LXI 50Ω Microwave Multiplexer 60-891-001

- High Performance 36-Channel RF Multiplexer
- 18GHz Bandwidth (SMA Version)
- 4GHz Bandwidth (BNC Version)
- 50Ω Characteristic Impedance
- Low Loss, High Isolation
- Compact 2U Form Factor
- LXI Standard 1.4 Compliant
- IVI & Direct I/O Drivers
- 3 Year Warranty

The 60-891-001 36 channel Microwave Multiplexer is suitable for switching 50Ω signals up to 18GHz. Connection is by front panel SMA connectors.

The 60-891-001 is also available in a 50Ω BNC version which can switch signals up to 4GHz.

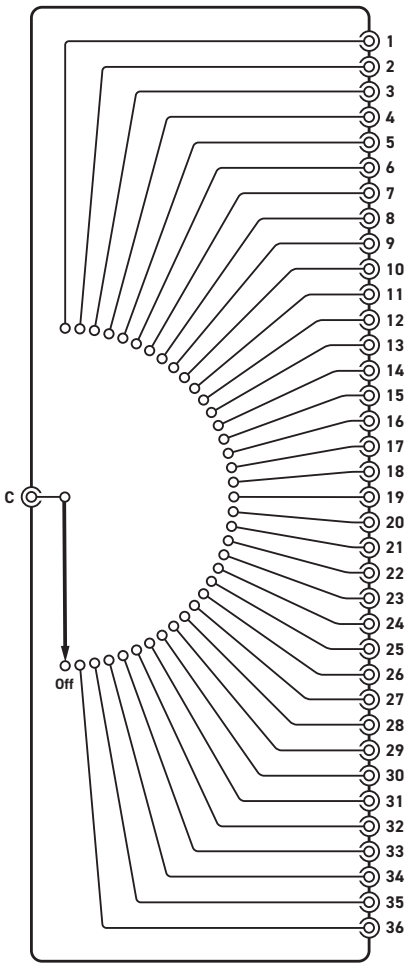
The multiplexer has an extremely high level of performance with low VSWR, very high isolation, low loss and high power handling. It is ideal for switching 50Ω systems for HF up to microwave frequencies. It occupies 2U of rack space, providing a compact switching solution.

Controlling the Multiplexer

The 60-891-001 is controlled through an LXI interface based on 1000Base-T Ethernet. This provides a quick and easy method of installing the 60-891-001 and a simple way of controlling 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.

Other Microwave Switching Configurations

We are able to offer other microwave switching solutions, if you have a custom requirement please contact your Pickering sales representative.



Schematic Diagram for the 60-891-001 36-Channel Multiplexer - Default Switch Position Shown

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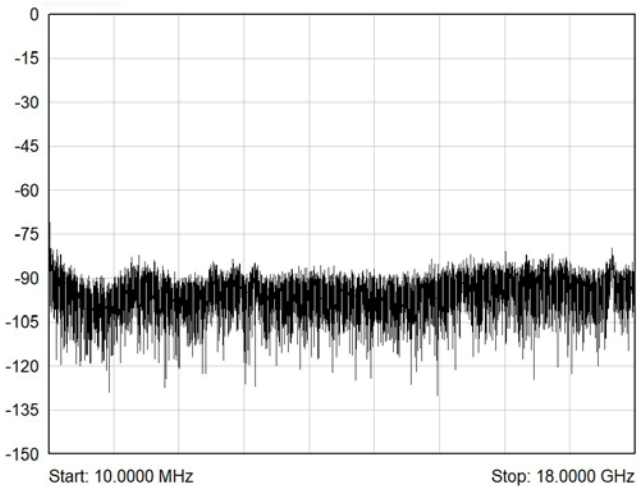
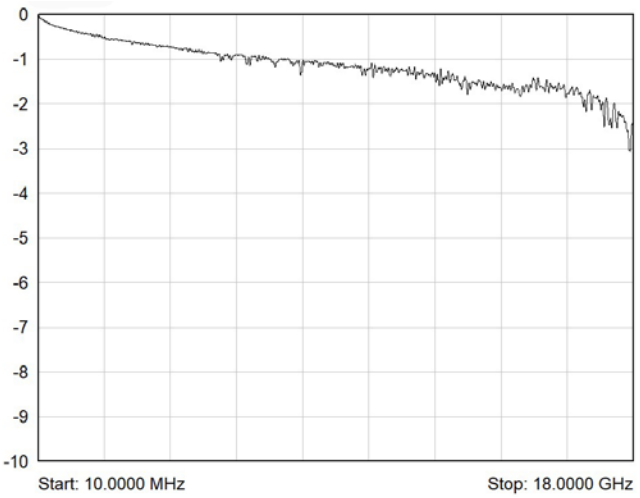
RF Specification for 60-891-001-001 (SMA 18GHz Version)

