LXI High Performance Video Multiplexer 60-721

- High Performance RF Multiplexer Suitable for Video Switching Applications
- 1GHz Bandwidth
- Available in 24, 48 or 72-Channel Versions
- 75 Ω Characteristic Impedance
- Automatic Termination of Unused Inputs
- Low Loss, High Isolation
- LED Indicator On Every Channel
- Consistent Performance Across All Channels
- Simple Remote Control Via LXI Interface
- LXI Standard 1.3 Compliant
- 3 Year Warranty

The 60-721 High Performance Video Multiplexer is designed for switching RF signals in 75 Ω systems at frequencies up to 1GHz. It is ideal for monitoring applications that require the selection of one channel to be routed to measuring equipment.

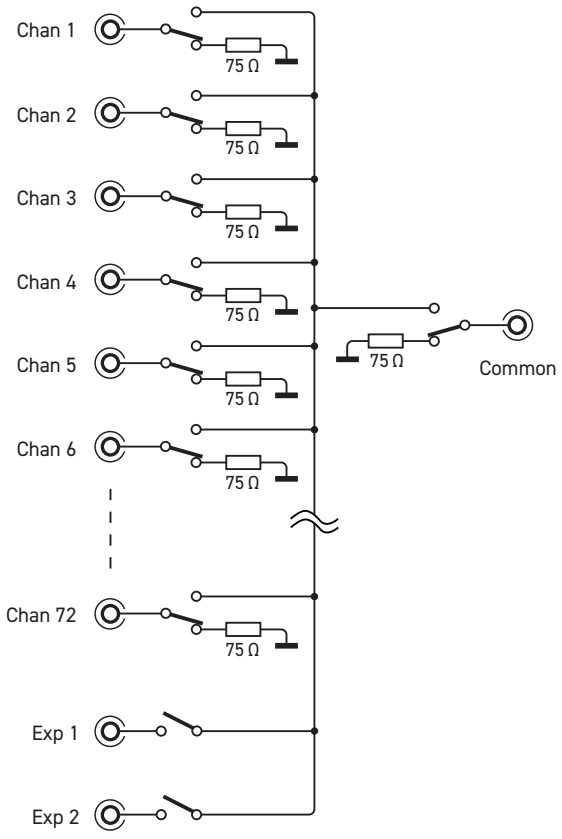
The automatic 75 Ω termination of unused channels helps maintain signal integrity and minimizes the possibility of introducing unwanted responses. The common connection is also automatically terminated when unused. Front panel LEDs adjacent to each input connector provide identification of the active channel.

High signal isolation and low crosstalk ensure that an active channel is not disturbed by signals on unselected channels. Careful design ensures a smooth pass band response and insertion loss, which is consistent on all signal paths. This can be easily calibrated out to provide traceable measurements.

The 60-721 includes two expansion ports Exp1 and Exp2 which allow the common signal to be routed to two further 60-721s. This allows the easy construction of large multiplexers.

Controlling the MUX

The 60-721 is controlled through an LXI interface based on Ethernet 100base-T connectivity. It provides a quick and easy method of installation and a simple way of controlling the unit in a remote location through its API or built in soft front panel. The ability to control the unit at a distance aids the testing of systems without the need for a physical presence.



