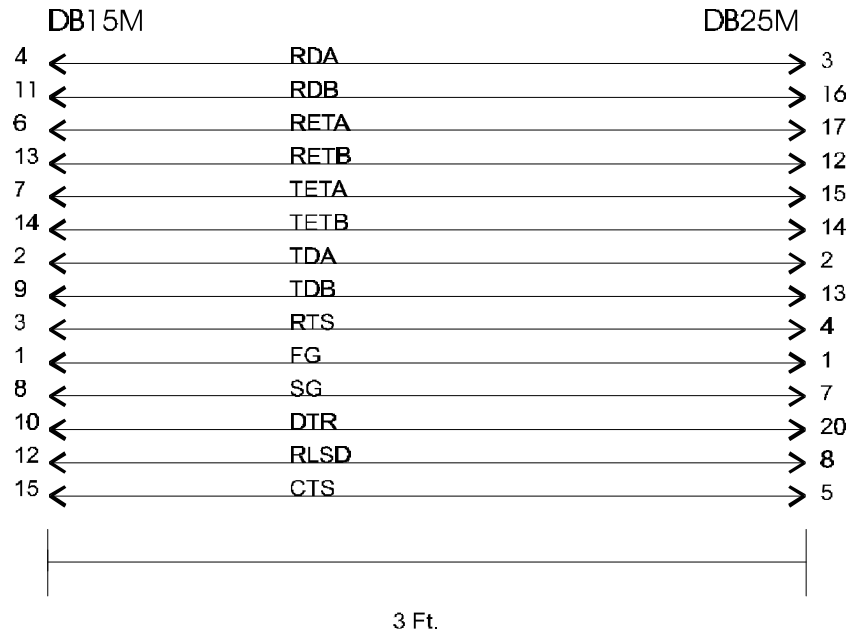
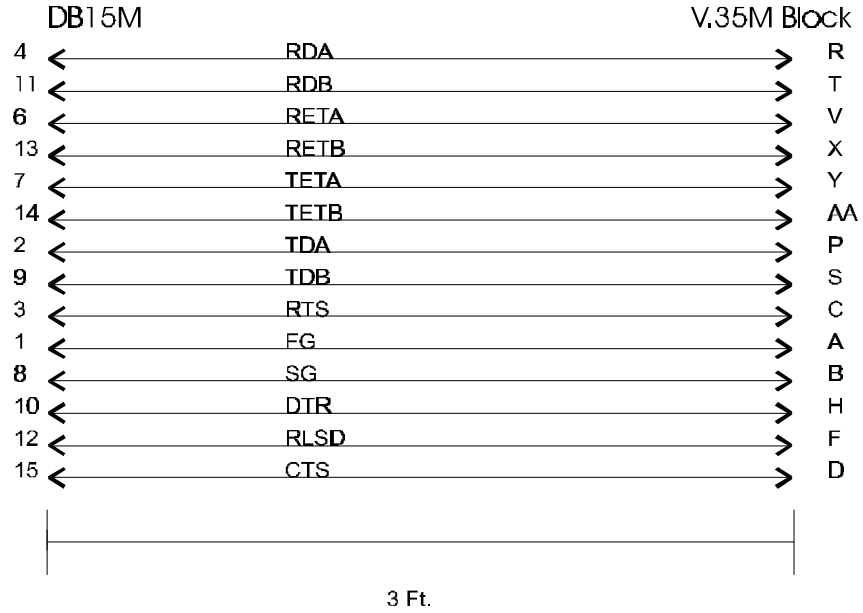
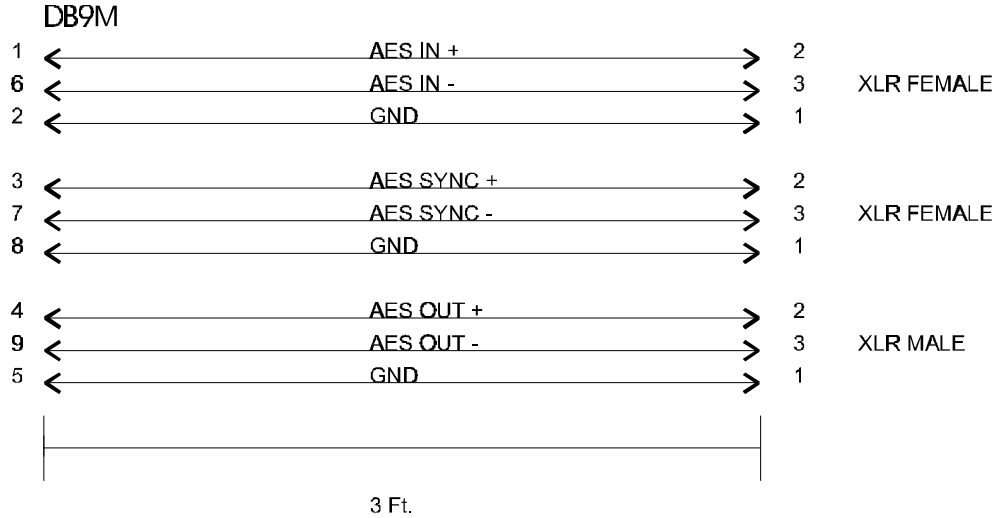


