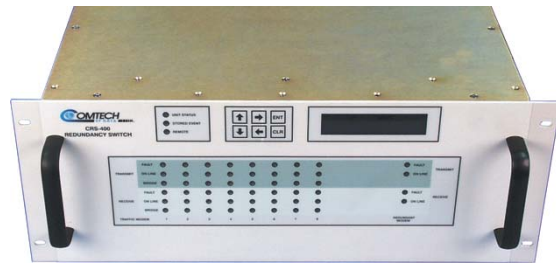


# CRS 1:N Redundancy Switches for Legacy Modems



CRS-200



CRS-400

## INTRODUCTION

The Comtech EF Data 1:N Modem Redundancy Switches provide full protection of traffic circuits in the case of equipment failure. They are primarily intended for hub applications, and are compatible with a variety of Comtech EF Data Satellite Modems. The protection system consists of traffic modems (up to ten for the CRS-200 and up to eight for the CRS-400), plus a redundant modem, and a redundancy switch. An optional IF switch, CRS-280 or CRS-280L, is available as a companion switch for multiple transponder or multiple satellite applications.

## COMPATIBILITY

These 1:N redundancy Switches support a wide-range of terrestrial data interface types including: EIA-422, V.35, EIA-232 and HSSI signals.

## KEY RELIABILITY FEATURES

- Twin, independent AC supplies
- Passive back-plane for signal path
- Normal traffic is not interrupted upon power failure
- Non-interruption of user data when other traffic modem Interface circuit cards are removed
- Data and clock are provided to the redundant modem when in bridged mode
- Programmable holdoff times to backup or restore
- Audible alarm programmable to activate based on various changes in status
- Provides single-point remote Monitor and Control (M&C) to switch and traffic modems
- Simplified configuration and control
- 2 line x 24 character vacuum fluorescent display
- Front panel keypad
- LED system status display showing unit and modem status, online/offline status and bridge status

## SUPERIOR FUNCTIONALITY

The configuration of each traffic modem is stored in the 1:N controller. This information is used to program the redundant modem if the traffic modem fails. The modem information is copied to the controller through a serial cable.

The 1:N controller also controls the traffic and redundant modem IF output. All modem outputs are ON if the CRS-280/CRS-280L IF switch is used in the system. The downlink path through the CRS-280/CRS-280L is completely passive.

External monitor and control may be connected to the CRS-230 controller board. The switch and each traffic modem may be monitored or controlled through this remote serial interface.

The data and clock signals to and from a traffic modems are routed through a Traffic Modem Interface (TMI), via a set of relays. This allows the data signals to pass directly through to the traffic modem in the event of a power failure. If the system's power supplies are lost, or if a TMI carrying traffic is removed, no interruption of traffic takes place.

The bridge mode may be used to verify the user data on a specific traffic modem. The redundant modem locks to the traffic modem receive IF input signal. The operator can program a delay interval for the backup modem to wait before coming on line when a traffic modem failure occurs.

## MODULAR CONSTRUCTION

The redundancy switches are modular in construction. All replaceable modules insert into slots in the back panel, including the controller, Traffic Modem Interfaces (TMIs), Redundant Modem Interfaces (RMIs) and Power Supply Units (PSUs). Power consumption is so low, even for fully populated units, that no fan cooling is required.

# CRS Series 1:N Redundancy Switches for Legacy Modems

## SYSTEM SPECIFICATION

Type	1:N Redundancy Switch system, N=10 max, bridging architecture.
Operating Modes	Fully automatic or manual Force Traffic Modem to Redundant Modem Remove selected Traffic Modem from control Programmable hold-off to backup and hold-off to restore (from 2 to 99 seconds)
Switching Conditions	Switch to Redundant Modem following a unit fault. Tx traffic alarm or Rx traffic alarm
IF Switching	With CRS-280 IF Switch: all modems outputs on all the time. Without CRS-280 IF Switch: IF On/Off control to modems
Redundant Modem Signal Source	Any one of the 10 traffic paths (bridge mode) (both Rx IF and Tx data)
Front Panel	Vacuum fluorescent display, 2 lines, 24 characters LED status display showing, for all modems Unit Status, Tx Status, Rx Status, Online and Bridge Status
Audible Alarm	Programmable to activate following various changes of state
Common faults	Dry relay contacts
Prime Power	Two independent inputs, (AC or DC versions available): 90 to 264 VAC, 50/60 Hz, or 48 (38 to 60) VDC <25 watts
Dimensional Envelope (Rack Mount – 4 U)	19W x 11.75D x 6.75H inch (48.26W x 29.85D x 17.15H cm)
Weight	~ 20 lbs (~ 9.07 kg)
Temperature	0 to +40°C (32 to 104°F) Operating 50 to 100°C (122 to 212°F) Storage
Humidity	95% at +40°C (104°F), Non-condensing
CE Mark	EMC and Safety

## CRS-200

The CRS-200 may be ordered in any of the following ways:

**Primary Input Power** – 100 to 250VAC or –48VDC

**Modems Used** – Listed by TMI type.

Modem	TMI
CDM-500* Rx Only (70/140 MHz) Rx & Tx (70/140 MHz)	CRS-220
CDM-550	CRS-220
CDM-550T	CRS-220

\* If the CDM-550 is selected:

**Data Interface** – 25-pin 'D' (EIA-422/-530A) with CRS-220

## CRS-400

The CRS-400 may be ordered in any of the following ways:

**Primary Input Power** – 100 to 250VAC or –48VDC

**Modems Used** – SDM-2020D Mod, SDM-202D.Demod

**Data Interface** – HSSI with CRS-410, (TMI)

## CRS-280/280L - IF Switch (Optional)

	CRS-280 (70/140MHz)	CRS-280L (L-Band)
Operating Frequency	50 to 180 MHz	950 to 1950 MHz
Connector Type	Tx/Rx BNC or TNC	Tx/Rx N-type
Return Loss	18 dB into 75Ω	15 dB into 50Ω
Power	From CRS-300	100-240 VAC 50/60 Hz (25W)
Dimensional Envelope (Rack Mount – 4RU)	19W x 2.5D x 7H inches (48.26W x 6.35 x 18Hcm)	19W x 14D x 7H inches (48.26W x 36D x 18H cm)
Weight	< 10 lbs (< 4.54 kg)	< 25 lbs (11.3 kg)

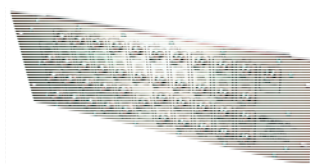
## WHICH SWITCH IS WHICH?

Selecting the correct switch has never been easier. Refer to the following table to match the switch to the modems to be protected.

Modem	Switch	1:N	Remarks	IF Switch
CDM-500, CDM-550, CDM-550T	CRS-200	1:10	70/140 MHz	CRS-280
CLM-9600L	CRS-300, CRS-350	1:10	L-Band, ESC Sw	CRS-280L
SDM-300L3	SMS-7000	1:8	L-Band	CRS-280L
SDM-2020	CRS-400	1:8	L-Band	CRS-280L
SDM-2020M	CRS-400	1:8	70/140 MHz	CRS-280
SDM-2020	CRS-400	1:8	70/140 MHz	CRS-280
SLM-5650	CRS-300	1:10	70/140 MHz L-Band	CRS-280 CRS-280L

## Notes:

- The CRS-300, CRS-280 and CRS-280L are not legacy products but support several legacy modems.
- The SLM-5650A ("A" model) Modem current build and not legacy.



CRS-280



CRS-280L

