

MAINTENANCE MANUAL

CEC/IMC DIGITAL AUDIO SWITCH

CUSTOMER-SPECIFIC SYSTEM DOCUMENTATION OVERVIEW OF "SAMPLE IMC"

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DESCRIPTION

This manual describes the customer-specific system documentation that is included with a CEC/IMC Digital Audio Switch when it ships from the factory. Since every CEC/IMC is unique, this system documentation is essential because it lists particular details about the as-shipped CEC/IMC.

Sample print-outs are included in this manual for an IMC that has all present interface module types. This IMC is referred to as "SAMPLE IMC" throughout this manual. It includes five (5) primary Card Cages and a CIA Card Cage. These six (6) racks reside in two (2) cabinets as shown in Figures 1 and 2. As-ordered specifications for SAMPLE IMC are shown in Table 1 and the actual customer-specific system documentation print-outs are shown in Figures 6 through 45.

EXPANSION REQUIREMENTS

Future CEC/IMC expansion requirements are very important issues when a CEC/IMC is ordered from the factory. Upgrades are **much** less complex if expansion requirements are specified on the original order **because the as-ordered expansion will be included in the original CEC/IMC structure.** This expansion includes:

- reserved Card Cage slots and if required, extra Card Cages (expansion Audio and Controller Boards are removed from the expansion Card Cage slots after final testing at the factory)
- audio ports (TDM bus slots) for the expansion Audio Boards are allocated
- in-cabinet cabling for the expansion items (includes Local Bus, Inter- & Intra-Rack and Concentrator Card Cables)
- extra Concentrator Cards (if required)

TABLE 1 - AS-ORDERED SPECIFICATIONS FOR "SAMPLE IMC"

ITEM	TOTAL INCLUDED	EXPANSION REQUIREMENTS
EDACS Sites *	2	1
Digital Dispatch Ports	32	8
Conventional Channels	4	4
C3 Maestro Consoles	4	4
C3 Modular/Desktop Consoles	4	4
CTIS Ports	4	4
LRIM Channels	4	4
CNI Systems	1	1
Distributed Multisite (NIM) Ports	4	4
Request Status Monitor (RSM) Ports	1	1
EDACS Data Gateway (EDG) Ports	4	0

* All MIMs used for EDACS site interfacing in SAMPLE IMC have 10 channels, 10 expansion channels and are equipped with redundant uplinks.

NOTE

Since the CEC is considered a subset of the IMC, CEC related print-outs are not included in this manual. SAMPLE IMC includes C3 Maestro and C3 Modular/Desktop console equipment as specified in Table 1.

**TABLE 2 - CONCENTRATOR CARDS
(Also See Figure 6)**

CONCEN. CARD NAME/TYPE	FIG. 8 - 10 ABBREVIATION	OPTION NUMBER	PART NUMBER
Data	D	MSDE3E	19D903525P1
Audio	A	MSAA1K	19D903531P1
MOM	M	MSDE3F	19D903533P1
Audio Relay	R	MSSU3G	19D904546G1
Audio Aux. I/O	n/a	MSAA1L	19D903529P1
Aux. I/O	n/a	MSDE3U	19C852221P1
Conventional	n/a	n/a	19D904337G1

INSIDE THE CABINETS

CARD CAGE SLOT INFORMATION

General

The system documentation includes information on a per slot basis for both the installed boards and the empty expansion slots for all Card Cages (racks) within the CEC/IMC. In the Card Cage slot information section of the print-outs (Figures 8 - 10), information about each Card Cage slot [columns 1 - 3] includes:

- slot function (for example – radio system number or console number that the board is associated with) [column 8]
- type of board installed [column 9]
- if it is an operating slot or a slot reserved for future expansion [column 9] (also see "*" note in Figure 7)
- labeling on the board's top and bottom handles [columns 10 and 11]

- DIP switch settings for the board [columns 13 and 14] (also see "****" note in Figure 7)
- Backplane I/O connector(s) assigned to the slot [column 4]
- Concentrator Card(s) type, connector(s) and cable(s) type assigned to each slot [columns 5 - 7]
- MIM Controller Boards only – GETC uplink location number assigned the MIM Controller Board and the GETC uplink cabinet's Concentrator Card number (location) and connector [column 12] (also see "****" note in Figure 7)

NOTE

It may be beneficial to review the "Per Slot Data" notes in Figure 7 at this time. These notes refer to the "Board Type" [column 9], "GETC Location" [column 12] and "Switch-1 Position 12345678" [column 13] data in Figures 8 - 10, as indicated by "*", "**", "****" respectively above the respective column. The first two notes describe the interpretation of the operating vs. the expansion Card Cage slots. The last note describes the special Controller Board DIP switch setting required for the "end node" that is furthest from the MOM Controller Board "end node".

As shown in Figure 8 [columns 1, 2, 3, 8, 9 and 10] SAMPLE IMC's Cabinet 1, Card Cage 1, Card Cage Slot 3 is assigned to radio system 1 ("SYS 01") and a MIM Controller Board is installed in the slot. This MIM interfaces with one of the EDACS sites connected to SAMPLE IMC. Figure 8 [column 4] also indicates which 24-pin I/O connector on the Backplane is assigned to this MIM Controller Board – "PA202". See Figure 5 for a detailed view of the Backplane connectors. The last two columns in Figure 8 indicate the binary settings for DIP switches SW1 and SW2 on the Controller Board – "1000000" and "00000001" respectively. To highlight this information in the figure, the related text has been **bold-faced**.

NOTE

DIP switch positions marked "OPEN" or "OFF" on the DIP switch package correspond to a "1".

Concentrator Card information on this slot includes card type "D" [column 5] which specifies the Data Concentrator Card as indicated in Figure 6 and Table 2, card location and connector number "A02-J02" assigned to the MIM [column 6], and the type of cable which interconnects

Backplane I/O connector "PA202" to connector J02 on Data Concentrator Card A02 [column 7]. As indicated in Figure 6, the part number for cable type "3" is 19D903628P2.

GETC uplink information for this slot is "01-02-A1-02". This indicates the GETC uplink for this MIM is located in GETC uplink Cabinet 1, location 2 and the Concentrator Card and connector assigned to this GETC is A1 connector J2. See the Application Assembly Diagrams in LBI-38662 for GETC locations. In the GETC uplink cabinet, this Concentrator Card is mounted near the bottom of the cabinet on the hinged horizontal panel. The panel is mounted to the rear-most cabinet rails.

Some Audio Boards utilize both dual-row 24-pin I/O connectors of their respective Card Cage slot (for example, PA104 and PA204 – see Figure 5). As shown in Figure 8, Cabinet 1, Card Cage 1, Card Cage Slot 17 contains the Audio Board for channels 1 - 4 of DVIM 2 ("DVI 02"). "PA216" is the lower dual-row connector used for audio interfacing and "PA116" is the upper dual-row connector used for relay contact (M-lead) interfacing to the respective DVIU.

Concentrator Card cabling is described in greater detail in later sections of this manual.

Controller Board auxiliary I/O pin-outs are not included in the customer-specific system documentation print-outs. See the Installation and Set-Up (Step 15) sections in LBI-38938 for detailed information on auxiliary I/O wiring and programming.

Special Clock Board Slots

Clock Boards are normally installed in the outer-most slots of the center-most daisy-chained Card Cage. As shown by Figure 3, Card Cage (rack) 1 in Cabinet 1 is SAMPLE IMC's center-most daisy-chained Card Cage. Figure 8 reveals one Clock Board is in slot 1 (far right slot as viewed from rear) and the other board is in slot 21 (far left slot as viewed from rear). **For proper CEC/IMC operation, the Clock Boards must not be moved to different Card Cage slots.**

Since the Clock Boards do not require any external connections, no Concentrator Card information is included for the Clock Boards. The Backplane I/O connectors, "PA2E1" and "PA2E2" (abbreviations for PA2-2E1 and PA2-2E2 respectively), are given for reference only.

Special End Node DIP Switch Settings

The MOM Controller Board and the Controller Board furthest from the MOM are referred to as "end nodes" since they are the Controller Boards closest to the ends of the daisy-chain Backplane set. Both Controller Boards each

have a special DIP switch setting identifying them as "end nodes". In most installations, each one will always be located in a Card Cage equipped with a Terminator Board. DIP switch 1 (SW1) position 2 must be set to "1" on both end node Controller Boards.

Even though a CIA rack has Terminator Boards on each end, it is not a part of the primary Backplane structure; therefore, no "end nodes" are installed in a CIA rack.

As shown in Figure 9, SAMPLE IMC's MOM Controller Board is located at Cabinet 1, Card Cage 3, Card Cage Slot 1. Switch 1 (SW1) position 2 is set to "1".

The other end node is located at Cabinet 2, Card Cage 2, Card Cage Slot 1. See Figures 3 and 10. Currently, the customer-specific system documentation print-outs do not indicate the special DIP switch setting for this end node. **Observe the third "Per Slot Data" note ("****") in Figure 7.**

NOTE

If the "end" Controller Board is removed, the Controller Board closest to it should be set as a temporary end node by setting SW1 position 2 to the "1", ("OPEN", or "OFF"). When the normal end node is reinstalled, the temporary end node should be turned off by setting SW1 position 2 back to the "0". Controller Boards must be reset after DIP switch changes.

Conventional Slots

SAMPLE IMC's VMIM components are located in Cabinet 2, Card Cage 2, Card Cage Slots 11 - 13. The CIA rack is Card Cage 3 in the same cabinet.

Standard factory wiring assumes all connections to conventional stations will be made via Audio Concentrator Cards. The customer-specific system documentation does not currently list any information on the Conventional Concentrator Cards.

Since the VMIM Controller and Audio Boards do not normally connect to any Concentrator Cards, the Card Cage slot print-outs do not specify any Concentrator Cards (locations and connectors) for VMIMs. This is also true for the CCI Controller Boards in CIA racks. See Figure 10 for SAMPLE IMC examples.

However, the Card Cage slot print-outs do specify the control data and audio cable interconnections between the VMIM and the CIA. As shown in Figure 10, Cabinet 2, Card Cage 2, Card Cage Slot 11 indicates "To Conv. Cage PA201" in the "Concen. Card Type" and "Concen. Connector" columns. This indicates the VMIM Controller Board cable interconnects the VMIM control data

(at PA210) to PA201 on the CIA rack. Similar interconnections for the audio signals are specified for the VMIM Audio Boards. To highlight this information in the figure, the related lines have been **bold-faced**.

TOTAL ALLOCATED AUDIO PORTS (TDM BUS SLOTS)

The total number of allocated audio ports (TDM bus slots) is given on the last page of the Card Cage slot information print-outs. As shown in Figure 10, "AUDIO PORTS USED = 146". Therefore, 146 of the approximate 240 available ports are used in SAMPLE IMC. This number may be useful during CEC/IMC upgrade procedures. It includes ports currently used and ports allocated for future expansion use. Calculations are shown in Table 3.

TABLE 3 - TOTAL ALLOCATED AUDIO PORT CALCULATIONS FOR SAMPLE IMC

PARAMETER	CALCULATION
Total Number of Audio Boards	53
Times 4 Ports per Audio Board	x 4
Subtotal	= 212
Less 3 Unused Ports per Console if no Call Director patch is used (16 total consoles)	- 48
Subtotal	= 164
Less 2 Unused Ports per MIM (10-channel MIMs use 3 Audio Boards = 12 channels)	- 6
Subtotal	= 158
Less LRIM Ports (two 4-channel LRIMs)	- 8
Subtotal	150
Less MOM Ports	- 4
Total Audio Ports Used	= 146

LOCAL BUS CABLE LOCATIONS

Figure 11 indicates where the Local Bus Cables in SAMPLE IMC are installed. It defines the mating of each Local Bus Cable between the Backplane connectors. The cable type – either long or short – is also defined.

As shown in Figure 11, Cabinet 1, Cage 3 in SAMPLE IMC has a total of seven (7) Local Bus Cables. A "LONG"

cable interconnects "JP1E1" to "JP101" and "SHORT" cables interconnect the other six (6) connector pairs. See Figure 5 for Backplane connector locations. Figure 6 lists cable part numbers. To highlight this information in the figure, the related text has been **bold-faced**.

NOTE

The Local Bus Cables are factory installed and should not be repositioned. Repositioning may affect board-to-Card Cage slot positions and the connection location of the Concentrator Card Cable at the Backplane.

INTRA-RACK AND INTER-RACK CABLE CONNECTIONS

Intra-Rack Cables join the Backplanes in an individual cabinet together. Inter-Rack Cables join the Backplanes between cabinets in a dual-cabinet installation. If the CEC/IMC uses four (4) or more primary Card Cages there will be two (2) Inter-Rack Cables that join the primary Card Cages together between the two required cabinets. These cables pass through openings in adjacent sides of the cabinets which are placed to minimize the Inter-Rack Cable length.

Figure 3 shows how the Intra-Rack and Inter-Rack Cables join the Card Cages (racks) together in SAMPLE IMC. This interconnection information is included in the system documentation. The rack-to-rack connector locations and the type of each cable are specified.

In SAMPLE IMC, there are a total of eight (8) Inter-Rack and Intra-Rack Cables. Figure 13 documents the Backplane interconnection points on a cabinet/cage/connector -to- cabinet/cage/connector basis. For example, the first line of information indicates Cabinet "01", Card Cage "01", Backplane Connector "V (P1E1)" connects to Cabinet "01", Card Cage "02", Backplane connector "V (P1E1)" using Cable "1". See Figure 5 for Backplane connector location details and see Figure 6 for specific cable part numbers. To highlight this information in the Figure 13, the related text has been **bold-faced**.

TERMINATOR BOARD LOCATIONS

The primary CEC/IMC Card Cage "daisy-chain" set has Terminator Boards on each end of the chain – two Terminator Boards per set. In addition, if the CEC/IMC is so equipped, each CIA rack has two Terminator Boards per rack – one on each end of the Backplane. The customer-specific system documentation specifies all Terminator Board locations.

As shown in Figure 14, SAMPLE IMC has a total of four (4) Terminator Boards – one on each end of the primary Card Cage daisy-chain set and one on each end of the CIA rack. One Terminator Board plugs to "V (P1E1)" and "W (P2E1)" in Cabinet 1, Card Cage 3 and the other Terminator Board plugs to the same connectors in Cabinet 2, Card Cage 2. To highlight this information in the figure, the related text has been **bold-faced**.

SAMPLE IMC's CIA rack is Card Cage 3 in Cabinet 2. Figure 14 specifies one Terminator Board on this rack plugs to connectors "U (P1E2)" and "X (P2E2)" and the other Terminator Board plugs to connectors "V (P1E1)" and "W (P2E1)". This information has been *italicized* in Figure 14.

BACKPLANE-TO-AUDIO CONCENTRATOR CARD CONNECTIONS

Concentrator Card Cable 19D903628P11 (20 inches), P12 (40 inches), or P13 (52 inches) joins the Audio Concentrator Card to the appropriate Backplane I/O connector. In most cases, this cable interconnects one of the lower 24-pin dual-row I/O connectors on the rear of the Backplane (PA201 - PA219, PA2-2E1, or PA2-2E2) to one of the 24-pin dual-row connectors (J1 - J6) on the Audio Concentrator Card. With the exception of the shield connection at the Backplane, this cable is wired in a straight-through pin-to-pin fashion – pin 1 to pin 1, pin 2 to pin 2, etc.

As shown in Figures 15 and 16, the customer-specific system documentation lists, on a per Concentrator Card and connector basis, the item (system, console, etc.) that each connector is assigned to. For example, connector J1 ("J01") on Audio Concentrator Card C2 ("C02") in Cabinet 1 ("01") carries the audio signals for C3 Maestro console 9 ("CRT 09"). To highlight this information in Figure 15, the related text has been **bold-faced**. Figure 8 shows that the other side of this cable (CIM side of "CRT 09") joins the Backplane at PA219 ("PA219") on Card Cage 1 ("01") in Cabinet 1 ("01"). This information has been *italicized* in Figure 8. See Figure 4 for Concentrator Card locations.

BACKPLANE-TO-AUDIO RELAY CONCENTRATOR CARD CONNECTIONS

Concentrator Card Cable 19D903628P51 (20 inches), P52 (40 inches), or P53 (52 inches) joins the Audio Relay Concentrator Card to the appropriate Backplane I/O connector. This cable interconnects one of the upper 24-pin dual-row I/O connectors on the rear of the Backplane (PA101 - PA119, PA1-2E1, or PA1-2E2) to one of the 24-pin dual-row connectors (J1 - J12) on the Audio Relay Concentrator Card. Each cable carries the relay contact

connections of four (4) channels. Currently, only the DVIM-to-DVIU interface utilizes these relay connections. See the subsection entitled "**RELAY CONNECTIONS**" within the "**CONCENTRATOR CARD CHAMP CONNECTOR PIN-OUTS**" section of this manual for additional details.

As shown in Figure 17, the customer-specific system documentation lists, on a per Concentrator Card and connector basis, the DVIM/DVIU channels assigned to each connector. For example, connector J2 ("J02") on Audio Relay Concentrator Card A4 ("A04") in Cabinet 1 ("01") has the relay contact connections for DVIM/DVIU 2 ("DVI 02") channels 5 - 8 ("05 - 08"). To highlight this information in the figure, the related text has been **bold-faced**. SAMPLE IMC uses only J1 - J10. See Figure 4 for Concentrator Card locations.

NOTE

Audio Board 19D903302P3 is required for DVIM channels and audio channels that require E & M signalling support.

BACKPLANE-TO-DATA CONCENTRATOR CARD CONNECTIONS

Concentrator Card Cable 19D903628P1 (20 inches), P2 (40 inches), or P3 (52 inches) joins the Data Concentrator Card to the appropriate Backplane I/O connector. This cable interconnects one of the lower 24-pin dual-row I/O connectors on the rear of the Backplane (PA201 - PA219, PA2-2E1, or PA2-2E2) to one of the 24-pin dual-row connectors (J1 - J10) on the Data Concentrator Card. With the exception of the shield connection at the Backplane, this cable is wired in a straight-through pin-to-pin fashion – pin 1 to pin 1, pin 2 to pin 2, etc.

As shown in Figure 18, the customer-specific system documentation lists, on a per Concentrator Card and connector basis, the item (system, console, etc.) that each connector is assigned to. For example, connector J9 ("J09") on Data Concentrator Card C3 ("C03") in Cabinet 1 ("01") carries the control data signals for C3 Modular/Desktop console 7 ("C3 07"). To highlight this information in the figure, the related text has been **bold-faced**. Figure 9 shows that the other side of this cable (XLTR and CIM side) joins Backplane Connectors "PA217" and "PA218" at Card Cage 3 ("03") in Cabinet 1 ("01"). The related information has been *italicized* in Figure 9. See Figure 4 for Concentrator Card locations.

As shown in Figure 18, all control data connections for SAMPLE IMC's EDACS radio systems are located in Cabinet 1 at Concentrator Card A2 ("A02"). Console connections are in Cabinet 1 at Data Concentrator Card C3

and Cabinet 2 at Data Concentrator Card C3. Other systems' connections are as indicated by Figure 18. See Figure 4 for Concentrator Card locations.

BACKPLANE-TO-MOM CONCENTRATOR CARD CONNECTIONS

Figure 19 indicates the MOM's Concentrator Card Cable connection point for SAMPLE IMC. "C04" in Cabinet 1 is the MOM Concentrator Card and the cable from the MOM Controller Board plugs to J1 on this card. See Figure 4 for Concentrator Card locations. As shown in Figure 9, the MOM Controller Board is located in Cabinet 1, Card Cage 3, Card Cage Slot 1 and the other end of this cable (19D903628P2) plugs to "PA2E1" (abbreviation for PA2-2E1) on the Backplane.

CONCENTRATOR CARD CHAMP CONNECTOR PIN-OUTS

The customer-specific system documentation also includes detailed pin-out information on the 50-pin Champ-type connectors located on the Concentrator Cards. The use of Champ connectors aids in the standardization of the twisted-pair connections into and out of the CEC/IMC. In most installations, standard 25-pair 50-pin Telco cables plug to the Champ connectors.

As with the in-cabinet interconnections, pin-out information is included on both the installed interface modules and the expansion interface modules.

The customer-specific system documentation does not currently list any information on the Conventional Concentrator Cards. Standard factory wiring assumes all connections to conventional stations are made via Audio Concentrator Cards.

AUDIO CONNECTIONS

Each Audio Concentrator Card can interface up to twenty-four (24) duplex channels of audio and/or modem signals (96 wires) into and out of the CEC/IMC. Consequently, a fully-loaded Audio Concentrator Card supports up to six (6) Audio Boards. However, this ratio is not established in most CECs/IMCs due to the expansion designed into the system; expansion Audio Boards are not installed in a new CEC/IMC when it ships from the factory.

The customer-specific system documentation lists the full-duplex audio input and output connections on a per Champ connector pin basis. Signals are routed between the CEC/IMC and the following external equipment via the Audio Concentrator Cards:

- C3 Maestro ("CRT") consoles
- C3 Modular/Desktop ("C3") consoles
- GETC uplinks
- other IMCs or a StarGate Controller via a NIM
- conventional stations
- EDG equipment
- CTIS equipment
- CNI equipment
- DVIU equipment
- logging recorders

In the above list, many of the items are allocated a separate Audio Concentrator Card(s). For example, audio connections for the DVIU equipment will not be on the same card as audio connections for EDACS site equipment.

