# Photon Voice v2.7

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## **Photon Voice Doxygen Readme**

#### **Offline Docs**

#### **Manual Generation**

To manually generate doxygen offline files:

"doxygen .\Docs\doxygen\voice-doxygen-offline.config"

#### **Automatic Generation**

Simply run "Docs\generate\_offline.bat". Open the file and edit DOXYGEN\_PATH accordingly. Also you need a LaTeX distrubution installed and some packages/dependencies.

This script will also copy the offline files to their respective locations and then clean up.

#### **Files**

#### HTML

It is not possible to disable HTML files generation. So those are just ignored or cleaned up after generation.

#### **CHM**

"PhotonVoice-Documentation.chm" should be copied

to "Assets\Photon\PhotonVoice-Documentation.chm"

from "Docs\TempOutputDocs\VOICE\_OFFLINE\_HTML\PhotonVoice-Documentation.chm".

#### **PDF**

"PhotonVoice-Documentation.pdf" should be copied to "Assets\Photon\PhotonVoice-Documentation.pdf" from "Docs\TempOutputDocs\latex\refman.pdf".

#### **Online Docs**

To manually generate doxygen online files:

"doxygen \\Docs\doxygen\voice-doxygen-online.config"

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| Package Functions |                       | ns     |         |  |  |
| All               | Enumera               | ations |         |  |  |

Here is a list of all documented namespace members with links to the namespaces they belong to:

- AudioSessionCategory : Photon.Voice.IOS
- AudioSessionCategoryOption : Photon.Voice.IOS
- AudioSessionMode: Photon.Voice.IOS
- Bandwidth : POpusCodec.Enums
- Channels : POpusCodec.Enums
- Codec : Photon.Voice
- Delay: POpusCodec.Enums
- OpusApplicationType : POpusCodec.Enums
- SignalHint : POpusCodec.Enums

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| Package Functions |         | ns     |            |         |  |
| All               | Enumera | ations |            |         |  |

AudioSessionCategory : Photon.Voice.IOS

• AudioSessionCategoryOption : Photon.Voice.IOS

• AudioSessionMode : Photon.Voice.IOS

Bandwidth : POpusCodec.EnumsChannels : POpusCodec.Enums

• Codec : Photon.Voice

• Delay: POpusCodec.Enums

• OpusApplicationType : POpusCodec.Enums

• SignalHint: POpusCodec.Enums

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| Class List | Class Index |         | Class Hi | erarchy | Cla | ss Members |  |

#### **Class List**

Here are the classes, structs, unions and interfaces with brief descriptions:

|                                      | [detail level 12345]                     |
|--------------------------------------|--|
| ▼ N Photon                           |  |
| ▼ N Voice                            |  |
| ► N IOS                              |  |
| ► N PUN                              |  |
| ▶ N Unity                            |  |
| AudioDesc                            |  |
| AudioInEnumerator                    |  |
| AudioStreamPlayer                    |  |
| ►                                    | Collection                               |
| ■ BufferReaderPushAdapter            | Simple BufferF impleme buffer, u LocalVe |
| BufferReaderPushAdapterAsyncPool     | BufferF<br>impleme<br>asynchi<br>LocalVe |
| BufferReaderPushAdapterAsyncPoolCopy | BufferF<br>impleme<br>asynchi<br>LocalVe |

|  | and data  |
|--|---|
| ■ BufferReaderPushAdapterAsyncPoolFloatToShort | BufferReimpleme asynchro LocalVo convertir                    |
| BufferReaderPushAdapterBase                    | Adapter<br>by readir<br>IDataRe<br>to Local                   |
| <b>□</b> FactoryPrimitiveArrayPool             | Primitive wrapped interface                                   |
| ♠ FactoryReusableArray                         | Array fac<br>array ins<br>requeste<br>length. If<br>array ins |
| G Framer                                       | Utility clapackets.   |
| □ IAudioDesc                                   | Audio Sc  |
| □ IAudioOut                                    |   |
| □ IAudioPusher                                 | Audio Pι  |
| © IAudioReader                                 | Audio Re  |
| <b>©</b> IDataReader                           | Interface<br>this is more<br>pushing                          |
| © IDecoder                                     | Generic   |
| IDecoderQueuedOutputImageNative                |   |
| © IEncoder                                     | Generic   |
| (a) IEncoderDirect                             | Interface consume call.                                       |
| <b>□</b> ILocalVoiceAudio                      | Interface   |
|  |   |

|                                      | stream.  |
|--------------------------------------|--|
| ILogger                              |  |
| ImageBufferInfo                      |  |
| ImageBufferNative                    |  |
| ■ ImageBufferNativeAlloc             |  |
| ImageBufferNativeGCHandleSinglePlane |  |
| ImageBufferNativePool                |  |
| ImageInputBuf                        |  |
| ☐ ImageOutputBuf                     |  |
| © IProcessor                         | Audio Pr   |
|                                      | Interface<br>their <b>Ser</b><br>called re<br><b>LocalVo</b> |
| □ ISyncAudioOut     □                |  |
| O IVoiceTransport                    |  |
| CoadBalancingFrontend                |  |
| ■ LoadBalancingTransport             | Extends with audi  |
| ♠ LocalVoice                         | Represe stream.  |
| <b>©</b> LocalVoiceAudio             | Outgoinç   |
| CocalVoiceAudioDummy                 | Dummy  |
| ♠ LocalVoiceAudioFloat               | Specializ<br><b>LocalVo</b>                                  |
| ♠ LocalVoiceAudioShort               | Specializ <b>LocalVo</b>                                     |
| ■ LocalVoiceFramed                   | Typed re   |
| ■ LocalVoiceFramedBase               | Typed re   |
| ObjectFactory                        | Uniform<br>ObjectPo<br>single re                             |
|                                      |  |

| ■ ObjectPool                     | Generic<br>a certain<br>optionally<br>property<br>(TInfo). |
|----------------------------------|--|
| ▶                                |  |
| © PrimitiveArrayPool             | Pool of A of type T being the                              |
|                                  | Informati<br>(incomin                                      |
| ■ RemoteVoiceOptions             | Event Ac for a rem stream).                                |
| • UnsupportedCodecException      | Exceptio unsuppo encounte                                  |
| • UnsupportedSampleTypeException | Exceptio unsuppo encounte                                  |
| <b>○ VoiceClient</b>             | Voice cli<br>clients or<br>IVoiceTr                        |
| <b>○</b> VoiceEvent              |  |
| VoiceInfo                        | Describe   |
| ▶                                |  |
| WebRTCAudioProcessor             |  |
| ▼  POpusCodec                    |  |
| OpusDecoder                      |  |
| OpusEncoder                      |  |
| OpusException                    |  |



| Main Page       | Related Pages | Classes |      |
|-----------------|---------------|---------|------|
| Package Functio | ns            |         |      |
|                 |               |         | A.I. |

#### Photon Namespace Reference

**Namespaces** 

## Namespaces

namespace Voice

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# Photon Voice v2.7

| Main Page                           | Related Pages | Classes |                                 |
|-------------------------------------|---------------|---------|---------------------------------|
| Package Functio                     | ns            |         |                                 |
| Photon Voice                        |               |         |                                 |
| Photon.Voice<br>Namespace Reference |               |         | spaces   Classes   Enumerations |

## Namespaces

| namespace | IOS   |  |
|-----------|-------|--|
| -         |       |  |
| namespace | PUN   |  |
|           |       |  |
| namespace | Unity |  |

## Classes

| class | AudioDesc   |
|-------|---|
| class | AudioInEnumerator   |
| class | AudioStreamPlayer   |
| class | AudioUtil Collection of Audio Utility functions and classes. More   |
| class | BufferReaderPushAdapter Simple BufferReaderPushAdapterBase implementation using a single buffer, using synchronous LocalVoice.PushData More                                       |
|       |   |
| class | BufferReaderPushAdapterAsyncPool<br>BufferReaderPushAdapter implementation using<br>asynchronous LocalVoice.PushDataAsync. More   |
|       |   |
| class | BufferReaderPushAdapterAsyncPoolCopy BufferReaderPushAdapter implementation using asynchronous LocalVoice.PushDataAsync and data copy. More                                       |
| class | BufferReaderPushAdapterAsyncPoolFloatToShort<br>BufferReaderPushAdapter implementation using<br>asynchronous LocalVoice.PushDataAsync, converting<br>float samples to short. More |
| .1    | DuffauDaadauDuala AdaustauD = = =   |
| class | BufferReaderPushAdapterBase Adapter base class to move data by reading from IDataReader.Read and pushing to LocalVoice. More  |
|       |   |
| class | FactoryPrimitiveArrayPool PrimitiveArrayPool <t> as wrapped in object factory</t>   |
|       |   |

interface. More...

class FactoryReusableArray

Array factory returning the same array instance as long as it requested with the same array length. If length changes, new array instance created. More...

class Framer

Utility class to re-frame audio packets. More...

interface IAudioDesc

Audio Source interface. More...

interface IAudioOut

interface IAudioPusher

Audio Pusher interface. More...

interface IAudioReader

Audio Reader interface. More...

interface IDataReader

Interface for pulling data, in case this is more appropriate than pushing it. <u>More...</u>

interface IDecoder

Generic decoder interface. More...

interface IDecoderQueuedOutputImageNative

interface **IEncoder** 

Generic encoder interface. More...

interface IEncoderDirect

Interface for an encoder which consumes input data via explicit call. More...

| interface | ILocalVoiceAudio  |
|-----------|---|
|           | Interface for an outgoing audio stream. More  |
| interface | ILogger   |
| class     | ImageBufferInfo   |
| class     | ImageBufferNative   |
| class     | ImageBufferNativeAlloc  |
| class     | ImageBufferNativeGCHandleSinglePlane  |
| class     | ImageBufferNativePool   |
| struct    | ImageInputBuf   |
| struct    | ImageOutputBuf  |
| interface | IProcessor<br>Audio Processor interface. <u>More</u>  |
| interface | IServiceable Interface for classes that want their Service() function to                    |
|           | be called regularly in the context of a <b>LocalVoice</b> . More                            |
| interface | ISyncAudioOut   |
| interface | IVoiceTransport   |
| class     | LoadBalancingFrontend   |
| class     | LoadBalancingTransport Extends LoadBalancingClient with audio streaming functionality. More |

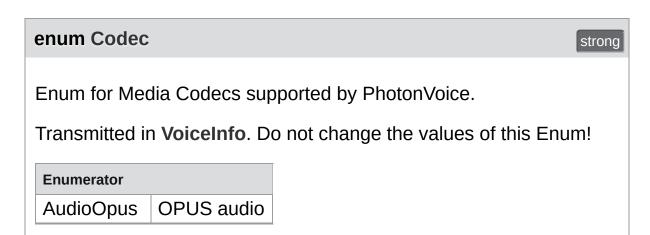
| class     | LocalVoice Represents outgoing data stream. More  |
|-----------|---|
|           |   |
| class     | LocalVoiceAudio Outgoing audio stream. More   |
|           |   |
| class     | LocalVoiceAudioDummy Dummy LocalVoiceAudio More   |
|           |   |
| class     | LocalVoiceAudioFloat Specialization of LocalVoiceAudio for float audio More   |
| class     | LocalVoiceAudioShort  |
| Class     | Specialization of <b>LocalVoiceAudio</b> for short audio <u>More</u>  |
|           |   |
| class     | LocalVoiceFramed Typed re-framing LocalVoice More   |
|           |   |
| class     | LocalVoiceFramedBase Typed re-framing LocalVoice More   |
|           |   |
| interface | ObjectFactory Uniform interface to ObjectPool <ttype, tinfo=""> and single reusable object. More</ttype,>                                       |
|           |   |
| class     | ObjectPool Generic Pool to re-use objects of a certain type (TType) that optionally match a certain property or set of properties (TInfo). More |
|           |   |
| class     | OpusCodec   |
|           |   |
| class     | PhotonTransportProtocol   |
|           |   |
| class     | PrimitiveArrayPool  |

|        | Pool of Arrays with components of type T, with <b>ObjectPool</b> info being the array's size. More       |
|--------|--|
| class  | RemoteVoice  |
| class  | RemoteVoiceInfo Information about a remote voice (incoming stream). More                                 |
| struct | RemoteVoiceOptions  Event Actions and other options for a remote voice (incoming stream). More           |
| class  | UnsupportedCodecException Exception thrown if an unsupported codec is encountered. More                  |
| class  | UnsupportedSampleTypeException Exception thrown if an unsupported audio sample type is encountered. More |
| class  | VoiceClient Voice client interact with other clients on network via IVoiceTransport. More                |
| class  | VoiceEvent   |
| struct | VoiceInfo Describes stream properties. More  |
| class  | WebRTCAudioLib   |
| class  | WebRTCAudioProcessor   |

## Enumerations

| enum | Codec Enum for Media Codecs supported by PhotonVoice. More |
|------|--|
| enum | ImageFormat  |
| enum | Rotation   |
| enum | Flip   |

## **Enumeration Type Documentation**



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# Photon Voice v2.7

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| Photon Voice         | ) IOS                    |         |                        |
| Photon.Vo<br>Namespa | oice.IOS<br>ce Reference |         | Classes   Enumerations |

## Classes

struct AudioSessionParameters

class AudioSessionParametersPresets

## Enumerations

| enum | AudioSessionCategory       |
|------|----------------------------|
| enum | AudioSessionMode           |
| enum | AudioSessionCategoryOption |

## **Enumeration Type Documentation**

| enum AudioSessionCategory strong |  |      |  |  |  |  |
|----------------------------------|--|------|--|--|--|--|
| Enumerator                       |  |      |  |  |  |  |
| Ambient                          | Use this category for background sounds sa rain, car engine noise, etc. Mixes with o music.          |      |  |  |  |  |
|                                  | API_AVAILABLE(ios(3.0), watchos(2.0), tvos(9.0)) API_UNAVAILABLE(macos);                             |      |  |  |  |  |
| SoloAmbient                      | Use this category for background sounds. Other music will stop playing.                              |      |  |  |  |  |
|                                  | API_AVAILABLE(ios(3.0), watchos(2.0), tvos(9.0)) API_UNAVAILABLE(macos);                             |      |  |  |  |  |
| Playback                         | Use this category for music tracks.  |      |  |  |  |  |
|                                  | API_AVAILABLE(ios(3.0), watchos(2.0), tvos(9.0)) API_UNAVAILABLE(macos);                             |      |  |  |  |  |
| Record                           | Use this category when recording audio.  |      |  |  |  |  |
|                                  | API_AVAILABLE(ios(3.0), watchos(2.0), tvos(9.0)) API_UNAVAILABLE(macos);                             |      |  |  |  |  |
| PlayAndRecord                    | Use this category when recording and play back audio.  | ring |  |  |  |  |
|                                  | API_AVAILABLE(ios(3.0), watchos(2.0), tvos(9.0)) API_UNAVAILABLE(macos);                             |      |  |  |  |  |
| AudioProcessing                  | Use this category when using a hardware codec or signal processor while not playing recording audio. | g or |  |  |  |  |
|                                  | API_DEPRECATED("No longer supported ios(3.0, 10.0)) API_UNAVAILABLE(watcho                           |      |  |  |  |  |

|            | tvos) API_UNAVAILABLE(macos);   |
|------------|---|
| MultiRoute | Use this category to customize the usage of available audio accessories and built-in audio hardware. For example, this category provides an application with the ability to use an available USB output and headphone output simultaneously for separate, distinct streams of audio data. Use of this category by an application requires a more detailed knowledge of, and interaction with, the capabilities of the available audio routes. May be used for input, output, or both. Note that not all output types and output combinations are eligible for multiroute. Input is limited to the last-in input port. Eligible inputs consist of the following: AVAudioSessionPortUSBAudio, AVAudioSessionPortBuiltInMic. Eligible outputs consist of the following: AVAudioSessionPortBuiltInMic. Eligible outputs consist of the following: AVAudioSessionPortHeadphones, AVAudioSessionPortHDMI, and AVAudioSessionPortBuiltInSpeaker. Note that AVAudioSessionPortBuiltInSpeaker is only allowed to be used when there are no other eligible outputs connected.  API_AVAILABLE(ios(6.0), watchos(2.0), tvos(9.0)) API_UNAVAILABLE(macos); |

# Enumerator MixWithOthers This allows an application to set whether or not other active audio apps will be interrupted or mixed with when your app's audio session goes active. The typical cases are: (1) AVAudioSessionCategoryPlayAndRecord or

AVAudioSessionCategoryMultiRoute this will default to false, but can be set to true. This would allow other applications to play in the background while an app had both audio input and output enabled (2)

AVAudioSessionCategoryPlayback this will default to false, but can be set to true. This would allow other applications to play in the background, but an app will still be able to play regardless of the setting of the ringer switch (3) Other categories this defaults to false and cannot be changed (that is, the mix with others setting of these categories cannot be overridden. An application must be prepared for setting this property to fail as behaviour may change in future releases. If an application changes their category, they should reassert the option (it is not sticky across category changes). MixWithOthers is only valid with AVAudioSessionCategoryPlayAndRecord, AVAudioSessionCategoryPlayback, and AVAudioSessionCategoryMultiRoute

#### **DuckOthers**

This allows an application to set whether or not other active audio apps will be ducked when when your app's audio session goes active. An example of this is the Nike app, which provides periodic updates to its user (it reduces the volume of any music currently being played while it provides its status). This defaults to off. Note that the other audio will be ducked for as long as the current session is active. You will need to deactivate your audio session when you want full volume playback of the other audio. If your category is AVAudioSessionCategoryPlayback, AVAudioSessionCategoryPlayAndRecord, or AVAudioSessionCategoryMultiRoute, by default the audio session will be non-mixable and nonducking. Setting this option will also make your category mixable with others

|                  | (AVAudioSessionCategoryOptionMixWithOthers will be set). DuckOthers is only valid with AVAudioSessionCategoryAmbient, AVAudioSessionCategoryPlayAndRecord, AVAudioSessionCategoryPlayback, and AVAudioSessionCategoryMultiRoute   |
|------------------|---|
| AllowBluetooth   | This allows an application to change the default behaviour of some audio session categories with regards to showing bluetooth Hands-Free Profile (HFP) devices as available routes. The current category behavior is: (1)  AVAudioSessionCategoryPlayAndRecord this will default to false, but can be set to true. This will allow a paired bluetooth HFP device to show up as an available route for input, while playing through the category-appropriate output (2) AVAudioSessionCategoryRecord this will default to false, but can be set to true. This will allow a paired bluetooth HFP device to show up as an available route for input (3) Other categories this defaults to false and cannot be changed (that is, enabling bluetooth for input in these categories is not allowed) An application must be prepared for setting this option to fail as behaviour may change in future releases. If an application changes their category or mode, they should reassert the override (it is not sticky across category and mode changes).  AllowBluetooth is only valid with AVAudioSessionCategoryPlayAndRecord |
| DefaultToSpeaker | This allows an application to change the default behaviour of some audio session categories with regards to the audio route. The current category behavior is: (1) AVAudioSessionCategoryPlayAndRecord category this will default to false, but can be set to true. this will route to Speaker (instead of Receiver) when no other audio route is connected. (2) Other categories this defaults to  |

false and cannot be changed (that is, the default to speaker setting of these categories cannot be overridden An application must be prepared for setting this property to fail as behaviour may change in future releases. If an application changes their category, they should reassert the override (it is not sticky across category and mode changes). DefaultToSpeaker is only valid with AVAudioSessionCategoryPlayAndRecord

| enum AudioSessionMode |   |              |  |  |  |  |
|-----------------------|---|--------------|--|--|--|--|
| Enumerator            |   |              |  |  |  |  |
| Default               | Modes modify the audio category in order to introduce behavior that is tailored to the specific use of audio within an application. Available in iOS 5.0 and greater.  The default mode API_AVAILABLE(ios(5.0), watchos(2.0), tvos(9.0)) API_UNAVAILABLE(macos);  | S            |  |  |  |  |
| VoiceChat             | Only valid with AVAudioSessionCategoryPlayAndRecord. Appropriate for <b>Voice</b> over IP (VoIP) applications. Reduces the number of allowable audio routes to be only those that are appropriate for VoIP applications and may engage appropriate system supplied signal processing. Has the side effect of setting AVAudioSessionCategoryOptionAllowBluetooth API_AVAILABLE(ios(5.0), watchos(2.0), tvos(9.0) API_UNAVAILABLE(macos); | )<br>]-<br>: |  |  |  |  |
| VideoRecording        | Only valid with AVAudioSessionCategoryPlayAndRecord or AVAudioSessionCategoryRecord. Modifies the audio routing options and may engage appropriat system-supplied signal processing.  | te           |  |  |  |  |

|               | API_AVAILABLE(ios(5.0), watchos(2.0), tvos(9.0)) API_UNAVAILABLE(macos);  |
|---------------|---|
| Measurement   | Appropriate for applications that wish to minimize the effect of system-supplied signal processing for input and/or output audio signals.   |
|               | API_AVAILABLE(ios(5.0), watchos(2.0), tvos(9.0)) API_UNAVAILABLE(macos);  |
| MoviePlayback | Engages appropriate output signal processing for movie playback scenarios. Currently only applied during playback over built-in speaker.  |
|               | API_AVAILABLE(ios(6.0), watchos(2.0), tvos(9.0)) API_UNAVAILABLE(macos);  |
| VideoChat     | Only valid with kAudioSessionCategory_PlayAndRecord. Reduces the number of allowable audio routes to be only those that are appropriate for video chat applications. May engage appropriate systemsupplied signal processing. Has the side effect of setting AVAudioSessionCategoryOptionAllowBluetooth and AVAudioSessionCategoryOptionDefaultToSpeaker. |
|               | API_AVAILABLE(ios(7.0), watchos(2.0), tvos(9.0)) API_UNAVAILABLE(macos);  |

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| Photon Voice IOS AudioSessionParameters     |  |   |               |   |          |                   |  |            |  |
| Public Member Functions   Public Attributes |  |   |               |   |          |                   |  |            |  |

## **AudioSessionParameters Struct Reference**

## **Public Member Functions**

## int CategoryOptionsToInt ()

override string ToString ()

## **Public Attributes**

#### AudioSessionCategory Category

#### AudioSessionMode Mode

#### AudioSessionCategoryOption[] CategoryOptions

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| Ctatia Dublia Attributas I List of all mambars |             |                 |       |     |            |  |

Static Public Attributes | List of all members

#### AudioSessionParametersPresets Class Reference

## Static Public Attributes

static AudioSessionParameters Game

static AudioSessionParameters VoIP

#### **AudioSessionParameters Game**

stati

#### **Initial value:**

#### AudioSessionParameters VoIP

static

#### **Initial value:**

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#### Classes

#### class PhotonVoiceNetwork

This class can be used to automatically sync client states between **PUN** and **Voice**. It also sets a custom **PUN** Speaker factory to find the Speaker component for a character's voice. For this to work attach a **PhotonVoiceView** next to the PhotonView of your player's prefab. More...

#### class PhotonVoiceView

Component that should be attached to a networked **PUN** prefab that has PhotonView. It will bind remote Recorder with local Speaker of the same networked prefab. This component makes automatic voice stream routing easy for players' characters/avatars. More...

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| Photon Voice PUN PhotonVoiceNetwork |      |             |                     |               |            |                   |                  |
| Dhoto                               | -\/- | sia a Nata  | lr                  |               |            | er Functions   Pu | iblic Attributes |

# PhotonVoiceNetwork Class Reference

Protected Member Functions | Public Attributes |
Protected Member Functions | Properties |
List of all members

This class can be used to automatically sync client states between **PUN** and **Voice**. It also sets a custom **PUN** Speaker factory to find the Speaker component for a character's voice. For this to work attach a **PhotonVoiceView** next to the PhotonView of your player's prefab. More...

Inherits VoiceConnection.

## **Public Member Functions**

#### bool ConnectAndJoinRoom ()

Connect voice client to **Photon** servers and join a **Voice** room More...

#### void Disconnect ()

Disconnect voice client from all **Photon** servers <u>More...</u>

▶ Public Member Functions inherited from VoiceConnection

#### **Public Attributes**

#### const string VoiceRoomNameSuffix = "\_voice\_"

Suffix for voice room names appended to **PUN** room names. More...

#### bool AutoConnectAndJoin = true

Auto connect voice client and join a voice room when **PUN** client is joined to a **PUN** room <u>More...</u>

#### bool AutoLeaveAndDisconnect = true

Auto disconnect voice client when **PUN** client is not joined to a **PUN** room <u>More...</u>

#### bool AutoCreateSpeakerIfNotFound = true

Auto instantiate a GameObject and attach a Speaker component to link to a remote audio stream if no candidate could be found More...

▶ Public Attributes inherited from VoiceConnection

# **Protected Member Functions**

| override void           | Awake ()  |
|-------------------------|---|
|                         |   |
| override void           | OnApplicationQuit ()  |
|                         |   |
| override void           | OnDestroy ()  |
|                         |   |
| override void           | OnVoiceStateChanged (ClientState fromState, ClientState toState)          |
|                         |   |
| override <b>Speaker</b> | <b>SimpleSpeakerFactory</b> (int playerId, byte voiceId, object userData) |
|                         |   |

<sup>▶</sup> Protected Member Functions inherited from VoiceConnection

# **Properties**

static PhotonVoiceNetwork Instance [get, set]
Singleton instance for PhotonVoiceNetwork More...

- ▶ Properties inherited from VoiceConnection
- ▶ Properties inherited from ILoggable

# Additional Inherited Members

- ▶ Protected Attributes inherited from VoiceConnection
- ▶ Events inherited from VoiceConnection

# **Detailed Description**

This class can be used to automatically sync client states between **PUN** and **Voice**. It also sets a custom **PUN** Speaker factory to find the Speaker component for a character's voice. For this to work attach a **PhotonVoiceView** next to the PhotonView of your player's prefab.

# **Member Function Documentation**

#### bool ConnectAndJoinRoom ()

Connect voice client to **Photon** servers and join a **Voice** room

#### **Returns**

If true, connection command send from client

## void Disconnect ()

Disconnect voice client from all **Photon** servers

#### Member Data Documentation

#### bool AutoConnectAndJoin = true

Auto connect voice client and join a voice room when  ${\bf PUN}$  client is joined to a  ${\bf PUN}$  room

#### bool AutoCreateSpeakerIfNotFound = true

Auto instantiate a GameObject and attach a Speaker component to link to a remote audio stream if no candidate could be found

#### bool AutoLeaveAndDisconnect = true

Auto disconnect voice client when **PUN** client is not joined to a **PUN** room

#### const string VoiceRoomNameSuffix = "\_voice\_"

Suffix for voice room names appended to **PUN** room names.

# **Property Documentation**

PhotonVoiceNetwork Instance

Singleton instance for PhotonVoiceNetwork

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|------------|-----------------------|------------|--------------|---------|------------------|------------------|
| Class List | Class Index           | Class Hi   | erarchy      | Cla     | ss Members       |                  |
| Photon Voi | ce PUN Pho            | tonVoiceVi | ew $\rangle$ |         |                  |                  |
|            |                       |            | Public Att   | ributes | Protected Mer    | mber Functions   |
|            | VoiceViev<br>eference | V          |              | 1       | Properties   Lis | t of all members |

Component that should be attached to a networked **PUN** prefab that has PhotonView. It will bind remote Recorder with local Speaker of the same networked prefab. This component makes automatic voice stream routing easy for players' characters/avatars. <u>More...</u>

Inherits VoiceComponent.

#### **Public Attributes**

#### bool AutoCreateRecorderIfNotFound

If true, a Recorder component will be added to the same GameObject if not found already. <u>More...</u>

#### bool UsePrimaryRecorder

If true, **PhotonVoiceNetwork.PrimaryRecorder** will be used by this **PhotonVoiceView** More...

#### bool SetupDebugSpeaker

If true, a Speaker component will be setup to be used for the DebugEcho mode <u>More...</u>

# **Protected Member Functions**

override void Awake ()

# **Properties**

#### Recorder RecorderInUse [get, set]

The Recorder component currently used by this **PhotonVoiceView** More...

#### Speaker SpeakerInUse [get, set]

The Speaker component currently used by this **PhotonVoiceView** More...

#### bool IsSetup [get, protected set]

If true, this **PhotonVoiceView** is setup and ready to be used More...

#### bool IsSpeaker [get, protected set]

If true, this **PhotonVoiceView** has a Speaker setup for playback of received audio frames from remote audio source More...

#### bool IsSpeaking [get]

If true, this **PhotonVoiceView** has a Speaker that is currently playing received audio frames from remote audio source More...

#### bool IsRecorder [get, protected set]

If true, this **PhotonVoiceView** has a Recorder setup for transmission of audio stream from local audio source <u>More...</u>

#### bool IsRecording [get]

If true, this **PhotonVoiceView** has a Recorder that is currently transmitting audio stream from local audio source <u>More...</u>

#### ▶ Properties inherited from VoiceComponent

Properties inherited from ILoggable

# Additional Inherited Members

▶ Protected Attributes inherited from VoiceComponent

# **Detailed Description**

Component that should be attached to a networked **PUN** prefab that has PhotonView. It will bind remote Recorder with local Speaker of the same networked prefab. This component makes automatic voice stream routing easy for players' characters/avatars.

#### Member Data Documentation

#### bool AutoCreateRecorderIfNotFound

If true, a Recorder component will be added to the same GameObject if not found already.

#### bool SetupDebugSpeaker

If true, a Speaker component will be setup to be used for the DebugEcho mode

#### bool UsePrimaryRecorder

If true, PhotonVoiceNetwork.PrimaryRecorder will be used by this PhotonVoiceView

# **Property Documentation**

#### bool IsRecorder

get protected set

If true, this **PhotonVoiceView** has a Recorder setup for transmission of audio stream from local audio source

#### bool IsRecording

get

If true, this **PhotonVoiceView** has a Recorder that is currently transmitting audio stream from local audio source

#### bool IsSetup

get protected set

If true, this PhotonVoiceView is setup and ready to be used

#### bool IsSpeaker

get protected set

If true, this PhotonVoiceView has a Speaker setup for playback of received audio frames from remote audio source

#### bool IsSpeaking

get

If true, this **PhotonVoiceView** has a Speaker that is currently playing received audio frames from remote audio source

#### Recorder RecorderInUse



The Recorder component currently used by this PhotonVoiceView

## Speaker SpeakerInUse

get set



The Speaker component currently used by this **PhotonVoiceView** 

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# Photon Voice v2.7

| Main Page       | Related Pages              | Classes |                                    |
|-----------------|----------------------------|---------|------------------------------------|
| Package Functio | ons                        |         |                                    |
| Photon Voice    | <b>Unity</b>               |         |                                    |
|                 | oice.Unity<br>ce Reference |         | <u>Namespaces</u>   <u>Classes</u> |

# Namespaces

namespace UtilityScripts

# Classes

| class     | AudioClipWrapper  |
|-----------|---|
| class     | AudioOutCapture   |
| interface | ILoggable   |
| class     | IOSAudioForceToSpeaker  |
| class     | Logger  |
| class     | MicWrapper  |
| class     | PhotonVoiceCreatedParams  |
| class     | Recorder Component representing outgoing audio stream in scene. More                        |
|           |   |
| class     | RemoteVoiceLink   |
| class     | Speaker Component representing remote audio stream in local scene. More                     |
| class     | UnityAndroidAudioInAEC  |
| 3.003     |   |
| class     | UnityAudioOut   |
| class     | VoiceComponent  |
| class     | VoiceConnection Component that represents a client voice connection to Photon Servers. More |
|           |   |

class VoiceLogger

class WebRtcAudioDsp

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|----------------|-------|-----------------------|----------|--|
| Package Functi | ons   |                       |          |  |
| Photon Voice   | Unity | <b>UtilityScripts</b> | <b>\</b> |  |

Classes

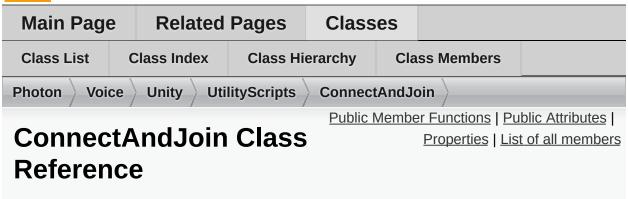
# Photon.Voice.Unity.UtilityScripts Namespace Reference

# Classes

| class | ConnectAndJoin  |
|-------|---|
| class | PhotonVoiceLagSimulationGui   |
| class | PhotonVoiceStatsGui Basic GUI to show traffic and health statistics of the connection to Photon, toggled by shift+tab. More |
| class | TestTone  |
| class | ToneAudioReader   |

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Inherits MonoBehaviour, IConnectionCallbacks, and IMatchmakingCallbacks.

# **Public Member Functions**

| void ConnectNow ()   |
|--|
| void OnCreatedRoom ()  |
| void <b>OnCreateRoomFailed</b> (short returnCode, string message)              |
| void <b>OnFriendListUpdate</b> (List< FriendInfo > friendList)                 |
| void OnJoinedRoom ()   |
| void <b>OnJoinRandomFailed</b> (short returnCode, string message)              |
| void <b>OnJoinRoomFailed</b> (short returnCode, string message)                |
| void OnLeftRoom ()   |
| void OnConnected ()  |
| void OnConnectedToMaster ()  |
| void OnDisconnected (DisconnectCause cause)                                    |
| void <b>OnRegionListReceived</b> (RegionHandler regionHandler)                 |
| void <b>OnCustomAuthenticationResponse</b> (Dictionary< string, object > data) |
| void <b>OnCustomAuthenticationFailed</b> (string debugMessage)                 |

# **Public Attributes**

bool RandomRoom = true

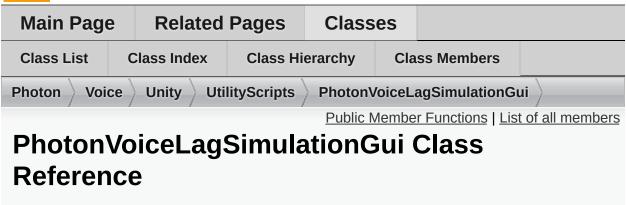
string RoomName

# **Properties**

bool **IsConnected** [get]

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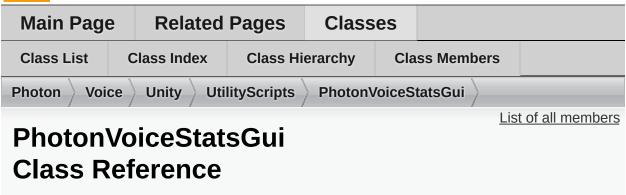
Inherits MonoBehaviour.

# **Public Member Functions**

void OnEnable ()

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Basic GUI to show traffic and health statistics of the connection to **Photon**, toggled by shift+tab. <u>More...</u>

Inherits MonoBehaviour.

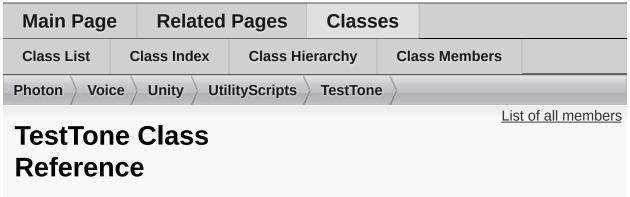
### **Detailed Description**

Basic GUI to show traffic and health statistics of the connection to **Photon**, toggled by shift+tab.

The shown health values can help identify problems with connection losses or performance. Example: If the time delta between two consecutive SendOutgoingCommands calls is a second or more, chances rise for a disconnect being caused by this (because acknowledgments to the server need to be sent in due time).

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Inherits MonoBehaviour.

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| Photon Voice Unity UtilityScripts ToneAudioReader |             |          |          |         |                         |                  |  |  |
|   |             |          | <u> </u> | ublic N | <u> 1ember Functior</u> | s   Properties   |  |  |
| ToneAudioReader                                   |             |          |          |         | <u>Lis</u>              | t of all members |  |  |
| Class Re  | eference    |          |          |         |                         |                  |  |  |

Inherits IAudioReader< float >.

# **Public Member Functions**

void **Dispose** ()

bool Read (float[] buf)

# **Properties**

int Channels [get]

int SamplingRate [get]

string **Error** [get]

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| Photon Voice Unity AudioClipWrapper |     |           |                 |          |                                      |            |  |  |
|                                     |     |           |                 | <u>P</u> | Public Member Functions   Properties |            |  |  |
| AudioClipWrapper                    |     |           |                 |          | <u>List of all members</u>           |            |  |  |
| Class R                             | -   |           |                 |          |                                      |            |  |  |

Inherits IAudioReader< float >.

### **Public Member Functions**

### AudioClipWrapper (AudioClip audioClip)

bool Read (float[] buffer)

void **Dispose** ()

# **Properties**

bool Loop [get, set]

int SamplingRate [get]

int Channels [get]

string **Error** [get]

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| Main Page                          | Related Pages        |                   | Classes |     |                            |                  |  |
|------------------------------------|----------------------|-------------------|---------|-----|----------------------------|------------------|--|
| Class List                         | Class Index          | Class Hierarchy C |         | Cla | ss Members                 |                  |  |
| Photon Voice Unity AudioOutCapture |                      |                   |         |     |                            |                  |  |
|                                    | utCaptur<br>eference | e                 |         |     | <u>Events</u>   <u>Lis</u> | t of all members |  |

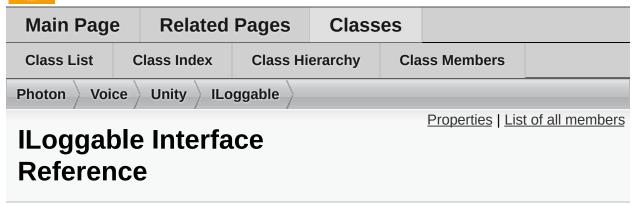
Inherits MonoBehaviour.

### **Events**

Action< float[], int > **OnAudioFrame** 

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# Photon Voice v2.7



Inherited by VoiceComponent, and VoiceConnection.

# **Properties**

DebugLevel LogLevel [get, set]

VoiceLogger Logger [get]

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| Main Pag   | е    | Relate   | d Pages      | Class                 | es          |            |                  |
|------------|------|----------|--------------|-----------------------|-------------|------------|------------------|
| Class List | Cla  | ss Index | Class Hi     | Class Hierarchy Class |             | ss Members |                  |
| Photon Voi | ce \ | Unity \  | OSAudioForce | еТоЅреак              | er $ angle$ |            |                  |
|            |      |          |              |                       |             | <u>Lis</u> | t of all members |

# **IOSAudioForceToSpeaker Class Reference**

Inherits MonoBehaviour.

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| Photon Voice Unity Logger |                        |                           |         |     |            |  |  |  |
|                           | Logger Class Reference |                           |         |     |            |  |  |  |

Inherits **ILogger**.