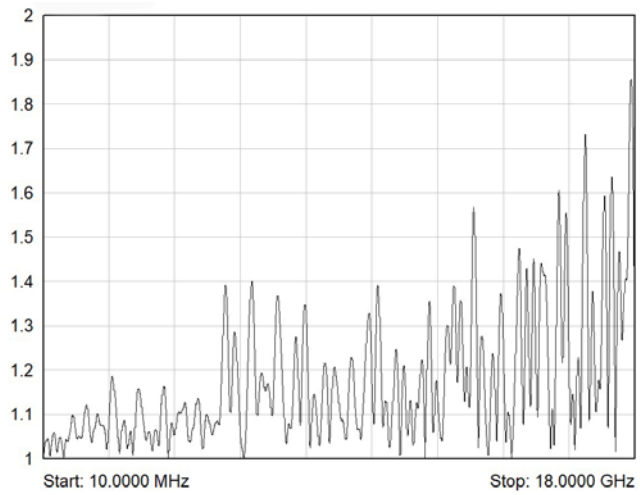
Characteristic Impedance:	50Ω
Bandwidth	DC to 18GHz
Maximum Power:	240W (0 - 3GHz) 150W (3 - 8GHz) 120W (8 - 12.4GHz) 100W (12.4 - 18GHz)
Isolation:	Typically >75dB to 18GHz
Insertion Loss:	Typically <3dB to 18GHz
VSWR:	Typically <1.5:1 to 7GHz Typically <1.6:1 to 12GHz Typically <1.9:1 to 16GHz Typically <2.2:1 to 18GHz
Crosstalk:	Typically <-70dB to 18GHz



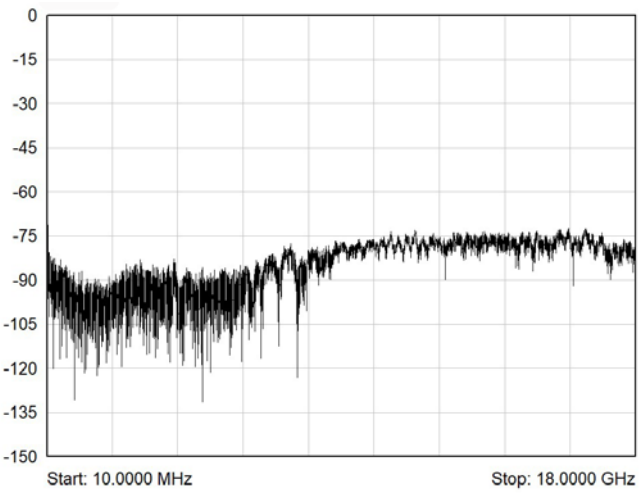
Typical Isolation (dB) Plot for SMA 18GHz Version



