



# MS-10 1:N Modem Redundancy Switch



## SUPPORTED MODELS

The MS-10 10:1 Modem Redundancy Switch provides fully automatic or manual redundancy for the following models:

- M7 IF Modems
- M7L L-band Modems
- M7LT Dual IF Modems and L-band Terminals

## KEY FEATURES

- Only 5 RU in Height
- Dual AC Power Supplies
- Serial Data Switching irrespective of Interface Type: EIA422/530, V.35, RS232
- Supports Ethernet 10/100 Base-T Data Switching
- Modular construction
- Non-disruptive (to others) Interface cards replacement
- Indicators Modem and Back-up Status
- Auto/Manual Redundancy
- Remote Monitor and Control (M&C)
- Simple Configuration & Control
- Touchscreen Display

## INTRODUCTION

The MS-10 Redundancy Switch supports up to 10 prime modems and 1 Standby or Backup modem. The MS-10 Redundancy Switch provides changeover for Serial and Ethernet Data Interfaces and the IF. The Serial and Ethernet Data Input / Output signals of the modems are physically switched from the prime to the Standby. On the IF side, the modems' internal mute is used to turn-off the IF output of modem which is going Off - line and the Standby modem is unmuted when it is taking over for a Prime modem. The Intermediate Frequency TX and RX interfaces of the modems are connected directly to the station Combiner-Dividers. The MS-10 is supplied with Passive Combiner – Dividers as accessories to facilitate IF inter-connections. The MS-10 Redundancy Switch is supplied will be a L band or an IF 70/140MHz system depending on the frequency band of Combiner-Dividers. The customer specifies the IF band for the Combiner-Dividers, either in the L- band 950 to 2050 MHz or in the 50 to 180 MHz. Optionally an active Combiner is available as accessory for the TX path.

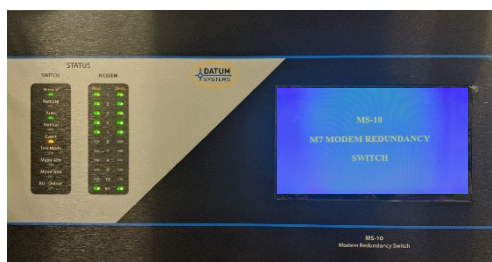
## FUNCTIONALITY

The MS-10 Redundancy Switch can be configured to learn the parameters of each Prime modem. If any Prime modem fails, the Standby modem is configured with the same parameters as the Prime modem. The data to / from the prime modem is switched to the standby modem, and the IF output of the Prime is turned Off and Standby modems is turned On. Passive combiners in the Uplink and Downlink path provide the interface to the Up / Down converters. The Uplink combiner can be optionally an active combiner with < 1.5 dB loss.

Monitor and control for the MS-10 Redundancy Switch is available on Serial and Ethernet control ports.

## CONSTRUCTION

The redundancy switches are modular in construction. The Data interfaces plug into the backplane, allowing each modem Interface to be plugged in or out without affecting the other modem traffic.



MS-10 Front Display View & Status LED's

## OPERATION

The standard MS-10 Redundancy Switch supports one (1) IF 70/140Mhz transponder (Uplink / Downlink) or one (1) L band Uplink / Downlink, depending on the version of the switch (L-band or IF 70/140MHz). A Multi-Transponder option is available (ask factory) when operation over multiple transponders of 70/140MHz or multiple L-band interfaces (multiple antenna / polarization) is desired. This is a useful when different modems within a redundancy switch system are connected to Uplink / Downlinks of different transponders / satellite bands (i.e. C/Ku) or to different satellites within the same or separate bands. The MS-10 Redundancy Switch is modular. The data interfaces plug into the backplane, and a pluggable interface card is provided for each modem, allowing each modem interface to be plugged-in or removed without affecting the other modem traffic. The data interface can be individually enabled/disabled.

The MS-10 Redundancy Switch has an easily configurable menu which allows the operator to configure the system quickly using a touch screen display & keyboard on the front panel. LED indicators display the fault status of modems and the Standby modem's Online / Off line status. The Prime modem number which is currently backed up by the standby modem is also displayed.

SPECIFICATIONS	
Capacity	1:N Redundancy, N=10 Online Modems max
Operating Modes	Fully automatic or manual If Prime modem recovers, traffic returns to the Prime modem when another modem fails
Switching Conditions	Switch to standby modem following: Modem fault; modem TX alarm or RX alarm
IF Changeover	IF Mute / Unmute control in modems with passive combiner for Uplink Option: Active combiner Option: Transponder switch, for Uplink / Downlink (Up to 4 transponders)
Data Interface	Serial Data Interface: 1 per modem Ethernet Data Interface: 1 per modem
Interface Type	BDB25 for Serial Data RJ45 for Ethernet
Uplink / Downlink Frequency	L band version: 950 to 2050 MHz (50 Ohm SMA) or IF Band version: 50 to 180 MHz (50 Ohm SMA)
Front Panel	Touchscreen display and keyboard LED status display for all modems Online Status
Faults	Form-C on 25 pin D Connector
Monitor & Control	Ethernet, Serial
Prime Power	Dual AC 220 VAC, 50 Hz
Power extension	DC extension for expansion chassis
Dimensions	Rack mount 4RU – MS10 6.75" x 19" x 12.5" (17.15 x 48.26 x 31.75 cm)
Weight	6 Kg –MS 10
Temperature	0 to +50°C operating
Humidity	-20 to +70°C storage 90% at 40°C non-condensing



MS-10 Rear View