### **Public Member Functions**

void LogError (string fmt, params object[] args)

void LogWarning (string fmt, params object[] args)

void LogInfo (string fmt, params object[] args)

void LogDebug (string fmt, params object[] args)

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| Main Page                     | Related     | Related Pages            |          | es                                   |            |                  |  |  |
|-------------------------------|-------------|--------------------------|----------|--------------------------------------|------------|------------------|--|--|
| Class List                    | Class Index | ass Index Class Hierarch |          | Cla                                  | ss Members |                  |  |  |
| Photon Voice Unity MicWrapper |             |                          |          |                                      |            |                  |  |  |
|                               |             |                          | <u>P</u> | Public Member Functions   Properties |            |                  |  |  |
| MicWrapper Class              |             |                          |          |                                      | <u>Lis</u> | t of all members |  |  |
| Referen                       | •           |                          |          |                                      |            |                  |  |  |

Inherits IAudioReader< float >.

### **Public Member Functions**

**MicWrapper** (string device, int suggestedFrequency, **Voice.ILogger** logger)

void Dispose ()

bool Read (float[] buffer)

# **Properties**

int SamplingRate [get]

int Channels [get]

string **Error** [get]

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| Main Pag                                    | e Related   | Pages    | Class   | es  |            |  |
|---|-------------|----------|---------|-----|------------|--|
| Class List                                  | Class Index | Class Hi | erarchy | Cla | ss Members |  |
| Photon Voice Unity PhotonVoiceCreatedParams |             |          |         |     |            |  |
| Properties   List of all members            |             |          |         |     |            |  |
| PhotonVoiceCreatedParams Class Reference    |             |          |         |     |            |  |

Inherited by Recorder.PhotonVoiceCreatedParams.

# **Properties**

Voice.LocalVoice Voice [get, set]

Voice.IAudioDesc AudioDesc [get, set]

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| Main Page                   | е   | Related                 | Pages | Class                   | es             |                         |                        |
|-----------------------------|-----|-------------------------|-------|-------------------------|----------------|-------------------------|------------------------|
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| Photon Voice Unity Recorder |     |                         |       |                         |                |                         |                        |
| <u>C</u>                    |     |                         |       |                         | <u>Classes</u> | Public Types            |                        |
| Recorder Class              |     |                         |       | Public Member Functions |                |                         |                        |
| Referen                     | 100 | <b>.</b>                |       | Prote                   | ected N        | <u> 1ember Function</u> | ns   <u>Properties</u> |
| Reference                   |     | 7                       |       |                         |                | <u>Lis</u>              | t of all members       |

Component representing outgoing audio stream in scene. <u>More...</u> Inherits **VoiceComponent**.

### Classes

### class **PhotonVoiceCreatedParams**

# Public Types

| enum | InputSourceType |
|------|-----------------|
| enum | МісТуре         |
| enum | SampleTypeConv  |

### **Public Member Functions**

void Init (VoiceClient voiceClient, object customObj=null)

Initializes the **Recorder** component to be able to transmit audio. More...

#### void ReInit ()

#### void RestartRecording ()

Restarts recording if something has changed that requires this. More...

#### void VoiceDetectorCalibrate (int durationMs)

Trigger voice detector calibration process. While calibrating, keep silence. **Voice** detector sets threshold basing on measured backgroud noise level. <u>More...</u>

#### void StartRecording ()

Starts recording. More...

#### void StopRecording ()

Stops recording. More...

### **Protected Member Functions**

### virtual void **SendPhotonVoiceCreatedMessage** ()

▶ Protected Member Functions inherited from VoiceComponent

# **Properties**

| static AudioInEnumerator  [get] Enumerator for the available microphone devices gathered by the Photon plugin. More  bool IsInitialized [get] If true, this Recorder has been initialized and is ready to transmit to remote clients. Otherwise call Init. More  bool RequiresInit [get]  bool RequiresRestart [get, protected set] Returns true if something has changed in the Recorder while recording that won't take effect unless recording is restarted using RestartRecording. More  bool TransmitEnabled [get, set] If true, audio transmission is enabled. More  bool Encrypt [get, set] If true, voice stream is sent encrypted. More  bool DebugEchoMode [get, set] If true, outgoing stream routed back to client via server same |                          |  |
|--|--------------------------|--|
| If true, this Recorder has been initialized and is ready to transmit to remote clients. Otherwise call Init. More  bool RequiresInit [get]  bool RequiresRestart [get, protected set] Returns true if something has changed in the Recorder while recording that won't take effect unless recording is restarted using RestartRecording. More  bool TransmitEnabled [get, set] If true, audio transmission is enabled. More  bool Encrypt [get, set] If true, voice stream is sent encrypted. More   | static AudioInEnumerator | [get] Enumerator for the available microphone devices gathered   |
| bool RequiresRestart [get, protected set] Returns true if something has changed in the Recorder while recording that won't take effect unless recording is restarted using RestartRecording. More  bool TransmitEnabled [get, set] If true, audio transmission is enabled. More  bool Encrypt [get, set] If true, voice stream is sent encrypted. More  bool DebugEchoMode [get, set] If true, outgoing stream routed  | bool                     | If true, this <b>Recorder</b> has been initialized and is ready to transmit to remote clients.   |
| protected set] Returns true if something has changed in the Recorder while recording that won't take effect unless recording is restarted using RestartRecording. More  bool TransmitEnabled [get, set] If true, audio transmission is enabled. More  bool Encrypt [get, set] If true, voice stream is sent encrypted. More  bool DebugEchoMode [get, set] If true, outgoing stream routed   | bool                     | RequiresInit [get]   |
| protected set] Returns true if something has changed in the Recorder while recording that won't take effect unless recording is restarted using RestartRecording. More  bool TransmitEnabled [get, set] If true, audio transmission is enabled. More  bool Encrypt [get, set] If true, voice stream is sent encrypted. More  bool DebugEchoMode [get, set] If true, outgoing stream routed   |                          |  |
| bool Encrypt [get, set] If true, voice stream is sent encrypted. More  bool DebugEchoMode [get, set] If true, outgoing stream routed   | bool                     | protected set] Returns true if something has changed in the <b>Recorder</b> while recording that won't take effect unless recording is restarted using <b>RestartRecording</b> . |
| lf true, voice stream is sent encrypted. More  bool DebugEchoMode [get, set] If true, outgoing stream routed   | bool                     | If true, audio transmission is   |
| If true, outgoing stream routed  | bool                     | If true, voice stream is sent  |
| If true, outgoing stream routed  |                          |  |
|  | bool                     | If true, outgoing stream routed  |

way as for remote client's streams. <u>More...</u>

bool **ReliableMode** [get, set]

If true, stream data sent in reliable mode. More...

bool **VoiceDetection** [get, set]
If true, voice detection enabled.
More...

float VoiceDetectionThreshold
[get, set]
Voice detection threshold (0..1,
where 1 is full amplitude).
More...

int VoiceDetectionDelayMs [get, set]

Keep detected state during this time after signal level dropped below threshold. Default is 500ms More...

object UserData [get, set]

Custom user object to be sent in the voice stream info event.

More...

Func< IAudioDesc > InputFactory [get, set]
Set the method returning new
Voice.IAudioDesc instance to
be assigned to a new voice
created with Source set to
Factory More...

AudioUtil.IVoiceDetector VoiceDetector [get]

Returns voice activity detector for recorder's audio stream. More...

#### 

Set or get **Unity** microphone device used for streaming. More...

### int PhotonMicrophoneDeviceId

[get, set]

Set or get photon microphone device used for streaming. More...

#### byte AudioGroup [get, set]

Target interest group that will receive transmitted audio. More...

#### byte InterestGroup [get, set]

Target interest group that will receive transmitted audio. More...

#### bool IsCurrentlyTransmitting [get]

Returns true if audio stream broadcasts. <u>More...</u>

### AudioUtil.ILevelMeter LevelMeter [get]

Level meter utility. More...

#### bool VoiceDetectorCalibrating [get]

If true, voice detector calibration is in progress. <u>More...</u>

| ILocalVoiceAudio              | voiceAudio [get]   |
|-------------------------------|--|
| InputSourceType               | <b>SourceType</b> [get, set]<br>Audio data source. More  |
| МісТуре                       | MicrophoneType [get, set]<br>Which microphone API to use<br>when the Source is set to<br>Microphone. More                        |
| SampleTypeConv                | <b>TypeConvert</b> [get, set] Force creation of 'short' pipeline and convert audio data to short for 'float' audio sources. More |
| AudioClip                     | AudioClip [get, set] Source audio clip. More   |
| bool                          | LoopAudioClip [get, set] Loop playback for audio clip sources. More  |
| POpusCodec.Enums.SamplingRate | SamplingRate [get, set] Outgoing audio stream sampling rate. More  |
| OpusCodec.FrameDuration       | FrameDuration [get, set] Outgoing audio stream encoder delay. More   |
| int                           | Bitrate [get, set] Outgoing audio stream bitrate. More   |
| bool                          | IsRecording [get, set] Gets or sets whether this   |

|      | <b>Recorder</b> is actively recording audio to be transmitted. More                |
|------|--|
| bool | ReactOnSystemChanges [get, set]  |
| bool | AutoStart [get, set] If true, automatically start recording when initialized. More |

- → Properties inherited from VoiceComponent
- ▶ Properties inherited from ILoggable

# Additional Inherited Members

▶ Protected Attributes inherited from VoiceComponent

# **Detailed Description**

Component representing outgoing audio stream in scene.

#### **Member Function Documentation**

```
void Init ( VoiceClient voiceClient,
     object     customObj = null
)
```

Initializes the **Recorder** component to be able to transmit audio.

#### **Parameters**

voiceClient The VoiceClient to be used with this Recorder.
customObj Optional user data object to be transmitted with the voice stream info

#### void RestartRecording ()

Restarts recording if something has changed that requires this.

#### void StartRecording()

Starts recording.

#### void StopRecording ()

Stops recording.

#### void VoiceDetectorCalibrate ( int durationMs )

Trigger voice detector calibration process. While calibrating, keep silence. **Voice** detector sets threshold basing on measured

backgroud noise level.

#### **Parameters**

durationMs Duration of calibration in milliseconds.

### **Property Documentation**

#### **AudioClip AudioClip**

get set



Source audio clip.

#### byte AudioGroup

get set



Target interest group that will receive transmitted audio.

If AudioGroup != 0, recorder's audio data is sent only to clients listening to this group.

#### **bool AutoStart**

get set



If true, automatically start recording when initialized.

#### int Bitrate





Outgoing audio stream bitrate.

#### bool DebugEchoMode





If true, outgoing stream routed back to client via server same way as for remote client's streams.

#### **bool Encrypt**



If true, voice stream is sent encrypted.

#### **OpusCodec.FrameDuration FrameDuration**

get set

Outgoing audio stream encoder delay.

#### Func<IAudioDesc> InputFactory





Set the method returning new **Voice.IAudioDesc** instance to be assigned to a new voice created with Source set to Factory

#### byte InterestGroup





Target interest group that will receive transmitted audio.

If InterestGroup != 0, recorder's audio data is sent only to clients listening to this group.

#### bool IsCurrentlyTransmitting



Returns true if audio stream broadcasts.

#### bool IsInitialized



If true, this **Recorder** has been initialized and is ready to transmit to remote clients. Otherwise call Init.

#### bool IsRecording





Gets or sets whether this **Recorder** is actively recording audio to be

transmitted. AudioUtil.ILevelMeter LevelMeter get Level meter utility. bool LoopAudioClip get set Loop playback for audio clip sources. MicType MicrophoneType get set Which microphone API to use when the Source is set to Microphone. int PhotonMicrophoneDeviceId get set Set or get photon microphone device used for streaming. **AudioInEnumerator PhotonMicrophoneEnumerator** static get Enumerator for the available microphone devices gathered by the Photon plugin. bool ReliableMode get set If true, stream data sent in reliable mode. **bool RequiresRestart** 

get protected set

Returns true if something has changed in the **Recorder** while recording that won't take effect unless recording is restarted using RestartRecording.

Think of this as a "isDirty" flag.

#### POpusCodec.Enums.SamplingRate SamplingRate

get set

Outgoing audio stream sampling rate.

#### InputSourceType SourceType





Audio data source.

#### bool TransmitEnabled

get set



If true, audio transmission is enabled.

#### **SampleTypeConv TypeConvert**





Force creation of 'short' pipeline and convert audio data to short for 'float' audio sources.

#### string UnityMicrophoneDevice





Set or get **Unity** microphone device used for streaming.

#### object UserData



Custom user object to be sent in the voice stream info event.

#### bool VoiceDetection

get set

If true, voice detection enabled.

#### int VoiceDetectionDelayMs

get set



Keep detected state during this time after signal level dropped below threshold. Default is 500ms

#### float VoiceDetectionThreshold





**Voice** detection threshold (0..1, where 1 is full amplitude).

#### AudioUtil.IVoiceDetector VoiceDetector



Returns voice activity detector for recorder's audio stream.

#### bool VoiceDetectorCalibrating

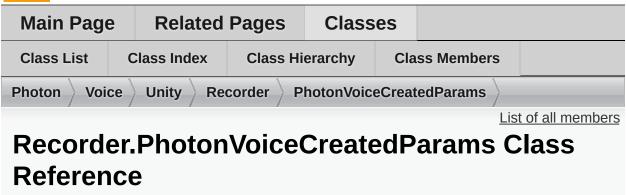


If true, voice detector calibration is in progress.

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Inherits PhotonVoiceCreatedParams.

### Additional Inherited Members

▶ Properties inherited from PhotonVoiceCreatedParams

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| Photon Voice Unity RemoteVoiceLink |             |          |                               |        |                  |                  |
|                                    |             |          | Public Me                     | mber F | unctions   Prope | erties   Events  |
| RemoteVoiceLink                    |             |          |                               |        | <u>Lis</u>       | t of all members |
| Class R                            | eference    |          |                               |        |                  |                  |

### **Public Member Functions**

RemoteVoiceLink (VoiceInfo info, int playerId, int voiceId, int channelId, ref RemoteVoiceOptions options)

## **Properties**

| VoiceInfo | Info [get]      |
|-----------|-----------------|
| int       | PlayerId [get]  |
| IIIC      | layena [get]    |
| int       | Voiceld [get]   |
| int       | Channelld [mak] |
| 1111      | Channelld [get] |

### **Events**

Action< float[]> FloatFrameDecoded

Action RemoteVoiceRemoved

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# Photon Voice v2.7

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| Class List    | Cla                             | ass Index | Class Hi                      | Class Hierarchy Class Memb |                | ss Members       |                |
| Photon Voi    | Photon Voice Unity Speaker      |           |                               |                            |                |                  |                |
|               |                                 |           |                               | Public Att                 | <u>ributes</u> | Protected Mer    | nber Functions |
| Speaker Class |                                 |           | Properties   List of all memb |                            |                | t of all members |                |
| Reference     |                                 |           |                               |                            |                |                  |                |

Component representing remote audio stream in local scene. <u>More...</u> Inherits **VoiceComponent**.

## Public Attributes

int **PlayDelayMs** = 200

## **Protected Member Functions**

override void Awake ()

### **Properties**

#### bool IsPlaying [get]

Is the speaker playing right now. More...

#### int Lag [get]

Smoothed difference between (jittering) stream and (clock-driven) audioOutput. More...

#### Action < Speaker > OnRemoteVoiceRemoveAction [get, set]

Register a method to be called when remote voice removed. More...

#### Realtime.Player Actor [get, set]

Per room, the connected users/players are represented with a Realtime.Player, also known as Actor. More...

#### bool IsLinked [get]

Whether or not this **Speaker** has been linked to a remote voice stream. More...

- Properties inherited from VoiceComponent
- Properties inherited from ILoggable

## Additional Inherited Members

▶ Protected Attributes inherited from VoiceComponent

## **Detailed Description**

Component representing remote audio stream in local scene.

### **Property Documentation**

Realtime.Player, also known as Actor.

#### Realtime.Player Actor



Per room, the connected users/players are represented with a

Photon Voice calls this Actor, to avoid a name-clash with the Player class in Voice.

#### bool IsLinked



Whether or not this **Speaker** has been linked to a remote voice stream.

#### bool IsPlaying



Is the speaker playing right now.

#### int Lag



Smoothed difference between (jittering) stream and (clock-driven) audioOutput.

#### Action<Speaker> OnRemoteVoiceRemoveAction





Register a method to be called when remote voice removed.



| Main Pag                                       | e Related   | Pages    | Classes |                 |  |  |
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| Class List                                     | Class Index | Class Hi | erarchy | / Class Members |  |  |
| Photon Voice Unity UnityAndroidAudioInAEC      |             |          |         |                 |  |  |
| Classes   Public Member Functions   Properties |             |          |         |                 |  |  |
| List of all members                            |             |          |         |                 |  |  |
| UnityAndroidAudioInAEC Class Reference         |             |          |         |                 |  |  |

Inherits IAudioPusher< short >.

### **Public Member Functions**

### UnityAndroidAudioInAEC (Voice.ILogger logger)

void SetCallback (Action< short[]> callback, ObjectFactory< short[],
 int > bufferFactory)

void Dispose ()

Public Member Functions inherited from IAudioPusher< short >

## **Properties**

int Channels [get]

int SamplingRate [get]

string **Error** [get]

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| Main Page                        | Related     | l Pages                                     | Classes |            |                  |                  |
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| Photon Voice Unity UnityAudioOut |             |   |         |            |                  |                  |
|                                  | Public I    | Public Member Functions   Public Attributes |         |            |                  |                  |
| UnityAudioOut Class<br>Reference |             |   |         |            | Properties   Lis | t of all members |

Inherits ISyncAudioOut< float >.

### **Public Member Functions**

UnityAudioOut (AudioSource audioSource)

void **Start** (int frequency, int channels, int frameSamples, int playDelayMs)

void Service ()

void **Push** (float∏ frame)

void Stop ()

void Pause ()

void UnPause ()

Public Member Functions inherited from ISyncAudioOut< float >

## Public Attributes

const int **FRAME\_POOL\_CAPACITY** = 50

## **Properties**

int Lag [get]

int PlaySamplePos [get, set]

bool **IsPlaying** [get]

Properties inherited from ISyncAudioOut< float >

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| Main Page                         | e Related   | Pages    | Class   | es               |                   |                 |
|-----------------------------------|-------------|----------|---------|------------------|-------------------|-----------------|
| Class List                        | Class Index | Class Hi | erarchy | hy Class Members |                   |                 |
| Photon Voice Unity VoiceComponent |             |          |         |                  |                   |                 |
|                                   |             |          |         |                  | Protected Mem     | ber Functions   |
| VoiceComponent                    |             |          |         | <u>Pr</u>        | otected Attribute | es   Properties |
| Class R                           |             |          |         | <u>Lis</u>       | t of all members  |                 |
|                                   |             |          |         |                  |                   |                 |

Inherits MonoBehaviour, and ILoggable.

Inherited by PhotonVoiceView, Recorder, Speaker, and WebRtcAudioDsp.

## **Protected Member Functions**

virtual void Awake ()

## Protected Attributes

DebugLevel | logLevel = DebugLevel.ERROR

## **Properties**

VoiceLogger Logger [get, protected set]

DebugLevel LogLevel [get, set]

→ Properties inherited from ILoggable

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| Main Pag                           | е | Related    | ed Pages Classes                           |   |            |  |  |
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| Photon Voice Unity VoiceConnection |   |            |  |   |            |  |  |
|                                    |   |            | Public I                                   | Public Member Functions   Public Attributes |            |  |  |
| VoiceConnection                    |   |            | Protected Member Functions                 |   |            |  |  |
| Class Reference                    |   |            | Protected Attributes   Properties   Events |   |            |  |  |
|                                    |   |            |  | <u>List of all members</u>                  |            |  |  |

Component that represents a client voice connection to  ${\bf Photon}$  Servers.  ${\bf \underline{More...}}$ 

Inherits ConnectionHandler, and ILoggable.

Inherited by PhotonVoiceNetwork.

### **Public Member Functions**

bool **ConnectUsingSettings** (AppSettings overwriteSettings=null) Connect to **Photon** server using **Settings** <u>More...</u>

### **Public Attributes**

#### AppSettings Settings

Settings to be used by this voice connection More...

#### Recorder PrimaryRecorder

Main **Recorder** to be used for transmission by default <u>More...</u>

Func< int, byte, object, Speaker > SpeakerFactory

Special factory to link **Speaker** components with incoming remote audio streams <u>More...</u>

## **Protected Member Functions**

| override void          | Awake ()  |
|------------------------|---|
| virtual void           | Update ()   |
| virtual void           | FixedUpdate ()  |
| override void          | OnDestroy ()  |
| virtual <b>Speaker</b> | <b>SimpleSpeakerFactory</b> (int playerId, byte voiceId, object userData) |
| virtual void           | OnVoiceStateChanged (ClientState fromState, ClientState toState)          |
| override void          | OnApplicationQuit ()  |
| void                   | CalcStatistics ()   |
| void                   | <b>LinkSpeaker (Speaker</b> speaker, <b>RemoteVoiceLink</b> remoteVoice)  |
|                        |   |

### **Protected Attributes**

List< RemoteVoiceLink > cachedRemoteVoices = new List<RemoteVoiceLink>()

### **Properties**

VoiceLogger Logger [get, protected set] **Logger** used by this component More... DebugLevel LogLevel [get, set] Log level for this component More... new LoadBalancingTransport Client [get] VoiceClient VoiceClient [get] Returns underlying Photon Voice client. More... ClientState ClientState [get] Returns **Photon Voice** client state. More... float FramesReceivedPerSecond [get1] Number of frames received per second. More... float FramesLostPerSecond [get] Number of frames lost per second. More... float FramesLostPercent [get] Percentage of lost frames. More... GameObject SpeakerPrefab [get, set] Prefab that contains Speaker component to be instantiated when receiving a new remote audio source info More...

Properties inherited from ILoggable

### **Events**

### Action< Speaker > SpeakerLinked

Fires when a speaker has been linked to a remote audio stream More...

#### Action < RemoteVoiceLink > RemoteVoiceAdded

Fires when a remote voice stream is added More...

## **Detailed Description**

Component that represents a client voice connection to **Photon** Servers.

## **Member Function Documentation**

#### bool

ConnectUsingSettings (AppSettings overwriteSettings = null)

Connect to **Photon** server using **Settings** 

#### **Parameters**

overwriteSettings Overwrites Settings before connecting

#### **Returns**

If true voice connection command was sent from client

## Member Data Documentation

#### **Recorder PrimaryRecorder**

Main Recorder to be used for transmission by default

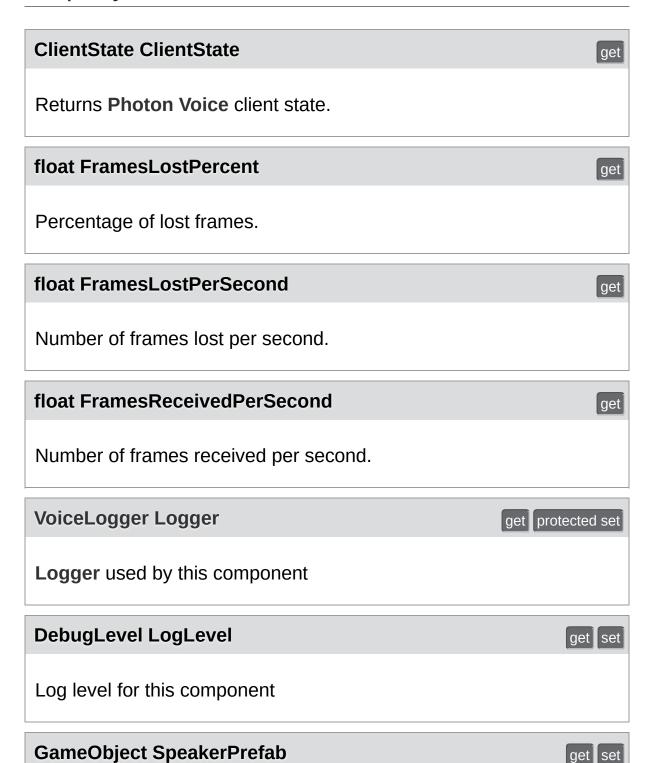
## **AppSettings Settings**

Settings to be used by this voice connection

## Func<int, byte, object, Speaker> SpeakerFactory

Special factory to link **Speaker** components with incoming remote audio streams

## **Property Documentation**



Prefab that contains **Speaker** component to be instantiated when receiving a new remote audio source info

#### **VoiceClient VoiceClient**



Returns underlying **Photon Voice** client.

## **Event Documentation**

#### Action<RemoteVoiceLink> RemoteVoiceAdded

Fires when a remote voice stream is added

## **Action<Speaker> SpeakerLinked**

Fires when a speaker has been linked to a remote audio stream

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| Photon Voice Unity VoiceLogger |                   |                            |         |                            |                                      |  |  |  |
|                                |                   |                            |         |                            | Public Member Functions   Properties |  |  |  |
| VoiceLogger Class              |                   |                            |         | <u>List of all members</u> |                                      |  |  |  |
| Referer                        | • •               |                            |         |                            |                                      |  |  |  |

Inherits **ILogger**.

## **Public Member Functions**

**VoiceLogger** (Object context, string tag, DebugLevel level=DebugLevel.ERROR)

**VoiceLogger** (string tag, DebugLevel level=DebugLevel.ERROR)

void LogError (string fmt, params object[] args)

void LogWarning (string fmt, params object[] args)

void **LogInfo** (string fmt, params object [] args)

void LogDebug (string fmt, params object[] args)

## **Properties**

```
String Tag [get, set]

DebugLevel LogLevel [get, set]

bool IsErrorEnabled [get]

bool IsWarningEnabled [get]

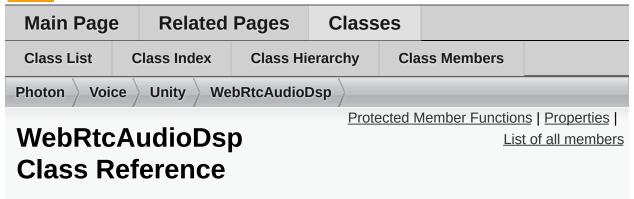
bool IsInfoEnabled [get]

bool IsDebugEnabled [get]
```

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Inherits VoiceComponent.

# **Protected Member Functions**

override void Awake ()

## **Properties**

bool **AEC** [get, set]

bool **AECMobile** [get, set]

int ReverseStreamDelayMs [get, set]

bool NoiseSuppression [get, set]

bool **HighPass** [get, set]

bool Bypass [get, set]

bool AGC [get, set]

bool VAD [get, set]

- ▶ Properties inherited from VoiceComponent
- ▶ Properties inherited from ILoggable

## **Additional Inherited Members**

▶ Protected Attributes inherited from VoiceComponent

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| Photon Voice AudioDesc       |   |             |          |          |                |                                      |                                      |
| AudioDesc Class<br>Reference |   |             | 5        | <u>P</u> | <u>ublic N</u> | <u>lember Function</u><br><u>Lis</u> | s   Properties  <br>t of all members |

Inherits IAudioDesc.

## **Public Member Functions**

**AudioDesc** (int samplingRate, int channels, string error)

void **Dispose** ()

# **Properties**

int SamplingRate [get]

int Channels [get]

string **Error** [get]

▶ Properties inherited from IAudioDesc

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| Photon Voice AudioInEnumerator |                          |       |                                  |          |       |                   |                 |
|                                |                          |       |                                  | Public I | Membe | er Functions   Pu | blic Attributes |
| AudioInEnumerator              |                          |       | Properties   List of all members |          |       |                   |                 |
| Class Reference                |                          |       |                                  |          |       |                   |                 |

Inherits IDisposable.

## **Public Member Functions**

# AudioInEnumerator (ILogger logger)

void Refresh ()

string NameAtIndex (int i)

int IDAtIndex (int i)

bool IDIsValid (int id)

void **Dispose** ()

# Public Attributes

readonly bool **IsSupported** = false

# **Properties**

string **Error** [get]

int Count [get]

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| Photon Voice AudioStreamPlayer           |                     |          |         |     |            |  |  |  |
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| AudioStreamPlayer< T List of all members |                     |          |         |     |            |  |  |  |
| > Class Template Reference               |                     |          |         |     |            |  |  |  |

Inherits IAudioOut< T >.

## **Public Member Functions**

**AudioStreamPlayer** (**ILogger** logger, **ISyncAudioOut**< T > audioOut, string logPrefix, bool debugInfo)

void **Start** (int frequency, int channels, int frameSamples, int playDelayMs)

void Service ()

void Push (T[] frame)

void Stop ()

# **Properties**

int Lag [get]

bool **IsPlaying** [get]

Properties inherited from IAudioOut< T >

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# Photon Voice v2.7

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Collection of Audio Utility functions and classes.  $\underline{\mathsf{More}...}$ 

#### Classes

interface ILevelMeter

Audio Level Metering interface. More...

interface IVoiceDetector

Voice Activity Detector interface. More...

class LevelMeter

Audio Level Meter. More...

class LevelMeterDummy

Dummy Audio Level Meter that doesn't actually do

anything. More...

class LevelMeterFloat

LevelMeter specialization for float audio. More...

class LevelMeterShort

**LevelMeter** specialization for short audio. More...

class Resampler

Sample-rate conversion Audio Processor. More...

class ToneAudioPusher

**IAudioPusher** that provides a constant tone signal.

More...

class ToneAudioReader

**IAudioReader** that provides a constant tone signal.

More...

class VoiceDetector

Simple voice activity detector triggered by signal level.

More...

class VoiceDetectorCalibration
Calibration Utility for Voice Detector More...

class VoiceDetectorDummy

Dummy VoiceDetector that doesn't actually do anything.

More...

class VoiceDetectorFloat

VoiceDetector specialization for float audio. More...

class VoiceDetectorShort

VoiceDetector specialization for float audio. More...

class VoiceLevelDetectCalibrate

Utility Audio Processor Voice Detection Calibration.

More...

#### Static Public Member Functions

static void Resample T > (T[] src, T[] dst, int dstCount, int channels)
Resample audio data so that the complete src buffer fits
into dstCount samples in the dst buffer. More...

# static void **ResampleAndConvert** (short[] src, float[] dst, int dstCount, int channels)

Resample audio data so that the complete src buffer fits into dstCount samples in the dst buffer, and convert short to float samples along the way. <u>More...</u>

# static void **ResampleAndConvert** (float[] src, short[] dst, int dstCount, int channels)

Resample audio data so that the complete src buffer fits into dstCount samples in the dst buffer, and convert float to short samples along the way. More...

#### static void **Convert** (float[] src, short[] dst, int dstCount)

Convert audio buffer from float to short samples. More...

#### static void **Convert** (short[] src, float[] dst, int dstCount)

Convert audio buffer from short to float samples. More...

#### static void ForceToStereo < T > (T[] src, T[] dst, int srcChannels)

Convert audio buffer with arbitrary number of channels to stereo. More...

# **Detailed Description**

Collection of Audio Utility functions and classes.

#### **Member Function Documentation**

```
static void Convert (float[] src,
short[] dst,
int dstCount
)

Convert audio buffer from float to short samples.

Parameters
```

**src** Source buffer.

**dst** Destination buffer.

dstCount Size of destination buffer (in total samples), source

buffer must be of same length or longer.

Convert audio buffer from short to float samples.

#### **Parameters**

**src** Source buffer.

**dst** Destination buffer.

dstCount Size of destination buffer (in total samples), source

buffer must be of same length or longer.

static

Convert audio buffer with arbitrary number of channels to stereo.

)

For mono sources (srcChannels==1), the signal will be copied to both Left and Right stereo channels. For all others, the first two available channels will be used, any other channels will be discarded.

#### **Parameters**

src Source buffer.
dst Destination buffer.

srcChannels Number of (interleaved) channels in src.

Resample audio data so that the complete src buffer fits into dstCount samples in the dst buffer.

This implements a primitive nearest-neighbor resampling algorithm for an arbitrary number of channels.

#### **Parameters**

**src** Source buffer.

**dst** Destination buffer.

dstCount Target size of destination buffer (in samples per

channel).

**channels** Number of channels in the signal (1=mono,

2=stereo). Must be > 0.

#### static void ResampleAndConvert (short[] src,

```
float[] dst,
int dstCount,
int channels
)
```

Resample audio data so that the complete src buffer fits into dstCount samples in the dst buffer, and convert short to float samples along the way.

This implements a primitive nearest-neighbor resampling algorithm for an arbitrary number of channels.

#### **Parameters**

src Source buffer.dst Destination buffer.

dstCount Target size of destination buffer (in samples per

channel).

**channels** Number of channels in the signal (1=mono,

2=stereo). Must be > 0.

```
static void ResampleAndConvert (float[] src,
short[] dst,
int dstCount,
int channels
)
```

Resample audio data so that the complete src buffer fits into dstCount samples in the dst buffer, and convert float to short samples along the way.

This implements a primitive nearest-neighbor resampling algorithm for an arbitrary number of channels.

#### **Parameters**

**src** Source buffer.

**dst** Destination buffer.

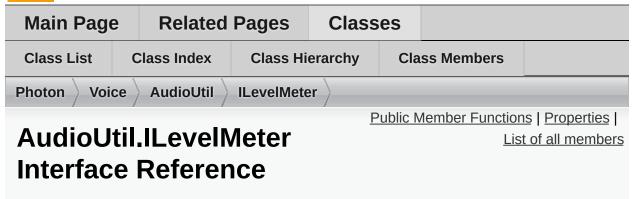
**dstCount** Target size of destination buffer (in samples per channel).

**channels** Number of channels in the signal (1=mono, 2=stereo). Must be > 0.

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Audio Level Metering interface. More...

Inherited by AudioUtil.LevelMeter< T >, and AudioUtil.LevelMeterDummy.

## **Public Member Functions**

void ResetAccumAvgPeakAmp ()
Reset AccumAvgPeakAmp. More...

## **Properties**

## float CurrentAvgAmp [get]

Average amplitude value over last half second. More...

#### float CurrentPeakAmp [get]

Maximum amplitude value over last half second sec. More...

#### float AccumAvgPeakAmp [get]

Average of CurrentPeakAmps since last reset. More...

# **Detailed Description**

Audio Level Metering interface.

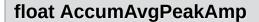
## **Member Function Documentation**

## void ResetAccumAvgPeakAmp()

Reset AccumAvgPeakAmp.

Implemented in AudioUtil.LevelMeter< T >, and AudioUtil.LevelMeterDummy.

# **Property Documentation**



get

Average of CurrentPeakAmps since last reset.

### float CurrentAvgAmp

get

Average amplitude value over last half second.

## float CurrentPeakAmp



Maximum amplitude value over last half second sec.

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| Photon Voi                                   | ice AudioUtil |                 |         |     |            |  |  |  |
| Properties   Events   List of all members    |               |                 |         |     |            |  |  |  |
| AudioUtil.IVoiceDetector Interface Reference |               |                 |         |     |            |  |  |  |

Voice Activity Detector interface. More...

Inherited by AudioUtil.VoiceDetector< T >, and AudioUtil.VoiceDetectorDummy.

# **Properties**

bool On [get, set]

If true, voice detection enabled. More...

float Threshold [get, set]

**Voice** detected as soon as signal level exceeds threshold. More...

bool Detected [get]

If true, voice detected. More...

DateTime DetectedTime [get]

Last time when switched to detected state. More...

int ActivityDelayMs [get, set]

Keep detected state during this time after signal level dropped below threshold. <u>More...</u>

# **Events**

#### Action **OnDetected**

Called when switched to detected state. More...

# **Detailed Description**

Voice Activity Detector interface.

# **Property Documentation**

#### int ActivityDelayMs

get set

Keep detected state during this time after signal level dropped below threshold.

#### **bool Detected**

get

If true, voice detected.

#### **DateTime DetectedTime**

get

Last time when switched to detected state.

#### bool On



If true, voice detection enabled.

#### float Threshold

get set



Voice detected as soon as signal level exceeds threshold.

## **Event Documentation**

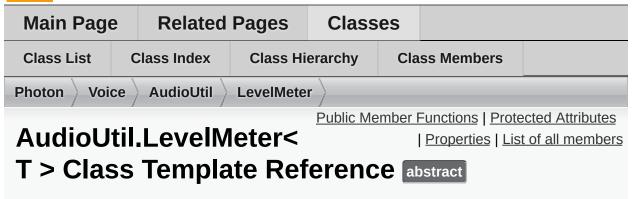
#### **Action OnDetected**

Called when switched to detected state.

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Audio Level Meter. More...

Inherits IProcessor< T >, and AudioUtil.ILevelMeter.

## **Public Member Functions**

void ResetAccumAvgPeakAmp ()

Reset AccumAvgPeakAmp. More...

abstract T[] **Process (T[] buf)**Process a frame of audio data. More...

void **Dispose** ()

# **Protected Attributes**

float ampSum

float **ampPeak** 

int **bufferSize** 

float[] prevValues

int **prevValuesHead** 

float accumAvgPeakAmpSum

int accumAvgPeakAmpCount

# **Properties**

float CurrentAvgAmp [get]

float CurrentPeakAmp [get, protected set]

float AccumAvgPeakAmp [get]

▶ Properties inherited from AudioUtil.ILevelMeter

# **Detailed Description**

Audio Level Meter.

## **Member Function Documentation**

#### abstract T [] Process (T[] buf)

pure virtual

Process a frame of audio data.

#### **Parameters**

buf Buffer containing input audio data

#### **Returns**

Buffer containing output audio data

Implements IProcessor< T >.

#### void ResetAccumAvgPeakAmp()

Reset AccumAvgPeakAmp.

Implements AudioUtil.ILevelMeter.

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| Photon Voi                                  | Photon Voice AudioUtil LevelMeterDummy |            |             |                       |    |            |  |  |
|   | Public Member Functions   Properties   |            |             |                       |    |            |  |  |
| <u>List of all members</u>                  |  |            |             |                       |    |            |  |  |
| Audial Itil LavalMaterDummy Class Reference |  |            |             |                       |    |            |  |  |

Dummy Audio Level Meter that doesn't actually do anything. <u>More...</u> Inherits **AudioUtil.ILevelMeter**.

# **Public Member Functions**

void ResetAccumAvgPeakAmp ()
Reset AccumAvgPeakAmp. More...

# **Properties**

float CurrentAvgAmp [get]

float CurrentPeakAmp [get]

float AccumAvgPeakAmp [get]

▶ Properties inherited from AudioUtil.ILevelMeter

# **Detailed Description**

Dummy Audio Level Meter that doesn't actually do anything.

## **Member Function Documentation**

### void ResetAccumAvgPeakAmp()

Reset AccumAvgPeakAmp.

Implements AudioUtil.ILevelMeter.

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| Photon Voi                                    | Photon Voice AudioUtil LevelMeterFloat |          |         |                   |  |  |  |  |
| Public Member Functions   List of all members |  |          |         |                   |  |  |  |  |
| AudioUtil.LevelMeterFloat Class Reference     |  |          |         |                   |  |  |  |  |

**LevelMeter** specialization for float audio. More...

Inherits AudioUtil.LevelMeter< float >.

## **Public Member Functions**

**LevelMeterFloat** (int samplingRate, int numChannels) Create new **LevelMeterFloat** instance. More...

override float[] Process (float[] buf)

Public Member Functions inherited from AudioUtil.LevelMeter< float >

# Additional Inherited Members

- Protected Attributes inherited from AudioUtil.LevelMeter< float</p>
- Properties inherited from AudioUtil.LevelMeter< float >

# **Detailed Description**

LevelMeter specialization for float audio.