Typical Insertion Loss (dB) Plot for SMA 18GHz Version



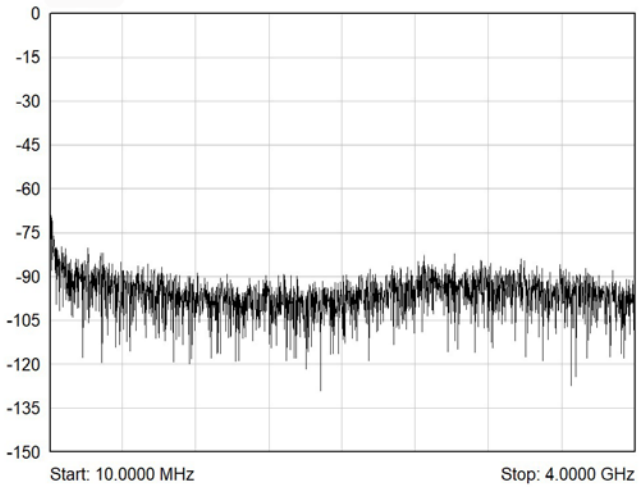
Typical VSWR Plot for SMA 18GHz Version



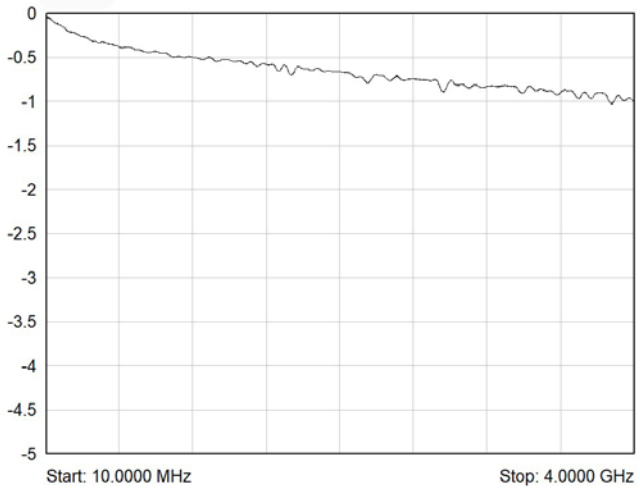
Typical Crosstalk (dB) Plot for SMA 18GHz Version

RF Specification for 60-891-001-002 (BNC 4GHz Version)

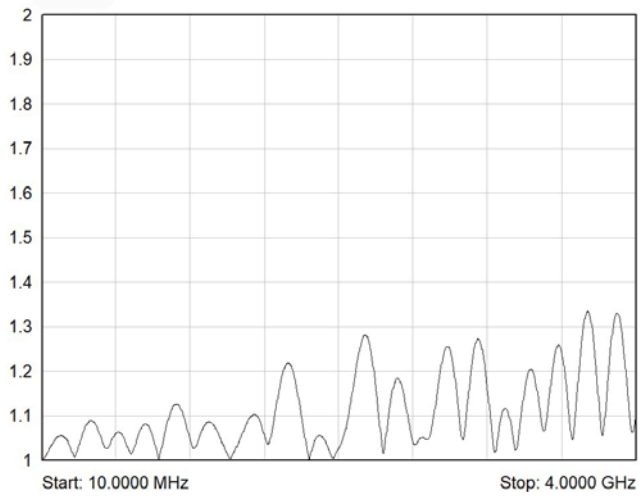
Characteristic Impedance:	50Ω
Bandwidth	DC to 4GHz
Maximum Power:	150W (0 - 1GHz) 70W (1 - 4GHz)
Isolation:	Typically >75dB to 4GHz
Insertion Loss:	Typically <1.5dB to 4GHz
VSWR:	Typically <1.45:1 to 4GHz
Crosstalk:	Typically <-70dB to 4GHz



