SECTION 7 MODULE SPECIFICATIONS

7.1 INTRODUCTION

This section lists the specifications for the V.35/RS-449/X.21 Combined Data Interface Module. Listed separately are the specifications for the V.35, RS-449, and X.21 portions of this interface.

7.1.1 V.35/306 Interface Specifications

The following are the specifications for the V.35 portion of this interface:

Maximum Data Rate

306 mode:	15 Mb/s
V.35 mode:	dependent upon cable length

Clock and Data Tolerances

Delay, SCT to SD:	70 ns typical
Skew, SCTE to SD:	20 ns typical

Balanced Drivers

Signal Swing (bipolar):	±0.55V ±0.1V into 100Ω
Short circuit current:	less than 100 mA
Rise time:	less than 20 ns
Generator impedance:	100Ω

Balanced Receivers

Load resistance:	100Ω

Polarity

Data polarity:	Mark (binary 1): “A” lead negative with respect to “B” lead Space (binary 0): “A” lead positive with respect to “B” lead
Signaling polarity:	ON: greater than +3VDC OFF: open or less than -3VDC

7.1.2 RS-449 Interface Specifications

The following are the specifications for the RS-449 portion of this interface:

Maximum Speed

RS-449 Balanced: (RS-422 T - terminated) (RS-422 U - unterminated)	15 Mb/s synchronous timing 20 kb/s asynchronous timing 520 kb/s recovered timing
RS-449 Unbalanced: (RS-423)	128 kb/s synchronous timing 20 kb/s asynchronous timing 128 kb/s recovered

Polarity

Data polarity:	MARK (binary “1”): “A” lead negative with respect to signal ground SPACE (binary “0”): “A” lead positive with respect to signal ground
Signal polarity:	OFF: “A” lead negative with respect to “B” lead ON: “A” lead positive with respect to “B” lead

Unbalanced Drivers

Short circuit current:	150 mA maximum
Output Level (both states):	$0.9V_0$ (Open circuit voltage, into 450Ω)
Output rise time (clock drivers):	1.2 µs maximum
Output rise time (signaling drivers):	10 µs typical
Open circuit voltage (V_0(>)	5.5 ±.5 volts

Balanced Drivers

Short circuit current:	150 mA maximum
Differential output signal swing:	2 volts minimum (with a 100Ω load)
Output rise and fall time:	20 ns maximum
Open circuit voltage:	6 volts maximum
Average DC offset:	0V ±0.4 volts

Receivers

Termination resistance: (specified with fail safe networks)	100Ω/unterminated (RCV DATA, RCV CLK, EXT TX CLK)
Input impedance:	7.4 kΩ minimum 6.6 kΩ minimum Single ended A to ground with B grounded
Input threshold:	±0.2 volts (A versus B)

7.1.3 X.21 Interface Specifications

The following are the specifications for the X.21 portion of this interface:

Maximum Speed

X.21:	dependent upon cable length 20 kb/s asynchronous timing 520 kb/S recovered timing

Polarity

Data Polarity:	MARK (binary “1”): “A” lead negative with respect to signal ground SPACE (binary “0”): “A” lead positive with respect to signal ground
Signal Polarity:	OFF: “A” lead negative with respect to “B” lead ON: “A” lead positive with respect to “B” lead

Drivers

Short circuit current:	150 mA maximum
Differential output signal swing:	2 volts minimum (with a 100Ω load)
Output rise and fall time:	20 ns maximum
Open circuit voltage:	6 volts maximum
Average DC offset:	0V ±0.4 volts

Receivers

Termination resistance:	100Ω
(specified with fail safe networks):	(RCV DATA, RCV CLK, EXT TX CLK)
Input Impedance:	7.4 kΩ minimum
	6.6 kΩ minimum
	Single ended A to ground with B grounded
Input threshold:	±0.2 volts (A versus B)

7.2 DIMENSIONS

The following are the dimensions for the V.35/RS-449/X.21 Combined Data Interface Module.

Width:	7.3 inches (185 mm)
Height:	1.5 inches (38 mm)
Depth:	5.2 inches (130 nun)

The Combined Data Interface Module fits into the interface slot for the FIREBERD 6000 and 4000 communications analyzers. Two spring-tensioned screws secure the interface module to the FIREBERD. Connector pins on the module mate with the mainframe's connector receptacle when the interface panel is flush with the mainframe rear panel.