## Constructor & Destructor Documentation

```
LevelMeterFloat (int samplingRate, int numChannels )
```

Create new LevelMeterFloat instance.

#### **Parameters**

**samplingRate** Sampling rate of the audio signal (in Hz). **numChannels** Number of channels in the audio signal.

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| Photon Voi                                    | Photon Voice AudioUtil LevelMeterShort |          |         |               |  |  |  |  |
| Public Member Functions   List of all members |  |          |         |               |  |  |  |  |
| AudioUtil.LevelMeterShort Class Reference     |  |          |         |               |  |  |  |  |

**LevelMeter** specialization for short audio. More...

Inherits AudioUtil.LevelMeter< short >.

## **Public Member Functions**

**LevelMeterShort** (int samplingRate, int numChannels)
Create new **LevelMeterShort** instance. <u>More...</u>

override short[] Process (short[] buf)

Public Member Functions inherited from AudioUtil.LevelMeter
short >

# Additional Inherited Members

- Protected Attributes inherited from AudioUtil.LevelMeter< short</p>
- Properties inherited from AudioUtil.LevelMeter< short >

# **Detailed Description**

LevelMeter specialization for short audio.

## Constructor & Destructor Documentation

```
LevelMeterShort (int_samplingRate, int_numChannels)
```

Create new LevelMeterShort instance.

#### **Parameters**

**samplingRate** Sampling rate of the audio signal (in Hz). **numChannels** Number of channels in the audio signal.

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| Class List                                | Class Index     | Class Hi | erarchy   | Cla     | ss Members                |                  |  |
| Photon Voi                                | ce AudioUtil    | Resample | r >       |         |                           |                  |  |
|   |                 | _        | Public Me | ember I | <u> -unctions   Prote</u> | ected Attributes |  |
| AudioUtil.Resampler<   List of all member |                 |          |           |         |                           | t of all members |  |
| T > Class Template Reference              |                 |          |           |         |                           |                  |  |

Sample-rate conversion Audio Processor. More...

Inherits IProcessor< T >.

## **Public Member Functions**

**Resampler** (int dstSize, int channels) Create a new **Resampler** instance. <u>More...</u>

T[] **Process (T[] buf)**Process a frame of audio data. <u>More...</u>

## void **Dispose** ()

# Protected Attributes

## T[] frameResampled

# **Detailed Description**

Sample-rate conversion Audio Processor.

This processor converts the sample-rate of the source stream. Internally, it uses **AudioUtil.Resample**.

## Constructor & Destructor Documentation

```
Resampler (int dstSize, int channels)

Create a new Resampler instance.

Parameters
dstSize Frame size of a destination frame. Determins output rate.
channels Number of audio channels expected in both in- and output.
```

## **Member Function Documentation**

### T [] Process (T[] buf)

Process a frame of audio data.

#### **Parameters**

buf Buffer containing input audio data

#### Returns

Buffer containing output audio data

Implements IProcessor< T >.

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| Main Page                              | Main Page Related Pages Classes |             | es       |         |                                      |            |                  |
|--|---------------------------------|-------------|----------|---------|--------------------------------------|------------|------------------|
| Class List                             | C                               | Class Index | Class Hi | erarchy | Class Members                        |            |                  |
| Photon Voice AudioUtil ToneAudioPusher |                                 |             |          |         |                                      |            |                  |
|  |                                 |             |          |         | Public Member Functions   Properties |            |                  |
|  |                                 |             |          |         |                                      | <u>Lis</u> | t of all members |
| AudioUtil.ToneAudioPusher< T > Class   |                                 |             |          |         |                                      |            |                  |
| Template Reference                     |                                 |             |          |         |                                      |            |                  |

IAudioPusher that provides a constant tone signal. More...
Inherits IAudioPusher< T >.

### **Public Member Functions**

**ToneAudioPusher** (int frequency=440, int bufSizeMs=100, int samplingRate=441000, int channels=2)

Create a new ToneAudioReader instance More...

void SetCallback (Action< T[]> callback, ObjectFactory< T[], int >
 bufferFactory)

Set the callback function used for pushing data More...

void Dispose ()

## **Properties**

int Channels [get]

int SamplingRate [get]

string **Error** [get]

▶ Properties inherited from IAudioDesc

## **Detailed Description**

**IAudioPusher** that provides a constant tone signal.

### Constructor & Destructor Documentation

```
ToneAudioPusher (int frequency = 440,
int bufSizeMs = 100,
int samplingRate = 441000,
int channels = 2
```

Create a new **ToneAudioReader** instance

#### **Parameters**

**frequency** Frequency of the generated tone (in Hz). **bufSizeMs** Size of buffers to push (in milliseconds). **samplingRate** Sampling rate of the audio signal (in Hz). **channels** Number of channels in the audio signal.

## **Member Function Documentation**

Set the callback function used for pushing data

#### **Parameters**

callback Callback function to uselocalVoice Outgoing audio stream, for context

Implements IAudioPusher< T >.

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| Photon Voice AudioUtil ToneAudioReader                     |   |               |          |         |               |  |  |  |
| Public Member Functions   Properties                       |   |               |          |         |               |  |  |  |
| <u>List of all members</u>                                 |   |               |          |         |               |  |  |  |
| AudioUtil.ToneAudioReader< T > Class<br>Template Reference |   |               |          |         |               |  |  |  |

IAudioReader that provides a constant tone signal. More...
Inherits IAudioReader< T >.

## **Public Member Functions**

**ToneAudioReader** (Func< double > clockSec=null, double frequency=440, int samplingRate=441000, int channels=2) Create a new **ToneAudioReader** instance More...

#### void Dispose ()

#### bool Read (T[] buf)

Fill full given frame buffer with source uncompressed data or return false if not enough such data. More...

## **Properties**

## int Channels [get]

Number of channels in the audio signal. More...

### int SamplingRate [get]

Sampling rate of the audio signal (in Hz). More...

### string Error [get]

If not null, audio object is in invalid state. More...

▶ Properties inherited from IAudioDesc

## **Detailed Description**

IAudioReader that provides a constant tone signal.

See also **MicWrapper** and **AudioClipWrapper** Because of current resampling algorithm, the tone is distorted if SamplingRate does not equal encoder sampling rate.

### Constructor & Destructor Documentation

```
ToneAudioReader (Func< double > clockSec = null,
double frequency = 440,
int samplingRate = 441000,
int channels = 2
)
```

#### Create a new **ToneAudioReader** instance

#### **Parameters**

**clockSec** Function to get current time in seconds. In

Unity, pass in '() => AudioSettings.dspTime' for

better results.

**frequency** Frequency of the generated tone (in Hz). **samplingRate** Sampling rate of the audio signal (in Hz). **channels** Number of channels in the audio signal.

## **Member Function Documentation**

## bool Read (T[] buffer )

Fill full given frame buffer with source uncompressed data or return false if not enough such data.

#### **Parameters**

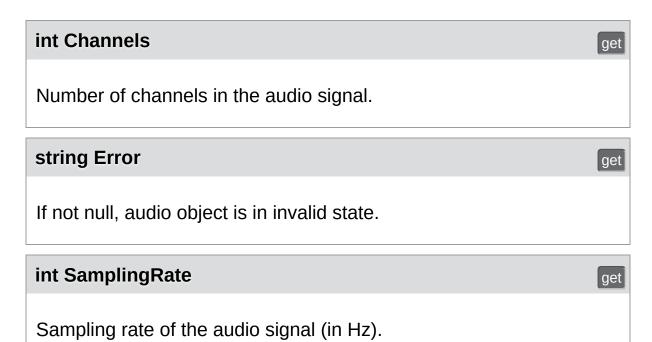
buffer Buffer to fill.

#### **Returns**

True if buffer was filled successfully, false otherwise.

Implements IDataReader< T >.

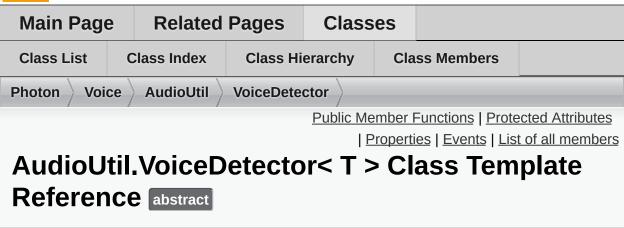
## **Property Documentation**



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Simple voice activity detector triggered by signal level. <u>More...</u>
Inherits IProcessor< T >, and AudioUtil.IVoiceDetector.

## **Public Member Functions**

abstract T[] **Process (T[] buf)**Process a frame of audio data. More...

## void **Dispose** ()

## **Protected Attributes**

int **activityDelay** 

int autoSilenceCounter = 0

int valuesCountPerSec

int activityDelayValuesCount

## **Properties**

bool On [get, set]

If true, voice detection enabled. More...

float Threshold [get, set]

**Voice** detected as soon as signal level exceeds threshold. More...

bool Detected [get, protected set]

If true, voice detected. More...

DateTime DetectedTime [get]

Last time when switched to detected state. More...

int ActivityDelayMs [get, set]

Keep detected state during this time after signal level dropped below threshold. <u>More...</u>

▶ Properties inherited from AudioUtil.IVoiceDetector

## **Events**

#### Action **OnDetected**

Called when switched to detected state. More...

▶ Events inherited from AudioUtil.IVoiceDetector

## **Detailed Description**

Simple voice activity detector triggered by signal level.

## **Member Function Documentation**

## abstract T [] Process (T[] buf)

pure virtual

Process a frame of audio data.

#### **Parameters**

**buf** Buffer containing input audio data

#### **Returns**

Buffer containing output audio data

Implements IProcessor< T >.

## **Property Documentation**

#### int ActivityDelayMs

get set

Keep detected state during this time after signal level dropped below threshold.

#### **bool Detected**

get protected set

If true, voice detected.

#### **DateTime DetectedTime**

get

Last time when switched to detected state.

#### bool On

get set



If true, voice detection enabled.

#### float Threshold

get set



Voice detected as soon as signal level exceeds threshold.

## **Event Documentation**

#### **Action OnDetected**

Called when switched to detected state.

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| Photon Voice AudioUtil VoiceDetectorCalibration |   |               |          |         |               |  |  |  |
| Public Member Functions   Protected Attributes  |   |               |          |         |               |  |  |  |
| I Properties I I ist of all members             |   |               |          |         |               |  |  |  |

# AudioUtil.VoiceDetectorCalibration< T > Class Template Reference

Calibration Utility for Voice Detector More...

Inherits IProcessor< T >.

## **Public Member Functions**

**VoiceDetectorCalibration (IVoiceDetector** voiceDetector, **ILevelMeter** levelMeter, int samplingRate, int channels) Create new **VoiceDetectorCalibration** instance. More...

#### void Calibrate (int durationMs)

Start calibration. More...

### T[] Process (T[] buf)

Process a frame of audio data. More...

### void Dispose ()

## **Protected Attributes**

## int calibrateCount

## Properties

bool **IsCalibrating** [get]

## **Detailed Description**

Calibration Utility for Voice Detector

Using this audio processor, you can calibrate the IVoiceDetector.Threshold.

### Constructor & Destructor Documentation

```
VoiceDetectorCalibration ( IVoiceDetector voiceDetector, ILevelMeter levelMeter, int samplingRate, int channels )
```

Create new VoiceDetectorCalibration instance.

#### **Parameters**

voiceDetector Voice Detector to calibrate.
 levelMeter Level Meter to look at for calibration.
 samplingRate Sampling rate of the audio signal (in Hz).
 numChannels Number of channels in the audio signal.

## **Member Function Documentation**

#### void Calibrate (int durationMs)

Start calibration.

#### **Parameters**

**durationMs** Duration of the calibration procedure (in milliseconds).

This activates the Calibration process. It will reset the given **LevelMeter**'s AccumAvgPeakAmp (accumulated average peak amplitude), and when the duration has passed, use it for the **VoiceDetector**'s detection threshold.

#### T [] Process (T[] buf)

Process a frame of audio data.

#### **Parameters**

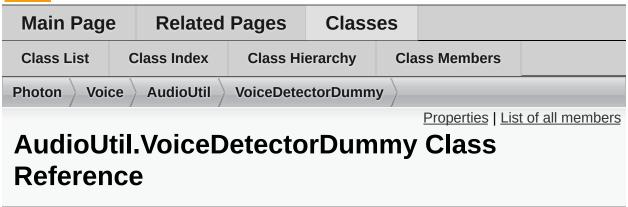
buf Buffer containing input audio data

#### Returns

Buffer containing output audio data

Implements IProcessor< T >.





Dummy **VoiceDetector** that doesn't actually do anything. <u>More...</u> Inherits **AudioUtil.IVoiceDetector**.

## **Properties**

```
bool On [get, set]

float Threshold [get, set]

bool Detected [get]

int ActivityDelayMs [get, set]

DateTime DetectedTime [get]

Action OnDetected
```

<sup>▶</sup> Properties inherited from AudioUtil.IVoiceDetector

## Additional Inherited Members

▶ Events inherited from AudioUtil.IVoiceDetector

## **Detailed Description**

Dummy VoiceDetector that doesn't actually do anything.

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| Photon Voice AudioUtil VoiceDetectorFloat     |   |               |          |         |               |  |  |  |
| Public Member Functions   List of all members |   |               |          |         |               |  |  |  |
| AudioUtil.VoiceDetectorFloat Class Reference  |   |               |          |         |               |  |  |  |

VoiceDetector specialization for float audio. More...

Inherits AudioUtil.VoiceDetector< float >.

## **Public Member Functions**

VoiceDetectorFloat (int samplingRate, int numChannels)
Create a new VoiceDetectorFloat instance. More...

override float[] Process (float[] buffer)

Public Member Functions inherited from AudioUtil.VoiceDetector< float >

## **Additional Inherited Members**

- Protected Attributes inherited from AudioUtil.VoiceDetector< float >
- Properties inherited from AudioUtil.VoiceDetector< float >
- Events inherited from AudioUtil.VoiceDetector< float >

## **Detailed Description**

VoiceDetector specialization for float audio.

## Constructor & Destructor Documentation

```
VoiceDetectorFloat (int samplingRate, int numChannels )
```

Create a new VoiceDetectorFloat instance.

#### **Parameters**

**samplingRate** Sampling rate of the audio signal (in Hz). **numChannels** Number of channels in the audio signal.

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| Photon Voice AudioUtil VoiceDetectorShort     |     |               |          |         |               |  |  |
| Public Member Functions   List of all members |     |               |          |         |               |  |  |
| AudioUtil.VoiceDetectorShort Class Reference  |     |               |          |         |               |  |  |

VoiceDetector specialization for float audio. More...

Inherits AudioUtil.VoiceDetector< short >.

## **Public Member Functions**

VoiceDetectorShort (int samplingRate, int numChannels)
Create a new VoiceDetectorFloat instance More...

override short[] Process (short[] buffer)

▶ Public Member Functions inherited from AudioUtil.VoiceDetector< short >

## **Additional Inherited Members**

- Protected Attributes inherited from AudioUtil.VoiceDetector
  short >
- Properties inherited from AudioUtil.VoiceDetector< short >
- Events inherited from AudioUtil.VoiceDetector< short >

# **Detailed Description**

VoiceDetector specialization for float audio.

## Constructor & Destructor Documentation

```
VoiceDetectorShort (int_samplingRate, int_numChannels )
```

Create a new VoiceDetectorFloat instance

#### **Parameters**

**samplingRate** Sampling rate of the audio signal (in Hz). **numChannels** Number of channels in the audio signal.

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| Photon Voice AudioUtil VoiceLevelDetectCalibrate |   |               |          |         |                        |                        |                  |
| Public Member F                                  |   |               |          |         | <u>lember Function</u> | ns   <u>Properties</u> |                  |
|  |   |               |          |         |                        | <u>Lis</u>             | t of all members |

# AudioUtil.VoiceLevelDetectCalibrate< T > Class Template Reference

Utility Audio Processor Voice Detection Calibration. More...

Inherits IProcessor< T >.

## **Public Member Functions**

**VoiceLevelDetectCalibrate** (int samplingRate, int channels) Create new **VoiceLevelDetectCalibrate** instance More...

#### void Calibrate (int durationMs)

Start calibration More...

#### T[] Process (T[] buf)

Process a frame of audio data. More...

#### void Dispose ()

# **Properties**

ILevelMeter LevelMeter [get]

The **LevelMeter** in use. More...

IVoiceDetector VoiceDetector [get]

The **VoiceDetector** in use More...

bool **IsCalibrating** [get]

# **Detailed Description**

Utility Audio Processor **Voice** Detection Calibration.

Encapsulates level meter, voice detector and voice detector calibrator in single instance.

## Constructor & Destructor Documentation

```
VoiceLevelDetectCalibrate (int samplingRate, int channels )
```

Create new VoiceLevelDetectCalibrate instance

#### **Parameters**

**samplingRate** Sampling rate of the audio signal (in Hz). **numChannels** Number of channels in the audio signal.

#### **Member Function Documentation**

#### void Calibrate ( int durationMs )

Start calibration

#### **Parameters**

**durationMs** Duration of the calibration procedure (in milliseconds).

This activates the Calibration process. It will reset the given **LevelMeter**'s AccumAvgPeakAmp (accumulated average peak amplitude), and when the duration has passed, use it for the **VoiceDetector**'s detection threshold.

#### T [] Process (T[] buf)

Process a frame of audio data.

#### **Parameters**

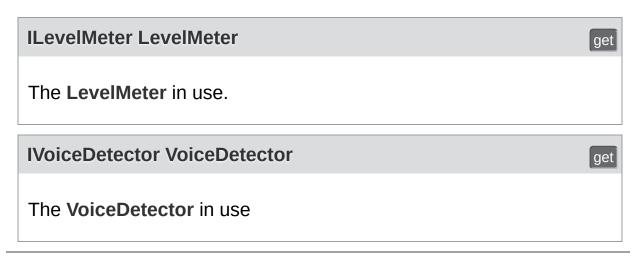
buf Buffer containing input audio data

#### Returns

Buffer containing output audio data

Implements IProcessor< T >.

# **Property Documentation**



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| Photon Voice BufferReaderPushAdapter |                        |             |          |           |               |                   |                  |  |
|                                      |                        |             |          | Public Me | ember I       | Functions   Prote | ected Attributes |  |
|                                      |                        |             |          |           |               | I Lis             | t of all members |  |

## BufferReaderPushAdapter< T > Class Template Reference

Simple **BufferReaderPushAdapterBase** implementation using a single buffer, using synchronous **LocalVoice.PushData** More...

Inherits BufferReaderPushAdapterBase< T >.

## **Public Member Functions**

BufferReaderPushAdapter (LocalVoice localVoice, IDataReader< T > reader)
Create a new BufferReaderPushAdapter instance
More...

override void Service (LocalVoice localVoice)

Do the actual data read/push. More...

Public Member Functions inherited from BufferReaderPushAdapterBase< T >

# **Protected Attributes**

## T[] buffer

Protected Attributes inherited from BufferReaderPushAdapterBase< T >

# **Detailed Description**

Simple **BufferReaderPushAdapterBase** implementation using a single buffer, using synchronous **LocalVoice.PushData** 

## Constructor & Destructor Documentation

```
BufferReaderPushAdapter (LocalVoice localVoice, IDataReader< T > reader )
```

Create a new **BufferReaderPushAdapter** instance

#### **Parameters**

**localVoice** LocalVoice instance to push data to. **reader** DataReader to read from.

## **Member Function Documentation**

#### override void Service (LocalVoice localVoice)

virtual

Do the actual data read/push.

#### **Parameters**

**localVoice** LocalVoice instance to push data to.

Implements BufferReaderPushAdapterBase< T >.

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| Photon Voice BufferReaderPushAdapterAsyncPool                  |             |          |         |               |  |  |  |  |
| Public Member Functions   List of all members                  |             |          |         |               |  |  |  |  |
| BufferReaderPushAdapterAsyncPool< T > Class Template Reference |             |          |         |               |  |  |  |  |

**BufferReaderPushAdapter** implementation using asynchronous **LocalVoice.PushDataAsync**. <u>More...</u>

Inherits BufferReaderPushAdapterBase< T >.

#### **Public Member Functions**

BufferReaderPushAdapterAsyncPool (LocalVoice localVoice, IDataReader< T > reader)
Create a new BufferReaderPushAdapter instance
More...

override void Service (LocalVoice localVoice)

Do the actual data read/push. More...

Public Member Functions inherited from BufferReaderPushAdapterBase< T >

# Additional Inherited Members

Protected Attributes inherited from BufferReaderPushAdapterBase< T >

# **Detailed Description**

**BufferReaderPushAdapter** implementation using asynchronous **LocalVoice.PushDataAsync**.

Acquires a buffer from pool before each Read, releases buffer after last Read (brings Acquire/Release overhead).

Expects localVoice to be a LocalVoiceFramed<T> of same T.

## Constructor & Destructor Documentation

```
BufferReaderPushAdapterAsyncPool (LocalVoice localVoic IDataReader< T > reader )
```

Create a new **BufferReaderPushAdapter** instance

#### **Parameters**

**localVoice LocalVoice** instance to push data to. **reader** DataReader to read from.

## **Member Function Documentation**

#### override void Service (LocalVoice localVoice)

virtual

Do the actual data read/push.

#### **Parameters**

**localVoice** Instance to push data to. Must be a LocalVoiceFramed<T> of same T.

Implements BufferReaderPushAdapterBase< T >.

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| Photon Voice BufferReaderPushAdapterAsyncPoolCopy |   |             |  |         |               |       |                  |  |  |
|   |   |             | Public Member Functions   Protected Attributes |         |               |       |                  |  |  |
|   |   |             |  |         |               | I Lis | t of all members |  |  |

# BufferReaderPushAdapterAsyncPoolCopy< T > Class Template Reference

**BufferReaderPushAdapter** implementation using asynchronous **LocalVoice.PushDataAsync** and data copy. <u>More...</u>

Inherits BufferReaderPushAdapterBase< T >.

#### **Public Member Functions**

BufferReaderPushAdapterAsyncPoolCopy (LocalVoice localVoice, IDataReader< T > reader) Create a new BufferReaderPushAdapter instance More...

override void Service (LocalVoice localVoice)

Do the actual data read/push. More...

▶ Public Member Functions inherited from BufferReaderPushAdapterBase< T >

# **Protected Attributes**

## T[] buffer

Protected Attributes inherited from BufferReaderPushAdapterBase< T >

## **Detailed Description**

**BufferReaderPushAdapter** implementation using asynchronous **LocalVoice.PushDataAsync** and data copy.

Reads data to preallocated buffer, copies it to buffer from pool before pushing. Compared with , this avoids one pool Acquire/Release cycle at the cost of a buffer copy. Expects localVoice to be a LocalVoiceFramed<T> of same T.

## Constructor & Destructor Documentation

```
BufferReaderPushAdapterAsyncPoolCopy (LocalVoice localVoice IDataReader< T > reaction (LocalVoice IDataReader) (LocalVoice IDataReader
```

Create a new **BufferReaderPushAdapter** instance

#### **Parameters**

**localVoice LocalVoice** instance to push data to. **reader** DataReader to read from.

## **Member Function Documentation**

#### override void Service (LocalVoice localVoice)

virtual

Do the actual data read/push.

#### **Parameters**

**localVoice** Instance to push data to. Must be a LocalVoiceFramed<T> of same T.

Implements BufferReaderPushAdapterBase< T >.

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| Photon Voice BufferReaderPushAdapterAsyncPoolFloatToShort |           |                     |       |     |            |  |  |

Public Member Functions | List of all members

# BufferReaderPushAdapterAsyncPoolFloatToShcClass Reference

**BufferReaderPushAdapter** implementation using asynchronous **LocalVoice.PushDataAsync**, converting float samples to short. More...

Inherits BufferReaderPushAdapterBase< float >.

#### **Public Member Functions**

BufferReaderPushAdapterAsyncPoolFloatToShort (LocalVoice localVoice, IDataReader< float > reader) Create a new BufferReaderPushAdapter instance More...

override void Service (LocalVoice localVoice)

Do the actual data read/push. More...

▶ Public Member Functions inherited from BufferReaderPushAdapterBase< float >

# Additional Inherited Members

Protected Attributes inherited from BufferReaderPushAdapterBase< float >

## **Detailed Description**

**BufferReaderPushAdapter** implementation using asynchronous **LocalVoice.PushDataAsync**, converting float samples to short.

This adapter works exactly like **BufferReaderPushAdapterAsyncPool**, but it converts float samples to short. Acquires a buffer from pool before each Read, releases buffer after last Read.

Expects localVoice to be a LocalVoiceFramed<T> of same T.

## Constructor & Destructor Documentation

BufferReaderPushAdapterAsyncPoolFloatToShort ( LocalVoice | IDataReader< †

Create a new **BufferReaderPushAdapter** instance

#### **Parameters**

**localVoice LocalVoice** instance to push data to. **reader** DataReader to read from.

## **Member Function Documentation**

#### override void Service (LocalVoice localVoice)

virtual

Do the actual data read/push.

#### **Parameters**

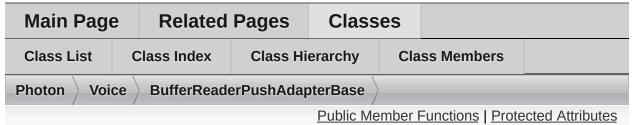
**localVoice** Instance to push data to. Must be a LocalVoiceFramed<T> of same T.

Implements BufferReaderPushAdapterBase< float >.

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| List of all members
| List of all members
| List of all members

## BufferReaderPushAdapterBase< T > Class Template Reference [abstract]

Adapter base class to move data by reading from **IDataReader.Read** and pushing to **LocalVoice**. More...

Inherits IServiceable.

Inherited by BufferReaderPushAdapter< T >, BufferReaderPushAdapterAsyncPool< T >, and BufferReaderPushAdapterAsyncPoolCopy< T >.

#### **Public Member Functions**

#### abstract void Service (LocalVoice localVoice)

Do the actual data read/push. More...

## **BufferReaderPushAdapterBase (IDataReader< T >** reader)

Create a new **BufferReaderPushAdapterBase** instance <u>More...</u>

#### void Dispose ()

Release resources associated with this instance. More...

## **Protected Attributes**

#### IDataReader< T > reader

## **Detailed Description**

Adapter base class to move data by reading from **IDataReader.Read** and pushing to **LocalVoice**.

Use this with a **LocalVoice** of same T type.

#### Constructor & Destructor Documentation

#### BufferReaderPushAdapterBase (IDataReader< T > reader )

Create a new **BufferReaderPushAdapterBase** instance

#### **Parameters**

reader DataReader to read from.

#### **Member Function Documentation**

#### void Dispose ()

Release resources associated with this instance.

#### abstract void Service (LocalVoice localVoice)

pure virtual

Do the actual data read/push.

#### **Parameters**

**localVoice** LocalVoice instance to push data to.

Implements IServiceable.

Implemented in

BufferReaderPushAdapterAsyncPoolFloatToShort,

BufferReaderPushAdapterAsyncPoolCopy< T >,

BufferReaderPushAdapterAsyncPool< T >, and

**BufferReaderPushAdapter< T >.** 

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| Class List (                           |  | Class Index   | Class Hierarchy |         | Class Members |  |  |  |  |  |
| Photon Voice FactoryPrimitiveArrayPool |  |               |                 |         |               |  |  |  |  |  |
| Public Member Functions   Properties   |  |               |                 |         |               |  |  |  |  |  |
| List of all members                    |  |               |                 |         |               |  |  |  |  |  |

# FactoryPrimitiveArrayPool< T > Class Template Reference

PrimitiveArrayPool<T> as wrapped in object factory interface. <u>More...</u>
Inherits **ObjectFactory< T[], int >**.

#### **Public Member Functions**

FactoryPrimitiveArrayPool (int capacity, string name)

FactoryPrimitiveArrayPool (int capacity, string name, int info)

T[] New ()

T[] New (int size)

void Free (T[] obj)

void Free (T[] obj, int info)

void Dispose ()

Public Member Functions inherited from ObjectFactory< T[], int</li>

## Properties

int **Info** [get]

Properties inherited from ObjectFactory< T[], int >

## **Detailed Description**

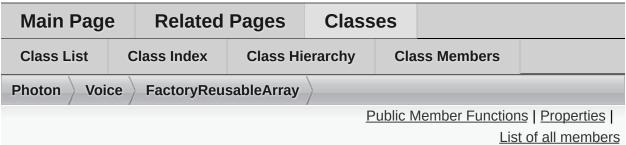
PrimitiveArrayPool<T> as wrapped in object factory interface.

#### **Template Parameters**

T Array element type.

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# FactoryReusableArray< T > Class Template Reference

Array factory returning the same array instance as long as it requested with the same array length. If length changes, new array instance created. More...

Inherits ObjectFactory< T[], int >.

#### **Public Member Functions**

# FactoryReusableArray (int size) T[] New () T[] New (int size) void Free (T[] obj) void Free (T[] obj, int info) void Dispose ()

<sup>▶</sup> Public Member Functions inherited from ObjectFactory< T[], int >

## Properties

int **Info** [get]

Properties inherited from ObjectFactory< T[], int >

## **Detailed Description**

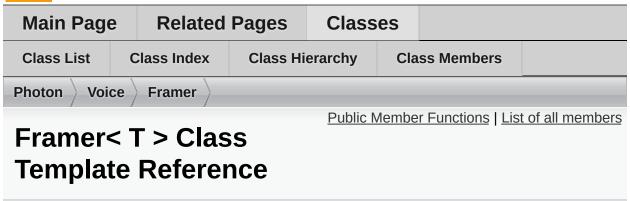
Array factory returning the same array instance as long as it requested with the same array length. If length changes, new array instance created.

#### **Template Parameters**

T Array element type.

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Utility class to re-frame audio packets. More...

#### **Public Member Functions**

#### Framer (int frameSize)

Create new Framer instance. More...

#### int Count (int bufLen)

Get the number of frames available after adding bufLen samples. More...

#### IEnumerable< T[]> Frame (T[] buf)

Append arbitrary-sized buffer and return available full frames. More...

## **Detailed Description**

Utility class to re-frame audio packets.

### Constructor & Destructor Documentation

#### Framer (int frameSize)

Create new Framer instance.

#### **Member Function Documentation**

#### int Count (int bufLen)

Get the number of frames available after adding bufLen samples.

#### **Parameters**

**bufLen** Number of samples that would be added.

#### Returns

Number of full frames available when adding bufLen samples.

#### IEnumerable<T[]> Frame ( T[] buf )

Append arbitrary-sized buffer and return available full frames.

#### **Parameters**

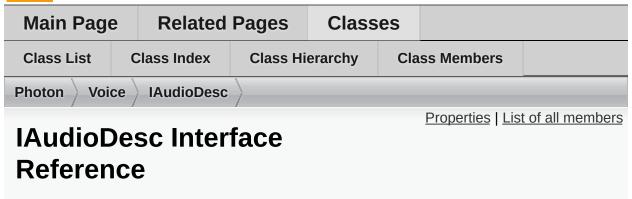
buf Array of samples to add.

#### Returns

Enumerator of full frames (might be none).

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Audio Source interface. More...

Inherits IDisposable.

Inherited by AudioDesc, IAudioPusher< T >, and IAudioReader< T >.

## **Properties**

#### int SamplingRate [get]

Sampling rate of the audio signal (in Hz). More...

#### int Channels [get]

Number of channels in the audio signal. More...

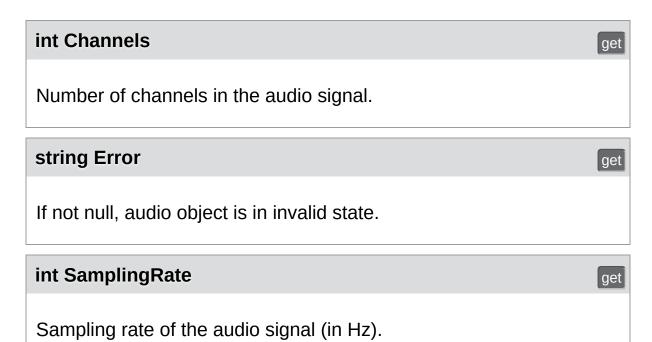
#### string **Error** [get]

If not null, audio object is in invalid state. More...

## **Detailed Description**

Audio Source interface.

## **Property Documentation**



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# Photon Voice v2.7

| Main Page                    | e Related   | Related Pages   |                            | es      |                 |                        |  |  |  |  |  |
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| Class List                   | Class Index | Class Hierarchy |                            | Cla     | ss Members      |                        |  |  |  |  |  |
| Photon Voice IAudioOut       |             |                 |                            |         |                 |                        |  |  |  |  |  |
|                              |             |                 | <u> </u>                   | ublic N | Member Function | ıs   <u>Properties</u> |  |  |  |  |  |
| IAudioC                      | Out< T >    |                 | <u>List of all members</u> |         |                 |                        |  |  |  |  |  |
| Interface Template Reference |             |                 |                            |         |                 |                        |  |  |  |  |  |

Inherited by AudioStreamPlayer< T >, and ISyncAudioOut< T >.

#### **Public Member Functions**

void **Start** (int frequency, int channels, int frameSamplesPerChannel, int playDelayMs)

void Stop ()

void Push (T[] frame)

void Service ()

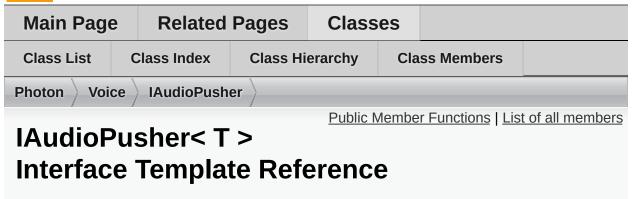
## **Properties**

bool **IsPlaying** [get]

int **Lag** [get]

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Audio Pusher interface. More...

Inherits IAudioDesc.

Inherited by AudioUtil.ToneAudioPusher< T >.

#### **Public Member Functions**

void SetCallback (Action< T[]> callback, ObjectFactory< T[], int > bufferFactory)
Set the callback function used for pushing data. More...

## Additional Inherited Members

▶ Properties inherited from IAudioDesc

## **Detailed Description**

Audio Pusher interface.

Opposed to an IAudioReader (which will deliver audio data when it is "pulled"), an IAudioPusher will push its audio data whenever it is ready,

#### **Member Function Documentation**

Set the callback function used for pushing data.

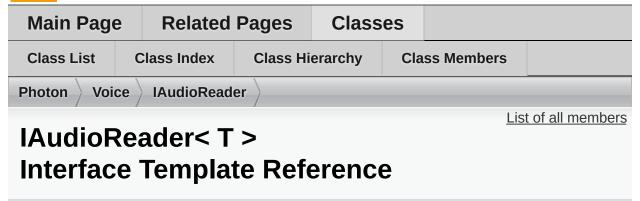
#### **Parameters**

callback Callback function to use.localVoice Outgoing audio stream, for context.

Implemented in AudioUtil.ToneAudioPusher< T >.

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Audio Reader interface. More...

Inherits IDataReader< T >, and IAudioDesc.

Inherited by AudioUtil.ToneAudioReader< T >.

## Additional Inherited Members

- Public Member Functions inherited from IDataReader< T >
- ▶ Properties inherited from IAudioDesc

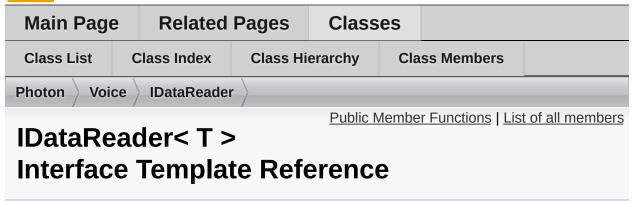
## **Detailed Description**

Audio Reader interface.

Opposed to an **IAudioPusher** (which will push its audio data whenever it is ready), an **IAudioReader** will deliver audio data when it is "pulled" (it's Read function is called).

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Interface for pulling data, in case this is more appropriate than pushing it. <u>More...</u>

Inherits IDisposable.

Inherited by IAudioReader< T >.

### **Public Member Functions**

bool Read (T[] buffer)
Fill full given frame buffer with source uncompressed data or return false if not enough such data. More...

# **Detailed Description**

Interface for pulling data, in case this is more appropriate than pushing it.

### **Member Function Documentation**

#### bool Read (T[] buffer)

Fill full given frame buffer with source uncompressed data or return false if not enough such data.

#### **Parameters**

buffer Buffer to fill.

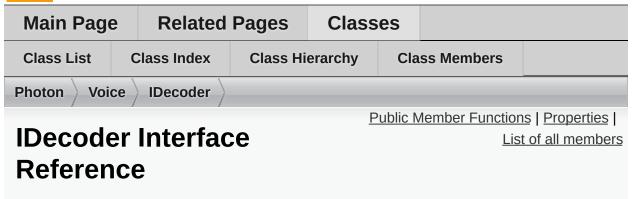
#### Returns

True if buffer was filled successfully, false otherwise.

Implemented in AudioUtil.ToneAudioReader< T >.

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Generic decoder interface. More...

Inherits IDisposable.

Inherited by IDecoderQueuedOutputImageNative, and OpusCodec.Decoder< T >.

void **Open (VoiceInfo info)**Open (initialize) the decoder. <u>More...</u>

void Input (byte[] buf)
Consumes the given encoded data. More...

## Properties

### string **Error** [get]

If not null, the object is in invalid state. More...

# **Detailed Description**

Generic decoder interface.

### **Member Function Documentation**

#### void Input ( byte[] buf )

Consumes the given encoded data.

Implemented in OpusCodec.Decoder< T >.

#### void Open (VoiceInfo info)

Open (initialize) the decoder.

#### **Parameters**

**info** Properties of the data stream to decode.

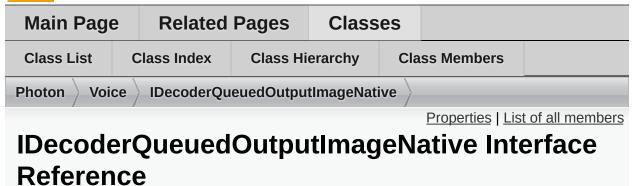
Implemented in OpusCodec.Decoder< T >.

### **Property Documentation**



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Inherits IDecoder.

### **Properties**

ImageFormat OutputImageFormat [get, set]

Flip OutputImageFlip [get, set]

Func<int, int, IntPtr > OutputImageBufferGetter [get, set]

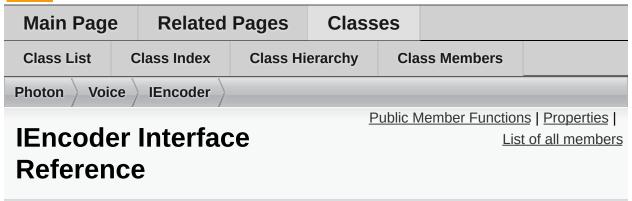
▶ Properties inherited from IDecoder

### **Additional Inherited Members**

▶ Public Member Functions inherited from IDecoder

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Generic encoder interface. More...

