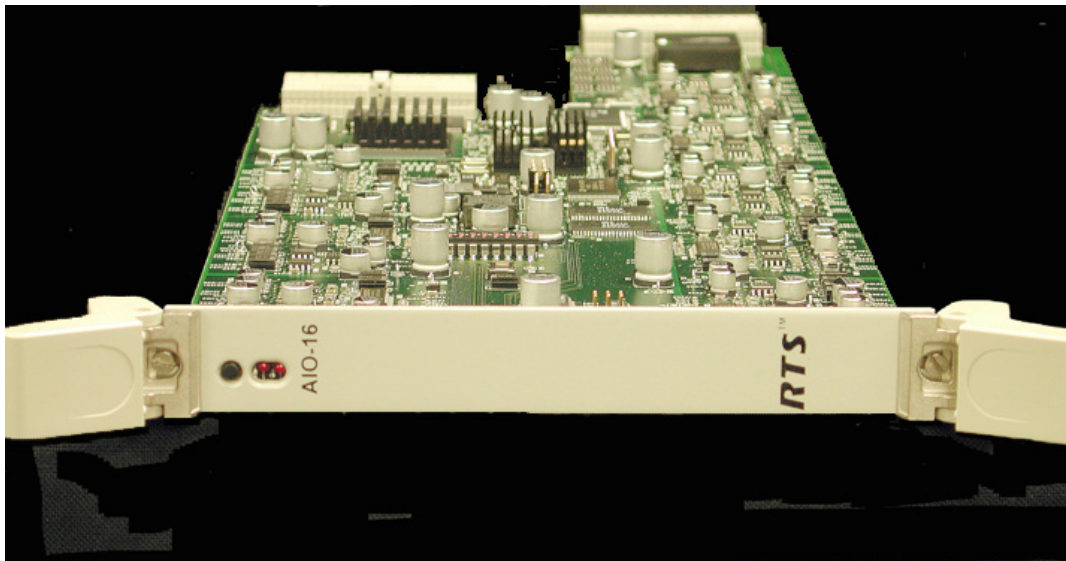


AIO-16
16-Channel Input/Output Card
User Manual



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WARRANTY INFORMATION

See the enclosed warranty card for further details.

UNPACKING AND INSPECTION

Immediately upon receipt of the equipment, inspect the shipping container and the contents carefully for any discrepancies or damage. Should there be any, notify factory service of any discrepancies in the shipment. Notify the freight company and factory service of any shipping damage.

CUSTOMER SUPPORT

Technical questions should be directed to:

Customer Service Department

RTS/Telex Communications, Inc.

12000 Portland Avenue South

Burnsville, MN 55337 U.S.A.

Telephone: (800) 392-3497

Fax: (800) 323-0498

Factory Service: (800) 553-5992

RETURN SHIPPING INSTRUCTIONS PROCEDURE FOR RETURNS

Customer Service Department

Telex Communications, Inc. (Lincoln, Nebraska)

Telephone: (402) 467-5321

Fax: (402) 467-3279

Factory Service: (800) 553-5992

SHIPPING TO THE MANUFACTURER

Please include a note in the box which supplies the company name, address, phone number, a person to contact regarding the repair, the type and quantity of equipment, a description of the problem and the serial number(s).

All shipments of product should be made via UPS Ground, prepaid (you may request from Factory Service a different shipment method). Any shipment upgrades will be paid by the customer. The equipment should be shipped in the original packing carton. If the original carton is not available, use any suitable container that is rigid and of adequate size. If a substitute container is used, the equipment should be wrapped in paper and surrounded with at least four inches of excelsior or similar shock-absorbing material. All shipments must be sent to the following address and must include the Proof of Purchase for warranty repair. Upon completion of any repair the equipment will be returned via United Parcel Service or specified shipper, collect.

Factory Service Department

Telex Communications, Inc.

8601 East Cornhusker Hwy.

Lincoln, NE 68507 U.S.A.

Attn: Service

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Description

Installed directly into the ADAM™ Matrix Intercom system, the AIO-16 card gives 16 ports of audio IN and OUT for each card installed (up to 17 cards) in the system. This doubles the amount of audio ports available from its predecessor the AIO-8. The AIO-16 is hot-swappable, allowing the user to insert the card and begin using it instantaneously. Once inserted into the system, it uses its “smart card” capability to see the backcard configuration and switches its keypanel communication protocol accordingly.

The AIO-16 is fully compatible with AIO-8 cards. It can run side-by-side with the AIO-8, seamlessly integrating into the port scheme already in place.

There are two AIO-16 backcard, the traditional 50-pin SCSI backcard and the new 50-pin MDR backcard which allows for a separate data pair per keypanel port.

There are also four new breakout panels that can be used with the AIO-16 card (DB-9 breakout, RJ-45 breakout, Telco breakout and the DB-9 Transformer Breakout), bringing the total number of breakout panels compatible with the AIO-16 to seven.

Features

Backward Compatibility	The AIO-16 is compatible with the AIO-8 card. To accomplish this backward compatibility, the AIO-16 must use an existing XCP-40-RJ12, XCP-24 (Telco) or XCP-40-DB-9 breakout panel with the SCSI backcard.
Smart Card	When the AIO-16 card is inserted into the system, it automatically figures the backcard configuration and the protocols being used.
Breakout Panels	Along with the existing breakout panels, four new panels (DB-9, Telco, RJ-45, and DB-9-T) have been specially made to integrate with the new MDR backcard. When using either the XCP-32 DB9, XCP-48-Telco, XCP-48-RJ45, or XCP-16-DB9-T, you must use the MDR backcard.

DIP Switches

NOTE: You must remove the card from the frame in order to change any DIP switch settings.

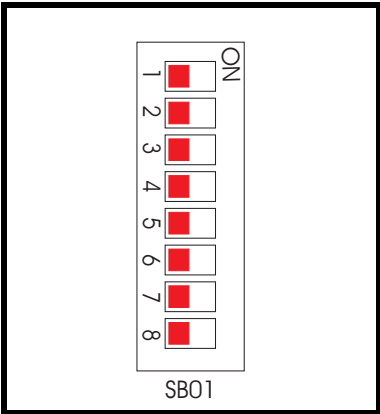


FIGURE 1. Default DIP switch settings on the AIO-16 card (SB01).

DIP Switch 1	Controls the initial load (or reload) of the firmware.
OFF (open)	Normal operation
ON (closed)	Boot to GERMS monitor and ignore code in flash.
Description	When the switch is in the ON position, the AIO-16 card skips the firmware programmed in flash. When the switch is in the OFF position, it runs the firmware from flash.
DIP Switches 2-7	Unused Keep in the OFF position.
DIP Switch 8	DEBUG ONLY Warning: DIP Switch 8 should always be left in the OFF position. It is reserved for debugging and can have unintended consequences.

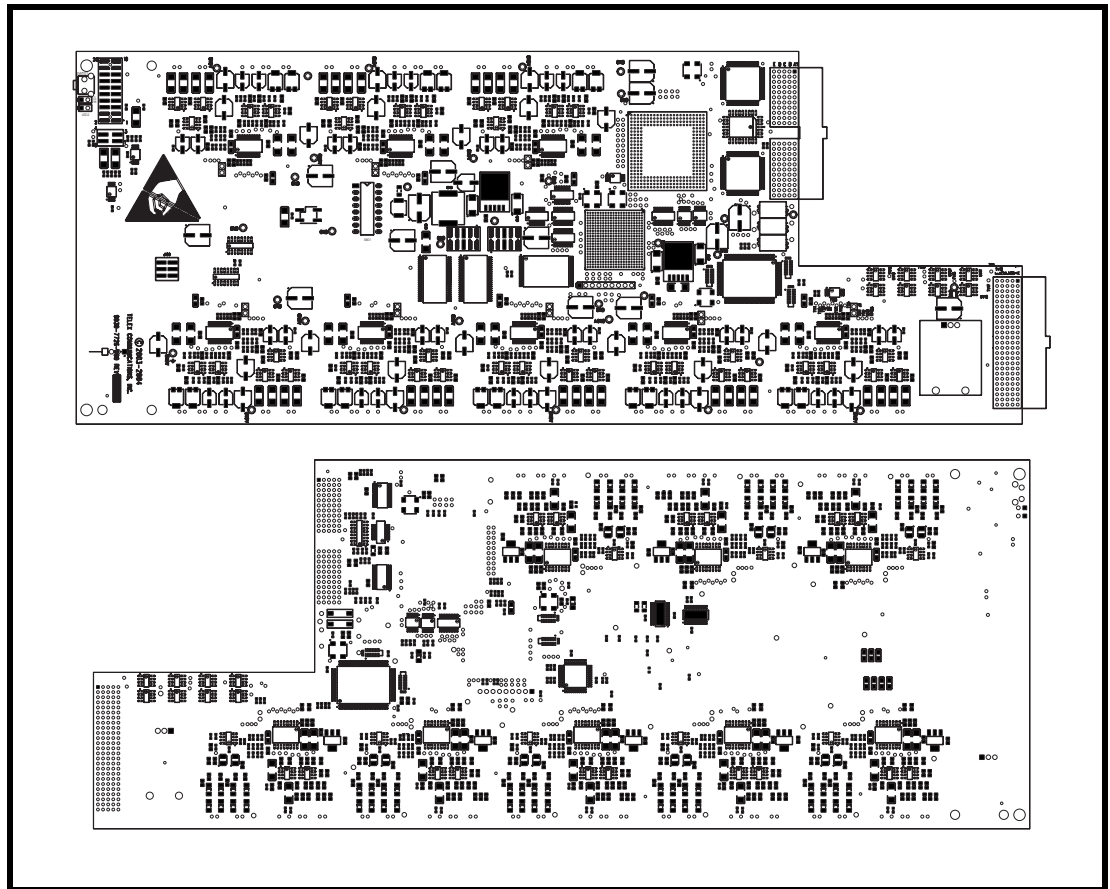


FIGURE 2. AIO-16 card top and bottom

Specifications

Analog

Signal	Fully differential
Nominal level	8 dBu
Maximum level	20 dBu
Input Impedance	High (22 K Ω)
Output Impedance	Low (600 Ω)

A/D and D/A

Sampling Rate	44.1 kHz
Resolution	24 bits
Converter Architecture	128 x Oversampling Δ - Σ Modulator

Audio Performance

SNR at 22 dBu	(A-weighted)>85 dB
THD+N at 22 dBu, 1 kHz	(unweighted),0.005%
Frequency Response at 20 dBu	within $\pm$ 1dB from 50 Hz - 20 kHz

All measurements performed using an Audio Precision System 1 Dual Domain System. Measurements were performed using a sine wave at $f=1$ kHz and level = 22 dBu
bandwidth = 50 Hz to 20 kHz

Connections - 4-wire balanced audio. Optional RS-485 data is available to communicate with keypanels. AIO-16 can be plugged into either a SCSI backcard or MDR backcard.

SCSI Backcard (9000-7726-002)

Backward compatibility to existing AIO-8 breakout panels. This card carries two single RS-485 data pairs; one data pair per group of 8 keypanel ports.

MDR Backcard (9000-7726-003)

Can be connected to 1RU, 48-port RJ-45 breakout panel or to a 2RU, 32-port DB-9 breakout panel. This card has 16 RS-485 data pairs so each intelligent keypanel can communicate with the matrix separately.

Installation

NOTE:

Before using the AIO-16 Card, you must:

- Have the new ADAM power supply installed. (P/n 9020-7516-001). For more information, see page 10.
- In a single frame system, have the Master Controller firmware 9.22.0 or higher installed.
- In a multi-frame system:

- Have the peripheral controller firmware 10.13.x or higher installed.
- Have the DBX firmware 1.13.0 or higher installed.

IMPORTANT!!! Use the following instructions for your initial setup of an AIO-16 card. If you do not follow these directions, the AIO-16 card may not work properly.

To install the AIO-16 card for the first time, do the following:

1. Gently insert the AIO-16 card into the appropriate ADAM slot.
2. Lightly tighten down the AIO-16 card.
3. Carefully attach the backcard (MDR or SCSI, see Figure 3) to the AIO-16 card from the back of the ADAM. Verify that it is properly seated against the AIO-16 card and is sitting firmly in the system.
4. Tighten the backcard to the frame.
5. Fully tighten down the AIO-16 from the front of the system.

NOTE: Once you have done this once, you do not have to repeat this every time.

6. Attach the desired breakout panel to the AIO-16's backcard connector. For more information on breakout panels, see Appendix A. For more information on Ports and Port Allocation, see "AIO-16 Ports, DBX Linking, and Interconnects" on page 15.

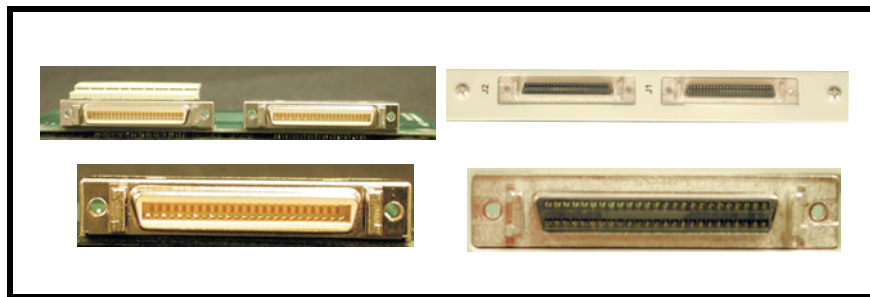


FIGURE 3. MDR backcard/connector and SCSI backcard/connector.

Power Supply Specifications

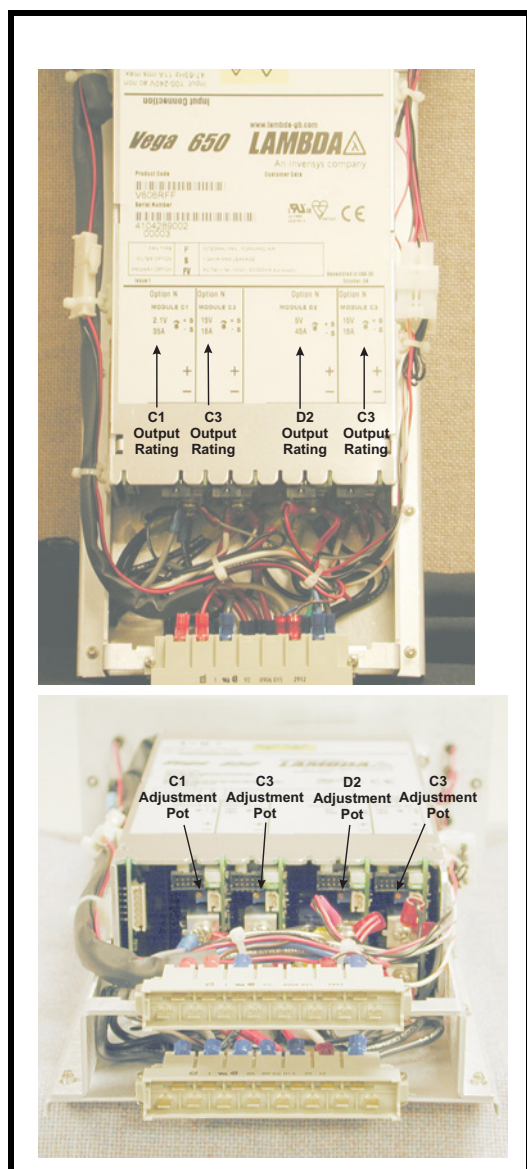


FIGURE 4. The new ADAM power supply showing the top and the adjustment pots (lower picture).

