

### NI-DAQ<sup>™</sup>7. Automation Explorer

# *x* Measurement &

20058370041G-0112

NI-DAQMeasurement & Automation Explorer (MAX) DAQSCXI



NI-DAQDAQAPI NI-DAQ NI-DAQNI-DAQ Readme2NI-DAQ APINI-DAQmx → → **National Instruments** → **NI-DAQ** → **NI-DAQmx** NINI-DAQmx

NI-DA

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monospace

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- DAQ —NI-DAQ 7.x DAQ
- SCXI—SCXI
- Getting Started with SCXI—SCXIDAQ
- —

### **Measurement & Automation ExplorerMAX**

MAXSCXI

- •
- •
- SCXI

MAXNINI-DAQDAQ

$\overline{\mathbb{N}}$				
DAQ	$\rightarrow NI\text{-}DAQ$	MAX		
DAQ				
$\mathbb{N}$		<f5></f5>	$\rightarrow$	



X LabVIEW Real-Time

LabVIEW Real-TimeDAQ

MAX

### • DAQ

### • RTDAQ

#### • SCXI

#### • SCXI

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▶

DAQ DAQ DAQ

DAQ

DAQ DAQ

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DAQ

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- .
- NI-DAQ

 NI-DAQNI-DAQmx
 → NI-DAQ
 → NI 

 DAQmx
 → NI → NI 

 Image: Second Seco

DAQ

- Windows 2000/XP
- <u>Windows NT</u>

<u>NI-DAQ</u>

### Windows 2000/XPDAQ

Windows 2000/XPDAQ

- 1. DAQDAQ
- 2. MAX
- 3. DAQ <u>DAQ</u>

Windows 2000/XP

<u>NI-DAQ</u>

### Windows NTDAQ

#### ISAPCI

ISAPCIWindows NT

1.
2. DAQ
3.
4. MAX
5. DAQ DAQ
<u>ISA PCI</u>

PC

PC



DAQ

- 1.  $\rightarrow$  **NI-DAQ**
- 2.

3. DAQ

- ----
- <u>AI</u>—
- <u>AO</u>—
- <u>Accessory</u>—
- <u>OPC</u>—OPC

4.

5. **OK** 

 $\overline{\mathbb{N}}$ 

- 1.  $\rightarrow$  **NI-DAQ**
- 2.

### 3. DAQ

- •
- •
- •

### AI

AI

- 1.  $\rightarrow$  **NI-DAQ**
- 2.
- 3. DAQ **AI**DAQ
  - •/
  - •

### AO

AO

- 1.  $\rightarrow$  **NI-DAQ**
- 2.
- 3. DAQ **AO**DAQ
  - •
  - •
  - •
  - •

- 1.  $\rightarrow$  **NI-DAQ**
- 2.
- 3. DAQ

### OPC

OPC

- 1.  $\rightarrow$  **NI-DAQ**
- 2.
- 3. **OPC**DAQ/OPC
- ŎŢ OPCNI-DAQOPC

- 1.  $\rightarrow$  **NI-DAQ**
- 2.

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3. DAQRDA

DAQ 1.  $\rightarrow$  NI-DAQ 2. MAX <u>I/OI/O</u>DAQ 3.

4.

LabVIEW Real-TimeDAQPCI-7041 RTDAQ

DAQAI	
1.	$\rightarrow$ NI-DAQ
2.	
MAX	
3. DAQ	
4. Y	
5.	
•	—
•	—Hz1000
• —Hz	Ζ
Hz	Hz



- 7.
- 8.

DAQAO 1.  $\rightarrow$  NI-DAQ 2. --MAX

3. DAQ

4.

• **DC**—DC

/

• —AC

DC **DC** 

5.

6.

7.

# **I/O**

DAQI/O 1. → **NI-DAQ** 2.

- \_\_\_\_
- MAX
  - I/O
- 3. DAQGPCTR
- 4.
- —
- \_\_\_\_
- \_\_\_\_

- 5.
- 6.
- 7.

# **I/O**

DAQDIO 1.  $\rightarrow$  **NI-DAQ** 2. --MAX 3. 4. 10

5.

6.

DAQ

- 1.  $\rightarrow$  **NI-DAQ**
- 2.