Inherits IDisposable.

Inherited by IEncoderDirect< B >.

ArraySegment< byte > DequeueOutput ()
Returns next encoded data frame (if such output supported). More...

### **Properties**

#### string **Error** [get]

If not null, the object is in invalid state. More...

### Action< ArraySegment< byte >> Output [get, set]

Set callback encoder calls on each encoded data frame (if such output supported). More...

### **Detailed Description**

Generic encoder interface.

Depending on implementation, encoder should either call Output on eaach data frame or return next data frame in **DequeueOutput()** call.

### **Member Function Documentation**

### **ArraySegment<byte> DequeueOutput ()**

Returns next encoded data frame (if such output supported).

### **Property Documentation**

#### string Error

get

If not null, the object is in invalid state.

#### **Action<ArraySegment<br/>byte> > Output**

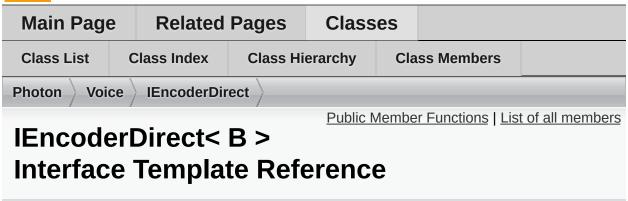




Set callback encoder calls on each encoded data frame (if such output supported).

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Interface for an encoder which consumes input data via explicit call. More...

Inherits IEncoder.

void Input (B buf)
Consumes the given raw data. More...

▶ Public Member Functions inherited from IEncoder

### Additional Inherited Members

▶ Properties inherited from IEncoder

# **Detailed Description**

Interface for an encoder which consumes input data via explicit call.

### **Member Function Documentation**

#### void Input ( B buf )

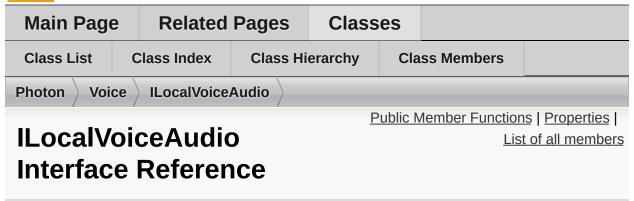
Consumes the given raw data.

#### **Parameters**

**buf** Array containing raw data (e.g. audio samples).

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Interface for an outgoing audio stream. More...

Inherited by LocalVoiceAudio< T >, and LocalVoiceAudioDummy.

void **VoiceDetectorCalibrate** (int durationMs)
Trigger voice detector calibration process. <u>More...</u>

### **Properties**

#### AudioUtil.IVoiceDetector VoiceDetector [get]

The VoiceDetector in use. More...

#### AudioUtil.ILevelMeter LevelMeter [get]

The LevelMeter utility in use. More...

#### bool VoiceDetectorCalibrating [get]

If true, voice detector calibration is in progress. <u>More...</u>

### **Detailed Description**

Interface for an outgoing audio stream.

A **LocalVoice** always brings a LevelMeter and a VoiceDetector, which you can access using this interface.

### **Member Function Documentation**

#### void VoiceDetectorCalibrate ( int durationMs )

Trigger voice detector calibration process.

While calibrating, keep silence. **Voice** detector sets threshold based on measured backgroud noise level.

#### **Parameters**

durationMs Duration of calibration (in milliseconds).

Implemented in LocalVoiceAudioDummy, and LocalVoiceAudio<

### **Property Documentation**

#### AudioUtil.ILevelMeter LevelMeter

get

The LevelMeter utility in use.

#### AudioUtil.IVoiceDetector VoiceDetector

get

The VoiceDetector in use.

Use it to enable or disable voice detector and set its parameters.

#### bool VoiceDetectorCalibrating



If true, voice detector calibration is in progress.

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| Main Page                   | Related     | Pages    | iges Classes |               |  |                  |  |
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| Class List                  | Class Index | Class Hi | erarchy      | Class Members |  |                  |  |
| Photon Voice ILogger        |             |          |              |               |  |                  |  |
| ILogger Interface Reference |             |          |              |               |  | t of all members |  |

Inherited by IVoiceTransport, Logger, and VoiceLogger.

void LogError (string fmt, params object[] args)

void LogWarning (string fmt, params object[] args)

void LogInfo (string fmt, params object[] args)

void LogDebug (string fmt, params object[] args)

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| Main Page                    | e Related   | Pages    | Classes |                               |  |  |  |
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| Photon Voice ImageBufferInfo |             |          |         |                               |  |  |  |
|                              |             |          |         | lember Functions   Properties |  |  |  |
| ImageBufferInfo Class        |             |          |         | <u>List of all members</u>    |  |  |  |
| Reference                    |             |          |         |                               |  |  |  |

ImageBufferInfo (int width, int height, int[] stride, ImageFormat
format)

### **Properties**

```
int Width [get]

int Height [get]

int[] Stride [get]

ImageFormat Format [get]

Rotation Rotation [get, set]

Flip Flip [get, set]
```

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| Main Pag                       | Related Pages Cla |                 | Class    | ses                                  |            |  |  |
|--------------------------------|-------------------|-----------------|----------|--------------------------------------|------------|--|--|
| Class List                     | Class Index       | Class Hierarchy |          | Cla                                  | ss Members |  |  |
| Photon Voice ImageBufferNative |                   |                 |          |                                      |            |  |  |
|                                |                   |                 | <u>P</u> | Public Member Functions   Properties |            |  |  |
| <b>ImageBufferNative</b>       |                   |                 |          | <u>List of all members</u>           |            |  |  |
| Class Reference                |                   |                 |          |                                      |            |  |  |

Inherited by ImageBufferNativeAlloc, and ImageBufferNativeGCHandleSinglePlane.

# ImageBufferNative (ImageBufferInfo info) virtual void Release ()

virtual void **Dispose** ()

### **Properties**

ImageBufferInfo Info [get, protected set]

IntPtr[] Planes [get, protected set]

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| Main Page                              | e Related                           | Pages                  | Class    | es       |                   |                  |
|--|-------------------------------------|------------------------|----------|----------|-------------------|------------------|
| Class List                             | Class Index                         | class Index Class Hier |          | Cla      | ss Members        |                  |
| Photon Voi                             | Photon Voice ImageBufferNativeAlloc |                        |          |          |                   |                  |
|  |                                     |                        | Public N | <u> </u> | r Functions   Lis | t of all members |
| ImageBufferNativeAlloc Class Reference |                                     |                        |          |          |                   |                  |

Inherits ImageBufferNative, and IDisposable.

ImageBufferNativeAlloc (ImageBufferNativePool < ImageBufferNativeAlloc > pool, ImageBufferInfo info)

override void Release ()

override void Dispose ()

▶ Public Member Functions inherited from ImageBufferNative

# **Additional Inherited Members**

▶ Properties inherited from ImageBufferNative

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|--|----|------------|-----------------------|-----------|------------|-----|--|
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| Photon Voi   | ce | ImageBuffe | rNativeGCH            | andleSing | lePlan     | e > |  |
| Public Member Functions   List of all members   ImageBufferNativeGCHandleSinglePlane Class   Reference |    |            |                       |           |            |     |  |

Inherits ImageBufferNative, and IDisposable.

ImageBufferNativeGCHandleSinglePlane (ImageBufferNativePool< ImageBufferNativeGCHandleSinglePlane > pool, ImageBufferInfo info)

void PinPlane (byte[] plane)

override void Release ()

override void **Dispose** ()

▶ Public Member Functions inherited from ImageBufferNative

# **Additional Inherited Members**

▶ Properties inherited from ImageBufferNative

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|-------------------|----|-------------|-------------|---------|-----|---------------|------------------|
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| Photon Voice      | се | ImageBuffe  | rNativePool |         |     |               |                  |
|                   |    |             |             |         |     | Public Mem    | ber Functions    |
|                   |    |             |             |         |     | Protected Mem | ber Functions    |
|                   |    |             |             |         |     | <u>Lis</u>    | t of all members |
| ImageB<br>Referen |    |             | /ePool      | l< T >  | Cla | ss Temp       | olate            |

Inherits ObjectPool< T, ImageBufferInfo >.

| delegate T | Factory (ImageBufferNativePool< T > pool, ImageBufferInfo info)                          |
|------------|--|
|            |  |
|            | ImageBufferNativePool (int capacity, Factory factory, string name)                       |
|            |  |
|            |  |
|            | ImageBufferNativePool (int capacity, Factory factory, string name, ImageBufferInfo info) |

Public Member Functions inherited from ObjectPool< T, ImageBufferInfo >

### **Protected Member Functions**

override T createObject (ImageBufferInfo info)

override void destroyObject (T obj)

override bool infosMatch (ImageBufferInfo i0, ImageBufferInfo i1)

Protected Member Functions inherited from ObjectPool< T, ImageBufferInfo >

## **Additional Inherited Members**

- Protected Attributes inherited from ObjectPool< T, ImageBufferInfo >
- Properties inherited from ObjectPool< T, ImageBufferInfo >

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|-----------------------------------|---------------|----------|---------|-------|----------------------------------|------------------|
| Class List                        | Class Index   | Class Hi | erarchy | Cla   | ss Members                       |                  |
| Photon Voic                       | e ImageInputi | Buf >    |         |       |                                  |                  |
| ImageInputBuf Struct<br>Reference |               |          |         | Publi | <u>c Attributes</u>   <u>Lis</u> | t of all members |

# **Public Attributes**

IntPtr[] Buf

int Width

int Height

int[] Stride

ImageFormat ImageFormat

Rotation Rotation

Flip Flip

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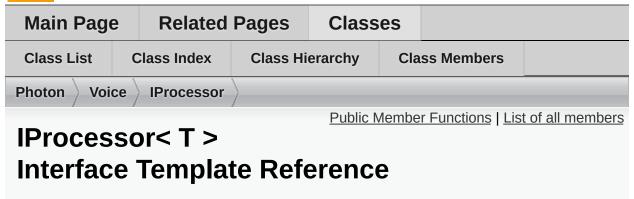
| Main Page                          | Related                   | Pages    | Class   | es    |                                  |                  |
|------------------------------------|---------------------------|----------|---------|-------|----------------------------------|------------------|
| Class List                         | Class Index               | Class Hi | erarchy | Cla   | ss Members                       |                  |
| Photon Voice                       | ce \rightarrow ImageOutpu | ıtBuf    |         |       |                                  |                  |
| ImageOutputBuf Struct<br>Reference |                           |          | t       | Publi | <u>c Attributes</u>   <u>Lis</u> | t of all members |

# **Public Attributes**

| IntPtr | Buf    |
|--------|--------|
| int    | Width  |
| int    | Height |
| int    | Stride |

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Audio Processor interface. More...

Inherits IDisposable.

Inherited by AudioUtil.LevelMeter< T >, AudioUtil.Resampler< T >, AudioUtil.VoiceDetectorCalibration< T >, and AudioUtil.VoiceLevelDetectCalibrate< T >.

T[] Process (T[] buf)
Process a frame of audio data. More...

# **Detailed Description**

Audio Processor interface.

### **Member Function Documentation**

#### T [] Process (T[] buf)

Process a frame of audio data.

#### **Parameters**

buf Buffer containing input audio data

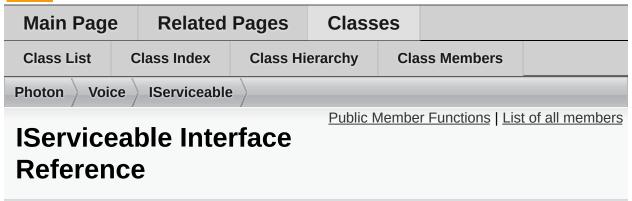
#### Returns

Buffer containing output audio data

Implemented in AudioUtil.VoiceLevelDetectCalibrate< T >, AudioUtil.VoiceDetector< T >, AudioUtil.VoiceDetectorCalibration< T >, AudioUtil.LevelMeter< T >, and AudioUtil.Resampler< T >.

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Interface for classes that want their **Service()** function to be called regularly in the context of a **LocalVoice**. More...

Inherited by BufferReaderPushAdapterBase< T >.

void Service (LocalVoice localVoice)
Service function that should be called regularly. More...

# **Detailed Description**

Interface for classes that want their **Service()** function to be called regularly in the context of a **LocalVoice**.

### **Member Function Documentation**

#### void Service (LocalVoice localVoice)

Service function that should be called regularly.

Implemented in BufferReaderPushAdapterAsyncPoolCopy< T >, BufferReaderPushAdapterAsyncPool< T >, BufferReaderPushAdapter< T >, and BufferReaderPushAdapterBase< T >.

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| Class List         | C   | lass Index Class Hierarch |       | erarchy                    | Class Members |                        |                |
| Photon Voi         | ice | ISyncAudio                | Out   |                            |               |                        |                |
|                    |     |                           |       | <u>P</u>                   | ublic N       | <b>Nember Function</b> | s   Properties |
| ISyncAudioOut< T > |     |                           |       | <u>List of all members</u> |               |                        |                |
| Interfac           |     |                           |       | erenc                      | е             |                        |                |

Inherits IAudioOut< T >.

void Pause ()

void **UnPause** ()

Public Member Functions inherited from IAudioOut< T >

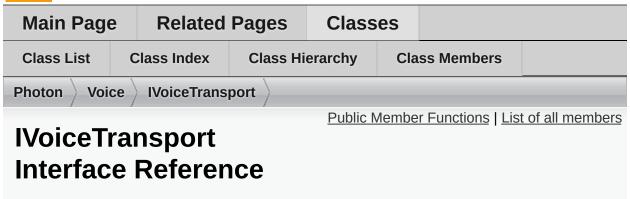
# **Properties**

int PlaySamplePos [get, set]

Properties inherited from IAudioOut< T >

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Inherits ILogger.

Inherited by LoadBalancingTransport.

bool IsChannelJoined (int channelld)

void **SendVoicesInfo** (IEnumerable< **LocalVoice** > voices, int channelld, int targetPlayerId)

void **SendVoiceRemove** (**LocalVoice** voice, int channelld, int targetPlayerId)

void SendFrame (ArraySegment< byte > data, byte evNumber, byte voiceld, int channelld, LocalVoice localVoice)

string ChannelldStr (int channelld)

string **PlayerIdStr** (int playerId)

void SetDebugEchoMode (LocalVoice v)

▶ Public Member Functions inherited from ILogger

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| Class List | С   | lass Index | Class Hi   | erarchy | Cla  | ss Members |                  |
| Photon Voi | се  | LoadBalanc | ingFronten | d 〉     |      |            |                  |
|            |     |            |            |         |      | <u>Lis</u> | t of all members |
| LoadBa     | ıla | ncingFı    | ronten     | d Cla   | ss F | Referenc   | e                |

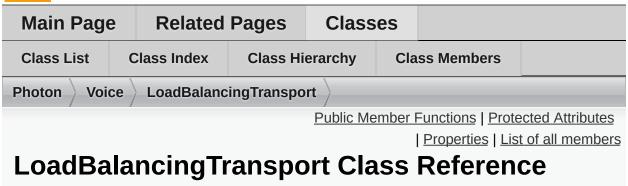
 $Inherits \ \textbf{LoadBalancingTransport}.$ 

### **Additional Inherited Members**

- ▶ Public Member Functions inherited from LoadBalancingTransport
- **▶** Protected Attributes inherited from LoadBalancingTransport
- ▶ Properties inherited from LoadBalancingTransport

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Extends LoadBalancingClient with audio streaming functionality. More...

 $Inherits\ Load Balancing Client,\ \textbf{IVoiceTransport},\ and\ ID is posable.$ 

Inherited by **LoadBalancingFrontend**.

| void         | LogError (string fmt, params object[] args)   |
|--------------|---|
| void         | LogWarning (string fmt, params object[] args)   |
| void         | LogInfo (string fmt, params object[] args)  |
| void         | LogDebug (string fmt, params object[] args)   |
| bool         | IsChannelJoined (int channelld)   |
| void         | SetDebugEchoMode (LocalVoice v)   |
|              | LoadBalancingTransport (ConnectionProtocol connectionProtocol=ConnectionProtocol.Udp) Initializes a new LoadBalancingTransport. More  |
| new void     | Service () This method dispatches all available incoming commands and then sends this client's outgoing commands. Call this method regularly (2 to 20 times a second). More |
|              |   |
| virtual bool | ChangeAudioGroups (byte[] groupsToRemove, byte[] groupsToAdd)   |
|              | ChangeAudioGroups (byte[] groupsToRemove, byte[] groupsToAdd)   |
|              | ChangeAudioGroups (byte[] groupsToRemove, byte[]  |
|              | ChangeAudioGroups (byte[] groupsToRemove, byte[] groupsToAdd)  SendVoicesInfo (IEnumerable< LocalVoice > voices, int  |

void **SendVoiceRemove** (**LocalVoice** voice, int channelld, int targetPlayerId)

void **SendFrame** (ArraySegment< byte > data, byte evNumber, byte voiceId, int channelId, **LocalVoice** localVoice)

string ChannelldStr (int channelld)

string PlayerIdStr (int playerId)

void Dispose ()

Releases all resources used by the **LoadBalancingTransport** instance. <u>More...</u>

# **Protected Attributes**

### VoiceClient voiceClient

## **Properties**

### VoiceClient VoiceClient [get]

The **VoiceClient** implementation associated with this **LoadBalancingTransport**. <u>More...</u>

### byte GlobalAudioGroup [get, set]

#### byte GlobalInterestGroup [get, set]

Set global audio group for this client. This call sets InterestGroup for existing local voices and for created later to given value. Client set as listening to this group only until LoadBalancingPeer.OpChangeGroups() called. This method can be called any time. More...

# **Detailed Description**

Extends LoadBalancingClient with audio streaming functionality.

Use your normal LoadBalancing workflow to join a **Voice** room. All standard LoadBalancing features are available.

#### To work with audio:

- Create outgoing audio streams with Client.CreateLocalVoice.
- Handle new incoming audio streams info with OnRemoteVoiceInfoAction.
- Handle incoming audio streams data with OnAudioFrameAction .
- Handle closing of incoming audio streams with .

## Constructor & Destructor Documentation

### LoadBalancingTransport (ConnectionProtocol connectionProtocol

Initializes a new **LoadBalancingTransport**.

#### **Parameters**

connectionProtocol Connection protocol (UDP or TCP). Connec

## **Member Function Documentation**

#### void Dispose ()

Releases all resources used by the **LoadBalancingTransport** instance.

#### void SendDebugEchoVoicesInfo ( int channelld )

Send VoicesInfo events to the local player for all voices that have DebugEcho enabled.

This function will call **SendVoicesInfo** for all local voices of our **VoiceClient** that have DebugEchoMode set to true, with the given channel ID, and the local Player's ActorNumber as target.

#### **Parameters**

**channelld** Transport Channel ID

#### new void Service ()

This method dispatches all available incoming commands and then sends this client's outgoing commands. Call this method regularly (2 to 20 times a second).

## **Property Documentation**

#### byte GlobalInterestGroup

get set

Set global audio group for this client. This call sets InterestGroup for existing local voices and for created later to given value. Client set as listening to this group only until

LoadBalancingPeer.OpChangeGroups() called. This method can be called any time.

#### LocalVoice.InterestGroup

LoadBalancingPeer.OpChangeGroups(byte[], byte[])

#### VoiceClient VoiceClient

get

The VoiceClient implementation associated with this LoadBalancingTransport.

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| Main Page                     |     | Related Pages |   | Classes             |               |  |  |
|-------------------------------|-----|---------------|---|---------------------|---------------|--|--|
| Class List                    | CI  | ass Index     | Class Hi                                    | erarchy             | Class Members |  |  |
| Photon Voice LocalVoice       |     |               |   |                     |               |  |  |
| LocalVoice Class<br>Reference |     |               | Public Member Functions   Public Attributes |                     |               |  |  |
|                               |     |               | Protected Member Functions                  |                     |               |  |  |
|                               |     |               | Protected Attributes   Properties           |                     |               |  |  |
| Kelelel                       | ICE |               |   | List of all members |               |  |  |

Represents outgoing data stream. More...

Inherits IDisposable.

Inherited by LocalVoiceAudioDummy, and LocalVoiceFramedBase.

## **Public Member Functions**

virtual IEncoder CreateDefaultEncoder (VoiceInfo info)

void RemoveSelf ()

Remove this voice from it's **VoiceClient** (using **VoiceClient.RemoveLocalVoice** More...

virtual void Dispose ()

# Public Attributes

const int **DATA\_POOL\_CAPACITY** = 50

# **Protected Member Functions**

void resetNoTransmitCnt ()

## **Protected Attributes**

IEncoder encoder

VoiceClient voiceClient

volatile bool disposed

object disposeLock = new object()

## **Properties**

byte Group [get, set]

byte InterestGroup [get, set]

If InterestGroup != 0, voice's data is sent only to clients listening to this group (if supported by transport). More...

VoiceInfo Info [get]

Returns Info structure assigned on local voice cration. More...

bool TransmitEnabled [get, set]

If true, stream data broadcasted. More...

bool IsCurrentlyTransmitting [get, protected set]

Returns true if stream broadcasts. More...

int FramesSent [get]

Sent frames counter. More...

int FramesSentBytes [get]

Sent frames bytes counter. More...

bool Reliable [get, set]

Send data reliable. More...

bool Encrypt [get, set]

Send data encrypted. More...

IServiceable LocalUserServiceable [get, set]

Optional user object attached to **LocalVoice**. its Service() will be called at each **VoiceClient.Service()** call. More...

## bool DebugEchoMode [get, set]

If true, outgoing stream routed back to client via server same way as for remote client's streams. Can be swithed any time. OnRemoteVoiceInfoAction and OnRemoteVoiceRemoveAction are triggered if required. This functionality availability depends on transport. More...

# **Detailed Description**

Represents outgoing data stream.

## **Member Function Documentation**

## void RemoveSelf()

Remove this voice from it's **VoiceClient** (using **VoiceClient.RemoveLocalVoice** 

.

## **Property Documentation**

#### bool DebugEchoMode

get set

If true, outgoing stream routed back to client via server same way as for remote client's streams. Can be swithed any time. OnRemoteVoiceInfoAction and OnRemoteVoiceRemoveAction are triggered if required. This functionality availability depends on transport.

#### **bool Encrypt**

get set

Send data encrypted.

#### int FramesSent

get

Sent frames counter.

#### int FramesSentBytes

get

Sent frames bytes counter.

#### VoiceInfo Info

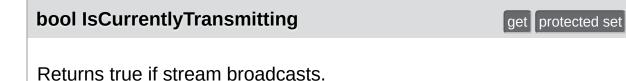
get

Returns Info structure assigned on local voice cration.

#### byte InterestGroup

get set

If InterestGroup != 0, voice's data is sent only to clients listening to this group (if supported by transport).



#### **IServiceable LocalUserServiceable**

Optional user object attached to **LocalVoice**. its Service() will be called at each **VoiceClient.Service()** call.

get set

get set



#### bool TransmitEnabled

If true, stream data broadcasted.

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| Main Page                    | e Related   | Related Pages   |                         | es                             |                                   |  |  |  |
|------------------------------|-------------|-----------------|-------------------------|--------------------------------|-----------------------------------|--|--|--|
| Class List                   | Class Index | Class Hierarchy |                         | Cla                            | ss Members                        |  |  |  |
| Photon Voice LocalVoiceAudio |             |                 |                         |                                |                                   |  |  |  |
| _                            |             |                 | Public Member Functions |                                |                                   |  |  |  |
| LocalVoiceAudio< T >         |             |                 |                         | Static Public Member Functions |                                   |  |  |  |
| Class Template               |             |                 |                         |                                | Protected Member Functions        |  |  |  |
|                              |             |                 |                         |                                | Protected Attributes   Properties |  |  |  |
| Reference                    |             |                 |                         | <u>List of all members</u>     |                                   |  |  |  |
|                              |             |                 |                         |                                |                                   |  |  |  |

Outgoing audio stream. More...

Inherits LocalVoiceFramed< T >, and ILocalVoiceAudio.

## **Public Member Functions**

## override IEncoder CreateDefaultEncoder (VoiceInfo info)

void VoiceDetectorCalibrate (int durationMs)
Trigger voice detector calibration process.
More...

- ▶ Public Member Functions inherited from LocalVoiceFramed< T</p>
- > Public Member Functions inherited from LocalVoice

## Static Public Member Functions

static LocalVoiceAudio< T > Create (VoiceClient voiceClient, byte voiceId, IEncoder encoder, VoiceInfo voiceInfo, IAudioDesc audioSourceDesc, int channelId)

Create a new LocalVoiceAudio<T> instance. More...

## **Protected Member Functions**

## void initBuiltinProcessors ()

Protected Member Functions inherited from LocalVoice

## **Protected Attributes**

# AudioUtil.VoiceDetector<T > voiceDetector AudioUtil.VoiceDetectorCalibration<T > voiceDetectorCalibration AudioUtil.LevelMeter<T > levelMeter int channels bool resampleSource

Protected Attributes inherited from LocalVoice

## **Properties**

#### virtual AudioUtil.IVoiceDetector VoiceDetector [get]

#### virtual AudioUtil.ILevelMeter LevelMeter [get]

bool **VoiceDetectorCalibrating** [get]
True if the VoiceDetector is
currently calibrating. More...

- Properties inherited from LocalVoiceFramed< T >
- Properties inherited from LocalVoiceFramedBase
- ▶ Properties inherited from LocalVoice
- ▶ Properties inherited from ILocalVoiceAudio

# Additional Inherited Members

▶ Public Attributes inherited from LocalVoice

# **Detailed Description**

Outgoing audio stream.

## **Member Function Documentation**

#### static LocalVoiceA

LocalVoiceAudio<T>

Create (VoiceClient voiceClient,

byte voiceld, IEncoder encoder, VoiceInfo voiceInfo,

IAudioDesc audioSourceDesc,

int channelld

)

static

Create a new LocalVoiceAudio<T> instance.

#### **Parameters**

voiceClient The VoiceClient to use for this outgoing stream.

voiceld Numeric ID for this voice.encoder Encoder to use for this voice.

**channelld** Voice transport channel ID to use for this voice.

#### Returns

The new LocalVoiceAudio<T> instance.

#### void VoiceDetectorCalibrate ( int durationMs )

Trigger voice detector calibration process.

While calibrating, keep silence. **Voice** detector sets threshold basing on measured backgroud noise level.

#### **Parameters**

durationMs Duration of calibration in milliseconds.

 $Implements \ \textbf{ILocalVoiceAudio}.$ 

# **Property Documentation**

## bool VoiceDetectorCalibrating

get

True if the VoiceDetector is currently calibrating.

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| Main Pag                             | Main Page Related |            | Pages    | Classes |                                      |  |  |  |
|--------------------------------------|-------------------|------------|----------|---------|--------------------------------------|--|--|--|
| Class List                           | C                 | lass Index | Class Hi | erarchy | Class Members                        |  |  |  |
| Photon Voice LocalVoiceAudioDummy    |                   |            |          |         |                                      |  |  |  |
| Public Member Functions              |                   |            |          |         |                                      |  |  |  |
| 2                                    |                   |            |          | Statio  | tatic Public Attributes   Properties |  |  |  |
| <u>List of all members</u>           |                   |            |          |         |                                      |  |  |  |
| LocalVoiceAudioDummy Class Reference |                   |            |          |         |                                      |  |  |  |

 ${\color{red} \textbf{Dummy LocalVoiceAudio}} \ {\color{red} \underline{\textbf{More}...}}$ 

Inherits LocalVoice, and ILocalVoiceAudio.

## **Public Member Functions**

void **VoiceDetectorCalibrate** (int durationMs)
Trigger voice detector calibration process. <u>More...</u>

▶ Public Member Functions inherited from LocalVoice

## Static Public Attributes

static LocalVoiceAudioDummy | Dummy = new | LocalVoiceAudioDummy() | A Dummy LocalVoiceAudio

instance. More...

# **Properties**

## AudioUtil.IVoiceDetector VoiceDetector [get]

## AudioUtil.ILevelMeter LevelMeter [get]

## bool VoiceDetectorCalibrating [get]

- ▶ Properties inherited from LocalVoice
- ▶ Properties inherited from ILocalVoiceAudio

## **Additional Inherited Members**

- Public Attributes inherited from LocalVoice
- > Protected Member Functions inherited from LocalVoice
- Protected Attributes inherited from LocalVoice

# **Detailed Description**

## **Dummy LocalVoiceAudio**

For testing, this **LocalVoiceAudio** implementation features a **AudioUtil.VoiceDetectorDummy** and a **AudioUtil.LevelMeterDummy** 

## **Member Function Documentation**

## void VoiceDetectorCalibrate ( int durationMs )

Trigger voice detector calibration process.

While calibrating, keep silence. **Voice** detector sets threshold based on measured backgroud noise level.

#### **Parameters**

durationMs Duration of calibration (in milliseconds).

Implements ILocalVoiceAudio.

## Member Data Documentation

LocalVoiceAudioDummy Dummy = new LocalVoiceAudioDummy()

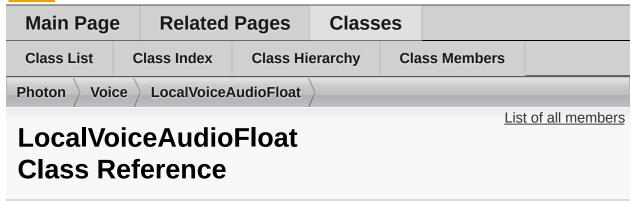
static

A Dummy **LocalVoiceAudio** instance.

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Specialization of LocalVoiceAudio for float audio More...

Inherits LocalVoiceAudio < float >.

## **Additional Inherited Members**

- Public Member Functions inherited from LocalVoiceAudio< float</li>
- Static Public Member Functions inherited from LocalVoiceAudio< float >
- Protected Member Functions inherited from LocalVoiceAudio
  float >
- Protected Attributes inherited from LocalVoiceAudio< float >
- Properties inherited from LocalVoiceAudio< float >

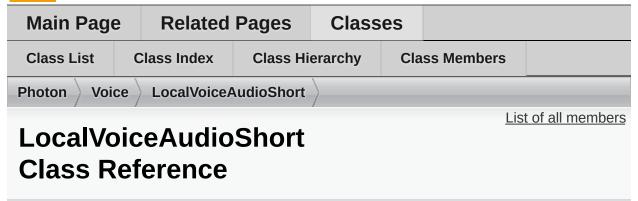
# **Detailed Description**

Specialization of LocalVoiceAudio for float audio

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Specialization of LocalVoiceAudio for short audio More...

Inherits LocalVoiceAudio < short >.

### **Additional Inherited Members**

- Public Member Functions inherited from LocalVoiceAudio
  short >
- Static Public Member Functions inherited from LocalVoiceAudio< short >
- Protected Member Functions inherited from LocalVoiceAudio
  short >
- Protected Attributes inherited from LocalVoiceAudio< short >
- Properties inherited from LocalVoiceAudio< short >

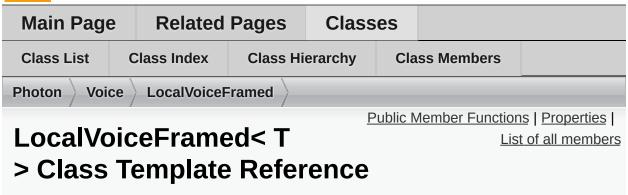
# **Detailed Description**

Specialization of LocalVoiceAudio for short audio

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Typed re-framing LocalVoice More...

Inherits LocalVoiceFramedBase.

Inherited by LocalVoiceAudio< T >.

### **Public Member Functions**

# void AddPostProcessor (params IProcessor< T >[] processors)

Adds processors after any built-in processors and everything added with AddPreProcessor. <u>More...</u>

# void **AddPreProcessor** (params **IProcessor**< T >[] processors)

Adds processors before built-in processors and everything added with AddPostProcessor. More...

#### void ClearProcessors ()

Clears all processors in pipeline including built-in resampling. User should add at least resampler processor after call. More...

#### void PushDataAsync (T[] buf)

Asynchronously push data into this stream. More...

### void PushData (T[] buf)

Synchronously push data into this stream. More...

### override void Dispose ()

Releases resources used by the VoiceFramed instance. Buffers used for asynchronous push will be disposed in encoder thread's 'finally'. <u>More...</u>

▶ Public Member Functions inherited from LocalVoice

## **Properties**

### FactoryPrimitiveArrayPool< T > BufferFactory [get]

bool PushDataAsyncReady [get]
Wether this LocalVoiceFramed
has capacity for more data buffers
to be pushed asynchronously.
More...

- ▶ Properties inherited from LocalVoiceFramedBase
- Properties inherited from LocalVoice

## **Additional Inherited Members**

- Public Attributes inherited from LocalVoice
- > Protected Member Functions inherited from LocalVoice
- Protected Attributes inherited from LocalVoice

# **Detailed Description**

#### Typed re-framing LocalVoice

Consumes data in array buffers of arbitrary length. Repacks them in frames of constant length for further processing and encoding.

#### **Parameters**

**voiceInfo** Outgoing stream parameters. Set applicable fields to read them by encoder and by receiving client when voice created.

channelld Transport channel specific to transport.encoder Encoder producing the stream.

#### **Returns**

Outgoing stream handler.

### **Member Function Documentation**

#### void AddPostProcessor ( params IProcessor< T >[] processors )

Adds processors after any built-in processors and everything added with AddPreProcessor.

#### **Parameters**

processors

#### void AddPreProcessor ( params IProcessor< T >[] processors )

Adds processors before built-in processors and everything added with AddPostProcessor.

#### **Parameters**

processors

### void ClearProcessors ()

Clears all processors in pipeline including built-in resampling. User should add at least resampler processor after call.

### override void Dispose ()

virtual

Releases resources used by the VoiceFramed instance. Buffers used for asynchronous push will be disposed in encoder thread's 'finally'.

Reimplemented from LocalVoice.

### void PushData(T[] buf)

Synchronously push data into this stream.

### void PushDataAsync (T[] buf)

Asynchronously push data into this stream.

# **Property Documentation**

### bool PushDataAsyncReady

get

Wether this **LocalVoiceFramed** has capacity for more data buffers to be pushed asynchronously.

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| Main Pag                          | e Rela    | Related Pages |          | Classes      |  |            |  |
|-----------------------------------|-----------|---------------|----------|--------------|--|------------|--|
| Class List                        | Class Inc | dex           | Class Hi | erarchy Clas |  | ss Members |  |
| Photon Voice LocalVoiceFramedBase |           |               |          |              |  |            |  |
| Properties   List of all members  |           |               |          |              |  |            |  |
|                                   |           |               |          |              |  |            |  |

### LocalVoiceFramedBase Class Reference

Typed re-framing LocalVoice More...

Inherits **LocalVoice**.

Inherited by LocalVoiceFramed< T >.

# **Properties**

### int FrameSize [get]

Data flow will be repacked to frames of this size. May differ from input voiceInfo.FrameSize. Processors should resample in this case. <u>More...</u>

▶ Properties inherited from LocalVoice

## **Additional Inherited Members**

- ▶ Public Member Functions inherited from LocalVoice
- ▶ Public Attributes inherited from LocalVoice
- > Protected Member Functions inherited from LocalVoice
- Protected Attributes inherited from LocalVoice

# **Detailed Description**

Typed re-framing LocalVoice

Base class for typed re-framing **LocalVoice** implementation (**LocalVoiceFramedBase<T>**)

# **Property Documentation**

#### int FrameSize

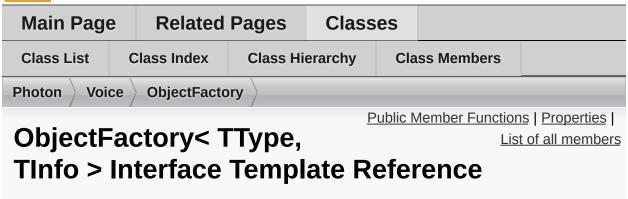
get

Data flow will be repacked to frames of this size. May differ from input voiceInfo.FrameSize. Processors should resample in this case.

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Uniform interface to ObjectPool<TType, TInfo> and single reusable object. More...

Inherits IDisposable.

## **Public Member Functions**

TType New ()

TType New (TInfo info)

void **Free** (TType obj)

void Free (TType obj, TInfo info)

# Properties

Tinfo Info [get]

# **Detailed Description**

Uniform interface to ObjectPool<TType, TInfo> and single reusable object.

### **Template Parameters**

TType Object type.

TInfo Type of property used to check 2 objects identity (like integral length of array).

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| Main Page                                   | Related                 | Pages           | Class | es  |                                   |                  |  |  |
|---|-------------------------|-----------------|-------|-----|-----------------------------------|------------------|--|--|
| Class List                                  | Class Index             | Class Hierarchy |       | Cla | ss Members                        |                  |  |  |
| Photon Voice ObjectPool                     |                         |                 |       |     |                                   |                  |  |  |
|   | Public Member Functions |                 |       |     |                                   |                  |  |  |
| ObjectPool TType, Protected Member Function |                         |                 |       |     |                                   | ber Functions    |  |  |
| Tinfo > Class Template                      |                         |                 |       |     | Protected Attributes   Properties |                  |  |  |
| List of all member                          |                         |                 |       |     |                                   | t of all members |  |  |
| Reference abstract                          |                         |                 |       |     |                                   |                  |  |  |

Generic Pool to re-use objects of a certain type (TType) that optionally match a certain property or set of properties (TInfo). <u>More...</u>

Inherits IDisposable.

### **Public Member Functions**

**ObjectPool** (int capacity, string name)

Create a new **ObjectPool** instance. Does not call **Init()**. More...

ObjectPool (int capacity, string name, TInfo info)
Create a new ObjectPool instance with the given info

structure. Calls Init(). More...

void Init (TInfo info)

(Re-)Initializes this ObjectPool. More...

TType AcquireOrCreate ()

Acquire an existing object, or create a new one if none are available. More...

TType AcquireOrCreate (TInfo info)

Acquire an existing object (if info matches), or create a new one from the passed info. More...

virtual bool Release (TType obj, TInfo objInfo)

Returns object to pool. More...

virtual bool Release (TType obj)

Returns object to pool, or destroys it if the pool is full. More...

void Dispose ()

Free resources assoicated with this **ObjectPool** More...

## **Protected Member Functions**

abstract TType createObject (TInfo info)

abstract void destroyObject (TType obj)

abstract bool infosMatch (TInfo i0, TInfo i1)

# **Protected Attributes**

| int    | capacity |
|--------|----------|
| TInfo  | info     |
| int    | pos      |
| string | name     |

# **Properties**

## Tinfo info [get]

The property (info) that objects in this Pool must match. More...

# **Detailed Description**

Generic Pool to re-use objects of a certain type (TType) that optionally match a certain property or set of properties (TInfo).

### **Template Parameters**

TType Object type.

TInfo Type of parameter used to check 2 objects identity (like integral length of array).

