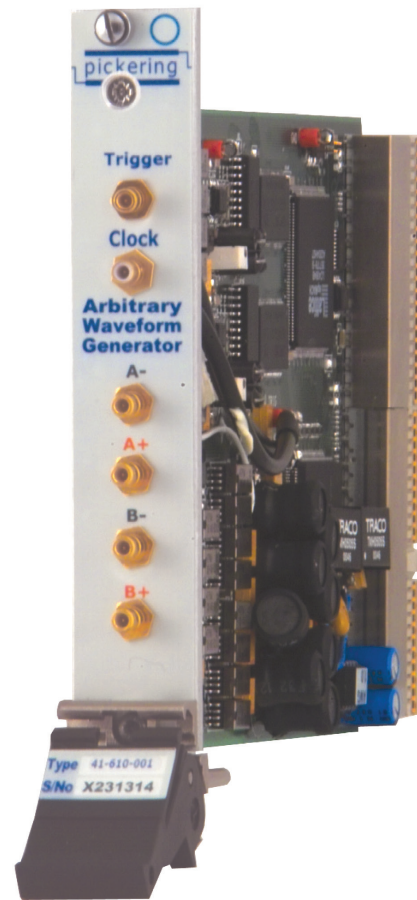


# 41-610 PXI Dual 100MS/s Arbitrary Waveform Generator

ARBITRARY WAVEFORM GENERATOR  
41-610

- High Performance Dual 100MS/s ARB
- 14 Bit Resolution
- Independent or Synchronized Clock Operation
- Differential Outputs
- Selectable Output Filters to Reduce Wideband Signals
- External or Internal Triggering for Synchronization
- Internal or External Clock Sources
- Adjustable DC Offset
- Variable Output Level From 315mV to 5Vpp
- Fully Supported by VISA and Kernel Drivers, Soft Front Panels and Waveform Libraries



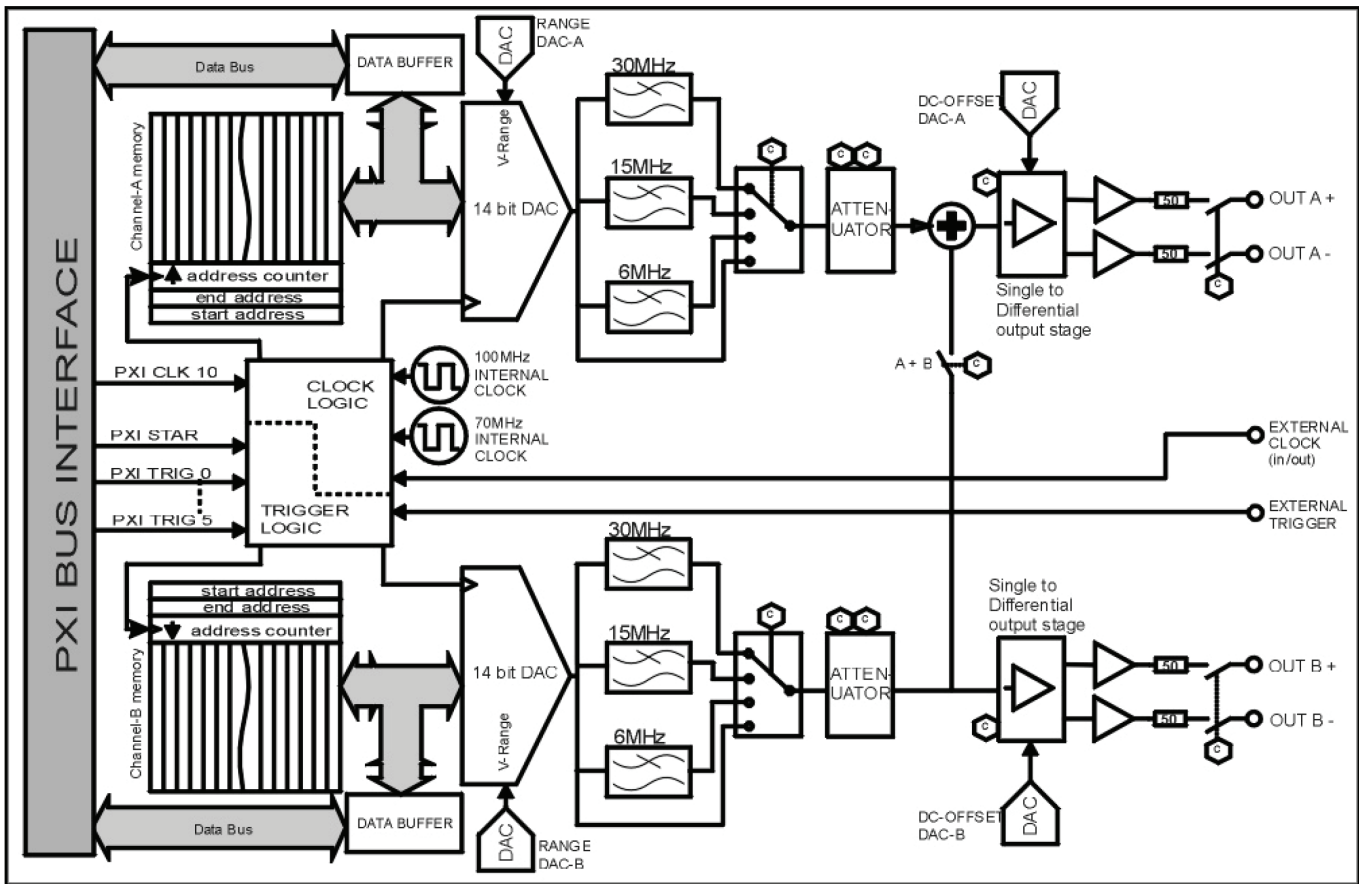
The 41-610 is a Dual Arbitrary waveform generator occupying one 3U PXI slot and featuring clock rates up to 100 Msample/s with 14 bit converter resolution. Careful attention to design ensures that the 41-610 can provide high quality signals with low timing skew between each of the channels. The module is ideal for applications requiring two high quality signal sources with closely matched timing requirements, including the driving of IQ modulators in RF systems. Compared to single channel ARBs the 41-610 saves PXI chassis space and simplifies ARB synchronization.

