APPENDIX A

BPX Node Specifications

Introduction

This appendix lists the BPX system specifications for Release 8.1.

General

System Capacity:	1 shelf with 15 card slots. Requires 1 or 2 dedicated slot(s) for BCC card. Requires 1 dedicated slot for ASM card.
Network Interface:	Asynchronous T3 with Physical Layer Convergence Protocol (see also T3 Interface spec). Unchannelized E3 with StrataCom T3-E3 Interface Module
Network Trunks:	32 per node max.
Network Interface Protocol:	ATM layer with 53-byte cell using StrataCom Transmission Interface or UNI header (selectable).
Cell Switching:	Crosspoint switch matrix, non-blocking.
Switch Capacity:	9.6 Gbps.
Slot Rate:	800 Mbps each, including overhead.
Connection Rate:	20 million cell connections/sec. between slots.
Classes of Service:	32 queues per port, assignable.
Clock Sources:	Internal, free-running oscillator, Stratum 3. Phase-locked to any appropriate network interface. External input at T1 or E1 rate
Clock Output:	Single clock output at T1 or E1 rate for synchronizing co-located IPX node(s) or CPE.
Cabinet Size:	22.75 inches (57.8 cm) high. 19.0 inches (48.25 cm) wide. 27.0 inches (68.6 cm) deep.

Weight, approx.	73 lb. (33.2 kg.) empty BPX shelf, w/fans but no PS. 6 lb. (2.7 kg.) each card. 18 lb. (8.2 kg.) empty AC Power Supply Tray. 16 lb. (7.3 kg.) each AC Power Supply 2 lb. (0.9 kg.) each DC Power Entry module.
Clearance Requirement:	At least 30 inches front and rear clearance; nominal 12 inch side clearance.
Power Source:	AC system: 180 – 264 VAC, 47 to 63 Hz. DC system: –42 to –56 VDC.
Power Requirements:	AC BPX-15: 13 A at 180 VAC (2300 VA). DC BPX-15: 40 A at –42 VDC (1680W).
Input Power Connector:	AC: 3-conductor IEC receptacle. 8 feet (2.4 m.) power cord supplied. DC: 3 Ring lug screw terminal connectors.
Circuit Breakers:	AC: 15 A on AC power supply assembly DC: 40A on power entry module
Fuses	Individual Backplane Card slot fuses, F1 through F3 for Fans 1 through 3, and F4 through F18 for card slots 1 through 15, respectively, 5A-120VAC rating
Operating Environment:	Operating Conditions are listed in Table A-1.
Shock:	Withstands 10G, 10 ms. at 1/2 sine wave.
Vibration	Withstands 1/4 G, 20–500 Hz.
Heat Transfer to Room:	**U**p to 7200 BTUs depending on node configuration.

Table A-1 Ambient Temperature and Humidity Limits

	Limits	
Conditions	**Fahrenheit**	**Centigrade**
Operating Temperature	+40 to +100 degrees	+4.5 to +38 degrees
Recommended	+68 to + 86 degrees	+20 to +30 degrees
Short-Term Temperature[1]	+35 to +120 degrees	+1.7 to + 49 degrees
Operating Relative Humidity	20% to 55% (non-condensing)	
Short-Term Relative Humidity	10% to 80% non-condensing	

1. Room temperature refers to conditions at a location 5 feet above the floor and 15 inches in front of the equipment.

ATM T3 Trunk Interface (BNI-T3, LM-3T3)

Line Rate:	44.736 Mbps ± 20 ppm, asynchronous.
Line Code:	B3ZS.
Signal Level:	DSX-3.
Framing Format:	C-bit parity is monitored. No other framing or control bits in the DS3 frame are either altered or monitored.
Protocol:	Physical Layer Convergence Protocol per AT&T Publication TA-TSY-000772 and 000773.
ATM Cell Rate:	96,000 cells/sec. Limited to 80,000 cells/sec. when interfacing with StrataCom IPX.
Alarms Sent:	AIS. Remote
Alarms Received:	AIS. Loss of Signal. Remote. Loss of Framing.
Line Errors Counted:	BPV. Parity Bit Errors.
Jitter:	Meets ACCUNET T45 specification (Pub 54014).
Connector:	75 ohm BNC.
Recommended Cable Lengths:	900 feet (275 m.) max. using specified cable. 450 feet (150 m.) to a DS3 crossconnect.
Indicators:	Card status. Port status.

ATM E3 Trunk Interface (BNI-E3, LM-3E3)

Line Rate:	34.368 Mbps ± 20 ppm, asynchronous.
Line Code:	HDB3.
Signal Level:	CCITT G.703.
Framing Format:	CCITT G.804, G.832.
Port Interface:	75 ohm unbalanced.
Barrier:	Fully barriered per EN 41003.
ATM Cell Rate:	80,000 cells/sec.
Jitter:	per CCITT G.823

ATM Layer Protocol:	per CCITT I.361 with HEC.
Port Alarm Processing:	AIS. Loss of Signal. Remote Alarm Indication. Loss of Framing.
Line Errors Counted:	BPV. Parity Bit Errors.
Connector:	75 ohm BNC.
Max. E3 Cable Lengths:	900 feet (275 m.) using specified cable.
Indicators:	Card status. Port status.

ATM OC3 Trunk Interface (BNI-OC3, LM-OC3

Line Rate:	155.20 Mbps	
Line Code:	NRZ	
Signal Level:	Max	Min
MMF TX	–8 dBm	–15 dBm
MMF RX	–8 dBm	–28 dBm
SMF LR TX	0 dBm	–5 dBM
SMF LR RX	–10 dBm	–34 dBm
Framing Format:	STS-3c, STM1	
Port Interface:	LMI, ILMI	
ATM Cell Rate:	353,208 cells/sec.	
Jitter:	< 0.01 UI p-p, < 0.1 UI rms	
ATM Layer Protocol:	LMI, ILMI	
Port Alarm Processing:	LOS, LOF, LOP, Path AIS, Path Yellow	
Line Errors Counted:	Section BIP8, Line BIP24, Line FEBE, Path BIP8, Path FEBE	
Connector:	MMF SC SMF FC/PC	
Max. Cable Lengths:	MMF ~ 2 KM SMF IR ~20 KM SMF LR ~40 KM	
Indicators:	Card status. Port status.	

ATM Service Interface (ASI-1, LM-2T3)

Capacity	2 ports per card.
Interface:	T3
Line Rate:	96,000 cells/sec.
No. of channels per card:	1000
No. of channels per node:	1000 or 5000 (grouped)
VPI Addressing Range:	0–255 (UNI), 0-1023 (NNI_7
VCI Addressing Range:	1–4095
Queues:	32, 16 per line (port) includes CBR, VBR, and ABR queues.

ATM Service Interface (ASI-1, LM-2E3)

Capacity	2 ports per card.
Interface:	E3
Line Rate:	80,000 cells/sec.
No. of channels per card:	1000
No. of channels per node:	1000 or 5000 (grouped)
VPI Addressing Range:	0–255 (UNI), 0-1023 (NNI_
VCI Addressing Range:	1–4095
Queues:	32, 16 per line (port) includes CBR, VBR, and ABR queues.

ATM Service Interface (ASI-2, LM-OC3)

Capacity	2 ports per card.
Interface:	OC3
Line Rate:	353,208 cells/sec.
No. of channels per card:	1000
No. of channels per node:	1000 or 5000 (grouped
VPI Addressing Range:	0–255 (UNI), 0-1023 (NNI_
VCI Addressing Range:	1–4095
Queues:	24, 12 per line (port) includes CBR and VBR queues.