The external side of an Audio Concentrator Card contains four (4) 50-pin Champ connectors – J7, J8, J9 and J10. Normally, only one or two of these connectors are used at each Audio Concentrator Card since two connectors carry the same signals as the other two, only in a different pin arrangement. This design was established to enhance the signal input and output wiring flexibility between the Audio Concentrator Cards' Champ connectors and the punch blocks. It allows all terminals on a specific punch block to be assigned as only inputs, or only outputs, or both inputs and outputs. The four connectors are wired as follows:

- J7 carries all 24 receive pairs (inputs) to all of the Audio Boards (six maximum) connected to the respective Audio Concentrator Card
- J8 carries all 24 transmit pairs (outputs) from all of the Audio Boards (six maximum) connected to the respective Audio Concentrator Card
- J9 carries 12 receive pairs (inputs) and 12 transmit pairs (outputs) to/from three (3) of the Audio Boards connected to the Audio Concentrator Card; receive and transmit pairs for a given channel are on adjacent Champ pins
- J10 carries 12 receive pairs (inputs) and 12 transmit pairs (outputs) to/from the other three (3) Audio Boards connected to the Audio Concentrator Card; receive and transmit pairs for a given channel are on adjacent Champ pins

The SAMPLE IMC print-out illustrates this wiring scheme as follows (see Figure 20): At Cabinet 1, Audio Concentrator Card A1 ("Cabinet 01 A01"), the audio/modem signal input pair for radio system 1 ("SYS 01") line 1 ("LN 01") is found on J7 pins 1 and 26 **and** on J9 pins 1 and 26. In addition, the audio/modem signal output

pair for radio system 1 line 1 is found on J8 pins 1 and 26 **and** on J9 pins 2 and 27. To highlight this information in Figure 20, the related text has been **bold-faced**. See Figure 4 or the Application Assembly Diagram in LBI-38662 for specific details on Concentrator Card locations.

Likewise, the input pair for radio system 1 line 13 is found on J7 pins 13 and 38 **and** on J10 pins 1 and 26. Similarly, the output pair for radio system 1 line 13 is found on J8 pins 13 and 38 **and** on J10 pins 2 and 27. To highlight this information in Figure 20, the related text has been *italicized*.

SAMPLE IMC has a total of sixteen (16) print-out pages on the audio/modem signal Champ connector pin-outs. See Figures 20 - 35. The following should be noted:

- Since many of the Audio Concentrator Cards are not fully-loaded, most of these pages do not indicate signals on every Champ pin.
- J7 and J8 connections are not given for the console, DVIU and CTIS equipment because each duplex channel (4-wires) between this equipment and the CEC/IMC will normally be within a single Telco cable.
- Simplex (2-wire) and duplex (4-wire) connections to/from a CI Board in the CIA rack are only made at J7 and J8. Simplex connections are made at J7 and duplex connections are made at J7 **and** J8. See Figure 35 for examples.

If necessary, see LBI-38869 for additional wiring details on the Audio Concentrator Card.

NOTE

Champ connector pins 25 and 50 are not used.

RELAY CONNECTIONS

The Audio Relay Concentrator Card provides 48 paired connections (96 wires) between external equipment and the relays on the Audio Boards. Each channel's Form-A relay contacts (normally-open SPST) are used to control co-located equipment of the respective audio/modem signal channel. A fully-loaded Audio Relay Concentrator Card can support relay connections from up to twelve (12) Audio Boards. The external side contains two (2) 50-pin Champ connectors – J14 and J15. Currently, DVIUs are the only equipment utilizing these M-lead relay connections via the Audio Relay Concentrator Card. This is described in the following paragraphs. Microware equipment (or equivalent) may also utilize these connections.

In addition to modem signal inputs and outputs, each DVIU channel requires a Form-A relay contact connection

from its respective DVIM Audio Board channel. This connection allows the DVIM channel to switch the DVIU channel to either encrypt or decrypt mode as follows:

- relay contacts closed = DVIU channel in encode or encrypt mode (for example, console transmitting a private message)
- relay contacts open = DVIU channel in decode or decrypt mode (for example, console receiving a private message)

As shown in Figure 36, the customer-specific system documentation lists these relay connections at the Champ connectors. For example, the Form-A contacts for SAMPLE IMC's DVIM/DVIU 1 channel (line) 1 are found in Cabinet 1 at Audio Relay Concentrator Card A4 ("Cabinet 01 A04") between J14 pins 9 and 34. Pin 9 is the "RELAY IN" terminal which corresponds to the RLY_Ax line on the Audio Board (where "x" = channel number); this is the normally-open relay contact connection. Pin 34 is the "RELAY OUT" terminal which corresponds to the RLY_Bx line on the Audio Board; this is the pole or common relay terminal connection. To highlight the above information in Figure 36, the related text has been **bold-faced**.

NOTE

Audio Board 19D903302P3 is required for DVIM channels and audio channels that require E & M signalling support.

If necessary, see LBI-38884 for additional wiring details on the Audio Relay Concentrator Card.

CONTROL DATA CONNECTIONS

The customer-specific system documentation also documents the RS-232 and RS-422 serial control data connections into and out of the CEC/IMC. These connections are made at the Data Concentrator Cards. The RS-232 and RS-422 serial data forms control data links between the CEC/IMC and the following equipment:

- C3 Maestro ("CRT") consoles
- C3 Modular/Desktop ("C3") consoles
- GETC uplinks
- other IMCs or a StarGate Controller via a NIM
- EDG equipment
- CTIS equipment
- CNI equipment
- RSM equipment (CAD computer)

Each Data Concentrator Card can interface up to ten (10) duplex control data pairs (40 wires) into and out of the CEC/IMC. In the above list, most of the items are given a separate Data Concentrator Card(s); for example, control data connections for the GETC uplinks will not be on the same card as control data connections for consoles.

The external side of a Data Concentrator Card contains three (3) 50-pin Champ connectors – J11, J12, and J13. External equipment is wired to the connectors as follows:

- J11 is used for C3 Modular/Desktop ("C3") console connections – all pairs are RS-422 serial connections (no pins are grounded)
- J12 is used for C3 Maestro ("CRT") console connections – all pairs are RS-422 serial connections (no pins are grounded)
- J13 is used for control data connections for all other external data devices such as GETC uplinks, EDG computers and CTIS equipment – transmit (TX) pairs are RS-232 serial connections (TX+ pin is grounded at the Controller Board and at the external equipment end) and the receive (RX) pairs are RS-422 connections

However, in nearly all cases, the RX pairs will be wired as RS-232 links. RS-232 levels are obtained from the differential RS-422 RX pairs by simply grounding the "RX+ DATA" or "422 +" terminal (see Concentrator Card or Controller Board schematics for exact "422" label) and connecting the RS-232 signal to the "RX- DATA" or "422 -" terminal. In an IMC-to-GETC uplink interface, grounds are as follows: The "RX+ DATA" pins are grounded only at the GETC Logic Board. The "TX+ DATA" lines are grounded at the Controller Board and at the GETC Logic Board.

GETC Uplink Control Data Connections

Control data Champ connector pin-outs for SAMPLE IMC's three (3) EDACS sites are shown in Figure 37. Serial control data connections for "SYS 01" are found on J13 pins 1 - 4 (-) and 26 - 29 (+) of Data Concentrator Card "A02" in "Cabinet 01". To highlight this information in the figure, the related text has been **bold-faced**.

On the customer-specific system documentation print-outs, the lines to (TX) and from (RX) the GETC uplinks are not identified as main or standby because either duplex line for a redundant MIM can be the main and either line can be the standby. At CEC/IMC power-up, main selection is determined by which MIM Controller Board initializes itself first. As shown in Figure 37, for example, System 1 ("SYS 01") has two "TX- DATA" lines, one on J13 pin 1 and the

other on J13 pin 3. One is the main connection and one is the standby (back-up) connection.

Control data connections for "SYS 03" are found on pins 9 - 12 (-) and 34 - 37 (+). "SYS 03" is *SAMPLE IMC's* expansion EDACS site. To highlight this information in Figure 37, the related text has been *italicized*.

Console Control Data Connections

Figure 39 shows the serial control data connections for nine (9) of the sixteen (16) consoles in *SAMPLE IMC*. These connections are located at Data Concentrator Card C3 in Cabinet 1. C3 Modular/Desktop ("C3") connections are on J11 and C3 Maestro ("CRT") connections are on J12. The remaining consoles' control data connections are shown in Figure 44.

Other Control Data Connections

Figures 38 and 45 identify the serial control data connections for the RSM equipment. RSM 1 connections are located at Data Concentrator Card B4 in Cabinet 1 and RSM 2 connections are located at Data Concentrator Card C4 in Cabinet 2. Both use J13 pins 1, 2, 26 and 27.

Figure 40 shows the serial control data connections for the two (2) CNI systems that connect to *SAMPLE IMC's* two MIM Controller Boards located in Cabinet 2, Card Cage 2 (See Figure 10). As indicated by Figure 40, the connections are located in Cabinet 2 on Data Concentrator Card A2 on connector J13 pins 1 - 4 and 26 - 29.

EDG connections are shown in Figure 41. As indicated by the figure, these connections are located in Cabinet 2, at Data Concentrator Card A4 on J13 pins 1, 2, 26 and 27.

CTIS connections are shown in Figure 42. They are located in Cabinet 2, at Data Concentrator Card B3, on J13 pins 1, 2, 26 and 27.

NIM connections are shown in Figure 43. These connections are located in Cabinet 2, Data Concentrator Card B4, on J13 pins 1, 2, 26 and 27.

MOM CONNECTIONS

All external connections to and from the MOM are made at the MOM Concentrator Card. Since these connections are dedicated (always the same between different CECs/IMCs), external wiring pin-outs are not included in the customer-specific system documentation. See the *CEC/IMC Installation, Set-Up and Troubleshooting* maintenance manual (LBI-38938) for CEC/IMC Manager (MOM PC) and System Manager interconnection details between each computer and the MOM Concentrator Card. If necessary, also see LBI-38870 for additional MOM Concentrator Card wiring details.

SPECIAL MOM CONTROLLER BOARD DIP SWITCH SETTINGS

The customer-specific system documentation does not indicate the special MOM Controller Board DIP switch settings which are necessary if a NIM is installed in the Digital Audio Switch. Before NIM call arbitration will operate correctly, special DIP switch settings are necessary **at all MOM Controller Boards in the NIM or StarGate network**. These settings identify each Digital Audio Switch with a unique assignment number. At each MOM, six (6) DIP switch positions are used to assign the IMC or StarGate Controller a "switch assignment number". This number must be different at every Digital Audio Switch in the network. In addition, each number must be between 33 to 63 (decimal). DIP switch positions are set identically to the MIM site assignment numbers by setting the binary equivalent at SW1 position 8 (LSB = 2^0 = 1 decimal) through SW1 position 4 (2^4 = 16 decimal) and SW2 position 5 (MSB = 2^5 = 32 decimal). See the *CEC/IMC Digital Audio Switch Installation Set-Up and Troubleshooting* maintenance manual (LBI-38938) for additional details.

