APPENDIX A

BPX Cabling Summary

Introduction

This appendix provides details on the cabling required to install the BPX node.

Note In all cable references, the transmit direction is from the BPX, receive is to the BPX.

Trunk Cabling

Trunk cables connect the customer DSX-3 crossconnect point or T3-E3 Interface Module to the BPX node at the LM-3T3 back card. Refer to Table A-1 for details.

Table A-1 Trunk Cables

Cable Parameter	Description
Type:	75-ohm coax cable (RG-59 B/U for short runs, AT&T 734A for longer runs). Two per T3/E3 line (XMT and RCV).
Max. Length:	450 feet max. between the BPX and the DSX-3/E3 point.
Connector:	Terminated in male BNC; Rx is receive from trunk, Tx is transmit to trunk.

Power Cabling

Power connections are made to the AC Power Supply Shelf or the DC Power Entry Module at the rear of the BPX node. Refer to Table A-2 and Table A-3. (next page) for acceptable cable and wire types.

AC Powered Nodes

AC power cables may be provided by the customer or ordered from StrataCom. Several standard cables are available (seeTable A-2). AC cables with other plugs or different lengths may be special ordered. For users who wish to construct their own power cable, the cable must mate with an IEC320 16/20A female receptacle on rear of the AC Power Supply Assembly.

Table A-2 AC Power Cables

Cable Parameter	Description
Cable:	Provided with 8 feet (2.3 m.) of 3-conductor wire with plug.
Plug: customer end	20 A NEMA L620, 3-prong plug (domestic) or 13 A 250 Vac BS1363, 3-prong fused plug (UK, Ireland) CEE 7/7 (Continental Europe) AS3112 (Australia/New Zealand) CEI23-16/VII (Italy)

DC Powered Nodes

DC wiring (Table A-3) is generally provided by the customer.

Table A-3 DC Power Wiring

Cable Parameter	Description
Wiring:	Single conductor, 8 AWG recommended wire gauge, 75°C insulation rating, copper conductors only. Provision is provided for attaching conduit.
Connection:	90° ring lug for #10 screw terminal block.

LM-BCC Cabling

This cabling connects data ports on the LM-BCC to StrataView Plus NMS computers, control terminals, and modems. It is also used for external clock inputs from a clock source. See Appendix A for more details on peripherals that can be attached to these ports.

Auxiliary and Control Port Cabling

The auxiliary and control ports are used to connect one of the nodes in the network to a control terminal, StrataView NMS workstation, or modem connections for remote alarm reporting or system monitoring. Refer to Table A-4 and Table A-5 for details on this cable.

Table A-4 Auxiliary and Control Port Cabling

Cable Parameter	Description
Interface:	RS-232 DCE ports.
Suggested Cable:	24 AWG, 25-wire. A straight-through RS-232 cable is used for a terminal or printer connection. A null modem cable may be needed when interfacing with modems on either port.
Cable Connector:	DB-25, subminiature, male. Table A-5 contains a list of the port pin assignments.
Max. Cable Length:	50 feet (15 m.)

Table A-5 Auxiliary and Control Port Pin Assignments

Pin#	Name	Source	Description
1	FG	both	Frame Ground
2	TxD	DTE	Transmit Data
3	RxD	DCE	Receive Data
4	RTS	DTE	Request to Send
5	CTS	DCE	Clear to Send
6	DSR	DCE	Data Set Ready
7	SG	both	Signal Ground
8	CD	DCE	Carrier Detect
20	DTR	DTE	Data Term Ready

LAN Port Cabling

The LAN connection is used to connect one of the nodes in the network to a StrataView Plus NMS workstation. See Table A-6 and Table A-7 for details.

Table A-6 LAN Port Cabling

Cable Parameter	Description
Interface:	Ethernet DCE port.
Suggested Cable:	TBS
Cable Connector:	DB-15, subminiature, male. Table A-7 contains a list of the port pin assignments.
Max. Cable Length:	50 feet (15 m.) max. to interface adapter.

Table A-7 LAN Port Pin Assignments

Pin #	Name	Pin #	Name
1	Shield	---	---
2	Collision Presence +	9	Collision Presence -
3	XMT +	10	XMT -
4	Reserved	11	Reserved
5	RCV +	12	RCV -
6	Power return	13	Power (+12V)
7	Reserved	14	Reserved
8	Reserved	15	Reserved

Modem Cabling

Refer to Appendix A for Modem Cabling information.

External Clock Input Cabling

This cable is for connecting external clock inputs to the LM-BCC EXT. TMG. connectors. There are two separate clock inputs, A and B, for primary and standby clock sources, either one or both of which may be 1.544 Mbps or 2.048 Mbps rate. Refer to Table A-8 through Table A-11.