Input Ratings

100 - 240V nominal

47 - 63Hz, 11A RMS Max.

Output Ratings

Module C1

2.1V, 35A

Module C3

15V, 18A

Module D2

5V, 45A

NOTE: The Adjustment Pots for each of the Voltage cells correspond to their position from the top of the unit, see Figure 4 .

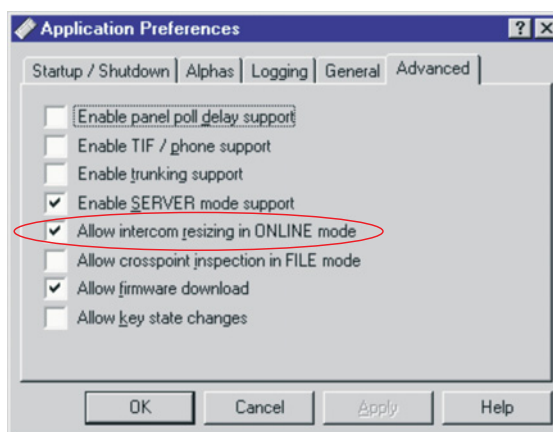
Intercom Sizing Wizard

In AZedit version 2.08.00 or higher, an Intercom Sizing Wizard is provided to help users setup their intercom systems quickly and easily. The primary function of this wizard allows users to configure their intercom systems without worrying about incorrect configuration options. The Intercom Sizing Wizard walks you through each step of setting up your intercom system, asking a series of specific questions, resulting in an easy and efficient setup procedure. You can use the wizard in ONLINE mode or FILE mode.

If you plan on using the Intercom Sizing Wizard in ONLINE mode, you must remember to select the Allow Intercom Resizing in Online Mode checkbox.

To select Allow Intercom Resizing in Online Mode, do the following,

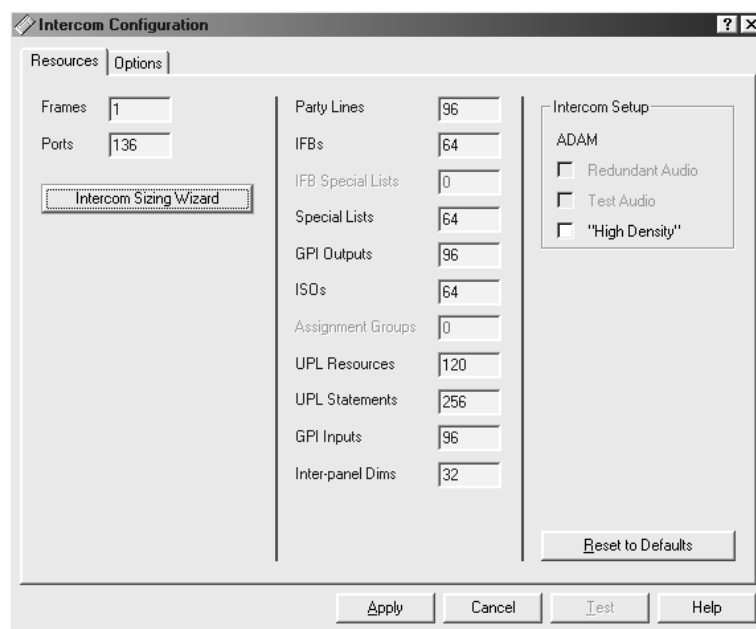
1. From the Option menu in AZedit, select **P**references.
The Application Preferences screen appears.
2. Click the **A**dvanced tab.
The Advanced screen appears.
3. Select the **A**llow Intercom Resizing in ONLINE Mode checkbox.



NOTE: You must use the Intercom Sizing Wizard if you are changing the number of frames, the number of ports, or the Intercom Setup options in your system.

To access the Intercom Sizing Wizard, do the following:

1. Open **AZedit**.
2. From the Options menu, select **Intercom Configuration**.
A Warning appears.
3. Click **OK**.



4. Click **Intercom Sizing Wizard**.
The Intercom Sizing Wizard begins.

In ONLINE mode, the wizard will automatically determine your intercom system size, and then will walk you through to get more specific information to configure your system.

In FILE mode, you will have to pick your intercom system, and then the wizard will walk you through the different options to determine the intercom system setup.



5. Select your system from the list, then click **Next**.
The Wizard will walk you through the rest of the setup.
6. When you are finished, click **Finish**.

I/O Card Status Screen

To Open the I/O Card Status screen, do the following:

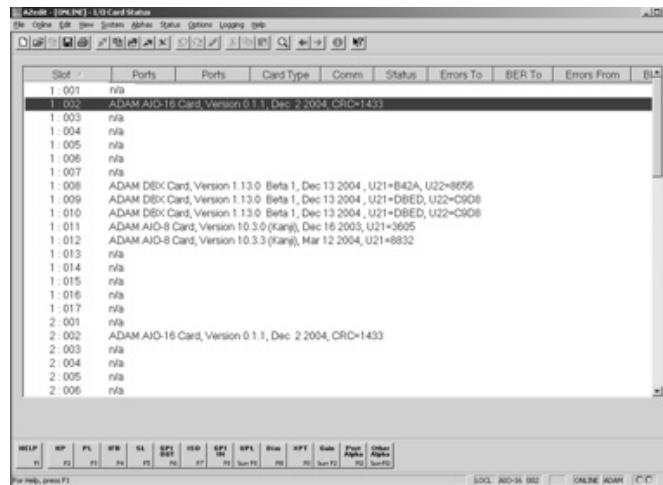
1. In AZedit, from the Status menu, select **I/O Cards**.
The I/O Card Status screen appears.

Slot	Ports	Ports	Card Type	Comm	Status	Errors To	BER To	Errors From	BL
1: 001	001 - 008	113 - 120	-	-	-	-	-	-	-
1: 002	009 - 016	121 - 128	AIO-16	OK	Our	99	-	4	-
1: 003	017 - 024	129 - 136	-	-	-	4	-	-	-
1: 004	025 - 032	137 - 144	-	-	-	-	-	-	-
1: 005	033 - 040	145 - 152	-	-	-	2	-	-	-
1: 006	041 - 048	153 - 160	-	-	-	-	-	-	-
1: 007	049 - 056	161 - 168	-	-	-	-	-	-	-
1: 008	-	-	DBX	OK	Our	136	-	1	-
1: 009	-	-	DBX	OK	Our	74	-	28	-
1: 010	-	-	DBX	OK	Our	1	-	-	-
1: 011	057 - 064	-	AIO-8	OK	Our	159	2	3	-
1: 012	065 - 072	-	AIO-8	OK	Our	58	2	1	-
1: 013	073 - 080	185 - 192	-	-	-	3	-	-	-
1: 014	081 - 088	193 - 200	-	-	-	-	-	-	-
1: 015	089 - 096	201 - 208	-	-	-	-	-	-	-
1: 016	097 - 104	209 - 216	-	-	-	-	-	-	-
1: 017	105 - 112	-	-	-	-	-	-	-	-
2: 001	217 - 224	329 - 336	-	-	-	-	-	-	-
2: 002	225 - 232	337 - 344	AIO-16	OK	Our	250	-	-	-
2: 003	233 - 240	345 - 352	-	-	-	-	-	-	-
2: 004	241 - 248	353 - 360	-	-	-	-	-	-	-
2: 005	249 - 256	361 - 368	-	-	-	-	-	-	-

Field	Type	Description
Slot	Column	Slot refers to the card in relation to which frame and its position in the frame. For example, 1:011 indicates the card is in Frame 1 and in slot 11.
Ports	Column	Ports display the ports that are designated to that slot. This column shows the first half of the sixteen ports on an AIO-16.
Ports	Column	Ports display the ports that are designated to that slot. This column shows the second half of the sixteen ports on an AIO-16.
Card Type	Column	Card Type displays the type of card in the ADAM.
Comm	Column	Comm displays the communication status of the card. Display statuses are: (blank) = no card present OK = the card is communicating with the master controller. BAD = the card is not communicating with the master controller
Status	Column	Status displays the status of the information on the card. Display statuses are: CUR = the information from the master controller is current and up-to-date. OLD = the information from the master controller is not current and out-of-date. CUT = the information is bad and communications are cut.
Errors To	Column	Errors To displays the number of errors the Master Controller logs that have been sent to the I/O card.
BER To	Column	BER (burst error rate) displays the number of errors that have been sent to the card in the last 10 minutes.
Errors From	Column	Errors From displays the number of errors the Master controller logs that have been sent from the I/O card.
BER From	Column	BER (burst error rate) displays the number of errors that have been sent from the card in the last 10 minutes.

Download AIO-16 Firmware through AZedit

1. Open **AZedit**.
2. From the Status menu, select **Software Versions**, then **I/O Cards**.
The I/O Card Version Information screen appears showing the occupied slots in the system.



3. Highlight the **Version** to be updated.
You may select more than one version at a time by holding the **CTRL** key down while you select.
4. Right-click the highlighted selection and select **Download Firmware**.
The Firmware Download Window appears.
5. Using the browse feature, browse to the **file to be downloaded**.
6. Click **Open**.
The Download Device Firmware window appears.
7. Click **Begin Download**.
The download begins.



8. When the download is finished, click **OK**.
The AIO-16 firmware download is complete. This takes a minute or two to occur.
9. Verify the **version upgrade in the I/O Card Version Information window** is correct.

WARNING!: Do NOT power down the frame or pull the AIO-16 card(s) from the frame until you have verified the new version information from AZedit. If the card loses power while reprogramming the on-board flash memory, the card may become unbootable, and may need to have its flash chips reprogrammed.

AIO-16 Ports, DBX Linking, and Interconnects

AIO-16 Ports

With the introduction of an AIO-16 card into the ADAM frame layout, the number of possible ports available doubles from 136 to 272 ports. This is because instead of 8 channels of audio per card, you now have 16 channels of audio per card. However, to be backwards compatible with the AIO-8 cards, the 16 channels had to be divided into two separate groups of eight channels per card (a bottom group and a top group). For example, if you have an AIO-16 card in slot one of an ADAM frame, the bottom group of eight channels will have ports 1-8 assigned to them, while the top group of eight channels will have ports 137-144 assigned to them, see below.

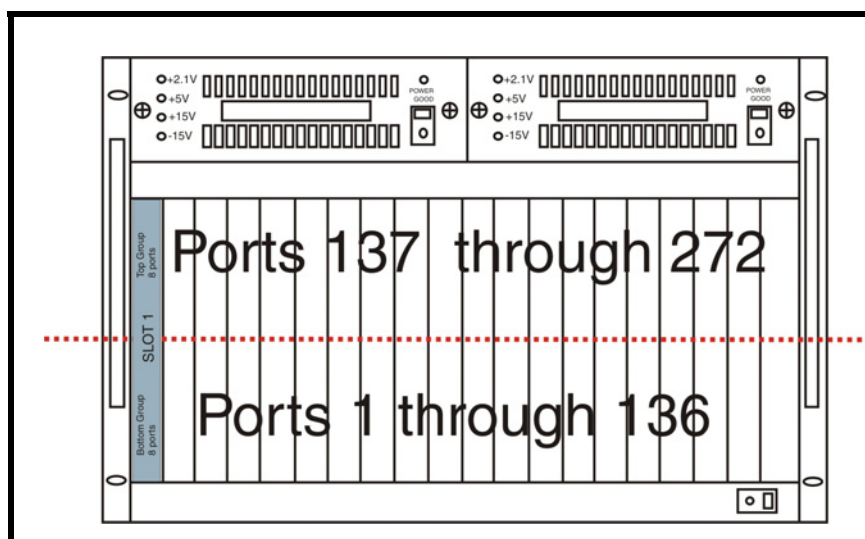


FIGURE 5. ADAM Frame with AIO-16 cards only and the port numbering scheme.

The ADAM Intercom System can run both the AIO-8 and AIO-16 card in the same frame. You can position your AIO-8 and AIO-16 cards in any slot or in any sequence within the ADAM frame. However, when mixing the AIO-8 and AIO-16 cards, it is important to know that the port numbering is consistent with the two-tier port system. For example, in slots 1,2,3 and 4, you have AIO-8 cards and in slot 5 you have an AIO-16 card. The port numbering scheme assigns 8 ports per card for the first four slots. When assigning ports to slot 5, the bottom group of ports are assigned in sequence with the AIO-8 cards; however, the top group of ports associated with the AIO-16 card are assigned the corresponding ports with the card position. This means that ports 137 through 168 are unused and the top group of ports used by the AIO-16 card starts with port 169 (see below).

Essentially, the port numbering is static, in that the port numbers used do not change whether you are using an AIO-8 or an AIO-16 card. Rather, it is a question of whether the ports shall or shall not exist.

