Specification Sheet MS2010A

High Performance DC-18GHz Modular Matrix
System MS2010A
Sizes 4x4 to 12x12

May 2016

General

The MS2010A switching systems are specifically designed for high performance coaxial signal switching within the DC-18GHz band. The units technology is leveraged from our field proven G2T product line and includes all of its many advanced features.

Intended for automating manual patch cords (or replace bulky and dated competitive products), this unit is designed for switching any coaxial signal within the DC-18GHz frequency. Our new proprietary high reliability relay elements coupled with our elegant and sophisticated rack-mount control and packaging gives you the performance and maintainability you demand. **If a relay should fail, it can be replaced with a spare by YOU in the field in less than two minutes.**

Configurations can be specified from 4x4 to as large as 12x12. The unit can also be configured with input and/or output terminations if required (up to 11x12, 12x11 or 11x11). SMA connectors are standard with N-Type optional. Multiple units can be connected together for even larger arrays with the "looping" port options.

The MS2010A units are designed to provide excellent signal performance with low crosstalk isolation, good phase matching, high isolation and low signal loss specifications. These rugged units are both compact and cost-effective. They provide the systems engineer with one of the best integrated solutions for reliably routing a wide range of signals for critical applications. Each input can be connected to only one output at a time (no fanout, only 1:1 connections).

Built-in features include optional redundant hot-swap power supplies, integrated rack mounting, relay usage logs, web browser, plus a powerful command and status protocol (488.2 compliant). With a global installation base, they are considered the next generation of switching systems to meet today's and tomorrow's needs for high performance and cost effective coaxial switching.

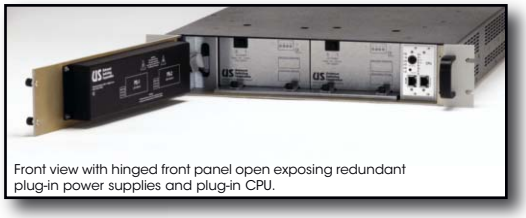
Applications

The advanced and sophisticated features of the MS2010A systems allow them to be used in numerous wideband applications:

- Ground stations with S-Band, L-Band, X-band
- Uplink or downlink signal routing
- Base installations
- Communication centers
- Satellite or automated test (ATE) installations

Features

- High reliability hot-swap plug-in relay elements
- Low MTTR with simple field replaceable relays
- DC to 18GHz bandpass (min)
- SMA signal connectors, or optional N-Type
- Full access matrix with 1:1 connectivity
- High crosstalk isolation, bi-directional signal path
- Built-in coil current monitoring
- Integrated individual relay usage logs
- Monitored cooling fans and internal temperatures
- Front panel color touchscreen display
- Remote control Ethernet (10/100), USB and Serial
- LXI 10/100 Ethernet with TCP/IP, SNMP, IPv4, IPv6
- Built-in web browser for control and monitor
- Command set is 488.2 compliant
- Rugged 2RU high aluminum chassis (3.50")
- Input and/or output terminations optional
- Optional "looping" ports to cascade units together
- International AC power range
- Self-monitoring hot-swap plug-in power supplies
- Rack mount design (19 inch)
- Built-in chassis slide mounting (slides not included)
- Certified CE EN61010 (LVD)



Front view with hinged front panel open exposing redundant plug-in power supplies and plug-in CPU.

MS2010A-201605

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System Details

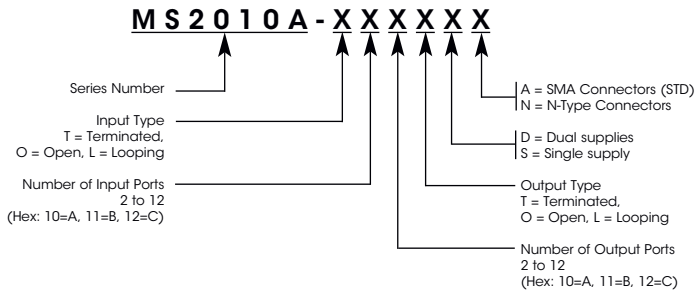
The MS2010A units are equipped with cool-running hot-swap power supplies and menu driven touchscreen. Remote control and monitor is via the plug-in LXI CPU with integrated Ethernet 10/100BaseT, USB and multi-serial ports (C3).

System control options and switching configurations are stored in FLASH memory, or the optional SD card. Different switching configurations may be stored in memory and may be recalled with a single command. This greatly simplifies control of commonly used configurations. For power up conditions, the system can be set to recall the last configuration since power down, or to completely clear all cross-point connections.

The unit includes monitored hot-swap redundant power supplies. The supplies install through the hinged front panel for quick and easy maintenance. Only one power supply assembly is needed for full operation. If power is lost to the unit, the relays go back to an "open" state. When power returns, the unit can be configured to remain "open" or to recall the last configuration.

LabVIEW VISA drivers can be downloaded from our website. The MS2010A is shipped complete with a detailed operations and programming manual. The unit is also compatible with our RouteWarePRO software package.

Model Number Assignment



NOTE: The unit is bidirectional so "input and output" are for reference only.

Performance Specifications

Switching configurations	4x4 to 12x12 (see above)
Configuration type	Fixed size
Switching elements	High reliability hot-swap relay
Terminations	Optional (Internal 2W)
Type of array	MxN blocking (1:1 connections)
Signal type	Single-ended passive
Signal connector	SMA standard (N-Type optional)
Frequency range	DC - 18GHz (min)
Signal coupling	DC coupled
Impedance	50 ohm
Transmission loss	<3.0dB @ 6GHz
	<5.0dB @ 12GHz
	<6.0dB @ 18GHz
Repeatability	<0.2dB max
Crosstalk isolation (min)	>95dB @ 6GHz
	>90dB @ 12GHz
	>85dB @ 18GHz
VSWR	<2.0:1 @ 18GHz typ
Maximum input level	120 watts @ 2.5GHz
(cold switching)	25 watts @ 18GHz
Power to "ready"	<5 seconds (no connections)
Command to action	<45mS (with Ethernet)

General Specifications

Remote control ports	10/100BaseT, USB and Multi-Serial
Protocols	SNMP, TCP/IP, IPv4, IPv6
Local control	Color touchscreen
Configuration memory	Built-in FLASH or uSD card
Unit firmware	Field upgradable (via Ethernet)
Control GUI	Optional (RouteWarePRO)
Software drivers	LabVIEW VISA (download)
AC power switch	Behind hinged front panel (supply)
AC power	90-264VAC, 47 to 440Hz, <100W
Power cord	NEMA 15A (USA) 6 foot (1ea)
Power section	Hot-swap redundant supplies (option)
Power supply monitoring	Included
High temperature alarm	Included
Relay usage logs	Included
Front panel color	FED-STD-595B #26440 (light gray)
Front panel thickness	1/8"
Mounting	Chassis-Trak® mounting pattern
Cooling	Fan assisted (monitored)
Venting	Side-To-Side, and out rear
Weight	<35lbs (varies with configuration)
Size	3.50"H x 19.00"W x 20.50"D **
Operating temp	0 to +60C
Non-operating temp	-20 to +75C
Humidity	0 to 95% (non-condensing @ +25C)
Altitude	<10,000 feet ASL
Mounting	RETMA slots (EIA), 2RU high
Chassis finish	Black texture paint & gold iridite
Handles	Black anodized
Contact life	>1,000,000 operations (per port)
MTBF	>35,000 hours per MIL-STD-217E, N1
Certifications	CE EN61010 LVD

** Systems with >10 ports on an axis are 24" deep

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