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Find the *Pickering 41-620-003* at our website: ***Click HERE***

41-620
Function Generator

- DC to 10MHz
- Three Channels in One 3U Slot
- 48-bit Frequency Resolution
- Simple Generation of Repetitive Arbitrary Waveforms
- DC Offset Capability
- Flexible Sweep Capability
- Amplitude Modulation Capability
- Uses 10MHz PXI Clock or External Clock Reference
- Comprehensive Trigger Support
- VISA Driver Supplied



The 41-620 is a compact 3 channel function generator provided in a PXI 3U single slot module. It is capable of generating sine waves to 10MHz with 48-bit frequency resolution referenced to the 10MHz PXI clock or to an external standard. The 41-620 can generate arbitrary waveforms loaded into the internal 256k memory, allowing the function generator to emulate many waveform types, including the typical waveforms of automotive and aerospace sensors.

The function generator provides a very simple method of providing variable output frequencies through the use of Direct Digital Synthesis (DDS), making it far easier to use than an ARB for repetitive waveform generation.

The 41-620 is capable of generating fast swept frequency signals, permitting the output to emulate the operation of variable speed devices. Sweeps can be single shot events or continuous up and down ramps. The DDS technology ensures the 41-620 settling time is extremely fast, being limited only by the update time over the PXI bus.

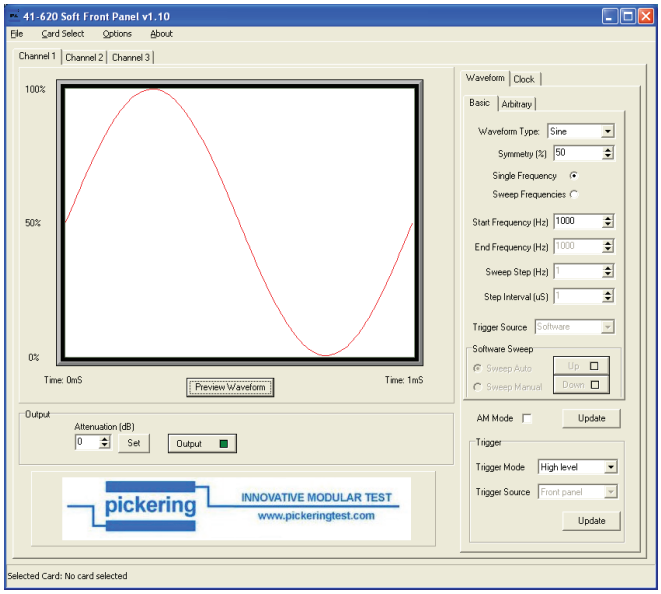
Each channel of the 41-620 can be amplitude modulated from a single AM input connector to allow independent time varying output levels to be reproduced. One channel of the module can be externally connected to provide the time varying level control independently of the waveform being generated.

The waveforms of the function generators are each stored in independent 256k memory blocks, permitting each channel to provide a different waveform shape. Waveforms are easily created externally, using Excel or similar tools, and loaded to the module memory via the backplane.

The 41-620 supports the PXI Trigger functions to allow triggered events from other instruments to initiate waveform generation or sweeps.

The supplied soft front panel demonstrates the ability of the 41-620 to quickly generate common waveforms and the ability to import external waveforms. The soft front panel also supports swept modes of operation.

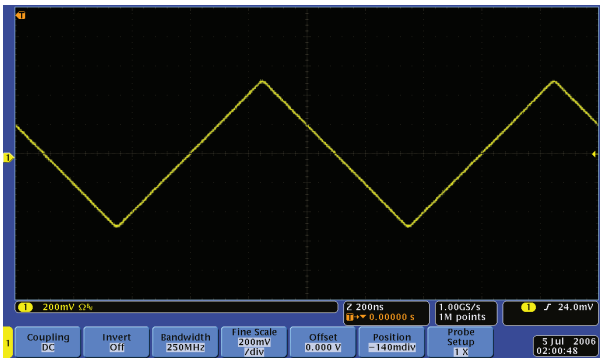
The 41-650 high voltage amplifier is perfect partner to the 41-620, allowing the signal levels of the 41-620 to be boosted to 60Vpp.