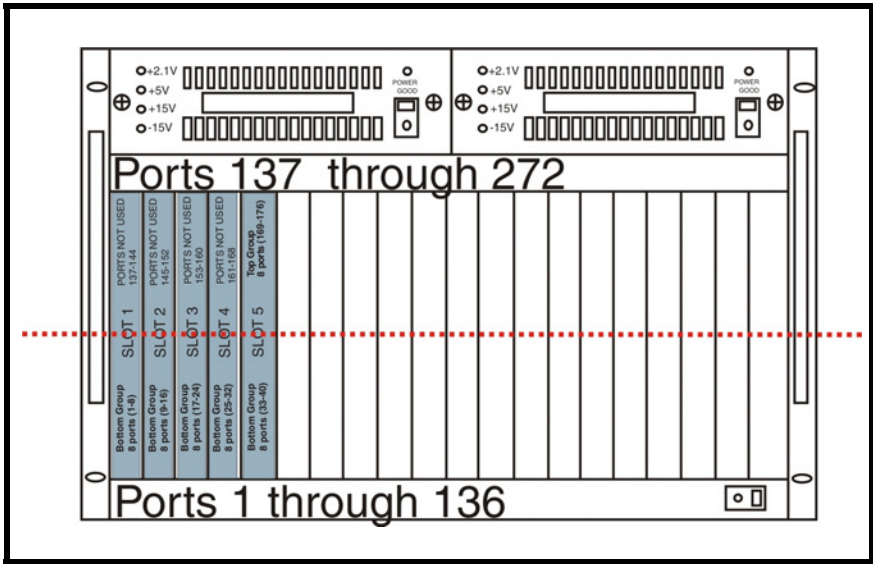
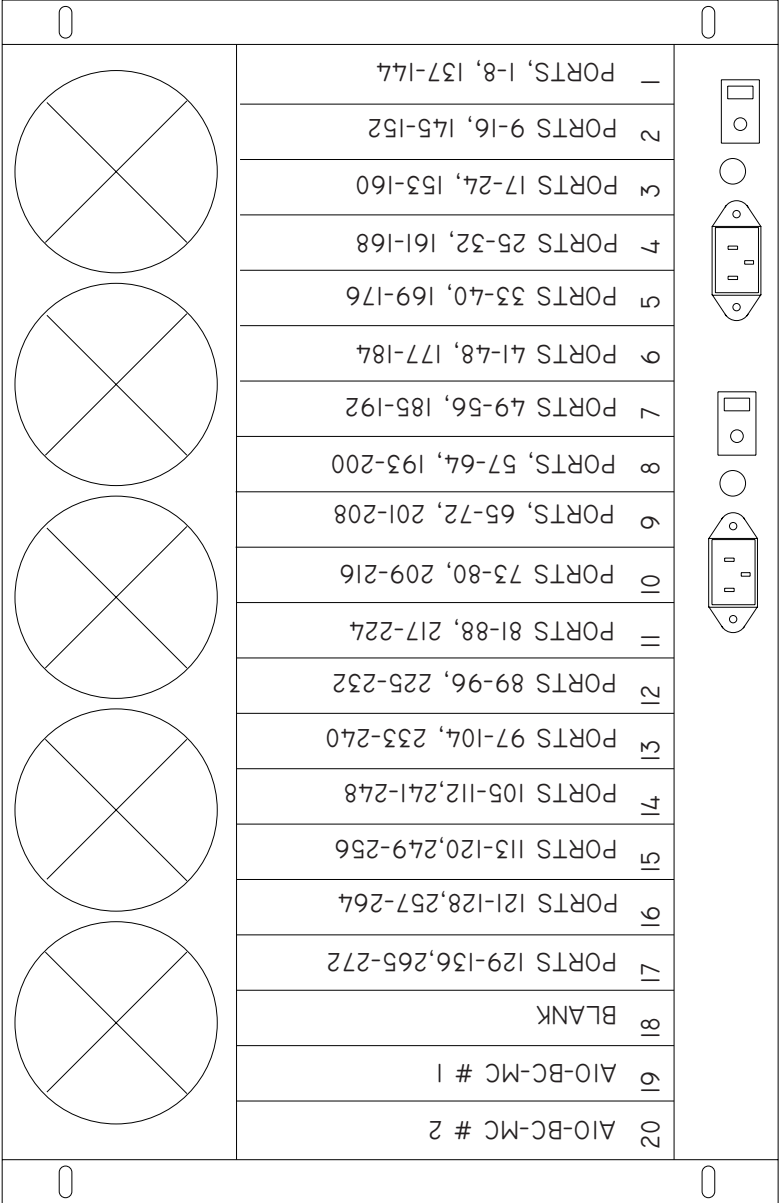


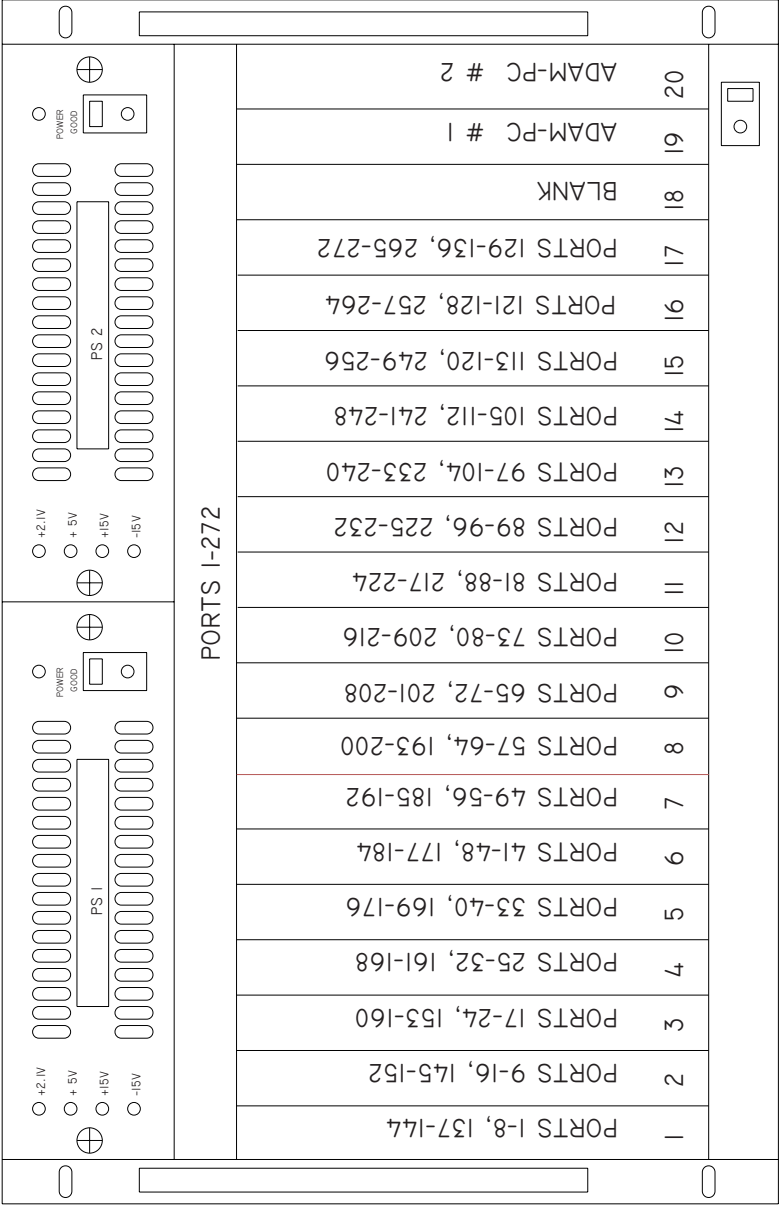
FIGURE 6. ADAM frame with both AIO-8 and AIO-16 cards.