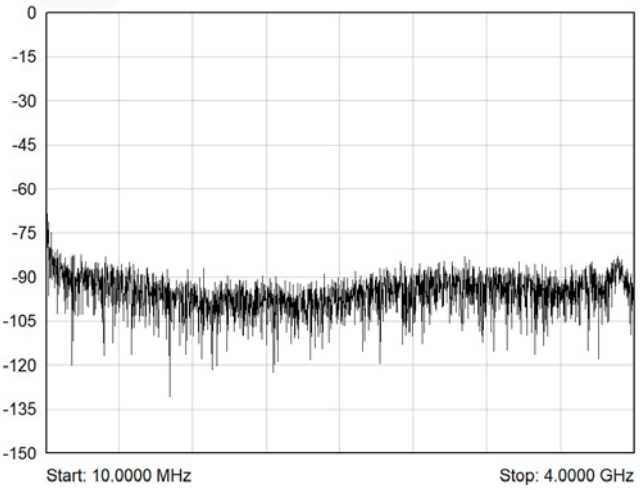
Typical Isolation (dB) Plot for BNC 4GHz Version



Typical Insertion Loss (dB) Plot for BNC 4GHz Version



Typical VSWR Plot for BNC 4GHz Version



Typical Crosstalk (dB) Plot for BNC 4GHz Version

General Multiplexer Information

Configuration:	36 to 1 Microwave Multiplexer.
Connectors:	Front panel SMA or BNC, alternatives available on request.
Operating Time:	<18ms
Maximum Voltage:	100VDC*
Maximum Switch Current:	1A
Path Resistance:	On: <200mΩ Off: >10^{10}Ω
Expected Life:	Low power: >5 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.

Power Source

Universal AC mains supply, 90-120/200-240V 50-60Hz	
Power Inlet:	Male IEC connector
Power Rating:	100VA maximum
Fuse Rating:	5A, 250V

LAN Interface

Compliant to LXI Standard 1.4, the 60-891-001 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.

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 SMA or BNC 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

LXI Microwave MUX, 50Ω	
36 to 1 MUX, 18GHz, SMA	**60-891-001-001**
36 to 1 MUX, 4GHz, BNC	**60-891-001-002**

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

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

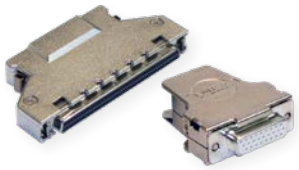
All customized products are given a unique part number, fully documented and may be ordered at any time in the future. Please contact your local sales office to discuss.

Mating Connectors & Cabling

For connection accessories for the 60-891-001 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.

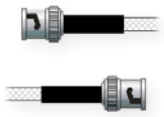
Connectivity Solutions

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

Multiway 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 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

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

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

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

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.

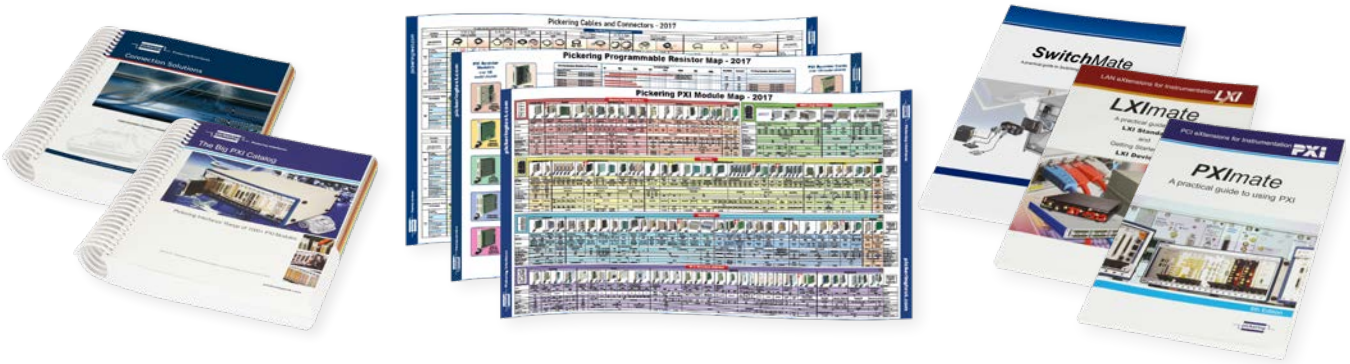
To learn more, please go to: pickeringtest.com/ebirst

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

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