



- High Bandwidth 75Ω RF Matrix
- Usable to 1.5GHz
- Fully Integrated Design
- Configurations to 32x8
- Automatic Termination of Unused Inputs
- Excellent RF Performance
- Simple Remote Control Via LXI Interface
- LXI Standard 1.4 Compliant
- 3 Year Warranty

The 60-731 is a family of integrated RF matrices suitable for use up to 1.5GHz.

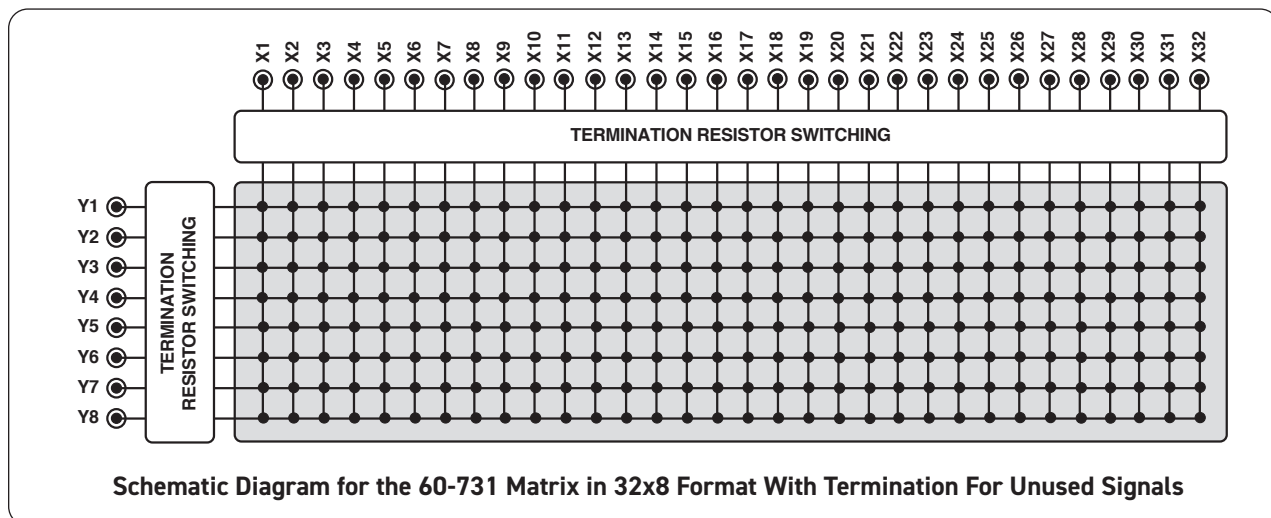
The construction of the 60-731 provides a cost effective alternative to RF switching based on microwave relays while maintaining a high level of performance.

The matrix is fully scalable, allowing a variety of sizes to be offered. The innovative design maintains a close insertion loss match for all signal routes, minimizing the calibration required when optimizing test system performance.

The design is non-blocking Y to X (or X to Y) allowing any input to be connected to any output. The construction is based on high quality electro-mechanical relays providing fast operating time compared to microwave relays.

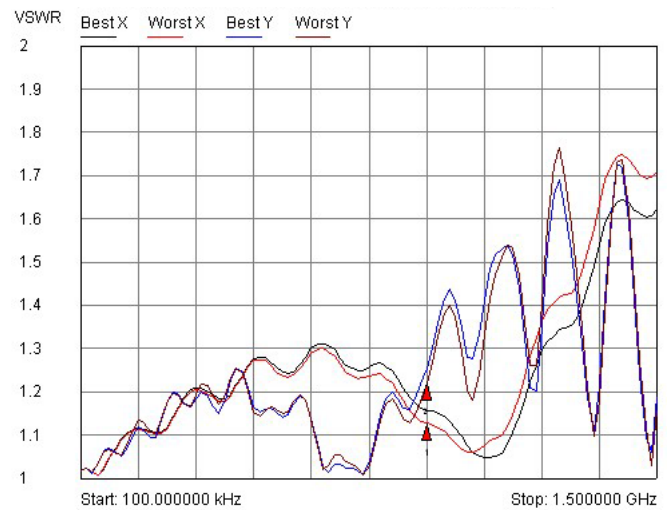
The unit is programmable via the LAN interface using Pickering's switch driver. Standard (W3C) web browsers can be used to access and change configuration information and provide control via the built in soft front panels.

The 60-731 is fitted with F-Type signal connectors simplifying connection to appliances and distribution systems typical of a domestic environment. The unit can be supplied with alternative connectors with improved performance and other matrix sizes can be specified. Contact your Pickering sales representative for information.