3. DAQ

### **RDALabVIEW Real-TimeDAQ**

DAQ

NI-DAQ\_\_\_\_\_

DAQ

DAQ

<u>RDA</u>

### NI-DAQ

NI-DAQRDADAQ LabVIEW NI-DAQVI

#### 1. $\rightarrow$ **NI-DAQ**

- 2.
- 3. /IPIP



DAQ

- 1. MAX  $\rightarrow$  **NI-DAQ**  $\rightarrow$  **DAQ**
- 2. IP
- 3. RDARDA
- 4. **OK** <u>DAQ</u> **OK**

DAQDAQSCXI

1

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- •
- •
- •

NI-DAQRDALabVIEW Real-Time LabVIEW Real-TimeDAQDAQMAX

DAQ
# RDA

RDA

- 1. DAQNI-DAQRDA
- 2. RDADAQ
- 3. RDA DAQ
- 4. RDA  $\rightarrow \rightarrow$  National Instruments  $\rightarrow$  NI-DAQ  $\rightarrow$  NI-DAQ RDARDARDA



# **RTDAQNI PCI-7041/6040E**

RTDAQ

RTDAQ

<u>RTDAQ</u>

RTDAQ\_\_\_\_\_

<u>RTDAQ</u>

RTDAQ

RTDAQ

- 1. RTDAQ
- 2. MAX

RT::<>

DAQ <u>RTDAQ</u>

RTDAQ

- 1. 2.
  - •
  - MAX
- 3.
  - •
  - •
- 4. **OK**
- 1.
- 2.
- 3. **<Enter>**

### RTDAQ

- 1. 2. MAX 3. OK 1. 2. MAX
- 3. **OK**

RTDAQ

1. 2.

۷.

\_\_\_\_

MAX

3. **OK** 

### RTDAQ

- 1.
- 2.
- 3.

LabVIEW Real-Time DAQ <u>Troubleshooter</u>RTSCXI **Configuration Wizard** 

ni.com/support/install Real-Time (RT) SCXI on RT Systems <u>Hardware Install</u> Real-Time

SCXI

<u>SCXI</u>

SCXI

SCXI

<u>SCXI</u>

- <u>SCXI</u><u>SCXI</u>
- <u>SCXI</u><u>SCXI</u>
- SCXI
- <u>SCXI</u><u>SCXI</u>

SCXI

SCXI

<u>SCXI</u>

SCXI

- 1.
- 2.  $\rightarrow$  **NI-DAQ** SCXI
- 3.
- 4.
- 5.

- 1.  $\rightarrow$  NI-DAQ SCXI
- 2. SCXI SCXI
- 3.
- 4.
- ፟∕∽\_\_\_\_

SCXI

- 1. SCXI
- 2.
- ID
- ١.
- SCXI (PXI-1010)
- 3.
- 4. NI-DAQSCXISCXI

#### NI-DAQSCXI <u>SCXI</u>

- kabVIEW Real-TimeDAQPCI-7041 RTDAQSCXI
   5.
   6.
   8.
   8.
   8.
   8.
   8.
   8.
- $\overline{\mathbb{N}}$

SCXI

1.  $\rightarrow$  **NI-DAQ** 

2. SCXI



SCXISCXI

SCXI

SCXI

<u>SCXI</u>

SCXI <u>SCXI</u> SCXI 1.  $\rightarrow$  NI-DAQ 2. SCXI 3. 4. SCXI 5. \_\_\_\_\_ 6.

- 1.  $\rightarrow$  **NI-DAQ**
- 2.



SCXI

1.

2. SCXI

SCXI

1. SCXI

2.

MAXSCXIIDSCXISCXI MAX

SCXI



 LabVIEW Real-TimeDAQPCI-7041 RTDAQSCXI



Q

1.

- 2. Traditional NI-DAQ
- 3.
- 4.
- 5.
- 6.
- .

  - •
  - <u>I/O</u>

- •
- ▶
- •
- •
- •
- •
- RTD
- •
- ▶ LVDT/RVDT
- ►

### DAQCJCCJC

# CJC

CJC **CJC** 1CJCCJCMAX

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- - -

CJC

CJCCJC CJC25°C

- •
- •

# I/O

- ▶ —
- •—
- **→**—
- ▶—

- 1. 2.
- 3.
  - •
  - •
  - ▶ I/O
- 4. **OK**

1.

2.

3.

4.

1.

2.

AI	
AI	
AI	
AI	
AI	_

# AI

DAQ

Deg CDeg FDeg KDeg R

0100 °CDeg C0100

DAQ

\_\_\_\_RTD

### NI-DAQ

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- \_\_\_\_
- \_\_\_\_
- \_\_\_\_\_

# AI

DAQDAQ

DAQMAX DAQ DAQ

(sys) (cfg)

(sys)(cfg)2DAQ

DAQDAQ MAX

4

AI

/ RTDLVDT/RVDT RTDLVDT/RVDT CJC CJC
AO	
AO	
<u>AO</u>	
	_
AO	

AO DAQ DAQ

AO

DAQ

DAQDAQMAX

DAQ

(sys) (cfg)

(sys)(cfg)2DAQ

# DIO

DIO

DIO

# DIO

DAQ

DAQ

1	(sys)(cfg)	(sys)1	(cfg)1	(N/A)
DAQ				
			(sys)(cfg)	(sys)(cfg)

(cfg)2DAQ

ONOFFONOFF1

- 1.
- 2.
- 3.
- 4. **OK**

MAX



- 1.
- 2. 3.

