



Appendix A— Connector Pinouts

A.1 CP – Control Processor Module

A.1.1 Maintenance and Control Port (PC1)

Connector Type: DB-9 Female

Pin Number	Name	Description
1	DCD (O)	Data carrier detect
2	TD (O)	Transmit data
3	RD (I)	Receive data
4	DTR (I)	Data terminal ready
5	GND	Signal ground
6	DSR (O)	Data set ready
7	RTS (I)	Request to send
8	CTS (O)	Clear to send
9	–	Not used

A.1.2 Ancillary Data Port

Connector Type: DB-25 Female

Pin Number	Name	Description
1	FGND	Frame ground
2	RD (I)	Receive data
3	TD (O)	Transmit data
4	RTS (I)	Request to send
5	CTS (O)	Clear to send
6	DSR (O)	Data set ready
7	GND	Ground
8	DCD (O)	Data carrier detect
9 – 19	–	Not used
20	DTR (I)	Data terminal ready
21 – 25	–	Not used

A.2 Encoder Module

A.2.1 Analog Audio Inputs Connector: Female XLR

1	Ground
2	+
3	-

A.2.2 Digital Audio Input Connector: Female XLR

1	Ground
2	IN+
3	IN -

A.2.3 Ancillary Data Port Connector Type: DB-25 Female

Pin Number	Name	Description
1	FGND	Frame ground
2	RD (I)	Receive data
3	TD (O)	Transmit data
4	RTS (I)	Request to send
5	CTS (O)	Clear to send
6	DSR (O)	Data set ready
7	GND	Ground
8	DCD (O)	Data carrier detect
9 – 19	–	Not used
20	DTR (I)	Data terminal ready
21 – 25	–	Not used

A.3 Decoder Module

A.3.1 Analog Audio Outputs

Connector: Male XLR

1	Ground
2	+
3	-

A.3.2 Digital Audio Output

Connector: Male XLR

1	Ground -
2	OUT +
3	OUT -

A.3.3 Digital Audio Sync Input

Connector: Female XLR

1	Ground
2	SYNC IN +
3	SYNC IN -

A.3.4 Ancillary Data Port

Connector Type: DB-25 Female

Pin Number	Name	Description
1	FGND	Frame ground
2	RD (I)	Receive data
3	TD (O)	Transmit data
4	RTS (I)	Request to send
5	CTS (O)	Clear to send
6	DSR (O)	Data set ready
7	GND	Ground
8	DCD (O)	Data carrier detect
9 – 19	–	Not used
20	DTR (I)	Data terminal ready
21 – 25	–	Not used

A.4 E1 Multiplexer Module

A.4.1 Main E1 , Drop/Insert, and E1 Timing Ports

Connector Type: DB-9 Male

Pin Number	Name	Description
1	RCV +	Incoming E1 (+) or D/I
2	GND	Ground/shield
3	XMT +	Outgoing E1 (+) or D/I
4	—	
5	—	
6	RCV -	Incoming E1 (-) or D/I
7	GND	Ground/shield
8	XMT -	Outgoing E1 (-) or D/I
9	—	

A.4.2 E1 Test Port (Monitor Port)

Connector Type: DB-9 Male

Pin Number	Name	Description
1	DS2RCV +	Incoming E1 (+)
2	DS2XMT+	Outgoing E1 (+)
3	DIRCV+	Incoming D/I (+)
4	DIXMT+	Outgoing D/I (+)
5	GND	Ground/shield
6	DS2RCV -	Incoming E1 (-)
7	DS2XMT-	Outgoing E1 (-)
8	DIRCV-	Incoming D/I (-)
9	DIXMT-	Outgoing D/I (-)

A.4.3 E1 User Data Ports

Connector Type: DB-25 Female

Pin Number	Name	Description	Interface
1	FGND	Frame ground A	V.24/X.21
2	RD (I)	Receive data	V.24
3	TD (O)	Transmit data	V.24
4	RTS (I)	Request to send	V.24
5	CTS (O)	Clear to send	V.24
6	DSR (O)	Data set ready	V.24
7	GND	Signal ground	V.24/X.21
8	DCD (O)	Data carrier detect	V.24
9	TDA (O)	Transmit data A	X.21
10	CA (O)	Control element A	X.21

