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NI PCI-5412

100 MS/s, 14-Bit Arbitrary Waveform Generator

- 14-bit resolution, 100 MS/s sampling rate
- Function generator emulation mode
- 8, 32, or 256 MB of shared waveform data and sequence instruction memory
- Multimodule synchronization with <20 ps skew
- 20 MHz analog bandwidth



Overview

The National Instruments PCI-5412 is a 100 MS/s arbitrary waveform generator featuring 14-bit resolution and up to 256 MB of onboard memory in a single PCI board. Because the NI PCI-5412 uses the PCI bus to communicate with the host computer, you can download waveforms at up to 84 MB/s – far faster than traditional GPIB-based instruments. Using the PCI-5412 Synchronization and Memory Core (SMC) architecture, you can create mixed-signal test systems by synchronizing the generator with digitizers and digital waveform generator/analyzers, or synchronizing two or more arbitrary waveform generators to form a phase-coherent multichannel generator.

Specifications

Specifications Documents

- Detailed Specifications
- Data Sheet

Specifications Summary

General	
Form Factor	PCI
OS Support	Windows, Real-Time, Linux
LabVIEW RT Support	Yes
Analog Input	
Number of Channels	0
Analog Output	
Number of Channels	1

Timing	Hardware
Update Rate	100 MS/s
Frequency Range	0..20 MHz
Resolution	14 bits
Output Impedance	50 Ohm, 75 Ohm
Maximum On-Board Memory	256 MB
Maximum Voltage Range	-6..6 V
Range Sensitivity	48 mV
Minimum Voltage Range	-2.82..2.82 mV
Range Sensitivity	1 mV
Waveform Types	Standard Functions, Intermediate Frequency, Arbitrary, DC
Provides Data Bit Marker?	No
Supports Linking/Looping Segments?	Yes
Supports Frequency Hopping and Sweeping?	No
Supports Data Streaming?	No
Supports On-the-fly signal adjustments?	No
Supports Modulation?	Yes
Dynamic Range	-70 dBFS
Noise Floor (@ -50 dBm output)	-148 dBm/Hz
Digital I/O	
Number of Channels	0
Timing/Triggering/Synchronization	
Synchronization Bus (RTSI)	Yes
T-clock Capability	Yes
Triggering	Digital
External Clocking	Yes
Physical Specifications	
Length	34.07 cm
Width	10.67 cm
Height	2.03 cm
I/O Connector	SMB male

Pricing

Step 1: Verify Device and Quantity Selection

Part Number	Description	Est Ship Days	US Dollars*	Qty
	NI PCI-5412			
779177-01	8 MB NI Recommended	--	For price, select country	
779177-02	32 MB	--	For price, select country	
779177-03	256 MB	--	For price, select country	

Each NI PCI-5412/8MB requires: 1 Cable



Step 2: Select Cable

Part Number	Description	Est Ship Days	US Dollars*	Qty
Shielded				
778827-01	SMB 112 NI Recommended	--	For price, select country	
188859-01	SMB 200	--	For price, select country	

Step 3: Select Optional Accessories

Part Number	Description	Est Ship Days	US Dollars*	Qty
Software				
778848-01	NI Analog Waveform Editor	--	For price, select country	

* You have selected the United States as the country where you will use the product(s). Pricing may have changed since you printed this document on 07/30/2008. Please visit ni.com to see current pricing.

Step 4: Place Order or Obtain Quote

Order Online or by Fax

1 . Navigate to ni.com/products and select "Order by Part Number" found under the "Business Center" section.

2. Once you have added your items to your cart, see the "Your Cart Options" section to place your order, obtain a quote, or print a fax form.

Order by Phone
 Call (866) 531-6285 to place your order or obtain a quote.

Software

Application Need

Automated test and test sequencing Simulation and control design

Industrial monitoring and control

Graphical Programming

Option 1: Select one of the following NI Developer Suite packages or Configure Your NI Developer Suite >>

Part Number	Description	Est Ship Days	US Dollars* (change)	Qty
-------------	-------------	---------------	----------------------	-----

Pre-configured NI Developer Suite Packages

DS410841	NI Developer Suite Core with Automated Test Option (English) NI Recommended	--	For price, select country	
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Option 2: Select any of the following software products

Part Number	Description	Est Ship Days	US Dollars*	Qty
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LabVIEW Software

776678-09	NI LabVIEW Professional Development System for Windows (English)	--	For price, select country	
776670-09	NI LabVIEW Full Development System for Windows (English)	--	For price, select country	
778786-03	NI Modulation Toolkit for LabVIEW	--	For price, select country	

Specialty Software

777777-09	NI TestStand Development System for Windows	--	For price, select country	
778848-01	NI Analog Waveform Editor	--	For price, select country	

Text-Based Programming

Option 1: Select one of the following NI Developer Suite packages or Configure Your NI Developer Suite >>

Part Number	Description	Est Ship Days	US Dollars* (change)	Qty
Pre-configured NI Developer Suite Packages				

DS410841	NI Developer Suite Core with Automated Test Option (English) NI Recommended	--	For price, select country	
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Option 2: Select any of the following software products

Part Number	Description	Est Ship Days	US Dollars*	Qty
Application Software				

776800-09	LabWindows/CVI Full Development System for Windows	--	For price, select country	
778801-09	NI Measurement Studio Professional Edition for Microsoft Visual Studio	--	For price, select country	
779384-03	NI LabWindows/CVI Run-Time Module for Linux	--	For price, select country	
777875-03	NI LabWindows/CVI Enterprise Connectivity Toolkit for Windows	--	For price, select country	
779086-01	NI Modulation Toolkit for LabWindows/CVI	--	For price, select country	

Specialty Software				
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777777-09	NI TestStand Development System for Windows	--	For price, select country	
778848-01	NI Analog Waveform Editor	--	For price, select country	

! Other compatible software: ANSI C/C++, Visual Basic .NET, Visual Basic 6.0

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Driver Software

- View Drivers and Updates
- Search All Drivers

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Order by Phone
Call (866) 531-6285 to place your order or obtain a quote.

Services

Extended Warranties

National Instruments designs and manufactures all products to minimize failures, but we know unexpected failures can still occur. Extended warranties provide a fixed economical price at the time of system purchase covering any repair costs for up to three years.

- Significant cost savings compared to individual repair incidents
- Fault location, diagnostics, and repair by NI any time the system product fails
- All parts and labor costs covered as well as any adjustments needed to bring the hardware back to manufacturing specifications

Calibration

NI recognizes the need to maintain properly calibrated devices for high-accuracy measurements. We provide manual calibration procedures, services to recalibrate your products, and automated calibration software to calibrate many of our measurement products.

Training

NI training is the fastest, most certain route to productivity with NI tools and successful application development.

- Learn more about NI training benefits and guarantees [http://www.ni.com/training/why_train.htm]
- View course information and schedules [<http://www.ni.com/training/>]
- Register now [<http://sine.ni.com/apps/we/nisv.custed>]

Repair Services

- You can return your registered product under warranty at no additional labor and parts cost. NI offers fault location, diagnostics, and repair any time the system fails as well as any adjustments needed to bring the hardware back to manufacturing specifications.
- Contact us [http://sine.ni.com/apps/utf8/nicc.call_me] to obtain a Return Material Authorization (RMA) form and shipping instructions
- View your RMA support request status [<http://www.ni.com/support/servicereq/>] online
- Register your product [<http://www.ni.com/register>]

Technical Support

www.ni.com/support [<http://www.ni.com/support/>]

Resources

Additional Product Information

- Manuals (8)
- Product Certifications (2)

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