- •



- 1. 2. 3. **m** by 4.
- 5.
- 6.

1. 2. 3.  $a_0, a_1, a_2, \dots a_n$  $y = a_0 + a_1 x + a_2 x^2 + \dots + a_n x^n$ y X OK a. b. c.  $a_0, a_1, a_2, \dots a_n$ 4.  $x = a_0 + a_1 y + a_2 y^2 + \dots + a_n y^n$ y X MAX OK a. b. 5. 6.

- 1. 2. 3.
- 4.
- 5.
- 6.





4. **OK** 

1. 2.

3. **OK** 

1. 2.

3. **OK** 



• .

 $y = mx + b \mathbf{mb}$  x

y

- 1.
- 2. 3.

- Windows 2000/XP
- <u>Windows NT</u>

### Windows 2000/XP

Windows 2000/XP\_\_\_\_Windows 2000/XP DAQDAQ

- .
- <u>PCIPXI</u>
- <u>AT E</u>

EISA <u>EISA</u>

## Windows 2000/XP

2Windows 2000/XP

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DAQ

NI-DAQDAQMAX

1.  $\rightarrow \rightarrow \rightarrow$ 2. DAQ 3. 4. 5. OK

DAQWindows 2000/XP

Windows 2000/XP <u>ni.com/support/ja</u>

Windows 2000/XPDAQ

## PCIPXI

PCIPXI DAQ PCIISAPCIPXI DAQ Windows 2000

# AT E

Windows 2000/XPAT E

AT E

DMA

AT EDMA

# AT E

Window	ws 2000/XPAT E	I/ODMA		
1.	Windows 2000/	$XP \longrightarrow \rightarrow \rightarrow$		
2.	DAQAT E Device2 of 2	2	Logical Device1 of 2	Logical
3.	Logical Device			
	<ul> <li>0000(IR0</li> <li>0001(IR0</li> <li>0002(IR0</li> <li>0003</li> </ul>	Q1DMA2) Q1DMA1) Q1)		
	EEPROM			
4.	DMA			
5.	21 • 0000 (D	MA)		
	DMA2 0000 2D DMA	OMA		DMA AT E
6.	ОК	ОК		

# DMA

AT EWindows 2000/XPDMA2 1DMA1200010002 0001DMA10002DMA 12DMA

DMA2AT E

- •
- 2Windows 2000/XP 2

2DMA112DMA 2DMA

AT EDMA

### AT EDMA

AT EDMANI-DAQ Set\_DAQ\_Device\_Info (LabVIEW Set DAQ Device Information VI) AT EDMA Windows 2000/XPDMA

1. Windo	ows 2000/XP	$\rightarrow \rightarrow \rightarrow$			
2. D.	AQAT E		Logical De	vice1 of 2	Logical
Devic	e2 of 2 2				
3. Logic	al Device				
00020	003DMA				
4. 2DM	A2				
5. MAX	DMA2Window	vs 2000/XP	DMA		
•					
			(DMA)	ISAA	ΤЕ
	DMA567				
•	1AT EDMAD	MA			
	AT E				
AT EEISA	EIS	A			

#### Windows 2000/XPI/OIRQDMADAQI/O IRQDMA

- 1.  $\rightarrow \rightarrow \rightarrow$
- 2. DAQ
0000

- 0000(IRQ1DMA2)
- 0001(IRQ1DMA1)
- 0002(IRQ1)
- 0003

DAQ Windows\Inf nidaq.infnidaq1.infPCPCMCIADAQ EEPROMWindows 2000/XP

1.	
2.	
3.	<b>OK</b> Windows 2000/XP
AT E	EISA: AT E

## EISA

EISADMA

AT E

# EISA:AT E

199512AT E316DMA0123567EEPROM 199512AT E EEPROMDMA567 EISA12AT EDMA0123EEEPROM

AT E EEPROM

## AT EEEPROM

199512AT EEEUPDATEAT EEEPROM EEUPDATE

• PnP BIOSDMAAT EAT E

 —EEUPDATEISAEEPROM
EEUPDATEEEUPDATE
ISAEISA DMABIOSDMA0123NI-DAQDMA
—EEUPDATEEEPROMISA
AT E434DMAIRQ
—EEUPDATEEEPROMISA

- EISA
- AT EEISADMA 0123199512ISA DMA0123)