ADAM SINGLE FRAME
PORT vs CARD LAYOUT
AIO-I6 272x272

ADAM MATRIX FRAME
REAR VIEW

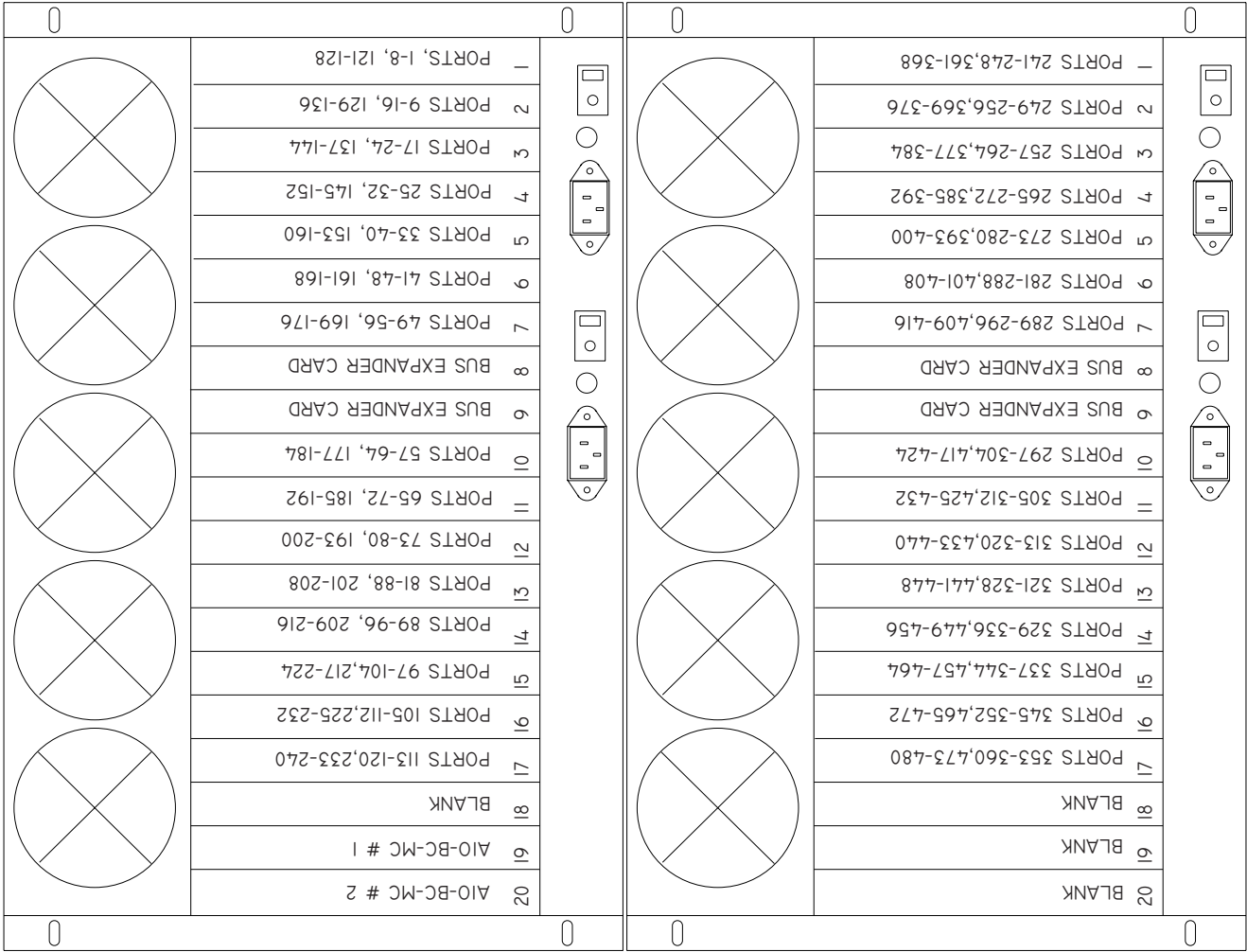


ADAM MATRIX FRAME
FRONT VIEW

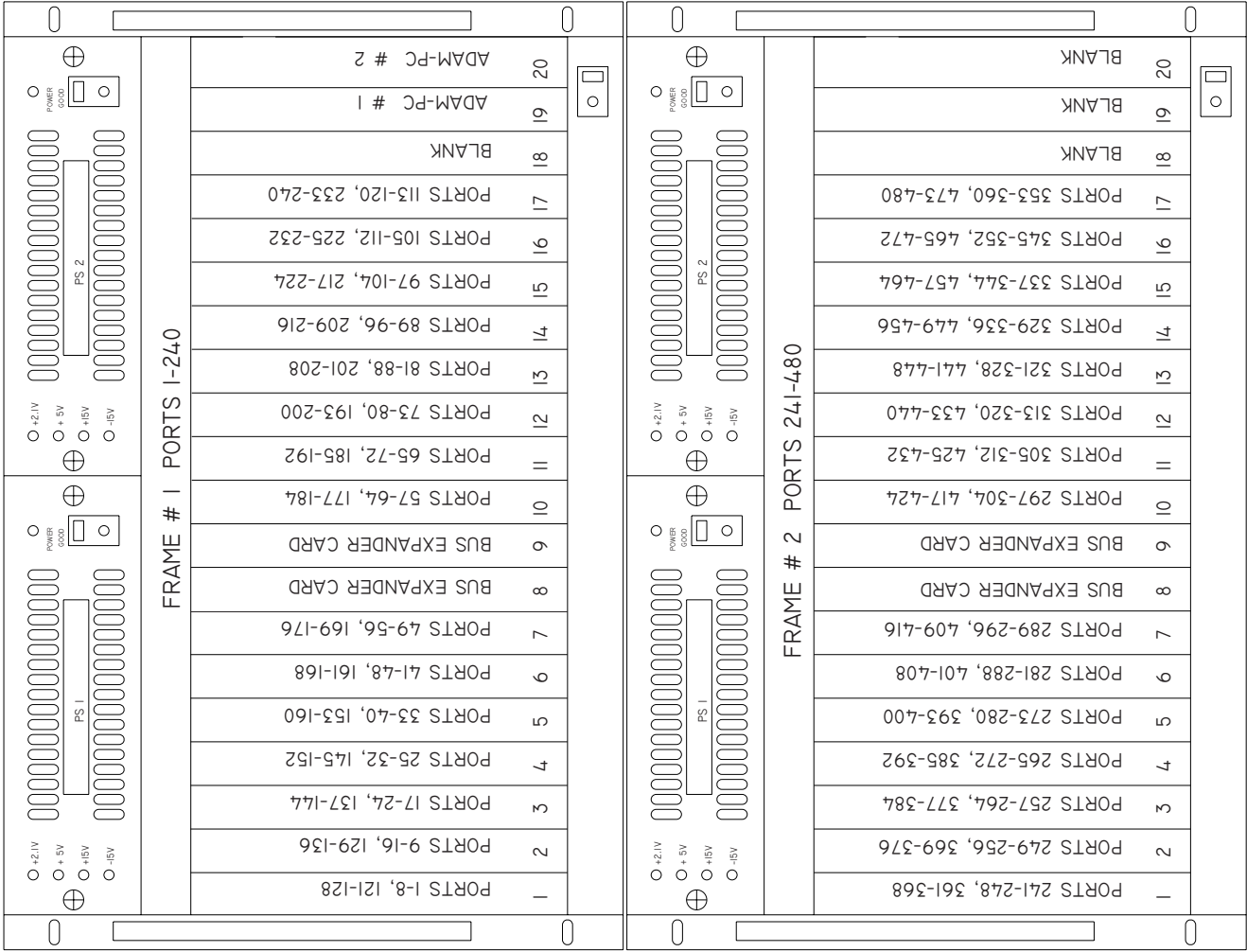


ADAM 2 FRAME DBX SYSTEM
REDUNDANT AUDIO
PORT VS CARD LAYOUT
AIO-16 480x480

ADAM MATRIX FRAMES
REAR VIEW



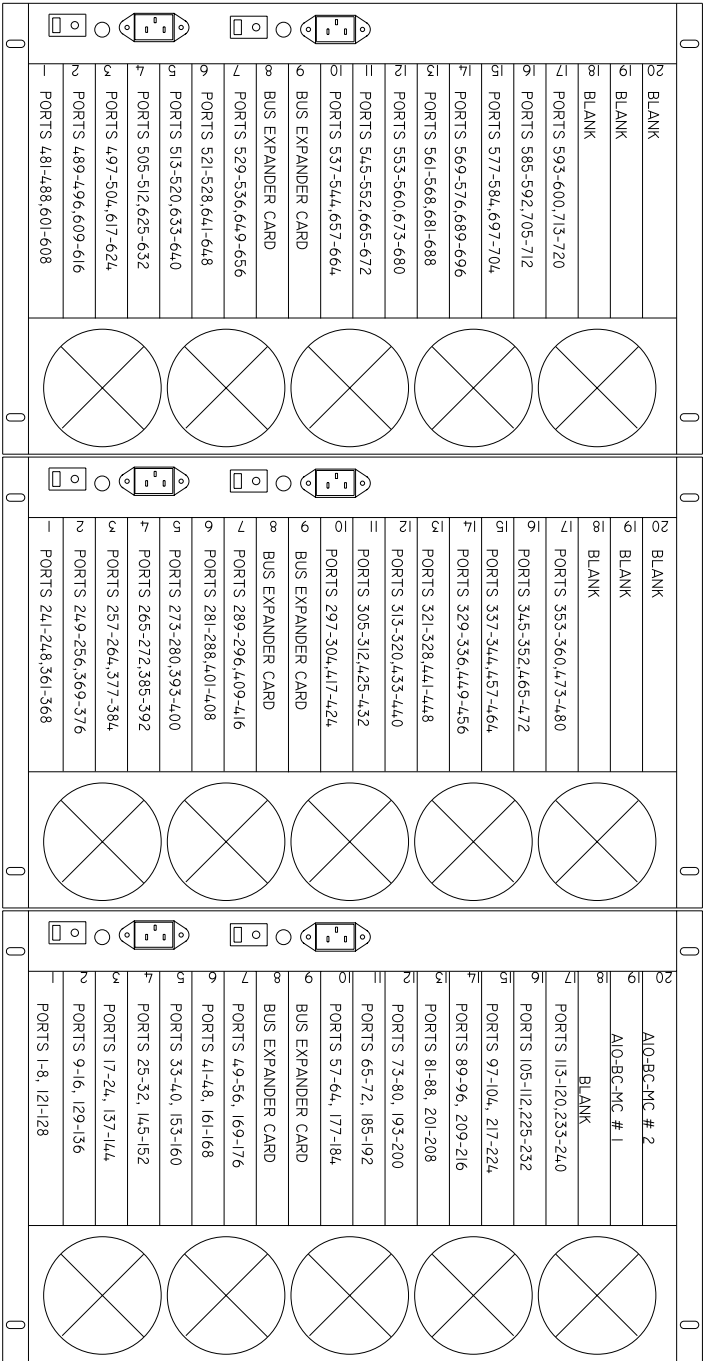
ADAM MATRIX FRAMES
FRONT VIEW



ADAM 3 FRAME DBX SYSTEM
NON-REDUNDANT AUDIO
PORT VS CARD LAYOUT

A10-I6 720 X 720

ADAM MATRIX FRAMES
REAR VIEW

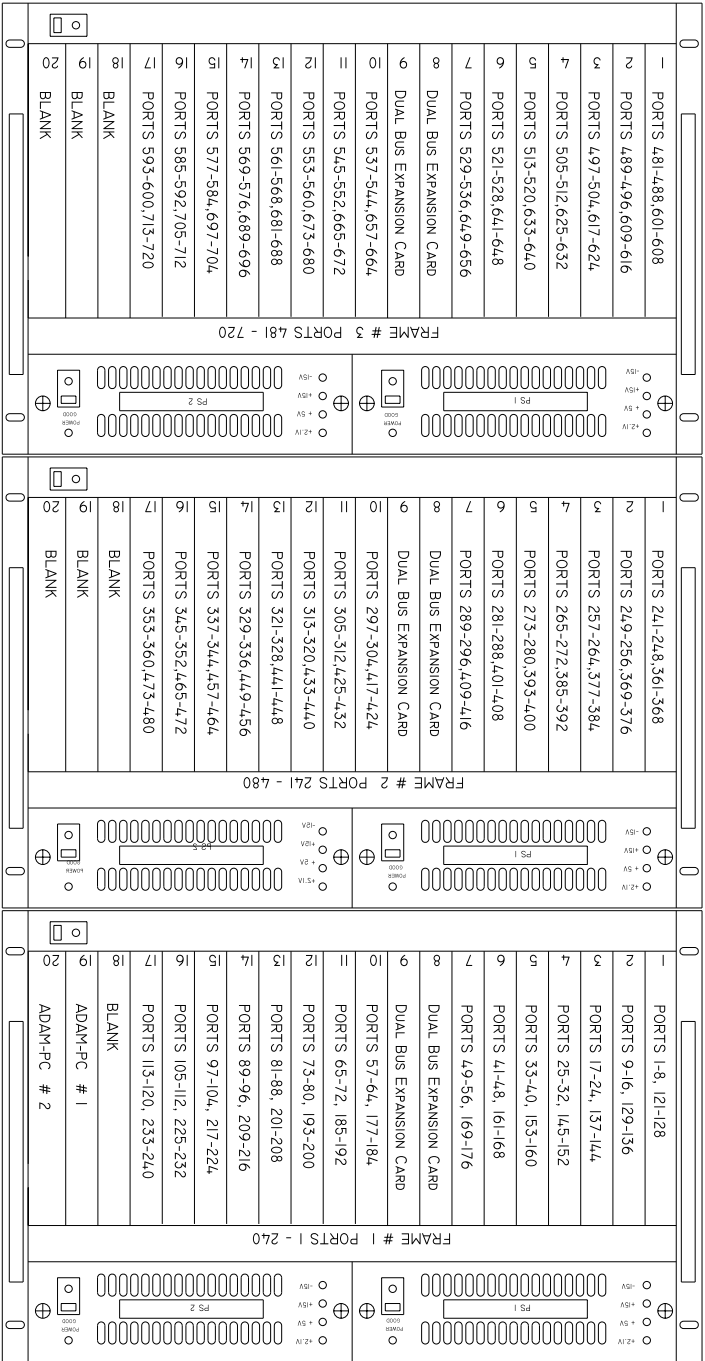


SLAVE FRAME 1

SLAVE FRAME 2

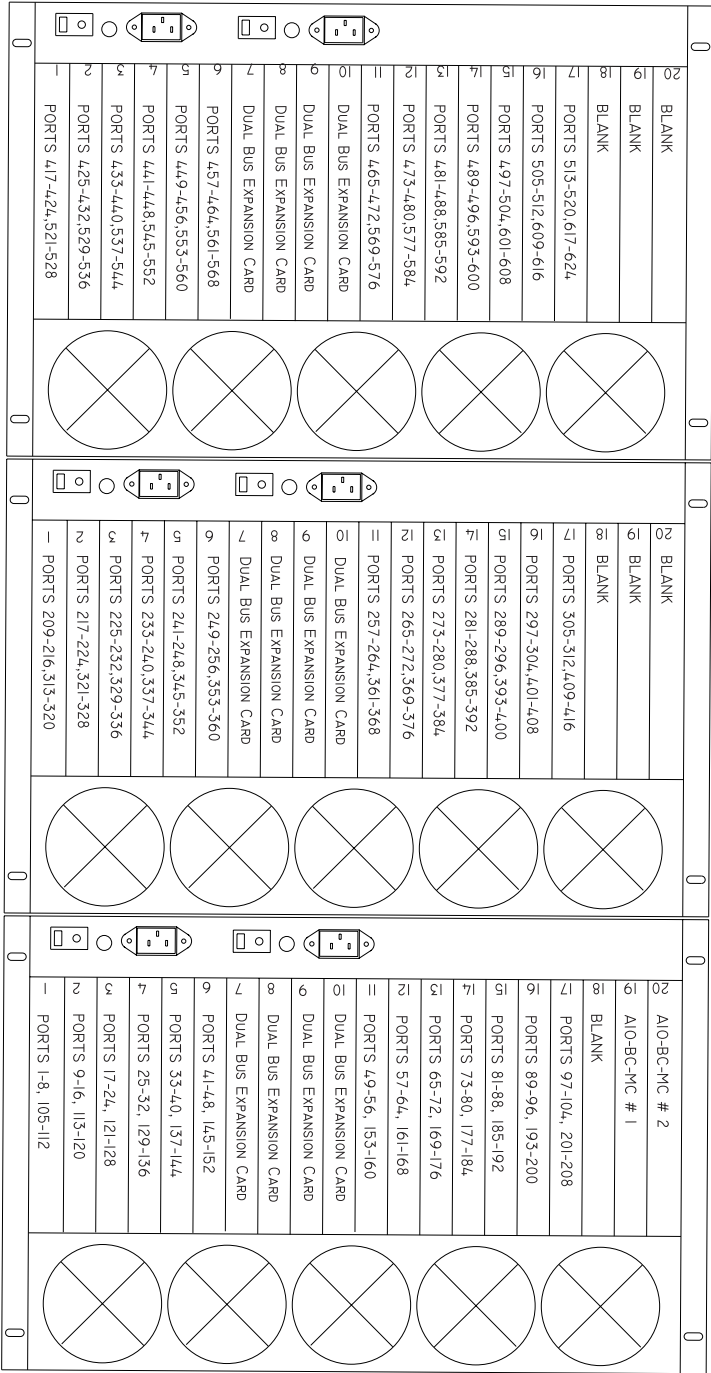
SLAVE FRAME 3

ADAM MATRIX FRAMES
FRONT VIEW

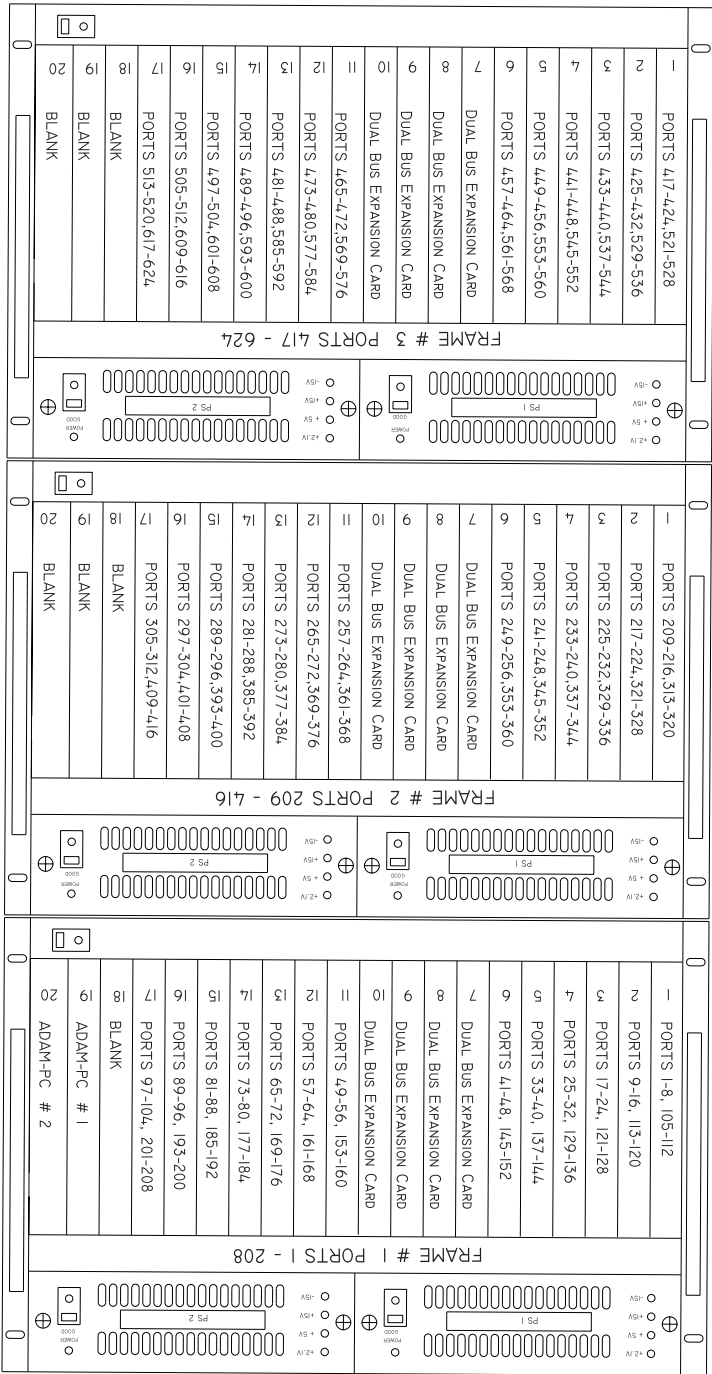


ADAM 3 FRAME DBX SYSTEM
REDUNDANT AUDIO
PORT VS CARD LAYOUT

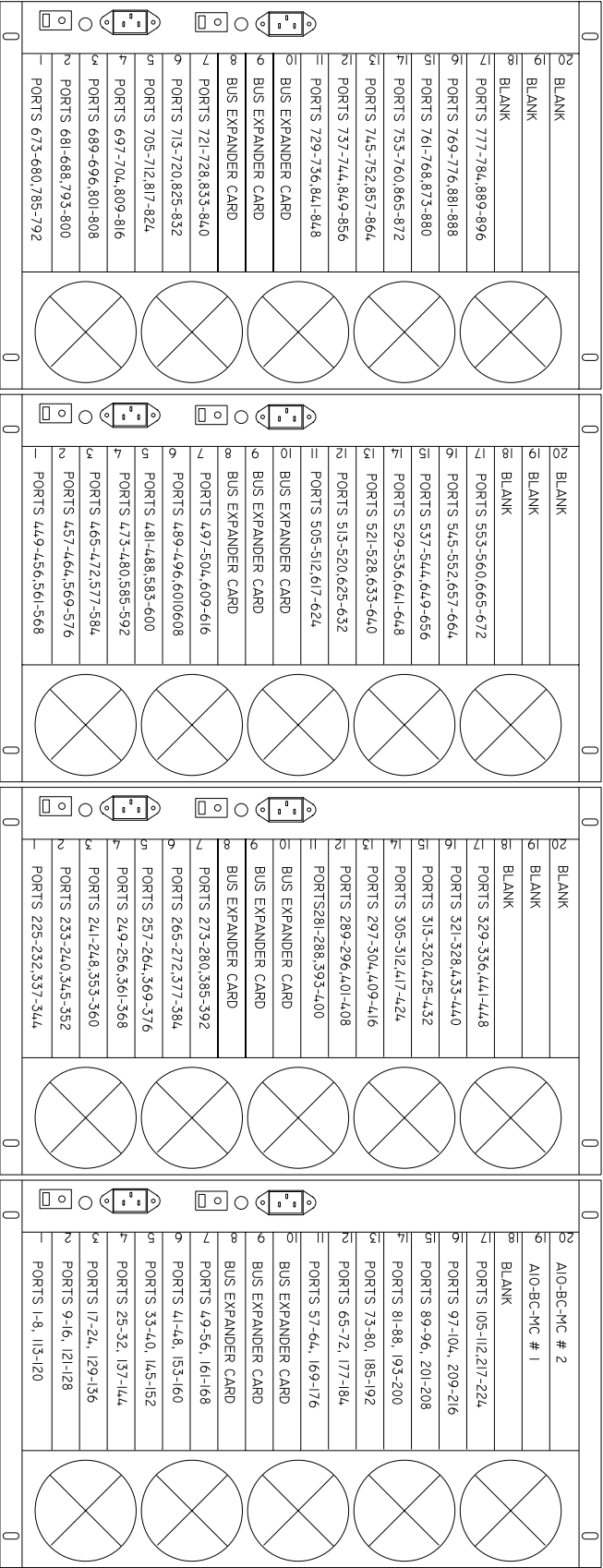
ADAM MATRIX FRAMES
REAR VIEW



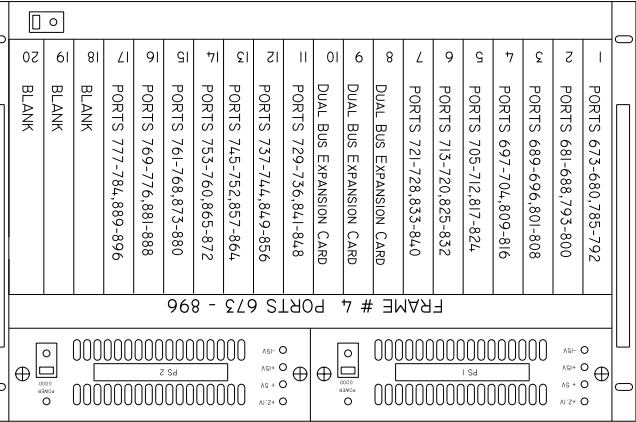
ADAM MATRIX FRAMES
FRONT VIEW



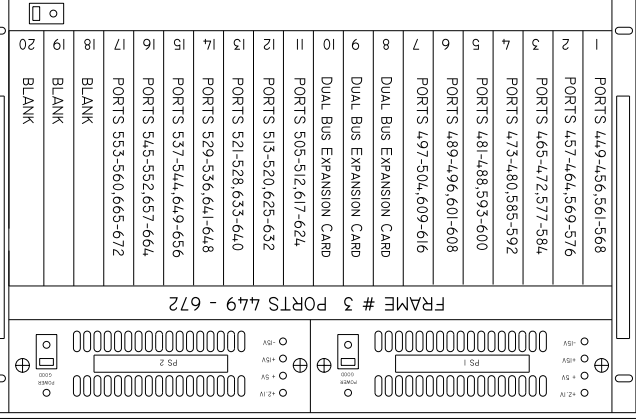
ADAM MATRIX FRAME
REAR VIEW



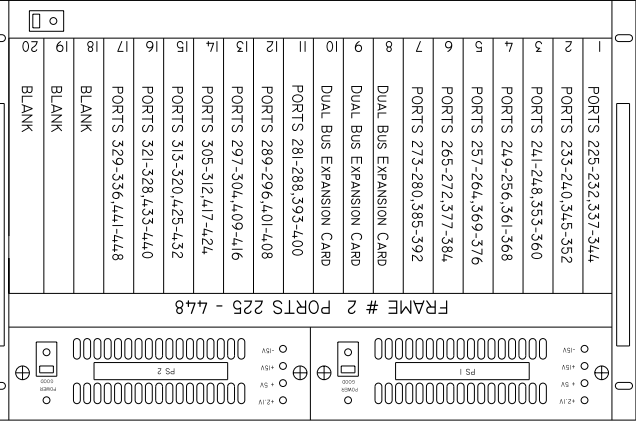
SLAVE FRAME 4



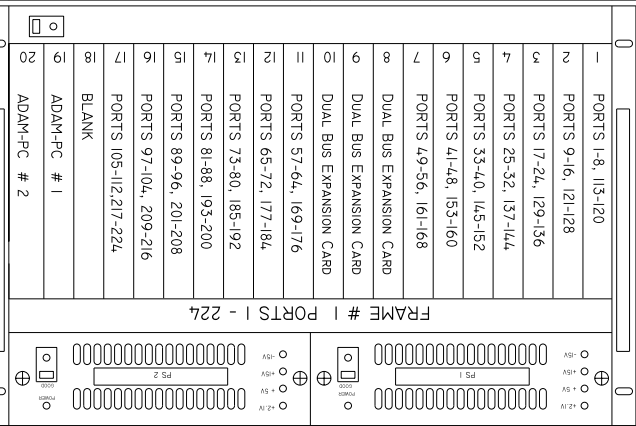
SLAVE FRAME 3



SLAVE FRAME 2



MASTER FRAME 1



ADAM MATRIX FRAMES
FRONT VIEW

ADAM 4 FRAME DBX SYSTEM
NON-REDUNDANT AUDIO
PORT VS CARD LAYOUT
AIO-I6 896 X 896

1 Frame 272 x 272

AIO-16 DBX Address and Port Locations

Matrix Frame & AIO Slot #	System AIO Card Number	Matrix Port / DIP Switch Table - ADAM272							
		Keypanel & TIF Rear DIP Switch Settings (DS-4 through DS-7)							
		U= Up D= Down							
		DUUU	UDUU	DDUU	UUDU	DUDU	UDDU	DDDU	UUUD
		I.D. -1	I.D. -2	I.D.-3	I.D. -4	I.D. -5	I.D. -6	I.D. -7	I.D. -8
1-1A	1	1	2	3	4	5	6	7	8
1-2A	2	9	10	11	12	13	14	15	16
1-3A	3	17	18	19	20	21	22	23	24
1-4A	4	25	26	27	28	29	30	31	32
1-5A	5	33	34	35	36	37	38	39	40
1-6A	6	41	42	43	44	45	46	47	48
1-7A	7	49	50	51	52	53	54	55	56
1-8A	8*	57	58	59	60	61	62	63	64
1-9A	9*	65	66	67	68	69	70	71	72
1-10A	10	73	74	75	76	77	78	79	80
1-11A	11	81	82	83	84	85	86	87	88
1-12A	12	89	90	91	92	93	94	95	96
1-13A	13	97	98	99	100	101	102	103	104
1-14A	14	105	106	107	108	109	110	111	112
1-15A	15	113	114	115	116	117	118	119	120
1-16A	16	121	122	123	124	125	126	127	128
1-17A	17	129	130	131	132	133	134	135	136
1-1B	1	137	138	139	140	141	142	143	144
1-2B	2	145	146	147	148	149	150	151	152
1-3B	3	153	154	155	156	157	158	159	160
1-4B	4	161	162	163	164	165	166	167	168
1-5B	5	169	170	171	172	173	174	175	176
1-6B	6	177	178	179	180	181	182	183	184
1-7B	7	185	186	187	188	189	190	191	192
1-8B	8*	193	194	195	196	197	198	199	200
1-9B	9*	201	202	203	204	205	206	207	208
1-10B	10	209	210	211	212	213	214	215	216
1-11B	11	217	218	219	220	221	222	223	224
1-12B	12	225	226	227	228	229	230	231	232
1-13B	13	233	234	235	236	237	238	239	240
1-14B	14	241	242	243	244	245	246	247	248
1-15B	15	249	250	251	252	253	254	255	256
1-16B	16	257	258	259	260	261	262	263	264
1-17B	17	265	266	267	268	269	270	271	272
*DENOTES CLOCK CARD POSITIONS									

2 Frame Non-Redundant 512 x 512

AIO-16 DBX Address and Port Locations

Matrix Frame & AIO Slot #	System AIO Card Number	Matrix Port / DIP Switch Table - ADAM512 Keypanel & TIF Rear DIP Switch Settings (DS-4 through DS-7) U= Up D= Down							
1-1A	1	1	2	3	4	5	6	7	8
1-2A	2	9	10	11	12	13	14	15	16
1-3A	3	17	18	19	20	21	22	23	24
1-4A	4	25	26	27	28	29	30	31	32
1-5A	5	33	34	35	36	37	38	39	40
1-6A	6	41	42	43	44	45	46	47	48
1-7A	7	49	50	51	52	53	54	55	56
1-8A	8*	57	58	59	60	61	62	63	64
DBX	9*	DBX Slot, Frame 1							
1-10A	10	65	66	67	68	69	70	71	72
1-11A	11	73	74	75	76	77	78	79	80
1-12A	12	81	82	83	84	85	86	87	88
1-13A	13	89	90	91	92	93	94	95	96
1-14A	14	97	98	99	100	101	102	103	104
1-15A	15	105	106	107	108	109	110	111	112
1-16A	16	113	114	115	116	117	118	119	120
1-17A	17	121	122	123	124	125	126	127	128
1-1B	1	129	130	131	132	133	134	135	136
1-2B	2	137	138	139	140	141	142	143	144
