



INTRODUCTION

The CRS-170 1:1 Redundancy Switch is a companion product used with Comtech EF Data L-Band modems:

- CDM-570L
- CDM-600L and CRS-150
- SDM-300L3 and SMS-301
- SNM-1001L and SMS-301
- SLM-3650L and SMS-301

The 1:1 switching assures fully protected data and signal paths and provides increased confidence that equipment failures will not adversely affect system availability. A block diagram illustrates the basic connection for the CDM-570 and the SDM-300L3 modems.

L-BAND SWITCHING

The CRS-170 provides L-Band switching. Data switching is accomplished separately. When switching occurs, the CRS-170 accommodates more than the just the L-Band signals. It switches the following:

- Tx and Rx L-Band signals
- 10 MHz reference to BUC and LNB
- DC power to the BUC and LNB
- FSK signaling to the BUC

DATA SWITCHING

Switching of the data interface signals is performed outside of the CRS-170. The data interfaces are switched as follows:

- CDM-570L - A simple Y-cable connects to the data interface and the programmable data interfaces are automatically selected and switched by the modems.
- CDM-600L - The CRS-150 provides data switching.
- SDM-300L3, SNM-1001L, and SLM-3650L. Data switching requires the SMS-301 Redundancy Switch

In both configurations the data and IF sections switch simultaneously.

OPERATION

Only one modem of a redundant pair is permitted to transmit its IF signal at a time. An RF switch in the CRS-170 selects the online carrier for transmission and takes the other unit offline. The CDM-570 or CDM-600L modem provides additional assurance by muting the carrier of the offline modem. On the Rx side of the CRS-170, a power splitter sends the receive signal simultaneously to both demodulators to monitor their health.

A significant feature of the CRS-170 redundancy system is an Auxiliary Serial connection between two CDM-570L or CDM-600L modems in a pair. When the two modems are interconnected, the online unit interrogates the standby unit to determine its configuration. If a difference in configuration is detected, the online unit automatically reconfigures the standby unit, so that the configurations are always synchronized. The advantage of this feature is clear: the standby unit is automatically programmed to match the online unit.

Modems supported by the SMS-301 switch can transfer the configuration from one modem to the other by programming the SMS-301 from the front panel or remote port.

MANUAL / AUTOMATIC SWITCHOVER

Manual switchover is enabled from the front panel or remote port of the online CDM-570L or CDM-600L modem. Automatic switching is inhibited by the user from the online unit. The user can select Unit Faults only, Unit Faults or Receive Traffic Faults, Unit Faults or Transmit Traffic Faults, or all three, for the switchover criteria, allowing maximum flexibility.

Automatic and manual redundancy of the SDM-300L3, SNM-1001L, and SLM-3650L are controlled from the front panel or remote port of the SMS-301.