Appendix A — Cable Diagrams

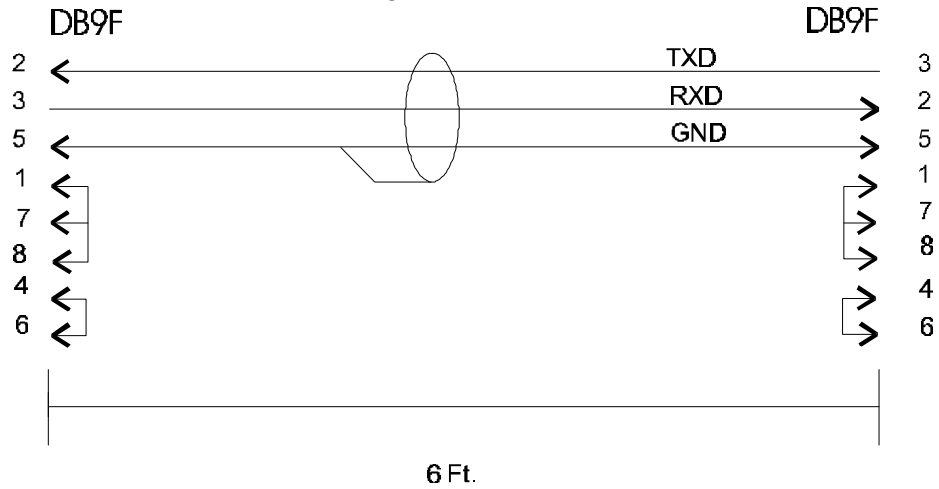
Cable C1300. DB15M To V.35 Block



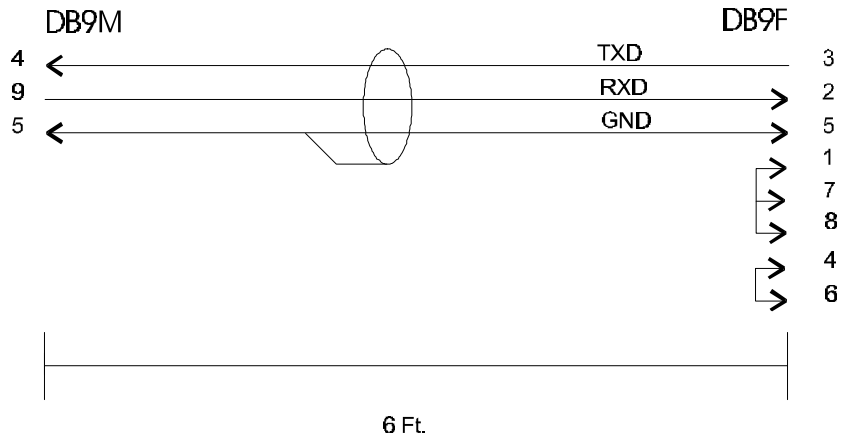
Cable C1500 —AES Adapter



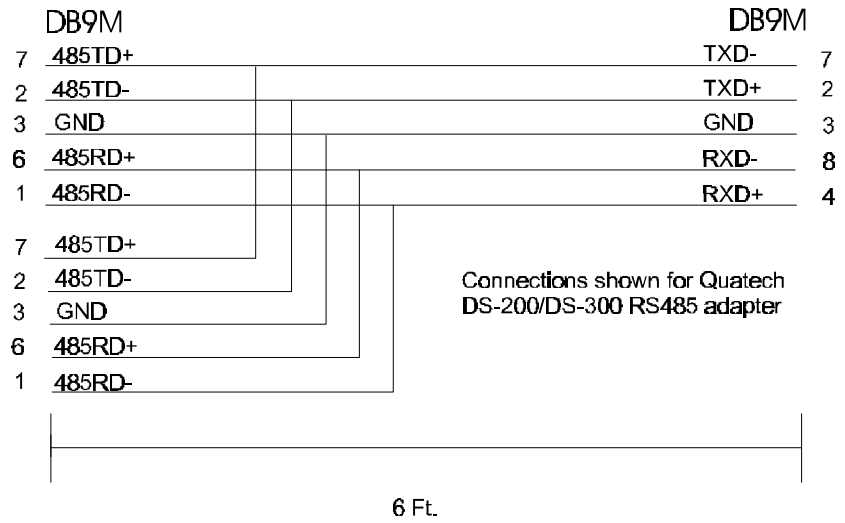
Cable C1700 — Ancillary Data And RS232 Cable



Cable C1800 — Rear Panel RS232 Remote Control Cable



Cable C1900 — Rear Panel RS485 Remote Control Cable



Appendix B — Rear Panel Connectors

Audio Input

Connector: Female XLR

| | |
|---|--------|
| 1 | Ground |
| 2 | + |
| 3 | - |

Audio Output

Connector: Male XLR

| | |
|---|--------|
| 1 | Ground |
| 2 | + |
| 3 | - |

AES/EBU

Connector: AMP 747158-8 (Female DB9)

Digital Audio Input

| | |
|---|--------|
| 1 | IN+ |
| 6 | IN- |
| 2 | Ground |

Digital Audio Output

| | |
|---|--------|
| 4 | OUT + |
| 9 | OUT - |
| 5 | Ground |

Digital Audio Sync Input

| | |
|---|-----------|
| 3 | SYNC IN + |
| 7 | SYNC IN - |
| 8 | Ground |

RS232/RS485 Remote Control

Connector: AMP 747150-8 (Female DB9)

RS232 (rear panel remote control port)

| | |
|---|-------------|
| 4 | RD (input) |
| 9 | TD (output) |
| 5 | Ground |

RS485

| | |
|---|--------------|
| 1 | RD- (Input) |
| 6 | RD+ (Input) |
| 2 | TD- (Output) |
| 7 | TD+ (Output) |