1-3B	3	145	146	147	148	149	150	151	152
1-4B	4	153	154	155	156	157	158	159	160
1-5B	5	161	162	163	164	165	166	167	168
1-6B	6	169	170	171	172	173	174	175	176
1-7B	7	177	178	179	180	181	182	183	184
1-8B	8*	185	186	187	188	189	190	191	192
	9*	Part of DBX Above							
1-10B	10	193	194	195	196	197	198	199	200
1-11B	11	201	202	203	204	205	206	207	208
1-12B	12	209	210	211	212	213	214	215	216
1-13B	13	217	218	219	220	221	222	223	224
1-14B	14	225	226	227	228	229	230	231	232
1-15B	15	233	234	235	236	237	238	239	240
1-16B	16	241	242	243	244	245	246	247	248
1-17B	17	249	250	251	252	253	254	255	256
* DENOTES CLOCK CARD POSITIONS									

2 Frame Non-Redundant 512 x 512 (cont.)

AIO-16 DBX Address and Port Locations

Matrix Frame & AIO Slot #	System AIO Card Number	Matrix Port / DIP Switch Table - ADAM512							
		Keypanel & TIF Rear DIP Switch Settings (DS-4 through DS-7) U= Up D= Down							
2-1A	1	257	258	259	260	261	262	263	264
2-2A	2	265	266	267	268	269	270	271	272
2-3A	3	273	274	275	276	277	278	279	280
2-4A	4	281	282	283	284	285	286	287	288
2-5A	5	289	290	291	292	293	294	295	296
2-6A	6	297	298	299	300	301	302	303	304
2-7A	7	305	306	307	308	309	310	311	312
2-8A	8*	313	314	315	316	317	318	319	320
DBX	9*	DBX Slot, Frame 2							
2-10A	10	321	322	323	324	325	326	327	328
2-11A	11	329	330	331	332	333	334	335	336
2-12A	12	337	338	339	340	341	342	343	344
2-13A	13	345	346	347	348	349	350	351	352
2-14A	14	353	354	355	356	357	358	359	360
2-15A	15	361	362	363	364	365	366	367	368
2-16A	16	369	370	371	372	373	374	375	376
2-17A	17	377	378	379	380	381	382	383	384
2-1B	1	385	386	387	388	389	390	391	392
2-2B	2	393	394	395	396	397	398	399	400
2-3B	3	401	402	403	404	405	406	407	408
2-4B	4	409	410	411	412	413	414	415	416
2-5B	5	417	418	419	420	421	422	423	424
2-6B	6	425	426	427	428	429	430	431	432
2-7B	7	433	434	435	436	437	438	439	440
2-8B	8*	441	442	443	444	445	446	447	448
	9*	Part of DBX Above							
2-10B	10	449	450	451	452	453	454	455	456
2-11B	11	457	458	459	460	461	462	463	464
2-12B	12	465	466	467	468	469	470	471	472
2-13B	13	473	474	475	476	477	478	479	480
2-14B	14	481	482	483	484	485	486	487	488
2-15B	15	489	490	491	492	493	494	495	496
2-16B	16	497	498	499	500	501	502	503	504
2-17B	17	505	506	507	508	509	510	511	512
* DENOTES CLOCK CARD POSITIONS									

2 Frame Redundant 480 x 480

AIO-16 DBX Address and Port Locations

Matrix Frame & AIO Slot #	System AIO Card Number	Matrix Port / DIP Switch Table - ADAM480 Keypanel & TIF Rear DIP Switch Settings (DS-4 through DS-7) U= Up D= Down							
1-1A	1	1	2	3	4	5	6	7	8
1-2A	2	9	10	11	12	13	14	15	16
1-3A	3	17	18	19	20	21	22	23	24
1-4A	4	25	26	27	28	29	30	31	32
1-5A	5	33	34	35	36	37	38	39	40
1-6A	6	41	42	43	44	45	46	47	48
1-7A	7	49	50	51	52	53	54	55	56
DBX	8*	DBX Slots, Frame 1							
DBX	9*								
1-10A	10	57	58	59	60	61	62	63	64
1-11A	11	65	66	67	68	69	70	71	72
1-12A	12	73	74	75	76	77	78	79	80
1-13A	13	81	82	83	84	85	86	87	88
1-14A	14	89	90	91	92	93	94	95	96
1-15A	15	97	98	99	100	101	102	103	104
1-16A	16	105	106	107	108	109	110	111	112
1-17A	17	113	114	115	116	117	118	119	120
1-1B	1	121	122	123	124	125	126	127	128
1-2B	2	129	130	131	132	133	134	135	136
1-3B	3	137	138	139	140	141	142	143	144
1-4B	4	145	146	147	148	149	150	151	152
1-5B	5	153	154	155	156	157	158	159	160
1-6B	6	161	162	163	164	165	166	167	168
1-7B	7	169	170	171	172	173	174	175	176
	8*	Part of DBX Above							
	9*								
1-10B	10	177	178	179	180	181	182	183	184
1-11B	11	185	186	187	188	189	190	191	192
1-12B	12	193	194	195	196	197	198	199	200
1-13B	13	201	202	203	204	205	206	207	208
1-14B	14	209	210	211	212	213	214	215	216
1-15B	15	217	218	219	220	221	222	223	224
1-16B	16	225	226	227	228	229	230	231	232
1-17B	17	233	234	235	236	237	238	239	240
* DENOTES CLOCK CARD POSITIONS									