SAMPLE IMC

CABINET 1

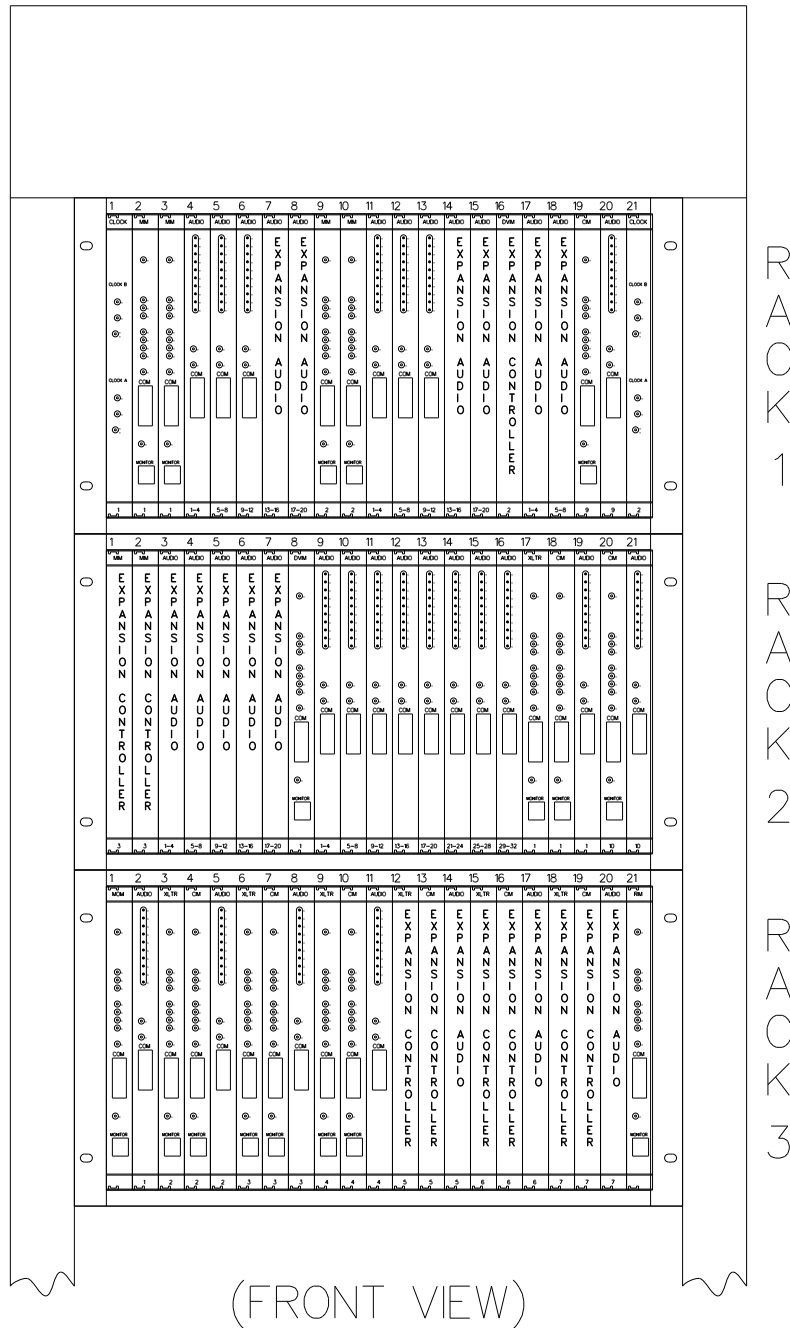


Figure 1 - SAMPLE IMC Cabinet 1 Card Cage Rack-Up

SAMPLE IMC

CABINET 2

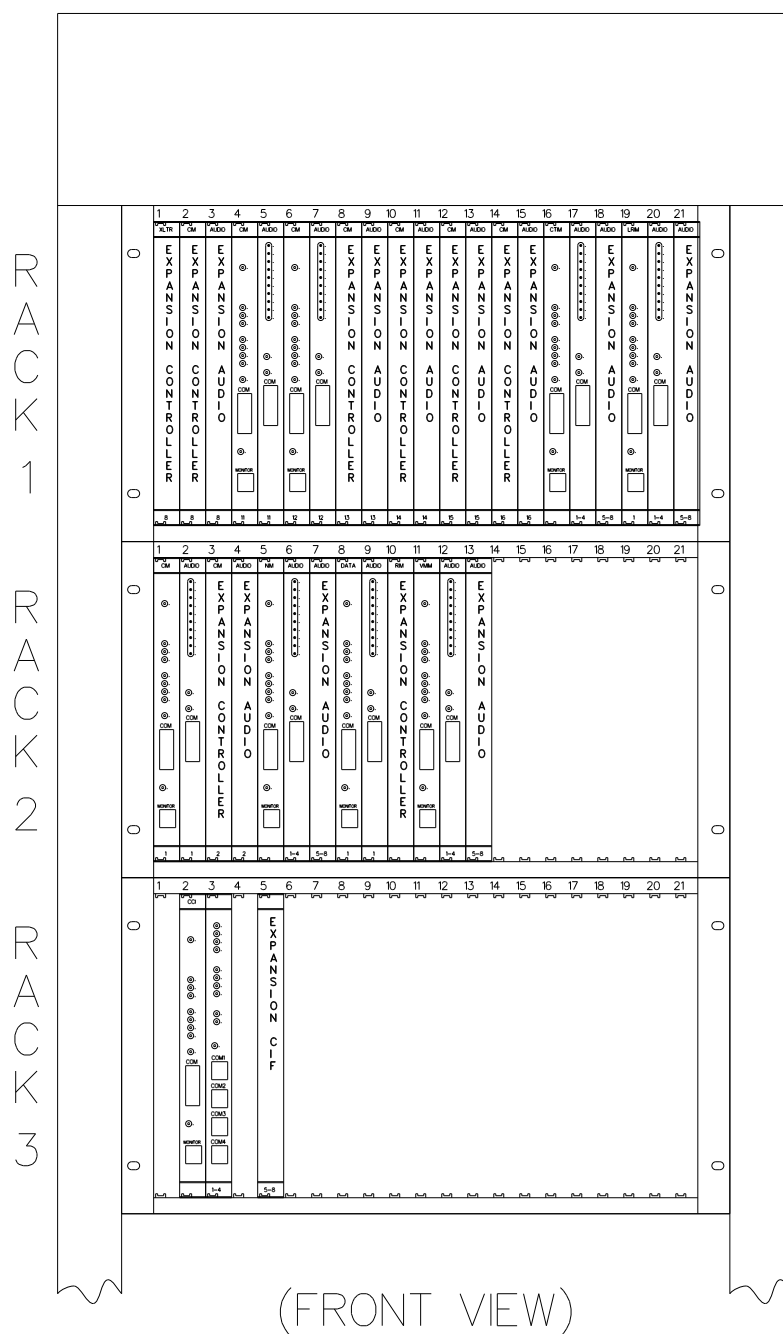


Figure 2 - SAMPLE IMC Cabinet 2 Card Cage Rack-Up

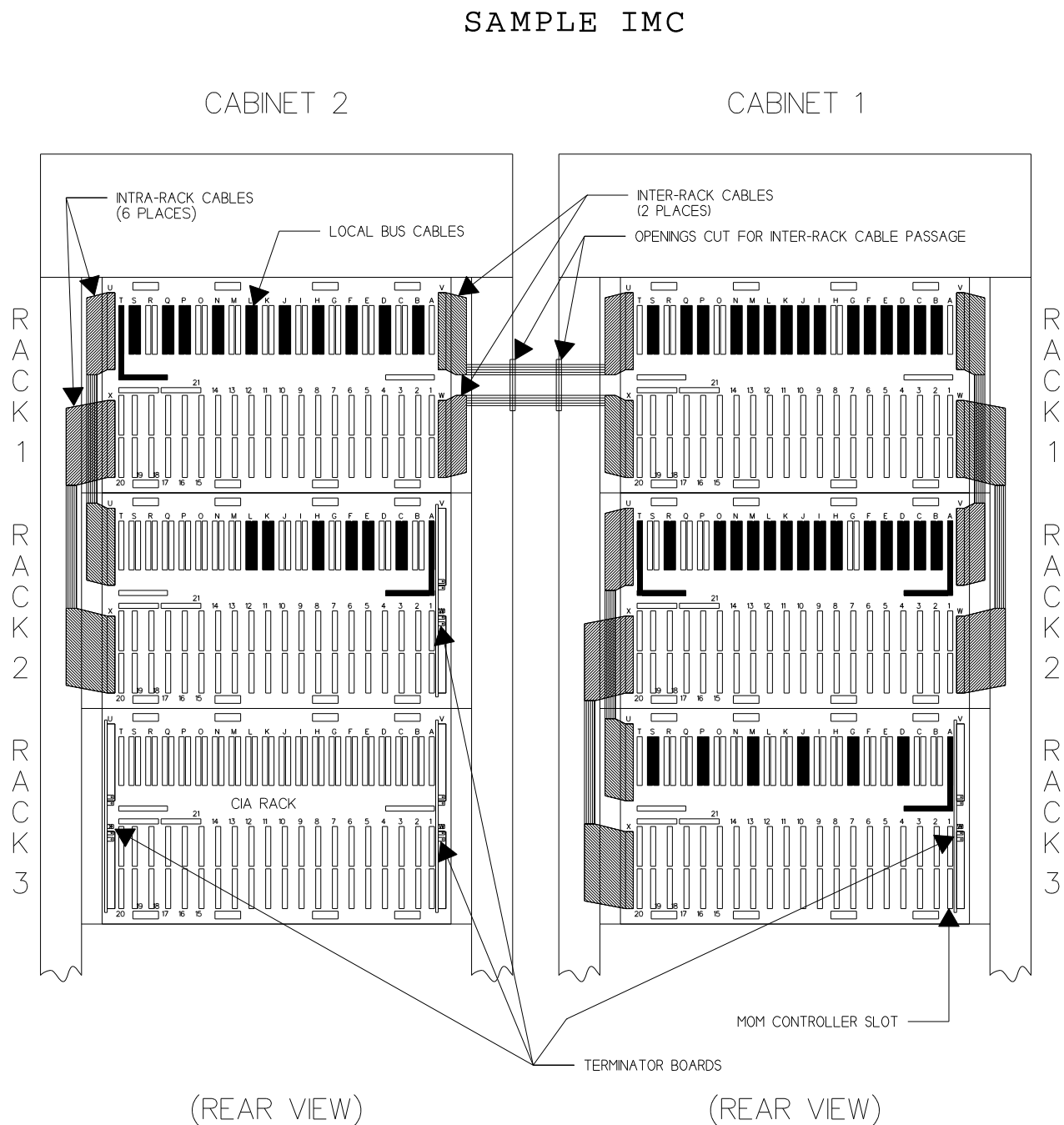
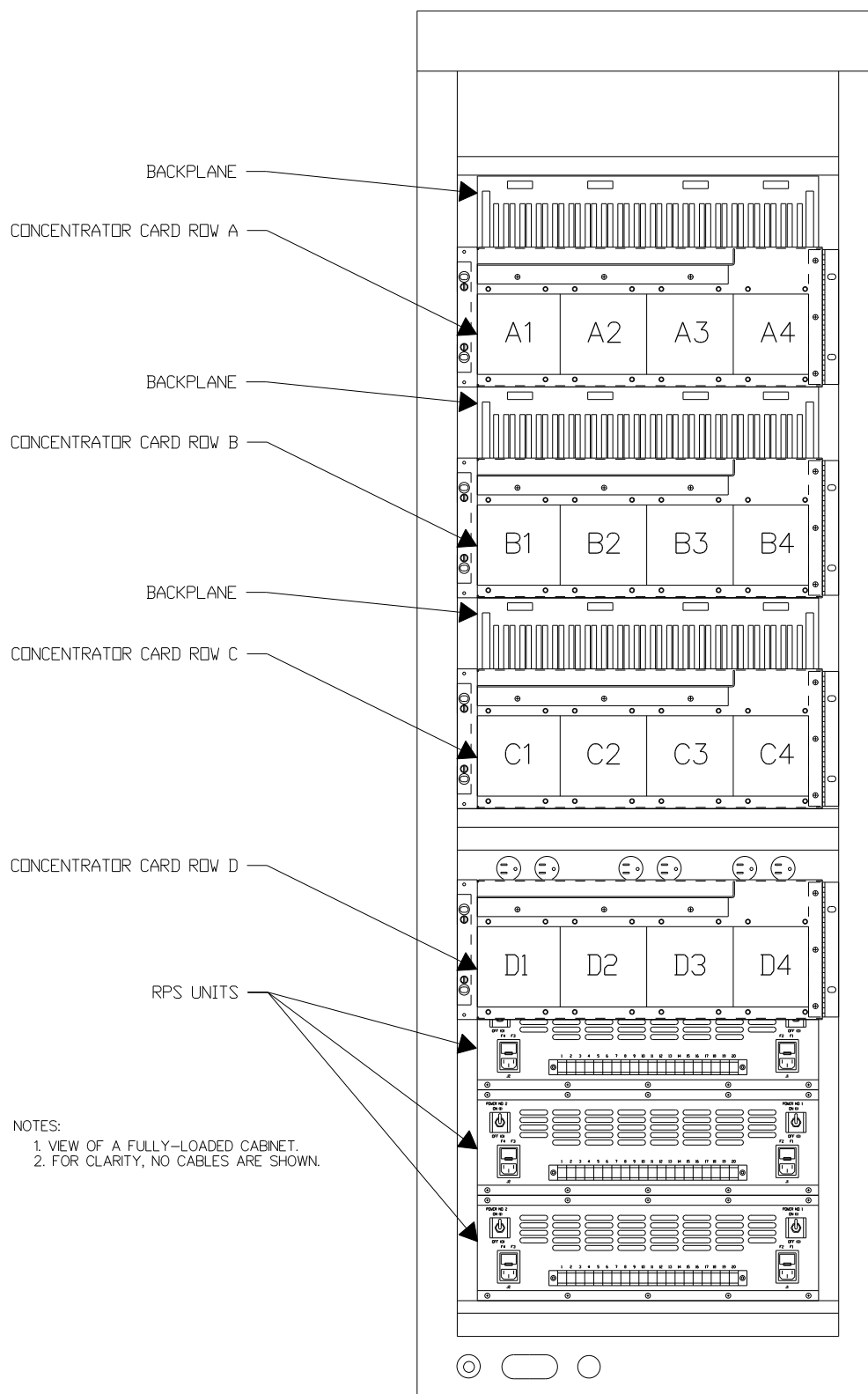


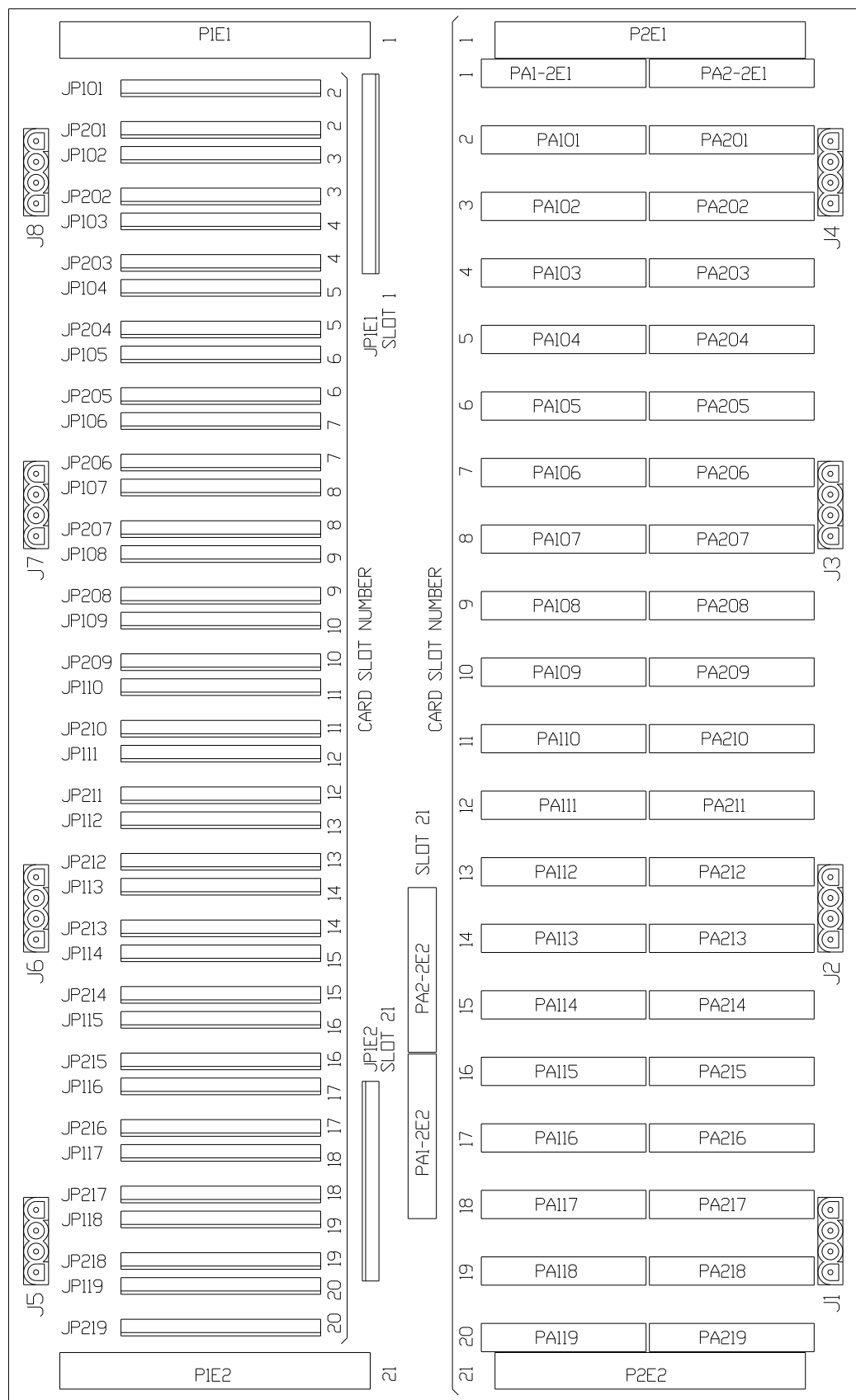
Figure 3 - SAMPLE IMC Intra-Rack, Inter-Rack And Local Bus Cable Interconnections And Terminator Board Locations



(REAR VIEW)

Figure 4 - Concentrator Card Locations

BACKPLANE 19D903291P1 (ASSEMBLY 19D903310P1)



MADE FROM 19D903313 SH 1, REV 2)

Figure 5 - Backplane Connectors (Viewed From Rear Of Cabinet)

Customer: SAMPLE
Group: IMC

Date: 09/28/93
Time: 11:23:55

Notes:

ABBR.	NAME	OPTION	PART NO.
D	DATA CC	MSDE3E	19D903525P1
M	MOM CC	MSDE3F	19D903533P1
A	AUDIO CC	MSAA1K	19D903531P1
R	AUDIO RELAY CC	MSSU3G	19D904546G1
	TERMINATOR MODULE	MSDE1T	19D903308P1
	AUDIO AUX I/O CC	MSAA1L	19D903529P1
	AUX I/O CC	MSDE3U	19C852221P1
	CONVENTIONAL CC	-----	19D904337G1
CABLES			
Intra-rack/Inter-rack Cables			
	Cable 1 (Top)		19B235983P4
	Cable 2 (Bottom)		19B235983P5
Local Bus Cables			
	Short (3 inches)		344A3728P1
	Long (8 inches)		344A3728P2
Backplane to Data CC			
	Cable 3		19D903628P2
Backplane to Audio CC			
	Cable 4		19D903628P12
Backplane to C3 Console CC			
	Cable 5		19D903628P22
Backplane (VMIM) to CIA Rack			
	Cable 6		19D903628P31
Backplane to Audio Relay CC			
	Cable 7		19D903628P52
Backplane (NIM) to Data CC			
	Cable 8		19D903628P62
Power Cable			
			19D903309P1

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Figure 6 - Inside The Cabinets: Concentrator Card and Cable Coding/Abbreviation Key

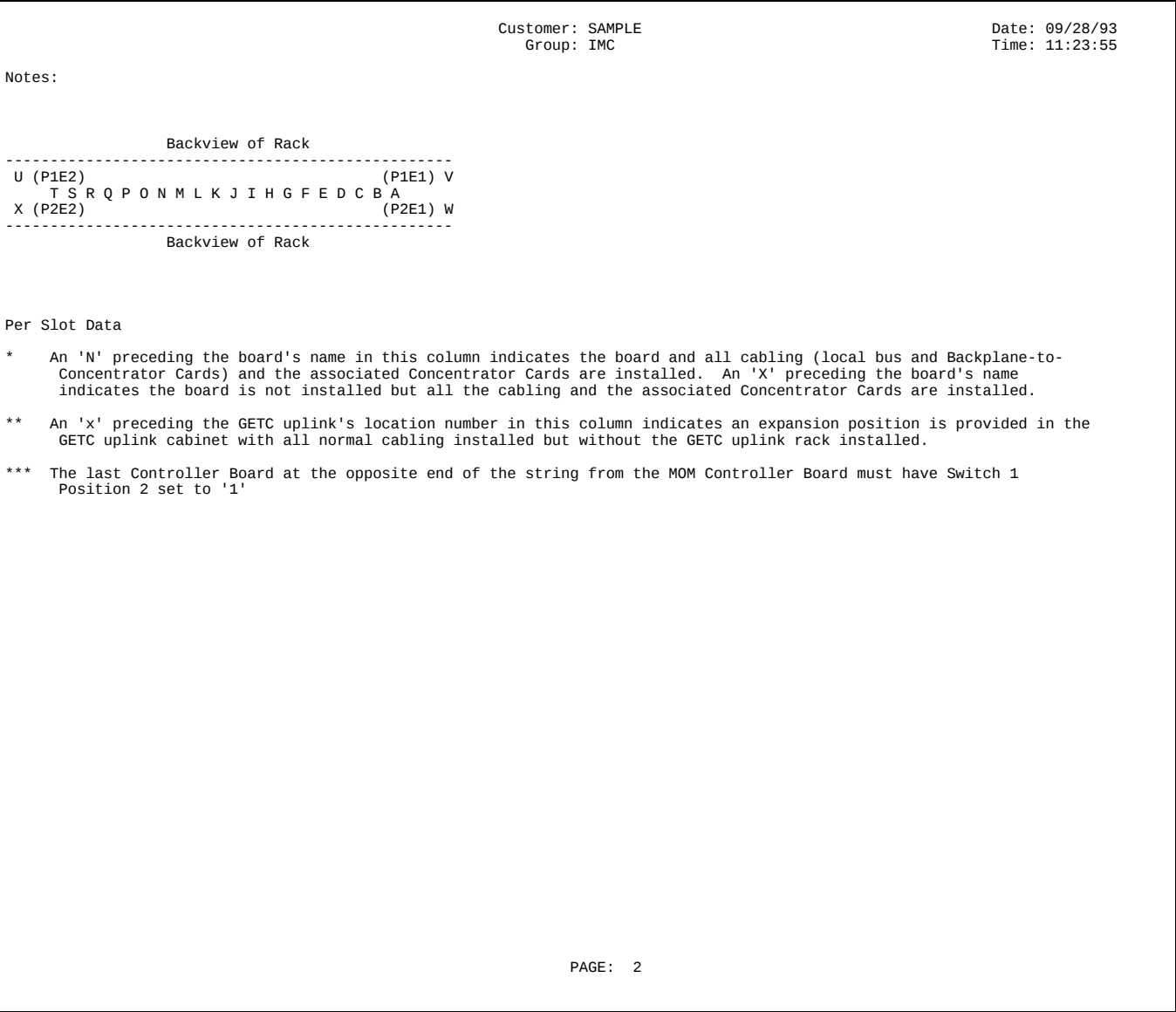


Figure 7 - Inside The Cabinets: Card Cage (Rack) Connector Identification and Per Slot Notes

Customer: SAMPLE Group: IMC											Date: 09/28/93 Time: 11:23:55		
Cab.	Card Cage (Rack)	Card Cage Slot	Back- plane I/O Conn.	Concen. Card Type	Concen. Connector	Cable Type	Slot Function	Board Type	Board Top Label	Board Bottom Label	GETC Location	Switch-1 Position 12345678	Switch-2 Position 12345678
01	01	01	PA2E1					NCLOCK	CLOCK	01			
01	01	02	PA201	D	A02-J01	3	SYS 01	NCONTROL	MIM	01	01-01-A1-01	10000000	00000001
01	01	03	PA202	D	A02-J02	3	SYS 01	NCONTROL	MIM	01	01-02-A1-02	10000000	00000001
01	01	04	PA203	A	A01-J01	4	SYS 01	NAUDIO	AUDIO	01-04		01000001	
01	01	05	PA204	A	A01-J02	4	SYS 01	NAUDIO	AUDIO	05-08		01000010	
01	01	06	PA205	A	A01-J03	4	SYS 01	NAUDIO	AUDIO	09-12		01000011	
01	01	07	PA206	A	A01-J04	4	SYS 01	XAUDIO	AUDIO	13-16		01000100	
01	01	08	PA207	A	A01-J05	4	SYS 01	XAUDIO	AUDIO	17-20		01000101	
01	01	09	PA208	D	A02-J03	3	SYS 02	NCONTROL	MIM	02	01-03-A1-03	10000000	00000010
01	01	10	PA209	D	A02-J04	3	SYS 02	NCONTROL	MIM	02	01-04-A1-04	10000000	00000010
01	01	11	PA210	A	A01-J06	4	SYS 02	NAUDIO	AUDIO	01-04		01000001	
01	01	12	PA211	A	A03-J01	4	SYS 02	NAUDIO	AUDIO	05-08		01000010	
01	01	13	PA212	A	A03-J02	4	SYS 02	NAUDIO	AUDIO	09-12		01000011	
01	01	14	PA213	A	A03-J03	4	SYS 02	XAUDIO	AUDIO	13-16		01000100	
01	01	15	PA214	A	A03-J04	4	SYS 02	XAUDIO	AUDIO	17-20		01000101	
01	01	16	PA215				DVI 02	XCONTROL	DVIM	02		10000001	10000010
01	01	17	PA216	A	B02-J01	4	DVI 02	XAUDIO	AUDIO	01-04		01000001	
			PA116	R	A04-J01	7							
01	01	18	PA217	A	B02-J02	4	DVI 02	XAUDIO	AUDIO	05-08		01000010	
			PA117	R	A04-J02	7							
01	01	19	PA218	D	C03-J01	3	CRT 09	NCONTROL	CIM	09		10000000	00101001
01	01	20	PA219	A	C02-J01	4	CRT 09	NAUDIO	AUDIO	01-04		01000001	
01	01	21	PA2E2					NCLOCK	CLOCK	02			
01	02	01	PA2E1	D	A02-J05	3	SYS 03	XCONTROL	MIM	03	x01-05-A1-05	10000000	00000011
01	02	02	PA201	D	A02-J06	3	SYS 03	XCONTROL	MIM	03	x01-06-A1-06	10000000	00000011
01	02	03	PA202	A	A03-J05	4	SYS 03	XAUDIO	AUDIO	01-04		01000001	
01	02	04	PA203	A	A03-J06	4	SYS 03	XAUDIO	AUDIO	05-08		01000010	
01	02	05	PA204	A	B01-J01	4	SYS 03	XAUDIO	AUDIO	09-12		01000011	
01	02	06	PA205	A	B01-J02	4	SYS 03	XAUDIO	AUDIO	13-16		01000100	
01	02	07	PA206	A	B01-J03	4	SYS 03	XAUDIO	AUDIO	17-20		01000101	
01	02	08	PA207				DVI 01	NCONTROL	DVIM	01		10000001	10000001
01	02	09	PA208	A	B02-J04	4	DVI 01	NAUDIO	AUDIO	01-04		01000001	
			PA108	R	A04-J03	7							
01	02	10	PA209	A	B02-J05	4	DVI 01	NAUDIO	AUDIO	05-08		01000010	
			PA109	R	A04-J04	7							
01	02	11	PA210	A	B03-J01	4	DVI 01	NAUDIO	AUDIO	09-12		01000011	
			PA110	R	A04-J05	7							
01	02	12	PA211	A	B03-J02	4	DVI 01	NAUDIO	AUDIO	13-16		01000100	
			PA111	R	A04-J06	7							
01	02	13	PA212	A	B03-J04	4	DVI 01	NAUDIO	AUDIO	17-20		01000101	
			PA112	R	A04-J07	7							
01	02	14	PA213	A	B03-J05	4	DVI 01	NAUDIO	AUDIO	21-24		01000110	
			PA113	R	A04-J08	7							
01	02	15	PA214	A	C01-J01	4	DVI 01	NAUDIO	AUDIO	25-28		01000111	
			PA114	R	A04-J09	7							
01	02	16	PA215	A	C01-J02	4	DVI 01	NAUDIO	AUDIO	29-32		01001000	
			PA115	R	A04-J10	7							

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Figure 8 - Inside The Cabinets: Card Cage Slot Information (1 of 3)

Customer: SAMPLE Group: IMC											Date: 09/28/93 Time: 11:23:55		

Cab.	Card Cage (Rack)	Card Cage Slot	Back- plane I/O Conn.	Concen. Card Type	Concen. Connector	Cable Type	Slot Function	Board Type	Board Top Label	Board Bottom Label	GETC Location	Switch-1 Position 12345678	Switch-2 Position 12345678
01	02	17	PA216	D	C03-J02	5	C3 01	NCONTROL	XLTR	01		10000000	11100000
01	02	18	PA217					NCONTROL	CIM	01		10000000	00100001
01	02	19	PA218	A	C02-J02	4	C3 01	NAUDIO	AUDIO	01-04		01000001	
01	02	20	PA219	D	C03-J03	3	CRT 10	NCONTROL	CIM	10		10000000	00101010
01	02	21	PA2E2	A	C02-J03	4	CRT 10	NAUDIO	AUDIO	01-04		01000001	
01	03	01	PA2E1	M	C04-J01	3	MOM	NCONTROL	MOM	n/a		11100000	01000000
01	03	02	PA201					NAUDIO	AUDIO	01-04		01000001	
01	03	03	PA202	D	C03-J04	5	C3 02	NCONTROL	XLTR	02		10000000	11100000
01	03	04	PA203					NCONTROL	CIM	02		10000000	00100010
01	03	05	PA204	A	C02-J04	4	C3 02	NAUDIO	AUDIO	01-04		01000001	
01	03	06	PA205	D	C03-J05	5	C3 03	NCONTROL	XLTR	03		10000000	11100000
01	03	07	PA206					NCONTROL	CIM	03		10000000	00100011
01	03	08	PA207	A	C02-J05	4	C3 03	NAUDIO	AUDIO	01-04		01000001	
01	03	09	PA208	D	C03-J06	5	C3 04	NCONTROL	XLTR	04		10000000	11100000
01	03	10	PA209					NCONTROL	CIM	04		10000000	00100100
01	03	11	PA210	A	C02-J06	4	C3 04	NAUDIO	AUDIO	01-04		01000001	
01	03	12	PA211	D	C03-J07	5	C3 05	XCONTROL	XLTR	05		10000000	11100000
01	03	13	PA212					XCONTROL	CIM	05		10000000	00100101
01	03	14	PA213	A	D01-J01	4	C3 05	XAUDIO	AUDIO	01-04		01000001	
01	03	15	PA214	D	C03-J08	5	C3 06	XCONTROL	XLTR	06		10000000	11100000
01	03	16	PA215					XCONTROL	CIM	06		10000000	00100110
01	03	17	PA216	A	D01-J02	4	C3 06	XAUDIO	AUDIO	01-04		01000001	
01	03	18	PA217	D	C03-J09	5	C3 07	XCONTROL	XLTR	07		10000000	11100000
01	03	19	PA218					XCONTROL	CIM	07		10000000	00100111
01	03	20	PA219	A	D01-J03	4	C3 07	XAUDIO	AUDIO	01-04		01000001	
01	03	21	PA2E2	D	B04-J01	3	RSM 01	NCONTROL	RIM	01		10000001	00000001
02	01	01	PA2E1	D	C03-J01	5	C3 08	XCONTROL	XLTR	08		10000000	11100000
02	01	02	PA201					XCONTROL	CIM	08		10000000	00101000
02	01	03	PA202	A	C02-J01	4	C3 08	XAUDIO	AUDIO	01-04		01000001	
02	01	04	PA203	D	C03-J02	3	CRT 11	NCONTROL	CIM	11		10000000	00101011
02	01	05	PA204	A	C02-J02	4	CRT 11	NAUDIO	AUDIO	01-04		01000001	
02	01	06	PA205	D	C03-J03	3	CRT 12	NCONTROL	CIM	12		10000000	00101100
02	01	07	PA206	A	C02-J03	4	CRT 12	NAUDIO	AUDIO	01-04		01000001	
02	01	08	PA207	D	C03-J04	3	CRT 13	XCONTROL	CIM	13		10000000	00101101
02	01	09	PA208	A	C02-J04	4	CRT 13	XAUDIO	AUDIO	01-04		01000001	