### Constructor & Destructor Documentation

```
ObjectPool (int capacity, string name)

Create a new ObjectPool instance. Does not call Init().

Parameters
capacity Capacity (size) of the object pool.
name Name of the object pool.
```

```
ObjectPool ( int capacity, string name, TInfo info )
```

Create a new **ObjectPool** instance with the given info structure. Calls **Init()**.

#### **Parameters**

capacity Capacity (size) of the object pool.

name Name of the object pool.

info Info about this Pool's objects.

### **Member Function Documentation**

#### TType AcquireOrCreate ()

Acquire an existing object, or create a new one if none are available.

If it fails to get one from the pool, this will create from the info given in this pool's constructor.

#### TType AcquireOrCreate (TInfo info)

Acquire an existing object (if info matches), or create a new one from the passed info.

#### **Parameters**

info Info structure to match, or create a new object with.

### void Dispose ()

Free resources assoicated with this ObjectPool

#### void Init (TInfo info)

(Re-)Initializes this ObjectPool.

If there are objects available in this Pool, they will be destroyed. Allocates (Capacity) new Objects.

#### **Parameters**

info Info about this Pool's objects.

```
virtual bool Release (TType obj,
TInfo objInfo
) virtual
```

Returns object to pool.

#### **Parameters**

**obj** The object to return to the pool. **objInfo** The info structure about obj.

obj is returned to the pool only if objInfo matches this pool's info. Else, it is destroyed.

### virtual bool Release (TType obj)

virtual

Returns object to pool, or destroys it if the pool is full.

#### **Parameters**

**obj** The object to return to the pool.

# **Property Documentation**

### **TInfo Info**

get

The property (info) that objects in this Pool must match.

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| Main Page                 | Main Page Related |          | Classes |     |            |  |
|---------------------------|-------------------|----------|---------|-----|------------|--|
| Class List                | Class Index       | Class Hi | erarchy | Cla | ss Members |  |
| Photon Voice OpusCodec    |                   |          |         |     |            |  |
| OpusCodec Class Reference |                   |          |         |     |            |  |

# Classes

| class | Decoder        |
|-------|----------------|
| class | DecoderFactory |
| class | DecoderFloat   |
|       |                |
| class | DecoderShort   |
| class | Encoder        |
| alaaa | Franksurflagt  |
| ciass | EncoderFloat   |
| class | EncoderShort   |
| class | Factory        |
| JIUJJ | i dotory       |
| class | Util           |
|       |                |

# **Public Types**

### enum FrameDuration

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| Main Page Related  |             | Pages           | Classes |                            |                                   |  |  |
|--------------------|-------------|-----------------|---------|----------------------------|-----------------------------------|--|--|
| Class List         | Class Index | Class Hierarchy |         | Cla                        | ss Members                        |  |  |
| Photon Voi         |             |                 |         |                            |                                   |  |  |
|                    |             |                 |         |                            | Public Member Functions           |  |  |
| OpusCodec.Decoder< |             |                 |         | Protected Member Functions |                                   |  |  |
| •                  |             |                 |         |                            | Protected Attributes   Properties |  |  |
| T > Class Template |             |                 |         | <u>List of all members</u> |                                   |  |  |
| Reference abstract |             |                 |         |                            |                                   |  |  |

Inherits **IDecoder**.

### **Public Member Functions**

**Decoder** (Action< T[]> output, **ILogger** logger)

void **Open (VoiceInfo i)**Open (initialize) the decoder. <u>More...</u>

void **Dispose** ()

void Input (byte[] buf)

Consumes the given encoded data. More...

# Protected Member Functions

abstract T[] **decodeTyped** (byte[] buf)

# Protected Attributes

## OpusDecoder decoder

## **Properties**

#### string **Error** [get]

Properties inherited from IDecoder

#### **Member Function Documentation**

#### void Input ( byte[] buf )

Consumes the given encoded data.

Implements IDecoder.

#### void Open (VoiceInfo info)

Open (initialize) the decoder.

#### **Parameters**

**info** Properties of the data stream to decode.

Implements IDecoder.

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| Main Pag                     | е | Related    | Pages Clas |             | es        |                 |                  |
|------------------------------|---|------------|------------|-------------|-----------|-----------------|------------------|
| Class List                   | C | lass Index | Class Hi   | erarchy Cla |           | ss Members      |                  |
| Photon Voice OpusCodec Decod |   |            | Decode     | rFactory    |           |                 |                  |
|                              |   |            |            |             | <u>St</u> | atic Public Mem | ber Functions    |
|                              |   |            |            |             |           | Lis             | t of all members |

**OpusCodec.DecoderFactory Class Reference** 

### Static Public Member Functions

static IEncoder Create< T > (VoiceInfo i, ILogger logger)

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| Main Page                              | е | Related     | Pages    | Classes |     |               |                  |  |
|--|---|-------------|----------|---------|-----|---------------|------------------|--|
| Class List                             | C | Class Index | Class Hi | erarchy | Cla | ss Members    |                  |  |
| Photon Voice OpusCodec DecoderFloat    |   |             |          |         |     |               |                  |  |
|  |   |             | -        |         |     | Public Mem    | ber Functions    |  |
|  |   |             |          |         |     | Protected Mem | ber Functions    |  |
|  |   |             |          |         |     | <u>Lis</u>    | t of all members |  |
| OpusCodec.DecoderFloat Class Reference |   |             |          |         |     |               |                  |  |

Inherits OpusCodec.Decoder< float >.

## **Public Member Functions**

DecoderFloat (Action< float[]> output, ILogger logger)

Public Member Functions inherited from OpusCodec.Decoder
float >

## **Protected Member Functions**

override float[] decodeTyped (byte[] buf)

#### **Additional Inherited Members**

- ▶ Protected Attributes inherited from OpusCodec.Decoder< float
- >
- Properties inherited from OpusCodec.Decoder< float >

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| Main Pag                               | е                          | Related     | Pages    | Classes |     |               |               |  |
|--|----------------------------|-------------|----------|---------|-----|---------------|---------------|--|
| Class List                             | C                          | Class Index | Class Hi | erarchy | Cla | ss Members    |               |  |
| Photon Voice OpusCodec DecoderShort    |                            |             |          |         |     |               |               |  |
|  |                            |             |          |         |     | Public Mem    | ber Functions |  |
|  |                            |             |          |         |     | Protected Mem | ber Functions |  |
|  | <u>List of all members</u> |             |          |         |     |               |               |  |
| OpusCodec.DecoderShort Class Reference |                            |             |          |         |     |               |               |  |

Inherits OpusCodec.Decoder< short >.

## **Public Member Functions**

DecoderShort (Action< short[]> output, ILogger logger)

Public Member Functions inherited from OpusCodec.Decoder
short >

## **Protected Member Functions**

override short[] **decodeTyped** (byte[] buf)

#### **Additional Inherited Members**

- ▶ Protected Attributes inherited from OpusCodec.Decoder< short
- Properties inherited from OpusCodec.Decoder< short >

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| Main Page                      | e Related   | Pages    | Class                      | es                                |            |  |  |  |
|--------------------------------|-------------|----------|----------------------------|-----------------------------------|------------|--|--|--|
| Class List                     | Class Index | Class Hi | Class Hierarchy C          |                                   | ss Members |  |  |  |
| Photon Voice OpusCodec Encoder |             |          |                            |                                   |            |  |  |  |
|                                | _           | _        |                            | Public Member Functions           |            |  |  |  |
| OpusCo                         | odec.Enc    | oder<    |                            | Protected Member Functions        |            |  |  |  |
| •                              | ss Templa   |          |                            | Protected Attributes   Properties |            |  |  |  |
| i / Cias                       | ss rempie   |          | <u>List of all members</u> |                                   |            |  |  |  |
| Referen                        | abstract    |          |                            |                                   |            |  |  |  |

Inherits IEncoderDirect< T[]>.

### **Public Member Functions**

void Input (T[] buf)

ArraySegment< byte > **DequeueOutput** ()

void **Dispose** ()

▶ Public Member Functions inherited from IEncoderDirect< T[]>

## **Protected Member Functions**

| <b>Encoder</b> (VoiceInfo i, ILogge | er |
|-------------------------------------|----|
| logger)                             |    |

abstract ArraySegment< byte > **encodeTyped** (T[] buf)

## Protected Attributes

### OpusEncoder encoder

## bool **disposed**

## **Properties**

string **Error** [get]

Action< ArraySegment< byte >> Output [get, set]

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| Main Page                              | e Related   | Pages    | ages Classes |     |               |               |  |
|--|-------------|----------|--------------|-----|---------------|---------------|--|
| Class List                             | Class Index | Class Hi | erarchy      | Cla | ss Members    |               |  |
| Photon Voice OpusCodec EncoderFloat    |             |          |              |     |               |               |  |
|  | _           |          |              |     | Protected Mem | ber Functions |  |
| List of all members                    |             |          |              |     |               |               |  |
| OpusCodec.EncoderFloat Class Reference |             |          |              |     |               |               |  |

Inherits OpusCodec.Encoder< float >.

### **Protected Member Functions**

override ArraySegment< byte > encodeTyped (float[] buf)

Protected Member Functions inherited from OpusCodec.Encoder< float >

#### **Additional Inherited Members**

- Public Member Functions inherited from OpusCodec.Encoder< float >
- Protected Attributes inherited from OpusCodec.Encoder< float</li>
- Properties inherited from OpusCodec.Encoder< float >

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| Main Pag                               | e Related   | Pages    | Class   | es  |               |               |  |
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| Photon Voice OpusCodec EncoderShort    |             |          |         |     |               |               |  |
| -                                      |             |          | -       |     | Protected Mem | ber Functions |  |
| <u>List of all members</u>             |             |          |         |     |               |               |  |
| OpusCodec.EncoderShort Class Reference |             |          |         |     |               |               |  |

Inherits OpusCodec.Encoder< short >.

### **Protected Member Functions**

override ArraySegment< byte > encodeTyped (short[] buf)

Protected Member Functions inherited from OpusCodec.Encoder< short >

#### **Additional Inherited Members**

- Public Member Functions inherited from OpusCodec.Encodershort >
- Protected Attributes inherited from OpusCodec.Encoder< short</p>
- Properties inherited from OpusCodec.Encoder< short >

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|--------------------------------|-------------|-------------|---------|-----|----------------------------|---------------|--|
| Class List                     | Class Index | Class Hi    | erarchy | Cla | ss Members                 |               |  |
| Photon Voice OpusCodec Factory |             |             |         |     |                            |               |  |
|                                | _           |             |         | St  | atic Public Mem            | ber Functions |  |
| OpusCodec.Factory              |             |             |         |     | <u>List of all members</u> |               |  |
| •                              | eference    | •           |         |     |                            |               |  |

### Static Public Member Functions

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|-----------------------------|-------------|-------------|---------------|----|------------|------------------|--|
| Class List                  | Class Index | Class Hi    | s Hierarchy C |    | ss Members |                  |  |
| Photon Voice OpusCodec Util |             |             |               |    |            |                  |  |
| OpusCo<br>Referen           | odec.Util ( | Class       |               |    | <u>Lis</u> | t of all members |  |

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| Main Pag                              | e Related        | Pages    | Class   | es  |                            |               |  |  |  |
|---------------------------------------|------------------|----------|---------|-----|----------------------------|---------------|--|--|--|
| Class List                            | Class Index      | Class Hi | erarchy | Cla | ss Members                 |               |  |  |  |
| Photon Voice PrimitiveArrayPool       |                  |          |         |     |                            |               |  |  |  |
|                                       |                  |          |         |     | Public Mem                 | ber Functions |  |  |  |
| Primitiv                              | <b>reArrayPo</b> | ool< T   |         |     | Protected Member Functions |               |  |  |  |
| > Class Template  List of all members |                  |          |         |     |                            |               |  |  |  |
| Referer                               | nce              |          |         |     |                            |               |  |  |  |

Pool of Arrays with components of type T, with **ObjectPool** info being the array's size. <u>More...</u>

Inherits ObjectPool< T[], int >.

## **Public Member Functions**

PrimitiveArrayPool (int capacity, string name)

PrimitiveArrayPool (int capacity, string name, int info)

▶ Public Member Functions inherited from ObjectPool< T[], int >

#### **Protected Member Functions**

override T[] createObject (int info)

override void destroyObject (T[] obj)

override bool infosMatch (int i0, int i1)

Protected Member Functions inherited from ObjectPool< T[], int</li>

## Additional Inherited Members

- Protected Attributes inherited from ObjectPool< T[], int >
- Properties inherited from ObjectPool< T[], int >

## **Detailed Description**

Pool of Arrays with components of type T, with **ObjectPool** info being the array's size.

#### **Template Parameters**

T Array element type.

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# Photon Voice v2.7

| Main Page                    | Related     | Pages    | es Classes |               |                  |                  |  |  |
|------------------------------|-------------|----------|------------|---------------|------------------|------------------|--|--|
| Class List                   | Class Index | Class Hi | erarchy    | Class Members |                  |                  |  |  |
| Photon Voice RemoteVoiceInfo |             |          |            |               |                  |                  |  |  |
| Remote\                      |             |          |            |               | Properties   Lis | t of all members |  |  |

Information about a remote voice (incoming stream). More...

## **Properties**

#### VoiceInfo Info [get]

Remote voice info. More...

#### int Channelld [get]

ID of channel used for transmission. More...

#### int PlayerId [get]

Player ID of voice owner. More...

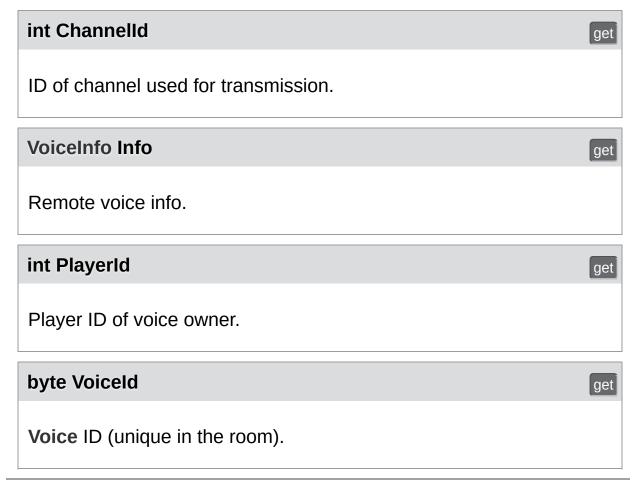
#### byte VoiceId [get]

Voice ID (unique in the room). More...

# **Detailed Description**

Information about a remote voice (incoming stream).

## **Property Documentation**



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| Main Page                       | Page Related Pages Cla |          | Class               | es                         |                 |                |  |  |
|---------------------------------|------------------------|----------|---------------------|----------------------------|-----------------|----------------|--|--|
| Class List                      | Class Index            | Class Hi | Class Hierarchy Cla |                            | ss Members      |                |  |  |
| Photon Voice RemoteVoiceOptions |                        |          |                     |                            |                 |                |  |  |
|                                 |                        |          | <u>P</u>            | ublic N                    | Member Function | s   Properties |  |  |
| Remote                          | VoiceOpt               | tions    |                     | <u>List of all members</u> |                 |                |  |  |
| Struct F                        |                        |          |                     |                            |                 |                |  |  |

Event Actions and other options for a remote voice (incoming stream).  $\underline{\text{More}}$ ...

## **Public Member Functions**

void SetOutput (Action< float[]> output)
Register a method to be called when new data frame received.. More...

void SetOutput (Action< short[]> output)

void SetOutput (Action< ImageOutputBuf > output)

# **Properties**

Action OnRemoteVoiceRemoveAction [get, set]

Register a method to be called when the remote voice is removed. More...

IDecoder Decoder [get, set]

Remote voice data decoder. Use to set decoder options or override it with user decoder. More...

ImageFormat OutputImageFormat [get, set]

Flip OutputImageFlip [get, set]

# **Detailed Description**

Event Actions and other options for a remote voice (incoming stream).

# **Member Function Documentation**

## void SetOutput ( Action< float[]> output )

Register a method to be called when new data frame received..

# **Property Documentation**

#### **IDecoder Decoder**

get set

Remote voice data decoder. Use to set decoder options or override it with user decoder.

#### **Action OnRemoteVoiceRemoveAction**





Register a method to be called when the remote voice is removed.

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# Photon Voice v2.7

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| Photon Voi                                | ce \ Unsupporte | dCodecExc | eption   |               |                   |                  |
|   |                 |           | Public N | <u> Membe</u> | r Functions   Lis | t of all members |
| UnsupportedCodecException Class Reference |                 |           |          |               |                   |                  |

Exception thrown if an unsupported codec is encountered. <u>More...</u> Inherits Exception.

# **Public Member Functions**

**UnsupportedCodecException** (string info, **Codec** codec, **ILogger** logger)

Create a new UnsupportedCodecException. More...

# **Detailed Description**

Exception thrown if an unsupported codec is encountered.

PhotonVoice currently only supports one Codec, **Codec.AudioOpus**.

### Constructor & Destructor Documentation

Create a new UnsupportedCodecException.

#### **Parameters**

**info** The info prepending standard message.

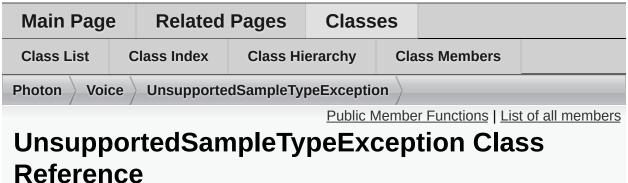
**codec** The codec actually encountered.

logger Loogger.

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Exception thrown if an unsupported audio sample type is encountered. More...

Inherits Exception.

# **Public Member Functions**

UnsupportedSampleTypeException (Type t)
Create a new UnsupportedSampleTypeException. More...

# **Detailed Description**

Exception thrown if an unsupported audio sample type is encountered.

PhotonVoice generally supports 32-bit floating point ("float") or 16-bit signed integer ("short") audio, but it usually won't be converted automatically due to the high CPU overhead (and potential loss of precision) involved.

## Constructor & Destructor Documentation

### UnsupportedSampleTypeException(Type t)

Create a new UnsupportedSampleTypeException.

#### **Parameters**

t The sample type actually encountered.

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| Photon Voice       | ce VoiceClient |          |          |                |                                      |                                      |
| VoiceCl<br>Referen | ient Class     | S        | <u>P</u> | <u>ublic N</u> | <u>lember Function</u><br><u>Lis</u> | s   Properties  <br>t of all members |

**Voice** client interact with other clients on network via **IVoiceTransport**. More...

Inherits IDisposable.

#### **Public Member Functions**

delegate void RemoteVoiceInfoDelegate (int channelld, int playerld, byte voiceld, VoiceInfo voiceInfo, ref RemoteVoiceOptions options) Remote voice info event delegate. More...

IEnumerable < LocalVoice > LocalVoicesInChannel (int channelld) Iterates through copy of all local voices list of given channel. More...

#### void Service ()

This method dispatches all available incoming commands and then sends this client's outgoing commands. Call this method regularly (2..20 times a second). More...

LocalVoice CreateLocalVoice (VoiceInfo voiceInfo, int channelId=0, **IEncoder** encoder=null)

> Creates basic outgoing stream w/o data processing support. Provided encoder should generate output data stream. More...

LocalVoiceFramed< T > CreateLocalVoiceFramed< T > (VoiceInfo voiceInfo, int frameSize, int channelld=0, **IEncoder** encoder=null) Creates outgoing stream consuming sequence of values passed in array buffers of arbitrary length which repacked in frames of constant length for further processing and encoding. More...

#### LocalVoiceAudio< T > CreateLocalVoiceAudio< T > (VoiceInfo voiceInfo, IAudioDesc audioSourceDesc, int channelId=0,

**IEncoder** encoder=null)

Creates outgoing audio stream. Adds audio specific features (e.g. resampling, level meter) to processing pipeline and to returning stream handler. More...

LocalVoice CreateLocalVoiceAudioFromSource (VoiceInfo voiceInfo, IAudioDesc source, bool forceShort=false, int channelld=0, **IEncoder** encoder=null) Creates outgoing audio stream of type automatically assigned and adds procedures (callback or serviceable) for consuming given audio source data. Adds audio specific features (e.g. resampling, level meter) to processing pipeline and to returning stream handler. More...

#### void RemoveLocalVoice (LocalVoice voice)

Removes local voice (outgoing data stream).

#### **Parameters**

**voice** Handler of outgoing stream to be removed.

More...

#### void **Dispose** ()

# **Properties**

| 1 Toperties             |   |
|-------------------------|---|
| int                     | FramesLost [get, set] Lost frames counter. More   |
|                         |   |
| int                     | FramesReceived [get] Received frames counter. More  |
|                         |   |
| int                     | FramesSent [get] Sent frames counter. More  |
| int                     | FramesSentBytes [get] Sent frames bytes counter. More   |
|                         |   |
| int                     | RoundTripTime [get] Average time required voice packet to return to sender. More  |
|                         |   |
| int                     | RoundTripTimeVariance [get] Average round trip time variation. More   |
|                         |   |
| bool                    | SuppressInfoDuplicateWarning [get, set] Do not log warning when duplicate info received. More   |
|                         |   |
| RemoteVoiceInfoDelegate | OnRemoteVoiceInfoAction [get, set] Register a method to be called when remote voice info arrived (after join or new new remote voice creation). Metod |
|                         |   |

parameters: (int channelld, int playerld, byte voiceld, **VoiceInfo** voiceInfo, ref **RemoteVoiceOptions** options); More...

int **DebugLostPercent** [get, set]
Lost frames simulation ratio.
More...

IEnumerable < LocalVoice > LocalVoices [get]
Iterates through copy of all local voices list. More...

IEnumerable < Remote VoiceInfo > Remote VoiceInfos [get] Iterates through all remote voices infos. More...

# **Detailed Description**

Voice client interact with other clients on network via IVoiceTransport.

### Member Function Documentation

Creates basic outgoing stream w/o data processing support. Provided encoder should generate output data stream.

#### **Parameters**

voiceInfo Outgoing stream parameters. Set applicable fields to read them by encoder and by receiving client when voice created.

channelld Transport channel specific to transport.encoder Encoder producing the stream.

#### Returns

Outgoing stream handler.

```
LocalVoiceAudio<T>
CreateLocalVoiceAudio< T > (VoiceInfo voiceInfo, IAudioDesc audioSourceDesc, int channelId = 0, IEncoder encoder = null )
```

Creates outgoing audio stream. Adds audio specific features (e.g. resampling, level meter) to processing pipeline and to returning stream handler.

#### **Template Parameters**

T Element type of audio array buffers.

#### **Parameters**

voiceInfo Outgoing audio stream parameters. Set applicable

fields to read them by encoder and by receiving

client when voice created.

**channelld** Transport channel specific to transport.

**encoder** Audio encoder. Set to null to use default Opus

encoder.

#### Returns

Outgoing stream handler.

audioSourceDesc.SamplingRate and voiceInfo.SamplingRate may do not match. Automatic resampling will occur in this case.

#### LocalVoice

CreateLocalVoiceAudioFromSource (VoiceInfo voiceInfo,

IAudioDesc source,

bool forceShort = fal

int channelld = 0,

encoder = null

)

**IEncoder** 

Creates outgoing audio stream of type automatically assigned and added procedures (callback or serviceable) for consuming given audio source data. Adds audio specific features (e.g. resampling, level meter) to processing pipeline and to returning stream handler.

#### **Parameters**

voiceInfo Outgoing audio stream parameters. Set applicable

fields to read them by encoder and by receiving client

when voice created.

**source** Streaming audio source.

forceShort For audio sources producing buffers of 'float' type,

creates stream of 'short' type and adds converter.

**channelld** Transport channel specific to transport.

**encoder** Audio encoder. Set to null to use default Opus encode

#### Returns

Outgoing stream handler.

audioSourceDesc.SamplingRate and voiceInfo.SamplingRate may do not match. Automatic resampling will occur in this case.

Creates outgoing stream consuming sequence of values passed in array buffers of arbitrary length which repacked in frames of constant length for further processing and encoding.

#### **Template Parameters**

Type of data consumed by outgoing stream (element type of array buffers).

#### **Parameters**

voiceInfo Outgoing stream parameters. Set applicable fields to read them by encoder and by receiving client when voice created.

**frameSize** Size of buffer **LocalVoiceFramed** repacks input data stream to.

channelld Transport channel specific to transport.encoder Encoder compressing data stream in pipeline.

#### **Returns**

Outgoing stream handler.

#### IEnumerable<LocalVoice>

#### LocalVoicesInChannel

(int channelld)

Iterates through copy of all local voices list of given channel.

```
delegate void
RemoteVoiceInfoDelegate (int channelld, int playerld, byte voiceInfo, ref RemoteVoiceOptions options)
```

Remote voice info event delegate.

#### void RemoveLocalVoice ( LocalVoice voice )

Removes local voice (outgoing data stream).

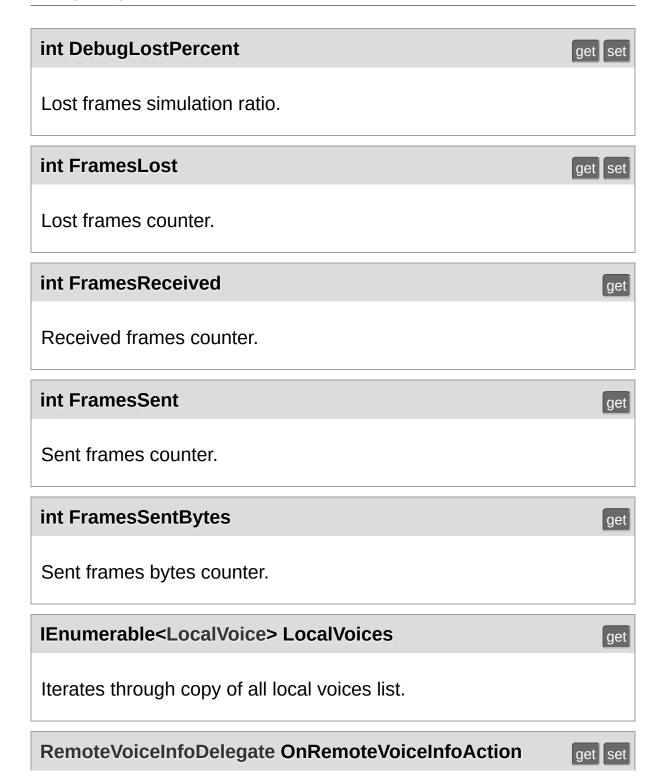
#### **Parameters**

voice Handler of outgoing stream to be removed.

#### void Service ()

This method dispatches all available incoming commands and then sends this client's outgoing commands. Call this method regularly (2..20 times a second).

# **Property Documentation**



Register a method to be called when remote voice info arrived (after join or new new remote voice creation). Metod parameters: (int channelld, int playerld, byte voiceld, **VoiceInfo** voiceInfo, ref **RemoteVoiceOptions** options);

#### IEnumerable<RemoteVoiceInfo> RemoteVoiceInfos

get

Iterates through all remote voices infos.

#### int RoundTripTime

get

Average time required voice packet to return to sender.

#### int RoundTripTimeVariance

get

Average round trip time variation.

#### bool SuppressInfoDuplicateWarning

get set

Do not log warning when duplicate info received.

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| Photon Voi         | ce VoiceEvent | $\rangle$ |         |       |                           |                  |
| VoiceEv<br>Referen | ent Class     | 5         |         | Publi | c Attributes   <u>Lis</u> | t of all members |

# **Public Attributes**

## Member Data Documentation

### const byte Code = 202

Single event used for voice communications.

Change if it conflicts with other event codes used in the same **Photon** room.

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| VoiceIn    | fo Struct    |          | Static F | <u>ublic N</u> | <u> 1ember Function</u> | ns   Properties  |
| Referer    | 100          |          |          |                | <u>Lis</u>              | t of all members |
| Kelelel    | ICE          |          |          |                |                         |                  |

Describes stream properties. <u>More...</u>

# **Public Member Functions**

override string ToString ()

## Static Public Member Functions

### static VoiceInfo CreateAudioOpus

(POpusCodec.Enums.SamplingRate samplingRate,

int channels, OpusCodec.FrameDuration

frameDurationUs, int bitrate, object userdata=null)

Create stream info for an Opus audio stream.

More...

### **Properties**

#### Codec Codec [get, set]

#### int SamplingRate [get, set]

Audio sampling rate (frequency, in Hz). More...

#### int Channels [get, set]

Source audio sampling rate (to be resampled to SamplingRate; in Hz). More...

#### int FrameDurationUs [get, set]

Uncompressed frame (audio packet) size in microseconds. More...

#### int Bitrate [get, set]

Target bitrate (in bits/second). More...

#### object UserData [get, set]

Optional user data. Should be serializable by **Photon**. More...

#### int FrameDurationSamples [get]

Uncompressed frame (data packet) size in samples. More...

### int FrameSize [get]

Uncompressed frame (data packet) array size. More...

#### int Width [get, set]

Video width (optional). More...

### int Height [get, set]

Video height (optional) More...

# **Detailed Description**

Describes stream properties.

### **Member Function Documentation**

```
static VoiceInfo
CreateAudioOpus ( POpusCodec.Enums.SamplingRate samplingF
int channels,
OpusCodec.FrameDuration frameDura
int bitrate,
object userdata =
```

Create stream info for an Opus audio stream.

#### **Parameters**

samplingRate Audio sampling rate.channels Number of channels.

frameDurationUs Uncompressed frame (audio packet) size in mic

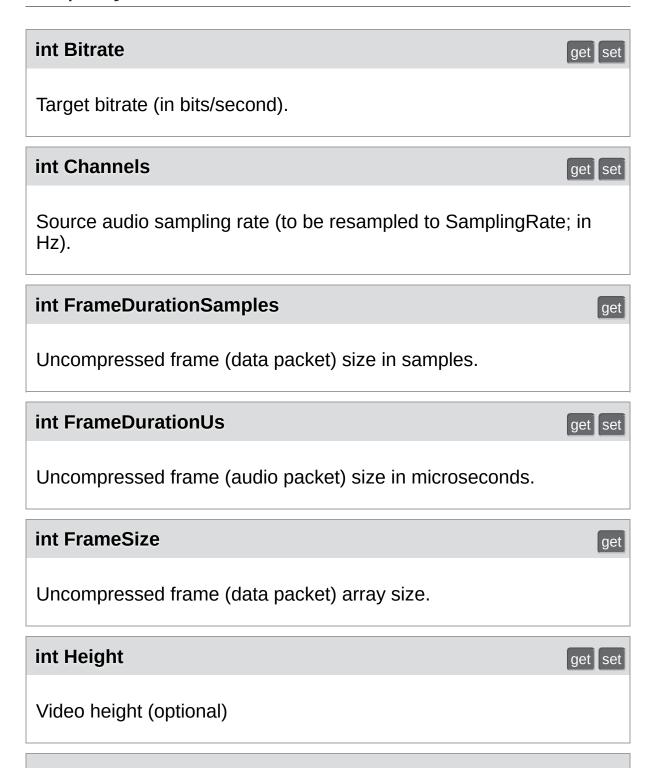
**bitrate** Stream bitrate (in bits/second).

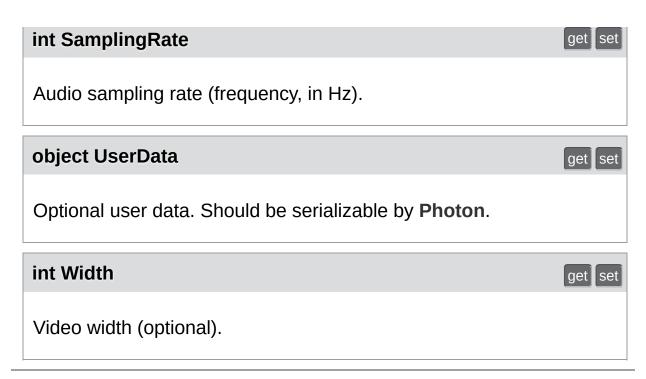
**userdata** Optional user data. Should be serializable by **P** 

#### Returns

VoiceInfo instance.

# **Property Documentation**





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| Main Page                   | in Page Related Pag |          | Class   | es            |   |                                     |  |
|-----------------------------|---------------------|----------|---------|---------------|---|-------------------------------------|--|
| Class List                  | Class Index         | Class Hi | erarchy | Class Members |   |                                     |  |
| Photon Voice WebRTCAudioLib |                     |          |         |               |   |                                     |  |
| WebRTC                      | _                   | b        |         | Class         | <u>es</u>   <u>Public Mem</u><br><u>Lis</u> | ber Functions  <br>t of all members |  |

Inherited by WebRTCAudioProcessor.

## Classes

struct ConfigParam

struct Param

#### **Public Member Functions**

static IntPtr **webrtc\_audio\_processor\_create** (int samplingRate, int channels, int frameSize, int revSamplingRate, int revChannels)

static int **webrtc\_audio\_processor\_set\_config\_param** (IntPtr proc, int param, int v)

static int webrtc\_audio\_processor\_init (IntPtr proc)

static int **webrtc\_audio\_processor\_set\_param** (IntPtr proc, int param, int v)

static int **webrtc\_audio\_processor\_process** (IntPtr proc, short[] buffer, int offset, out bool voiceDetected)

static int **webrtc\_audio\_processor\_process\_reverse** (IntPtr proc, short[] buffer, int bufferSize)

static void webrtc\_audio\_processor\_destroy (IntPtr proc)

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| Photon Voice   | WebRTCAu  | dioLib C | onfigParar | n 〉        |            |  |

Public Attributes | List of all members

# WebRTCAudioLib.ConfigParam Struct Reference

#### **Public Attributes**

const int **AEC\_DELAY\_AGNOSTIC** = 12

const int **AEC\_EXTENDED\_FILTER** = 13

const int **AGC EXPERIMENTAL** = 53

const int **AGC\_EXPERIMENTAL\_STARTUP\_MIN\_VOLUME** = 54

const int **AGC\_EXPERIMENTAL\_CLIP\_LEVEL\_MIN** = 55

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| Photon Voi          | ce WebRTCAu | dioLib P | aram $\rangle$ |       |                    |                  |
|                     |             |          |                | Duhli | c Attributos I Lie | t of all mombors |

## WebRTCAudioLib.Param Struct Reference

#### **Public Attributes**

const int **REVERSE\_STREAM\_DELAY\_MS** = 1

const int AEC = 10

const int **AEC SUPPRESSION LEVEL** = 11

const int AECM = 20

const int **AECM ROUTING MODE** = 21

const int **AECM COMFORT NOISE** = 22

const int **HIGH\_PASS\_FILTER** = 31

const int NS = 41

const int **NS\_LEVEL** = 42

const int AGC = 51

const int **AGC MODE** = 52

const int **AGC\_COMPRESSION\_GAIN** = 56

const int **AGC\_LIMITER** = 57

const int VAD = 61

const int **VAD\_FRAME\_SIZE\_MS** = 62

const int **VAD LIKEHOOD** = 63



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| Class List                           | Class II | ndex         | Class Hi    | erarchy Class Members |         |                 |                |
| Photon Voi                           | ce Web   | RTCAu        | dioProcesso | or $\rangle$          |         |                 |                |
| -                                    |          |              |             | <u> </u>              | ublic N | Member Function | s   Properties |
| <u>List of all members</u>           |          |              |             |                       |         |                 |                |
| WehRTCAudioProcessor Class Reference |          |              |             |                       |         |                 |                |

Inherits WebRTCAudioLib, and IProcessor< short >.

#### **Public Member Functions**

**WebRTCAudioProcessor** (**ILogger** logger, int frameSize, int samplingRate, int channels, int reverseSamplingRate, int reverseChannels)

short[] Process (short[] buf)

void **OnAudioOutFrameFloat** (float∏ data)

void Dispose ()

- ▶ Public Member Functions inherited from WebRTCAudioLib
- Public Member Functions inherited from IProcessor< short >

### **Properties**

int AECStreamDelayMs [set]

bool **AEC** [set]

bool AECMobile [set]

int AECMRoutingMode [set]

bool AECMComfortNoise [set]

bool HighPass [set]

bool NoiseSuppression [set]

bool AGC [set]

bool VAD [set]

bool Bypass [set]

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| Main Page       | Related Pages | Classes |  |
|-----------------|---------------|---------|--|
| Package Functio | ns            |         |  |

## POpusCodec Namespace Reference

Namespaces | Classes

## Namespaces

### namespace **Enums**

## Classes

| class | OpusDecoder   |
|-------|---------------|
| class | OpusEncoder   |
| class | OpusException |
| class | Wrapper       |

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| Main Page Related |               | Pages      | Class               | es                                   |                                       |  |  |
|-------------------|---------------|------------|---------------------|--------------------------------------|---------------------------------------|--|--|
| Class List        | t Class Index |            | Class Hierarchy Cla |                                      | ss Members                            |  |  |
| POpusCodec        | $\rangle$ o   | pusDecoder | $\rangle$           |                                      |                                       |  |  |
| OpusDe<br>Referer | ass           | <u>P</u>   | Public N            | <u>lember Functior</u><br><u>Lis</u> | ns   Properties  <br>t of all members |  |  |

Inherits IDisposable.

### **Public Member Functions**

**OpusDecoder** (SamplingRate outputSamplingRateHz, **Channels** numChannels)

float[] DecodePacketFloat (byte[] packetData)

short[] DecodePacketShort (byte[] packetData)

void Dispose ()

## **Properties**

string **Version** [get]

Bandwidth PreviousPacketBandwidth [get]

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| Main Page Related |                        | Pages     | Pages Classes     |                                       |  |  |
|-------------------|------------------------|-----------|-------------------|---------------------------------------|--|--|
| Class List        | Class List Class Index |           | ss Hierarchy Clas |                                       | ss Members                             |  |
| POpusCodec        | OpusEncoder            | $\rangle$ |                   |                                       |  |  |
| OpusEr            | ass                    | Public I  | Membe             | er Functions   Pu<br>Properties   Lis | iblic Attributes  <br>t of all members |  |
| Referen           |                        |           |                   |                                       |  |  |

Inherits IDisposable.

#### **Public Member Functions**

OpusEncoder (SamplingRate inputSamplingRateHz, Channels numChannels, int bitrate, OpusApplicationType applicationType, Delay encoderDelay)

ArraySegment< byte > **Encode** (float[] pcmSamples)

ArraySegment< byte > **Encode** (short[] pcmSamples)

void Dispose ()

## Public Attributes

const int **BitrateMax** = -1

## Properties

| SamplingRate  | InputSamplingRate [get]   |
|---------------|---|
| Channels      | InputChannels [get]   |
| strina        | Version [get]   |
| Stillig       | version [get]   |
| Delay         | EncoderDelay [get, set] Using a duration of less than 10 ms will prevent the encoder from using the LPC or hybrid modes. More |
| int           | FrameSizePerChannel [get]   |
|               |   |
| int           | Bitrate [get, set]  |
| Bandwidth     | MaxBandwidth [get, set]   |
| Complexity    | Complexity [get, set]   |
| int           | ExpectedPacketLossPercentage [get, set]   |
| SignalHint    | SignalHint [get, set]   |
| ForceChannels | ForceChannels [get, set]  |
| bool          | UseInbandFEC [get, set]   |
| bool          | UseUnconstrainedVBR [get, set]  |
| bool          | DtxEnabled [get, set]   |

## **Property Documentation**

#### **Delay EncoderDelay**





Using a duration of less than 10 ms will prevent the encoder from using the LPC or hybrid modes.