2 Frame Redundant 480 x 480 (cont.)

AIO-16 DBX Address and Port Locations

Matrix Frame & AIO Slot #	System AIO Card Number	Matrix Port / DIP Switch Table - ADAM480 Keypanel & TIF Rear DIP Switch Settings (DS-4 through DS-7) U= Up D= Down							
2-1A	1	241	242	243	244	245	246	247	248
2-2A	2	249	250	251	252	253	254	255	256
2-3A	3	257	258	259	260	261	262	263	264
2-4A	4	265	266	267	268	269	270	271	272
2-5A	5	273	274	275	276	277	278	279	280
2-6A	6	281	282	283	284	285	286	287	288
2-7A	7	289	290	291	292	293	294	295	296
DBX	8*	DBX Slots, Frame 2							
DBX	9*								
2-10A	10	297	298	299	300	301	302	303	304
2-11A	11	305	306	307	308	309	310	311	312
2-12A	12	313	314	315	316	317	318	319	320
2-13A	13	321	322	323	324	325	326	327	328
2-14A	14	329	330	331	332	333	334	335	336
2-15A	15	337	338	339	340	341	342	343	344
2-16A	16	345	346	347	348	349	350	351	352
2-17A	17	353	354	355	356	357	358	359	360
2-1B	1	361	362	363	364	365	366	367	368
2-2B	2	369	370	371	372	373	374	375	376
2-3B	3	377	378	379	380	381	382	383	384
2-4B	4	385	386	387	388	389	390	391	392
2-5B	5	393	394	395	396	397	398	399	400
2-6B	6	401	402	403	404	405	406	407	408
2-7B	7	409	410	411	412	413	414	415	416
	8*	Part of DBX Above							
	9*								
2-10B	10	417	418	419	420	421	422	423	424
2-11B	11	425	426	427	428	429	430	431	432
2-12B	12	433	434	435	436	437	438	439	440
2-13B	13	441	442	443	444	445	446	447	448
2-14B	14	449	450	451	452	453	454	455	456
2-15B	15	457	458	459	460	461	462	463	464
2-16B	16	465	466	467	468	469	470	471	472
2-17B	17	473	474	475	476	477	478	479	480
* DENOTES CLOCK CARD POSITIONS									

3 Frame Redundant 624 x 624

AIO-16 DBX Address and Port Locations

Matrix Frame & AIO Slot #	System AIO Card Number	Matrix Port / DIP Switch Table - ADAM 624 Keypanel & TIF Rear DIP Switch Settings (DS-4 through DS-7) U= Up D= Down							
1-1A	1	1	2	3	4	5	6	7	8
1-2A	2	9	10	11	12	13	14	15	16
1-3A	3	17	18	19	20	21	22	23	24
1-4A	4	25	26	27	28	29	30	31	32
1-5A	5	33	34	35	36	37	38	39	40
1-6A	6	41	42	43	44	45	46	47	48
DBX	7	DBX Slots, Frame 1							
DBX	8*								
DBX	9*								
DBX	10								
1-11A	11	49	50	51	52	53	54	55	56
1-12A	12	57	58	59	60	61	62	63	64
1-13A	13	65	66	67	68	69	70	71	72
1-14A	14	73	74	75	76	77	78	79	80
1-15A	15	81	82	83	84	85	86	87	88
1-16A	16	89	90	91	92	93	94	95	96
1-17A	17	97	98	99	100	101	102	103	104
1-1B	1	105	106	107	108	109	110	111	112
1-2B	2	113	114	115	116	117	118	119	120
1-3B	3	121	122	123	124	125	126	127	128
1-4B	4	129	130	131	132	133	134	135	136
1-5B	5	137	138	139	140	141	142	143	144
1-6B	6	145	146	147	148	149	150	151	152
	7	Part of DBX Above							
	8*								
	9*								
	10								
1-11B	11	153	154	155	156	157	158	159	160
1-12B	12	161	162	163	164	165	166	167	168
1-13B	13	169	170	171	172	173	174	175	176
1-14B	14	177	178	179	180	181	182	183	184
1-15B	15	185	186	187	188	189	190	191	192
1-16B	16	193	194	195	196	197	198	199	200
1-17B	17	201	202	203	204	205	206	207	208
* DENOTES CLOCK CARD POSITIONS									
2-1A	1	209	210	211	212	213	214	215	216
2-2A	2	217	218	219	220	221	222	223	224

2-3A	3	225	226	227	228	229	230	231	232
2-4A	4	233	234	235	236	237	238	239	240
2-5A	5	241	242	243	244	245	246	247	248
2-6A	6	249	250	251	252	253	254	255	256
DBX	7	DBX Slots, Frame 2							
DBX	8*								
DBX	9*								
DBX	10								
2-11A	11	257	258	259	260	261	262	263	264
2-12A	12	265	266	267	268	269	270	271	272
2-13A	13	273	274	275	276	277	278	279	280
2-14A	14	281	282	283	284	285	286	287	288
2-15A	15	289	290	291	292	293	294	295	296
2-16A	16	297	298	299	300	301	302	303	304
2-17A	17	305	306	307	308	309	310	311	312
2-1B	1	313	314	315	316	317	318	319	320
2-2B	2	321	322	323	324	325	326	327	328
2-3B	3	329	330	331	332	333	334	335	336
2-4B	4	337	338	339	340	341	342	343	344
2-5B	5	345	346	347	348	349	350	351	352
2-6B	6	353	354	355	356	357	358	359	360
	7	Part of DBX Above							
	8*								
	9*								
	10								
2-11B	11	361	362	363	364	365	366	367	368
2-12B	12	369	370	371	372	373	374	375	376
2-13B	13	377	378	379	380	381	382	383	384
2-14B	14	385	386	387	388	389	390	391	392
2-15B	15	393	394	395	396	397	398	399	400
2-16B	16	401	402	403	404	405	406	407	408
2-17B	17	409	410	411	412	413	414	415	416
* DENOTES CLOCK CARD POSITIONS									
3-1A	1	417	418	419	420	421	422	423	424
3-2A	2	425	426	427	428	429	430	431	432
3-3A	3	433	434	435	436	437	438	439	440
3-4A	4	441	442	443	444	445	446	447	448
3-5A	5	449	450	451	452	453	454	455	456
3-6A	6	457	458	459	460	461	462	463	464
DBX	7	DBX Slots, Frame 3							
DBX	8*								
DBX	9*								
DBX	10								
3-11A	11	465	466	467	468	469	470	471	472
3-12A	12	473	474	475	476	477	478	479	480

3-13A	13	481	482	483	484	485	486	487	488
3-14A	14	489	490	491	492	493	494	495	496
3-15A	15	497	498	499	500	501	502	503	504
3-16A	16	505	506	507	508	509	510	511	512
3-17A	17	513	514	515	516	517	518	519	520
3-1B	1	521	522	523	524	525	526	527	528
3-2B	2	529	530	531	532	533	534	535	536
3-3B	3	537	538	539	540	541	542	543	544
3-4B	4	545	546	547	548	549	550	551	552
3-5B	5	553	554	555	556	557	558	559	560
3-6B	6	561	562	563	564	565	566	567	568
	7	Part of DBX Above							
	8*								
	9*								
	10								
3-11B	11	569	570	571	572	573	574	575	576
3-12B	12	577	578	579	580	581	582	583	584
3-13B	13	585	586	587	588	589	590	591	592
3-14B	14	593	594	595	596	597	598	599	600
3-15B	15	601	602	603	604	605	606	607	608
3-16B	16	609	610	611	612	613	614	615	616
3-17B	17	617	618	619	620	621	622	623	624

4 Frame Non-Redundant 896 x 896

AIO-16 DBX Address and Port Locations

Matrix Frame & AIO Slot #	System AIO Card Number	Matrix Port / DIP Switch Table - ADAM 896 Keypanel & TIF Rear DIP Switch Settings (DS-4 through DS-7) U= Up D= Down							
1-1A	1	1	2	3	4	5	6	7	8
1-2A	2	9	10	11	12	13	14	15	16
1-3A	3	17	18	19	20	21	22	23	24
1-4A	4	25	26	27	28	29	30	31	32
1-5A	5	33	34	35	36	37	38	39	40
1-6A	6	41	42	43	44	45	46	47	48
1-7A	7	49	50	51	52	53	54	55	56
DBX	8*	DBX Slots, Frame 1							
DBX	9*								
DBX	10								
1-11A	11	57	58	59	60	61	62	63	64
1-12A	12	65	66	67	68	69	70	71	72
1-13A	13	73	74	75	76	77	78	79	80
1-14A	14	81	82	83	84	85	86	87	88
1-15A	15	89	90	91	92	93	94	95	96

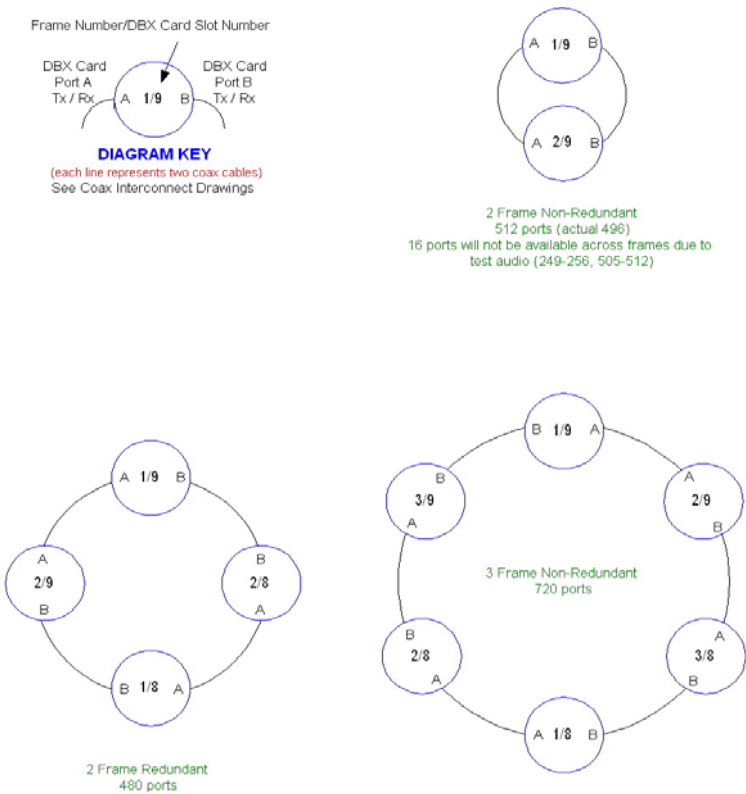
1-16A	16	97	98	99	100	101	102	103	104
1-17A	17	105	106	107	108	109	110	111	112
1-1B	1	113	114	115	116	117	118	119	120
1-2B	2	121	122	123	124	125	126	127	128
1-3B	3	129	130	131	132	133	134	135	136
1-4B	4	137	138	139	140	141	142	143	144
1-5B	5	145	146	147	148	149	150	151	152
1-6B	6	153	154	155	156	157	158	159	160
1-7B	7	161	162	163	164	165	166	167	168
	8*	Part of DBX Above							
	9*								
	10								
1-11B	11	169	170	171	172	173	174	175	176
1-12B	12	177	178	179	180	181	182	183	184
1-13B	13	185	186	187	188	189	190	191	192
1-14B	14	193	194	195	196	197	198	199	200
1-15B	15	201	202	203	204	205	206	207	208
1-16B	16	209	210	211	212	213	214	215	216
1-17B	17	217	218	219	220	221	222	223	224
* DENOTES CLOCK CARD POSITIONS									
2-1A	1	225	226	227	228	229	230	231	232
2-2A	2	233	234	235	236	237	238	239	240
2-3A	3	241	242	243	244	245	246	247	248
2-4A	4	249	250	251	252	253	254	255	256
2-5A	5	257	258	259	260	261	262	263	264
2-6A	6	265	266	267	268	269	270	271	272
2-7A	7	273	274	275	276	277	278	279	280
DBX	8*	DBX Slots, Frame 2							
DBX	9*								
DBX	10								
2-11A	11	281	282	283	284	285	286	287	288
2-12A	12	289	290	291	292	293	294	295	296
2-13A	13	297	298	299	300	301	302	303	304
2-14A	14	305	306	307	308	309	310	311	312
2-15A	15	313	314	315	316	317	318	319	320
2-16A	16	321	322	323	324	325	326	327	328
2-17A	17	329	330	331	332	333	334	335	336
2-1B	1	337	338	339	340	341	342	343	344
2-2B	2	345	346	347	348	349	350	351	352
2-3B	3	353	354	355	356	357	358	359	360
2-4B	4	361	362	363	364	365	366	367	368
2-5B	5	369	370	371	372	373	374	375	376
2-6B	6	377	378	379	380	381	382	383	384
2-7B	7	385	386	387	388	389	390	391	392