11	RDA (I)	Receive data A	X.21
12	IA (I)	Indicator element A	X.21
13	SA (I)	Timing element A	X.21
14	—		
15	—		
16	—		
17	BA (I)	Byte timing A	X.21
18	BB (I)	Byte timing B	X.21
19	—		
20	DTR (I)	Data terminal ready	V.24
21	TDB (O)	Transmit data B	X.21
22	CB (O)	Control element B	X.21
23	RDB (I)	Receive data B	X.21
24	IB (I)	Indicator element B	X.21
25	SB (I)	Timing element B	X.21

A.5 T1 Multiplexer Module

A.5.1 Main T1, Drop/Insert, and T1 Timing Ports

Connector Type: DB-9 Male

DB-9 Pin Number	Name	Description
1	RCV +	Incoming T1 (+) or D/I
2	GND	Ground/shield
3	XMT +	Outgoing T1 (+) or D/I
6	RCV -	Incoming T1 (-) or D/I
7	GND	Ground/shield
8	XMT -	Outgoing T1 (-) or D/I
4, 5, 9	-	Not used

A.5.2 T1 RJ-45 to DB-9 Adapter

RJ-45F Pin DB-9F Pin

1	1
2	6
4	3
5	8

A.5.3 T1 Test Port (Monitor Port)

Connector Type: DB-9 Male

Pin Number	Name	Description
1	RX T1 (ring)	Incoming T1 (+)
2	TX T1 (ring)	Outgoing T1 (+)
3	RX D/I (ring)	Incoming D/I (+)
4	TX D/I (ring)	Outgoing D/I (+)
5	GND	Ground/shield
6	RX T1 (tip)	Incoming T1 (-)
7	TX T1 (tip)	Outgoing T1 (-)
8	RX D/I (tip)	Incoming D/I (-)
9	TX D/I (tip)	Outgoing D/I (-)

A.5.4 T1 User Data Ports

Connector Type: DB-25 Female

Pin Number	Name	Description	Interface
1	FGND	Frame ground A	V.24/X.21
2	RD (I)	Receive data	V.24
3	TD (O)	Transmit data	V.24
4	RTS (I)	Request to send	V.24
5	CTS (O)	Clear to send	V.24
6	DSR (O)	Data set ready	V.24
7	GND	Signal ground	V.24/X.21
8	DCD (O)	Data carrier detect	V.24
9	TDA (O)	Transmit data A	X.21
10	CA (O)	Control element A	X.21
11	RDA (I)	Receive data A	X.21
12	IA (I)	Indicator element A	X.21
13	SA (I)	Timing element A	X.21
14	—		
15	—		
16	—		
17	BA (I)	Byte timing A	X.21
18	BB (I)	Byte timing B	X.21
19	—		
20	DTR (I)	Data terminal ready	V.24
21	TDB (O)	Transmit data B	X.21
22	CB (O)	Control element B	X.21
23	RDB (I)	Receive data B	X.21
24	IB (I)	Indicator element B	X.21
25	SB (I)	Timing element B	X.21

A.6 ISDN 3BRI Module

A.6.1 ISDN U Interface

Connector Type: RJ-45

Pin Number	Name
1	Not used
2	Not used
3	Not used
4	U interface network connection (Tip)
5	U interface network connection (Ring)
6	Not used
7	Not used
8	Not used

A.6.2 ISDN S/T Interface

Connector Type: RJ-45

Pin Number	Name
1	Not used
2	Not used
3	Transmit (+)
4	Receive (+)
5	Receive (-)
6	Transmit (-)
7	Not used
8	Not used

A.6.3 RS-232 Anc Data Port

Connector Type: DB-9 Female

Pin Number	Name	Description
1	DCD (O)	Data carrier detect
2	RD (I)	Receive data
3	TD (O)	Transmit data
4	DTR (I)	Data terminal ready
5	GND	Signal ground
6	DSR (O)	Data set ready
7	RTS (I)	Request to send
8	CTS (O)	Clear to send
9	—	Not used

A.7 Codec Module

A.7.1 Analog Audio Outputs

Connector: Male XLR

1	Ground
2	+
3	-

A.7.2 Digital Audio Output

Connector: Male XLR

1	Ground -
2	OUT +
3	OUT -

A.7.3 Analog Audio Inputs

Connector: Female XLR

1	Ground
2	+
3	-

A.7.4 Digital Audio Input

Connector: Female XLR

1	Ground
2	IN+
3	IN -

A.7.5 Ancillary Data Port

Connector Type: DB-9 Male

Pin Number	Name	Description
1	FGND	Frame ground
2	RD (I)	Receive data (Encoder input data)
3	TD (O)	Transmit data (Decoder output data)
4	No Connect	Not used
5	No Connect	Not used
6	No Connect	Not used
7	GND	Ground
8	No Connect	Not used
9	No Connect	Not used

A.8 X.21/V.35 Digital Interface Module

Refer to Chapter 10 for details on the X.21/V.35 interface connectors.