Each output is provided as an independent differential signal, making the outputs ideal for applications requiring differential drives to improve noise immunity and device performance. The waveforms for each ARB can be supplied on the independent outputs or can be summed together on one differential output.

Each ARB supports 512k of waveform storage. Waveforms can be created from the embedded waveform library or imported as files from external software tools, including MathCad and Excel. Waveforms can be played using one of the internal clock sources or using an external clock source for more demanding applications. The 41-610 supports all commonly used trigger modes, allowing it to be used in applications where synchronized operation is required.

The two ARBs can also be used independently with different clock sources for maximum flexibility in applications requiring independent ARBs in a single PXI module.

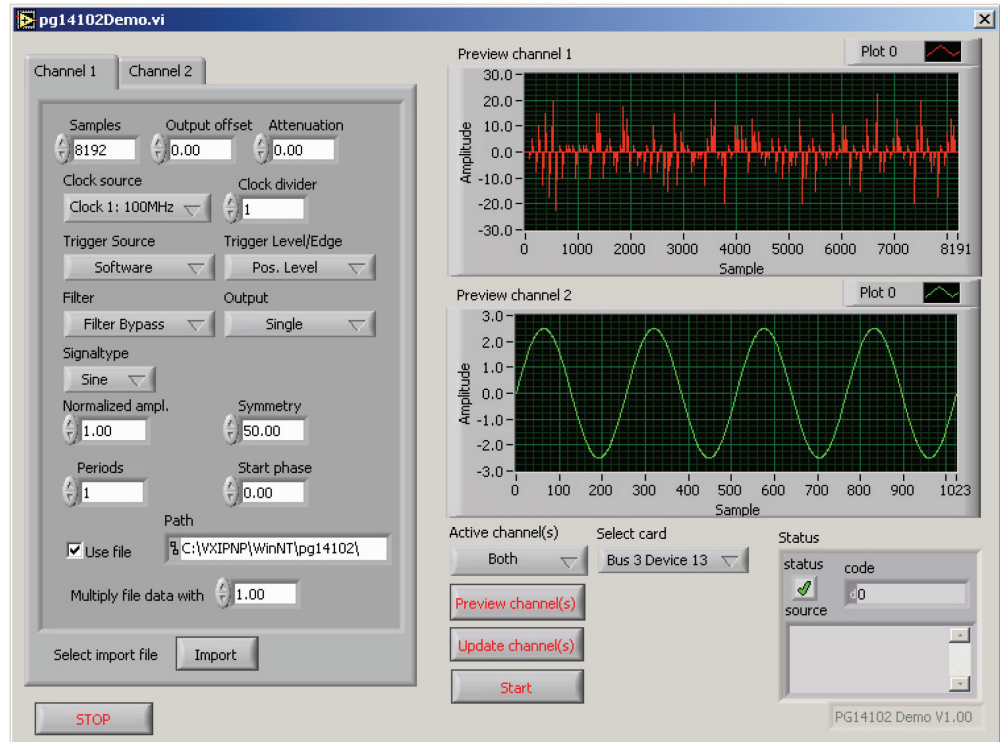
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Block Diagram for the 41-610 Dual Channel ARB