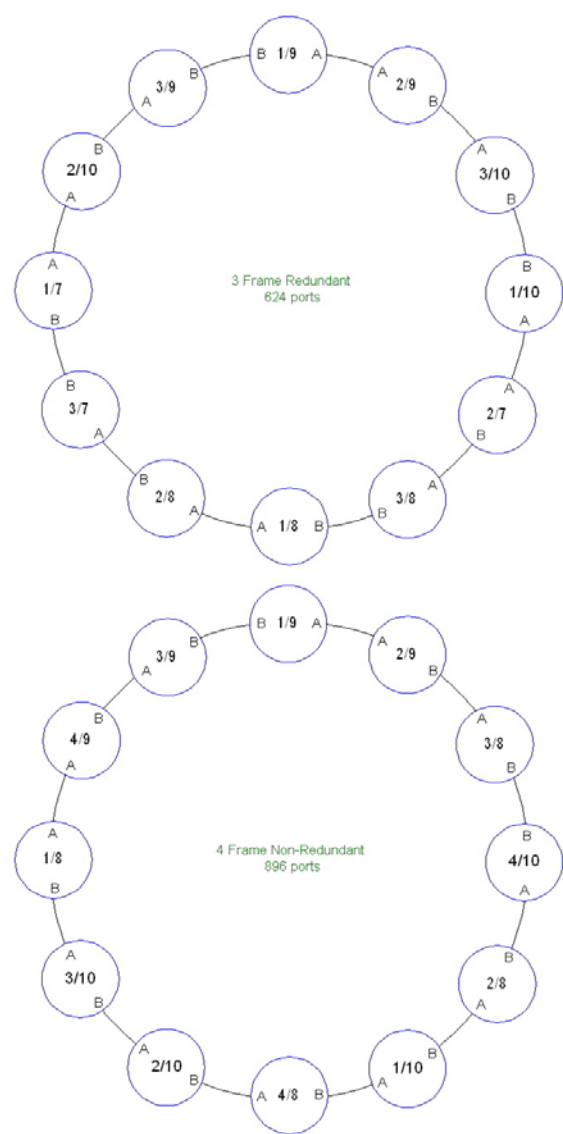
	8*	Part of DBX Above							
	9*								
	10								
2-11B	11	393	394	395	396	397	398	399	400
2-12B	12	401	402	403	404	405	406	407	408
2-13B	13	409	410	411	412	413	414	415	416
2-14B	14	417	418	419	420	421	422	423	424
2-15B	15	425	426	427	428	429	430	431	432
2-16B	16	433	434	435	436	437	438	439	440
2-17B	17	441	442	443	444	445	446	447	448
* DENOTES CLOCK CARD POSITIONS									
3-1A	1	449	450	451	452	453	454	455	456
3-2A	2	457	458	459	460	461	462	463	464
3-3A	3	465	466	467	468	469	470	471	472
3-4A	4	473	474	475	476	477	478	479	480
3-5A	5	481	482	483	484	485	486	487	488
3-6A	6	489	490	491	492	493	494	495	496
3-7A	7	497	498	499	500	501	502	503	504
DBX	8*	DBX Slots, Frame 3							
DBX	9*								
DBX	10								
3-11A	11	505	506	507	508	509	510	511	512
3-12A	12	513	514	515	516	517	518	519	520
3-13A	13	521	522	523	524	525	526	527	528
3-14A	14	529	530	531	532	533	534	535	536
3-15A	15	537	538	539	540	541	542	543	544
3-16A	16	545	546	547	548	549	550	551	552
3-17A	17	553	554	555	556	557	558	559	560
3-1B	1	561	562	563	564	565	566	567	568
3-2B	2	569	570	571	572	573	574	575	576
3-3B	3	577	578	579	580	581	582	583	584
3-4B	4	585	586	587	588	589	590	591	592
3-5B	5	593	594	595	596	597	598	599	600
3-6B	6	601	602	603	604	605	606	607	608
3-7B	7	609	610	611	612	613	614	615	616
	8*	Part of DBX Above							
	9*								
	10								
3-11B	11	617	618	619	620	621	622	623	624
3-12B	12	625	626	627	628	629	630	631	632
3-13B	13	633	634	635	636	637	638	639	640
3-14B	14	641	642	643	644	645	646	647	648
3-15B	15	649	650	651	652	653	654	655	656
3-16B	16	657	658	659	660	661	662	663	664
3-17B	17	665	666	667	668	669	670	671	672

* DENOTES CLOCK CARD POSITIONS									
4-1A	1	673	674	675	676	677	678	679	680
4-2A	2	681	682	683	684	685	686	687	688
4-3A	3	689	690	691	692	693	694	695	696
4-4A	4	697	698	699	700	701	702	703	704
4-5A	5	705	706	707	708	709	710	711	712
4-6A	6	713	714	715	716	717	718	719	720
3-7A	7	721	722	723	724	725	726	727	728
DBX	8*	DBX Slots, Frame 4							
DBX	9*								
DBX	10								
4-11A	11	729	730	731	732	733	734	735	736
4-12A	12	737	738	739	740	741	742	743	744
4-13A	13	745	746	747	748	749	750	751	752
4-14A	14	753	754	755	756	757	758	759	760
4-15A	15	761	762	763	764	765	766	767	768
4-16A	16	769	770	771	772	773	774	775	776
4-17A	17	777	778	779	780	781	782	783	784
4-1B	1	785	786	787	788	789	790	791	792
4-2B	2	793	794	795	796	797	798	799	800
4-3B	3	801	802	803	804	805	806	807	808
4-4B	4	809	810	811	812	813	814	815	816
4-5B	5	817	818	819	820	821	822	823	824
4-6B	6	825	826	827	828	829	830	831	832
4-7B	7	833	834	835	836	837	838	839	840
	8*	Part of DBX Above							
	9*								
	10								
4-11B	11	841	842	843	844	845	846	847	848
4-12B	12	849	850	851	852	853	854	855	856
4-13B	13	857	858	859	860	861	862	863	864
4-14B	14	865	866	867	868	869	870	871	872
4-15B	15	873	874	875	876	877	878	879	880
4-16B	16	881	882	883	884	885	886	887	888
4-17B	17	889	890	891	892	893	894	895	896
* DENOTES CLOCK CARD POSITIONS									

ADAM AIO-16 DBX Link Mapping

High Density Wiring





Breakout Panel Guide

Introduction

Breakout Panels provide a convenient way of expanding the port capacity of an ADAM intercom system. Currently there are nine breakout panels for use with breakout panels: XCP-32-DB9, XCP-16-DB9-T, XCP- 48-RJ45, XCP-Telco, XCP-40-DB9, XCP-40-RJ11, XCP-24, XCP-24-USCO, XCP-ADAM-MC, XCP-954and XCP-955.

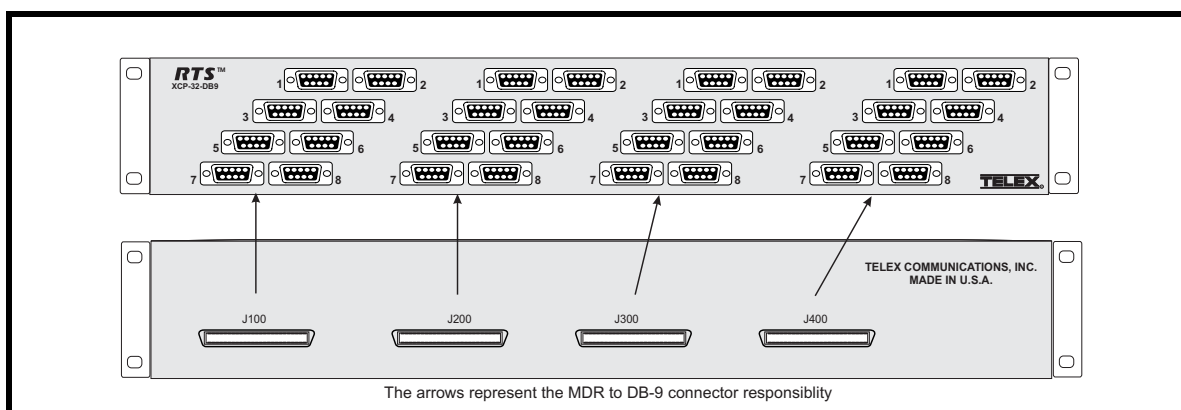
Installation

Requirements

- Have the new ADAM power supply installed (p/n - 9020-7515-001).
- In a single frame system, have the Master Controller firmware 9.22.0 or higher installed.
- In a multi-frame system have: the Peripheral Controller firmware 10.13.x or higher installed and the DBX firmware 1.13.0 or higher installed.

XCP-32-DB9

9000-7810-000



The XCP-32-DB9 is the newly created 32-port DB9 breakout panel with MDR connector for the ADAM with an AIO-16 card and Cronus. It allows you to expand the number of DB-9 serial ports. The XCP-32-DB9 is backward compatible with the AIO-8 card.

NOTE: When using the 32-port DB-9 breakout panel, you **MUST** use the MDR backcard for both the AIO-16 and Cronus.

Specifications

Dimensions:

19" (482.6mm) W x 3.5" (88.9mm) H x 1" (25.4mm) D

Weight:

1.7 lb. (0.77 kg)

9-pin Male D-sub	
Pin 1	Keypanel Data +
Pin 2	Keypanel Data -
Pin 3	N/A
Pin 4	Audio Out +
Pin 5	Audio Out -
Pin 6	N/A
Pin 7	Audio In -
Pin 8	Audio In +
Pin 9	N/A

MDR Connector		
Pin Number	Port	Function
8	1	Data +
33	1	Data -
24	1	Audio To Matrix +
49	1	Audio To Matrix -
25	1	Audio From Matrix +
50	1	Audio From Matrix -
7	2	Data +
32	2	Data -
22	2	Audio To Matrix +
47	2	Audio To Matrix -
23	2	Audio From Matrix +
48	2	Audio From Matrix -
6	3	Data +
31	3	Data -
20	3	Audio To Matrix +
45	3	Audio To Matrix -
21	3	Audio From Matrix +
46	3	Audio From Matrix -
5	4	Data +
30	4	Data +
18	4	Audio To Matrix +
43	4	Audio To Matrix -
19	4	Audio From Matrix +
44	4	Audio From Matrix -
4	5	Data +
29	5	Data +
16	5	Audio To Matrix +
41	5	Audio To Matrix -
17	5	Audio From Matrix +
42	5	Audio From Matrix -
3	6	Data +
28	6	Data +
14	6	Audio To Matrix +
39	6	Audio To Matrix -
15	6	Audio From Matrix +
40	6	Audio From Matrix -
2	7	Data +
27	7	Data +

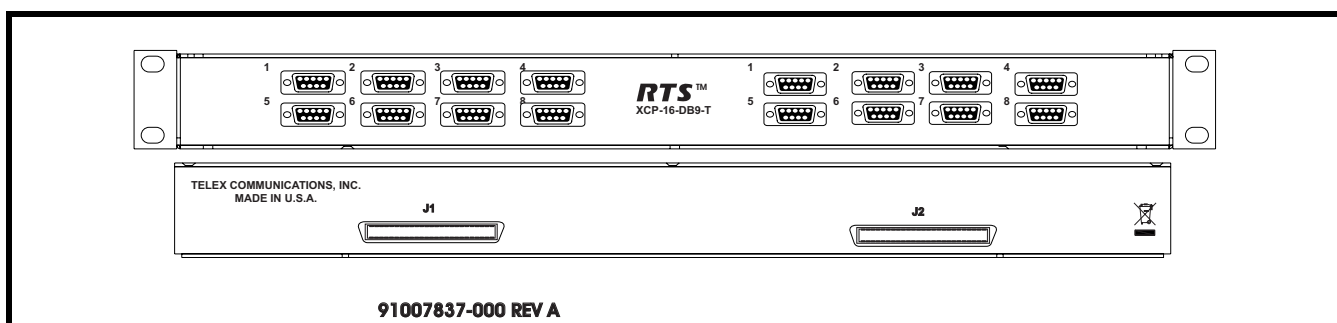
MDR Connector		
Pin Number	Port	Function
12	7	Audio To Matrix +
37	7	Audio To Matrix -
13	7	Audio From Matrix +
38	7	Audio From Matrix -
1	8	Data +
26	8	Data +
10	8	Audio To Matrix +
35	8	Audio To Matrix -
11	8	Audio From Matrix +
36	8	Audio From Matrix -

NOTE: There are 4 MDR connectors on the XCP-32-DB9 Breakout panel.

MDR Connector	Port
J1	1-8
J2	9-16
J3	17-24
J4	25-32

XCP-16-DB9-T

9000-7837-000



The XCP-16-DB9-T is the newly created 16-port DB9 breakout panel with MDR connector and an audio transformer for the Cronus and AIO-16. It allows you to expand the number of DB-9 serial ports in the Intercom system.

Specifications

Dimensions:

18.98" (482mm) W x 1.69" (43mm) H x 3.11" (79mm) D

Weight:

2.2 lb. (1.0 kg)

NOTE: When using the 32-port DB-9 breakout panel, you **MUST** use the MDR backcard for both the AIO-16 and Cronus.

9-pin Male D-sub	
Pin 1	Keypanel Data +
Pin 2	Keypanel Data -
Pin 3	N/A
Pin 4	Audio Out +
Pin 5	Audio Out -
Pin 6	N/A
Pin 7	Audio In -
Pin 8	Audio In +
Pin 9	N/A

MDR Connector		
Pin Number	Port	Function
8	1	Data +
33	1	Data -
24	1	Audio To Matrix +
49	1	Audio To Matrix -
25	1	Audio From Matrix +

MDR Connector		
Pin Number	Port	Function
50	1	Audio From Matrix -
7	2	Data +
32	2	Data -
22	2	Audio To Matrix +
47	2	Audio To Matrix -
23	2	Audio From Matrix +
48	2	Audio From Matrix -
6	3	Data +
31	3	Data -
20	3	Audio To Matrix +
45	3	Audio To Matrix -
21	3	Audio From Matrix +
46	3	Audio From Matrix -
5	4	Data +
30	4	Data +
18	4	Audio To Matrix +
43	4	Audio To Matrix -
19	4	Audio From Matrix +
44	4	Audio From Matrix -
4	5	Data +
29	5	Data +
16	5	Audio To Matrix +
41	5	Audio To Matrix -
17	5	Audio From Matrix +
42	5	Audio From Matrix -
3	6	Data +
28	6	Data +
14	6	Audio To Matrix +
39	6	Audio To Matrix -
15	6	Audio From Matrix +
40	6	Audio From Matrix -
2	7	Data +
27	7	Data +
12	7	Audio To Matrix +
37	7	Audio To Matrix -
13	7	Audio From Matrix +
38	7	Audio From Matrix -

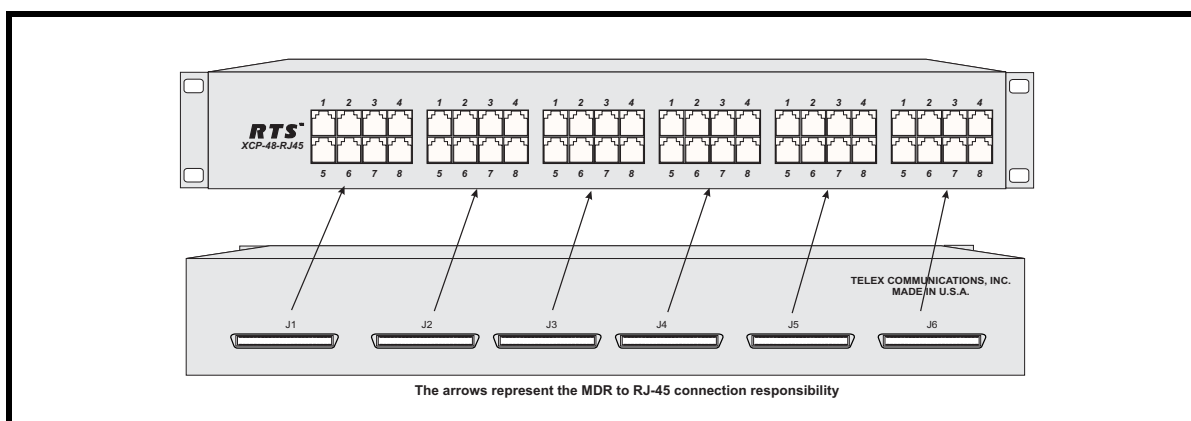
MDR Connector		
Pin Number	Port	Function
1	8	Data +
26	8	Data +
10	8	Audio To Matrix +
35	8	Audio To Matrix -
11	8	Audio From Matrix +
36	8	Audio From Matrix -

NOTE: There are 2 MDR connectors on the XCP-32-DB9-T Breakout panel.