| 3 | Ground |

Ancillary Data

Connector: AMP 747871-8 (Male DB9)

| | | |
|---|---------------|--------|
| 1 | DCD | Input |
| 2 | RXD | Input |
| 3 | TXD | Output |
| 4 | DTR | Output |
| 5 | Ground | |
| 6 | DSR | Input |
| 7 | RTS | Output |
| 8 | CTS | Input |
| 9 | no connection | |

Alarm Relay

Connector: AMP 747871-8 (Male DB9)

| | |
|---|-------------------------------------------------|
| 1 | Common 1 |
| 2 | no connection |
| 3 | Normal 2 (power on and no summary alarm (RLS)) |
| 4 | Common 2 |
| 5 | Alarm 1 (power off or summary alarm (RLS)) |
| 6 | no connection |
| 7 | Alarm 2 (power off or summary alarm (RLS)) |
| 8 | no connection |
| 9 | Normal 1 (power on and no summary alarm (RLS)) |

DIF101, DIF102

X.21

Connector: DB15F

| | | |
|----|------|--------------------------|
| 1 | fg | Frame ground |
| | t(a) | Transmit data A (output) |
| | c(a) | Control element A |
| 4 | r(a) | |
| 5 | i(a) | (input) |
| 6 | | Timing element A (input) |
| | b(a) | Byte timing B (input) |
| | sg | Signal ground |
| | t(b) | Transmit data B (output) |
| | c(b) | Control element B |
| 11 | r(b) | |
| 12 | i(b) | (input) |
| 13 | | Timing element B (input) |
| 14 | | Byte timing B (input) |
| 15 | | |

