



- High Performance 6-Channel RF Multiplexers
- Available With 4, 8, 12 or 16 Multiplexer Banks
- 2.5GHz Bandwidth
- 75Ω Characteristic Impedance
- Low Loss, High Isolation
- Compact 2U Form Factor
- Simple Remote Control Via LXI Interface
- LXI Standard 1.4 Compliant
- 3 Year Warranty

The 60-820 Microwave Multiplexer is suitable for switching 75Ω signals up to 2.5GHz. With up to 16 banks of 6 channels it is ideal for constructing complex microwave switching systems for many applications. Connection is by front panel mounted DIN1.6/5.6 style connectors.

The multiplexer has an extremely high level of performance with low VSWR, very high isolation, low loss and high power handling. It is ideal for switching 75Ω systems from HF band to low microwave frequencies. It occupies 2U of rack space, providing a compact switching solution. Multiplexers can be user connected to create customized switching systems which include both multiplexer and matrix arrangements.

### Controlling the Multiplexer

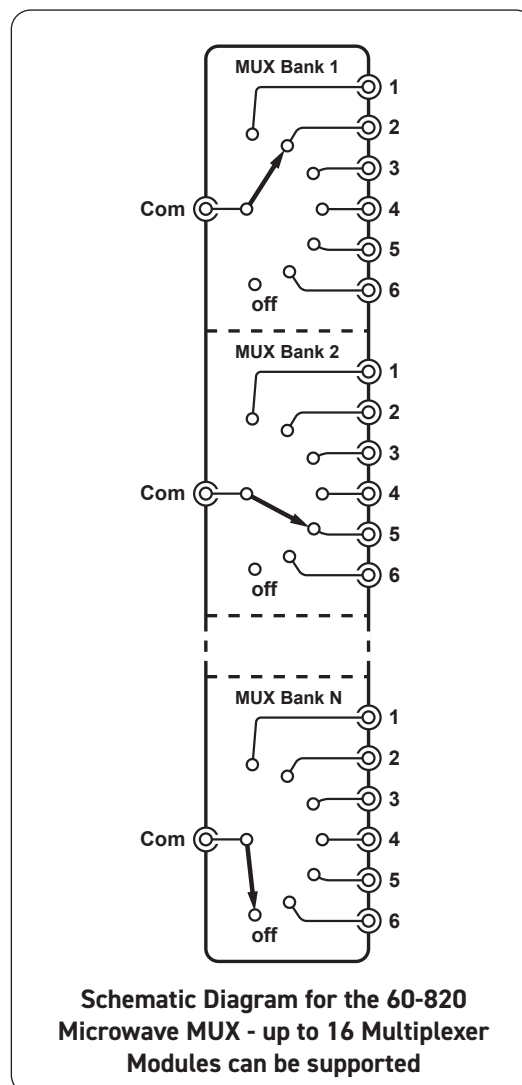
The 60-820 is controlled through an LXI interface based on Ethernet 1000Base-T connectivity. This provides a quick and easy method of installing the 60-820 and a simple way of controlling the it at a remote location through its API or built in soft front panel. The ability to control the unit at a distance aids the testing of systems without the need for a physical presence.

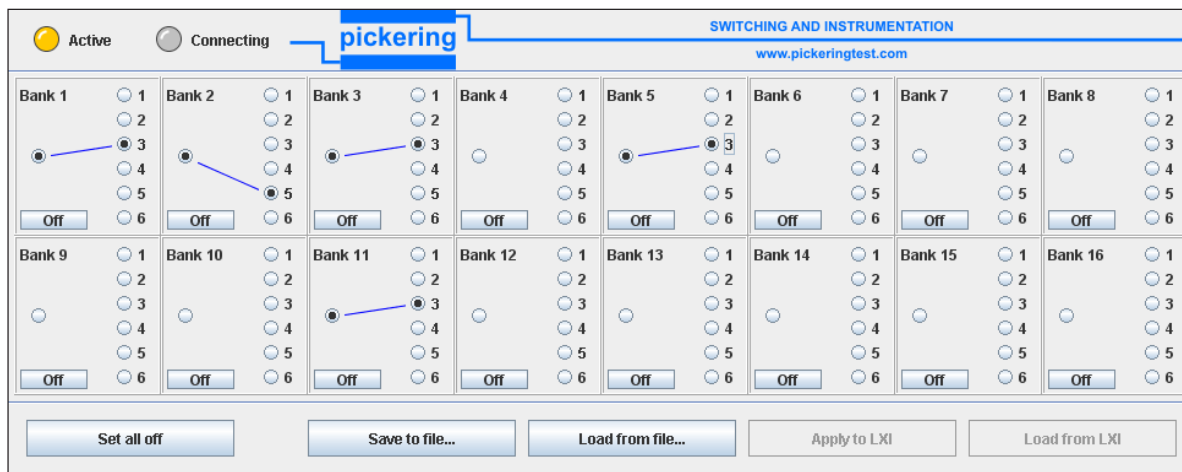
### Easy Repair

To allow fast in field repair, relays may be individually replaced without removing the covers from the chassis or the chassis from the host rack.

### Other Microwave Switching Configurations

We are able to offer other microwave switching solutions, if you have a custom requirement for switching please contact your Pickering sales representative. The 60-820 can be supplied with other frequency ranges and connector styles. A 50Ω version of the 60-820, the 60-800, is also available.