Schematic Diagram for the 60-721 Multiplexer in 72-Channel Format

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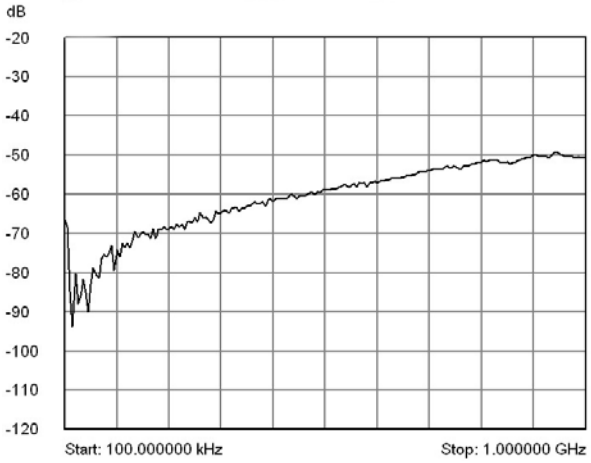
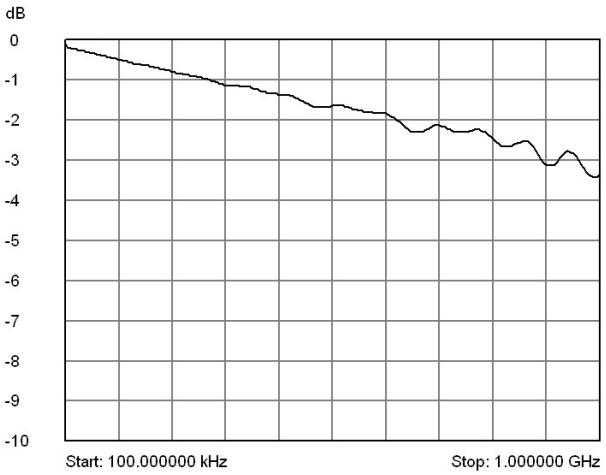
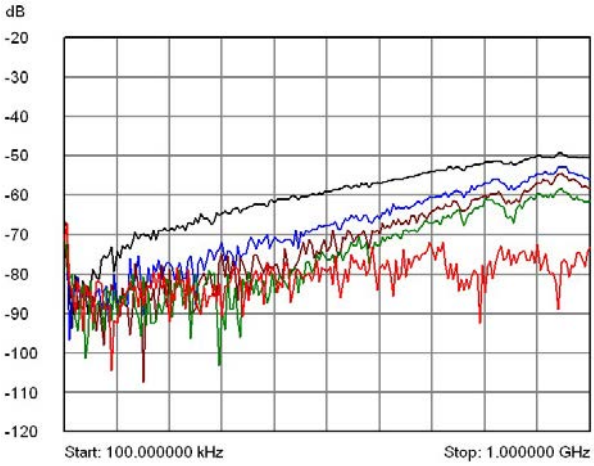


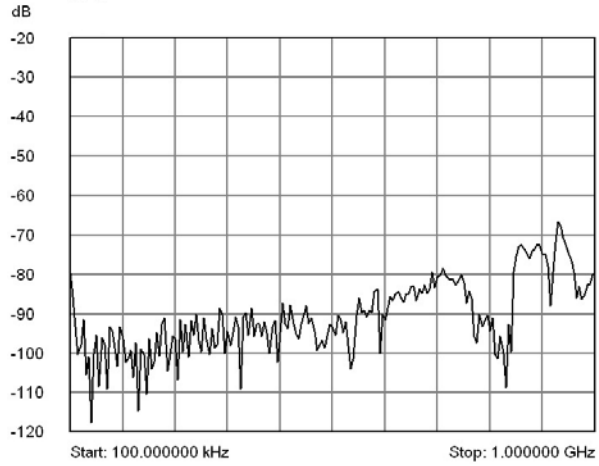
Typical Crosstalk Plot for the 60-721 Multiplexer (between adjacent channels)



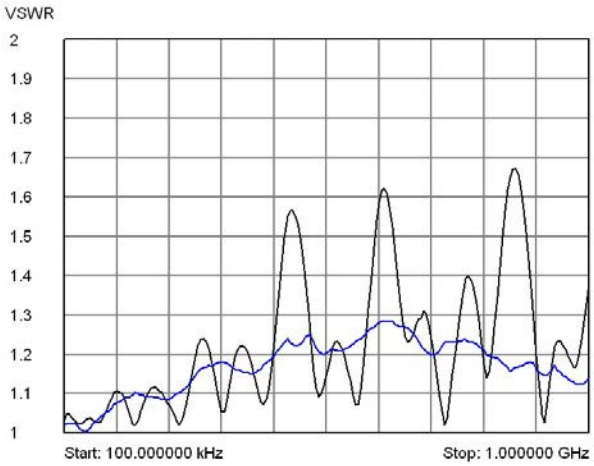
Typical Insertion Loss Plot for the 60-721 Multiplexer (between selected channel and Common)