V.35

Connector: DB15F

| | | |
|----|------|----------------------------|
| | fg | Frame ground |
| | t(a) | Transmit data A (output) |
| | rts | Request to send |
| | rda | Receive data A (input) |
| | | N/C |
| 6 | | Receive timing A (input) |
| 7 | | Transmit timing A (output) |
| | Sg | Signal ground |
| | tdb | Transmit data B (output) |
| | dtr | Data terminal ready |
| | rdb | Receive data B (input) |
| | rlsd | Receive line signal detect |
| 13 | retb | |
| 14 | tetb | (output) |
| 15 | | Clear to send |

Appendix C — Factory Defaults

The factory default values are as follows:

| | | |
|-------------|-------------------------|--------------------------------------------------|
| CAA 1 YES | | set auto answer on for line 1 |
| CAA 2 YES | | set auto answer on for line 2 |
| CAC NO | | set to no auto reconnect |
| CAN 2 | | set ancillary data port to configuration 2 (mux) |
| CBR 128 | | set loopback digital interface bit rate |
| CBZ NO | | internal alarm buzzer inactive |
| CCV 7 | | set LCD contrast |
| CDC NO | | don't display connect time |
| CDM | | clear dialing parameters |
| CDR 9600 | | set decoder DSP ancillary data rate |
| CEA LN0 | !OI0 | set default link actions |
| CEA LN1 | !OI1 | |
| CEA LN2 | !OI2 | |
| CEA LN3 | !OI3 | |
| CEA LN4 | !OI4 | |
| CEA LN5 | !OI5 | |
| CEA LN6 | !OI6 | |
| CEA LN7 | !OI7 | |
| CEA LN10 | BER | |
| CEA LN11 | OOF | |
| CEA ESM | !EPL | |
| CEA DSM | !DPL # BER # OOF | |
| CEA RLS | EPL & DPL & !BER & !OOF | |
| CEA RL0 | LN0 | |
| CEA RL1 | LN1 | |
| CEA RL2 | LN2 | |
| CEA RL3 | LN3 | |
| CEA RL4 | LN4 | |
| CEA RL5 | LN5 | |
| CEA RL6 | LN6 | |
| CEA RL7 | LN7 | |
| CEA SC1 | CI1 | |
| CEA RC1 | LN8 | |
| CEA VA0 | | all Virtual Actions cleared |
| CEA VA1 | | |
| CEA VA2 | | |
| CEA VA3 | | |
| CFM 4 Wires | | set rear panel 485 port to 4 wires |

| | |
|---------------|---------------------------------------------------|
| CFP NO | set no front panel remote control protocol |
| CGH OLDPKI | set to old PKI framing in H.221 mode |
| CHK 1 | clear all hot keys |
| CHK 2 | |
| CID 0 | set to RS485 ID 0 |
| CIF 1 NONE | set to no digital interface |
| CIF 2 NONE | set to no digital interface |
| CLB 1 NORM | set no digital loopback on DIF 1 |
| CLB 2 NORM | set no digital loopback on DIF 2 |
| CLI STATUS 10 | set status led intensity |
| CLL A ON | set all speed dialing |
| CMA 2400 | set mux ancillary data 2400 baud |
| CPC NO | no protocol for remote communications |
| CRB 9600 | set remote control baud rate |
| CRD 1 | set number of TA redial attempts to 1 |
| CRE YES | set to echo rear panel commands |
| CRI 232 | RS232 for remote communication |
| CRM 4WIRES | set RS485 remote control port to 4 wire |
| CSL LB | system loopback |
| CSP RS232 | set sync anc data interface to RS232 |
| CTC NONE | no connection to any TA |
| CTM 0 0 | turn off timer 0 |
| CTM 1 0 | turn off timer 1 |
| CTM 2 0 | turn off timer 2 |
| CTM 3 0 | turn off timer 3 |
| CTO 15 | set TA dialing time-out in seconds |
| CVA 0 | set virtual action 0 to empty |
| CVA 1 | set virtual action 1 to empty |
| CVA 2 | set virtual action 2 to empty |
| CVA 3 | set virtual action 3 to empty |
| DAF CCS | set decoder ancillary data format |
| DAL MPEGL2 | set to MPEG I layer 2 |
| DCO ISOCCS | set decoder decoding mode to ISO and CCS |
| DCS NORM | set decoder output to no copy or swap |
| DDO 48 | set to 48 kHz digital output |
| DES NOTREQ | set decoder AES sync timing not required |
| DIN NO | set decoder to operate together with encoder |
| DMD NORM | set decoder maintenance diagnostic mode to normal |
| DMU NONE | set decoder mute to none |
| DSP NO | set to no decoder scale factor |
| DTI NORMAUTO | set decoder timing to normal |
| EAF CCS | set encoder ancillary data format |
| EAI A | set input to analog |