Customer: SAMPLE Group: IMC										Date: 09/28/93 Time: 11:23:55			
Cab.	Card Cage (Rack)	Card Cage Slot	Back- plane I/O Conn.	Concen. Card Type	Concen. Connector	Cable Type	Slot Function	Board Type	Board Top Label	Board Bottom Label	GETC Location	Switch-1 Position 12345678	Switch-2 Position 12345678
02	02	01	PA2E1	D	A02-J01	3	CNI 01	NCONTROL	MIM	01	01-07-A2-01	10000000	00000101
02	02	02	PA201	A	A01-J01	4	CNI 01	NAUDIO	AUDIO	01-04		01000001	
02	02	03	PA202	D	A02-J02	3	CNI 02	XCONTROL	MIM	02	x01-08-A2-02	10000000	00000110
02	02	04	PA203	A	A01-J02	4	CNI 02	XAUDIO	AUDIO	05-08		01000001	
02	02	05	PA204	D	B04-J01	8	NIM 01	NCONTROL	NIM	01		10000000	01110111
02	02	06	PA205	A	B01-J01	4	NIM 01	NAUDIO	AUDIO	01-04		01000001	
02	02	07	PA206	A	B01-J02	4	NIM 01	XAUDIO	AUDIO	05-08		01000010	
02	02	08	PA207	D	A04-J01	3	EDG 01	NCONTROL	DATA	01	01-09-A2-03	10000000	00110001
02	02	09	PA208	A	A03-J01	4	EDG 01	NAUDIO	AUDIO	01-04		01000001	
02	02	10	PA209	D	C04-J01	3	RSM 02	XCONTROL	RIM	02		10000001	00000010
02	02	11	PA210	(To Conv. Cage PA201)	6			NCONTROL	VMIM	01		10000000	10101000
02	02	12	PA211	(To Conv. Cage PA202)	4			NAUDIO	AUDIO	01-04		01000001	
02	02	13	PA212	(To Conv. Cage PA204)	4			XAUDIO	AUDIO	05-08		01000010	
02	03	02	PA101	D		3	CONV 01	NCONTROL	CCI	01		10000000	11000001
02	03	03	PA102	A	D02-J01	4	CONV 01	NAUDIO	CI	01-04		01010001	
02	03	05	PA104	A	D02-J02	4	CONV 01	XAUDIO	CI	05-08		01010010	

AUDIO PORTS USED = 146

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Figure 10 - Inside The Cabinets: Card Cage Slot Information (3 of 3)

Local Bus Cables

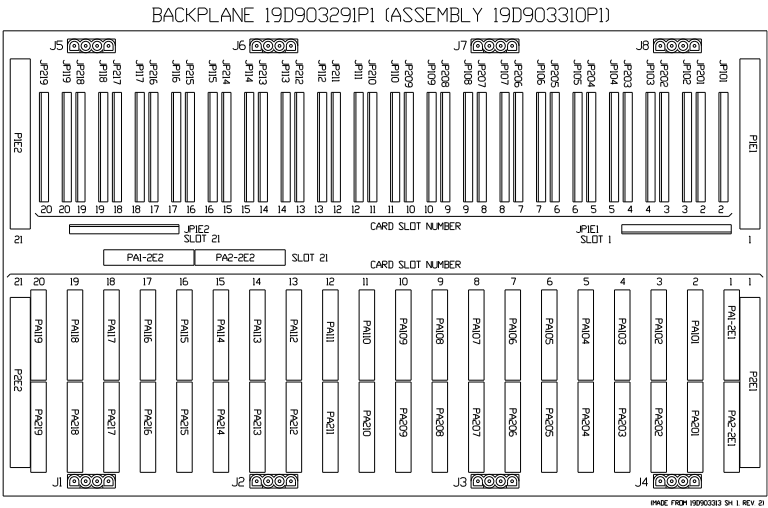
Customer: SAMPLE
Group: IMC

Date: 09/28/93
Time: 11:23:55

Cab.	Card Cage (Rack)	Backplane Connections	Cable Type
01	01	JP201 - JP102	SHORT
01	01	JP202 - JP103	SHORT
01	01	JP203 - JP104	SHORT
01	01	JP204 - JP105	SHORT
01	01	JP205 - JP106	SHORT
01	01	JP206 - JP107	SHORT
01	01	JP208 - JP109	SHORT
01	01	JP209 - JP110	SHORT
01	01	JP210 - JP111	SHORT
01	01	JP211 - JP112	SHORT
01	01	JP212 - JP113	SHORT
01	01	JP213 - JP114	SHORT
01	01	JP215 - JP116	SHORT
01	01	JP216 - JP117	SHORT
01	01	JP218 - JP119	SHORT
01	02	JP1E1 - JP101	LONG
01	02	JP201 - JP102	SHORT
01	02	JP202 - JP103	SHORT
01	02	JP203 - JP104	SHORT
01	02	JP204 - JP105	SHORT
01	02	JP205 - JP106	SHORT
01	02	JP207 - JP108	SHORT
01	02	JP208 - JP109	SHORT
01	02	JP209 - JP110	SHORT
01	02	JP210 - JP111	SHORT
01	02	JP211 - JP112	SHORT
01	02	JP212 - JP113	SHORT
01	02	JP213 - JP114	SHORT
01	02	JP214 - JP115	SHORT
01	02	JP217 - JP118	SHORT
01	02	JP219 - JP2E2	LONG
01	03	JP1E1 - JP101	LONG
01	03	JP203 - JP104	SHORT
01	03	JP206 - JP107	SHORT
01	03	JP209 - JP110	SHORT
01	03	JP212 - JP113	SHORT
01	03	JP215 - JP116	SHORT
01	03	JP218 - JP119	SHORT
02	01	JP201 - JP102	SHORT
02	01	JP203 - JP104	SHORT
02	01	JP205 - JP106	SHORT
02	01	JP207 - JP108	SHORT
02	01	JP209 - JP110	SHORT
02	01	JP211 - JP112	SHORT
02	01	JP213 - JP114	SHORT
02	01	JP215 - JP116	SHORT

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Figure 11 - Inside The Cabinets: Local Bus Cable Information (1 of 2)



Backplane Connectors (Cables Not Shown For Clarity)

Customer: SAMPLE
Group: IMC

Date: 09/28/93
Time: 11:23:55

Local Bus Cables

Cab.	Card Cage (Rack)	Backplane Connections	Cable Type
02	01	JP216 - JP117	SHORT
02	01	JP218 - JP119	SHORT
02	01	JP219 - JP2E2	LONG
02	02	JP1E1 - JP101	LONG
02	02	JP202 - JP103	SHORT
02	02	JP204 - JP105	SHORT
02	02	JP205 - JP106	SHORT
02	02	JP207 - JP108	SHORT
02	02	JP210 - JP111	SHORT
02	02	JP211 - JP112	SHORT

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Figure 12 - Inside The Cabinets: Local Bus Cable Information (2 of 2)

Customer: SAMPLE

Group: IMC

Date: 09/28/93

Time: 11:23:55

Intra-rack and Inter-rack Cable Data

Cab.	Card Cage	Backplane Connector		Cab.	Card Cage	Backplane Connector	Cable
01	01	V (P1E1)	-T0-	01	02	V (P1E1)	1
01	01	W (P2E1)		01	02	W (P2E1)	2
01	02	U (P1E2)		01	03	U (P1E2)	1
01	02	X (P2E2)		01	03	X (P2E2)	2
01	01	U (P1E2)		02	01	V (P1E1)	1
01	01	X (P2E2)		02	01	W (P2E1)	2
02	01	U (P1E2)		02	02	U (P1E2)	1
02	01	X (P2E2)		02	02	X (P2E2)	2

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Figure 13 - Inside The Cabinets: Intra-Rack and Inter-Rack Cable Information (1 of 1)

			Customer: SAMPLE	Date: 09/28/93
			Group: IMC	Time: 11:23:55
Terminator Board Data				
Cab.	Card Cage	Backplane Connector		
01	03	V (P1E1) - W (P2E1)	Terminator	1
02	02	V (P1E1) - W (P2E1)	Terminator	2
02	03	U (P1E2) - X (P2E2)	Terminator	3
02	03	V (P1E1) - W (P2E1)	Terminator	4
PAGE: 9				

Figure 14 - Inside The Cabinets: Terminator Board Locations (1 of 1)

Customer: SAMPLE
Group: IMC

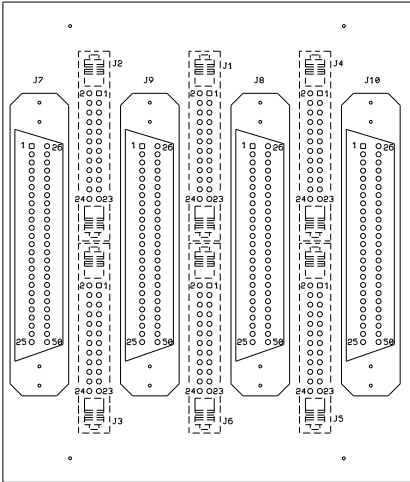
Date: 09/28/93
Time: 11:23:55

Concentrator Card AUDIO Connections (To/From Backplanes)

Cab.	Concen. Card	----- Connector Audio Channel Assignments -----					
01	A01	J01 SYS 01 AUDIO 01-04	J02 SYS 01 AUDIO 05-08	J03 SYS 01 AUDIO 09-12	J04 SYS 01 AUDIO 13-16	J05 SYS 01 AUDIO 17-20	J06 SYS 02 AUDIO 01-04
01	A03	J01 SYS 02 AUDIO 05-08	J02 SYS 02 AUDIO 09-12	J03 SYS 02 AUDIO 13-16	J04 SYS 02 AUDIO 17-20	J05 SYS 03 AUDIO 01-04	J06 SYS 03 AUDIO 05-08
01	B01	J01 SYS 03 AUDIO 09-12	J02 SYS 03 AUDIO 13-16	J03 SYS 03 AUDIO 17-20			
01	B02	J01 DVI 02 AUDIO 01-04	J02 DVI 02 AUDIO 05-08	J04 DVI 01 AUDIO 01-04	J05 DVI 01 AUDIO 05-08		
01	B03	J01 DVI 01 AUDIO 09-12	J02 DVI 01 AUDIO 13-16	J04 DVI 01 AUDIO 17-20	J05 DVI 01 AUDIO 21-24		
01	C01	J01 DVI 01 AUDIO 25-28	J02 DVI 01 AUDIO 29-32				
01	C02	J01 CRT 09 AUDIO 01-04	J02 C3 01 AUDIO 01-04	J03 CRT 10 AUDIO 01-04	J04 C3 02 AUDIO 01-04	J05 C3 03 AUDIO 01-04	J06 C3 04 AUDIO 01-04
01	D01	J01 C3 05 AUDIO 01-04	J02 C3 06 AUDIO 01-04	J03 C3 07 AUDIO 01-04			
02	A01	J01 CNI 01 AUDIO 01-04	J02 CNI 02 AUDIO 05-08				

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Figure 15 - Inside The Cabinets: Concentrator Card Audio Connections (1 of 2)



Audio Concentrator Card 19D903531P1 (Viewed From External Side)

Customer: SAMPLE
Group: IMC

Date: 09/28/93
Time: 11:23:55

Concentrator Card AUDIO Connections (To/From Backplanes)

Cab.	Concen. Card	Connector Audio Channel Assignments					
02	A03	J01 EDG 01 AUDIO 01-04					
02	B01	J01 NIM 01 AUDIO 01-04	J02 NIM 01 AUDIO 05-08				
02	B02	J01 CTIS AUDIO 01-04	J02 CTIS AUDIO 05-08				
02	C01	J01 RIF 01 AUDIO 01-04	J02 RIF 01 AUDIO 05-08				
02	C02	J01 C3 08 AUDIO 01-04	J02 CRT 11 AUDIO 01-04	J03 CRT 12 AUDIO 01-04	J04 CRT 13 AUDIO 01-04	J05 CRT 14 AUDIO 01-04	J06 CRT 15 AUDIO 01-04
02	D01	J01 CRT 16 AUDIO 01-04					
02	D02	J01 CONV 01 AUDIO 01-04	J02 CONV 01 AUDIO 05-08				

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Figure 16 - Inside The Cabinets: Concentrator Card Audio Connections (2 of 2)

Customer: SAMPLE
Group: IMC

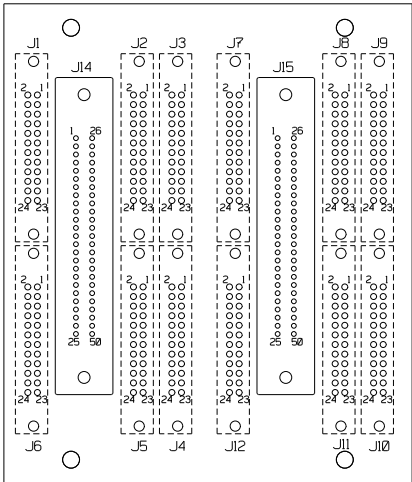
Date: 09/28/93
Time: 11:23:55

Concentrator Card RELAY Connections (To/From Backplanes)

Cab.	Concen. Card	Connector Relay Assignments									
01	A04	J01 DVI 02 RELAY 01-04	J02 DVI 02 RELAY 05-08	J03 DVI 01 RELAY 01-04	J04 DVI 01 RELAY 05-08	J05 DVI 01 RELAY 09-12	J06 DVI 01 RELAY 13-16	J07 DVI 01 RELAY 17-20	J08 DVI 01 RELAY 21-24	J09 DVI 01 RELAY 25-28	J10 DVI 01 RELAY 29-32

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Figure 17 - Inside The Cabinets: Concentrator Card Relay Connections (1 of 1)



Audio Relay Concentrator Card 19D904546P1 (Viewed From External Side)

Customer: SAMPLE
Group: IMC

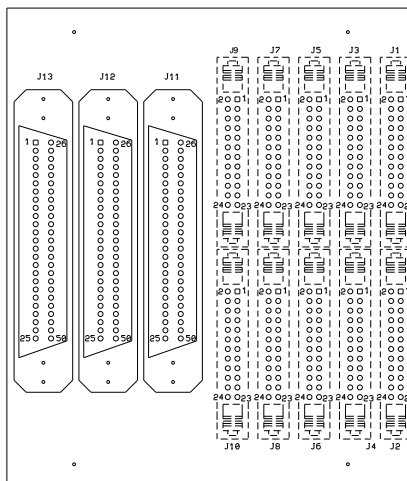
Date: 09/28/93
Time: 11:23:55

Concentrator Card CONTROL Connections (To/From Backplanes)

Cab.	Concen. Card	Connector Control Assignments									
01	A02	J01 SYS 01 CONTROL 01	J02 SYS 01 CONTROL 01	J03 SYS 02 CONTROL 02	J04 SYS 02 CONTROL 02	J05 SYS 03 CONTROL 03	J06 SYS 03 CONTROL 03				
01	B04	J01 RSM 01 CONTROL 01									
01	C03	J01 CRT 09 CONTROL 09	J02 C3 01 CONTROL 01	J03 CRT 10 CONTROL 10	J04 C3 02 CONTROL 02	J05 C3 03 CONTROL 03	J06 C3 04 CONTROL 04	J07 C3 05 CONTROL 05	J08 C3 06 CONTROL 06	J09 C3 07 CONTROL 07	
02	A02	J01 CNI 01 CONTROL 01	J02 CNI 02 CONTROL 02								
02	A04	J01 EDG 01 CONTROL 01									
02	B03	J01 CTIS CONTROL 01									
02	B04	J01 NIM 01 CONTROL 01									
02	C03	J01 C3 08 CONTROL 08	J02 CRT 11 CONTROL 11	J03 CRT 12 CONTROL 12	J04 CRT 13 CONTROL 13	J05 CRT 14 CONTROL 14	J06 CRT 15 CONTROL 15	J07 CRT 16 CONTROL 16			
02	C04	J01 RSM 02 CONTROL 02									

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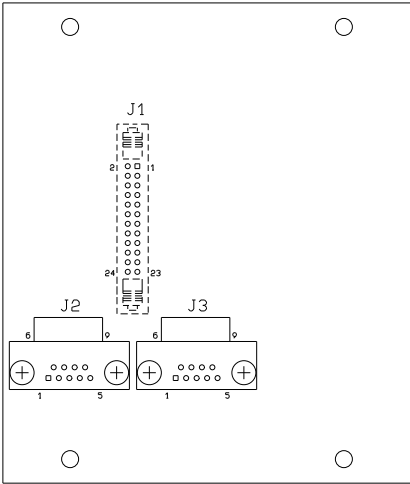
Figure 18 - Inside The Cabinets: Concentrator Card Control Data Connections (1 of 1)



Data Concentrator Card 19D903525P1 (Viewed From External Side)

		Customer: SAMPLE	Date: 09/28/93
		Group: IMC	Time: 11:23:55
Concentrator Card MOM Connections (To/From Backplanes)			
Cab.	Concen. Card	----- Connector MOM Assignments -----	
01	C04	J01 MOM CONTROL n/a	

Figure 19 - Inside The Cabinets: Concentrator Card MOM Connections (1 of 1)



MOM Concentrator Card 19D903533P1 (Viewed From External Side)

Customer: SAMPLE
Group: IMC

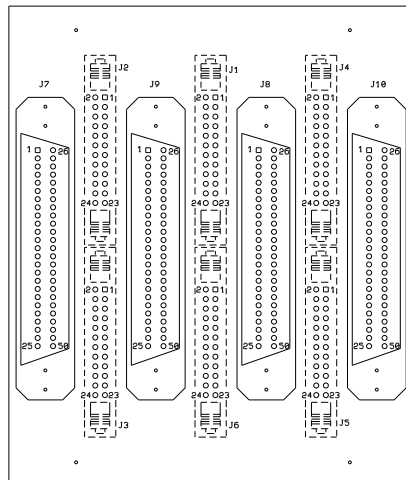
Date: 09/28/93
Time: 11:26:02

Cabinet 01 A01 Concentrator Card AUDIO Connections (To/From External Connections)