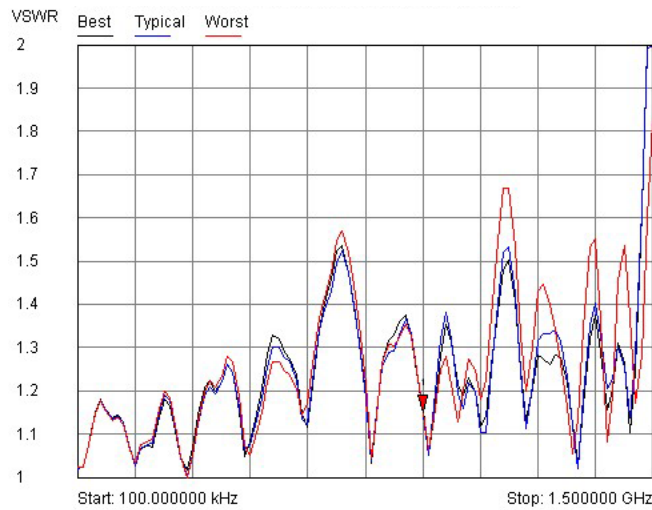




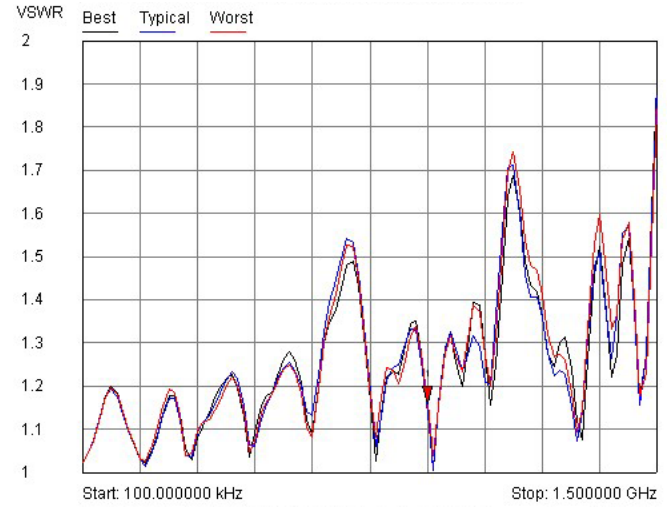
60-731 Typical Insertion Loss



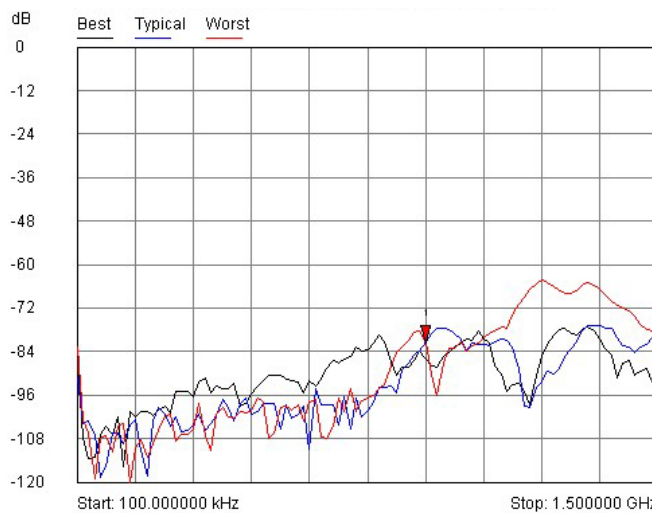
60-731 Typical VSWR - Internal Terminations



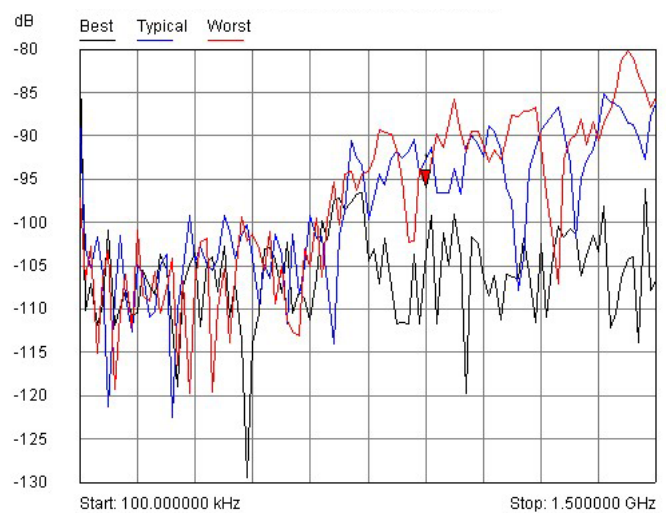
60-731 Typical VSWR - Y Port Thru Path to X Port