| | |
|-----------|-----------------------------------------------|
| EAL MPEG2 | |
| EAM JS | set to joint stereo |
| | set to no mono mix |
| ESR 48 | |
| EBR 128 | set encoder to 128K bit rate |
| | set no copyright bit |
| ECS NORM | |
| EEP NO | set no emphasis bit |
| | set encoder line format to 2 line, line 1 & 2 |
| ELU 1 | |
| EOR NO | set no original bit |
| | set no privacy bit off |
| EPR YES | |
| EPY 0 1 | set psychoacoustic parameter type |
| | set psychoacoustic parameter type |
| EPY 2 1 | |
| EPY 3 2 | set psychoacoustic parameter type |
| | set psychoacoustic parameter type |
| EPY 5 3 | |
| EPY 6 1 | set psychoacoustic parameter type |
| | set psychoacoustic parameter type |
| EPY 8 1 | |
| EPY 9 3 | set psychoacoustic parameter type |
| | set psychoacoustic parameter type |
| EPY 11 3 | |
| EPY 12 4 | set psychoacoustic parameter type |
| | set psychoacoustic parameter type |
| EPY 14 1 | |
| EPY 15 3 | set psychoacoustic parameter type |
| | set psychoacoustic parameter type |
| EPY 17 3 | |
| EPY 18 4 | set psychoacoustic parameter type |
| | set psychoacoustic parameter type |
| EPY 20 3 | |
| EPY 21 3 | set psychoacoustic parameter type |
| | set psychoacoustic parameter type |
| EPY 23 1 | |
| EPY 24 1 | set psychoacoustic parameter type |
| | set psychoacoustic parameter type |
| EPY 26 4 | |
| EPY 27 3 | set psychoacoustic parameter type |

| | |
|---------------|-------------------------------------------|
| EPY 28 4 | set psychoacoustic parameter type |
| EPY 29 4 | set psychoacoustic parameter type |
| EPY 30 1 | set psychoacoustic parameter type |
| EPY 31 1 | set psychoacoustic parameter type |
| ESD OFF | set encoder sine wave detector off |
| ESP NO | set to no encoder scale factor protection |
| ESW CI0 OFF | set simulated switch 0 open |
| ESW CI1 OFF | set simulated switch 1 open |
| ESW CI2 OFF | set simulated switch 2 open |
| ESW CI3 OFF | set simulated switch 3 open |
| ESW CI4 OFF | set simulated switch 4 open |
| ESW CI5 OFF | set simulated switch 5 open |
| ESW CI6 OFF | set simulated switch 6 open |
| ESW CI7 OFF | set simulated switch 7 open |
| ETI NORM | set encoder timing to normal |
| MBD 1 | set BER count down counter |
| MBE NO | disallow remote boot |
| MBL 1 | set BER limit to 1 |
| MBP 10 | set BER maximum count at 10 |
| MBR | clear the BER counter |
| MBU 1 | set BER count up counter |
| MBX ON | set keypad clicker on |
| MCP NONE | set to no connect port |
| MET DISABLED | disable hardware tests |
| MLK KEYPAD NO | set no command lockout from keypad |
| MLK INBAND NO | set no command lockout from inband |
| MLK FRONT NO | set no command lockout from front panel |
| MLK REAR NO | set no command lockout from rear panel |
| MLK DIF NO | set no command lockout from digital |
| MLK VA NO | set no command lockout from virtual |
| MOD 1 | set OOF down counter |
| MOL 10 | set OOF limit to 10 |
| MOP 20 | set OOF count maximum |
| MOU 2 | set OOF up counter |
| MQL EL -60 | set encoder left quiet threshold level |
| MQL ER -60 | set encoder right quiet threshold level |
| MQL DL -60 | set decoder left quiet threshold level |
| MQL DR -60 | set decoder right quiet threshold level |
| MQL E -60 | set encoder stereo quiet threshold level |
| MQL D -60 | set decoder stereo quiet threshold level |
| MQT EL 10 | set encoder left quiet threshold time |
| MQT ER 10 | set encoder right quiet threshold time |
| MQT DL 10 | set decoder left quiet threshold time |