-EEUPDATEEEPROMEISA

• AT EEISAISA199512EISA

AT EEEPROM

\_\_\_\_\_ eeupdate.zip

# MAX

MAXWindows 2000/XPDLLWindows NI-DAQWindows 2000/XPNI-DAQ NI-DAQ

 $\rightarrow$ 

MAXWindows 2000/XP

HKEY\_LOCAL\_MACHINE\System\CurrentControlSet\Services\Class\DAQDev nnnn 416 Windows\_\_\_\_\_ NI

HKEY\_LOCAL\_MACHINE\Enum\ISAPNP\NICnnnn nnnn 416

HKEY\_LOCAL\_MACHINE\Enum\PCI\VEN\_1093&DEV\_nnnn nnnn 416

HKEY\_LOCAL\_MACHINE\Enum\PCMCIA\National\_Instruments-DAQCARD\* \* 416CRC

HKEY\_LOCAL\_MACHINE\Enum\Root\DAQDevice

Windows 2000/XP  $\rightarrow$  regedt32.exe

# Windows 2000/XPNI-DAQ

WindowsNI-DAQ: NI-DAQ Niconfig.daqSCXIMAX

NI-DAQ

- 1. WindowsNI-DAQ: Niconfig.daq)
- 2. Windows 2000/XP  $\rightarrow \rightarrow \rightarrow$
- 3. DAQWindows 2000/XP
- 4. **OK**

5.

DAQNI-DAQWindows 2000/XP

## Windows NT

Windows NTDAQDAQ

# Windows NT

Windows NT

- <u>ISA</u>
- <u>PC</u>
- <u>PCI</u>

# ISA

Windows NTISADAQNI-DAQ Windows NTISAMAX

- 1. Windows NTCD
- 2. \Drvlib\Pnpisa\X86
- 3. Pnpisa.inf
- 4. Pnpisa.inf
- 5. ISADAQ
- 6. Windows NTISADAQ
- 7. MAX MAX

DAQ

MAXISA

# PC (PCMCIA)

PCPC

PC

 $\rightarrow \rightarrow \rightarrow$  Windows NT

Windows NT



MAXPC

# PCI

PCI DAQ PCIPCIISAPCI DAQWindows NTMAXBIOS

1. 2. Windows NTWindows NT regedt32.exeI/O

outOfMemoryError

IoPageLockLimit

HKEY\_LOCAL\_MACHINE\System\CurrentControlSet\Control\Session Manager\Memory Management

0



IoPageLockLimit0

# Windows NTNI-DAQ

NI-DAQ

- 1.
- 2.
- 3. MAX
- 4. WindowsNI-DAQ:

Niconfig.daq)

# B D H I M N O P R S

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BIOS —BIOSPCBIOS

D

DAQ 1. 2. 3. A/DDIOD/ADIO DIO

#### Η

hex 1616

I //O -/-IRQ // ISA PC

#### Μ

MAX Measurement & Automation Explorer

**N** NI-DAQ DAQ **O** OLE OPC OLE

#### P

PCI PCIPeripheral Component Interconnect—ISAEISAPCI 132M/

PCMCIA PC

R

RDA —NI-DAQ

- RT Real-Time—
- RT LabVIEW Real-TimeDAQ

### S

SCXI Signal Conditioning eXtensions for Instrumentation—PCDAQ

OS

dB

Measurement & Automation Explorer

- 1. 1I/O
- 2. DAQPCMCIADAQSCXIDAQ

DAQ

I/OPCISAPCI

DIP

SCXI11DAQSCXI
CPU

National Instruments Corporation

NI90NINI NI(RMA: Return Material Authorization)NINI NININI **NININI** NI1NININI

NI

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Tektronix®TekTektronix, Inc.()

National Instruments  $\rightarrow$  CD

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39 02 413091
91 80 51190000
44 0 1635 523545
1800 300 800
43 0 662 45 79 90 0
31 0 348 433 466
800 433 3488
82 02 3451 3400
1 800 226 5886
41 56 200 51 51
46 0 8 587 895 00
34 91 640 0085
386 3 425 4200
662 278 6777
886 02 2377 2222
86 21 6555 7838
420 224 235 774
45 45 76 26 00
49 0 89 741 31 30
0800 553 322
47 0 66 90 76 60
385 0 9 725 725 11
33 0 1 48 14 24 24
512 683 0100
32 0 2 757 00 20
55 11 3262 3599
48 22 3390150
351 210 311 210

1 800 887710
27 0 11 805 8197
01 800 010 0793
961 0 1 33 28 28
7 095 783 68 51
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