----- PINS -----	----- J07 -----	----- J08 -----	----- J09 -----	----- J10 -----
01	SYS 01 AUDIO IN LO LN 01	SYS 01 AUDIO OUT LO LN 01	SYS 01 AUDIO IN LO LN 01	SYS 01 AUDIO IN LO LN 13
26	SYS 01 AUDIO IN HI LN 01	SYS 01 AUDIO OUT HI LN 01	SYS 01 AUDIO IN HI LN 01	SYS 01 AUDIO IN HI LN 13
02	SYS 01 AUDIO IN LO LN 02	SYS 01 AUDIO OUT LO LN 02	SYS 01 AUDIO OUT LO LN 01	SYS 01 AUDIO OUT LO LN 13
27	SYS 01 AUDIO IN HI LN 02	SYS 01 AUDIO OUT HI LN 02	SYS 01 AUDIO OUT HI LN 01	SYS 01 AUDIO OUT HI LN 13
03	SYS 01 AUDIO IN LO LN 03	SYS 01 AUDIO OUT LO LN 03	SYS 01 AUDIO IN LO LN 02	SYS 01 AUDIO IN LO LN 14
28	SYS 01 AUDIO IN HI LN 03	SYS 01 AUDIO OUT HI LN 03	SYS 01 AUDIO IN HI LN 02	SYS 01 AUDIO IN HI LN 14
04	SYS 01 AUDIO IN LO LN 04	SYS 01 AUDIO OUT LO LN 04	SYS 01 AUDIO OUT LO LN 02	SYS 01 AUDIO OUT LO LN 14
29	SYS 01 AUDIO IN HI LN 04	SYS 01 AUDIO OUT HI LN 04	SYS 01 AUDIO OUT HI LN 02	SYS 01 AUDIO OUT HI LN 14
05	SYS 01 AUDIO IN LO LN 05	SYS 01 AUDIO OUT LO LN 05	SYS 01 AUDIO IN LO LN 03	SYS 01 AUDIO IN LO LN 15
30	SYS 01 AUDIO IN HI LN 05	SYS 01 AUDIO OUT HI LN 05	SYS 01 AUDIO IN HI LN 03	SYS 01 AUDIO IN HI LN 15
06	SYS 01 AUDIO IN LO LN 06	SYS 01 AUDIO OUT LO LN 06	SYS 01 AUDIO OUT LO LN 03	SYS 01 AUDIO OUT LO LN 15
31	SYS 01 AUDIO IN HI LN 06	SYS 01 AUDIO OUT HI LN 06	SYS 01 AUDIO OUT HI LN 03	SYS 01 AUDIO OUT HI LN 15
07	SYS 01 AUDIO IN LO LN 07	SYS 01 AUDIO OUT LO LN 07	SYS 01 AUDIO IN LO LN 04	SYS 01 AUDIO IN LO LN 16
32	SYS 01 AUDIO IN HI LN 07	SYS 01 AUDIO OUT HI LN 07	SYS 01 AUDIO IN HI LN 04	SYS 01 AUDIO IN HI LN 16
08	SYS 01 AUDIO IN LO LN 08	SYS 01 AUDIO OUT LO LN 08	SYS 01 AUDIO OUT LO LN 04	SYS 01 AUDIO OUT LO LN 16
33	SYS 01 AUDIO IN HI LN 08	SYS 01 AUDIO OUT HI LN 08	SYS 01 AUDIO OUT HI LN 04	SYS 01 AUDIO OUT HI LN 16
09	SYS 01 AUDIO IN LO LN 09	SYS 01 AUDIO OUT LO LN 09	SYS 01 AUDIO IN LO LN 05	SYS 01 AUDIO IN LO LN 17
34	SYS 01 AUDIO IN HI LN 09	SYS 01 AUDIO OUT HI LN 09	SYS 01 AUDIO IN HI LN 05	SYS 01 AUDIO IN HI LN 17
10	SYS 01 AUDIO IN LO LN 10	SYS 01 AUDIO OUT LO LN 10	SYS 01 AUDIO OUT LO LN 05	SYS 01 AUDIO OUT LO LN 17
35	SYS 01 AUDIO IN HI LN 10	SYS 01 AUDIO OUT HI LN 10	SYS 01 AUDIO OUT HI LN 05	SYS 01 AUDIO OUT HI LN 17
11	SYS 01 AUDIO IN LO LN 11	SYS 01 AUDIO OUT LO LN 11	SYS 01 AUDIO IN LO LN 06	SYS 01 AUDIO IN LO LN 18
36	SYS 01 AUDIO IN HI LN 11	SYS 01 AUDIO OUT HI LN 11	SYS 01 AUDIO IN HI LN 06	SYS 01 AUDIO IN HI LN 18
12	SYS 01 AUDIO IN LO LN 12	SYS 01 AUDIO OUT LO LN 12	SYS 01 AUDIO OUT LO LN 06	SYS 01 AUDIO OUT LO LN 18
37	SYS 01 AUDIO IN HI LN 12	SYS 01 AUDIO OUT HI LN 12	SYS 01 AUDIO OUT HI LN 06	SYS 01 AUDIO OUT HI LN 18
13	SYS 01 AUDIO IN LO LN 13	SYS 01 AUDIO OUT LO LN 13	SYS 01 AUDIO IN LO LN 07	SYS 01 AUDIO IN LO LN 19
38	SYS 01 AUDIO IN HI LN 13	SYS 01 AUDIO OUT HI LN 13	SYS 01 AUDIO IN HI LN 07	SYS 01 AUDIO IN HI LN 19
14	SYS 01 AUDIO IN LO LN 14	SYS 01 AUDIO OUT LO LN 14	SYS 01 AUDIO OUT LO LN 07	SYS 01 AUDIO OUT LO LN 19
39	SYS 01 AUDIO IN HI LN 14	SYS 01 AUDIO OUT HI LN 14	SYS 01 AUDIO OUT HI LN 07	SYS 01 AUDIO OUT HI LN 19
15	SYS 01 AUDIO IN LO LN 15	SYS 01 AUDIO OUT LO LN 15	SYS 01 AUDIO IN LO LN 08	SYS 01 AUDIO IN LO LN 20
40	SYS 01 AUDIO IN HI LN 15	SYS 01 AUDIO OUT HI LN 15	SYS 01 AUDIO IN HI LN 08	SYS 01 AUDIO IN HI LN 20
16	SYS 01 AUDIO IN LO LN 16	SYS 01 AUDIO OUT LO LN 16	SYS 01 AUDIO OUT LO LN 08	SYS 01 AUDIO OUT LO LN 20
41	SYS 01 AUDIO IN HI LN 16	SYS 01 AUDIO OUT HI LN 16	SYS 01 AUDIO OUT HI LN 08	SYS 01 AUDIO OUT HI LN 20
17	SYS 01 AUDIO IN LO LN 17	SYS 01 AUDIO OUT LO LN 17	SYS 01 AUDIO IN LO LN 09	SYS 02 AUDIO IN LO LN 01
42	SYS 01 AUDIO IN HI LN 17	SYS 01 AUDIO OUT HI LN 17	SYS 01 AUDIO IN HI LN 09	SYS 02 AUDIO IN HI LN 01
18	SYS 01 AUDIO IN LO LN 18	SYS 01 AUDIO OUT LO LN 18	SYS 01 AUDIO OUT LO LN 09	SYS 02 AUDIO OUT LO LN 01
43	SYS 01 AUDIO IN HI LN 18	SYS 01 AUDIO OUT HI LN 18	SYS 01 AUDIO OUT HI LN 09	SYS 02 AUDIO OUT HI LN 01
19	SYS 01 AUDIO IN LO LN 19	SYS 01 AUDIO OUT LO LN 19	SYS 01 AUDIO IN LO LN 10	SYS 02 AUDIO IN LO LN 02
44	SYS 01 AUDIO IN HI LN 19	SYS 01 AUDIO OUT HI LN 19	SYS 01 AUDIO IN HI LN 10	SYS 02 AUDIO IN HI LN 02
20	SYS 01 AUDIO IN LO LN 20	SYS 01 AUDIO OUT LO LN 20	SYS 01 AUDIO OUT LO LN 10	SYS 02 AUDIO OUT LO LN 02
45	SYS 01 AUDIO IN HI LN 20	SYS 01 AUDIO OUT HI LN 20	SYS 01 AUDIO OUT HI LN 10	SYS 02 AUDIO OUT HI LN 02
21	SYS 02 AUDIO IN LO LN 01	SYS 02 AUDIO OUT LO LN 01	SYS 01 AUDIO IN LO LN 11	SYS 02 AUDIO IN LO LN 03
46	SYS 02 AUDIO IN HI LN 01	SYS 02 AUDIO OUT HI LN 01	SYS 01 AUDIO IN HI LN 11	SYS 02 AUDIO IN HI LN 03
22	SYS 02 AUDIO IN LO LN 02	SYS 02 AUDIO OUT LO LN 02	SYS 01 AUDIO OUT LO LN 11	SYS 02 AUDIO OUT LO LN 03
47	SYS 02 AUDIO IN HI LN 02	SYS 02 AUDIO OUT HI LN 02	SYS 01 AUDIO OUT HI LN 11	SYS 02 AUDIO OUT HI LN 03
23	SYS 02 AUDIO IN LO LN 03	SYS 02 AUDIO OUT LO LN 03	SYS 01 AUDIO IN LO LN 12	SYS 02 AUDIO IN LO LN 04
48	SYS 02 AUDIO IN HI LN 03	SYS 02 AUDIO OUT HI LN 03	SYS 01 AUDIO IN HI LN 12	SYS 02 AUDIO IN HI LN 04
24	SYS 02 AUDIO IN LO LN 04	SYS 02 AUDIO OUT LO LN 04	SYS 01 AUDIO OUT LO LN 12	SYS 02 AUDIO OUT LO LN 04
49	SYS 02 AUDIO IN HI LN 04	SYS 02 AUDIO OUT HI LN 04	SYS 01 AUDIO OUT HI LN 12	SYS 02 AUDIO OUT HI LN 04
25				

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Figure 20 - Concentrator Card Champ Connector Pin-Outs: Audio Connections (1 of 16)



Audio Concentrator Card 19D903531P1 (Viewed From External Side)

Customer: SAMPLE										Date: 09/28/93									
Group: IMC										Time: 11:26:02									
Cabinet 01 A03 Concentrator Card AUDIO Connections (To/From External Connections)																			
PINS		J07				J08				J09				J10					
01		SYS 02	AUDIO IN	LO LN 05		SYS 02	AUDIO OUT	LO LN 05		SYS 02	AUDIO IN	LO LN 05		SYS 02	AUDIO IN	LO LN 17			
	26	SYS 02	AUDIO IN	HI LN 05		SYS 02	AUDIO OUT	HI LN 05		SYS 02	AUDIO IN	HI LN 05		SYS 02	AUDIO IN	HI LN 17			
02		SYS 02	AUDIO IN	LO LN 06		SYS 02	AUDIO OUT	LO LN 06		SYS 02	AUDIO OUT	LO LN 05		SYS 02	AUDIO OUT	LO LN 17			
	27	SYS 02	AUDIO IN	HI LN 06		SYS 02	AUDIO OUT	HI LN 06		SYS 02	AUDIO OUT	HI LN 05		SYS 02	AUDIO OUT	HI LN 17			
03		SYS 02	AUDIO IN	LO LN 07		SYS 02	AUDIO OUT	LO LN 07		SYS 02	AUDIO IN	LO LN 06		SYS 02	AUDIO IN	LO LN 18			
	28	SYS 02	AUDIO IN	HI LN 07		SYS 02	AUDIO OUT	HI LN 07		SYS 02	AUDIO IN	HI LN 06		SYS 02	AUDIO IN	HI LN 18			
04		SYS 02	AUDIO IN	LO LN 08		SYS 02	AUDIO OUT	LO LN 08		SYS 02	AUDIO OUT	LO LN 06		SYS 02	AUDIO OUT	LO LN 18			
	29	SYS 02	AUDIO IN	HI LN 08		SYS 02	AUDIO OUT	HI LN 08		SYS 02	AUDIO OUT	HI LN 06		SYS 02	AUDIO OUT	HI LN 18			
05		SYS 02	AUDIO IN	LO LN 09		SYS 02	AUDIO OUT	LO LN 09		SYS 02	AUDIO IN	LO LN 07		SYS 02	AUDIO IN	LO LN 19			
	30	SYS 02	AUDIO IN	HI LN 09		SYS 02	AUDIO OUT	HI LN 09		SYS 02	AUDIO IN	HI LN 07		SYS 02	AUDIO IN	HI LN 19			
06		SYS 02	AUDIO IN	LO LN 10		SYS 02	AUDIO OUT	LO LN 10		SYS 02	AUDIO OUT	LO LN 07		SYS 02	AUDIO OUT	LO LN 19			
	31	SYS 02	AUDIO IN	HI LN 10		SYS 02	AUDIO OUT	HI LN 10		SYS 02	AUDIO OUT	HI LN 07		SYS 02	AUDIO OUT	HI LN 19			
07		SYS 02	AUDIO IN	LO LN 11		SYS 02	AUDIO OUT	LO LN 11		SYS 02	AUDIO IN	LO LN 08		SYS 02	AUDIO IN	LO LN 20			
	32	SYS 02	AUDIO IN	HI LN 11		SYS 02	AUDIO OUT	HI LN 11		SYS 02	AUDIO IN	HI LN 08		SYS 02	AUDIO IN	HI LN 20			
08		SYS 02	AUDIO IN	LO LN 12		SYS 02	AUDIO OUT	LO LN 12		SYS 02	AUDIO OUT	LO LN 08		SYS 02	AUDIO OUT	LO LN 20			
	33	SYS 02	AUDIO IN	HI LN 12		SYS 02	AUDIO OUT	HI LN 12		SYS 02	AUDIO OUT	HI LN 08		SYS 02	AUDIO OUT	HI LN 20			
09		SYS 02	AUDIO IN	LO LN 13		SYS 02	AUDIO OUT	LO LN 13		SYS 02	AUDIO IN	LO LN 09		SYS 03	AUDIO IN	LO LN 01			
	34	SYS 02	AUDIO IN	HI LN 13		SYS 02	AUDIO OUT	HI LN 13		SYS 02	AUDIO IN	HI LN 09		SYS 03	AUDIO IN	HI LN 01			
10		SYS 02	AUDIO IN	LO LN 14		SYS 02	AUDIO OUT	LO LN 14		SYS 02	AUDIO OUT	LO LN 09		SYS 03	AUDIO OUT	LO LN 01			
	35	SYS 02	AUDIO IN	HI LN 14		SYS 02	AUDIO OUT	HI LN 14		SYS 02	AUDIO OUT	HI LN 09		SYS 03	AUDIO OUT	HI LN 01			
11		SYS 02	AUDIO IN	LO LN 15		SYS 02	AUDIO OUT	LO LN 15		SYS 02	AUDIO IN	LO LN 10		SYS 03	AUDIO IN	LO LN 02			
	36	SYS 02	AUDIO IN	HI LN 15		SYS 02	AUDIO OUT	HI LN 15		SYS 02	AUDIO IN	HI LN 10		SYS 03	AUDIO IN	HI LN 02			
12		SYS 02	AUDIO IN	LO LN 16		SYS 02	AUDIO OUT	LO LN 16		SYS 02	AUDIO OUT	LO LN 10		SYS 03	AUDIO OUT	LO LN 02			
	37	SYS 02	AUDIO IN	HI LN 16		SYS 02	AUDIO OUT	HI LN 16		SYS 02	AUDIO OUT	HI LN 10		SYS 03	AUDIO OUT	HI LN 02			
13		SYS 02	AUDIO IN	LO LN 17		SYS 02	AUDIO OUT	LO LN 17		SYS 02	AUDIO IN	LO LN 11		SYS 03	AUDIO IN	LO LN 03			
	38	SYS 02	AUDIO IN	HI LN 17		SYS 02	AUDIO OUT	HI LN 17		SYS 02	AUDIO IN	HI LN 11		SYS 03	AUDIO IN	HI LN 03			
14		SYS 02	AUDIO IN	LO LN 18		SYS 02	AUDIO OUT	LO LN 18		SYS 02	AUDIO OUT	LO LN 11		SYS 03	AUDIO OUT	LO LN 03			
	39	SYS 02	AUDIO IN	HI LN 18		SYS 02	AUDIO OUT	HI LN 18		SYS 02	AUDIO OUT	HI LN 11		SYS 03	AUDIO OUT	HI LN 03			
15		SYS 02	AUDIO IN	LO LN 19		SYS 02	AUDIO OUT	LO LN 19		SYS 02	AUDIO IN	LO LN 12		SYS 03	AUDIO IN	LO LN 04			
	40	SYS 02	AUDIO IN	HI LN 19		SYS 02	AUDIO OUT	HI LN 19		SYS 02	AUDIO IN	HI LN 12		SYS 03	AUDIO IN	HI LN 04			
16		SYS 02	AUDIO IN	LO LN 20		SYS 02	AUDIO OUT	LO LN 20		SYS 02	AUDIO OUT	LO LN 12		SYS 03	AUDIO OUT	LO LN 04			
	41	SYS 02	AUDIO IN	HI LN 20		SYS 02	AUDIO OUT	HI LN 20		SYS 02	AUDIO OUT	HI LN 12		SYS 03	AUDIO OUT	HI LN 04			
17		SYS 03	AUDIO IN	LO LN 01		SYS 03	AUDIO OUT	LO LN 01		SYS 02	AUDIO IN	LO LN 13		SYS 03	AUDIO IN	LO LN 05			
	42	SYS 03	AUDIO IN	HI LN 01		SYS 03	AUDIO OUT	HI LN 01		SYS 02	AUDIO IN	HI LN 13		SYS 03	AUDIO IN	HI LN 05			
18		SYS 03	AUDIO IN	LO LN 02		SYS 03	AUDIO OUT	LO LN 02		SYS 02	AUDIO OUT	LO LN 13		SYS 03	AUDIO OUT	LO LN 05			
	43	SYS 03	AUDIO IN	HI LN 02		SYS 03	AUDIO OUT	HI LN 02		SYS 02	AUDIO OUT	HI LN 13		SYS 03	AUDIO OUT	HI LN 05			
19		SYS 03	AUDIO IN	LO LN 03		SYS 03	AUDIO OUT	LO LN 03		SYS 02	AUDIO IN	LO LN 14		SYS 03	AUDIO IN	LO LN 06			
	44	SYS 03	AUDIO IN	HI LN 03		SYS 03	AUDIO OUT	HI LN 03		SYS 02	AUDIO IN	HI LN 14		SYS 03	AUDIO IN	HI LN 06			
20		SYS 03	AUDIO IN	LO LN 04		SYS 03	AUDIO OUT	LO LN 04		SYS 02	AUDIO OUT	LO LN 14		SYS 03	AUDIO OUT	LO LN 06			
	45	SYS 03	AUDIO IN	HI LN 04		SYS 03	AUDIO OUT	HI LN 04		SYS 02	AUDIO OUT	HI LN 14		SYS 03	AUDIO OUT	HI LN 06			
21		SYS 03	AUDIO IN	LO LN 05		SYS 03	AUDIO OUT	LO LN 05		SYS 02	AUDIO IN	LO LN 15		SYS 03	AUDIO IN	LO LN 07			
	46	SYS 03	AUDIO IN	HI LN 05		SYS 03	AUDIO OUT	HI LN 05		SYS 02	AUDIO IN	HI LN 15		SYS 03	AUDIO IN	HI LN 07			
22		SYS 03	AUDIO IN	LO LN 06		SYS 03	AUDIO OUT	LO LN 06		SYS 02	AUDIO OUT	LO LN 15		SYS 03	AUDIO OUT	LO LN 07			
	47	SYS 03	AUDIO IN	HI LN 06		SYS 03	AUDIO OUT	HI LN 06		SYS 02	AUDIO OUT	HI LN 15		SYS 03	AUDIO OUT	HI LN 07			
23		SYS 03	AUDIO IN	LO LN 07		SYS 03	AUDIO OUT	LO LN 07		SYS 02	AUDIO IN	LO LN 16		SYS 03	AUDIO IN	LO LN 08			
	48	SYS 03	AUDIO IN	HI LN 07		SYS 03	AUDIO OUT	HI LN 07		SYS 02	AUDIO IN	HI LN 16		SYS 03	AUDIO IN	HI LN 08			
24		SYS 03	AUDIO IN	LO LN 08		SYS 03	AUDIO OUT	LO LN 08		SYS 02	AUDIO OUT	LO LN 16		SYS 03	AUDIO OUT	LO LN 08			
	49	SYS 03	AUDIO IN	HI LN 08		SYS 03	AUDIO OUT	HI LN 08		SYS 02	AUDIO OUT	HI LN 16		SYS 03	AUDIO OUT	HI LN 08			
25																			
	50																		
PAGE: 2																			

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Figure 21 - Concentrator Card Champ Connector Pin-Outs: Audio Connections (2 of 16)