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| Main Page Related F           |             | Pages        | Class    | es       |          |                                      |  |
|-------------------------------|-------------|--------------|----------|----------|----------|--------------------------------------|--|
| Class List                    | C           | lass Index   | Class Hi | erarchy  | Cla      | ss Members                           |  |
| POpusCodec                    | $\rangle$ o | pusException | 1 >      |          |          |                                      |  |
| OpusException Class Reference |             |              |          | <u>P</u> | Public N | <u>lember Functior</u><br><u>Lis</u> | ns   <u>Properties</u>  <br>t of all members |

Inherits Exception.

## **Public Member Functions**

OpusException (OpusStatusCode statusCode, string message)

## **Properties**

OpusStatusCode [get]

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## Photon Voice v2.7

| Main Page Related |   | Pages       | Class    | es      |     |            |  |
|-------------------|---|-------------|----------|---------|-----|------------|--|
| Class List        | C | Class Index | Class Hi | erarchy | Cla | ss Members |  |

#### **Class Index**

#### $A \mid B \mid C \mid D \mid E \mid F \mid I \mid L \mid M \mid O \mid P \mid R \mid S \mid T \mid U \mid V \mid W$



В

BufferReaderPushAdapter (Photon.Voice)
BufferReaderPushAdapterAsyncPool (Photon.Voice)
BufferReaderPushAdapterAsyncPoolCopy (Photon.Voice)
BufferReaderPushAdapterAsyncPoolFloatToShort (Photon.Voice)
BufferReaderPushAdapterBase (Photon.Voice)

С

WebRTCAudioLib.ConfigParam (Photon.Voice)
ConnectAndJoin (Photon.Voice.Unity.UtilityScripts)

D

OpusCodec.Decoder (Photon.Voice)
OpusCodec.DecoderFactory (Photon.Voice)

## OpusCodec.DecoderFloat (Photon.Voice) OpusCodec.DecoderShort (Photon.Voice)



**OpusCodec.Encoder (Photon.Voice)** 

#### $A \mid B \mid C \mid D \mid E \mid F \mid I \mid L \mid M \mid O \mid P \mid R \mid S \mid T \mid U \mid V \mid W$

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| Main Page Related |   | Pages       | Class    | es      |     |            |  |
|-------------------|---|-------------|----------|---------|-----|------------|--|
| Class List        | C | Class Index | Class Hi | erarchy | Cla | ss Members |  |

### **Class Hierarchy**

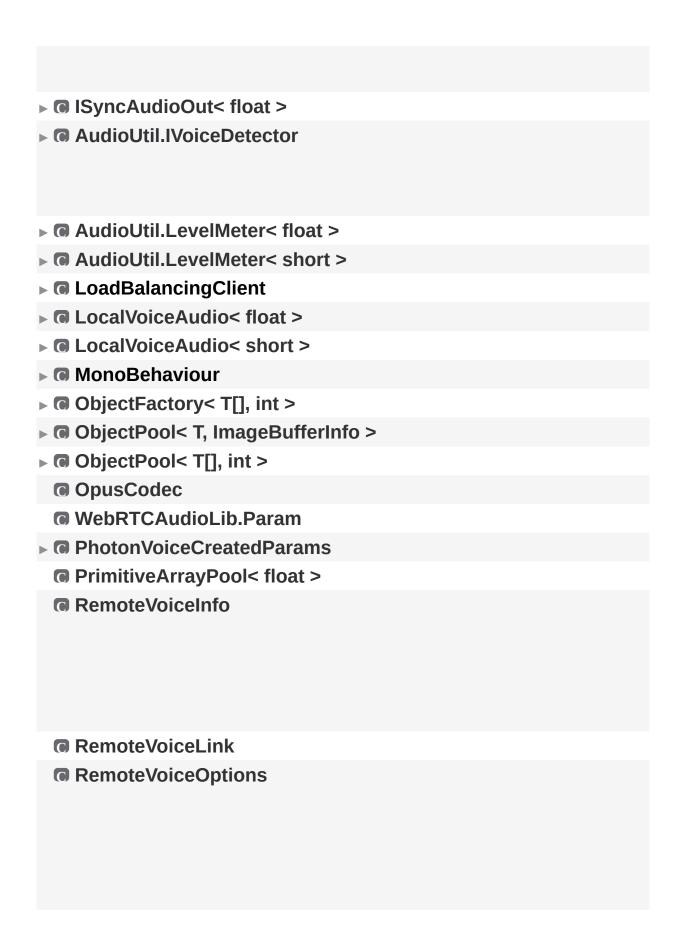
This inheritance list is sorted roughly, but not completely, alphabetically:

[detail level 1 2 3 4 5]

- AudioSessionParameters
- AudioSessionParametersPresets
- AudioUtil
- - WebRTCAudioLib.ConfigParam
- **▶ (a)** ConnectionHandler
- - OpusCodec.DecoderFactory

- **▶ @** Exception
  - OpusCodec.Factory
  - Framer< T >
  - Framer< float >

| C  |
|----|
| la |
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- OpusCodec.Util
- - VoiceEvent
  - VoiceInfo

#### 

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| I | Mai   | n P           | ag | ge Related Pages Classes |            |      |     |   |    |     |      |          |    |   |                      |      |   |   |  |  |  |
|---|-------|---------------|----|--------------------------|------------|------|-----|---|----|-----|------|----------|----|---|----------------------|------|---|---|--|--|--|
| C | Class | ass List Clas |    |                          |            | s In | dex |   | CI | ass | Hier | arch     | ny |   | <b>Class Members</b> |      |   |   |  |  |  |
| F | AII   | Functions     |    |                          | ons Variab |      |     |   | es |     | Prop | operties |    |   | Eve                  | ents |   |   |  |  |  |
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Here is a list of all documented class members with links to the class documentation for each member:

#### - a -

- AccumAvgPeakAmp : AudioUtil.ILevelMeter
- AcquireOrCreate(): ObjectPool< TType, TInfo >
- ActivityDelayMs: AudioUtil.IVoiceDetector, AudioUtil.VoiceDetector< T >
- Actor : Speaker
- AddPostProcessor(): LocalVoiceFramed< T >
- AddPreProcessor(): LocalVoiceFramed< T >
- AudioClip : Recorder
- AudioGroup : Recorder
- AutoConnectAndJoin : PhotonVoiceNetwork
- AutoCreateRecorderIfNotFound : PhotonVoiceView
- AutoCreateSpeakerIfNotFound : PhotonVoiceNetwork
- AutoLeaveAndDisconnect : PhotonVoiceNetwork
- AutoStart : Recorder

## Photon Voice v2.7

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| P | AII   | Functions   |    |   | ns Variab |      |     |     | es  |     | Prop | operties |     |     | Eve           | ents |   |   |  |  |  |  |
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Here is a list of all documented class members with links to the class documentation for each member:

#### - b -

- Bitrate: Recorder, VoiceInfo
- BufferReaderPushAdapter(): BufferReaderPushAdapter< T >
- BufferReaderPushAdapterAsyncPool():
   BufferReaderPushAdapterAsyncPool< T >
- BufferReaderPushAdapterAsyncPoolCopy():
   BufferReaderPushAdapterAsyncPoolCopy< T >
- BufferReaderPushAdapterAsyncPoolFloatToShort():
   BufferReaderPushAdapterAsyncPoolFloatToShort
- BufferReaderPushAdapterBase():BufferReaderPushAdapterBase< T >

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| I | Mai   | n P          | ag | е | ı          | Rel  | ate | d F | ag                  | es |      | CI       | ass | ses |     |      |     |      |  |  |  |
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| C | Class | s List Class |    |   |            | s In | dex |     | Class Hierarchy Cla |    |      |          |     |     |     |      | lem | bers |  |  |  |
| P | AII   | Functions    |    |   | ns Variabl |      |     |     | es                  |    | Prop | operties |     |     | Eve | ents |     |      |  |  |  |
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Here is a list of all documented class members with links to the class documentation for each member:

#### - C -

- Calibrate(): AudioUtil.VoiceDetectorCalibration< T > ,
   AudioUtil.VoiceLevelDetectCalibrate< T >
- Channelld: RemoteVoiceInfo
- Channels : AudioUtil.ToneAudioReader< T > , IAudioDesc , VoiceInfo
- ClearProcessors(): LocalVoiceFramed< T >
- ClientState : VoiceConnection
- Code : VoiceEvent
- ConnectAndJoinRoom(): PhotonVoiceNetwork
- ConnectUsingSettings() : VoiceConnection
- Convert(): AudioUtil
- Count(): Framer< T >
- Create(): LocalVoiceAudio< T >
- CreateAudioOpus(): VoiceInfo
- CreateLocalVoice(): VoiceClient
- CreateLocalVoiceAudio< T >(): VoiceClient
- CreateLocalVoiceAudioFromSource(): VoiceClient
- CreateLocalVoiceFramed< T >(): VoiceClient
- CurrentAvgAmp : AudioUtil.ILevelMeter
- CurrentPeakAmp : AudioUtil.ILevelMeter



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Here is a list of all documented class members with links to the class documentation for each member:

#### - d -

- DebugEchoMode : LocalVoice , Recorder
- DebugLostPercent : VoiceClient
- Decoder : RemoteVoiceOptions
- DequeueOutput(): IEncoder
- Detected : AudioUtil.IVoiceDetector , AudioUtil.VoiceDetector 
   T >
- DetectedTime : AudioUtil.IVoiceDetector , AudioUtil.VoiceDetector < T >
- Disconnect(): PhotonVoiceNetwork
- Dispose(): BufferReaderPushAdapterBase< T > , LoadBalancingTransport , LocalVoiceFramed< T > , ObjectPool< TType, TInfo >
- Dummy : LocalVoiceAudioDummy

## Photon Voice v2.7

| r | Mai   | n P           | ag | е | Related Pages Classes |      |     |   |    |     |      |          |    |   |      |      |     |      |  |  |
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Here is a list of all documented class members with links to the class documentation for each member:

#### -е-

- EncoderDelay : OpusEncoder
- Encrypt : LocalVoice , Recorder
- Error : AudioUtil.ToneAudioReader< T > , IAudioDesc , IDecoder , IEncoder

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Here is a list of all documented class members with links to the class documentation for each member:

#### - f -

- ForceToStereo< T >(): AudioUtil
- Frame() : **Framer**< **T** >
- FrameDuration : Recorder
- FrameDurationSamples : VoiceInfo
- FrameDurationUs: VoiceInfo
- Framer(): Framer< T >
- FrameSize : LocalVoiceFramedBase , VoiceInfo
- FramesLost : VoiceClient
- FramesLostPercent : VoiceConnection
- FramesLostPerSecond : VoiceConnection
- FramesReceived : VoiceClient
- FramesReceivedPerSecond : VoiceConnection
- FramesSent : LocalVoice , VoiceClient
- FramesSentBytes : LocalVoice , VoiceClient

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Here is a list of all documented class members with links to the class documentation for each member:

- g -
  - GlobalInterestGroup : LoadBalancingTransport

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Here is a list of all documented class members with links to the class documentation for each member:

- h -
  - Height : VoiceInfo

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Here is a list of all documented class members with links to the class documentation for each member:

#### - i -

- Info : LocalVoice , ObjectPool< TType, TInfo > , RemoteVoiceInfo
- Init(): ObjectPool< TType, TInfo > , Recorder
- Input(): IDecoder , IEncoderDirect< B > ,
   OpusCodec.Decoder< T >
- InputFactory : Recorder
- Instance : PhotonVoiceNetwork
- InterestGroup : LocalVoice , Recorder
- IsCurrentlyTransmitting : LocalVoice , Recorder
- IsInitialized : Recorder
- IsLinked : Speaker
- IsPlaying : Speaker
- IsRecorder : PhotonVoiceView
- IsRecording : PhotonVoiceView , Recorder
- IsSetup : PhotonVoiceView
- IsSpeaker : PhotonVoiceView
- IsSpeaking : PhotonVoiceView



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Here is a list of all documented class members with links to the class documentation for each member:

#### - 1 -

- Lag : Speaker
- LevelMeter: AudioUtil.VoiceLevelDetectCalibrate< T > , ILocalVoiceAudio , Recorder
- LevelMeterFloat(): AudioUtil.LevelMeterFloat
- LevelMeterShort(): AudioUtil.LevelMeterShort
- LoadBalancingTransport(): LoadBalancingTransport
- LocalUserServiceable : LocalVoice
- LocalVoices : VoiceClient
- LocalVoicesInChannel(): VoiceClient
- Logger: VoiceConnectionLogLevel: VoiceConnection
- LoopAudioClip : Recorder

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Here is a list of all documented class members with links to the class documentation for each member:

- m -
  - MicrophoneType : Recorder

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Here is a list of all documented class members with links to the class documentation for each member:

#### **- 0 -**

- ObjectPool(): ObjectPool< TType, TInfo >
- On : AudioUtil.IVoiceDetector , AudioUtil.VoiceDetector < T >
- OnDetected : AudioUtil.IVoiceDetector , AudioUtil.VoiceDetector< T >
- OnRemoteVoiceInfoAction: VoiceClient
- OnRemoteVoiceRemoveAction: RemoteVoiceOptions, Speaker
- Open(): IDecoder, OpusCodec.Decoder< T >
- Output : IEncoder

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Here is a list of all documented class members with links to the class documentation for each member:

#### - p -

- PhotonMicrophoneDeviceId : Recorder
- PhotonMicrophoneEnumerator : Recorder
- PlayerId : RemoteVoiceInfo
- PrimaryRecorder : VoiceConnection
- Process(): AudioUtil.LevelMeter< T > , AudioUtil.Resampler
   T > , AudioUtil.VoiceDetector< T > ,
   AudioUtil.VoiceDetectorCalibration< T > ,
   AudioUtil.VoiceLevelDetectCalibrate< T > , IProcessor< T >
- PushData(): LocalVoiceFramed< T >
- PushDataÄsync(): LocalVoiceFramed< T >
- PushDataAsyncReady : LocalVoiceFramed< T >

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Here is a list of all documented class members with links to the class documentation for each member:

#### - r -

- Read(): AudioUtil.ToneAudioReader< T > , IDataReader< T >
- RecorderInUse : PhotonVoiceView
- Release(): ObjectPool< TType, TInfo >
- Reliable : LocalVoice
- ReliableMode : Recorder
- RemoteVoiceAdded: VoiceConnection
- RemoteVoiceInfoDelegate(): VoiceClient
- RemoteVoiceInfos: VoiceClient
- RemoveLocalVoice(): VoiceClient
- RemoveSelf(): LocalVoice
- RequiresRestart : Recorder
- Resample< T >(): AudioUtil
- ResampleAndConvert(): AudioUtil
- Resampler(): AudioUtil.Resampler< T >
- ResetAccumAvgPeakAmp(): AudioUtil.ILevelMeter,
   AudioUtil.LevelMeter< T > , AudioUtil.LevelMeterDummy
- RestartRecording(): Recorder
- RoundTripTime : VoiceClient
- RoundTripTimeVariance : VoiceClient



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| C | Class | s Lis | st  | C     | Clas | s In | dex  |     | CI  | ass | Hier | arch  | ny |     | Clas | ss M | lem | bers |  |  |  |
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Here is a list of all documented class members with links to the class documentation for each member:

#### - S -

- SamplingRate : AudioUtil.ToneAudioReader< T > , IAudioDesc , Recorder , VoiceInfo
- SendDebugEchoVoicesInfo(): LoadBalancingTransport
- Service(): BufferReaderPushAdapter< T > ,
   BufferReaderPushAdapterAsyncPool< T > ,
   BufferReaderPushAdapterAsyncPoolCopy< T > ,
   BufferReaderPushAdapterAsyncPoolFloatToShort ,
   BufferReaderPushAdapterBase< T > , IServiceable ,
   LoadBalancingTransport , VoiceClient
- SetCallback(): AudioUtil.ToneAudioPusher< T > ,
   IAudioPusher< T >
- SetOutput(): RemoteVoiceOptions
- Settings : VoiceConnection
- SetupDebugSpeaker : PhotonVoiceView
- SourceType : Recorder
- SpeakerFactory: VoiceConnection
- SpeakerInUse : PhotonVoiceView
- SpeakerLinked: VoiceConnection
- SpeakerPrefab : VoiceConnection
- StartRecording(): Recorder
- StopRecording(): Recorder
- SuppressInfoDuplicateWarning : VoiceClient

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Here is a list of all documented class members with links to the class documentation for each member:

#### - t -

- Threshold : AudioUtil.IVoiceDetector , AudioUtil.VoiceDetector< T >
- ToneAudioPusher(): AudioUtil.ToneAudioPusher< T >
- ToneAudioReader(): AudioUtil.ToneAudioReader< T >
- TransmitEnabled : LocalVoice , Recorder
- TypeConvert : Recorder

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Here is a list of all documented class members with links to the class documentation for each member:

#### - u -

- UnityMicrophoneDevice : Recorder
- UnsupportedCodecException(): UnsupportedCodecException
- UnsupportedSampleTypeException():
   UnsupportedSampleTypeException
- UsePrimaryRecorder : PhotonVoiceView
- UserData: Recorder, VoiceInfo

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Here is a list of all documented class members with links to the class documentation for each member:

#### - V -

- VoiceClient: LoadBalancingTransport, VoiceConnection
- VoiceDetection : Recorder
- VoiceDetectionDelayMs : Recorder
- VoiceDetectionThreshold : Recorder
- VoiceDetector : AudioUtil.VoiceLevelDetectCalibrate< T > , ILocalVoiceAudio , Recorder
- VoiceDetectorCalibrate(): ILocalVoiceAudio, LocalVoiceAudio
   T > , LocalVoiceAudioDummy , Recorder
- VoiceDetectorCalibrating : ILocalVoiceAudio , LocalVoiceAudio < T > , Recorder
- VoiceDetectorCalibration():
  - AudioUtil.VoiceDetectorCalibration< T >
- VoiceDetectorFloat(): AudioUtil.VoiceDetectorFloat
- VoiceDetectorShort(): AudioUtil.VoiceDetectorShort
- Voiceld: RemoteVoiceInfo
- VoiceLevelDetectCalibrate():
   AudioUtil.VoiceLevelDetectCalibrate< T >
- VoiceRoomNameSuffix : PhotonVoiceNetwork

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Here is a list of all documented class members with links to the class documentation for each member:

- W -
  - Width: VoiceInfo

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| A | All Functions    |   | ns |      | Vai  | riabl           | les |     | Pro | per | ties  | Ev  | ents |        |       |  |  |
| a | b                | С | d  | f    | i    | 1               | o   | р   | r   | s   | t     | u   | v    |        |       |  |  |

#### - a -

- AcquireOrCreate(): ObjectPool< TType, TInfo >
- AddPostProcessor(): LocalVoiceFramed< T >
- AddPreProcessor(): LocalVoiceFramed< T >

#### - b -

- BufferReaderPushAdapter(): BufferReaderPushAdapter< T >
- BufferReaderPushAdapterAsyncPool():
   BufferReaderPushAdapterAsyncPool< T >
- BufferReaderPushAdapterAsyncPoolCopy():
   BufferReaderPushAdapterAsyncPoolCopy< T >
- BufferReaderPushAdapterAsyncPoolFloatToShort():
   BufferReaderPushAdapterAsyncPoolFloatToShort
- BufferReaderPushAdapterBase() : BufferReaderPushAdapterBase< T >

#### - C -

- Calibrate(): AudioUtil.VoiceDetectorCalibration< T > ,
   AudioUtil.VoiceLevelDetectCalibrate< T >
- ClearProcessors(): LocalVoiceFramed< T >
- ConnectAndJoinRoom(): PhotonVoiceNetwork
- ConnectUsingSettings(): VoiceConnection
- Convert(): AudioUtil

- Count(): Framer< T >
- Create(): LocalVoiceAudio< T >
- CreateAudioOpus(): VoiceInfo
- CreateLocalVoice(): VoiceClient
- CreateLocalVoiceAudio< T >(): VoiceClient
- CreateLocalVoiceAudioFromSource(): VoiceClient
- CreateLocalVoiceFramed< T >(): VoiceClient

#### - d -

- DequeueOutput(): IEncoder
- Disconnect(): PhotonVoiceNetwork
- Dispose(): BufferReaderPushAdapterBase< T > , LoadBalancingTransport , LocalVoiceFramed< T > , ObjectPool< TType, TInfo >

#### - f -

- ForceToStereo< T >(): AudioUtil
- Frame() : Framer< T >
- Framer(): Framer< T >

### - i -

- Init(): ObjectPool< TType, TInfo > , Recorder
- Input(): IDecoder , IEncoderDirect< B > ,
   OpusCodec.Decoder< T >

#### - 1 -

- LevelMeterFloat(): AudioUtil.LevelMeterFloat
- LevelMeterShort(): AudioUtil.LevelMeterShort
- LoadBalancingTransport(): LoadBalancingTransport
- LocalVoicesInChannel(): VoiceClient

- ObjectPool(): ObjectPool< TType, TInfo >
- Open(): IDecoder, OpusCodec.Decoder< T >

#### - p -

- Process(): AudioUtil.LevelMeter< T > , AudioUtil.Resampler
   T > , AudioUtil.VoiceDetector< T > ,
   AudioUtil.VoiceDetectorCalibration< T > ,
   AudioUtil.VoiceLevelDetectCalibrate< T > , IProcessor< T >
- PushData(): LocalVoiceFramed< T >
- PushDataAsync(): LocalVoiceFramed< T >

#### - r -

- Read(): AudioUtil.ToneAudioReader< T > , IDataReader< T >
- Release(): ObjectPool< TType, TInfo >
- RemoteVoiceInfoDelegate(): VoiceClient
- RemoveLocalVoice(): VoiceClient
- RemoveSelf(): LocalVoice
- Resample< T >() : AudioUtil
- ResampleAndConvert() : AudioUtil
- Resampler(): AudioUtil.Resampler< T >
- ResetAccumAvgPeakAmp(): AudioUtil.ILevelMeter,
   AudioUtil.LevelMeter< T > , AudioUtil.LevelMeterDummy
- RestartRecording(): Recorder

#### - S -

- SendDebugEchoVoicesInfo(): LoadBalancingTransport
- Service(): BufferReaderPushAdapter< T > ,
   BufferReaderPushAdapterAsyncPool< T > ,
   BufferReaderPushAdapterAsyncPoolCopy< T > ,
   BufferReaderPushAdapterAsyncPoolFloatToShort ,
   BufferReaderPushAdapterBase< T > , IServiceable ,
   LoadBalancingTransport , VoiceClient
- SetCallback(): AudioUtil.ToneAudioPusher< T > ,
   IAudioPusher< T >
- SetOutput(): RemoteVoiceOptions

StartRecording(): RecorderStopRecording(): Recorder

#### - t -

- ToneAudioPusher(): AudioUtil.ToneAudioPusher< T >
- ToneAudioReader(): AudioUtil.ToneAudioReader< T >

#### - u -

- UnsupportedCodecException(): UnsupportedCodecException
- UnsupportedSampleTypeException():
   UnsupportedSampleTypeException

#### - V -

- VoiceDetectorCalibrate(): ILocalVoiceAudio, LocalVoiceAudio
   T > , LocalVoiceAudioDummy , Recorder
- VoiceDetectorCalibration():
   AudioUtil.VoiceDetectorCalibration< T >
- VoiceDetectorFloat(): AudioUtil.VoiceDetectorFloat
- VoiceDetectorShort(): AudioUtil.VoiceDetectorShort
- VoiceLevelDetectCalibrate():
   AudioUtil.VoiceLevelDetectCalibrate< T >

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- AutoConnectAndJoin : PhotonVoiceNetwork
- AutoCreateRecorderIfNotFound : PhotonVoiceView
- AutoCreateSpeakerIfNotFound : PhotonVoiceNetwork
- AutoLeaveAndDisconnect : PhotonVoiceNetwork
- Code : VoiceEvent
- Dummy : LocalVoiceAudioDummy
- PrimaryRecorder : VoiceConnection
- Settings : VoiceConnection
- SetupDebugSpeaker : PhotonVoiceView
- SpeakerFactory: VoiceConnection
- UsePrimaryRecorder : PhotonVoiceView
- VoiceRoomNameSuffix : PhotonVoiceNetwork

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#### - a -

• AccumAvgPeakAmp : AudioUtil.ILevelMeter

 ActivityDelayMs: AudioUtil.IVoiceDetector, AudioUtil.VoiceDetector< T >

• Actor : Speaker

AudioClip : Recorder
 AudioGroup : Recorder
 AutoStart : Recorder

#### - b -

• Bitrate : Recorder , VoiceInfo

#### - C -

• Channelld : RemoteVoiceInfo

 Channels: AudioUtil.ToneAudioReader< T > , IAudioDesc , VoiceInfo

• ClientState : VoiceConnection

CurrentAvgAmp : AudioUtil.ILevelMeter
 CurrentPeakAmp : AudioUtil.ILevelMeter

#### - d -

- DebugEchoMode : LocalVoice , Recorder
- DebugLostPercent : VoiceClient
- Decoder : RemoteVoiceOptions
- Detected : AudioUtil.IVoiceDetector , AudioUtil.VoiceDetector 
   T >
- DetectedTime : AudioUtil.IVoiceDetector , AudioUtil.VoiceDetector< T >

#### - e -

- EncoderDelay : OpusEncoder
- Encrypt : LocalVoice , Recorder
- Error : AudioUtil.ToneAudioReader< T > , IAudioDesc , IDecoder , IEncoder

#### - f -

- FrameDuration : Recorder
- FrameDurationSamples : VoiceInfo
- FrameDurationUs: VoiceInfo
- FrameSize : LocalVoiceFramedBase , VoiceInfo
- FramesLost : VoiceClient
- FramesLostPercent: VoiceConnection
- FramesLostPerSecond : VoiceConnection
- FramesReceived : VoiceClient
- FramesReceivedPerSecond : VoiceConnection
- FramesSent : LocalVoice , VoiceClient
- FramesSentBytes : LocalVoice , VoiceClient

#### - g -

• GlobalInterestGroup : LoadBalancingTransport

#### - h -

• Height: VoiceInfo

#### - i -

- Info : LocalVoice , ObjectPool< TType, TInfo > , RemoteVoiceInfo
- InputFactory : Recorder
- Instance : PhotonVoiceNetwork
- InterestGroup : LocalVoice , Recorder
- IsCurrentlyTransmitting : LocalVoice , Recorder
- IsInitialized : Recorder
- IsLinked : Speaker
- IsPlaying : Speaker
- IsRecorder : PhotonVoiceView
- IsRecording : PhotonVoiceView , Recorder
- IsSetup : PhotonVoiceView
- IsSpeaker : PhotonVoiceView
- IsSpeaking : PhotonVoiceView

#### - 1 -

- Lag : Speaker
- LevelMeter: AudioUtil.VoiceLevelDetectCalibrate< T > , ILocalVoiceAudio , Recorder
- LocalUserServiceable : LocalVoice
- LocalVoices : VoiceClient
- Logger: VoiceConnection
- LogLevel : VoiceConnection
- LoopAudioClip : Recorder

#### - m -

• MicrophoneType : Recorder

#### - 0 -

- On: AudioUtil.IVoiceDetector, AudioUtil.VoiceDetector< T >
- OnRemoteVoiceInfoAction: VoiceClient
- OnRemoteVoiceRemoveAction: RemoteVoiceOptions, Speaker
- Output : **IEncoder**

#### - p -

- PhotonMicrophoneDeviceId : Recorder
- PhotonMicrophoneEnumerator : Recorder
- PlayerId : RemoteVoiceInfo
- PushDataAsyncReady : LocalVoiceFramed< T >

#### - r -

- RecorderInUse : PhotonVoiceView
- Reliable : LocalVoice
- ReliableMode : Recorder
- RemoteVoiceInfos: VoiceClient
- RequiresRestart : Recorder
- RoundTripTime : VoiceClient
- RoundTripTimeVariance : VoiceClient

#### - S -

- SamplingRate : AudioUtil.ToneAudioReader< T > , IAudioDesc , Recorder , VoiceInfo
- SourceType : Recorder
- SpeakerInUse : PhotonVoiceView
- SpeakerPrefab : VoiceConnection
- SuppressInfoDuplicateWarning : VoiceClient

#### - t -

- Threshold : AudioUtil.IVoiceDetector , AudioUtil.VoiceDetector < T >
- TransmitEnabled : LocalVoice , Recorder
- TypeConvert : Recorder

#### - u -

- UnityMicrophoneDevice : Recorder
- UserData : Recorder , VoiceInfo

#### - V -

- VoiceClient : LoadBalancingTransport , VoiceConnection
- VoiceDetection : Recorder
- VoiceDetectionDelayMs : Recorder
- VoiceDetectionThreshold : Recorder
- VoiceDetector : AudioUtil.VoiceLevelDetectCalibrate< T > , ILocalVoiceAudio , Recorder
- VoiceDetectorCalibrating : ILocalVoiceAudio , LocalVoiceAudio < T > , Recorder
- Voiceld : RemoteVoiceInfo
- W -
  - Width: VoiceInfo

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 OnDetected : AudioUtil.IVoiceDetector , AudioUtil.VoiceDetector< T >

• RemoteVoiceAdded: VoiceConnection

• SpeakerLinked : VoiceConnection

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Main Page Related Pages Classes

### **Related Pages**

Here is a list of all related documentation pages:

**Photon Voice Doxygen Readme** 

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| Package Functio | ns                       |         |              |
| POpusCodec > E  | Enums                    |         |              |
| -               | dec.Enums<br>ce Referenc | e       | Enumerations |

### **Enumerations**

enum Bandwidth: int

enum Channels: int

enum Complexity: int

enum **Delay** 

Using a duration of less than 10 ms will prevent the encoder from using the LPC or hybrid modes. More...

enum ForceChannels: int

enum OpusApplicationType: int

enum **OpusStatusCode**: int

enum **SamplingRate**: int

enum **SignalHint**: int

### **Enumeration Type Documentation**

| : int                         |
|-------------------------------|
|                               |
| Up to 4Khz                    |
| Up to 6Khz                    |
| Up to 8Khz                    |
| Up to 12Khz                   |
| Up to 20Khz (High Definition) |
|                               |

| enum Ch   | enum Channels : int |  |  |  |  |
|-----------|---------------------|--|--|--|--|
| Enumerate | or                  |  |  |  |  |
| Mono      | 1 Channel           |  |  |  |  |
| Stereo    | 2 Channels          |  |  |  |  |

### enum Delay strong

Using a duration of less than 10 ms will prevent the encoder from using the LPC or hybrid modes.

| Enumerator   |       |
|--------------|-------|
| Delay2dot5ms | 2.5ms |
| Delay5ms     | 5ms   |
| Delay10ms    | 10ms  |
| Delay20ms    | 20ms  |
| Delay40ms    | 40ms  |
| Delay60ms    | 60ms  |

| enum OpusApplication | onType : int strong  |
|----------------------|--|
| Enumerator           |  |
| Voip                 | Gives best quality at a given bitrate for voice signals. It enhances the input signal by high-pass filtering and emphasizing formants and harmonics. Optionally it includes in-band forward error correction to protect against packet loss. Use this mode for typical VoIP applications. Because of the enhancement, even at high bitrates the output may sound different from the input. |
| Audio                | Gives best quality at a given bitrate for most non-voice signals like music. Use this mode for music and mixed (music/voice) content, broadcast, and applications requiring less than 15 ms of coding delay.   |
| RestrictedLowDelay   | Configures low-delay mode that disables the speech-optimized mode in exchange for slightly reduced delay.  |

| enum S  | ignalHint : int                                      | ong |
|---------|--|-----|
| Enumera | tor  |     |
| Auto    | (default)  |     |
| Voice   | Bias thresholds towards choosing LPC or Hybrid modes |     |
| Music   | Bias thresholds towards choosing MDCT modes.         |     |

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| Photon Voice IOS AudioSessionParameters |  |               |                 | arameters | $\rangle$ |            |  |

### **AudioSessionParameters Member List**

This is the complete list of members for **AudioSessionParameters**, including all inherited members.

| Category (defined in AudioSessionParameters)               | <b>Audic</b> |
|--|--------------|
| CategoryOptions (defined in AudioSessionParameters)        | <b>Audic</b> |
| CategoryOptionsToInt() (defined in AudioSessionParameters) | Audic        |
| Mode (defined in AudioSessionParameters)                   | Audic        |
| ToString() (defined in AudioSessionParameters)             | Audic        |

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| Photon Voice IOS AudioSessionParametersPresets |  |               |                 |         |     |            |  |

### **AudioSessionParametersPresets Member List**

This is the complete list of members for **AudioSessionParametersPresets**, including all inherited members.

Game (defined in AudioSessionParametersPresets) AudioSessionP
VoIP (defined in AudioSessionParametersPresets) AudioSessionP

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| Photon               | Voice | e PUN | Pho                | tonVoiceNe | twork   |            |  |  |

### PhotonVoiceNetwork Member List

This is the complete list of members for **PhotonVoiceNetwork**, including all inherited members.

**AutoConnectAndJoin** 

AutoCreateSpeakerIfNotFound

**AutoLeaveAndDisconnect** 

Awake() (defined in PhotonVoiceNetwork)

cachedRemoteVoices (defined in VoiceConnection)

CalcStatistics() (defined in VoiceConnection)

Client (defined in VoiceConnection)

ClientState

ConnectAndJoinRoom()

ConnectUsingSettings(AppSettings overwriteSettings=null)

**Disconnect()** 

FixedUpdate() (defined in VoiceConnection)

**FramesLostPercent** 

**FramesLostPerSecond** 

**FramesReceivedPerSecond** 

Instance

LinkSpeaker (Speaker speaker, RemoteVoiceLink remoteVoice) (defined

Logger

LogLevel

OnApplicationQuit() (defined in PhotonVoiceNetwork)

OnVoiceStateChanged(ClientState fromState, ClientState toState) (def PrimaryRecorder

RemoteVoiceAdded

**Settings** 

**SimpleSpeakerFactory**(int playerId, byte voiceId, object userData) (def **SpeakerFactory** 

**SpeakerLinked** 

**SpeakerPrefab** 

Update() (defined in VoiceConnection)

VoiceClient

**VoiceRoomNameSuffix** 

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| Class List                       | Clas | s Index       | Class Hi | erarchy | Cla | ss Members |  |
| Photon Voice PUN PhotonVoiceView |      |               |          |         |     |            |  |

### **PhotonVoiceView Member List**

This is the complete list of members for **PhotonVoiceView**, including all inherited members.

| AutoCreateRecorderIfNotFound         | PhotonVoiceView               |
|--------------------------------------|-------------------------------|
| Awake() (defined in PhotonVoiceView) | PhotonVoiceView protected vii |
| IsRecorder                           | PhotonVoiceView               |
| IsRecording                          | PhotonVoiceView               |
| IsSetup                              | PhotonVoiceView               |
| IsSpeaker                            | PhotonVoiceView               |
| IsSpeaking                           | PhotonVoiceView               |
| Logger (defined in VoiceComponent)   | VoiceComponent                |
| logLevel (defined in VoiceComponent) | VoiceComponent protected      |
| LogLevel (defined in VoiceComponent) | VoiceComponent                |
| RecorderInUse                        | PhotonVoiceView               |
| SetupDebugSpeaker                    | PhotonVoiceView               |
| SpeakerInUse                         | PhotonVoiceView               |
| UsePrimaryRecorder                   | PhotonVoiceView               |

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| Class List                                       | Class Index | Class Hierarchy |         | Cla | ss Members |  |
| Photon Voice Unity UtilityScripts ConnectAndJoin |             |                 |         |     |            |  |

### ConnectAndJoin Member List

This is the complete list of members for **ConnectAndJoin**, including all inherited members.

ConnectNow() (defined in ConnectAndJoin)

IsConnected (defined in ConnectAndJoin)

OnConnected() (defined in ConnectAndJoin)

OnConnectedToMaster() (defined in ConnectAndJoin)

OnCreatedRoom() (defined in ConnectAndJoin)

OnCreateRoomFailed(short returnCode, string message) (defined in CoOnCustomAuthenticationFailed(string debugMessage) (defined in CoOnCustomAuthenticationResponse(Dictionary< string, object > data)
OnDisconnected(DisconnectCause cause) (defined in ConnectAndJoiOnFriendListUpdate(List< FriendInfo > friendList) (defined in ConnectAndJoiOnFriendListUpdate(List< FriendInfo > friendList) (defined in ConnectAndJoiOnFriendListUpdate(List< FriendInfo > friendList) (defined in ConnectAndJoiOnFriendListUpdate(List< FriendInfo > friendList)

OnJoinedRoom() (defined in ConnectAndJoin)

OnJoinRandomFailed(short returnCode, string message) (defined in C OnJoinRoomFailed(short returnCode, string message) (defined in Con OnLeftRoom() (defined in ConnectAndJoin)

OnRegionListReceived(RegionHandler regionHandler) (defined in ConRandomRoom (defined in ConnectAndJoin)

RoomName (defined in ConnectAndJoin)



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| Class List Class Index |   | ndex | Class Hierarchy |  | Cla     | ss Members |  |  |
| Photon                 | Photon Voice Unity UtilityScripts PhotonVoiceLagSimulationGui |      |                 |  |         |            |  |  |
| Dhot                   | PhotonVoical agSimulationGui Mambar List                      |      |                 |  |         |            |  |  |

## PhotonVoiceLagSimulationGui Member List

This is the complete list of members for **PhotonVoiceLagSimulationGui**, including all inherited members.

OnEnable() (defined in PhotonVoiceLagSimulationGui) PhotonVoice

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including all inherited members.

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|---|---------------------------------|---------------|------------|----|--|--|--|--|
| Class List  | Class Index Class Hierarchy Cla |               | ss Members |    |  |  |  |  |
| Photon Voice Unity UtilityScripts PhotonVoiceStatsGui |                                 |               |            |    |  |  |  |  |
| PhotonVoiceStatsGui Member List                       |                                 |               |            |    |  |  |  |  |

This is the complete list of members for **PhotonVoiceStatsGui**,

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|--|-------------|-----------------|--|-----|------------|--|--|--|
| Class List                                 | Class Index | Class Hierarchy |  | Cla | ss Members |  |  |  |
| Photon Voice Unity UtilityScripts TestTone |             |                 |  |     |            |  |  |  |
| TestTone Member List                       |             |                 |  |     |            |  |  |  |

This is the complete list of members for **TestTone**, including all inherited members.