Typical Crosstalk Plot for the 60-721 Multiplexer (taken between channel 54 and channels 55, 56, 57, 58 and 30)



Typical Isolation Plot for the 60-721 Multiplexer (all relays off)



Typical Insertion VSWR Plot for the 60-721 Multiplexer (black trace is from channel to terminated Common, blue trace is from channel to internal termination)

General Multiplexer Information

MUX Configurations:	24-Channel, 48-Channel, or 72-Channel.
Connectors:	Front panel F-Type, 75 Ω.
Operating Time:	5 ms (limited by relays)
Maximum Power:	0.5 W (limited by termination resistors).
Expected Life Low Power:	 > $2x10^7$ operations

Note: RF performance is primarily determined by using industry standard F-type connectors. Contact Pickering Interfaces for other connector options with improved RF performance.

Multiplexer RF Specification

Characteristic Impedance:	75 Ω
Insertion Loss:	3.5 dB at 1 GHz
VSWR (selected channel):	< 1.7:1 to 1 GHz
VSWR (terminated channel):	< 1.5:1 to 1 GHz
Crosstalk:	50 dB typical at 1 GHz, adjacent channel. >50 dB at 1 GHz for all other channels.
Isolation:	> 65 dB to 1 GHz

Power Source

Universal AC mains supply, 90-120/200-240 V 50-60 Hz	
Power Inlet:	Male IEC connector
Power Rating:	100 VA maximum
Fuse Rating:	2.5 A, 250 V

LAN Interface

Compliant to LXI Standard 1.3, the 60-721 has a 100Base-T Ethernet Interface via a standard RJ-45 connector mounted on the rear panel.

LXI Status Indicators

Front panel mounted LEDs:

- Power
- Ready
- Error
- LAN
- Active

MUX Status Indicators

Green LED indicates selected channel.

Mechanical Characteristics

Supplied with front panel ears to enable rack mounting on a shelf or other rear support mechanism.

Dimensions: 2U high, full 19" rack width, 500 mm depth

3D models for all versions in a variety of popular file formats are available on request.

Connectors

Signals via front panel F-type connectors.

Operating/Storage Conditions

Operating Temperature:	0 °C to +55 °C
Humidity:	Up to 90% non-condensing
Altitude:	5000 m
Storage/Transport Temperature:	-20 °C to +75 °C
Humidity:	Up to 90% non-condensing
Altitude:	15000 m

Safety & CE Compliance

All products 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

24-Channel 1GHz Video Multiplexer	60-721-001
48-Channel 1GHz Video Multiplexer	60-721-002
72-Channel 1GHz Video Multiplexer	60-721-003

