GPIB 120Ω RF Multiplexer Module 20-730

- 120Ω Balanced R.F. Multiplexer with 200MHz Bandwidth
- Dual 16 to 1 Configuration
- 120Ω Differential Version Suitable for Digital Telecoms/Data Switching
- Front Panel Mounted High Density Connectors
- May be Used for Building Larger Switching Networks
- Built-In Self Test
- Suitable for Digital Applications to over 34MBits/s

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

Model 20-730-802 is a Dual 16 Channel RF Multiplexer and is suitable for switching 2-wire 120Ω telecommunications traffic with signal frequencies up to 34MBit with good insertion loss, return loss and isolation performance. The 20-730-802 has a bandwidth in excess of 200MHz.

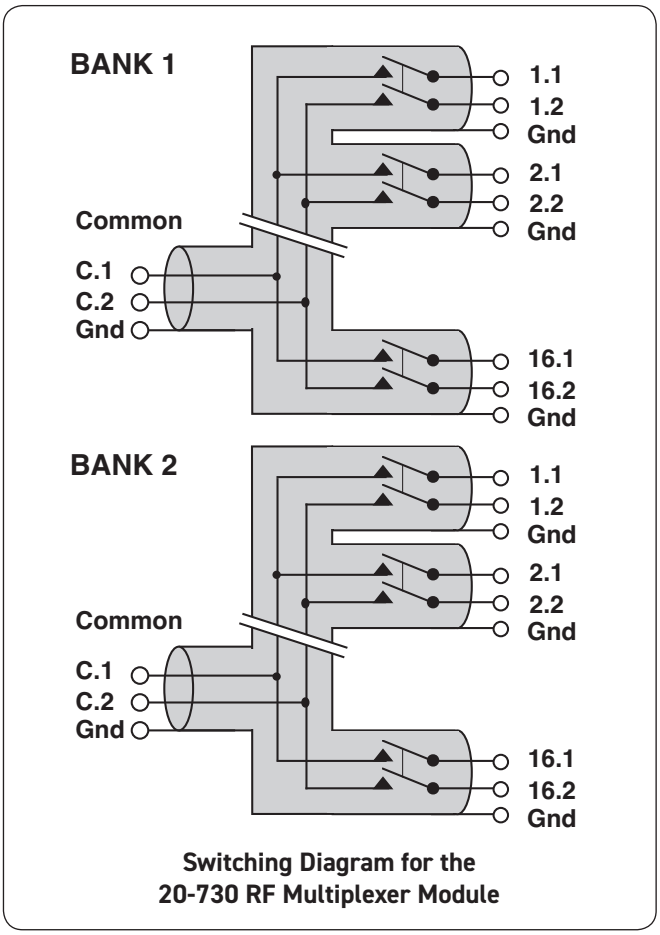
Models 20-730-802 are designed specifically for digital telecommunications switching using 120Ω twisted pair cabling, the module uses 50-pin D-type connectors. It is suitable for switching digital frequencies from d.c. to over 34MBits/s, it is especially popular for 2Mbit/s signals.

The 20-730-802 may be used with it's companion product the 20-520 series of matrix modules, these also have a balanced 120Ω impedance, they are available in 16 x 4 or 8 x 8 formats (please refer to the 20-520 series data sheet for further details).

Programming

The multiplexer module is simple to program:

ARESET a	Open all channels on device **a**
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**
CHAN a,b,c	Select channel **c** on bank **b** of multiplexer **a**.
CHAN a,b,c,s	Multi-channel selection argument **s** allows opening/closing of any combination of channels. This is only suitable for low frequency applications.



Switching Diagram for the 20-730 RF Multiplexer Module

ISSUE 3.7 JUL 2019

Specification

Characteristic Impedance:	120Ω Balanced
Maximum Frequency:	200MHz
Rise Time:	<1ns
Insertion Loss:	<3dB
Return Loss:	<11dB (1:1.8 VSWR)
Isolation (at max frequency):	>60dB
Crosstalk (at max frequency):	>55dB
Maximum Voltage:	100V DC
Maximum Power:	10W
Maximum Switch Current:	0.5A
Maximum Carry Current:	1.2A
On Path Resistance:	<500mΩ
Off Path Resistance:	$>10^{10}\Omega$
Differential Thermal Offset:	<10µV
Switching Time:	10ms
Expected Life (Low power):	$>1x10^{8}$ operations
Expected Life (Full power):	$>5x10^{6}$ operations

Further Options

The 20-730-802 multiplexer is available with another option:

- Built in positions for internal 120Ω to 75Ω converters (factory fitted), this allows off-the-shelf 75Ω test equipment to be used if a 120Ω type is unavailable.