Soft Front Panel for the 60-820 16-Bank 6 to 1 Microwave Multiplexer

### General Multiplexer Information

Configuration:	6 to 1 Microwave Multiplexer with up to 16 independent banks.
Connectors:	Front panel DIN1.6/5.6 (DIN47295)
Operating Time:	<18ms
Max Voltage:	100VDC*
Max Switch Current:	1A
Path Resistance:	On: <200mΩ Off: >10 <sup>10</sup> Ω (unterminated)
Expected Life:	Low power: >2 million per position Max power: 0.3 million

\* For full voltage rating, signal sources to be switched must be fully isolated from mains supply and safety earth.

### Multiplexer RF Specification

Impedance:	75Ω
Bandwidth	2.5GHz
Maximum Power:	400W to 1GHz 240W to 2.5GHz
Isolation:	>80dB to 1GHz >70dB to 2.5GHz
Insertion Loss:	<0.2dB to 1GHz <0.3dB to 2.5GHz
VSWR:	<1:1.2 to 1GHz <1:1.3 to 2.5GHz

### Power Source

Universal AC mains supply, 90-264VAC, 50-60Hz
Power Inlet: Male IEC connector

### LAN Interface

Compliant to LXI Standard 1.4, the 60-732 has a 1000Base-T Ethernet Interface via a standard RJ-45 connector mounted on the rear panel with an LCD display showing the unit's IP address\*. **\*Note:** Legacy units may not have 1000Base-T support or be fitted with an LCD display.

### LXI Status Indicators

Front panel mounted LEDs: Power, Ready, Error, LAN, Active

### 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, 500mm depth

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

### Connectors

Signals via front panel DIN1.6/5.6 connectors.

### Cooling

Fan assisted cooling, side air intakes and rear exhaust.

### 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 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

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### LXI Microwave MUX, 50Ω

6 to 1 MUX, 2.5GHz, DIN1.6/5.6, 4-Banks,	60-820-004
6 to 1 MUX, 2.5GHz, DIN1.6/5.6, 8-Banks,	60-820-008
6 to 1 MUX, 2.5GHz, DIN1.6/5.6, 12-Banks,	60-820-012
6 to 1 MUX, 2.5GHz, DIN1.6/5.6, 16-Banks,	60-820-016

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Versions with other bank counts, alternative connector types and different frequency ranges can be made to order, please contact sales office.

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## 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

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For connection accessories for the 60-820 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 the Connection Solutions catalog.

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## 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.



Connectors & Backshells



Multiwire Cable Assemblies



RF Cable Assemblies



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.

Visit: [pickeringtest.com/cdt](http://pickeringtest.com/cdt) to start your design.

### Mass Interconnect

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

### Pickering Reed Relays

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

To learn more, please go to: [pickeringrelay.com](http://pickeringrelay.com)

### Programming

All LXI devices are supplied with built-in software drivers, web pages for configuration and soft front panels as required by the LXI specification. A variety of drivers are provided (C, .NET, IVI, SOAP) which are compatible with all Microsoft supported versions of Windows and popular older versions. For a list of all supporting operating systems, please see: [pickeringtest.com/os](http://pickeringtest.com/os)

The drivers may be used in many commonly used 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++, Visual C#)
- **Keysight** VEE and OpenTAP
- **Mathworks** Matlab
- **Marvin** ATEasy
- **MTQ Testsolutions** Tecap Test & Measurement Suite

As well as various open source environments such as:

- **Sharp Develop**
- **Dev-C++**

To learn more about software drivers and development environments, please go to: [pickeringtest.com/software](http://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, please go to: [pickeringtest.com/spm](http://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, please go to: [pickeringtest.com/ebirst](http://pickeringtest.com/ebirst)

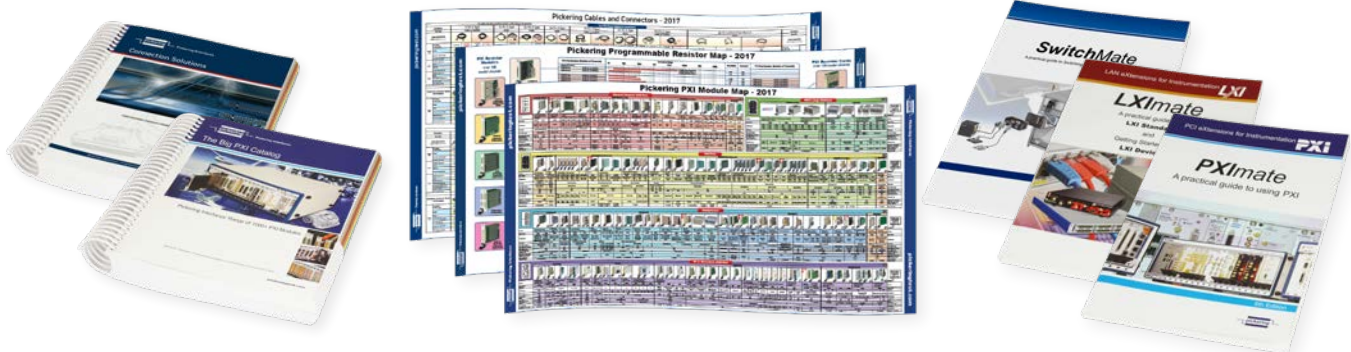


## Three Year Warranty

All standard products manufactured by Pickering Interfaces are warranted against defective materials and workmanship for a period of three years from the date of delivery to the original purchaser. Extended warranty and service agreements are available for all our modules and systems with various levels to suit 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, please go to: [pickeringtest.com/support](http://pickeringtest.com/support)

## Available Product Resources

We have a large library of product resources including success stories, product and support videos, articles, as well as complete product catalogs and product reference maps to assist when looking for the switching, simulation and cable and connector solutions you need. We have also published handy reference books on Switching Technology and for the PXI and LXI standards.



To view, download or request any of our product resources, please visit: [pickeringtest.com/resources](http://pickeringtest.com/resources)

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