Product Customization

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

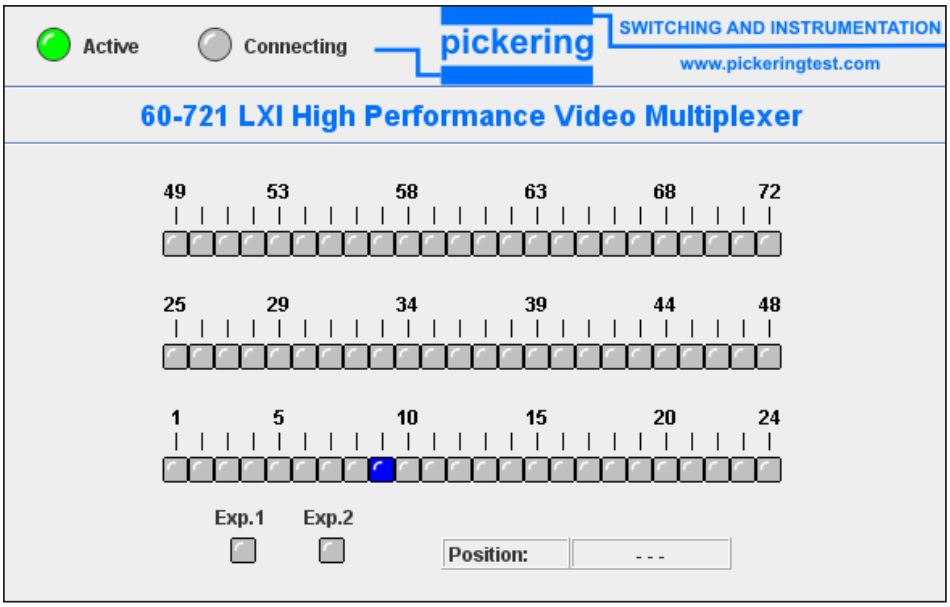
Customization can include:

- 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.

Mating Connectors & Cabling

For connection accessories for the 60-721 please refer to the 90-011D RF Cable Assemblies data sheet where a complete list and documentation can be found for accessories, or refer to our website.



Soft Front Panel Supplied With the 60-721 LXI High Performance Video Multiplexer

Connectivity Solutions

We provide a full range of supporting cable and connector solutions for all our switching products—20 connector families with **1200+** products. We offer everything from simple mating connectors to complex cables assemblies and terminal blocks. All assemblies are manufactured by Pickering and are guaranteed to mechanically and electrically mate to our modules. These accessories are detailed in Connector Accessories data sheets, where a complete list and documentation can be found for each accessory.

Connectors & Backshells

Multi-way Cable Assemblies

RF Cable Assemblies

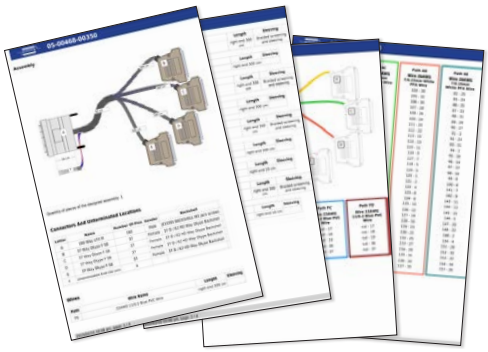
Breakouts

Connector Blocks

We also offer customized cabling and have a free online **Cable Design Tool** that can be used to create custom cable solutions for many applications.

- Fully supported on modern browsers and tablet operating systems.
- Built-in tutorials and videos allow you to get quickly up to speed.
- Store cable assemblies in the Cloud and develop over time.
- Each cable design has a downloadable PDF documentation file detailing all specifications

Start designing your custom cabling, go to pickeringtest.com/cdt



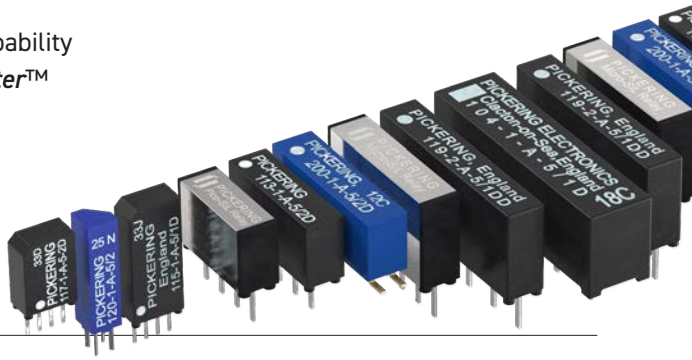
Mass Interconnect

We recommend the use of a mass interconnect solution when an Interchangeable Test Adapter (ITA) is required for PXI/LXI based test systems. Our modules are fully supported by Virginia Panel and MacPanel.

Pickering Reed Relays

We are the only switch provider with in-house reed relay manufacturing capability via our Relay Division. These instrument grade reed relays feature ***SoftCenter***™ technology, ensuring long service life and repeatable contact performance.