Customer: SAMPLE										Date: 09/28/93			
Group: IMC										Time: 11:26:02			
Cabinet 01 B01 Concentrator Card AUDIO Connections (To/From External Connections)													
---- PINS ----		-----J07-----				-----J08-----				-----J09-----		-----J10-----	
01		SYS 03	AUDIO IN	LO LN 09	SYS 03	AUDIO OUT	LO LN 09	SYS 03	AUDIO IN	LO LN 09			
	26	SYS 03	AUDIO IN	HI LN 09	SYS 03	AUDIO OUT	HI LN 09	SYS 03	AUDIO IN	HI LN 09			
02		SYS 03	AUDIO IN	LO LN 10	SYS 03	AUDIO OUT	LO LN 10	SYS 03	AUDIO OUT	LO LN 09			
	27	SYS 03	AUDIO IN	HI LN 10	SYS 03	AUDIO OUT	HI LN 10	SYS 03	AUDIO OUT	HI LN 09			
03		SYS 03	AUDIO IN	LO LN 11	SYS 03	AUDIO OUT	LO LN 11	SYS 03	AUDIO IN	LO LN 10			
	28	SYS 03	AUDIO IN	HI LN 11	SYS 03	AUDIO OUT	HI LN 11	SYS 03	AUDIO IN	HI LN 10			
04		SYS 03	AUDIO IN	LO LN 12	SYS 03	AUDIO OUT	LO LN 12	SYS 03	AUDIO OUT	LO LN 10			
	29	SYS 03	AUDIO IN	HI LN 12	SYS 03	AUDIO OUT	HI LN 12	SYS 03	AUDIO OUT	HI LN 10			
05		SYS 03	AUDIO IN	LO LN 13	SYS 03	AUDIO OUT	LO LN 13	SYS 03	AUDIO IN	LO LN 11			
	30	SYS 03	AUDIO IN	HI LN 13	SYS 03	AUDIO OUT	HI LN 13	SYS 03	AUDIO IN	HI LN 11			
06		SYS 03	AUDIO IN	LO LN 14	SYS 03	AUDIO OUT	LO LN 14	SYS 03	AUDIO OUT	LO LN 11			
	31	SYS 03	AUDIO IN	HI LN 14	SYS 03	AUDIO OUT	HI LN 14	SYS 03	AUDIO OUT	HI LN 11			
07		SYS 03	AUDIO IN	LO LN 15	SYS 03	AUDIO OUT	LO LN 15	SYS 03	AUDIO IN	LO LN 12			
	32	SYS 03	AUDIO IN	HI LN 15	SYS 03	AUDIO OUT	HI LN 15	SYS 03	AUDIO IN	HI LN 12			
08		SYS 03	AUDIO IN	LO LN 16	SYS 03	AUDIO OUT	LO LN 16	SYS 03	AUDIO OUT	LO LN 12			
	33	SYS 03	AUDIO IN	HI LN 16	SYS 03	AUDIO OUT	HI LN 16	SYS 03	AUDIO OUT	HI LN 12			
09		SYS 03	AUDIO IN	LO LN 17	SYS 03	AUDIO OUT	LO LN 17	SYS 03	AUDIO IN	LO LN 13			
	34	SYS 03	AUDIO IN	HI LN 17	SYS 03	AUDIO OUT	HI LN 17	SYS 03	AUDIO IN	HI LN 13			
10		SYS 03	AUDIO IN	LO LN 18	SYS 03	AUDIO OUT	LO LN 18	SYS 03	AUDIO OUT	LO LN 13			
	35	SYS 03	AUDIO IN	HI LN 18	SYS 03	AUDIO OUT	HI LN 18	SYS 03	AUDIO OUT	HI LN 13			
11		SYS 03	AUDIO IN	LO LN 19	SYS 03	AUDIO OUT	LO LN 19	SYS 03	AUDIO IN	LO LN 14			
	36	SYS 03	AUDIO IN	HI LN 19	SYS 03	AUDIO OUT	HI LN 19	SYS 03	AUDIO IN	HI LN 14			
12		SYS 03	AUDIO IN	LO LN 20	SYS 03	AUDIO OUT	LO LN 20	SYS 03	AUDIO OUT	LO LN 14			
	37	SYS 03	AUDIO IN	HI LN 20	SYS 03	AUDIO OUT	HI LN 20	SYS 03	AUDIO OUT	HI LN 14			
13								SYS 03	AUDIO IN	LO LN 15			
	38							SYS 03	AUDIO IN	HI LN 15			
14								SYS 03	AUDIO OUT	LO LN 15			
	39							SYS 03	AUDIO OUT	HI LN 15			
15								SYS 03	AUDIO IN	LO LN 16			
	40							SYS 03	AUDIO IN	HI LN 16			
16								SYS 03	AUDIO OUT	LO LN 16			
	41							SYS 03	AUDIO OUT	HI LN 16			
17								SYS 03	AUDIO IN	LO LN 17			
	42							SYS 03	AUDIO IN	HI LN 17			
18								SYS 03	AUDIO OUT	LO LN 17			
	43							SYS 03	AUDIO OUT	HI LN 17			
19								SYS 03	AUDIO IN	LO LN 18			
	44							SYS 03	AUDIO IN	HI LN 18			
20								SYS 03	AUDIO OUT	LO LN 18			
	45							SYS 03	AUDIO OUT	HI LN 18			
21								SYS 03	AUDIO IN	LO LN 19			
	46							SYS 03	AUDIO IN	HI LN 19			
22								SYS 03	AUDIO OUT	LO LN 19			
	47							SYS 03	AUDIO OUT	HI LN 19			
23								SYS 03	AUDIO IN	LO LN 20			
	48							SYS 03	AUDIO IN	HI LN 20			
24								SYS 03	AUDIO OUT	LO LN 20			
	49							SYS 03	AUDIO OUT	HI LN 20			
25													
	50												

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Figure 22 - Concentrator Card Champ Connector Pin-Outs: Audio Connections (3 of 16)

Customer: SAMPLE						Date: 09/28/93											
Group: IMC						Time: 11:26:02											
Cabinet 01 B02 Concentrator Card AUDIO Connections (To/From External Connections)																	
PINS		-----J07-----				-----J08-----				-----J09-----				-----J10-----			
01						DVI 02 AUDIO IN LO LN 01				DVI 01 AUDIO IN LO LN 01							
	26					DVI 02 AUDIO IN HI LN 01				DVI 01 AUDIO IN HI LN 01							
02						DVI 02 AUDIO OUT LO LN 01				DVI 01 AUDIO OUT LO LN 01							
	27					DVI 02 AUDIO OUT HI LN 01				DVI 01 AUDIO OUT HI LN 01							
03						DVI 02 AUDIO IN LO LN 02				DVI 01 AUDIO IN LO LN 02							
	28					DVI 02 AUDIO IN HI LN 02				DVI 01 AUDIO IN HI LN 02							
04						DVI 02 AUDIO OUT LO LN 02				DVI 01 AUDIO OUT LO LN 02							
	29					DVI 02 AUDIO OUT HI LN 02				DVI 01 AUDIO OUT HI LN 02							
05						DVI 02 AUDIO IN LO LN 03				DVI 01 AUDIO IN LO LN 03							
	30					DVI 02 AUDIO IN HI LN 03				DVI 01 AUDIO IN HI LN 03							
06						DVI 02 AUDIO OUT LO LN 03				DVI 01 AUDIO OUT LO LN 03							
	31					DVI 02 AUDIO OUT HI LN 03				DVI 01 AUDIO OUT HI LN 03							
07						DVI 02 AUDIO IN LO LN 04				DVI 01 AUDIO IN LO LN 04							
	32					DVI 02 AUDIO IN HI LN 04				DVI 01 AUDIO IN HI LN 04							
08						DVI 02 AUDIO OUT LO LN 04				DVI 01 AUDIO OUT LO LN 04							
	33					DVI 02 AUDIO OUT HI LN 04				DVI 01 AUDIO OUT HI LN 04							
09						DVI 02 AUDIO IN LO LN 05				DVI 01 AUDIO IN LO LN 05							
	34					DVI 02 AUDIO IN HI LN 05				DVI 01 AUDIO IN HI LN 05							
10						DVI 02 AUDIO OUT LO LN 05				DVI 01 AUDIO OUT LO LN 05							
	35					DVI 02 AUDIO OUT HI LN 05				DVI 01 AUDIO OUT HI LN 05							
11						DVI 02 AUDIO IN LO LN 06				DVI 01 AUDIO IN LO LN 06							
	36					DVI 02 AUDIO IN HI LN 06				DVI 01 AUDIO IN HI LN 06							
12						DVI 02 AUDIO OUT LO LN 06				DVI 01 AUDIO OUT LO LN 06							
	37					DVI 02 AUDIO OUT HI LN 06				DVI 01 AUDIO OUT HI LN 06							
13						DVI 02 AUDIO IN LO LN 07				DVI 01 AUDIO IN LO LN 07							
	38					DVI 02 AUDIO IN HI LN 07				DVI 01 AUDIO IN HI LN 07							
14						DVI 02 AUDIO OUT LO LN 07				DVI 01 AUDIO OUT LO LN 07							
	39					DVI 02 AUDIO OUT HI LN 07				DVI 01 AUDIO OUT HI LN 07							
15						DVI 02 AUDIO IN LO LN 08				DVI 01 AUDIO IN LO LN 08							
	40					DVI 02 AUDIO IN HI LN 08				DVI 01 AUDIO IN HI LN 08							
16						DVI 02 AUDIO OUT LO LN 08				DVI 01 AUDIO OUT LO LN 08							
	41					DVI 02 AUDIO OUT HI LN 08				DVI 01 AUDIO OUT HI LN 08							
17																	
	42																
18																	
	43																
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Figure 23 - Concentrator Card Champ Connector Pin-Outs: Audio Connections (4 of 16)

Customer: SAMPLE						Date: 09/28/93											
Group: IMC						Time: 11:26:03											
Cabinet 01 B03 Concentrator Card AUDIO Connections (To/From External Connections)																	
----- PINS -----		-----J07-----				-----J08-----				-----J09-----				-----J10-----			
01										DVI 01	AUDIO IN	LO LN 09	DVI 01	AUDIO IN	LO LN 17		
	26									DVI 01	AUDIO IN	HI LN 09	DVI 01	AUDIO IN	HI LN 17		
02										DVI 01	AUDIO OUT	LO LN 09	DVI 01	AUDIO OUT	LO LN 17		
	27									DVI 01	AUDIO OUT	HI LN 09	DVI 01	AUDIO OUT	HI LN 17		
03										DVI 01	AUDIO IN	LO LN 10	DVI 01	AUDIO IN	LO LN 18		
	28									DVI 01	AUDIO IN	HI LN 10	DVI 01	AUDIO IN	HI LN 18		
04										DVI 01	AUDIO OUT	LO LN 10	DVI 01	AUDIO OUT	LO LN 18		
	29									DVI 01	AUDIO OUT	HI LN 10	DVI 01	AUDIO OUT	HI LN 18		
05										DVI 01	AUDIO IN	LO LN 11	DVI 01	AUDIO IN	LO LN 19		
	30									DVI 01	AUDIO IN	HI LN 11	DVI 01	AUDIO IN	HI LN 19		
06										DVI 01	AUDIO OUT	LO LN 11	DVI 01	AUDIO OUT	LO LN 19		
	31									DVI 01	AUDIO OUT	HI LN 11	DVI 01	AUDIO OUT	HI LN 19		
07										DVI 01	AUDIO IN	LO LN 12	DVI 01	AUDIO IN	LO LN 20		
	32									DVI 01	AUDIO IN	HI LN 12	DVI 01	AUDIO IN	HI LN 20		
08										DVI 01	AUDIO OUT	LO LN 12	DVI 01	AUDIO OUT	LO LN 20		
	33									DVI 01	AUDIO OUT	HI LN 12	DVI 01	AUDIO OUT	HI LN 20		
09										DVI 01	AUDIO IN	LO LN 13	DVI 01	AUDIO IN	LO LN 21		
	34									DVI 01	AUDIO IN	HI LN 13	DVI 01	AUDIO IN	HI LN 21		
10										DVI 01	AUDIO OUT	LO LN 13	DVI 01	AUDIO OUT	LO LN 21		
	35									DVI 01	AUDIO OUT	HI LN 13	DVI 01	AUDIO OUT	HI LN 21		
11										DVI 01	AUDIO IN	LO LN 14	DVI 01	AUDIO IN	LO LN 22		
	36									DVI 01	AUDIO IN	HI LN 14	DVI 01	AUDIO IN	HI LN 22		
12										DVI 01	AUDIO OUT	LO LN 14	DVI 01	AUDIO OUT	LO LN 22		
	37									DVI 01	AUDIO OUT	HI LN 14	DVI 01	AUDIO OUT	HI LN 22		
13										DVI 01	AUDIO IN	LO LN 15	DVI 01	AUDIO IN	LO LN 23		
	38									DVI 01	AUDIO IN	HI LN 15	DVI 01	AUDIO IN	HI LN 23		
14										DVI 01	AUDIO OUT	LO LN 15	DVI 01	AUDIO OUT	LO LN 23		
	39									DVI 01	AUDIO OUT	HI LN 15	DVI 01	AUDIO OUT	HI LN 23		
15										DVI 01	AUDIO IN	LO LN 16	DVI 01	AUDIO IN	LO LN 24		
	40									DVI 01	AUDIO IN	HI LN 16	DVI 01	AUDIO IN	HI LN 24		
16										DVI 01	AUDIO OUT	LO LN 16	DVI 01	AUDIO OUT	LO LN 24		
	41									DVI 01	AUDIO OUT	HI LN 16	DVI 01	AUDIO OUT	HI LN 24		
17																	
	42																
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Figure 24 - Concentrator Card Champ Connector Pin-Outs: Audio Connections (5 of 16)

Customer: SAMPLE				Date: 09/28/93	
Group: IMC				Time: 11:26:03	
Cabinet 01 C01 Concentrator Card AUDIO Connections (To/From External Connections)					
----- PINS -----		-----J07-----		-----J08-----	
01				DVI 01	AUDIO IN LO LN 25
	26			DVI 01	AUDIO IN HI LN 25
02				DVI 01	AUDIO OUT LO LN 25
	27			DVI 01	AUDIO OUT HI LN 25
03				DVI 01	AUDIO IN LO LN 26
	28			DVI 01	AUDIO IN HI LN 26
04				DVI 01	AUDIO OUT LO LN 26
	29			DVI 01	AUDIO OUT HI LN 26
05				DVI 01	AUDIO IN LO LN 27
	30			DVI 01	AUDIO IN HI LN 27
06				DVI 01	AUDIO OUT LO LN 27
	31			DVI 01	AUDIO OUT HI LN 27
07				DVI 01	AUDIO IN LO LN 28
	32			DVI 01	AUDIO IN HI LN 28
08				DVI 01	AUDIO OUT LO LN 28
	33			DVI 01	AUDIO OUT HI LN 28
09				DVI 01	AUDIO IN LO LN 29
	34			DVI 01	AUDIO IN HI LN 29
10				DVI 01	AUDIO OUT LO LN 29
	35			DVI 01	AUDIO OUT HI LN 29
11				DVI 01	AUDIO IN LO LN 30
	36			DVI 01	AUDIO IN HI LN 30
12				DVI 01	AUDIO OUT LO LN 30
	37			DVI 01	AUDIO OUT HI LN 30
13				DVI 01	AUDIO IN LO LN 31
	38			DVI 01	AUDIO IN HI LN 31
14				DVI 01	AUDIO OUT LO LN 31
	39			DVI 01	AUDIO OUT HI LN 31
15				DVI 01	AUDIO IN LO LN 32
	40			DVI 01	AUDIO IN HI LN 32
16				DVI 01	AUDIO OUT LO LN 32
	41			DVI 01	AUDIO OUT HI LN 32
17					
	42				
18					
	43				
19					
	44				
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Figure 25 - Concentrator Card Champ Connector Pin-Outs: Audio Connections (6 of 16)

Customer: SAMPLE				Date: 09/28/93					
Group: IMC				Time: 11:26:03					
Cabinet 01 C02 Concentrator Card AUDIO Connections (To/From External Connections)									
PINS		J07		J08		J09		J10	
01	26					CRT 09	AUDIO IN LO LN 01	C3 02	AUDIO IN LO LN 01
						CRT 09	AUDIO IN HI LN 01	C3 02	AUDIO IN HI LN 01
02	27					CRT 09	AUDIO OUT LO LN 01	C3 02	AUDIO OUT LO LN 01
						CRT 09	AUDIO OUT HI LN 01	C3 02	AUDIO OUT HI LN 01
03	28					CRT 09	AUDIO IN LO LN 02	C3 02	AUDIO IN LO LN 02
						CRT 09	AUDIO IN HI LN 02	C3 02	AUDIO IN HI LN 02
04	29					CRT 09	AUDIO OUT LO LN 02	C3 02	AUDIO OUT LO LN 02
						CRT 09	AUDIO OUT HI LN 02	C3 02	AUDIO OUT HI LN 02
05	30					CRT 09	AUDIO IN LO LN 03	C3 02	AUDIO IN LO LN 03
						CRT 09	AUDIO IN HI LN 03	C3 02	AUDIO IN HI LN 03
06	31					CRT 09	AUDIO OUT LO LN 03	C3 02	AUDIO OUT LO LN 03
						CRT 09	AUDIO OUT HI LN 03	C3 02	AUDIO OUT HI LN 03
07	32					CRT 09	AUDIO IN LO LN 04	C3 02	AUDIO IN LO LN 04
						CRT 09	AUDIO IN HI LN 04	C3 02	AUDIO IN HI LN 04
08	33					CRT 09	AUDIO OUT LO LN 04	C3 02	AUDIO OUT LO LN 04
						CRT 09	AUDIO OUT HI LN 04	C3 02	AUDIO OUT HI LN 04
09	34					C3 01	AUDIO IN LO LN 01	C3 03	AUDIO IN LO LN 01
						C3 01	AUDIO IN HI LN 01	C3 03	AUDIO IN HI LN 01
10	35					C3 01	AUDIO OUT LO LN 01	C3 03	AUDIO OUT LO LN 01
						C3 01	AUDIO OUT HI LN 01	C3 03	AUDIO OUT HI LN 01
11	36					C3 01	AUDIO IN LO LN 02	C3 03	AUDIO IN LO LN 02
						C3 01	AUDIO IN HI LN 02	C3 03	AUDIO IN HI LN 02
12	37					C3 01	AUDIO OUT LO LN 02	C3 03	AUDIO OUT LO LN 02
						C3 01	AUDIO OUT HI LN 02	C3 03	AUDIO OUT HI LN 02
13	38					C3 01	AUDIO IN LO LN 03	C3 03	AUDIO IN LO LN 03
						C3 01	AUDIO IN HI LN 03	C3 03	AUDIO IN HI LN 03
14	39					C3 01	AUDIO OUT LO LN 03	C3 03	AUDIO OUT LO LN 03
						C3 01	AUDIO OUT HI LN 03	C3 03	AUDIO OUT HI LN 03
15	40					C3 01	AUDIO IN LO LN 04	C3 03	AUDIO IN LO LN 04
						C3 01	AUDIO IN HI LN 04	C3 03	AUDIO IN HI LN 04
16	41					C3 01	AUDIO OUT LO LN 04	C3 03	AUDIO OUT LO LN 04
						C3 01	AUDIO OUT HI LN 04	C3 03	AUDIO OUT HI LN 04
17	42					CRT 10	AUDIO IN LO LN 01	C3 04	AUDIO IN LO LN 01
						CRT 10	AUDIO IN HI LN 01	C3 04	AUDIO IN HI LN 01
18	43					CRT 10	AUDIO OUT LO LN 01	C3 04	AUDIO OUT LO LN 01
						CRT 10	AUDIO OUT HI LN 01	C3 04	AUDIO OUT HI LN 01
19	44					CRT 10	AUDIO IN LO LN 02	C3 04	AUDIO IN LO LN 02
						CRT 10	AUDIO IN HI LN 02	C3 04	AUDIO IN HI LN 02
20	45					CRT 10	AUDIO OUT LO LN 02	C3 04	AUDIO OUT LO LN 02
						CRT 10	AUDIO OUT HI LN 02	C3 04	AUDIO OUT HI LN 02
21	46					CRT 10	AUDIO IN LO LN 03	C3 04	AUDIO IN LO LN 03
						CRT 10	AUDIO IN HI LN 03	C3 04	AUDIO IN HI LN 03
22	47					CRT 10	AUDIO OUT LO LN 03	C3 04	AUDIO OUT LO LN 03
						CRT 10	AUDIO OUT HI LN 03	C3 04	AUDIO OUT HI LN 03
23	48					CRT 10	AUDIO IN LO LN 04	C3 04	AUDIO IN LO LN 04
						CRT 10	AUDIO IN HI LN 04	C3 04	AUDIO IN HI LN 04
24	49					CRT 10	AUDIO OUT LO LN 04	C3 04	AUDIO OUT LO LN 04
						CRT 10	AUDIO OUT HI LN 04	C3 04	AUDIO OUT HI LN 04
25	50								

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Figure 26 - Concentrator Card Champ Connector Pin-Outs: Audio Connections (7 of 16)

Customer: SAMPLE				Date: 09/28/93					
Group: IMC				Time: 11:26:03					
Cabinet 01 D01 Concentrator Card AUDIO Connections (To/From External Connections)									
PINS		J07		J08		J09		J10	
01						C3 05	AUDIO IN	LO LN 01	
	26					C3 05	AUDIO IN	HI LN 01	
02						C3 05	AUDIO OUT	LO LN 01	
	27					C3 05	AUDIO OUT	HI LN 01	
03						C3 05	AUDIO IN	LO LN 02	
	28					C3 05	AUDIO IN	HI LN 02	
04						C3 05	AUDIO OUT	LO LN 02	
	29					C3 05	AUDIO OUT	HI LN 02	
05						C3 05	AUDIO IN	LO LN 03	
	30					C3 05	AUDIO IN	HI LN 03	
06						C3 05	AUDIO OUT	LO LN 03	
	31					C3 05	AUDIO OUT	HI LN 03	
07						C3 05	AUDIO IN	LO LN 04	
	32					C3 05	AUDIO IN	HI LN 04	
08						C3 05	AUDIO OUT	LO LN 04	
	33					C3 05	AUDIO OUT	HI LN 04	
09						C3 06	AUDIO IN	LO LN 01	
	34					C3 06	AUDIO IN	HI LN 01	
10						C3 06	AUDIO OUT	LO LN 01	
	35					C3 06	AUDIO OUT	HI LN 01	
11						C3 06	AUDIO IN	LO LN 02	
	36					C3 06	AUDIO IN	HI LN 02	
12						C3 06	AUDIO OUT	LO LN 02	
	37					C3 06	AUDIO OUT	HI LN 02	
13						C3 06	AUDIO IN	LO LN 03	
	38					C3 06	AUDIO IN	HI LN 03	
14						C3 06	AUDIO OUT	LO LN 03	
	39					C3 06	AUDIO OUT	HI LN 03	
15						C3 06	AUDIO IN	LO LN 04	
	40					C3 06	AUDIO IN	HI LN 04	
16						C3 06	AUDIO OUT	LO LN 04	
	41					C3 06	AUDIO OUT	HI LN 04	
17						C3 07	AUDIO IN	LO LN 01	
	42					C3 07	AUDIO IN	HI LN 01	
18						C3 07	AUDIO OUT	LO LN 01	
	43					C3 07	AUDIO OUT	HI LN 01	
19						C3 07	AUDIO IN	LO LN 02	
	44					C3 07	AUDIO IN	HI LN 02	
20						C3 07	AUDIO OUT	LO LN 02	
	45					C3 07	AUDIO OUT	HI LN 02	
21						C3 07	AUDIO IN	LO LN 03	
	46					C3 07	AUDIO IN	HI LN 03	
22						C3 07	AUDIO OUT	LO LN 03	
	47					C3 07	AUDIO OUT	HI LN 03	
23						C3 07	AUDIO IN	LO LN 04	
	48					C3 07	AUDIO IN	HI LN 04	
24						C3 07	AUDIO OUT	LO LN 04	
	49					C3 07	AUDIO OUT	HI LN 04	
25									
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Figure 27 - Concentrator Card Champ Connector Pin-Outs: Audio Connections (8 of 16)