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| Class List | lass List Class Index Class Hierarchy             |         | Cla           | ss Members |    |  |  |  |
| Photon Voi | Photon Voice Unity UtilityScripts ToneAudioReader |         |               |            |    |  |  |  |

### **ToneAudioReader Member List**

This is the complete list of members for **ToneAudioReader**, including all inherited members.

| Channels (defined in ToneAudioReader)          | ToneAudioReade |
|--|----------------|
| Dispose() (defined in ToneAudioReader)         | ToneAudioReade |
| Error (defined in ToneAudioReader)             | ToneAudioReade |
| Read(float[] buf) (defined in ToneAudioReader) | ToneAudioReade |
| SamplingRate (defined in ToneAudioReader)      | ToneAudioReade |
| ToneAudioReader() (defined in ToneAudioReader) | ToneAudioReade |

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| Class List | Class Index                   | Class Hierarchy |  | Cla | ss Members |  |
| Photon Voi | ce $ angle$ Unity $ angle$ Au | oper >          |  |     |            |  |

## **AudioClipWrapper Member List**

This is the complete list of members for **AudioClipWrapper**, including all inherited members.

AudioClipWrapper(AudioClip audioClip) (defined in AudioClipWrappe

Channels (defined in AudioClipWrapper)

**Dispose()** (defined in **AudioClipWrapper**)

**Error** (defined in **AudioClipWrapper**)

**Loop** (defined in **AudioClipWrapper**)

Read(float[] buffer) (defined in AudioClipWrapper)

**SamplingRate** (defined in **AudioClipWrapper**)

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| Photon Voi | Photon Voice Unity AudioOutCapture |             |                     |       |            |  |  |

## **AudioOutCapture Member List**

This is the complete list of members for **AudioOutCapture**, including all inherited members.

OnAudioFrame (defined in AudioOutCapture) AudioOutCapture

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## Photon Voice v2.7

Main Page Related Pages Classes

Class List Class Index Class Hierarchy Class Members

Photon Voice Unity ILoggable

Loggable Member List

This is the complete list of members for **ILoggable**, including all inherited members.

Logger (defined in ILoggable)

LogLevel (defined in ILoggable)

ILoggable

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| Class List                                | C | Class Index Class Hierarchy Cla |  | ss Members |  |  |  |  |
| Photon Voice Unity IOSAudioForceToSpeaker |   |                                 |  |            |  |  |  |  |
| IOSAudioForceToSpeaker Member List        |   |                                 |  |            |  |  |  |  |

This is the complete list of members for **IOSAudioForceToSpeaker**, including all inherited members.

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## Photon Voice v2.7

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| Photon Voice Unity Logger |             |                             |         |     |            |  |  |
| Logger Member List        |             |                             |         |     |            |  |  |

This is the complete list of members for **Logger**, including all inherited members.

LogDebug(string fmt, params object[] args) (defined in Logger)LoggLogError(string fmt, params object[] args) (defined in Logger)LoggLogInfo(string fmt, params object[] args) (defined in Logger)LoggLogWarning(string fmt, params object[] args) (defined in Logger)Logg

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| Photon Voice Unity MicWrapper |                                    |       |         |            |  |  |  |  |
| MicWrapper Member List        |                                    |       |         |            |  |  |  |  |

This is the complete list of members for **MicWrapper**, including all inherited members.

Channels (defined in MicWrapper)

**Dispose()** (defined in **MicWrapper**)

**Error** (defined in **MicWrapper**)

MicWrapper(string device, int suggestedFrequency, Voice.ILogger logge

Read(float[] buffer) (defined in MicWrapper)

SamplingRate (defined in MicWrapper)

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| Photon Voi          | Photon Voice Unity PhotonVoiceCreatedParams |               |                 |         |     |             |  |  |  |

### PhotonVoiceCreatedParams Member List

This is the complete list of members for **PhotonVoiceCreatedParams**, including all inherited members.

AudioDesc (defined in PhotonVoiceCreatedParams) PhotonVoiceCreatedParams) PhotonVoiceCreatedParams) PhotonVoiceCreatedParams)

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| Main Page Related    |                             | Pages    | s Classes |     |            |  |  |
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| Class List           | Class Index                 | Class Hi | erarchy   | Cla | ss Members |  |  |
| Photon Voi           | Photon Voice Unity Recorder |          |           |     |            |  |  |
| Recorder Member List |                             |          |           |     |            |  |  |

This is the complete list of members for **Recorder**, including all inherited members.

| AudioClip   | Recorder   |
|---|--|
| AudioGroup  | Recorder   |
| AutoStart   | Recorder   |
| Awake() (defined in VoiceComponent)   | VoiceCon   |
| Bitrate   | Recorder   |
| DebugEchoMode   | Recorder   |
| Encrypt   | Recorder   |
| FrameDuration   | Recorder   |
| Init(VoiceClient voiceClient, object customObj=null)  | Recorder   |
| InputFactory  | Recorder   |
|   |  |
| InputSourceType enum name (defined in Recorder)   | Recorder   |
| InputSourceType enum name (defined in Recorder) InterestGroup   | Recorder<br>Recorder                                     |
| ,   |  |
| InterestGroup   | Recorder   |
| InterestGroup IsCurrentlyTransmitting   | Recorder<br>Recorder                                     |
| InterestGroup IsCurrentlyTransmitting IsInitialized   | Recorder<br>Recorder<br>Recorder                         |
| InterestGroup IsCurrentlyTransmitting IsInitialized IsRecording   | Recorder<br>Recorder<br>Recorder<br>Recorder             |
| InterestGroup IsCurrentlyTransmitting IsInitialized IsRecording LevelMeter                                    | Recorder<br>Recorder<br>Recorder<br>Recorder             |
| InterestGroup IsCurrentlyTransmitting IsInitialized IsRecording LevelMeter Logger (defined in VoiceComponent) | Recorder<br>Recorder<br>Recorder<br>Recorder<br>VoiceCon |

| MicrophoneType  | Recorder |
|---|----------|
| MicType enum name (defined in Recorder)               | Recorder |
| PhotonMicrophoneDeviceId                              | Recorder |
| PhotonMicrophoneEnumerator                            | Recorder |
| ReactOnSystemChanges (defined in Recorder)            | Recorder |
| Relnit() (defined in Recorder)                        | Recorder |
| ReliableMode  | Recorder |
| RequiresInit (defined in Recorder)                    | Recorder |
| RequiresRestart                                       | Recorder |
| RestartRecording()                                    | Recorder |
| SampleTypeConv enum name (defined in Recorder)        | Recorder |
| SamplingRate  | Recorder |
| SendPhotonVoiceCreatedMessage() (defined in Recorder) | Recorder |
| SourceType  | Recorder |
| StartRecording()                                      | Recorder |
| StopRecording()                                       | Recorder |
| TransmitEnabled                                       | Recorder |
| TypeConvert   | Recorder |
| UnityMicrophoneDevice                                 | Recorder |
| UserData  | Recorder |
| voiceAudio (defined in Recorder)                      | Recorder |
| VoiceDetection  | Recorder |
| VoiceDetectionDelayMs                                 | Recorder |
| VoiceDetectionThreshold                               | Recorder |
| VoiceDetector   | Recorder |
| VoiceDetectorCalibrate(int durationMs)                | Recorder |
| VoiceDetectorCalibrating                              | Recorder |



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| Photon  | Voic                               | e Unity | Rec       | corder | PhotonVoic | eCreat | edParams ) |  |

# Recorder.PhotonVoiceCreatedParams Member List

This is the complete list of members for **Recorder.PhotonVoiceCreatedParams**, including all inherited members.

AudioDesc (defined in PhotonVoiceCreatedParams) PhotonVoiceCreatedParams) PhotonVoiceCreatedParams) PhotonVoiceCreatedParams)

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| Photon Voi        | ce Vnity Re | moteVoiceL          | ink ) |     |            |

#### RemoteVoiceLink Member List

This is the complete list of members for **RemoteVoiceLink**, including all inherited members.

Channelld (defined in RemoteVoiceLink)

FloatFrameDecoded (defined in RemoteVoiceLink)

Info (defined in RemoteVoiceLink)

PlayerId (defined in RemoteVoiceLink)

RemoteVoiceLink(VoiceInfo info, int playerId, int voiceId, int channeIId,

RemoteVoiceRemoved (defined in RemoteVoiceLink)

VoiceId (defined in RemoteVoiceLink)

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## Photon Voice v2.7

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| Photon Voic | Photon Voice Unity Speaker |                      |       |            |  |  |  |  |  |  |
| Speaker     | r Member                   | List                 |       |            |  |  |  |  |  |  |

This is the complete list of members for **Speaker**, including all inherited members.

| Actor                                | Speaker        |               |
|--------------------------------------|----------------|---------------|
| Awake() (defined in Speaker)         | Speaker        | protected vir |
| IsLinked                             | Speaker        |               |
| IsPlaying                            | Speaker        |               |
| Lag                                  | Speaker        |               |
| Logger (defined in VoiceComponent)   | VoiceComponent |               |
| logLevel (defined in VoiceComponent) | VoiceComponent | protected     |
| LogLevel (defined in VoiceComponent) | VoiceComponent |               |
| OnRemoteVoiceRemoveAction            | Speaker        |               |
| PlayDelayMs (defined in Speaker)     | Speaker        |               |

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| Photon Voi | ce $ angle$ Un | nity Un                     | ityAndroidA | udioInAE |            |  |  |

## **UnityAndroidAudioInAEC Member List**

This is the complete list of members for **UnityAndroidAudioInAEC**, including all inherited members.

Channels (defined in UnityAndroidAudioInAEC)

**Dispose()** (defined in **UnityAndroidAudioInAEC)** 

**Error** (defined in **UnityAndroidAudioInAEC**)

SamplingRate (defined in UnityAndroidAudioInAEC)

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| Main Page    | Relate                       | d Pages      | Class       | ses |            |  |
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| Photon Voice | ce $ angle$ Unity $ angle$ L | JnityAudioOu | t $\rangle$ |     |            |  |

## **UnityAudioOut Member List**

This is the complete list of members for **UnityAudioOut**, including all inherited members.

FRAME\_POOL\_CAPACITY (defined in UnityAudioOut)

IsPlaying (defined in UnityAudioOut)

Lag (defined in UnityAudioOut)

Pause() (defined in UnityAudioOut)

PlaySamplePos (defined in UnityAudioOut)

Push(float[] frame) (defined in UnityAudioOut)

Service() (defined in UnityAudioOut)

Start(int frequency, int channels, int frameSamples, int playDelayMs) (de

Stop() (defined in UnityAudioOut)

UnityAudioOut(AudioSource audioSource) (defined in UnityAudioOut)

UnPause() (defined in UnityAudioOut)

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| Photon Voi                 | Photon Voice Unity VoiceComponent |               |          |            |  |  |  |  |  |
| VoiceComponent Member List |                                   |               |          |            |  |  |  |  |  |

This is the complete list of members for **VoiceComponent**, including all inherited members.

| Awake() (defined in VoiceComponent)  | VoiceComponent | protected | vir |
|--------------------------------------|----------------|-----------|-----|
| Logger (defined in VoiceComponent)   | VoiceComponent |           |     |
| logLevel (defined in VoiceComponent) | VoiceComponent | protected |     |
| LogLevel (defined in VoiceComponent) | VoiceComponent |           |     |
|                                      |                |           |     |

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| Photon Voi | ce Vnity Vo                   | iceConnecti   | on  |            |  |  |

#### VoiceConnection Member List

This is the complete list of members for **VoiceConnection**, including all inherited members.

Awake() (defined in VoiceConnection)

cachedRemoteVoices (defined in VoiceConnection)

CalcStatistics() (defined in VoiceConnection)

Client (defined in VoiceConnection)

**ClientState** 

**ConnectUsingSettings**(AppSettings overwriteSettings=null)

FixedUpdate() (defined in VoiceConnection)

**FramesLostPercent** 

**FramesLostPerSecond** 

**FramesReceivedPerSecond** 

**LinkSpeaker**(Speaker speaker, RemoteVoiceLink remoteVoice) (defined **Logger** 

LogLevel

OnApplicationQuit() (defined in VoiceConnection)

**OnDestroy**() (defined in **VoiceConnection**)

OnVoiceStateChanged(ClientState fromState, ClientState toState) (def

PrimaryRecorder

RemoteVoiceAdded

**Settings** 

SimpleSpeakerFactory(int playerId, byte voiceId, object userData) (def

SpeakerFactory

SpeakerLinked

SpeakerPrefab

**Update()** (defined in **VoiceConnection)** 

VoiceClient

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| Photon Voi | ce Unity Vo | oiceLogger | >               |    |             |

## VoiceLogger Member List

This is the complete list of members for **VoiceLogger**, including all inherited members.

**IsDebugEnabled** (defined in **VoiceLogger**)

IsErrorEnabled (defined in VoiceLogger)

IsInfoEnabled (defined in VoiceLogger)

**IsWarningEnabled** (defined in **VoiceLogger**)

LogDebug(string fmt, params object[] args) (defined in VoiceLogger)

LogError(string fmt, params object[] args) (defined in VoiceLogger)

LogInfo(string fmt, params object[] args) (defined in VoiceLogger)

LogLevel (defined in VoiceLogger)

LogWarning(string fmt, params object[] args) (defined in VoiceLogger)

Tag (defined in VoiceLogger)

VoiceLogger(Object context, string tag, DebugLevel level=DebugLevel.

VoiceLogger(string tag, DebugLevel level=DebugLevel.ERROR) (define

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| Photon Voi | ce | Unity We    | ebRtcAudio | Osp $\rangle$ |     |            |  |

## WebRtcAudioDsp Member List

This is the complete list of members for **WebRtcAudioDsp**, including all inherited members.

| AEC (defined in WebRtcAudioDsp)                  | WebRtcAudi |
|--|------------|
| AECMobile (defined in WebRtcAudioDsp)            | WebRtcAudi |
| AGC (defined in WebRtcAudioDsp)                  | WebRtcAudi |
| Awake() (defined in WebRtcAudioDsp)              | WebRtcAudi |
| Bypass (defined in WebRtcAudioDsp)               | WebRtcAudi |
| HighPass (defined in WebRtcAudioDsp)             | WebRtcAudi |
| Logger (defined in VoiceComponent)               | VoiceCompo |
| logLevel (defined in VoiceComponent)             | VoiceCompo |
| LogLevel (defined in VoiceComponent)             | VoiceCompo |
| NoiseSuppression (defined in WebRtcAudioDsp)     | WebRtcAudi |
| ReverseStreamDelayMs (defined in WebRtcAudioDsp) | WebRtcAudi |
| VAD (defined in WebRtcAudioDsp)                  | WebRtcAudi |
|  |            |

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| Photon Voi | ice | AudioDesc   | <u> </u> |         |     |            |  |
|            |     |             |          |         |     |            |  |

### **AudioDesc Member List**

This is the complete list of members for **AudioDesc**, including all inherited members.

AudioDesc(int samplingRate, int channels, string error) (defined in Aud

Channels (defined in AudioDesc)

**Dispose()** (defined in **AudioDesc**)

**Error** (defined in AudioDesc)

**SamplingRate** (defined in **AudioDesc**)

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| Photon Voi | ce AudioInEnu | ımerator |         |     |            |  |

#### **AudioInEnumerator Member List**

This is the complete list of members for **AudioInEnumerator**, including all inherited members.

AudioInEnumerator(ILogger logger) (defined in AudioInEnumerator)

**Count** (defined in **AudioInEnumerator**)

**Dispose()** (defined in **AudioInEnumerator**)

**Error** (defined in **AudioInEnumerator**)

**IDAtIndex**(int i) (defined in **AudioInEnumerator**)

IDIsValid(int id) (defined in AudioInEnumerator)

**IsSupported** (defined in **AudioInEnumerator**)

NameAtIndex(int i) (defined in AudioInEnumerator)

Refresh() (defined in AudioInEnumerator)

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| Photon Voi | ce AudioStrea | mPlayer \ |         |     |            |  |

## **AudioStreamPlayer< T > Member List**

This is the complete list of members for **AudioStreamPlayer< T >**, including all inherited members.

AudioStreamPlayer(ILogger logger, ISyncAudioOut< T > audioOut, strikes the strikes of the strike

Lag (defined in AudioStreamPlayer< T >)

Push(T[] frame) (defined in AudioStreamPlayer< T >)

Service() (defined in AudioStreamPlayer< T >)

Start(int frequency, int channels, int frameSamples, int playDelayMs) (de Stop() (defined in AudioStreamPlayer< T >)

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| Photon Voi | се | AudioUtil  |          |         |     |            |  |

#### **AudioUtil Member List**

This is the complete list of members for **AudioUtil**, including all inherited members.

Convert(float[] src, short[] dst, int dstCount)

Convert(short[] src, float[] dst, int dstCount)

ForceToStereo < T > (T[] src, T[] dst, int srcChannels)

**Resample**< T >(T[] src, T[] dst, int dstCount, int channels)

ResampleAndConvert(short[] src, float[] dst, int dstCount, int channels)

ResampleAndConvert(float[] src, short[] dst, int dstCount, int channels)

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| Photon Voi | ce AudioUtil | ILevelMete | er >    |     |            |  |

### AudioUtil.ILevelMeter Member List

This is the complete list of members for **AudioUtil.ILevelMeter**, including all inherited members.

AccumAvgPeakAmp AudioUtil.ILevelMeter
CurrentAvgAmp AudioUtil.ILevelMeter
CurrentPeakAmp AudioUtil.ILevelMeter
ResetAccumAvgPeakAmp() AudioUtil.ILevelMeter

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| Photon Voice | ce AudioUtil | IVoiceDete | ector   |     |            |

### **AudioUtil.IVoiceDetector Member List**

This is the complete list of members for **AudioUtil.IVoiceDetector**, including all inherited members.

ActivityDelayMs AudioUtil.IVoiceDetector
Detected AudioUtil.IVoiceDetector
DetectedTime AudioUtil.IVoiceDetector
On AudioUtil.IVoiceDetector
OnDetected AudioUtil.IVoiceDetector
Threshold AudioUtil.IVoiceDetector

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| Photon Voi | ce AudioUtil | LevelMete | r 〉     |     |             |
| A 1 1 - 1  | 4:1 1 a IN   |           | T . NA  |     | L I ! . 4   |

#### AudioUtil.LevelMeter< T > Member List

This is the complete list of members for AudioUtil.LevelMeter < T >, including all inherited members.

| AccumAvgPeakAmp (defined in AudioUtil.LevelMeter< T >)                       | Αι |
|--|----|
| <pre>accumAvgPeakAmpCount (defined in AudioUtil.LevelMeter&lt; T &gt;)</pre> | Αι |
| accumAvgPeakAmpSum (defined in AudioUtil.LevelMeter< T >)                    | Αι |
| ampPeak (defined in AudioUtil.LevelMeter< T >)                               | Αι |
| ampSum (defined in AudioUtil.LevelMeter< T >)                                | Αι |
| bufferSize (defined in AudioUtil.LevelMeter< T >)                            | Αι |
| CurrentAvgAmp (defined in AudioUtil.LevelMeter< T >)                         | Αι |
| CurrentPeakAmp (defined in AudioUtil.LevelMeter< T >)                        | Αι |
| Dispose() (defined in AudioUtil.LevelMeter< T >)                             | Αι |
| prevValues (defined in AudioUtil.LevelMeter< T >)                            | Αι |
| prevValuesHead (defined in AudioUtil.LevelMeter< T >)                        | Αι |
| Process(T[] buf)   | Αι |
| ResetAccumAvgPeakAmp()   | Αι |
|  |    |

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| Photon Voi | се | AudioUtil   | LevelMete | rDummy  | >   |            |  |

## AudioUtil.LevelMeterDummy Member List

This is the complete list of members for **AudioUtil.LevelMeterDummy**, including all inherited members.

AccumAvgPeakAmp (defined in AudioUtil.LevelMeterDummy) Audic
CurrentAvgAmp (defined in AudioUtil.LevelMeterDummy) Audic
CurrentPeakAmp (defined in AudioUtil.LevelMeterDummy) Audic
ResetAccumAvgPeakAmp() Audic

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| Photon   | Voice | AudioUtil   | LevelMete | rFloat  |     |            |  |

#### AudioUtil.LevelMeterFloat Member List

This is the complete list of members for **AudioUtil.LevelMeterFloat**, including all inherited members.

AccumAvgPeakAmp (defined in AudioUtil.LevelMeter< float >)
accumAvgPeakAmpCount (defined in AudioUtil.LevelMeter< float >)
accumAvgPeakAmpSum (defined in AudioUtil.LevelMeter< float >)
ampPeak (defined in AudioUtil.LevelMeter< float >)
ampSum (defined in AudioUtil.LevelMeter< float >)
bufferSize (defined in AudioUtil.LevelMeter< float >)
CurrentAvgAmp (defined in AudioUtil.LevelMeter< float >)
CurrentPeakAmp (defined in AudioUtil.LevelMeter< float >)
Dispose() (defined in AudioUtil.LevelMeter< float >)
LevelMeterFloat(int samplingRate, int numChannels)
prevValues (defined in AudioUtil.LevelMeter< float >)
prevValuesHead (defined in AudioUtil.LevelMeter< float >)
Process(float[] buf) (defined in AudioUtil.LevelMeterFloat)
LevelMeter< float >.Process(T[] buf)
ResetAccumAvgPeakAmp()

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| Photon Voi | ce AudioUtil                   | LevelMete | rShort  |     |            |  |

#### AudioUtil.LevelMeterShort Member List

This is the complete list of members for **AudioUtil.LevelMeterShort**, including all inherited members.

AccumAvgPeakAmp (defined in AudioUtil.LevelMeter< short >)
accumAvgPeakAmpCount (defined in AudioUtil.LevelMeter< short >
accumAvgPeakAmpSum (defined in AudioUtil.LevelMeter< short >)
ampPeak (defined in AudioUtil.LevelMeter< short >)
ampSum (defined in AudioUtil.LevelMeter< short >)
bufferSize (defined in AudioUtil.LevelMeter< short >)
CurrentAvgAmp (defined in AudioUtil.LevelMeter< short >)
CurrentPeakAmp (defined in AudioUtil.LevelMeter< short >)
Dispose() (defined in AudioUtil.LevelMeter< short >)
LevelMeterShort(int samplingRate, int numChannels)
prevValues (defined in AudioUtil.LevelMeter< short >)
prevValuesHead (defined in AudioUtil.LevelMeter< short >)
Process(short[] buf) (defined in AudioUtil.LevelMeterShort)
LevelMeter< short >.Process(T[] buf)
ResetAccumAvgPeakAmp()

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| Photon Voice AudioUtil Resampler     |                                    |               |     |            |  |  |  |
| AudioUtil.Resampler< T > Member List |                                    |               |     |            |  |  |  |

## This is the complete list of members for Audio Itil Posampler T >

This is the complete list of members for AudioUtil.Resampler < T >, including all inherited members.

Dispose() (defined in AudioUtil.Resampler< T >)

frameResampled (defined in AudioUtil.Resampler< T >)

AudioUtil.Re

Process(T[] buf)

Resampler(int dstSize, int channels)

AudioUtil.Re

AudioUtil.Re

AudioUtil.Re

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| Photon                 | Voice | AudioUtil       | ToneAudio | Pusher  |            |  |  |

#### AudioUtil.ToneAudioPusher< T > Member List

This is the complete list of members for **AudioUtil.ToneAudioPusher**< T >, including all inherited members.

**Channels** (defined in **AudioUtil.ToneAudioPusher< T >**)

Dispose() (defined in AudioUtil.ToneAudioPusher< T >)

Error (defined in AudioUtil.ToneAudioPusher< T >)

**SamplingRate** (defined in **AudioUtil.ToneAudioPusher< T >**)

**SetCallback**(Action< T[]> callback, ObjectFactory< T[], int > bufferFacto **ToneAudioPusher**(int frequency=440, int bufSizeMs=100, int samplingF

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#### AudioUtil.ToneAudioReader< T > Member List

This is the complete list of members for **AudioUtil.ToneAudioReader**< T >, including all inherited members.

Channels

**Dispose()** (defined in **AudioUtil.ToneAudioReader< T >)** 

Error

Read(T[] buf)

**SamplingRate** 

ToneAudioReader(Func< double > clockSec=null, double frequency=44

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| Photon Voi        | ce AudioUtil | VoiceDete | ctor          |     |            |  |

#### AudioUtil.VoiceDetector< T > Member List

This is the complete list of members for **AudioUtil.VoiceDetector< T** >, including all inherited members.

activityDelay (defined in AudioUtil.VoiceDetector< T >)

**ActivityDelayMs** 

activityDelayValuesCount (defined in AudioUtil.VoiceDetector< T >)
autoSilenceCounter (defined in AudioUtil.VoiceDetector< T >)

**Detected** 

**DetectedTime** 

Dispose() (defined in AudioUtil.VoiceDetector< T >)

On

**OnDetected** 

Process(T[] buf)

**Threshold** 

valuesCountPerSec (defined in AudioUtil.VoiceDetector< T >)

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| Photon   | Voice           | AudioUtil   | VoiceDete     | ctorCalibra         | ation | >          |  |

# AudioUtil.VoiceDetectorCalibration< T > Member List

This is the complete list of members for **AudioUtil.VoiceDetectorCalibration< T >**, including all inherited members.

Calibrate(int durationMs)

calibrateCount (defined in AudioUtil.VoiceDetectorCalibration< T >)

Dispose() (defined in AudioUtil.VoiceDetectorCalibration< T >)

**IsCalibrating** (defined in **AudioUtil.VoiceDetectorCalibration< T >**)

Process(T[] buf)

VoiceDetectorCalibration(IVoiceDetector voiceDetector, ILevelMeter le

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| Photon   | Voice             | AudioUtil   | VoiceDete       | ctorDumm | у > |            |  |

## AudioUtil.VoiceDetectorDummy Member List

This is the complete list of members for **AudioUtil.VoiceDetectorDummy**, including all inherited members.

ActivityDelayMs (defined in AudioUtil.VoiceDetectorDummy) Audiol
Detected (defined in AudioUtil.VoiceDetectorDummy) Audiol
DetectedTime (defined in AudioUtil.VoiceDetectorDummy) Audiol
On (defined in AudioUtil.VoiceDetectorDummy) Audiol
OnDetected (defined in AudioUtil.VoiceDetectorDummy) Audiol
Threshold (defined in AudioUtil.VoiceDetectorDummy) Audiol

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| Photon Voi | ce AudioUtil | VoiceDete | ctorFloat    |    |            |  |

#### AudioUtil.VoiceDetectorFloat Member List

This is the complete list of members for **AudioUtil.VoiceDetectorFloat**, including all inherited members.

activityDelay (defined in AudioUtil.VoiceDetector< float >)

**ActivityDelayMs** 

activityDelayValuesCount (defined in AudioUtil.VoiceDetector< float autoSilenceCounter (defined in AudioUtil.VoiceDetector< float >)

**Detected** 

**DetectedTime** 

Dispose() (defined in AudioUtil.VoiceDetector< float >)

On

**OnDetected** 

Process(float[] buffer) (defined in AudioUtil.VoiceDetectorFloat)

VoiceDetector< float >.Process(T[] buf)

**Threshold** 

valuesCountPerSec (defined in AudioUtil.VoiceDetector< float >)

VoiceDetectorFloat(int samplingRate, int numChannels)

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| Photon Voi | ce AudioUtil | VoiceDete | ctorShort     | $\rangle$ |            |  |

#### AudioUtil.VoiceDetectorShort Member List

This is the complete list of members for **AudioUtil.VoiceDetectorShort**, including all inherited members.

activityDelay (defined in AudioUtil.VoiceDetector< short >)

**ActivityDelayMs** 

activityDelayValuesCount (defined in AudioUtil.VoiceDetector< shor autoSilenceCounter (defined in AudioUtil.VoiceDetector< short >)

**Detected** 

**DetectedTime** 

Dispose() (defined in AudioUtil.VoiceDetector< short >)

On

**OnDetected** 

Process(short[] buffer) (defined in AudioUtil.VoiceDetectorShort)

VoiceDetector< short >.Process(T[] buf)

**Threshold** 

valuesCountPerSec (defined in AudioUtil.VoiceDetector< short >)

VoiceDetectorShort(int samplingRate, int numChannels)

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| Photon Voice AudioUtil VoiceLevelDetectCalibrate     |             |                       |         |                     |  |  |  |  |  |
| AudioUtil.VoiceLevelDetectCalibrate< T > Member List |             |                       |         |                     |  |  |  |  |  |

This is the complete list of members for **AudioUtil.VoiceLevelDetectCalibrate< T >**, including all inherited members.

| Calibrate(int durationMs)  |     |
|--|-----|
| Dispose() (defined in AudioUtil.VoiceLevelDetectCalibrate< T >)    |     |
| IsCalibrating (defined in AudioUtil.VoiceLevelDetectCalibrate< T > | ) / |
| LevelMeter   |     |
| Process(T[] buf)   | 1   |
| VoiceDetector  |     |
| VoiceLevelDetectCalibrate(int samplingRate, int channels)          | /   |
|  |     |

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| Photon Voice BufferReaderPushAdapter |   |             |          |                    |  |            |  |  |

## **BufferReaderPushAdapter< T > Member List**

This is the complete list of members for **BufferReaderPushAdapter**< T >, including all inherited members.

buffer (defined in BufferReaderPushAdapter< T >)

BufferReaderPushAdapter(LocalVoice localVoice, IDataReader< T > re BufferReaderPushAdapterBase(IDataReader< T > reader) Dispose()

reader (defined in BufferReaderPushAdapterBase< T >)
Service(LocalVoice localVoice)

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| Photon    | Voice                          | BufferRead | erPushAdap    | oterAsyncF | Pool       |  |  |

# BufferReaderPushAdapterAsyncPool< T > Member List

This is the complete list of members for **BufferReaderPushAdapterAsyncPool< T >**, including all inherited members.

**BufferReaderPushAdapterAsyncPool**(LocalVoice localVoice, IDataRe **BufferReaderPushAdapterBase**(IDataReader< T > reader)

Dispose()

reader (defined in BufferReaderPushAdapterBase< T >)

Service(LocalVoice localVoice)

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| Photon  | Voice | BufferReaderPushAdapterAsyncPoolCopy |                      |       |     |            |  |  |

# **BufferReaderPushAdapterAsyncPoolCopy< T** > Member List

This is the complete list of members for **BufferReaderPushAdapterAsyncPoolCopy< T >**, including all inherited members.

buffer (defined in BufferReaderPushAdapterAsyncPoolCopy< T >)
BufferReaderPushAdapterAsyncPoolCopy(LocalVoice localVoice, ID:
BufferReaderPushAdapterBase(IDataReader< T > reader)
Dispose()

reader (defined in BufferReaderPushAdapterBase< T >)
Service(LocalVoice localVoice)

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| Photon Voice BufferReaderPushAdapterAsyncPoolFloatToShort |                  |      |                       |              |     |            |  |

## BufferReaderPushAdapterAsyncPoolFloatToSho Member List

This is the complete list of members for **BufferReaderPushAdapterAsyncPoolFloatToShort**, including all inherited members.

**BufferReaderPushAdapterAsyncPoolFloatToShort**(LocalVoice localV **BufferReaderPushAdapterBase**(IDataReader< T > reader)

Dispose()

reader (defined in BufferReaderPushAdapterBase< float >)

Service(LocalVoice localVoice)

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| Photon  | Voice                              | e $\rangle$ | BufferReaderPushAdapterBase |       |            |  |  |  |

# BufferReaderPushAdapterBase< T > Member List

This is the complete list of members for **BufferReaderPushAdapterBase< T >**, including all inherited members.

BufferReaderPushAdapterBase(IDataReader< T > reader)

BufferRea

BufferRea

BufferRea

reader (defined in BufferReaderPushAdapterBase< T >)

BufferRea

BufferRea

BufferRea

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BufferRea

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| Photon Voice FactoryPrimitiveArrayPool |                             |               |     |            |  |  |

### FactoryPrimitiveArrayPool< T > Member List

This is the complete list of members for **FactoryPrimitiveArrayPool< T >**, including all inherited members.

**Dispose()** (defined in **FactoryPrimitiveArrayPool< T >)** 

FactoryPrimitiveArrayPool(int capacity, string name) (defined in Facto FactoryPrimitiveArrayPool(int capacity, string name, int info) (defined in FactoryPrimitiveArrayPool(int capacity, string name, int info) (defined in FactoryPrimitiveArrayPool(int capacity, string name) (defined in FactoryPrimitiveArrayPool(int capacity) (defined in Facto

Free(T[] obj) (defined in FactoryPrimitiveArrayPool< T >)

Free(T[] obj, int info) (defined in FactoryPrimitiveArrayPool< T >)

Free(TType obj) (defined in ObjectFactory< T[], int >)

Free(TType obj, TInfo info) (defined in ObjectFactory< T[], int >)

Info (defined in FactoryPrimitiveArrayPool< T >)

New() (defined in FactoryPrimitiveArrayPool< T >)

**New**(int size) (defined in **FactoryPrimitiveArrayPool< T >**)

New(TInfo info) (defined in ObjectFactory< T[], int >)

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| Photon Voi             | се | FactoryReu    | sableArray      | $\rangle$ |            |  |

### FactoryReusableArray< T > Member List

This is the complete list of members for **FactoryReusableArray< T >**, including all inherited members.

**Dispose()** (defined in **FactoryReusableArray< T >)** 

FactoryReusableArray(int size) (defined in FactoryReusableArray< T

Free(T[] obj) (defined in FactoryReusableArray< T >)

Free(T[] obj, int info) (defined in FactoryReusableArray< T >)

Free(TType obj) (defined in ObjectFactory< T[], int >)

Free(TType obj, TInfo info) (defined in ObjectFactory< T[], int >)

Info (defined in FactoryReusableArray< T >)

New() (defined in FactoryReusableArray< T >)

New(int size) (defined in FactoryReusableArray< T >)

New(TInfo info) (defined in ObjectFactory< T[], int >)

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### Framer< T > Member List

This is the complete list of members for **Framer**< **T** >, including all inherited members.

Count(int bufLen) Framer< T >
Frame(T[] buf) Framer< T >
Framer(int frameSize) Framer< T >

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| Photon Voi | ce \ IAudioDesc |          |         |     |            |
|            |                 | _        |         |     |            |

### **IAudioDesc Member List**

This is the complete list of members for **IAudioDesc**, including all inherited members.

Channels IAudioDesc Error IAudioDesc SamplingRate IAudioDesc

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| Photon Voi        | ce $\rangle$ | IAudioOut  | >               |  |     |            |  |

### IAudioOut< T > Member List

This is the complete list of members for **IAudioOut< T >**, including all inherited members.

**IsPlaying** (defined in **IAudioOut< T >**)

Lag (defined in IAudioOut< T >)

Push(T[] frame) (defined in IAudioOut< T >)

Service() (defined in IAudioOut< T >)

Start(int frequency, int channels, int frameSamplesPerChannel, int play[
Stop() (defined in IAudioOut< T >)

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| Photon Voice IAudioPusher |   |            |          |               |    |            |  |

### IAudioPusher< T > Member List

This is the complete list of members for **IAudioPusher< T >**, including all inherited members.

**Channels** 

**Error** 

**SamplingRate** 

SetCallback(Action< T[]> callback, ObjectFactory< T[], int > bufferFacto

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 IAudioReader

### **IAudioReader< T > Member List**

This is the complete list of members for **IAudioReader**< T >, including all inherited members.

Channels IAudioDesc

Error IAudioDesc

Read(T[] buffer) IDataReader< T >

SamplingRate IAudioDesc

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| Photon Voice IDataReader     |   |            |            |         |     |            |  |  |  |
| IDataReader< T > Member List |   |            |            |         |     |            |  |  |  |

This is the complete list of members for **IDataReader**< **T** >, including all inherited members.

Read(T[] buffer) IDataReader< T >

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| Photon Voi           | ce Decoder  |          |             |  |            |  |  |  |  |
| IDecoder Member List |             |          |             |  |            |  |  |  |  |

#### lDecoder Member List

This is the complete list of members for **IDecoder**, including all inherited members.

Error IDecoder
Input(byte[] buf) IDecoder
Open(VoiceInfo info) IDecoder

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| Photon Voice IDecoderQueuedOutputImageNative |                                       |               |         |         |            |  |  |  |

# IDecoderQueuedOutputImageNative Member List

This is the complete list of members for **IDecoderQueuedOutputImageNative**, including all inherited members.

#### **Error**

Input(byte[] buf)

Open(VoiceInfo info)

OutputImageBufferGetter (defined in IDecoderQueuedOutputImageNoutputImageFlip (defined in IDecoderQueuedOutputImageNative)
OutputImageFormat (defined in IDecoderQueuedOutputImageNative)

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| Photon Voice IEncoder |   |             |                 |              |    |            |  |  |
|                       |   |             |                 |              |    |            |  |  |

### **IEncoder Member List**

This is the complete list of members for **IEncoder**, including all inherited members.

DequeueOutput() IEncoder
Error IEncoder
Output IEncoder

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 IEncoderDirect

### **IEncoderDirect< B > Member List**

This is the complete list of members for **IEncoderDirect< B >**, including all inherited members.

DequeueOutput() IEncoder

Error IEncoder

Input(B buf) IEncoderDirect< B >

Output IEncoder

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| Photon Voice LocalVoiceAudio |   |             |          |                 |    |            |  |  |

### **ILocalVoiceAudio Member List**

This is the complete list of members for **ILocalVoiceAudio**, including all inherited members.

LevelMeterILocalVoiceAudioVoiceDetectorILocalVoiceAudioVoiceDetectorCalibrate(int durationMs)ILocalVoiceAudioVoiceDetectorCalibratingILocalVoiceAudio

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| Photon Voice ILogger |             |          |                       |  |            |  |  |  |  |
| ILogger Member List  |             |          |                       |  |            |  |  |  |  |

This is the complete list of members for **ILogger**, including all inherited members.

LogDebug(string fmt, params object[] args) (defined in ILogger)ILogLogError(string fmt, params object[] args) (defined in ILogger)ILogLogInfo(string fmt, params object[] args) (defined in ILogger)ILogLogWarning(string fmt, params object[] args) (defined in ILogger)ILog

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| Photon Voi        | Photon Voice ImageBufferInfo |                    |               |     |            |  |  |  |  |

### **ImageBufferInfo Member List**

This is the complete list of members for **ImageBufferInfo**, including all inherited members.

Flip (defined in ImageBufferInfo)

Format (defined in ImageBufferInfo)

Height (defined in ImageBufferInfo)

ImageBufferInfo(int width, int height, int[] stride, ImageFormat format) (

Rotation (defined in ImageBufferInfo)

Stride (defined in ImageBufferInfo)

Width (defined in ImageBufferInfo)

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| Photon Voice ImageBuffe |   |             | rNative >            |    |            |  |  |
|                         |   |             |                      |    | _          |  |  |

## **ImageBufferNative Member List**

This is the complete list of members for **ImageBufferNative**, including all inherited members.

**Dispose()** (defined in **ImageBufferNative**)

ImageBufferNative(ImageBufferInfo info) (defined in ImageBufferNative)
Info (defined in ImageBufferNative)

Planes (defined in ImageBufferNative)

Release() (defined in ImageBufferNative)

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| Photon Voi | се | ImageBuffe  | rNativeAllo |                    |    |            |  |

## ImageBufferNativeAlloc Member List

This is the complete list of members for **ImageBufferNativeAlloc**, including all inherited members.