| | |
|-----------|----------------------------------------------|
| MQT DR 10 | set decoder right quiet threshold time |
| MQT E 10 | set encoder stereo quiet threshold time |
| MQT D 10 | set decoder stereo quiet threshold time |
| MRS RP | set rear panel remote control source to rear |
| MTM NONE | set to no test measurements |
| MWP NONE | set to no watch port |

Appendix D - Useful Pull-Outs

| Entry | Description | Bit rate | Sample rate | Encoder algorithm | Mode | Line format | Decoder indep. | Zephyr compatible | RoadRunner equivalent |
|-------|-----------------|----------|-------------|-------------------|------|-------------|----------------|-------------------|-----------------------|
| 0 | CDQ1000_24K:QS | 64 | 24 | CCSN | M | L1 | NO | NO | 6 |
| 1 | CDQ20002LNS:QS | 128 | 48 | MPEGL2 | JS | CCSL12 | NO | NO | |
| 2 | H221_2LINES:QS | 128 | 48 | MPEGL2 | JS | H221L12 | NO | NO | |
| 5 | MICRO56:QS | 56 | 16 | G.722 | M1 | L1 | NO | YES | 40 |
| 6 | G.722_56K:QS | 56 | 16 | G.722 | M1 | L1 | NO | YES | 40 |
| 7 | G.722_64K:QS | 64 | 16 | G.722 | M1 | L1 | NO | YES | 42 |
| 8 | MPEGL2/64K:QS | 64 | 48 | MPEGL2 | M | L1 | NO | NO | 10 |
| 9 | MPEGL2/56K:QS | 56 | 48 | MPEGL2 | M | L1 | NO | NO | 4 |
| 10 | CCSN/64K:QS | 64 | 48 | CCSN | M | L1 | NO | NO | 10 |
| 11* | CCSTEST64 | 64 | 48 | MPEGL2 | M | L1 | NO | NO | |
| 12* | CCSTEST128 | 128 | 48 | MPEGL2 | JS | CCSL12 | NO | NO | |
| 13* | CCSTESTH221 | 128 | 48 | MPEGL2 | JS | H221L12 | NO | NO | |
| 14* | CCSTEST56 | 56 | 48 | MPEGL2 | M | L1 | NO | NO | |
| 15* | CCSTEST112 | 112 | 56 | MPEGL2 | JS | CCSL12 | NO | NO | |
| 16 | CDQ1000/56K:QS | 56 | 24 | CCSN | M | L1 | NO | NO | 0 |
| 17 | CDQ2000/112:QS | 112 | 48 | MPEGL2 | JS | CCSL12 | NO | NO | |
| 18 | CCSN/56K:QS | 56 | 48 | CCSN | M | L1 | NO | NO | 4 |
| 19 | G.722_H.221:QS | 64 | 16 | G.722 | M1 | H221L1 | NO | NO | 44 |
| 20 | CCSN/128K:QS | 128 | 48 | CCSN | JS | CCSL12 | NO | NO | |
| 21 | CCSN/112K:QS | 112 | 48 | CCSN | JS | CCSL12 | NO | NO | |
| 22 | CDQ2001/128:QS | 128 | 32 | MPEGL2 | JS | CCSL12 | NO | NO | |
| 23 | CDQ2001/112:QS | 112 | 32 | MPEGL2 | JS | CCSL12 | NO | NO | |
| 24 | ZEPHYR/56K:QS | 56 | 48 | MPEGL2 | M | L1 | YES | YES | 5 |
| 25 | ZEPHYR/64K:QS | 64 | 48 | MPEGL2 | M | L1 | YES | YES | 11 |
| 26 | ZEPHYR/112K:QS | 112 | 48 | MPEGL2 | JS | CCSL12 | YES | YES | |
| 27 | ZEPHYR/128K:QS | 128 | 48 | MPEGL2 | JS | CCSL12 | YES | YES | |
| 28 | LYR3/56K:QS | 56 | 48 | MPEGL3 | M | L1 | NO | NO | 24 |
| 29 | LYR3/64K:QS | 64 | 48 | MPEGL3 | M | L1 | NO | NO | 30 |
| 30 | LYR3IND56:QS | 56 | 48 | MPEGL3 | M | L1 | YES | YES | 25 |
| 31 | LYR3IND64:QS | 64 | 48 | MPEGL3 | M | L1 | YES | YES | 31 |
| 32 | LYR3IND56/32:QS | 56 | 32 | MPEGL3 | M | L1 | YES | YES | 23 |
| 33 | LYR3IND64/32:QS | 64 | 32 | MPEGL3 | M | L1 | YES | YES | 29 |
| 34 | ROADRUN112:QS | 112 | 48 | MPEGL2 | M | CCSL12 | NO | NO | 14 |
| 35 | ROADRUN128:QS | 128 | 48 | MPEGL2 | M | CCSL12 | NO | NO | 18 |
| 36 | ZEPH112MONO:QS | 112 | 48 | MPEGL2 | M | CCSL12 | YES | YES | 15 |
| 37 | ZEPH128MONO:QS | 128 | 48 | MPEGL2 | M | CCSL12 | YES | YES | 19 |