Mechanical Characteristics and Connectors

All 20-730-802 model versions are housed in shielded 6U height (262mm) Eurocard modules and are 160mm deep. Panel width is 2.4 Inches.

All connections to the unit are via two 50-pin D-type connectors, additional ground positions for shielding are built in (four 50-pin connectors are fitted to the front panel, only two are used). Other connector types are available such as BNC. Please contact the sales office for details.

Self Test

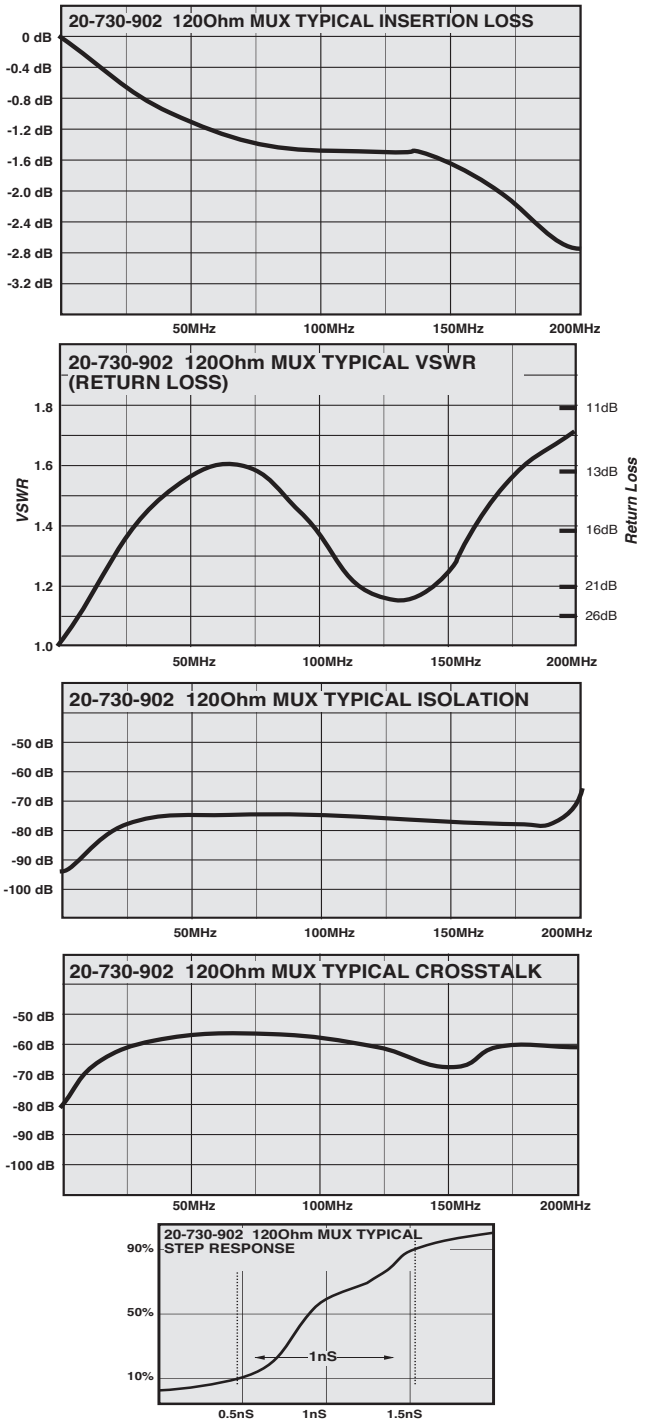
Self-Test is invoked at power on and may also be operated under software (**`*TST?`**) or via a recessed push button. Self-Test pass is indicated on a front panel LED with a full pass/fail description available using the **`DIAGNOSTIC?`** command. Self-Test comprises 2 levels:-

1. **Logic Test**
2. **Relay Coil Test**

These two levels of testing will find the majority of failures, however the relay contacts themselves are not tested.

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.



Typical RF Performance Plots for 20-730-802

Operating/Storage Conditions

Operating Conditions

Operating Temperature:	0°C to +55°C
Humidity:	Up to 95% non-condensing
Altitude:	5000m

Storage and Transport Conditions

Storage Temperature:	-20°C to +75°C
Humidity:	Up to 95% non-condensing
Altitude:	15000m

Product Order Codes

Dual 16 to 1 RF Multiplexer (D-Type 120Ω)	
200MHz, 2-Wire	**20-730-802**

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.

Mating Connectors & Cabling

For connection accessories for this module please refer to the 90-005D 50-Pin D-Type Connector Accessories data sheet where a complete list and documentation can be found for accessories, or refer to the Connection Solutions catalog.