X.21 LOCAL Module Port Pinouts

Pin Number	Name	Direction	Description
1	FGND	-	Frame ground A
2	TDA	Input	Transmit data A
3	CA	Input	Control element A
4	RDA	Output	Receive data A
5	IA	Output	Indicator element A
6	SA	Output	Timing element A
7	BA	Output	Byte timing A
8	GND	-	Signal ground
9	TDB	Input	Transmit data B
10	CB	Input	Control element B
11	RDB	Output	Receive data B
12	IB	Output	Indicator element A
13	SB	Output	Timing element B
14	BB	Output	Byte timing B
15	-	-	Not used

V.35 LOCAL Module Port Pinouts

Pin Number	Name	Direction	Description
1	FGND	-	Frame ground A
2	TDA	Input	Transmit data A
3	RTS	Input	Request to send
4	RDA	Output	Receive data A
5	-	-	Not used
6	RETA	Output	Receive timing A
7	TETA	Output	Transmit timing A
8	GND	-	Signal ground
9	TDB	Input	Transmit data B
10	DTR	Input	Data terminal ready
11	RDB	Output	Receive data B
12	RLSD	Output	Receive line signal detect
13	RETB	Output	Receive timing B
14	TETB	Output	Transmit timing B
15	CTS	Output	Clear to send

X.21 Network Module Port Pinouts

Pin Number	Name	Direction	Description
1	FGND	-	Frame ground A
2	TDA	Input	Transmit data A
3	RCA	Input	Receive Clock A
4	RDA	Output	Receive data A
5	IA	Output	Indicator element A
6	SA	Output	Timing element A
7	BA	Output	Byte timing A
8	GND	-	Signal ground
9	TDB	Input	Transmit data B
10	RCB	Input	Receive Clock B
11	RDB	Output	Receive data B
12	IB	Output	Indicator element A
13	SB	Output	Timing element B
14	BB	Output	Byte timing B
15	-	-	Not used

V.35 Network Module Port Pinouts

Pin Number	Name	Direction	Description
1	FGND	-	Frame ground A
2	TDA	Input	Transmit data A
3	RCA	Input	Receive Clock A
4	RDA	Output	Receive data A
5	-	-	Not used
6	RETA	Output	Receive timing A
7	TETA	Output	Transmit timing A
8	GND	-	Signal ground
9	TDB	Input	Transmit data B
10	RCB	Input	Receive Clock B
11	RDB	Output	Receive data B
12	RLSD	Output	Receive line signal detect
13	RETB	Output	Receive timing B
14	TETB	Output	Transmit timing B
15	CTS	Output	Clear to send

Appendix B - ISDN Ordering And Provisioning

B.1.1 North American ISDN Ordering Contacts

Ameritech	800-TEAMDATA
AT&T	800-222-7956
Bell Atlantic	800-570-ISDN
Bellcore	800-992-ISDN
BellSouth	800-428-ISDN
Cincinnati Bell	800-566-DATA
GTE	800-888-8799
MCI	800-MCI-ISDN
Nevada Bell	702-333-4811
Pacific Bell	800-4PB-ISDN
Rochester Telephone	716-777-1234
SNET	203-553-2369
Sprint	913-624-4162
Stentor Canada	800-578-ISDN
Southwestern Bell	800-992-ISDN
US West	800-246-5226 or 303-896-8301
Wiltel	918-588-5069

B.1.2 North American ISDN Provisioning

In an effort to make ISDN ordering and provisioning as easy as possible, we recommend faxing the following five pages to your ISDN service provider. If provisioned as shown on these pages, your ISDN circuit will work with your *TEAM*. If given a choice between AT&T Custom or National ISDN, we

recommend National ISDN. Also note that **when ordering ISDN service, you must ask for long distance service and specify a carrier.** Unlike regular telephone service, long distance is not automatically provided.