### Software Interface

A demonstration LabView soft front panel is supplied with the 41-610. The soft front panel enables waveforms to be created, viewed and played using the graphical interface. The module is supplied with kernel and VISA compatible drivers.



Included ARB Soft Front Panel

## Specifications

### ARB Characteristics

Resolution:	14 bits on both channels.
Internal clock sample rate:	100 Ms/s, 70 Ms/s, 10 Ms/s (PXI CLK10). When set to internal clock the clock is provided on the front panel at TTL levels.
Internal clock accuracy:	100 ppm.
External clock sample rate:	DC to 100Ms/s.
Clock division ratio:	Settable from 1 to 256.
Memory Depth:	512k per for each output.

### ARB Trigger

Supported trigger sources:	Front panel source (TTL), PXI Trigger 0 to 5, Star Trigger, Software trigger.
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### ARB Output

Output:	Differential output for both channels.
Output Impedance:	50Ω
Output Voltage:	315mV to 5Vpp into an open circuit.  Output level can be further reduced with reduced SFDR.
DC Output Offset:	±2.5V
Combined output:	A channel – B channel on a differential output (A connectors used).
Output filters:	Selectable as none, 6MHz, 15MHz or 30MHz (3 pole Butterworth).
Output range control:	Range of 24dB in 3dB steps (7 off) with fine level control between steps. Range can be extended use fine level control (performance not specified).
Output accuracy:	0.1% of range ±0.5mV (at DC)
Frequency response:	Deviation from a $\sin x/x$ envelope is less than ±0.5dB relative to 30MHz from DC to 50MHz with no filter selected.
Output Spectral Purity:	For 100Ms/s sample rate, 2Vpp output into 50Ω.
SFDR (with harmonics)	
1 MHz sine wave:	-78dB
10 MHz sine wave:	-64dB, typically -70dB.
Channel crosstalk:	Better than >80dB @ 10MHz.

### Waveform Generation

Internal:	Sine, pulsed (adjustable duty cycle). Triangle (adjustable symmetry).
External:	Files created using external tools can be imported.

## Physical Parameters

Connectors:	SMB front panel signal connectors.
Physical Characteristics:	One slot, 3U PXI.
PCI Interface:	33 MHz, 32-bit Address, 16-bit Data.

## Operating/Storage Conditions

### Operating Conditions

Operating Temperature:	0°C to +55°C
Humidity:	Up to 90% non-condensing
Altitude:	5000m

### Storage and Transport Conditions

Storage Temperature:	-20°C to +75°C
Humidity:	Up to 90% non-condensing
Altitude:	15000m

## Power Requirements

+3.3V	+5V	+12V	-12V
0.38A	0.3A	0.24A	0.24A

## Safety & CE Compliance

All modules are fully CE compliant and meet applicable EU directives: Low-voltage safety EN61010-1:2001, EMC Immunity EN61000-6-1:2001, Emissions EN55011:1998.

## Product Order Codes

Dual Channel 100MS/s 14-bit 50Ω standard output ARB Module	<b>41-610-001</b>
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## Latest Details

Please refer to our Web Site for Latest Product Details.  
[www.pickeringtest.com](http://www.pickeringtest.com)

## Mating Connectors & Cabling

For connection accessories for the 41-610 module please refer to the **90-011D** RF Connector Accessories data sheet where a complete list and documentation can be found for accessories.

Alternatively, refer to the Pickering Interfaces "**Connection Solutions**" catalog for the full list of connector/cabling options, including drawings, photos and specifications. This is available in either print or as a download. Alternatively our web site has dynamically linked connector/cabling options, including pricing, for all Pickering PXI modules.





Pickering Interfaces are sponsor members of the PXI Systems Alliance [www.pxisa.org](http://www.pxisa.org)

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