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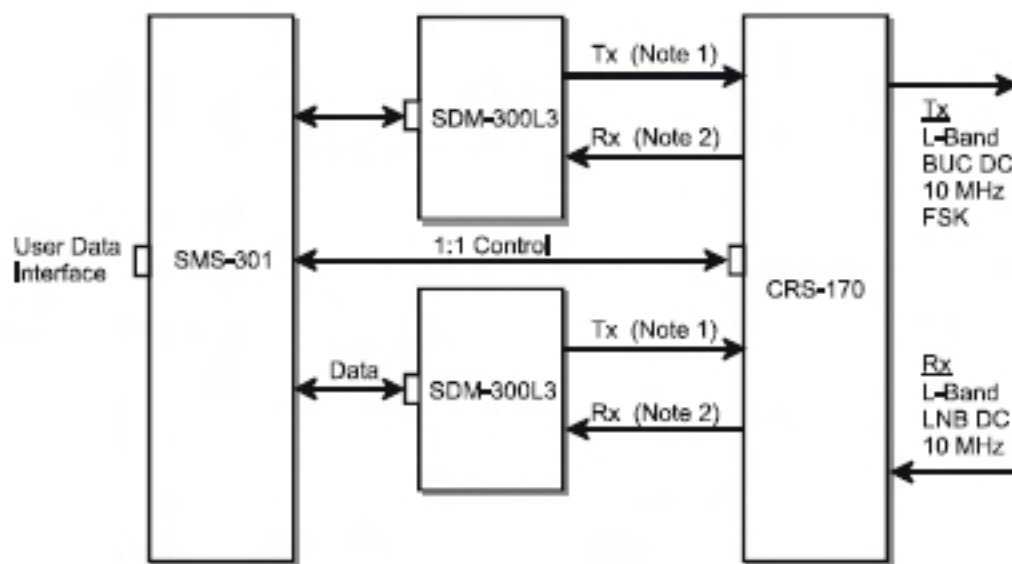
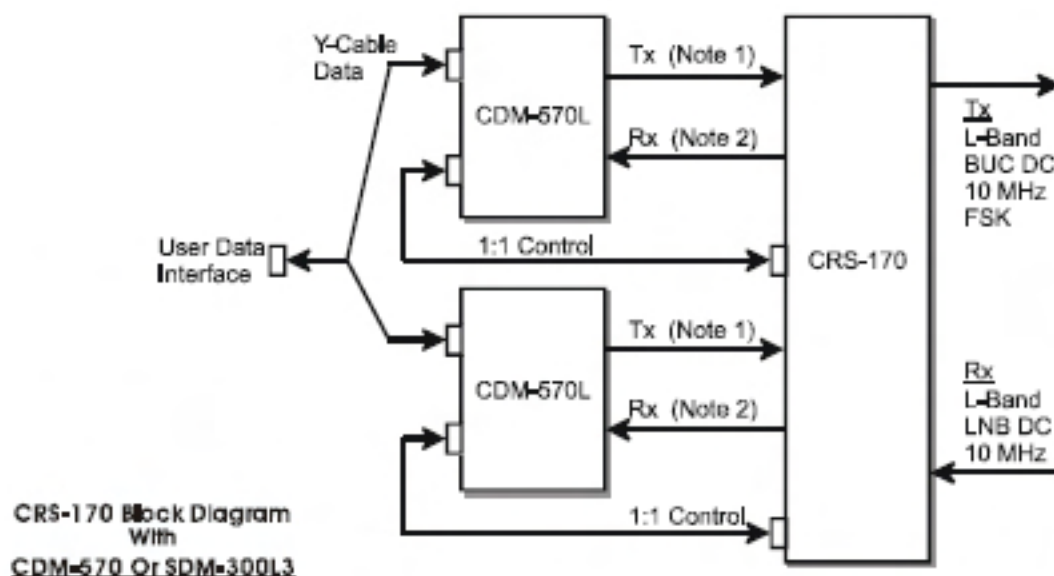
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Specifications

System Type	1:1 Redundancy Switch	IF Insertion Loss	
Impedance	Type N, 50 Ω (Only). Requires Modem with 50 Ω , Type N Connectors	Transmit IF	Switched by RF relay (2 dB max loss)
Operating Modes		Receive IF	Passive power splitting (5 dB max loss)
CDM-570L, CDM-600L	Fully automatic or Manual (via the front panel of the online modem, or via the modem's remote control interface)	Fault Detection / Switching Times	
		CDM-570	0.5 seconds / Within 0.1 seconds of fault detection
Modems with SMS-301	Manual or automatic via SMS-301 front panel or remote port	Modems with SMS-301	0.5 seconds / programmable switchover
Redundant Modem Signal Source	Full bridging architecture: TX Clock and Data, and RX IF fed to both units via data switching.	Data Interfaces	See modem datasheets
	With CDM-570L: Continuous fault comparison and configuration updates of online and standby units.	Weight	1.1 lbs (0.5 kg)
Switching Conditions	Switchover initiated by modem faults.	Dimensions	1.7 H x 5.7 W x 4.1 D inches (43 H x 143 W x 104 D mm)
		Power Requirements	+12 volts DC @ 200 mA (max)
		Environmental Approvals	CE (planned) as follows: EN 55022 Class B (Emissions) EN 50082-1 (Immunity) EN 60950 (Safety) FCC Part 15 Class B



- Notes:
1. Includes Tx L-Band, BUC DC, 10 MHz and FSK
 2. Includes Rx L-Band, LNB DC, 10 MHz