Customer: SAMPLE
Group: IMC

Date: 09/28/93
Time: 11:26:03

Cabinet 02 A01 Concentrator Card AUDIO Connections (To/From External Connections)

----- PINS -----	----- J07 -----	----- J08 -----	----- J09 -----	----- J10 -----
01	CNI 01 AUDIO IN LO LN 01	CNI 01 AUDIO OUT LO LN 01	CNI 01 AUDIO IN LO LN 01	
26	CNI 01 AUDIO IN HI LN 01	CNI 01 AUDIO OUT HI LN 01	CNI 01 AUDIO IN HI LN 01	
02	CNI 01 AUDIO IN LO LN 02	CNI 01 AUDIO OUT LO LN 02	CNI 01 AUDIO OUT LO LN 01	
27	CNI 01 AUDIO IN HI LN 02	CNI 01 AUDIO OUT HI LN 02	CNI 01 AUDIO OUT HI LN 01	
03	CNI 01 AUDIO IN LO LN 03	CNI 01 AUDIO OUT LO LN 03	CNI 01 AUDIO IN LO LN 02	
28	CNI 01 AUDIO IN HI LN 03	CNI 01 AUDIO OUT HI LN 03	CNI 01 AUDIO IN HI LN 02	
04	CNI 01 AUDIO IN LO LN 04	CNI 01 AUDIO OUT LO LN 04	CNI 01 AUDIO OUT LO LN 02	
29	CNI 01 AUDIO IN HI LN 04	CNI 01 AUDIO OUT HI LN 04	CNI 01 AUDIO OUT HI LN 02	
05	CNI 02 AUDIO IN LO LN 05	CNI 02 AUDIO OUT LO LN 05	CNI 01 AUDIO IN LO LN 03	
30	CNI 02 AUDIO IN HI LN 05	CNI 02 AUDIO OUT HI LN 05	CNI 01 AUDIO IN HI LN 03	
06	CNI 02 AUDIO IN LO LN 06	CNI 02 AUDIO OUT LO LN 06	CNI 01 AUDIO OUT LO LN 03	
31	CNI 02 AUDIO IN HI LN 06	CNI 02 AUDIO OUT HI LN 06	CNI 01 AUDIO OUT HI LN 03	
07	CNI 02 AUDIO IN LO LN 07	CNI 02 AUDIO OUT LO LN 07	CNI 01 AUDIO IN LO LN 04	
32	CNI 02 AUDIO IN HI LN 07	CNI 02 AUDIO OUT HI LN 07	CNI 01 AUDIO IN HI LN 04	
08	CNI 02 AUDIO IN LO LN 08	CNI 02 AUDIO OUT LO LN 08	CNI 01 AUDIO OUT LO LN 04	
33	CNI 02 AUDIO IN HI LN 08	CNI 02 AUDIO OUT HI LN 08	CNI 01 AUDIO OUT HI LN 04	
09			CNI 02 AUDIO IN LO LN 05	
34			CNI 02 AUDIO IN HI LN 05	
10			CNI 02 AUDIO OUT LO LN 05	
35			CNI 02 AUDIO OUT HI LN 05	
11			CNI 02 AUDIO IN LO LN 06	
36			CNI 02 AUDIO IN HI LN 06	
12			CNI 02 AUDIO OUT LO LN 06	
37			CNI 02 AUDIO OUT HI LN 06	
13			CNI 02 AUDIO IN LO LN 07	
38			CNI 02 AUDIO IN HI LN 07	
14			CNI 02 AUDIO OUT LO LN 07	
39			CNI 02 AUDIO OUT HI LN 07	
15			CNI 02 AUDIO IN LO LN 08	
40			CNI 02 AUDIO IN HI LN 08	
16			CNI 02 AUDIO OUT LO LN 08	
41			CNI 02 AUDIO OUT HI LN 08	
17				
42				
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Figure 28 - Concentrator Card Champ Connector Pin-Outs: Audio Connections (9 of 16)

Customer: SAMPLE
Group: IMC

Date: 09/28/93
Time: 11:26:03

Cabinet 02 A03 Concentrator Card AUDIO Connections (To/From External Connections)

----- PINS -----		-----J07-----				-----J08-----				-----J09-----				-----J10-----			
01		EDG 01	AUDIO IN	LO LN 01		EDG 01	AUDIO OUT	LO LN 01		EDG 01	AUDIO IN	LO LN 01					
	26	EDG 01	AUDIO IN	HI LN 01		EDG 01	AUDIO OUT	HI LN 01		EDG 01	AUDIO IN	HI LN 01					
02		EDG 01	AUDIO IN	LO LN 02		EDG 01	AUDIO OUT	LO LN 02		EDG 01	AUDIO OUT	LO LN 01					
	27	EDG 01	AUDIO IN	HI LN 02		EDG 01	AUDIO OUT	HI LN 02		EDG 01	AUDIO OUT	HI LN 01					
03		EDG 01	AUDIO IN	LO LN 03		EDG 01	AUDIO OUT	LO LN 03		EDG 01	AUDIO IN	LO LN 02					
	28	EDG 01	AUDIO IN	HI LN 03		EDG 01	AUDIO OUT	HI LN 03		EDG 01	AUDIO IN	HI LN 02					
04		EDG 01	AUDIO IN	LO LN 04		EDG 01	AUDIO OUT	LO LN 04		EDG 01	AUDIO OUT	LO LN 02					
	29	EDG 01	AUDIO IN	HI LN 04		EDG 01	AUDIO OUT	HI LN 04		EDG 01	AUDIO OUT	HI LN 02					
05										EDG 01	AUDIO IN	LO LN 03					
	30									EDG 01	AUDIO IN	HI LN 03					
06										EDG 01	AUDIO OUT	LO LN 03					
	31									EDG 01	AUDIO OUT	HI LN 03					
07										EDG 01	AUDIO IN	LO LN 04					
	32									EDG 01	AUDIO IN	HI LN 04					
08										EDG 01	AUDIO OUT	LO LN 04					
	33									EDG 01	AUDIO OUT	HI LN 04					
09																	
	34																
10																	
	35																
11																	
	36																
12																	
	37																
13																	
	38																
14																	
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18																	
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Figure 29 - Concentrator Card Champ Connector Pin-Outs: Audio Connections (10 of 16)

Customer: SAMPLE										Date: 09/28/93					
Group: IMC										Time: 11:26:03					
Cabinet 02 B01 Concentrator Card AUDIO Connections (To/From External Connections)															
----- PINS -----		-----J07-----				-----J08-----				-----J09-----				-----J10-----	
01		NIM 01	AUDIO IN	LO LN 01		NIM 01	AUDIO OUT	LO LN 01		NIM 01	AUDIO IN	LO LN 01			
	26	NIM 01	AUDIO IN	HI LN 01		NIM 01	AUDIO OUT	HI LN 01		NIM 01	AUDIO IN	HI LN 01			
02		NIM 01	AUDIO IN	LO LN 02		NIM 01	AUDIO OUT	LO LN 02		NIM 01	AUDIO OUT	LO LN 01			
	27	NIM 01	AUDIO IN	HI LN 02		NIM 01	AUDIO OUT	HI LN 02		NIM 01	AUDIO OUT	HI LN 01			
03		NIM 01	AUDIO IN	LO LN 03		NIM 01	AUDIO OUT	LO LN 03		NIM 01	AUDIO IN	LO LN 02			
	28	NIM 01	AUDIO IN	HI LN 03		NIM 01	AUDIO OUT	HI LN 03		NIM 01	AUDIO IN	HI LN 02			
04		NIM 01	AUDIO IN	LO LN 04		NIM 01	AUDIO OUT	LO LN 04		NIM 01	AUDIO OUT	LO LN 02			
	29	NIM 01	AUDIO IN	HI LN 04		NIM 01	AUDIO OUT	HI LN 04		NIM 01	AUDIO OUT	HI LN 02			
05		NIM 01	AUDIO IN	LO LN 05		NIM 01	AUDIO OUT	LO LN 05		NIM 01	AUDIO IN	LO LN 03			
	30	NIM 01	AUDIO IN	HI LN 05		NIM 01	AUDIO OUT	HI LN 05		NIM 01	AUDIO IN	HI LN 03			
06		NIM 01	AUDIO IN	LO LN 06		NIM 01	AUDIO OUT	LO LN 06		NIM 01	AUDIO OUT	LO LN 03			
	31	NIM 01	AUDIO IN	HI LN 06		NIM 01	AUDIO OUT	HI LN 06		NIM 01	AUDIO OUT	HI LN 03			
07		NIM 01	AUDIO IN	LO LN 07		NIM 01	AUDIO OUT	LO LN 07		NIM 01	AUDIO IN	LO LN 04			
	32	NIM 01	AUDIO IN	HI LN 07		NIM 01	AUDIO OUT	HI LN 07		NIM 01	AUDIO IN	HI LN 04			
08		NIM 01	AUDIO IN	LO LN 08		NIM 01	AUDIO OUT	LO LN 08		NIM 01	AUDIO OUT	LO LN 04			
	33	NIM 01	AUDIO IN	HI LN 08		NIM 01	AUDIO OUT	HI LN 08		NIM 01	AUDIO OUT	HI LN 04			
09										NIM 01	AUDIO IN	LO LN 05			
	34									NIM 01	AUDIO IN	HI LN 05			
10										NIM 01	AUDIO OUT	LO LN 05			
	35									NIM 01	AUDIO OUT	HI LN 05			
11										NIM 01	AUDIO IN	LO LN 06			
	36									NIM 01	AUDIO IN	HI LN 06			
12										NIM 01	AUDIO OUT	LO LN 06			
	37									NIM 01	AUDIO OUT	HI LN 06			
13										NIM 01	AUDIO IN	LO LN 07			
	38									NIM 01	AUDIO IN	HI LN 07			
14										NIM 01	AUDIO OUT	LO LN 07			
	39									NIM 01	AUDIO OUT	HI LN 07			
15										NIM 01	AUDIO IN	LO LN 08			
	40									NIM 01	AUDIO IN	HI LN 08			
16										NIM 01	AUDIO OUT	LO LN 08			
	41									NIM 01	AUDIO OUT	HI LN 08			
17															
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Figure 30 - Concentrator Card Champ Connector Pin-Outs: Audio Connections (11 of 16)

Customer: SAMPLE				Date: 09/28/93	
Group: IMC				Time: 11:26:03	
Cabinet 02	B02	Concentrator Card AUDIO Connections (To/From External Connections)			
----- PINS -----		-----J07-----		-----J08-----	
01				CTIS	AUDIO IN LO LN 01
	26			CTIS	AUDIO IN HI LN 01
02				CTIS	AUDIO OUT LO LN 01
	27			CTIS	AUDIO OUT HI LN 01
03				CTIS	AUDIO IN LO LN 02
	28			CTIS	AUDIO IN HI LN 02
04				CTIS	AUDIO OUT LO LN 02
	29			CTIS	AUDIO OUT HI LN 02
05				CTIS	AUDIO IN LO LN 03
	30			CTIS	AUDIO IN HI LN 03
06				CTIS	AUDIO OUT LO LN 03
	31			CTIS	AUDIO OUT HI LN 03
07				CTIS	AUDIO IN LO LN 04
	32			CTIS	AUDIO IN HI LN 04
08				CTIS	AUDIO OUT LO LN 04
	33			CTIS	AUDIO OUT HI LN 04
09				CTIS	AUDIO IN LO LN 05
	34			CTIS	AUDIO IN HI LN 05
10				CTIS	AUDIO OUT LO LN 05
	35			CTIS	AUDIO OUT HI LN 05
11				CTIS	AUDIO IN LO LN 06
	36			CTIS	AUDIO IN HI LN 06
12				CTIS	AUDIO OUT LO LN 06
	37			CTIS	AUDIO OUT HI LN 06
13				CTIS	AUDIO IN LO LN 07
	38			CTIS	AUDIO IN HI LN 07
14				CTIS	AUDIO OUT LO LN 07
	39			CTIS	AUDIO OUT HI LN 07
15				CTIS	AUDIO IN LO LN 08
	40			CTIS	AUDIO IN HI LN 08
16				CTIS	AUDIO OUT LO LN 08
	41			CTIS	AUDIO OUT HI LN 08
17					
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Figure 31 - Concentrator Card Champ Connector Pin-Outs: Audio Connections (12 of 16)

			Customer: SAMPLE		Date: 09/28/93	
			Group: IMC		Time: 11:26:03	
Cabinet 02	C01	Concentrator Card AUDIO Connections (To/From External Connections)				
----	PINS	-----J07-----	-----J08-----	-----J09-----	-----J10-----	
01			RIF 01 AUDIO OUT LO LN 01			
	26		RIF 01 AUDIO OUT HI LN 01			
02			RIF 01 AUDIO OUT LO LN 02			
	27		RIF 01 AUDIO OUT HI LN 02			
03			RIF 01 AUDIO OUT LO LN 03			
	28		RIF 01 AUDIO OUT HI LN 03			
04			RIF 01 AUDIO OUT LO LN 04			
	29		RIF 01 AUDIO OUT HI LN 04			
05			RIF 01 AUDIO OUT LO LN 05			
	30		RIF 01 AUDIO OUT HI LN 05			
06			RIF 01 AUDIO OUT LO LN 06			
	31		RIF 01 AUDIO OUT HI LN 06			
07			RIF 01 AUDIO OUT LO LN 07			
	32		RIF 01 AUDIO OUT HI LN 07			
08			RIF 01 AUDIO OUT LO LN 08			
	33		RIF 01 AUDIO OUT HI LN 08			
09						
	34					
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Figure 32 - Concentrator Card Champ Connector Pin-Outs: Audio Connections (13 of 16)

Customer: SAMPLE Group: IMC						Date: 09/28/93 Time: 11:26:03											
Cabinet 02 C02 Concentrator Card AUDIO Connections (To/From External Connections)																	
PINS		-J07-----				-J08-----				-J09-----				-J10-----			
01						C3 08	AUDIO IN	LO LN 01	CRT 13	AUDIO IN	LO LN 01	C3 08	AUDIO IN	LO LN 01	CRT 13	AUDIO IN	LO LN 01
	26					C3 08	AUDIO IN	HI LN 01	CRT 13	AUDIO IN	HI LN 01	C3 08	AUDIO IN	HI LN 01	CRT 13	AUDIO IN	HI LN 01
02						C3 08	AUDIO OUT	LO LN 01	CRT 13	AUDIO OUT	LO LN 01	C3 08	AUDIO OUT	LO LN 01	CRT 13	AUDIO OUT	LO LN 01
	27					C3 08	AUDIO OUT	HI LN 01	CRT 13	AUDIO OUT	HI LN 01	C3 08	AUDIO OUT	HI LN 01	CRT 13	AUDIO OUT	HI LN 01
03						C3 08	AUDIO IN	LO LN 02	CRT 13	AUDIO IN	LO LN 02	C3 08	AUDIO IN	LO LN 02	CRT 13	AUDIO IN	LO LN 02
	28					C3 08	AUDIO IN	HI LN 02	CRT 13	AUDIO IN	HI LN 02	C3 08	AUDIO IN	HI LN 02	CRT 13	AUDIO IN	HI LN 02
04						C3 08	AUDIO OUT	LO LN 02	CRT 13	AUDIO OUT	LO LN 02	C3 08	AUDIO OUT	LO LN 02	CRT 13	AUDIO OUT	LO LN 02
	29					C3 08	AUDIO OUT	HI LN 02	CRT 13	AUDIO OUT	HI LN 02	C3 08	AUDIO OUT	HI LN 02	CRT 13	AUDIO OUT	HI LN 02
05						C3 08	AUDIO IN	LO LN 03	CRT 13	AUDIO IN	LO LN 03	C3 08	AUDIO IN	LO LN 03	CRT 13	AUDIO IN	LO LN 03
	30					C3 08	AUDIO IN	HI LN 03	CRT 13	AUDIO IN	HI LN 03	C3 08	AUDIO IN	HI LN 03	CRT 13	AUDIO IN	HI LN 03
06						C3 08	AUDIO OUT	LO LN 03	CRT 13	AUDIO OUT	LO LN 03	C3 08	AUDIO OUT	LO LN 03	CRT 13	AUDIO OUT	LO LN 03
	31					C3 08	AUDIO OUT	HI LN 03	CRT 13	AUDIO OUT	HI LN 03	C3 08	AUDIO OUT	HI LN 03	CRT 13	AUDIO OUT	HI LN 03
07						C3 08	AUDIO IN	LO LN 04	CRT 13	AUDIO IN	LO LN 04	C3 08	AUDIO IN	LO LN 04	CRT 13	AUDIO IN	LO LN 04
	32					C3 08	AUDIO IN	HI LN 04	CRT 13	AUDIO IN	HI LN 04	C3 08	AUDIO IN	HI LN 04	CRT 13	AUDIO IN	HI LN 04
08						C3 08	AUDIO OUT	LO LN 04	CRT 13	AUDIO OUT	LO LN 04	C3 08	AUDIO OUT	LO LN 04	CRT 13	AUDIO OUT	LO LN 04
	33					C3 08	AUDIO OUT	HI LN 04	CRT 13	AUDIO OUT	HI LN 04	C3 08	AUDIO OUT	HI LN 04	CRT 13	AUDIO OUT	HI LN 04
09						CRT 11	AUDIO IN	LO LN 01	CRT 14	AUDIO IN	LO LN 01	CRT 11	AUDIO IN	LO LN 01	CRT 14	AUDIO IN	LO LN 01
	34					CRT 11	AUDIO IN	HI LN 01	CRT 14	AUDIO IN	HI LN 01	CRT 11	AUDIO IN	HI LN 01	CRT 14	AUDIO IN	HI LN 01
10						CRT 11	AUDIO OUT	LO LN 01	CRT 14	AUDIO OUT	LO LN 01	CRT 11	AUDIO OUT	LO LN 01	CRT 14	AUDIO OUT	LO LN 01
	35					CRT 11	AUDIO OUT	HI LN 01	CRT 14	AUDIO OUT	HI LN 01	CRT 11	AUDIO OUT	HI LN 01	CRT 14	AUDIO OUT	HI LN 01
11						CRT 11	AUDIO IN	LO LN 02	CRT 14	AUDIO IN	LO LN 02	CRT 11	AUDIO IN	LO LN 02	CRT 14	AUDIO IN	LO LN 02
	36					CRT 11	AUDIO IN	HI LN 02	CRT 14	AUDIO IN	HI LN 02	CRT 11	AUDIO IN	HI LN 02	CRT 14	AUDIO IN	HI LN 02
12						CRT 11	AUDIO OUT	LO LN 02	CRT 14	AUDIO OUT	LO LN 02	CRT 11	AUDIO OUT	LO LN 02	CRT 14	AUDIO OUT	LO LN 02
	37					CRT 11	AUDIO OUT	HI LN 02	CRT 14	AUDIO OUT	HI LN 02	CRT 11	AUDIO OUT	HI LN 02	CRT 14	AUDIO OUT	HI LN 02
13						CRT 11	AUDIO IN	LO LN 03	CRT 14	AUDIO IN	LO LN 03	CRT 11	AUDIO IN	LO LN 03	CRT 14	AUDIO IN	LO LN 03
	38					CRT 11	AUDIO IN	HI LN 03	CRT 14	AUDIO IN	HI LN 03	CRT 11	AUDIO IN	HI LN 03	CRT 14	AUDIO IN	HI LN 03
14						CRT 11	AUDIO OUT	LO LN 03	CRT 14	AUDIO OUT	LO LN 03	CRT 11	AUDIO OUT	LO LN 03	CRT 14	AUDIO OUT	LO LN 03
	39					CRT 11	AUDIO OUT	HI LN 03	CRT 14	AUDIO OUT	HI LN 03	CRT 11	AUDIO OUT	HI LN 03	CRT 14	AUDIO OUT	HI LN 03
15						CRT 11	AUDIO IN	LO LN 04	CRT 14	AUDIO IN	LO LN 04	CRT 11	AUDIO IN	LO LN 04	CRT 14	AUDIO IN	LO LN 04
	40					CRT 11	AUDIO IN	HI LN 04	CRT 14	AUDIO IN	HI LN 04	CRT 11	AUDIO IN	HI LN 04	CRT 14	AUDIO IN	HI LN 04
16						CRT 11	AUDIO OUT	LO LN 04	CRT 14	AUDIO OUT	LO LN 04	CRT 11	AUDIO OUT	LO LN 04	CRT 14	AUDIO OUT	LO LN 04
	41					CRT 11	AUDIO OUT	HI LN 04	CRT 14	AUDIO OUT	HI LN 04	CRT 11	AUDIO OUT	HI LN 04	CRT 14	AUDIO OUT	HI LN 04
17						CRT 12	AUDIO IN	LO LN 01	CRT 15	AUDIO IN	LO LN 01	CRT 12	AUDIO IN	LO LN 01	CRT 15	AUDIO IN	LO LN 01
	42					CRT 12	AUDIO IN	HI LN 01	CRT 15	AUDIO IN	HI LN 01	CRT 12	AUDIO IN	HI LN 01	CRT 15	AUDIO IN	HI LN 01
18						CRT 12	AUDIO OUT	LO LN 01	CRT 15	AUDIO OUT	LO LN 01	CRT 12	AUDIO OUT	LO LN 01	CRT 15	AUDIO OUT	LO LN 01
	43					CRT 12	AUDIO OUT	HI LN 01	CRT 15	AUDIO OUT	HI LN 01	CRT 12	AUDIO OUT	HI LN 01	CRT 15	AUDIO OUT	HI LN 01
19						CRT 12	AUDIO IN	LO LN 02	CRT 15	AUDIO IN	LO LN 02	CRT 12	AUDIO IN	LO LN 02	CRT 15	AUDIO IN	LO LN 02
	44					CRT 12	AUDIO IN	HI LN 02	CRT 15	AUDIO IN	HI LN 02	CRT 12	AUDIO IN	HI LN 02	CRT 15	AUDIO IN	HI LN 02
20						CRT 12	AUDIO OUT	LO LN 02	CRT 15	AUDIO OUT	LO LN 02	CRT 12	AUDIO OUT	LO LN 02	CRT 15	AUDIO OUT	LO LN 02
	45					CRT 12	AUDIO OUT	HI LN 02	CRT 15	AUDIO OUT	HI LN 02	CRT 12	AUDIO OUT	HI LN 02	CRT 15	AUDIO OUT	HI LN 02
21						CRT 12	AUDIO IN	LO LN 03	CRT 15	AUDIO IN	LO LN 03	CRT 12	AUDIO IN	LO LN 03	CRT 15	AUDIO IN	LO LN 03
	46					CRT 12	AUDIO IN	HI LN 03	CRT 15	AUDIO IN	HI LN 03	CRT 12	AUDIO IN	HI LN 03	CRT 15	AUDIO IN	HI LN 03
22						CRT 12	AUDIO OUT	LO LN 03	CRT 15	AUDIO OUT	LO LN 03	CRT 12	AUDIO OUT	LO LN 03	CRT 15	AUDIO OUT	LO LN 03
	47					CRT 12	AUDIO OUT	HI LN 03	CRT 15	AUDIO OUT	HI LN 03	CRT 12	AUDIO OUT	HI LN 03	CRT 15	AUDIO OUT	HI LN 03
23						CRT 12	AUDIO IN	LO LN 04	CRT 15	AUDIO IN	LO LN 04	CRT 12	AUDIO IN	LO LN 04	CRT 15	AUDIO IN	LO LN 04
	48					CRT 12	AUDIO IN	HI LN 04	CRT 15	AUDIO IN	HI LN 04	CRT 12	AUDIO IN	HI LN 04	CRT 15	AUDIO IN	HI LN 04
24						CRT 12	AUDIO OUT	LO LN 04	CRT 15	AUDIO OUT	LO LN 04	CRT 12	AUDIO OUT	LO LN 04	CRT 15	AUDIO OUT	LO LN 04
	49					CRT 12	AUDIO OUT	HI LN 04	CRT 15	AUDIO OUT	HI LN 04	CRT 12	AUDIO OUT	HI LN 04	CRT 15	AUDIO OUT	HI LN 04
25																	
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Figure 33 - Concentrator Card Champ Connector Pin-Outs: Audio Connections (14 of 16)