* — These entries dial numbers, and will not work unless an internal terminal adapter is used and an ISDN line is connected.

Appendix E — Specifications

All published specifications are typical and subject to change without notice.

ANALOG AUDIO SPECIFICATIONS

| | |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Connector Type: | Gold plated Neutrik® 3-pin XLR |
| Input: | female |
| Output: | male |
| A/D & D/A converters: | 24 bit sigma-delta |
| Sample frequencies: | 16, 24, 32, or 48 kHz |
| Input impedance: | 600 Ohms or >25 kOhm, balanced |
| Output impedance: | 600 Ohms or < 60 Ohms, balanced |
| Clipping level: | +12, +15 or +18 dBu, ± 1 dB |
| Insertion gain: | 0 dB ±0.5 dB |
| System frequency response: | ±0.3 dB, ref. @ 1 kHz. MUSICAM Layer II. |
| Fs = 16 KHz | 20 to 7,500 Hz |
| FS = 24 KHz | 20 to 11,250 Hz |
| System frequency response: | ±0.15 dB, ref. @ 1 kHz. MUSICAM Layer II and Layer III. |
| Fs = 32 KHz | 20 to 14,500 Hz |
| FS = 48 KHz | 20 to 20,000 Hz |
| Total harmonic distortion: | <-80 dB @ 1 KHz |
| Signal-to-noise ratio: | >92 dB |
| Crosstalk: | <-85 dB |
| L/R phase difference: | <0.5° |
| Compression algorithms: | CCS MUSICAM® old CCS MUSICAM® new ISO/MPEG Layer II ISO/MPEG Layer III CCITT G.722 Storage for additional algorithms |

DIGITAL AUDIO SPECIFICATIONS

Connector type: DB9, female optional XLR adapter available
 Interface type: AES/EBU or S/PDIF
 Lock range: ± 200 ppm
 Rate adaption: Automatic

DATA INTERFACE SPECIFICATIONS

Network interface types: ISDN BRI (2B + D), RS422, V.35, X.21
 Number of ISDN B channels supported: 1 to 6 in parallel
 Bit rates: Layer II: 24, 32, 40, 48, 56, 64, 80, 96, 112, 128, 144, 160, 192, 224, 256, 320 or 384 kb/s.
 Layer III: 56, 64, 112, 128, 192, 256 or 320 kb/s
 G.722 56 or 64 kb/s