To learn more go to pickeringrelay.com



Programming

Pickering provide kernel, IVI and VISA (NI & Keysight) drivers which are compatible with all Microsoft supported versions of Windows and popular older versions.

For more information go to pickeringtest.com/os

The VISA driver support is provided for LabVIEW Real Time Operating Systems (Pharlap and Linux-RT). For other RTOS support contact Pickering. These drivers may be used with a variety of programming environments and applications including:

- **Pickering Interfaces Switch Path Manager**
- **National Instruments** products (LabVIEW, LabWindows/CVI, Switch Executive, MAX, TestStand, VeriStand, etc.)
- **Microsoft Visual Studio** products (Visual Basic, Visual C++)
- **Programming Languages** C, C++, C#, Python
- **Keysight** VEE and OpenTAP
- **Mathworks MATLAB, Simulink**
- **Marvin** ATEasy
- **MTQ Testsolutions** Tecap Test & Measurement Suite

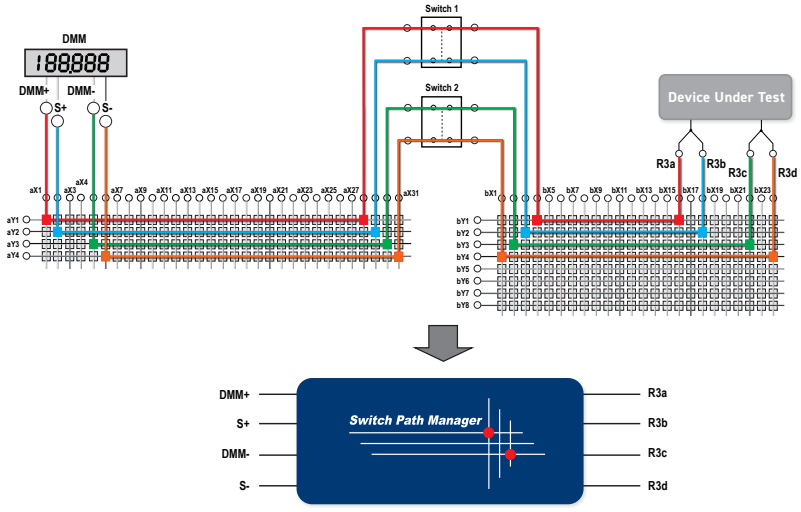
Drivers for popular Linux distributions are available, other environments are also supported, please contact Pickering with specific enquiries. We provide Soft Front Panels (SFPs) for our products for familiarity and manual control, as well as comprehensive documentation and example programs to help you develop test routines with ease.

To learn more about software drivers and development environments go to pickeringtest.com/software

Signal Routing Software

Our signal routing software, Switch Path Manager, automatically selects and energizes switch paths through Pickering switching systems. Signal routing is performed by simply defining test system endpoints to be connected together, greatly accelerating Test System software development.

To learn more go to pickeringtest.com/spm



Diagnostic Relay Test Tools

eBIRST Switching System Test Tools are designed specifically for our PXI, PCI or LXI products, these tools simplify switching system fault-finding by quickly testing the system and graphically identifying the faulty relay.

To learn more go to pickeringtest.com/ebirst

Three Year Warranty & Guaranteed Long-Term Support

All standard products manufactured by Pickering Interfaces are warranted against defective materials and workmanship for three years from the date of delivery to the original purchaser. Extended warranty and service agreements are available with various levels for your requirements. Although we offer a 3-year warranty as standard, we also include guaranteed long-term support—with a history of supporting our products for typically 15-20 years.

To learn more go to pickeringtest.com/support

Available Product Resources

We have a library of resources including success stories, product and support videos, articles and white papers as well as application-specific brochures to assist you. We have also published reference books on switching technology and the PXI and LXI standards.

To view, download or request any of our product resources go to pickeringtest.com/resources