Customer: SAMPLE				Date: 09/28/93	
Group: IMC				Time: 11:26:03	
Cabinet 02 D01 Concentrator Card AUDIO Connections (To/From External Connections)					
----- PINS -----		-----J07-----		-----J08-----	
01				-----J09-----	
	26			-----J10-----	
02				CRT 16	AUDIO IN LO LN 01
	27			CRT 16	AUDIO IN HI LN 01
03				CRT 16	AUDIO OUT LO LN 01
	28			CRT 16	AUDIO OUT HI LN 01
04				CRT 16	AUDIO IN LO LN 02
	29			CRT 16	AUDIO IN HI LN 02
05				CRT 16	AUDIO OUT LO LN 02
	30			CRT 16	AUDIO OUT HI LN 02
06				CRT 16	AUDIO IN LO LN 03
	31			CRT 16	AUDIO IN HI LN 03
07				CRT 16	AUDIO OUT LO LN 03
	32			CRT 16	AUDIO OUT HI LN 03
08				CRT 16	AUDIO IN LO LN 04
	33			CRT 16	AUDIO IN HI LN 04
09				CRT 16	AUDIO OUT LO LN 04
	34			CRT 16	AUDIO OUT HI LN 04
10					
	35				
11					
	36				
12					
	37				
13					
	38				
14					
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Figure 34 - Concentrator Card Champ Connector Pin-Outs: Audio Connections (15 of 16)

Customer: SAMPLE
Group: IMC

Date: 09/28/93
Time: 11:26:03

Cabinet 02 D02 Concentrator Card AUDIO Connections (To/From External Connections)

---- PINS ----						-----J07-----				---J08---			
01		CONV 01 CH 01 AUDIO LO		SIMPLEX IN-OUT	DUPLEX OUT	DUPLEX IN							
	26	CONV 01 CH 01 AUDIO HI		SIMPLEX IN-OUT	DUPLEX OUT	DUPLEX IN							
02		CONV 01 CH 02 AUDIO LO		SIMPLEX IN-OUT	DUPLEX OUT	DUPLEX IN							
	27	CONV 01 CH 02 AUDIO HI		SIMPLEX IN-OUT	DUPLEX OUT	DUPLEX IN							
03		CONV 01 CH 03 AUDIO LO		SIMPLEX IN-OUT	DUPLEX OUT	DUPLEX IN							
	28	CONV 01 CH 03 AUDIO HI		SIMPLEX IN-OUT	DUPLEX OUT	DUPLEX IN							
04		CONV 01 CH 04 AUDIO LO		SIMPLEX IN-OUT	DUPLEX OUT	DUPLEX IN							
	29	CONV 01 CH 04 AUDIO HI		SIMPLEX IN-OUT	DUPLEX OUT	DUPLEX IN							
05		CONV 01 CH 05 AUDIO LO		SIMPLEX IN-OUT	DUPLEX OUT	DUPLEX IN							
	30	CONV 01 CH 05 AUDIO HI		SIMPLEX IN-OUT	DUPLEX OUT	DUPLEX IN							
06		CONV 01 CH 06 AUDIO LO		SIMPLEX IN-OUT	DUPLEX OUT	DUPLEX IN							
	31	CONV 01 CH 06 AUDIO HI		SIMPLEX IN-OUT	DUPLEX OUT	DUPLEX IN							
07		CONV 01 CH 07 AUDIO LO		SIMPLEX IN-OUT	DUPLEX OUT	DUPLEX IN							
	32	CONV 01 CH 07 AUDIO HI		SIMPLEX IN-OUT	DUPLEX OUT	DUPLEX IN							
08		CONV 01 CH 08 AUDIO LO		SIMPLEX IN-OUT	DUPLEX OUT	DUPLEX IN							
	33	CONV 01 CH 08 AUDIO HI		SIMPLEX IN-OUT	DUPLEX OUT	DUPLEX IN							
09													
	34												
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	35												
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Figure 35 - Concentrator Card Champ Connector Pin-Outs: Audio Connections (16 of 16)

Customer: SAMPLE
Group: IMC

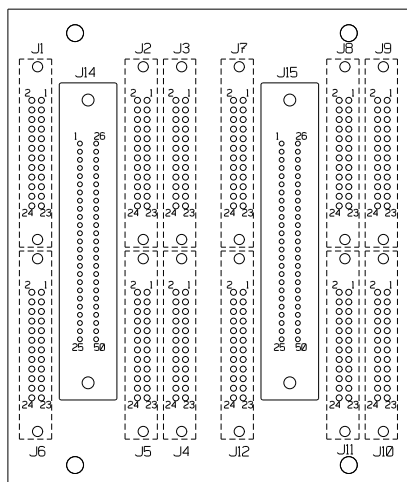
Date: 09/28/93
Time: 11:26:03

Cabinet 01 A04 Concentrator Card RELAY Connections (To/From External Connections)

PINS		J14			J15		
01		DVI 02	RELAY IN	LINE 01	DVI 01	RELAY IN	LINE 17
	26	DVI 02	RELAY OUT	LINE 01	DVI 01	RELAY OUT	LINE 17
02		DVI 02	RELAY IN	LINE 02	DVI 01	RELAY IN	LINE 18
	27	DVI 02	RELAY OUT	LINE 02	DVI 01	RELAY OUT	LINE 18
03		DVI 02	RELAY IN	LINE 03	DVI 01	RELAY IN	LINE 19
	28	DVI 02	RELAY OUT	LINE 03	DVI 01	RELAY OUT	LINE 19
04		DVI 02	RELAY IN	LINE 04	DVI 01	RELAY IN	LINE 20
	29	DVI 02	RELAY OUT	LINE 04	DVI 01	RELAY OUT	LINE 20
05		DVI 02	RELAY IN	LINE 05	DVI 01	RELAY IN	LINE 21
	30	DVI 02	RELAY OUT	LINE 05	DVI 01	RELAY OUT	LINE 21
06		DVI 02	RELAY IN	LINE 06	DVI 01	RELAY IN	LINE 22
	31	DVI 02	RELAY OUT	LINE 06	DVI 01	RELAY OUT	LINE 22
07		DVI 02	RELAY IN	LINE 07	DVI 01	RELAY IN	LINE 23
	32	DVI 02	RELAY OUT	LINE 07	DVI 01	RELAY OUT	LINE 23
08		DVI 02	RELAY IN	LINE 08	DVI 01	RELAY IN	LINE 24
	33	DVI 02	RELAY OUT	LINE 08	DVI 01	RELAY OUT	LINE 24
09		DVI 01 RELAY IN LINE 01			DVI 01	RELAY IN	LINE 25
	34	DVI 01 RELAY OUT LINE 01			DVI 01	RELAY OUT	LINE 25
10		DVI 01	RELAY IN	LINE 02	DVI 01	RELAY IN	LINE 26
	35	DVI 01	RELAY OUT	LINE 02	DVI 01	RELAY OUT	LINE 26
11		DVI 01	RELAY IN	LINE 03	DVI 01	RELAY IN	LINE 27
	36	DVI 01	RELAY OUT	LINE 03	DVI 01	RELAY OUT	LINE 27
12		DVI 01	RELAY IN	LINE 04	DVI 01	RELAY IN	LINE 28
	37	DVI 01	RELAY OUT	LINE 04	DVI 01	RELAY OUT	LINE 28
13		DVI 01	RELAY IN	LINE 05	DVI 01	RELAY IN	LINE 29
	38	DVI 01	RELAY OUT	LINE 05	DVI 01	RELAY OUT	LINE 29
14		DVI 01	RELAY IN	LINE 06	DVI 01	RELAY IN	LINE 30
	39	DVI 01	RELAY OUT	LINE 06	DVI 01	RELAY OUT	LINE 30
15		DVI 01	RELAY IN	LINE 07	DVI 01	RELAY IN	LINE 31
	40	DVI 01	RELAY OUT	LINE 07	DVI 01	RELAY OUT	LINE 31
16		DVI 01	RELAY IN	LINE 08	DVI 01	RELAY IN	LINE 32
	41	DVI 01	RELAY OUT	LINE 08	DVI 01	RELAY OUT	LINE 32
17		DVI 01	RELAY IN	LINE 09			
	42	DVI 01	RELAY OUT	LINE 09			
18		DVI 01	RELAY IN	LINE 10			
	43	DVI 01	RELAY OUT	LINE 10			
19		DVI 01	RELAY IN	LINE 11			
	44	DVI 01	RELAY OUT	LINE 11			
20		DVI 01	RELAY IN	LINE 12			
	45	DVI 01	RELAY OUT	LINE 12			
21		DVI 01	RELAY IN	LINE 13			
	46	DVI 01	RELAY OUT	LINE 13			
22		DVI 01	RELAY IN	LINE 14			
	47	DVI 01	RELAY OUT	LINE 14			
23		DVI 01	RELAY IN	LINE 15			
	48	DVI 01	RELAY OUT	LINE 15			
24		DVI 01	RELAY IN	LINE 16			
	49	DVI 01	RELAY OUT	LINE 16			
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Figure 36 - Concentrator Card Champ Connector Pin-Outs: Relay Connections (1 of 1)



Audio Relay Concentrator Card 19D904546P1 (Viewed From External Side)

Customer: SAMPLE
Group: IMC

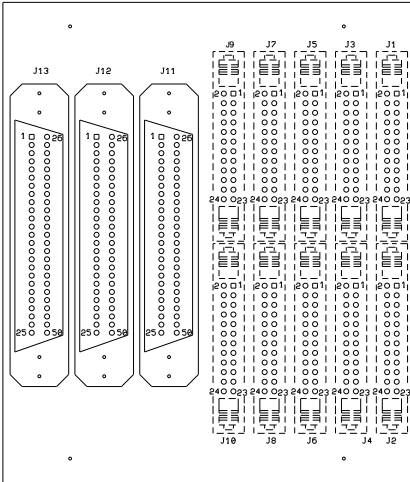
Date: 09/28/93
Time: 11:26:04

Cabinet 01 A02 Concentrator Card CONTROL Connections (To/From External Connections)

----	PINS	----	J11-----	J12-----	J13-----
01					SYS 01 TX- DATA
	26				SYS 01 TX+ DATA
02					SYS 01 RX- DATA
	27				SYS 01 RX+ DATA
03					SYS 01 TX- DATA
	28				SYS 01 TX+ DATA
04					SYS 01 RX- DATA
	29				SYS 01 RX+ DATA
05					SYS 02 TX- DATA
	30				SYS 02 TX+ DATA
06					SYS 02 RX- DATA
	31				SYS 02 RX+ DATA
07					SYS 02 TX- DATA
	32				SYS 02 TX+ DATA
08					SYS 02 RX- DATA
	33				SYS 02 RX+ DATA
09					SYS 03 TX- DATA
	34				SYS 03 TX+ DATA
10					SYS 03 RX- DATA
	35				SYS 03 RX+ DATA
11					SYS 03 TX- DATA
	36				SYS 03 TX+ DATA
12					SYS 03 RX- DATA
	37				SYS 03 RX+ DATA
13					
	38				
14					
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Figure 37 - Concentrator Card Champ Connector Pin-Outs: Control Data Connections (1 of 9)



Data Concentrator Card 19D903525P1 (Viewed From External Side)

Customer: SAMPLE				Date: 09/28/93
Group: IMC				Time: 11:26:04
Cabinet 01 B04 Concentrator Card CONTROL Connections (To/From External Connections)				
----	PINS	-----J11-----	-----J12-----	-----J13-----
01	26			RSM 01 TX- DATA
02				RSM 01 TX+ DATA
	27			RSM 01 RX- DATA
03				RSM 01 RX+ DATA
	28			
04				
	29			
05				
	30			
06				
	31			
07				
	32			
08				
	33			
09				
	34			
10				
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Figure 38 - Concentrator Card Champ Connector Pin-Outs: Control Data Connections (2 of 9)

				Customer: SAMPLE	Date: 09/28/93
				Group: IMC	Time: 11:26:04
Cabinet 01 C03 Concentrator Card CONTROL Connections (To/From External Connections)					
----	PINS	-----J11-----	-----J12-----	-----J13-----	
01	26		CRT 09 TX+ DATA		
02			CRT 09 TX- DATA		
	27		CRT 09 RX+ DATA		
03			CRT 09 RX- DATA		
	28	C3 01 TX+ DATA			
04		C3 01 TX- DATA			
	29	C3 01 RX+ DATA			
05					
	30		CRT 10 TX+ DATA		
06			CRT 10 TX- DATA		
	31		CRT 10 RX+ DATA		
07			CRT 10 RX- DATA		
	32	C3 02 TX+ DATA			
08		C3 02 TX- DATA			
	33	C3 02 RX+ DATA			
09		C3 02 RX- DATA			
	34	C3 03 TX+ DATA			
10		C3 03 TX- DATA			
	35	C3 03 RX+ DATA			
11		C3 03 RX- DATA			
	36	C3 04 TX+ DATA			
12		C3 04 TX- DATA			
	37	C3 04 RX+ DATA			
13		C3 04 RX- DATA			
	38	C3 05 TX+ DATA			
14		C3 05 TX- DATA			
	39	C3 05 RX+ DATA			
15		C3 05 RX- DATA			
	40	C3 06 TX+ DATA			
16		C3 06 TX- DATA			
	41	C3 06 RX+ DATA			
17		C3 06 RX- DATA			
	42	C3 07 TX+ DATA			
18		C3 07 TX- DATA			
	43	C3 07 RX+ DATA			
19		C3 07 RX- DATA			
	44				
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PAGE: 20					

Figure 39 - Concentrator Card Champ Connector Pin-Outs: Control Data Connections (3 of 9)

Customer: SAMPLE				Date: 09/28/93
Group: IMC				Time: 11:26:04
Cabinet 02 A02 Concentrator Card CONTROL Connections (To/From External Connections)				
----	PINS	-----J11-----	-----J12-----	-----J13-----
01	26			CNI 01 TX- DATA
02	27			CNI 01 TX+ DATA
03	28			CNI 01 RX- DATA
04	29			CNI 01 RX+ DATA
05	30			CNI 02 TX- DATA
06	31			CNI 02 TX+ DATA
07	32			CNI 02 RX- DATA
08	33			CNI 02 RX+ DATA
09	34			
10	35			
11	36			
12	37			
13	38			
14	39			
15	40			
16	41			
17	42			
18	43			
19	44			
20	45			
21	46			
22	47			
23	48			
24	49			
25	50			
PAGE: 21				

Figure 40 - Concentrator Card Champ Connector Pin-Outs: Control Data Connections (4 of 9)

Customer: SAMPLE

Group: IMC

Date: 09/28/93

Time: 11:26:04

Cabinet 02

A04

Concentrator Card CONTROL Connections (To/From External Connections)

-----PINS-----

01

26

02

27

03

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04

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-----J11-----

-----J12-----

-----J13-----

EDG 01

TX- DATA

EDG 01

TX+ DATA

EDG 01

RX- DATA

EDG 01

RX+ DATA

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Figure 41 - Concentrator Card Champ Connector Pin-Outs: Control Data Connections (5 of 9)

Customer: SAMPLE				Date: 09/28/93	
Group: IMC				Time: 11:26:04	
Cabinet 02 B03 Concentrator Card CONTROL Connections (To/From External Connections)					
----- PINS -----		-----J11-----		-----J12-----	
01				CTIS	TX- DATA
02	26			CTIS	TX+ DATA
03	27			CTIS	RX- DATA
04	28			CTIS	RX+ DATA
05	29				
06	30				
07	31				
08	32				
09	33				
10	34				
11	35				
12	36				
13	37				
14	38				
15	39				
16	40				
17	41				
18	42				
19	43				
20	44				
21	45				
22	46				
23	47				
24	48				
25	49				
	50				
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Figure 42 - Concentrator Card Champ Connector Pin-Outs: Control Data Connections (6 of 9)

Customer: SAMPLE
Group: IMC

Date: 09/28/93
Time: 11:26:04

Cabinet 02 B04 Concentrator Card CONTROL Connections (To/From External Connections)

----	PINS	-----J11-----	-----J12-----	-----J13-----
01				NIM 01 TX- DATA
02	26			NIM 01 TX+ DATA
03	27			NIM 01 RX- DATA
04	28			NIM 01 RX+ DATA
05	29			
06	30			
07	31			
08	32			
09	33			
10	34			
11	35			
12	36			
13	37			
14	38			
15	39			
16	40			
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Figure 43 - Concentrator Card Champ Connector Pin-Outs: Control Data Connections (7 of 9)

Customer: SAMPLE
Group: IMC

Date: 09/28/93
Time: 11:26:04

Cabinet 02 C03 Concentrator Card CONTROL Connections (To/From External Connections)

----	PINS	----	J11-----	-----J12-----	-----J13-----
01		C3 08	TX+ DATA		
	26	C3 08	TX- DATA		
02		C3 08	RX+ DATA		
	27	C3 08	RX- DATA		
03				CRT 11	TX+ DATA
	28			CRT 11	TX- DATA
04				CRT 11	RX+ DATA
	29			CRT 11	RX- DATA
05				CRT 12	TX+ DATA
	30			CRT 12	TX- DATA
06				CRT 12	RX+ DATA
	31			CRT 12	RX- DATA
07				CRT 13	TX+ DATA
	32			CRT 13	TX- DATA
08				CRT 13	RX+ DATA
	33			CRT 13	RX- DATA
09				CRT 14	TX+ DATA
	34			CRT 14	TX- DATA
10				CRT 14	RX+ DATA
	35			CRT 14	RX- DATA
11				CRT 15	TX+ DATA
	36			CRT 15	TX- DATA
12				CRT 15	RX+ DATA
	37			CRT 15	RX- DATA
13				CRT 16	TX+ DATA
	38			CRT 16	TX- DATA
14				CRT 16	RX+ DATA
	39			CRT 16	RX- DATA
15					
	40				
16					
	41				
17					
	42				
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Figure 44 - Concentrator Card Champ Connector Pin-Outs: Control Data Connections (8 of 9)

		Customer: SAMPLE		Date: 09/28/93
		Group: IMC		Time: 11:26:04
Cabinet 02	C04	Concentrator Card CONTROL Connections (To/From External Connections)		
----	PINS	-----J11-----	-----J12-----	-----J13-----
01	26			RSM 02 TX- DATA
02	27			RSM 02 TX+ DATA
03	28			RSM 02 RX- DATA
04	29			RSM 02 RX+ DATA
05	30			
06	31			
07	32			
08	33			
09	34			
10	35			
11	36			
12	37			
13	38			
14	39			
15	40			
16	41			
17	42			
18	43			
19	44			
20	45			
21	46			
22	47			
23	48			
24	49			
25	50			

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Figure 45 - Concentrator Card Champ Connector Pin-Outs: Control Data Connections (9 of 9)