FAX-PAGE 1

B.1.3 AT&T 5ESS Custom

Request from the telephone company an ISDN line in a "Point To Point" configuration with 2B1Q line code. Your ISDN line must be configured to allow circuit switched data on both B-channels and signaling on the D-channel. Request that the telephone company program your ISDN line with the following attributes:

- Maximum terminals set to 1 (this tells the switch that there is 1 terminal active on this line.)
- Maximum B-channels set to 2; Actual User settings (this tells the switch that you are an actual user and may use both B-channels simultaneously.)
- Circuit switched data set to 2; circuit switched data channel set to any (this tells the switch that you may use both B-channels simultaneously. The "Any" tells the switch that either B-channel can be used for data.)
- Terminal type is Type A - Basic Terminal (this tells the switch you are a basic ISDN terminal.)
- Display set to Yes (this tells the switch that you have display capabilities.)
- Call appearance quantity set to 1 (this tells the switch that you want 1 appearance of your primary telephone number.)
- Call appearance preference set to Idle (this tells the switch that your software will make a positive choice of which call appearance it will use to initiate a call.)

The Telephone Company will also need to know any additional voice features that you require on your ISDN lines. Examples of these features are Caller ID and Call Forwarding. PLEASE REMEMBER TO SPECIFY A LONG DISTANCE CARRIER.

FAX-PAGE 2**B.1.4 AT&T 5ESS - National ISDN 1**

Request from the telephone company a National ISDN 1 ISDN line in a "multipoint" configuration with 2B1Q line code. The optional "multipoint" configuration will allow you to have a separate telephone number for each B-channel; however, it will physically be only one ISDN line. The Telephone Company should supply you with a different telephone number and SPID (Service Profile Identification) for each B-channel in a multipoint arrangement. Your ISDN line must be configured to allow circuit switched data on both B-channels and signaling on the D-channel. Request that the Telephone Company program your ISDN line with the following attributes:

- Maximum terminals set to 2 (this tells the switch that there are 2 terminals active on this line.)
- Maximum B-channels set to 2; Actual User settings (this tells the switch that you are an actual user and may use both B-channels simultaneously.)
- Circuit switched data set to 2; circuit switched data channel set to any (this tells the switch that you may use both B-channels simultaneously. The "Any" tells the switch that either B-channel can be used for data.)
- Terminal type is Type A - Basic Terminal (this tells the switch you are a basic ISDN terminal.)
- Display set to Yes (this tells the switch that you have display capabilities.)
- Circuit switched data limit set to 2 (this tells the switch that you may receive 2 data calls.)
- Call appearance preference set to Idle (this tells the switch that your software will make a positive choice of which call appearance it will use to initiate a call.)

The Telephone Company will also need to know any additional voice features that you require on your ISDN lines. Examples of these features are Caller ID and Call Forwarding. PLEASE REMEMBER TO SPECIFY A LONG DISTANCE CARRIER.

FAX-PAGE 3

B.1.5 AT&T 5ESS — Custom

- 2B1Q line code
- 2B&D line - Point To Point
 - B1 - circuit switched voice/data
 - B2 - circuit switched voice/data
 - D - signaling only
 - set MTERM to 1
 - set MAXB CHNL to 2; ACT USR to Y
 - set CSD to 2; CSD CHL to ANY
 - set TERMTYP to TYPE-A; DISPLAY to Y
 - set CA QTY to 1
 - set CA PREF to I
- list any additional data features required
- specify long distance carrier

B.1.6 AT&T 5ESS — National ISDN

- 2B1Q line code
- 2B&D line - Standard
 - B1 - circuit switched voice/data
 - B2 - circuit switched voice/data
 - D - signaling only
 - set MTERM to 2
 - set CHNL to 2; ACT USR to Y
 - set CSD to 2; CSD CHL to ANY
 - set TERMTYP to TYPE-A; DISPLAY to Y
 - set CSD limit to 2
 - set CA PREF to I
- Optional - multipoint; different DN for each B-channel, but same OE (office equipment.)
- list any additional data features required
- specify long distance carrier

FAX-PAGE 4

B.1.7 Northern Telecomm DMS-100 BC-35 National ISDN 1

Request from the telephone company a National ISDN 1 ISDN line with 2B1Q line code. Your ISDN line must be configured to allow circuit switched data on both B-channels and signaling on the D-channel. The telephone company should supply you with a separate telephone number and SPID (Service Profile Identification) for each B-channel; however, it will physically be only one ISDN line. Request that the Telephone Company program your ISDN line with the following attributes:

B1 and B2 should be set as follows:

