Racal Instruments™
1260-138A
High-Density Multiplexer Plug-In

The Racal Instruments™ 1260-138A is a high-density scanner/multiplexer switch card for use in Racal Instruments™ 1260-100 and 1260-101 VXI carriers or the Racal Instruments™ 1256 GPIB/Ethernet and 1256L (LXI Core 2011 Compliant) switching systems.

Key Features

- **Eight 1x8, two-wire scanner/ multiplexer**
- **Link 1x8 cells under program control**
- **Link up to 6 plug-ins under program control**
- **Can be used in VXI, GPIB/RS-232, and LXI switching systems**
- **True differential design ideal for telecom and datacom applications**
- **Two and four-wire switching modes**
- **Standard Adapt-a-Switch™ plug-in design for ease of replacement**

Product Information

This plug-in provides maximum flexibility to construct a wide range of scanner/ multiplexer configurations under software control while maintaining excellent bandwidth and signal integrity.

All relays are bi-directional, enabling use as either a scanner or multiplexer. Each (1x8) multiplexer can be used to connect any combination of up to 8 two-wire signals to a two-wire common. These commons can be linked under program control to construct any combination of larger multiplexers. Possible configurations include:

- One (1x64) two-wire
- Two (1x32) two-wire
- Four (1x16) two-wire
- One (1x16) two-wire plus One (1x48) two-wire
- Many other configurations

Multiple plug-ins can be linked under program control via the Adapt-a-Switch™ carrier or 1256 analog bus to form large two- and four-wire multiplexers. This allows you to construct very large multiplexers without external wiring. It also eases the integration/wiring task while maintaining signal integrity.

This card was designed for true differential switching, which makes it ideal for telecom and datacom applications. However, it has great single ended characteristics as well with >85 MHz bandwidth. With its combination of density, versatility, expandability, and high signal integrity, the 1260-138A is ideal for construction of large switching systems, as well as applications where the final switching requirements are not fully defined. The 1260-138A is an excellent choice for continuity testing, audio, video, telecom, datacom, and multipurpose ATE systems.

The Racal Instruments™ Option 01T interface (for VXI) controls the 1260-138A using either register-based or message-based commands. The 1256 (for GPIB/ Ethernet) and 256L (for LXI) support message-based operations. Refer to the Option 01T/1256/1256L literature for more information about product specifications
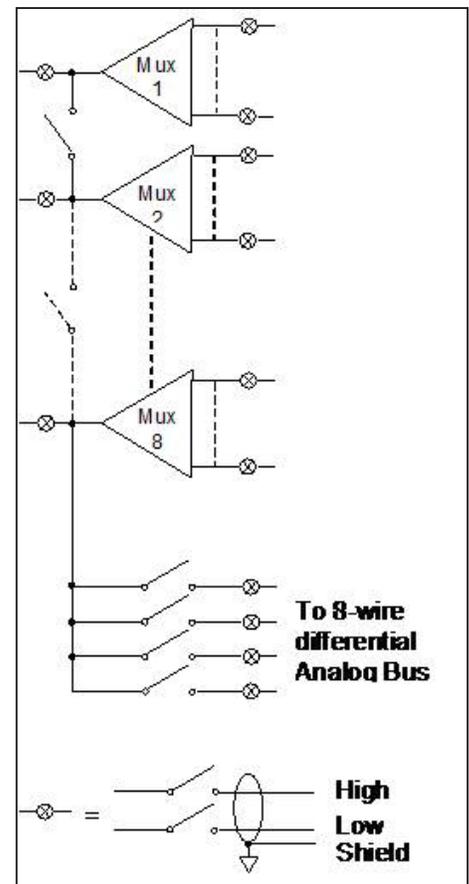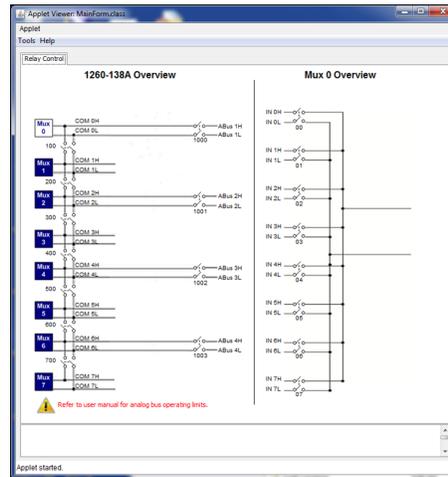

Block diagram

Product Information
continued

and features such as include, exclude, and scan lists, user-defined path names, and reset states.

The Adapt-a-Switch™ series includes VXI*plug&play* support for frameworks based on Microsoft Win32® application programming interface, including drivers for LabWindows™/CVI and LabVIEW™.

