

Redundancy in CCTX4, CCTX12 and CCTX24 Media Converters

The CCTX product line was designed to have redundant power supplies so that a customer could provide separate power input sources in the event of power outages, etc. The designs of the pc-boards internal to the unit do not have redundant circuitry. The failure of a component could cause the failure of either a single channel of conversion, a group of channels or the entire CCTX unit. Having spare units on hand will facilitate a quick return to service; however, it will not provide uninterrupted operation. Although the CCTX product line has been very reliable in service, it was not designed for uninterrupted operation, such as life safety applications. The only true way to provide redundancy is to have duplicate systems on diverse paths.

The CCTX-4 power supply board has one 5 volt to 3.3 volt regulator circuit to power both of the conversion boards. A failure in this circuit can shut down the CCTX unit.

The CCTX12/24 power supply board has four 12 volt to 3.3 volt regulator circuits. A failure in one of these circuits can shut down either 1 or 2 conversion boards in a twelve channel unit or 3 conversion boards in a twenty four channel unit. There is a single 12 volt to 5 volt regulator for control functions and cooling fan operation. A failure of this regulator can shut down the entire CCTX12/24.

Each CCTX conversion board contains 2 channels of conversion. Each conversion board has regulator circuits for 2 volts and 1 volt. The failure of either circuit could shut down the conversion board. There is also a microcontroller for both conversion channels. A failure in this unit could shut down the conversion board. The conversion circuitry is separate for each channel and a failure in its associated circuitry will affect only that channel of conversion.

The failure of either power supply will set an alarm light on the front panel and in the management software. If SMTP management software is used, a trap will be sent. If both supplies fail at the same time, there is no provision for setting an alarm.