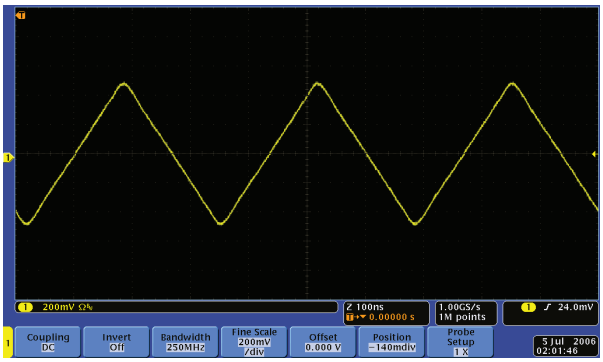
Soft Front Panel for the 41-620 Function Generator

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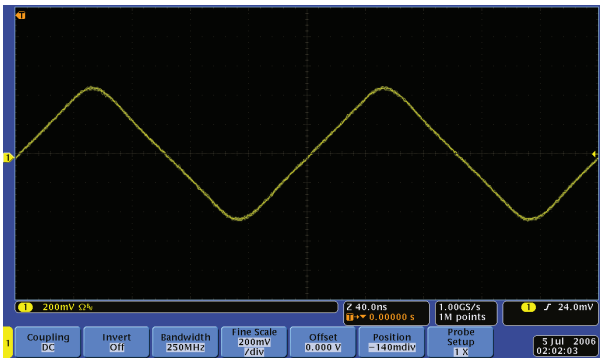
Typical Waveforms Generated by 41-620 With Output Attenuation Set to 10 dB and Loaded into 50Ω



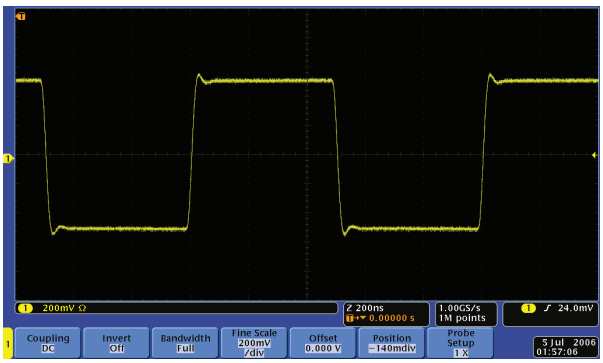
Triangular Waveform at Frequency of1MHz



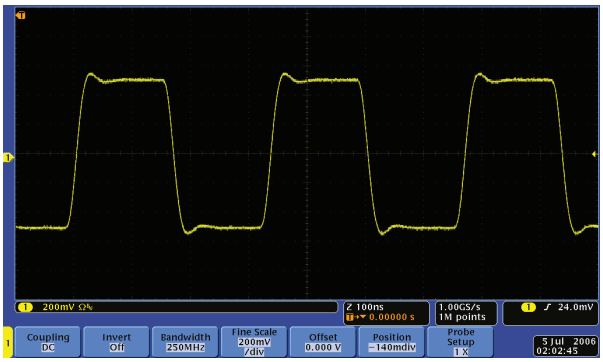
Triangular Waveform at Frequency of 3MHz



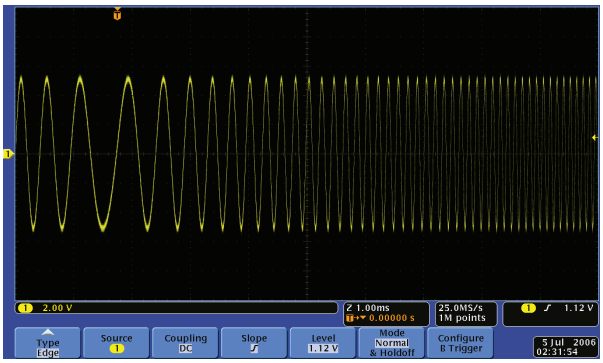
Triangular Waveform at Frequency of 5MHz