Auxiliary data channel

Type of connector: DB9, female
 Bit rate, direct mode: 300, 1,200, 2,400, 9,600, or 38,400 bps
 Bit rate, Mux mode: 300, 1,200, 2,400, 9,600, or 19,200 bps
 Mode: 8 data bits, 1 stop bit
 Handshake: None required

Alarm interface

Type of connector: DB9, male
 Functions: Summary alarm
 Type: Form C contacts

CONTROL INTERFACES

Level indicators: Norm and Clip LED
 Remote control, rear panel:
 Features controlled: All
 Electrical interfaces: RS232-C or RS485
 Connector: DB9, male
 Bit rates: 1,200, 2,400, 4,800, 9,600, or 38,400 bits/s
 Mode: 8 data bits, 1 stop bit, no parity
 Handshake: None or XON/XOFF
 Digital Control Outputs:
 Type: Dry floating relay or open collector TTL
 Number: 1 DPDT
 Connector: DB9, female

GENERAL

Environmental Conditions:

Storage temperature: -40 to +70° C (-40 to +158° F)
 Operating temperature: 5 to +45° C (41 to +113° F)
 Relative humidity: 20 to 80%, non-condensing
 EMC: EN 50081-1, EN 50082-2

Power requirements: 90 to 250 VAC, 47 to 65 Hz. <60 Watts

Dimensions, Models 210, 220, and 230:

Height: 2U (3.5", 8.89 cm)
 Width: 19" (48.26 cm), rack mountable
 Depth: 12.2" (30.99 cm)

Net weight: Approx. 14.4 lbs. (6.6 Kg)

DELAY MEASUREMENTS

The following measurements are typical, $\pm 20\%$

| Bit Rate | Sample Rate | Algorithm | Line Fmt | M | JS | DM | S | M1 |
|----------|-------------|-----------|----------|-----|-----|-----|-----|----|
| 64 | 16 | MPEGL2 | L1 | 190 | 200 | 200 | 200 | |
| 64 | 24 | MPEGL2 | L1 | 140 | 135 | 135 | 135 | |
| 64 | 32 | MPEGL2 | L1 | 100 | 100 | 100 | 100 | |
| 64 | 48 | MPEGL2 | L1 | 70 | 70 | 70 | 75 | |
| 64 | 16 | G.722 | L1 | - | - | - | - | 35 |

The following measurements are for the CCS 2-Line mode. Low-delay single-line delay figures are typically $\frac{1}{2}$ those shown here.

| | | | | | | | |
|-----|----|--------|--------|-----|-----|-----|-----|
| 128 | 16 | MPEGL2 | CCSL12 | - | - | - | - |
| 128 | 24 | MPEGL2 | CCSL12 | 265 | 265 | 265 | 265 |
| 128 | 32 | MPEGL2 | CCSL12 | 230 | 230 | 230 | 230 |
| 128 | 48 | MPEGL2 | CCSL12 | 135 | 130 | 160 | 160 |

Frequency Response and Noise Specifications

The following plots are representative of performance at the most popular configurations. These measurements were taken using the Audio Precision System One, Dual Domain analyzer and the standard test suite.

Appendix F — ISDN Ordering And Provisioning

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 |

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 **CDQPrima**, regardless of terminal adapter used. 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 |
|------------|

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**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

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

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

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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.

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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 G — 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 should 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**

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.

THERE ARE NO OTHER WARRANTIES MUSICAM USA DISCLAIMS ALL OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY HAVE OTHERS, WHICH VARY FROM STATE TO STATE.

NO LIABILITY FOR CONSEQUENTIAL DAMAGES IN NO EVENT SHALL MUSICAM USA OR ANY OF ITS SUPPLIERS BE LIABLE FOR ANY DAMAGES WHATSOEVER (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF DATA COMMUNICATIONS, LOSS OF BUSINESS INFORMATION, OR OTHER PECUNIARY LOSS) ARISING OUT OF THE USE OF, OR INABILITY TO USE, THIS MUSICAM USA PRODUCT, EVEN IF MUSICAM USA HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. BECAUSE SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.