- Set the circuit switch option to Yes; set the barrier restriction option to no packet mode data (NOPMD) only (this tells the switch that you require circuit switch ability on your B-channel, The bearer restriction on your line means that you are not allowed packet data on your B-channel.)
- Set protocol to function version 2; (PVC2) (this tells the switch that your CPE software is using National ISDN 1 protocol.)
- Set the service profile identification (SPID) suffix to 1 (this tells the switch that the digit following your telephone number will be 1. The SPID format is *area code + 7 digit number + 1 + 00*.)
- Set the Terminal Endpoint Identifier (TEI) to Dynamic (this tells the switch that you can accept any TEI value from 64 to 126.)
- Set Ring to Yes (this tells the switch to send an alerting message to your CPE when there is an incoming call.)
- Set the maximum keys to 10 (this tells the switch how much memory to allocate for features.)
- Set Key system (EKTS) option to No (this tells the switch that you are not a key system.)
- Place the lower layer compatibility option for data on the B-channels (this tells the switch that your CPE may utilize the lower layer compatibility information element for data on the B-channels.)
- Place calling subaddress option for data on the B-channels (this tells the switch that your CPE will send a subaddress.)
- Place called subaddress option for data on the B-channels (this tells the switch that your CPE can receive a subaddress.)

The Telephone Company will also need to know any additional data features that you require on your ISDN lines.

FAX-PAGE 5**B.1.8** Northern Telecomm DMS-100 BC-35 National ISDN 1

- 2B1Q line code
- 2B&D line
- B1 - set circuit switch to YES; set BEARER RESTRICTION to NOPMD (no packet)
 - functional version 2; (PVC 2)
 - set SPID-SUFFIX to 1
 - set TEI to DYNAMIC
 - set RING to YES
 - set MAXKEYS to 10
 - set EKTS to NO
 - set data option: PROVLLC CMDATA (lower layer compatibility)
 - set data option: PROVCGS CMDATA (calling subaddress)
 - set data option: PROVCDs CMDATA (called subaddress)
- B2 - set circuit switch to YES; set BEARER RESTRICTION to NOPMD (no packet)
 - functional version 2; (PVC 2)
 - set SPID-SUFFIX to 1
 - set TEI to DYNAMIC
 - set RING to YES
 - set MAXKEYS to 10
 - set EKTS to NO
 - set data option: PROVLLC CMDATA (lower layer compatibility)
 - set data option: PROVCGS CMDATA (calling subaddress)
 - set data option: PROVCDs CMDATA (called subaddress)

list any additional data features required for B1 and B2



Appendix C — One Year Limited Warranty

MUSICAM USA, formerly known as Corporate Computer Systems (CCS) warrants to the original purchaser that each of its hardware products and all components therein contained will be free from defects in materials and/or workmanship for one (1) year from the date of purchase. Any warranty hereunder is extended only to the original purchaser and is not assignable.

In the event of a malfunction or other indication of failure attributable directly to faulty workmanship and/or material, MUSICAM USA will, at its option, repair or replace said device or components, to whatever extent it shall deem necessary to restore said device to proper operating condition.

Before returning a device for repair, the customer must call MUSICAM USA at (732) 739-5600 and obtain a **Return Authorization Number**. This number must be included with the customer's mailing address and telephone number when the product is returned.

Products must be returned to:

MUSICAM USA

670 North Beers St. Building #4

Holmdel, NJ 07733

U.S.A.

Attention: Warranty Repair : RMA# _____

During the first year after the date of purchase, all labor and materials will be provided without charge. There shall be no warranty for either parts or labor after the expiration of 1 year from the date of purchase.

Units must be returned postage pre-paid. It is recommended that the unit be insured and securely packed when shipped. Units returned which are out of warranty will be repaired or replaced (at the option of MUSICAM USA) and the customer will be charged for parts and labor at current rates.

Units will be returned to the customer after repair or replacement has been completed by carrier and method chosen by MUSICAM USA to any destination within the United States of America. Should a customer desire

some other specific form of conveyance, or be located beyond the US borders, then the customer must bear the cost of return shipment.

The customer shall be solely responsible for the failure of any MUSICAM USA hardware computer product, or component thereof, resulting from accident, abuse or misapplication of the product, and MUSICAM USA assumes no liability as a consequence of such events under the terms of this Warranty.

While every effort on the part of MUSICAM USA has been made to provide clear and accurate technical information on the application of its products, MUSICAM USA assumes no liability in any events which may arise from the use of said technical information.

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