**Dispose()** (defined in **ImageBufferNativeAlloc**)

ImageBufferNative(ImageBufferInfo info) (defined in ImageBufferNativImageBufferNativeAlloc(ImageBufferNativePool< ImageBufferNativeAlloc(ImageBufferNative)

Planes (defined in ImageBufferNative)

Release() (defined in ImageBufferNativeAlloc)

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| Photon  | Voice             | ImageBuffe  | rNativeGCH | andleSing     | lePlan | е >        |  |

## ImageBufferNativeGCHandleSinglePlane Member List

This is the complete list of members for ImageBufferNativeGCHandleSinglePlane, including all inherited members.

Dispose() (defined in ImageBufferNativeGCHandleSinglePlane)
ImageBufferNative(ImageBufferInfo info) (defined in ImageBufferNativ
ImageBufferNativeGCHandleSinglePlane(ImageBufferNativePool< Im
Info (defined in ImageBufferNative)

PinPlane(byte[] plane) (defined in ImageBufferNativeGCHandleSingle Planes (defined in ImageBufferNative)

Release() (defined in ImageBufferNativeGCHandleSinglePlane)

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| Photon Voi        | се | ImageBuffer | rNativePool     |               |     |            |  |

### ImageBufferNativePool< T > Member List

This is the complete list of members for **ImageBufferNativePool< T >**, including all inherited members.

#### AcquireOrCreate()

AcquireOrCreate(TInfo info)

capacity (defined in ObjectPool< T, ImageBufferInfo >)

createObject(ImageBufferInfo info) (defined in ImageBufferNativePool
createObject(TInfo info) (defined in ObjectPool< T, ImageBufferInfo >
destroyObject(T obj) (defined in ImageBufferNativePool< T >)
destroyObject(TType obj) (defined in ObjectPool< T, ImageBufferInfo
Dispose()</pre>

Factory(ImageBufferNativePool< T > pool, ImageBufferInfo info) (define ImageBufferNativePool(int capacity, Factory factory, string name) (define ImageBufferNativePool(int capacity, Factory factory, string name, Imaginfo (defined in ObjectPool< T, ImageBufferInfo >) Info

infosMatch(ImageBufferInfo i0, ImageBufferInfo i1) (defined in ImageBufferInfosMatch(TInfo i0, TInfo i1) (defined in ObjectPool< T, ImageBufferInit(TInfo info)</pre>

name (defined in ObjectPool< T, ImageBufferInfo >)

**ObjectPool**(int capacity, string name)

ObjectPool(int capacity, string name, TInfo info)

pos (defined in ObjectPool< T, ImageBufferInfo >)

# Release(TType obj, TInfo objInfo) Release(TType obj)

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| Photon Voice ImageInputBuf |                           |                          |    |            |  |  |  |  |
| lmageln                    | ImageInputBuf Member List |                          |    |            |  |  |  |  |

This is the complete list of members for **ImageInputBuf**, including all inherited members.

| Buf (defined in ImageInputBuf)         | <b>ImageInputBuf</b> |
|--|----------------------|
| Flip (defined in ImageInputBuf)        | <b>ImageInputBuf</b> |
| Height (defined in ImageInputBuf)      | <b>ImageInputBuf</b> |
| ImageFormat (defined in ImageInputBuf) | <b>ImageInputBuf</b> |
| Rotation (defined in ImageInputBuf)    | <b>ImageInputBuf</b> |
| Stride (defined in ImageInputBuf)      | <b>ImageInputBuf</b> |
| Width (defined in ImageInputBuf)       | <b>ImageInputBuf</b> |

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| Photon Voice ImageOutputBuf |                            |   |             |                      |    |            |  |  |
| lmoo                        | ImagaQutnutBuf Mambar List |   |             |                      |    |            |  |  |

### ImageOutputBuf Member List

This is the complete list of members for **ImageOutputBuf**, including all inherited members.

| Buf (defined in ImageOutputBuf)    | <b>ImageOutputBuf</b> |
|------------------------------------|-----------------------|
| Height (defined in ImageOutputBuf) | <b>ImageOutputBuf</b> |
| Stride (defined in ImageOutputBuf) | <b>ImageOutputBuf</b> |
| Width (defined in ImageOutputBuf)  | <b>ImageOutputBuf</b> |

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| Photon Voi                  | ce   IProcessor   |                   |       |     |            |  |
| IProcessor< T > Member List |                   |                   |       |     |            |  |

This is the complete list of members for **IProcessor< T >**, including all inherited members.

Process(T[] buf) | IProcessor< T >

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| Photon  | Voi                     | се |             |          |                    |  |            |  |
| ICon    | ICaniacable Member Liet |    |             |          |                    |  |            |  |

### **IServiceable Member List**

This is the complete list of members for **IServiceable**, including all inherited members.

Service(LocalVoice localVoice) | IServiceable

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| Photon Voice SyncAudioOut |    |               |          |              |  |            |  |

## **ISyncAudioOut< T > Member List**

This is the complete list of members for **ISyncAudioOut< T >**, including all inherited members.

IsPlaying (defined in IAudioOut< T >)

Lag (defined in IAudioOut< T >)

Pause() (defined in ISyncAudioOut< T >)

PlaySamplePos (defined in ISyncAudioOut< T >)

Push(T[] frame) (defined in IAudioOut< T >)

Service() (defined in IAudioOut< T >)

Start(int frequency, int channels, int frameSamplesPerChannel, int play[

Stop() (defined in IAudioOut< T >)

UnPause() (defined in ISyncAudioOut< T >)

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| Photon Voi | се | IVoiceTrans | port     |         |     |            |

#### **IVoiceTransport Member List**

This is the complete list of members for **IVoiceTransport**, including all inherited members.

ChannelIdStr(int channelId) (defined in IVoiceTransport)

IsChannelJoined(int channelId) (defined in IVoiceTransport)

LogDebug(string fmt, params object[] args) (defined in ILogger)

LogError(string fmt, params object[] args) (defined in ILogger)

LogInfo(string fmt, params object[] args) (defined in ILogger)

LogWarning(string fmt, params object[] args) (defined in ILogger)

PlayerIdStr(int playerId) (defined in IVoiceTransport)

SendFrame(ArraySegment< byte > data, byte evNumber, byte voiceId, i
SendVoiceRemove(LocalVoice voice, int channelId, int targetPlayerId) (
SendVoicesInfo(IEnumerable< LocalVoice > voices, int channelId, int targetPlayerId) (
SetDebugEchoMode(LocalVoice v) (defined in IVoiceTransport)

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| Photon Voi | ce | LoadBalanc  | ingFronten | d 〉         |    |            |  |

#### **LoadBalancingFrontend Member List**

This is the complete list of members for **LoadBalancingFrontend**, including all inherited members.

ChangeAudioGroups(byte[] groupsToRemove, byte[] groupsToAdd) (de ChannelldStr(int channelld) (defined in LoadBalancingTransport)

Dispose()

GlobalAudioGroup (defined in LoadBalancingTransport)

GlobalInterestGroup

IsChannelJoined(int channelld) (defined in LoadBalancingTransport)
LoadBalancingTransport(ConnectionProtocol connectionProtocol=Cor
LogDebug(string fmt, params object[] args) (defined in LoadBalancing'
LogError(string fmt, params object[] args) (defined in LoadBalancingTra
LogInfo(string fmt, params object[] args) (defined in LoadBalancingTra
LogWarning(string fmt, params object[] args) (defined in LoadBalancin
PlayerIdStr(int playerId) (defined in LoadBalancingTransport)

SendDebugEchoVoicesInfo(int channelld)

SendFrame(ArraySegment< byte > data, byte evNumber, byte voiceId, i SendVoiceRemove(LocalVoice voice, int channelld, int targetPlayerId) ( SendVoicesInfo(IEnumerable< LocalVoice > voices, int channelld, int ta Service()

SetDebugEchoMode(LocalVoice v) (defined in LoadBalancingTransportoriceClient (defined in LoadBalancingTransport)

VoiceClient

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| Photon Voi | се | LoadBalanc | ingTranspo | rt \    |     |            |  |

#### LoadBalancingTransport Member List

This is the complete list of members for **LoadBalancingTransport**, including all inherited members.

ChangeAudioGroups(byte[] groupsToRemove, byte[] groupsToAdd) (de ChannelldStr(int channelld) (defined in LoadBalancingTransport)

Dispose()

GlobalAudioGroup (defined in LoadBalancingTransport)

GlobalInterestGroup

IsChannelJoined(int channelld) (defined in LoadBalancingTransport)
LoadBalancingTransport(ConnectionProtocol connectionProtocol=Cor
LogDebug(string fmt, params object[] args) (defined in LoadBalancing'
LogError(string fmt, params object[] args) (defined in LoadBalancingTra
LogInfo(string fmt, params object[] args) (defined in LoadBalancingTra
LogWarning(string fmt, params object[] args) (defined in LoadBalancin
PlayerIdStr(int playerId) (defined in LoadBalancingTransport)

SendDebugEchoVoicesInfo(int channelld)

SendFrame(ArraySegment< byte > data, byte evNumber, byte voiceId, i SendVoiceRemove(LocalVoice voice, int channelld, int targetPlayerId) ( SendVoicesInfo(IEnumerable< LocalVoice > voices, int channelld, int ta Service()

SetDebugEchoMode(LocalVoice v) (defined in LoadBalancingTransportoriceClient (defined in LoadBalancingTransport)

VoiceClient

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| Photon Voi | ce \ LocalVoice   |          |         |     | _          |  |
| LocalVo    | oice Meml         | ber Lis  | st      |     |            |  |

This is the complete list of members for **LocalVoice**, including all inherited members.

| CreateDefaultEncoder(VoiceInfo info) (defined in LocalVoice) | LocalVo |
|--|---------|
| DATA_POOL_CAPACITY (defined in LocalVoice)                   | LocalVo |
| DebugEchoMode  | LocalVo |
| Dispose() (defined in LocalVoice)                            | LocalVo |
| disposed (defined in LocalVoice)                             | LocalVo |
| disposeLock (defined in LocalVoice)                          | LocalVo |
| encoder (defined in LocalVoice)                              | LocalVo |
| Encrypt  | LocalVo |
| FramesSent   | LocalVo |
| FramesSentBytes  | LocalVo |
| Group (defined in LocalVoice)                                | LocalVo |
| Info   | LocalVo |
| InterestGroup  | LocalVo |
| IsCurrentlyTransmitting                                      | LocalVo |
| LocalUserServiceable   | LocalVo |
| Reliable   | LocalVo |
| RemoveSelf()   | LocalVo |
| resetNoTransmitCnt() (defined in LocalVoice)                 | LocalVo |
| TransmitEnabled  | LocalVo |
| voiceClient (defined in LocalVoice)                          | LocalVo |

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| Photon Voi | ce \ LocalVoice | Audio    |         |     |            |  |

#### LocalVoiceAudio< T > Member List

This is the complete list of members for **LocalVoiceAudio< T >**, including all inherited members.

AddPostProcessor(params IProcessor< T > [] processors)

**AddPreProcessor**(params IProcessor< T >[] processors)

**BufferFactory** (defined in **LocalVoiceFramed< T >**)

channels (defined in LocalVoiceAudio< T >)

ClearProcessors()

Create(VoiceClient voiceClient, byte voiceId, IEncoder encoder, VoiceInt

CreateDefaultEncoder(VoiceInfo info) (defined in LocalVoiceAudio < T

**DATA\_POOL\_CAPACITY** (defined in **LocalVoice**)

DebugEchoMode

Dispose()

disposed (defined in LocalVoice)

disposeLock (defined in LocalVoice)

encoder (defined in LocalVoice)

**Encrypt** 

**FrameSize** 

**FramesSent** 

**FramesSentBytes** 

**Group** (defined in **LocalVoice**)

Info

initBuiltinProcessors() (defined in LocalVoiceAudio< T >)

InterestGroup

**IsCurrentlyTransmitting** 

levelMeter (defined in LocalVoiceAudio< T >)

**LevelMeter** (defined in **LocalVoiceAudio< T >**)

LocalUserServiceable

PushData(T[] buf)

PushDataAsync(T[] buf)

PushDataAsyncReady

Reliable

RemoveSelf()

resampleSource (defined in LocalVoiceAudio< T >)

resetNoTransmitCnt() (defined in LocalVoice)

**TransmitEnabled** 

voiceClient (defined in LocalVoice)

**VoiceDetector** (defined in **LocalVoiceAudio< T >**)

voiceDetector (defined in LocalVoiceAudio< T >)

**VoiceDetectorCalibrate**(int durationMs)

VoiceDetectorCalibrating

voiceDetectorCalibration (defined in LocalVoiceAudio< T >)

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| Photon Voi | ce \ Local\ | oiceAudioDumn | ny 〉    |     |            |  |

## **LocalVoiceAudioDummy Member List**

This is the complete list of members for **LocalVoiceAudioDummy**, including all inherited members.

| CreateDefaultEncoder(VoiceInfo info) (defined in LocalVoice) | Loc |
|--|-----|
| DATA_POOL_CAPACITY (defined in LocalVoice)                   | Loc |
| DebugEchoMode  | Loc |
| Dispose() (defined in LocalVoice)                            | Loc |
| disposed (defined in LocalVoice)                             | Loc |
| disposeLock (defined in LocalVoice)                          | Loc |
| Dummy  | Loc |
| encoder (defined in LocalVoice)                              | Loc |
| Encrypt  | Loc |
| FramesSent   | Loc |
| FramesSentBytes  | Loc |
| Group (defined in LocalVoice)                                | Loc |
| Info   | Loc |
| InterestGroup  | Loc |
| <b>IsCurrentlyTransmitting</b>                               | Loc |
| LevelMeter (defined in LocalVoiceAudioDummy)                 | Loc |
| LocalUserServiceable   | Loc |
| LocalVoiceAudioDummy() (defined in LocalVoiceAudioDummy)     | Loc |
| Reliable   | Loc |
| RemoveSelf()   | Loc |

| resetNoTransmitCnt() (defined in LocalVoice)               | Loc |
|--|-----|
| TransmitEnabled  | Loc |
| voiceClient (defined in LocalVoice)                        | Loc |
| VoiceDetector (defined in LocalVoiceAudioDummy)            | Loc |
| VoiceDetectorCalibrate(int durationMs)                     | Loc |
| VoiceDetectorCalibrating (defined in LocalVoiceAudioDummy) | Loc |

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| Photon Voi | се | LocalVoice <i>A</i> | AudioFloat |         |     |            |  |

#### LocalVoiceAudioFloat Member List

This is the complete list of members for **LocalVoiceAudioFloat**, including all inherited members.

channels (defined in LocalVoiceAudio< float >)

Create(VoiceClient voiceClient, byte voiceId, IEncoder encoder, VoiceInterateDefaultEncoder(VoiceInfo info) (defined in LocalVoiceAudio< float >)

**LevelMeter** (defined in **LocalVoiceAudio< float >**)

levelMeter (defined in LocalVoiceAudio< float >)

resampleSource (defined in LocalVoiceAudio< float >)

voiceDetector (defined in LocalVoiceAudio< float >)

**VoiceDetector** (defined in **LocalVoiceAudio< float >**)

VoiceDetectorCalibrate(int durationMs)

VoiceDetectorCalibrating

voiceDetectorCalibration (defined in LocalVoiceAudio< float >)

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| Photon Voi | се | LocalVoice <i>A</i> | AudioShort | $\rangle$ |     |            |  |

#### LocalVoiceAudioShort Member List

This is the complete list of members for **LocalVoiceAudioShort**, including all inherited members.

channels (defined in LocalVoiceAudio< short >)

Create(VoiceClient voiceClient, byte voiceId, IEncoder encoder, VoiceInterateDefaultEncoder(VoiceInfo info) (defined in LocalVoiceAudio < sinitBuiltinProcessors() (defined in LocalVoiceAudio < short >)

LevelMeter (defined in LocalVoiceAudio < short >)

levelMeter (defined in LocalVoiceAudio< short >)

resampleSource (defined in LocalVoiceAudio< short >)

voiceDetector (defined in LocalVoiceAudio< short >)

VoiceDetector (defined in LocalVoiceAudio< short >)

VoiceDetectorCalibrate(int durationMs)

VoiceDetectorCalibrating

voiceDetectorCalibration (defined in LocalVoiceAudio< short >)

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| Photon  | Voi  | се           | LocalVoiceF    | ramed |           |               |      |  |
| Loos    | .IV. | ۰i،          | oEram <i>e</i> | \d/ T | > Mon     | shoi          | Lict |  |

#### LocalVoiceFramed< T > Member List

This is the complete list of members for LocalVoiceFramed < T >, including all inherited members.

| AddPostProcessor(params IProcessor< T >[] processors)        | LocalVo |
|--|---------|
| AddPreProcessor(params IProcessor< T >[] processors)         | LocalVo |
| BufferFactory (defined in LocalVoiceFramed< T >)             | LocalVo |
| ClearProcessors()  | LocalVo |
| CreateDefaultEncoder(VoiceInfo info) (defined in LocalVoice) | LocalVo |
| DATA_POOL_CAPACITY (defined in LocalVoice)                   | LocalVo |
| DebugEchoMode  | LocalVo |
| Dispose()  | LocalVo |
| disposed (defined in LocalVoice)                             | LocalVo |
| disposeLock (defined in LocalVoice)                          | LocalVo |
| encoder (defined in LocalVoice)                              | LocalVo |
| Encrypt  | LocalVo |
| FrameSize  | LocalVo |
| FramesSent   | LocalVo |
| FramesSentBytes  | LocalVo |
| Group (defined in LocalVoice)                                | LocalVo |
| Info   | LocalVo |
| InterestGroup  | LocalVo |
| IsCurrentlyTransmitting                                      | LocalVo |
| LocalUserServiceable   | LocalVo |

| PushDataAsync(T[] buf) Local\                       |
|---|
| PushDataAsyncReady Local\                           |
| Reliable Local\                                     |
| RemoveSelf() Local\                                 |
| resetNoTransmitCnt() (defined in LocalVoice) LocalV |
| TransmitEnabled Local\                              |
| voiceClient (defined in LocalVoice) LocalV          |

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| Photon Voice LocalVoiceFramedBase |             |               |                    |    |            |  |  |
| _                                 |             | _             |                    |    |            |  |  |

#### LocalVoiceFramedBase Member List

This is the complete list of members for **LocalVoiceFramedBase**, including all inherited members.

| CreateDefaultEncoder(VoiceInfo info) (defined in LocalVoice) | LocalVo |
|--|---------|
| DATA_POOL_CAPACITY (defined in LocalVoice)                   | LocalVo |
| DebugEchoMode  | LocalVo |
| Dispose() (defined in LocalVoice)                            | LocalVo |
| disposed (defined in LocalVoice)                             | LocalVo |
| disposeLock (defined in LocalVoice)                          | LocalVo |
| encoder (defined in LocalVoice)                              | LocalVo |
| Encrypt  | LocalVo |
| FrameSize  | LocalVo |
| FramesSent   | LocalVo |
| FramesSentBytes  | LocalVo |
| Group (defined in LocalVoice)                                | LocalVo |
| Info   | LocalVo |
| InterestGroup  | LocalVo |
| <b>IsCurrentlyTransmitting</b>                               | LocalVo |
| LocalUserServiceable   | LocalVo |
| Reliable   | LocalVo |
| RemoveSelf()   | LocalVo |
| resetNoTransmitCnt() (defined in LocalVoice)                 | LocalVo |
| TransmitEnabled  | LocalVo |

#### voiceClient (defined in LocalVoice)

LocalVo

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## Photon Voice v2.7

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| Photon Voi | Photon Voice ObjectFactory |                 |       |     |            |  |  |  |

#### **ObjectFactory< TType, TInfo > Member List**

This is the complete list of members for **ObjectFactory< TType**, **TInfo** >, including all inherited members.

Free(TType obj) (defined in ObjectFactory< TType, TInfo >)
Free(TType obj, TInfo info) (defined in ObjectFactory< TType, TInfo >)
Info (defined in ObjectFactory< TType, TInfo >)
New() (defined in ObjectFactory< TType, TInfo >)
New(TInfo info) (defined in ObjectFactory< TType, TInfo >)

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| Photon Voi | ce ObjectPool |          |         |     |            |

#### **ObjectPool< TType, TInfo > Member List**

This is the complete list of members for **ObjectPool< TType**, **TInfo >**, including all inherited members.

AcquireOrCreate()

AcquireOrCreate(TInfo info)

capacity (defined in ObjectPool< TType, TInfo >)

createObject(TInfo info) (defined in ObjectPool< TType, TInfo >)

destroyObject(TType obj) (defined in ObjectPool< TType, TInfo >)

Dispose()

info (defined in ObjectPool< TType, TInfo >)

Info

infosMatch(TInfo i0, TInfo i1) (defined in ObjectPool< TType, TInfo >)
Init(TInfo info)

name (defined in ObjectPool< TType, TInfo >)

ObjectPool(int capacity, string name)

ObjectPool(int capacity, string name, TInfo info)

pos (defined in ObjectPool< TType, TInfo >)

Release(TType obj, TInfo objInfo)

Release(TType obj)

## Photon Voice v2.7

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| Photon Voice OpusCodec |             |          |                     |  |            |  |  |
| OpusCodec Member List  |             |          |                     |  |            |  |  |

This is the complete list of members for **OpusCodec**, including all inherited members.

FrameDuration enum name (defined in OpusCodec) OpusCodec

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| Photon Voi        | се | OpusCodec     | Decode          | r > |     |            |

## **OpusCodec.Decoder< T > Member List**

This is the complete list of members for **OpusCodec.Decoder< T >**, including all inherited members.

decoder (defined in OpusCodec.Decoder< T >)

Decoder(Action< T[]> output, ILogger logger) (defined in OpusCodec.D
decodeTyped(byte[] buf) (defined in OpusCodec.Decoder< T >)

Dispose() (defined in OpusCodec.Decoder< T >)

Error (defined in OpusCodec.Decoder< T >)

Input(byte[] buf)

Open(VoiceInfo i)

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| Photon Voi          | ce C | OpusCodec | Decode          | rFactory ) | )   |            |  |

### **OpusCodec.DecoderFactory Member List**

This is the complete list of members for **OpusCodec.DecoderFactory**, including all inherited members.

Create < T > (VoiceInfo i, ILogger logger) (defined in OpusCodec.Decod

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| Photon Voi            | се | OpusCodec   | Decode          | rFloat |     |            |  |

#### **OpusCodec.DecoderFloat Member List**

This is the complete list of members for **OpusCodec.DecoderFloat**, including all inherited members.

decoder (defined in OpusCodec.Decoder< float >)

Decoder(Action< T[]> output, ILogger logger) (defined in OpusCodec.D
DecoderFloat(Action< float[]> output, ILogger logger) (defined in OpusCodecTyped(byte[] buf) (defined in OpusCodec.DecoderFloat)

Dispose() (defined in OpusCodec.Decoder< float >)

Error (defined in OpusCodec.Decoder< float >)

Input(byte[] buf)

Open(VoiceInfo i)

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| Photon Voi | ce OpusCodeo | Decode        | rShort          |    |             |

## **OpusCodec.DecoderShort Member List**

This is the complete list of members for **OpusCodec.DecoderShort**, including all inherited members.

decoder (defined in OpusCodec.Decoder< short >)

Decoder(Action< T[]> output, ILogger logger) (defined in OpusCodec.D DecoderShort(Action< short[]> output, ILogger logger) (defined in Opus decodeTyped(byte[] buf) (defined in OpusCodec.DecoderShort)

Dispose() (defined in OpusCodec.Decoder< short >)

Error (defined in OpusCodec.Decoder< short >)

Input(byte[] buf)

Open(VoiceInfo i)

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| Photon Voi | ce OpusCodeo            | Encode          | r >     |     |            |

## **OpusCodec.Encoder< T > Member List**

This is the complete list of members for **OpusCodec.Encoder< T >**, including all inherited members.

DequeueOutput() (defined in OpusCodec.Encoder< T >)

Dispose() (defined in OpusCodec.Encoder< T >)

disposed (defined in OpusCodec.Encoder< T >)

encoder (defined in OpusCodec.Encoder< T >)

Encoder(VoiceInfo i, ILogger logger) (defined in OpusCodec.Encoder<
encodeTyped(T[] buf) (defined in OpusCodec.Encoder< T >)

Error (defined in OpusCodec.Encoder< T >)

Input(T[] buf) (defined in OpusCodec.Encoder< T >)

IEncoderDirect< T[]>.Input(B buf)

Output (defined in OpusCodec.Encoder< T >)

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## Photon Voice v2.7

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| Photon Voi | ce OpusCodeo | Encode          | rFloat |     |            |

#### **OpusCodec.EncoderFloat Member List**

This is the complete list of members for **OpusCodec.EncoderFloat**, including all inherited members.

DequeueOutput() (defined in OpusCodec.Encoder< float >)
Dispose() (defined in OpusCodec.Encoder< float >)
disposed (defined in OpusCodec.Encoder< float >)
Encoder(VoiceInfo i, ILogger logger) (defined in OpusCodec.Encoder<
encoder (defined in OpusCodec.Encoder< float >)
encodeTyped(float[] buf) (defined in OpusCodec.EncoderFloat)
encodeTyped(T[] buf) (defined in OpusCodec.Encoder< float >)
Error (defined in OpusCodec.Encoder< float >)
Input(T[] buf) (defined in OpusCodec.Encoder< float >)
Output (defined in OpusCodec.Encoder< float >)

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## Photon Voice v2.7

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| Photon Voi | ce C | )pusCodec | Encode          | rShort |     |            |

## **OpusCodec.EncoderShort Member List**

This is the complete list of members for **OpusCodec.EncoderShort**, including all inherited members.

DequeueOutput() (defined in OpusCodec.Encoder< short >)
Dispose() (defined in OpusCodec.Encoder< short >)
disposed (defined in OpusCodec.Encoder< short >)
Encoder(VoiceInfo i, ILogger logger) (defined in OpusCodec.Encoder<
encoder (defined in OpusCodec.Encoder< short >)
encodeTyped(short[] buf) (defined in OpusCodec.EncoderShort)
encodeTyped(T[] buf) (defined in OpusCodec.Encoder< short >)
Error (defined in OpusCodec.Encoder< short >)
Input(T[] buf) (defined in OpusCodec.Encoder< short >)
Output (defined in OpusCodec.Encoder< short >)

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| Class Lis | st                  | Class Index | Class Hierarchy Cla |               | ss Members |  |  |
| Photon    | Voice               | OpusCodec   | Factory             |               |            |  |  |
|           | <b>^</b>            |             | B 4                 |               |            |  |  |

#### **OpusCodec.Factory Member List**

This is the complete list of members for **OpusCodec.Factory**, including all inherited members.

CreateEncoder< B >(VoiceInfo i, ILogger logger) (defined in OpusCode

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| Photon Voi | Photon Voice OpusCodec Util |                     |  |            |  |  |  |  |  |
| OpusCo     | OpusCodec.Util Member List  |                     |  |            |  |  |  |  |  |

This is the complete list of members for **OpusCodec.Util**, including all inherited members.

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| Photon Voi | се               | PrimitiveArı | rayPool                |       |     |             |

#### **PrimitiveArrayPool< T > Member List**

This is the complete list of members for **PrimitiveArrayPool< T >**, including all inherited members.

AcquireOrCreate()

AcquireOrCreate(TInfo info)

capacity (defined in ObjectPool< T[], int >)

createObject(int info) (defined in PrimitiveArrayPool< T >)

createObject(TInfo info) (defined in ObjectPool< T[], int >)

destroyObject(T[] obj) (defined in PrimitiveArrayPool< T >)

destroyObject(TType obj) (defined in ObjectPool< T[], int >)

Dispose()

info (defined in ObjectPool< T[], int >)

Info

infosMatch(int i0, int i1) (defined in PrimitiveArrayPool< T >)

infosMatch(TInfo i0, TInfo i1) (defined in ObjectPool< T[], int >)

Init(TInfo info)

name (defined in ObjectPool< T[], int >)

ObjectPool(int capacity, string name)

ObjectPool(int capacity, string name, TInfo info)

pos (defined in ObjectPool< T[], int >)

PrimitiveArrayPool(int capacity, string name) (defined in PrimitiveArra PrimitiveArrayPool(int capacity, string name, int info) (defined in Primit Release(TType obj, TInfo objInfo)

#### Release(TType obj)

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| Photon Voi | ce $\rangle$      | RemoteVoic | elnfo             |               |     |            |  |

#### RemoteVoiceInfo Member List

This is the complete list of members for **RemoteVoiceInfo**, including all inherited members.

Channelld RemoteVoiceInfo
Info RemoteVoiceInfo
PlayerId RemoteVoiceInfo
VoiceId RemoteVoiceInfo

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| Photon Voi | се                | RemoteVoic  | eOptions        |  |     |             |

#### RemoteVoiceOptions Member List

This is the complete list of members for **RemoteVoiceOptions**, including all inherited members.

#### Decoder

**OnRemoteVoiceRemoveAction** 

OutputImageFlip (defined in RemoteVoiceOptions)

OutputImageFormat (defined in RemoteVoiceOptions)

**SetOutput**(Action< float[]> output)

**SetOutput**(Action< short[]> output) (defined in **RemoteVoiceOptions**)

SetOutput(Action < ImageOutputBuf > output) (defined in RemoteVoice

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| Photon Voice UnsupportedCodecException |                   |             |                   | eption        |     |            |  |
|  |                   |             |                   |               |     |            |  |

### **UnsupportedCodecException Member List**

This is the complete list of members for **UnsupportedCodecException**, including all inherited members.

UnsupportedCodecException(string info, Codec codec, ILogger logge

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|---|----------------------|----------|-------------------|--|------------|--|--|--|
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| Photon Voice UnsupportedSampleTypeException |                      |          |                   |  |            |  |  |  |
|   | _                    | _        |                   |  |            |  |  |  |

# **UnsupportedSampleTypeException Member**List

This is the complete list of members for **UnsupportedSampleTypeException**, including all inherited members.

UnsupportedSampleTypeException(Type t) UnsupportedSampleType

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| Photon Voi | се                  | VoiceClient | $\rangle$ |               |     |            |

#### VoiceClient Member List

This is the complete list of members for **VoiceClient**, including all inherited members.

CreateLocalVoice(VoiceInfo voiceInfo, int channelId=0, IEncoder encode CreateLocalVoiceAudio T > (VoiceInfo voiceInfo, IAudioDesc audioSoe CreateLocalVoiceAudioFromSource(VoiceInfo voiceInfo, IAudioDesc entered CreateLocalVoiceFramed T > (VoiceInfo voiceInfo, int frameSize, int cetugLostPercent

Dispose() (defined in VoiceClient)

**FramesLost** 

**FramesReceived** 

**FramesSent** 

**FramesSentBytes** 

LocalVoices

LocalVoicesInChannel(int channelId)

**OnRemoteVoiceInfoAction** 

RemoteVoiceInfoDelegate(int channelld, int playerld, byte voiceId, Voice RemoteVoiceInfos

RemoveLocalVoice(LocalVoice voice)

RoundTripTime

RoundTripTimeVariance

Service()

**SuppressInfoDuplicateWarning** 

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| Photon Voi | ce $\rangle$ | VoiceEvent  | $\rangle$ |         |     |            |  |

# **VoiceEvent Member List**

This is the complete list of members for **VoiceEvent**, including all inherited members.

Code VoiceEvent

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| Photon Voi | ce Void | celnfo |          |         |     |            |  |

### **VoiceInfo Member List**

This is the complete list of members for **VoiceInfo**, including all inherited members.

**Bitrate** 

**Channels** 

Codec (defined in VoiceInfo)

CreateAudioOpus(POpusCodec.Enums.SamplingRate samplingRate, i

**FrameDurationSamples** 

**FrameDurationUs** 

**FrameSize** 

Height

SamplingRate

ToString() (defined in VoiceInfo)

**UserData** 

Width

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| Class L | ist   | Class Index | Class Hi | erarchy | Cla | ss Members |  |
| Photon  | Voice | WebRTCAu    | dioLib   |         |     |            |  |

### WebRTCAudioLib Member List

This is the complete list of members for **WebRTCAudioLib**, including all inherited members.

webrtc\_audio\_processor\_create(int samplingRate, int channels, int fra webrtc\_audio\_processor\_destroy(IntPtr proc) (defined in WebRTCAu webrtc\_audio\_processor\_init(IntPtr proc) (defined in WebRTCAudioL webrtc\_audio\_processor\_process(IntPtr proc, short[] buffer, int offset, webrtc\_audio\_processor\_process\_reverse(IntPtr proc, short[] buffer, webrtc\_audio\_processor\_set\_config\_param(IntPtr proc, int param, in webrtc\_audio\_processor\_set\_param(IntPtr proc, int param, int v) (def

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| Class L | ist   | Class Index | Class Hi | erarchy Cla |     | ss Members |  |
| Photon  | Voice | e WebRTCAu  | dioLib C | onfigParar  | n 〉 |            |  |

## WebRTCAudioLib.ConfigParam Member List

This is the complete list of members for **WebRTCAudioLib.ConfigParam**, including all inherited members.

AEC\_DELAY\_AGNOSTIC (defined in WebRTCAudioLib.ConfigParam AEC\_EXTENDED\_FILTER (defined in WebRTCAudioLib.ConfigParam AGC\_EXPERIMENTAL (defined in WebRTCAudioLib.ConfigParam) AGC\_EXPERIMENTAL\_CLIP\_LEVEL\_MIN (defined in WebRTCAudioLib.ConfigParam) AGC\_EXPERIMENTAL\_STARTUP\_MIN\_VOLUME (defined in WebRTCAudioLib.ConfigParam)

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| Photon Voi | ce WebR   | ΓCAudioLib | Pai    | ram $\rangle$ |    |            |  |

#### WebRTCAudioLib.Param Member List

This is the complete list of members for **WebRTCAudioLib.Param**, including all inherited members.

**AEC** (defined in WebRTCAudioLib.Param)

AEC\_SUPPRESSION\_LEVEL (defined in WebRTCAudioLib.Param)

**AECM** (defined in **WebRTCAudioLib.Param**)

**AECM\_COMFORT\_NOISE** (defined in **WebRTCAudioLib.Param**)

**AECM\_ROUTING\_MODE** (defined in **WebRTCAudioLib.Param**)

AGC (defined in WebRTCAudioLib.Param)

AGC\_COMPRESSION\_GAIN (defined in WebRTCAudioLib.Param)

**AGC\_LIMITER** (defined in WebRTCAudioLib.Param)

AGC\_MODE (defined in WebRTCAudioLib.Param)

**HIGH\_PASS\_FILTER** (defined in WebRTCAudioLib.Param)

NS (defined in WebRTCAudioLib.Param)

**NS\_LEVEL** (defined in **WebRTCAudioLib.Param**)

REVERSE\_STREAM\_DELAY\_MS (defined in WebRTCAudioLib.Parai

**VAD** (defined in **WebRTCAudioLib.Param**)

VAD\_FRAME\_SIZE\_MS (defined in WebRTCAudioLib.Param)

VAD\_LIKEHOOD (defined in WebRTCAudioLib.Param)



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| Photon Voi | се        | WebRTCAu    | dioProcesso | or $\rangle$ |  |            |

### WebRTCAudioProcessor Member List

This is the complete list of members for **WebRTCAudioProcessor**, including all inherited members.

**AEC** (defined in WebRTCAudioProcessor)

**AECMComfortNoise** (defined in WebRTCAudioProcessor)

AECMobile (defined in WebRTCAudioProcessor)

**AECMRoutingMode** (defined in **WebRTCAudioProcessor**)

**AECStreamDelayMs** (defined in **WebRTCAudioProcessor**)

AGC (defined in WebRTCAudioProcessor)

**Bypass** (defined in **WebRTCAudioProcessor**)

**Dispose()** (defined in **WebRTCAudioProcessor**)

**HighPass** (defined in **WebRTCAudioProcessor**)

NoiseSuppression (defined in WebRTCAudioProcessor)

OnAudioOutFrameFloat(float[] data) (defined in WebRTCAudioProces

Process(short[] buf) (defined in WebRTCAudioProcessor)

IProcessor< short >.Process(T[] buf)

VAD (defined in WebRTCAudioProcessor)

webrtc\_audio\_processor\_create(int samplingRate, int channels, int fra webrtc\_audio\_processor\_destroy(IntPtr proc) (defined in WebRTCAu webrtc\_audio\_processor\_init(IntPtr proc) (defined in WebRTCAudioL webrtc\_audio\_processor\_process(IntPtr proc, short[] buffer, int offset, webrtc\_audio\_processor\_process\_reverse(IntPtr proc, short[] buffer, webrtc\_audio\_processor\_set\_config\_param(IntPtr proc, int param, in

# webrtc\_audio\_processor\_set\_param(IntPtr proc, int param, int v) (def WebRTCAudioProcessor(ILogger logger, int frameSize, int samplingRa

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| POpusCodec    | ) c | pusDecoder  |          |         |     |            |  |
| _             |     |             | _        |         |     |            |  |

### **OpusDecoder Member List**

This is the complete list of members for **OpusDecoder**, including all inherited members.

DecodePacketFloat(byte[] packetData) (defined in OpusDecoder)
DecodePacketShort(byte[] packetData) (defined in OpusDecoder)
Dispose() (defined in OpusDecoder)

OpusDecoder(SamplingRate outputSamplingRateHz, Channels numCharviousPacketBandwidth (defined in OpusDecoder)

Version (defined in OpusDecoder)

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| POpusCodec | O | pusEncoder |          |         |     |            |  |

## **OpusEncoder Member List**

This is the complete list of members for **OpusEncoder**, including all inherited members.

Bitrate (defined in OpusEncoder)

**BitrateMax** (defined in **OpusEncoder**)

**Complexity** (defined in **OpusEncoder**)

**Dispose()** (defined in **OpusEncoder**)

**DtxEnabled** (defined in **OpusEncoder**)

Encode(float[] pcmSamples) (defined in OpusEncoder)

Encode(short[] pcmSamples) (defined in OpusEncoder)

**EncoderDelay** 

ExpectedPacketLossPercentage (defined in OpusEncoder)

ForceChannels (defined in OpusEncoder)

FrameSizePerChannel (defined in OpusEncoder)

InputChannels (defined in OpusEncoder)

InputSamplingRate (defined in OpusEncoder)

MaxBandwidth (defined in OpusEncoder)

OpusEncoder(SamplingRate inputSamplingRateHz, Channels numCha

SignalHint (defined in OpusEncoder)

**UseInbandFEC** (defined in **OpusEncoder**)

UseUnconstrainedVBR (defined in OpusEncoder)

Version (defined in OpusEncoder)

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| POpusCodec | ) o | pusException                  | 1 >   |       |            |  |  |
|            |     |                               |       |       |            |  |  |

# **OpusException Member List**

This is the complete list of members for **OpusException**, including all inherited members.

**OpusException**(OpusStatusCode statusCode, string message) (defined **StatusCode** (defined in **OpusException**)

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