60-731 Typical VSWR - X Port Thru Path to Y Port



60-731 Typical Crosstalk (red trace is typical worst case)



60-731 Typical Isolation - X to Y Path

NOTE: Marker on plots indicates a frequency of 900MHz

General Matrix Information

Matrix Size:	32x8, 24x8, 16x8 or 8x8
Connectors:	Front panel Precision F-type.
Operating Time:	3ms
Life Expectancy:	10 ⁷ operations at <100mW

Matrix RF Specification

Characteristic Impedance:	75Ω
Usable Frequency Range:	DC to 1.5GHz
Insertion Loss (typical):	-0.3dB at 100kHz -1.7dB at 900MHz -2.5dB at 1.5GHz
VSWR (typical)	
Internal termination:	1.4:1 at 900MHz 1.8:1 at 1.5GHz
Thru path:	1.6:1 at 900MHz 1.8:1 at 1.5GHz
Isolation (typical):	
Single X to Y path:	-85dB at 900MHz -80dB at 1.5GHz
Crosstalk	
Typical:	-75dB at 900MHz -65dB at 1.5GHz
Other paths:	-75dB at 900MHz -70dB at 1.5GHz
Maximum RF Power:	0.125W (limited by termination resistors)

Power Source

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

LAN Interface

Compliant to LXI Standard 1.4, the 60-731 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: 3U 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 F-type connectors.

Operating/Storage Conditions

Operating Conditions

Operating Temperature:	0°C to +55°C
Humidity:	Up to 85% non-condensing
Altitude:	5000m

Storage and Transport Conditions

Storage Temperature:	-20°C to +75°C
Humidity:	Up to 85% 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

1GHz, 75Ω Matrix, 32x8 terminated	60-731-001
1GHz, 75Ω Matrix, 24x8 terminated	60-731-002
1GHz, 75Ω Matrix, 16x8 terminated	60-731-003
1GHz, 75Ω Matrix, 8x8 terminated	60-731-004

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

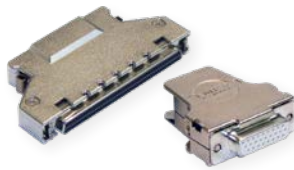
All customized products are given a unique part number, fully documented and may be ordered at any time in the future. Please contact your local sales office to discuss.

Mating Connectors & Cabling

For connection accessories for the 60-731 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

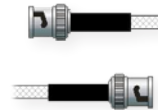
We provide a full range of supporting cable and connector solutions for all our switching products—20 connector families with 1200+ products. We offer everything from simple mating connectors to complex cables assemblies and terminal blocks. All assemblies are manufactured by Pickering and are guaranteed to mechanically and electrically mate to our modules.



Connectors & Backshells



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 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

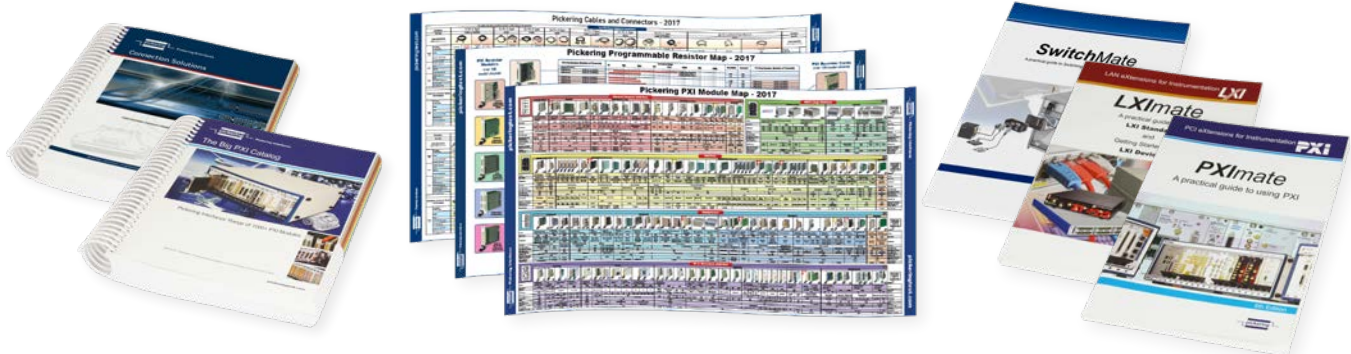


Three Year Warranty

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

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