GPIB Low Noise High Isolation Multiplexer 20-620

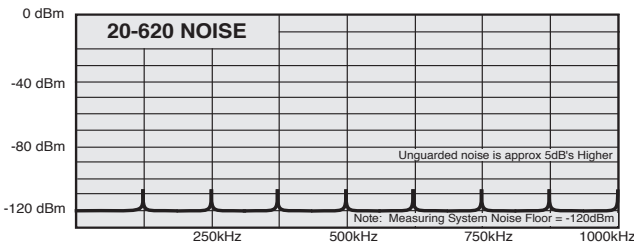
- High Isolation Low Noise Multiplexer Switching 1 Pole Plus Switched Shield
- Single or Dual Multiplexer Operation
- Uses High Quality Ruthenium Reed Relays For Maximum Reliability
- Built-In Self Test
- Choice of Shielded Connectors: BNC or XLR

A High Isolation Very Low Noise Multiplexer, available as either Single 16 to 1 or dual 8 to 1 with a choice of connector types. This module is intended for high quality multiplexing of low frequency signals up to 1MHz.

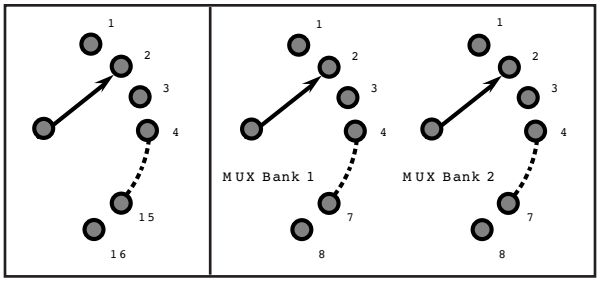
20-620 Multiplexer - *For the highest quality switching applications*

Applications will be found where general purpose multiplexers have inadequate isolation and crosstalk performance. These include: high quality data acquisition (usually 2-pole with frequencies < 1MHz), audio broadcast/studio, low noise high isolation instrumentation and very high quality signal routing in ATE systems.

***Please contact Pickering for alternative PXI/LXI/USB solutions**

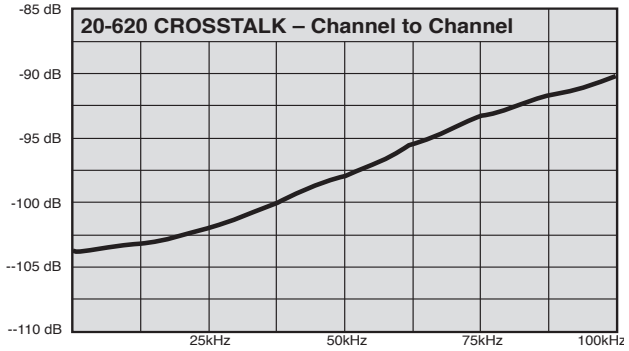


Noise Performance For The 20-620 Multiplexer



The 20-620 is Available as Either a 16 to 1 or Dual 8 to 1 Multiplexer

Insertion Loss Plot For The 20-620 Multiplexer



Crosstalk Plot For The 20-620 Multiplexer

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Relay Type

The modules are fitted with Ruthenium Reed Relays.

All reed relays are manufactured by our sister company Pickering Electronics: pickeringrelay.com

Electrical Specification

Maximum Switch Voltage:	200V d.c.
Maximum High to Low Voltage:	100V d.c.
Maximum Guard Voltage (Relative to Hi/Lo):	±100V d.c.
Maximum Power:	10W
Maximum Switch Current:	0.5A
Maximum Carry Current:	1.2A
On Path Resistance:	<300mΩ
Off Path Resistance:	>1x10^{10}Ω
Differential Thermal Offset:	<5µV
Maximum Frequency (3dB in 50Ω system):	40MHz
Capacitance, unselected channel to guard:	<40pF
Capacitance, selected channel to guard:	<70pF
Capacitance, unselected channel to common:	<5pF
Expected Life (low power):	>1x10^{8}ops
Expected Life (high power):	>5x10^{6}ops
Switching Time:	<15ms
Noise Level/dBm (0 to 1MHz in 50Ω system)	
With Passive Guard:	<-105dBm
With No Guard:	<-100dBm

AC Performance (50Ω)	10kHz	100kHz	1MHz
Isolation, channel to common:	>90dB	>85dB	>68dB
Isolation, channel to channel:	>90dB	>78dB	>70dB
Isolation, bank to bank:	>100dB	>90dB	>80dB
Isolation, module to module	>100dB	>100dB	>90dB

Mechanical Characteristics

All modules conform to the 6U height (262mm) Eurocard standard and are 160mm deep. Panel width is 2.4 Inches for the BNC version and 3.6 Inches for the XLR type.

Connectors

Connection to the module front panel is via 18 screened connectors. The screen for each connector is isolated from the analogue common except when that channel is selected.

Programming

The 20-620 Multiplexer module is simple to program:

`ARESET a`	Open all channels on device **a**
`CHAN a,c`	Select channel **c** on multiplexer **a** When in dual 8 to 1 mode the address is prefixed by 1 or 2.
`DELAY t`	Force a minimum delay of **t** milliseconds between two instructions
`DIAGNOSTIC?`	Report any Self Test errors
`RESET`	Open all switches on all modules
`VIEW? a`	View status of device **a**

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

Safety & CE Compliance

All modules are fully CE compliant and meet applicable EU directives: Low-voltage safety EN61010-1:2010, EMC Immunity EN61326-1:2013, Emissions EN55011:2009+A1:2010.

Product Order Codes

Single 16-Chan MUX, BNC Coaxial (Single pole + switched shield)	20-620-021-S/16/1
Dual 8 Channel MUX, XLR Audio (Two pole + switched shield)	20-620-322

Product Customization

Pickering System 20 modules are designed and manufactured on our own flexible manufacturing lines, giving complete product control and enabling simple customization to meet very specific requirements.

Customization can include:

- Alternative relay types
- Mixture of relay types
- Alternative number of relays
- Different performance specifications

All customized products are given a unique part number, fully documented and may be ordered at any time in the future. Please contact your local sales office to discuss.