

## INTRODUCTION

The CRS-100 1:1 Redundancy Switch is a companion product for use with Comtech EFData CDM-500, CDM-550 or CDM-550T modems. Its purpose is to continuously monitor a pair of modems in a redundant configuration, so that the unit automatically switches data and IF signals from the failed unit to the standby unit if an equipment failure or undesired traffic condition occur. In this manner, traffic paths are fully protected, and the system operator can have increased confidence that equipment failures will not adversely affect system availability.

## DATA TYPES SUPPORTED

The CRS-100 includes, as standard, a universal data interface that eliminates the need to exchange interface cards for different applications. The interfaces supported include EIA-422 (EIA530) DCE, V.35 DCE, synchronous EIA-232 DCE, asynchronous EIA-232 (at data rates up to 56 kbaud) and X.21 DTE and DCE. The user does not have to configure the interface type — control signals from the modems automatically perform the selection.

Clock and data signals in the transmit direction are buffered and fed to both modems in the pair simultaneously. The receive IF signal is split and fed to both modems. This means that both modems see identical Tx and Rx traffic signals all the time, which permits the CRS-100 to continuously compare the fault status of both modems. If the CRS-100 sees an identical fault on both modems at the same time, it will infer that the fault condition exists in the external system, and eliminate an unnecessary switchover.

## OPERATION

Only one modem in the pair (the online unit) is permitted to transmit its IF carrier signal at any one instant. For total security, the offline modem mutes its TX carrier, and the CRS-100 provides further isolation by using an RF relay within the unit. Unlike some other 1:1 redundancy systems, which use a passive power combiner for this function (losing approximately 3.5 dB in output power level), the CRS-100 does not introduce any attenuation of output signal level.

A significant feature of the CRS-100 redundancy system is the Auxiliary Serial connection between the two modems in the pair. When the appropriate cable connects the two modems, the online unit will interrogate the standby unit at regular intervals, to determine its configuration. If a difference in configuration is detected, the online unit will automatically reconfigure the standby unit, so that the configurations are always synchronized. The advantage of this feature is clear: if the standby unit is replaced, it does not have to be reprogrammed to match the online unit — the process is entirely automatic.

## MANUAL / AUTOMATIC SWITCHOVER

Manual switchover is enabled from the front panel or remote control of the online modem. Automatic switching can be limited to the user application by selecting two switches at the side of the unit. The user can select Unit Faults only, Unit Faults or Receive Traffic Faults, Unit Faults or Transmit Traffic Faults, or all three. This selection provides a great deal of flexibility in the operation of the Switch.



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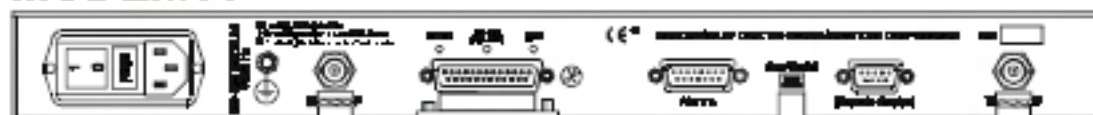
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### Specifications

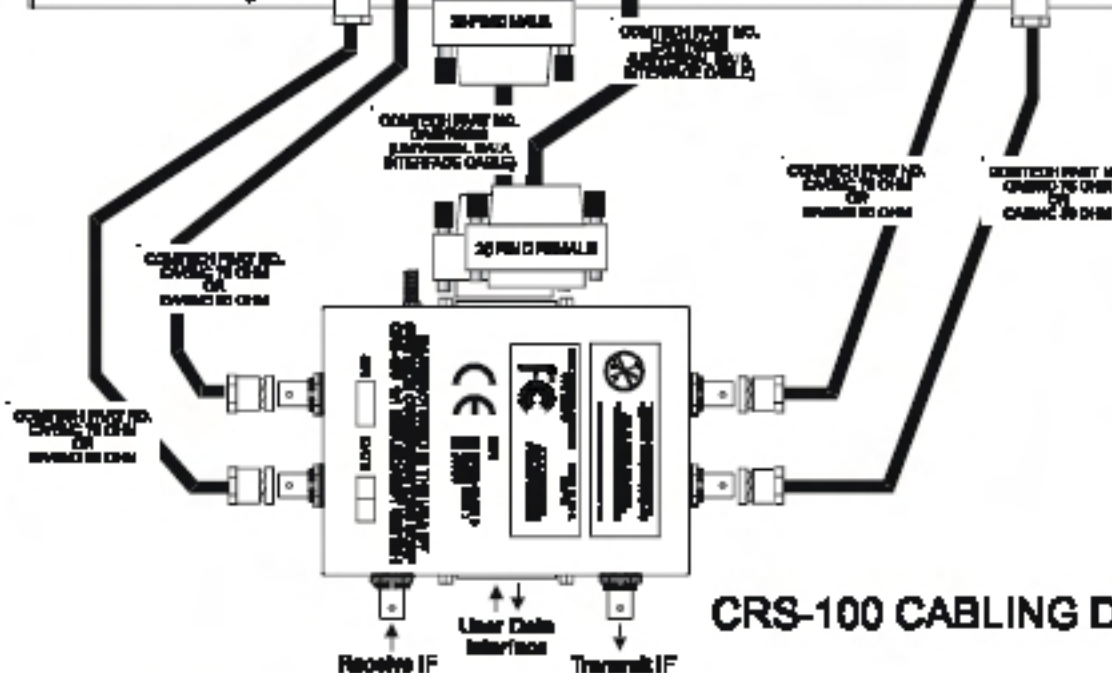
<p><b>System Type</b> 1:1 Redundancy Switch</p> <p><b>Operating Modes</b> Fully automatic Manual (via the front panel of the online modem, or via the modem's remote control interface)</p> <p><b>Redundant Modem Signal Source</b> Full bridging architecture TX Clock and Data, and RX IF fed to both units. Continuous fault comparison and configuration updates of online and standby units.</p> <p><b>Switching Conditions</b> Switchover initiated by any modem fault, Unit faults only Unit faults or Receive Traffic Faults Unit faults or Transmit Traffic Faults</p> <p><b>IF Switching / Splitting</b> Transmit IF: Switched by RF relay (0.3 dB max loss) Receive IF: Passive power splitting (3.5 dB max loss)</p>	<p><b>Fault Detection Time</b> 0.5 seconds maximum</p> <p><b>Switching Time</b> Within 0.1 seconds of fault detection</p> <p><b>Data Interfaces</b> EIA-422 / EIA530 V.35 DCE Sync / Async EIA-232</p> <p><b>Weight</b> 1.1 lbs (0.5 kg)</p> <p><b>Dimensions</b> 1.7 inches (43 mm) high 5.7 inches (143 mm) wide 4.1 inches (104 mm) deep</p> <p><b>Power Requirements</b> 3.2 Watts maximum, from modems +12 volts DC @ 160 mA (max) -12 volts DC @ 100 mA (max)</p> <p><b>Environmental Approvals</b> CE as follows: EN 55022 Class B (Emissions) EN 50082-1 (Immunity) EN 60950 (Safety) FCC Part 15 Class B</p>
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### MODEM A



### MODEM B



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