1260-138A LXI Web Control

Specifications

Note: The Astronics Test Systems policy is one of continuous development and improvement. Consequently, the equipment may vary in detail from the description and specifications in this publication.

Input

Maximum Switching Voltage
• 300 VDC or 300 VAC

Maximum Switching Current
• 2 ADC or 2 AAC

Maximum Switching Power
• 60 W, 125 VA

DC Performance
Path Resistance
• 1x8 (2-wire): <500 mΩ (Initial)
• 1x64 (2-wire): <500 mΩ (Initial)

Insulation Resistance
• 10^9 Ω

Thermal EMF
• 1x8 (2-wire): <15 µV
• 1x64 (2-wire): <20 µV

AC Performance (Into 50 Ω)
Bandwidth (-3 dB)
• 1x8: >85 MHz
• 1x64: >4 MHz

Insertion Loss (1X8)
• 100 kHz: <0.1 dB
• 1 MHz: <0.2 dB
• 10 MHz: 1.7 dB
• 30 MHz: <1.7 dB

Isolation (1x8)
• 100 kHz: >88 dB
• 1 MHz: >78 dB
• 10 MHz: >44 dB
• 30 MHz: >40 dB

Crosstalk (1X8)
• 100 kHz: <-63 dB
• 1 MHz: <-63 dB
• 10 MHz: <-41 dB
• 30 MHz: <-34 dB

Capacitance
• 1x8 (Channel to Chassis): <50 pF
• 1x8 (Open Channel): <5 pF
• 1x8 (Hi to Lo): <110 pF
• 1x64 (Hi to Lo): <400 pF

Interface
Power Requirements
• +5 VDC at 150 mA plus 30 mA per energized relay (2 A)

Front Panel I/O Interface Connector
• 160 pin DIN Connector

Environmental
(All environmental conditions designed to meet MIL-PRF-28800F, Class 3)
Temperature
• Operating: 0° C to 55° C
• Storage: -40° C to 75° C

Relative Humidity
• 85% ±5%, non-condensing at <30° C

Altitude
• Operating: 10,000 ft
• Non-Operating: 15,000 ft

Shock
• 30 g, 11 ms, ½ sine wave

Vibration
• 0.013 in: (pk-pk), 5 to 55 Hz

Bench Handling
• 4-inch drop at 45°

Emissions
• EN55011A with limits in accordance with EN50081-1

Immunity
• IEC801-2,3,4 with limits in accordance with EN50082-1

Safety
• EN61010-1

Switching Time
• <3 ms max (includes settling time)

Rated Switch Operations
• Mechanical: 1 x 10^8
• Electrical: 1 x 10^6 @ 50 V, 0.1 A; 1 x 10^6 @ 10 V, 10 mA

MTBF
• MIL-HDBK-217E: 183,169 hrs
• Bellcore: 154,107 hrs

MTTR
• <5 min

Software
Drivers
• LabVIEW™, LabWindows™/CVI, VXI*plug&play* support for frameworks based on Microsoft Win32® application programming interface

Web Controls
• When used with a Racal Instruments™ 1256L
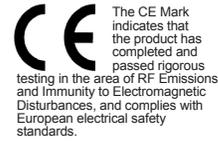
Specifications

continued

Mechanical

Weight

• 13 oz (0.45 kg)

Dimensions

• 4.5" H x 0.75" W x 9.5" D

Cooling Requirements

• See 1260-100 cooling data

The CE Mark indicates that the product has completed and passed rigorous testing in the area of RF Emissions and Immunity to Electromagnetic Disturbances, and complies with European electrical safety standards.

Ordering Information

Note: When the 1260-138A is used in a VXI mainframe other than a 1256 or 1256L, a Racal Instruments™ Option 01T Smart Control Module must be installed in the mainframe's left-most slot.

407723 : Racal Instruments™ 1260-138A

Adapt-a-Switch™ High-Density Multiplexer Plug-in Module

Accessories:

OPT-405108-001 : Racal Instruments™ Option 01T Smart Card Module installed (manual must be ordered separately; see below)

407531-001 : Racal Instruments™ Option 01T Smart Card Module (not installed) with manual

407664 : 160-pin Connector Kit with Strain Relief

407408-001 : 160-Pin Cable Assembly, 6 ft, 24 AWG

407409-001 : 160-Pin Cable Assembly, 12 ft, 24 AWG

407809-001 : 160-Pin Cable Assembly, 6 ft, 24 AWG

602258-116 : 160-Pin Backshell

602258-900 : Extra 24 Gauge contact

990898 : Insertion Tool

990899 : Extraction Tool

991020 : Crimp Tool