T1 Clock Cabling

Table A-8 External Clock Cabling

Cable Parameter	Description
Cable Type:	Western Electric 22 AWG, ABAM individually shielded twisted pair. Two pair per T1 line (1 transmit and 1 receive).
Cable Connector:	Male DB-15 subminiature. See Table A-9 for pinouts.
Max. Cable Length:	533 ft (162 m.) maximum between the BPX and the first repeater or CSU. Selection of cable length equalizers.

Table A-9 T1 Connector Pin Assignments for External Clock

Pin #	Description
1	Transmit, Tip
2	Transmit Pair Shield
3	Receive, Tip
4	Receive Pair Shield
9	Transmit, Ring
11	Receive, Ring

E1 Clock Cabling

Table A-10 E1 Connector Pin Assignments for External Clock

Connector	Description
Cable Type:	75-ohm coax cable for unbalanced connection or 100–120-ohm twisted pair for balanced connection. Two cables/pairs (1 transmit, 1 receive) per E1 line.
Cable Connector:	Two female BNC for unbalanced connection; male DB15 for balanced connection. See Table A-11 and Table A-12 for pinouts.
Max. Cable Length:	Approx. 100 meters maximum between the BPX and the first repeater or CSU. Equalizer for cable length.

Table A-11 E1 Connector Pin Assignments for Ext. Clk (unbalanced)

Connector	Description
Rx BNC	Receive E1 from trunk
Tx BNC	Transmit E1 to trunk

Table A-12 E1 Connector Pin Assignments for Ext. Clk (balanced)

Pin #	Description
1	Receive, Tip
9	Receive, Ring
2	Receive Pair Shield
3	Transmit, Tip
11	Transmit, Ring
10	Transmit Pair Shield

External Alarm Cabling

This cable (Table A-13) is for connecting network alarm outputs to the LM-ASM ALARM OUTPUT connector only. Table A-14 lists the pinouts for the network alarm outputs.

Table A-13 External Alarm Cabling

Cable Parameter	Description
Interface:	Dry-contact relay closure.
Wire:	24 AWG, shielded, 6-pair.
Connector:	DB-15, Subminiature, male

Table A-14 Network Alarm Pin Assignments

Pin	Alarm	Description
1	Audible—Major	Normally open
2		Common
9		Normally closed
4	Visual—Major	Normally open
5		Common
12		Normally closed
7	unused	n.c.
8	unused	n.c.
3	Audible—Minor	Normally open
11		Common
10		Normally closed
6	Visual—Minor	Normally open
14		Common
13		Normally closed
15	unused	n.c.

Standard BPX Cables

Table A-15 lists the various cables that may be ordered directly from StrataCom. Cable lengths are specified as a suffix to the StrataCom model number. For example 5610-50 indicates a 50 foot cable. Cables are generally available in standard lengths of 10 ft (3 m.), 25 ft (7.6 m.), 50 ft (15 m.), 75 ft (22.8 m.) and 100 ft (30 m.) Lengths of 101 ft. (30 m.) to 600 ft. (183 m.) are available on a special order.

When a cable is connectorized, the connector gender (male-female) will be indicated as well as the number of pins. For example RS-232/M25-M25 indicates a cable terminated with a male DB25 at both ends.

Table A-15 Standard Cables Available from StrataCom

Model#	Description	Usage
T3-E3-10 T3-E3-25 T3-E3-50 T3-E3-75 T3-E3-xx	75 Ω coax/BNC-BNC, 10' 75 Ω coax/BNC-BNC, 25' 75 Ω coax/BNC-BNC, 50' 75 Ω coax/BNC-BNC, 75' length to be specified	T3 or E3 tank interface
5620	RS-232/M25-F25	Control port to control terminal, StrataView, or ext. window device
5621	RS-232/M25-M25 special	Control or Aux. port to modem
5623	RS-232/M25-M25	Aux. port to ext. window device
5601	Ground cable	DC
5670	Molex-pigtail	DC
5671	Spade lug-pigtail	DC

Redundancy “Y” Cable

The redundancy cables are a special “Y” cable available from StrataCom. They are required for redundant trunk and data interfaces. Table A-16 lists the Y-cables used with various BPX back cards.

Table A-16 Redundancy Y-Cables

Y - Cable	Used On	StrataCom P/N
T3 trunk	LM-3T3	TBS
E3 trunk	LM-3E3	TBS
Aux./Cont. ports	LM-BCC	TBS
Ext. Clk. In	LM-BCC	TBS
Ext. Clk. Out	LM-BCC	TBS