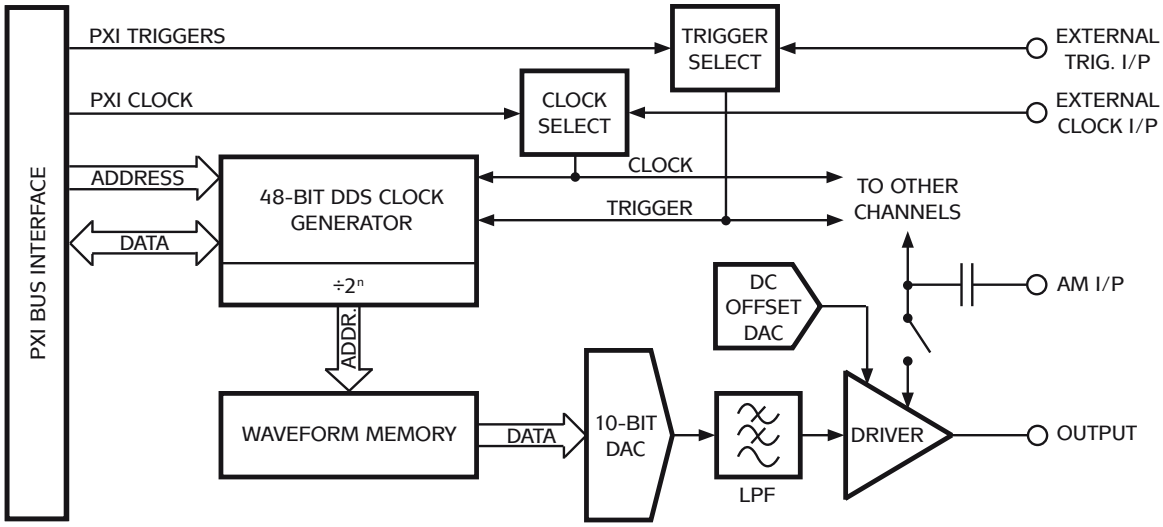
Square Wave at Frequency of 3MHz



Square Wave at Frequency of 5MHz



Swept Sine Wave from 1kHz to 10kHz in 10Hz Steps at 10µs Intervals



41-620 Function Generator Block Diagram

Specification (each channel)

Frequency

Frequency range:	DC to 10MHz (sine wave).
Frequency resolution:	48-bit
Frequency accuracy:	As PXI backplane 10MHz clock.
Frequency sweep:	Frequency sweeps can be single or continuous (ramp up and/or down) phase continuous through use of DDS sweep facility.

Output

Maximum Output:	±10V, open circuit load.
Waveform Signal:	10V pk to pk, open circuit load
Output Offset Voltage:	Settable from -5V to +5V in 10mV steps.
Output DAC resolution:	10-bit
Signal Level Control:	0 to -40dB, <0.1dB steps.
Output Impedance:	50Ω
Output Loading:	Capable of driving 600Ω with 10V peak e.m.f. Typically capable of driving a 50Ω load with 6V peak e.m.f. output (DC and signal).

AM Input

Functionality:	Single input connection can be used to amplitude one, two or three output channels. AC coupled, modulation frequency range 10Hz to 20kHz.

Waveforms

Waveform memory:	256k per channel of fixed length Permits any waveform to be loaded and replayed, including sine, square, ramp. Waveform fidelity limited by fixed 15MHz low pass filter.

Parametric Performance

(AM and DC offset set to 0)

SFDR:	>40dB (DC to 1MHz, 5Vpp) >35dB (1MHz to 10MHz, 5Vpp)
Amplitude accuracy:	±2% DC to 1MHz 0 to -15% (typically -8%) at 10MHz

Trigger and clock

Clock source:	10MHz PXI clock or external clock source.
Trigger:	Level or edge triggered operation. Initiates single shot or continuous operation PXI Trigger sources or external source.
Level:	Clock and trigger inputs require DC coupled signal derived from 5V CMOS logic drivers, nominal +2.5V input threshold voltage.

Physical Parameters

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

Power Requirements

+3.3V	+5V	+12V	-12V
1.8A	110mA	75mA	150mA

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.

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

Product Order Codes

Three Channel Function Generator	**41-620-003**

Latest Details

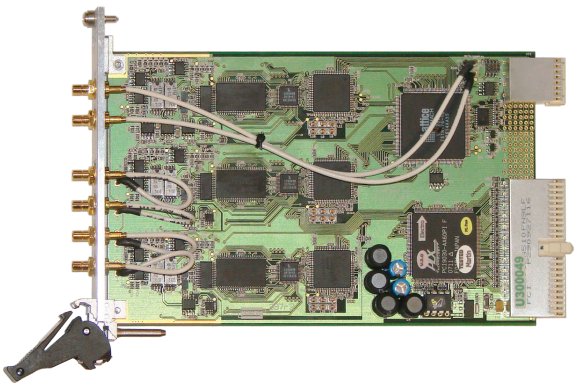
Please refer to our Web Site for Latest Product Details.
www.pickeringtest.com

Mating Connectors & Cabling

For connection accessories for the 41-620 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.





Three Channel Function Generator 41-620-003

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