MDR Connector	Port
J1	1-8
J2	9-16

XCP-48-RJ45

9000-7809-000



The XCP-48-RJ45 is the newly created 48-port RJ-45 breakout panel with MDR connector for the AIO-16 and Cronus. It allow you to expand the number of RJ-45 ports on the Intercom system.

Specifications

Dimensions:

18.98" (482mm) W x 1.69" (43mm) H x 2.95" (75mm) D

Weight:

3.5 lb. (1.59 kg)

NOTE: When using the 48-port RJ-45 breakout panel, you **MUST** use the MDR backcard for both the AIO-16 and Cronus.

RJ-45	
Pin 1	N/A
Pin 2	Keypanel Data -
Pin 3	Audio Out +
Pin 4	Audio In +
Pin 5	Audio In -
Pin 6	Audio Out -
Pin 7	Keypanel Data +
Pin 8	N/A

MDR Connector		
Pin Number	Port	Function
8	1	Data +
33	1	Data -
24	1	Audio To Matrix +

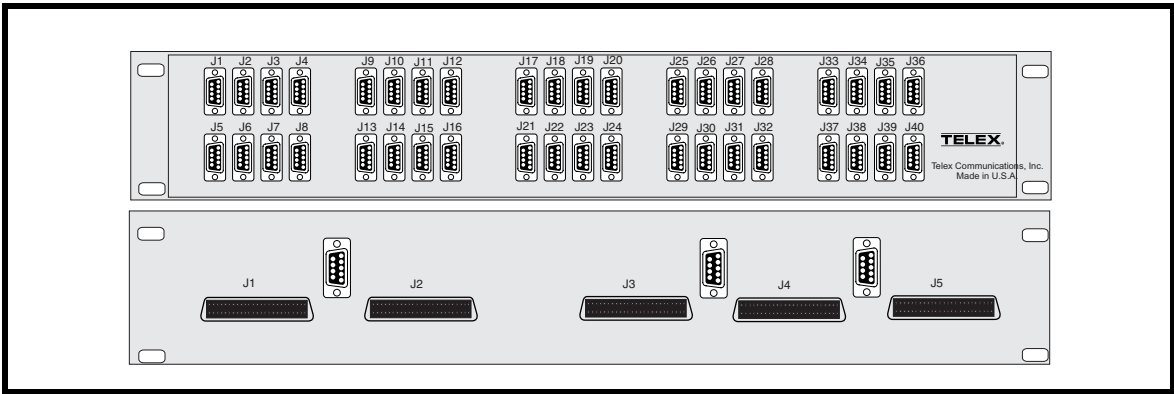
MDR Connector		
Pin Number	Port	Function
49	1	Audio To Matrix -
25	1	Audio From Matrix +
50	1	Audio From Matrix -
7	2	Data +
32	2	Data -
22	2	Audio To Matrix +
47	2	Audio To Matrix -
23	2	Audio From Matrix +
48	2	Audio From Matrix -
6	3	Data +
31	3	Data -
20	3	Audio To Matrix +
45	3	Audio To Matrix -
21	3	Audio From Matrix +
46	3	Audio From Matrix -
5	4	Data +
30	4	Data +
18	4	Audio To Matrix +
43	4	Audio To Matrix -
19	4	Audio From Matrix +
44	4	Audio From Matrix -
4	5	Data +
29	5	Data +
16	5	Audio To Matrix +
41	5	Audio To Matrix -
17	5	Audio From Matrix +
42	5	Audio From Matrix -
3	6	Data +
28	6	Data +
14	6	Audio To Matrix +
39	6	Audio To Matrix -
15	6	Audio From Matrix +
40	6	Audio From Matrix -
2	7	Data +
27	7	Data +
12	7	Audio To Matrix +
37	7	Audio To Matrix -

MDR Connector		
Pin Number	Port	Function
13	7	Audio From Matrix +
38	7	Audio From Matrix -
1	8	Data +
26	8	Data +
10	8	Audio To Matrix +
35	8	Audio To Matrix -
11	8	Audio From Matrix +
36	8	Audio From Matrix -

NOTE: There are 6 MDR connectors on the XCP-48 RJ-45 Breakout panel.

MDR Connector	Port
J1	1-8
J2	9-16
J3	17-24
J4	25-32
J5	33-40
J6	41-48

XCP-40-DB9
9000-7515-000



The XCP-40-DB9 breakout panel allows for the expansion of the ADAM frame at 40+, 80+, and 120+. When using the 40-port DB-9 breakout panel, you must use the SCSI backcard with the AIO-16 card.

Specifications

Dimensions:

19" (482.6mm) W x 3.5" (88.9mm) H x 1.25" (31.75mm) D

Weight:

1.95 lb. (0.88 kg)

9-pin Male D-sub	
Pin 1	Keypanel Data +
Pin 2	Keypanel Data -
Pin 3	N/A
Pin 4	Audio Out +
Pin 5	Audio Out -
Pin 6	N/A
Pin 7	Audio In -
Pin 8	Audio In +
Pin 9	N/A

SCSI Connector - J1, J2, J3, J4, J5		
Pin Number	Port	Function
2		Data +
27		Data -

SCSI Connector - J1, J2, J3, J4, J5		
Pin Number	Port	Function
34	1	Audio To Matrix +
9	1	Audio To Matrix -
35	1	Audio From Matrix +
10	1	Audio From Matrix -
36	2	Audio To Matrix +
11	2	Audio To Matrix -
37	2	Audio From Matrix +
12	2	Audio From Matrix -
38	3	Audio To Matrix +
13	3	Audio To Matrix -
39	3	Audio From Matrix +
14	3	Audio From Matrix -
40	4	Audio To Matrix +
15	4	Audio To Matrix -
41	4	Audio From Matrix +
16	4	Audio From Matrix -
42	5	Audio To Matrix +
17	5	Audio To Matrix -
43	5	Audio From Matrix +
18	5	Audio From Matrix -
44	6	Audio To Matrix +
19	6	Audio To Matrix -
45	6	Audio From Matrix +
20	6	Audio From Matrix -
46	7	Audio To Matrix +
21	7	Audio To Matrix -
47	7	Audio From Matrix +
22	7	Audio From Matrix -
48	8	Audio To Matrix +
23	8	Audio To Matrix -
49	8	Audio From Matrix +
24	8	Audio From Matrix -

XCP-40-RJ11

9000-7494-000

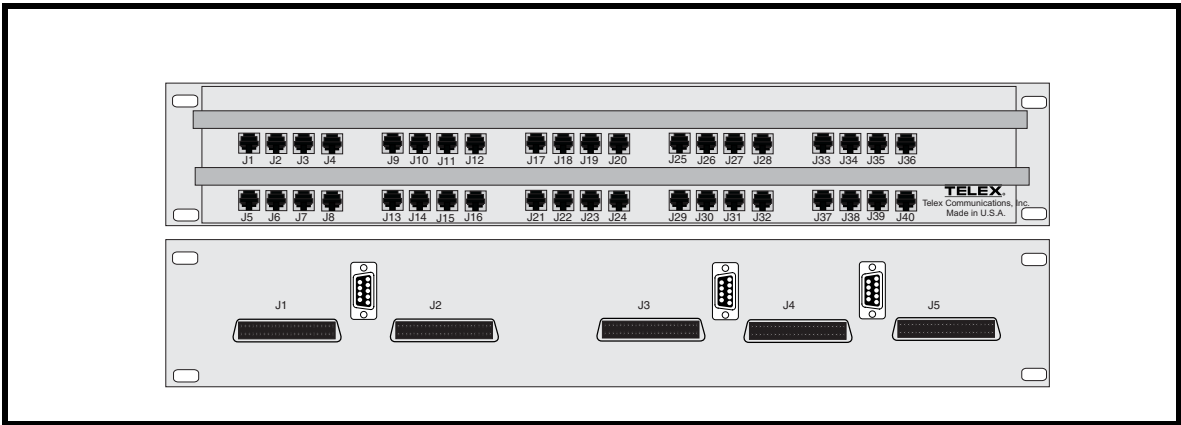


Figure 1.

The XCP-40-RJ-12 Breakout Panel allows for the expansion of the ADAM frame using RJ-12 connectors. When using the 40-port RJ-12 breakout panel, you MUST use the SCSI backcard with the AIO-16 card.

Specifications

Dimensions:

19" (482.6mm) W x 3.5" (88.9mm) H x 1.25" (31.75mm) D

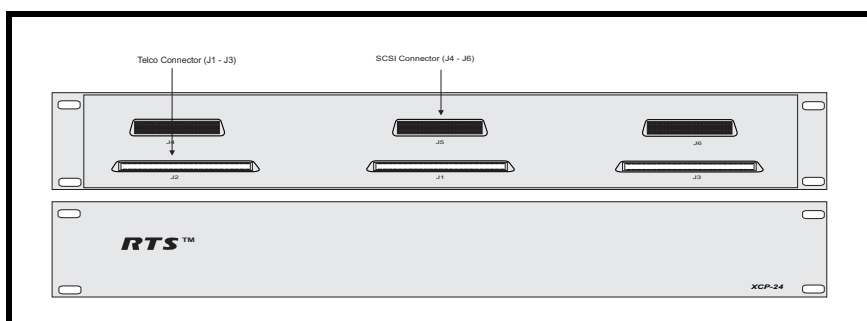
Weight:

1.75 lb. (0.79 kg)

RJ-12 Connector	
Pin 1	Keypanel Data -
Pin 2	Audio Out +
Pin 3	Audio In +
Pin 4	Audio In -
Pin 5	Audio Out -
Pin 6	Keypanel Data +

SCSI Connector - J1, J2, J3, J4, J5		
Pin Number	Port	Function
2		Data +
27		Data -
34	1	Audio To Matrix +

SCSI Connector - J1, J2, J3, J4, J5		
Pin Number	Port	Function
9	1	Audio To Matrix -
35	1	Audio From Matrix +
10	1	Audio From Matrix -
36	2	Audio To Matrix +
11	2	Audio To Matrix -
37	2	Audio From Matrix +
12	2	Audio From Matrix -
38	3	Audio To Matrix +
13	3	Audio To Matrix -
39	3	Audio From Matrix +
14	3	Audio From Matrix -
40	4	Audio To Matrix +
15	4	Audio To Matrix -
41	4	Audio From Matrix +
16	4	Audio From Matrix -
42	5	Audio To Matrix +
17	5	Audio To Matrix -
43	5	Audio From Matrix +
18	5	Audio From Matrix -
44	6	Audio To Matrix +
19	6	Audio To Matrix -
45	6	Audio From Matrix +
20	6	Audio From Matrix -
46	7	Audio To Matrix +
21	7	Audio To Matrix -
47	7	Audio From Matrix +
22	7	Audio From Matrix -
48	8	Audio To Matrix +
23	8	Audio To Matrix -
49	8	Audio From Matrix +
24	8	Audio From Matrix -

**Figure 2.**

The XCP-24 Breakout Panel allows for the expansion of the ADAM frame using TELCO connectors. When using the XCP-24 breakout panel, you must use the SCSI backcard with the AIO-16 card.

Specifications

Dimensions:

18.98" (482mm) W x 1.69" (43mm) H x.354" (9mm) D

Weight:

1 lb. (.4535924 kg)

SCSI Connector - J1, J2, J3, J4, J5		
Pin Number	Port	Function
2		Data +
27		Data -
34	1	Audio To Matrix +
9	1	Audio To Matrix -
35	1	Audio From Matrix +
10	1	Audio From Matrix -
36	2	Audio To Matrix +
11	2	Audio To Matrix -
37	2	Audio From Matrix +
12	2	Audio From Matrix -
38	3	Audio To Matrix +
13	3	Audio To Matrix -
39	3	Audio From Matrix +

SCSI Connector - J1, J2, J3, J4, J5		
Pin Number	Port	Function
14	3	Audio From Matrix -
40	4	Audio To Matrix +
15	4	Audio To Matrix -
41	4	Audio From Matrix +
16	4	Audio From Matrix -
42	5	Audio To Matrix +
17	5	Audio To Matrix -
43	5	Audio From Matrix +
18	5	Audio From Matrix -
44	6	Audio To Matrix +
19	6	Audio To Matrix -
45	6	Audio From Matrix +
20	6	Audio From Matrix -
46	7	Audio To Matrix +
21	7	Audio To Matrix -
47	7	Audio From Matrix +
22	7	Audio From Matrix -
48	8	Audio To Matrix +
23	8	Audio To Matrix -
49	8	Audio From Matrix +
24	8	Audio From Matrix -

Telco Backcard - Telco Connector - J1		
Pin Number	Port	Function
1	1	Audio To Matrix +
26	1	Audio To Matrix -
2	2	Audio To Matrix +
27	2	Audio To Matrix -
3	3	Audio To Matrix +
28	3	Audio To Matrix -
4	4	Audio To Matrix +
29	4	Audio To Matrix -
5	5	Audio To Matrix +

Telco Backcard - Telco Connector - J1		
Pin Number	Port	Function
30	5	Audio To Matrix -
6	6	Audio To Matrix +
31	6	Audio To Matrix -
7	7	Audio To Matrix +
32	7	Audio To Matrix -
8	8	Audio To Matrix +
33	8	Audio To Matrix -
9	9	Audio To Matrix +
34	9	Audio To Matrix -
10	10	Audio To Matrix +
35	10	Audio To Matrix -
11	11	Audio To Matrix +
36	11	Audio To Matrix -
12	12	Audio To Matrix +
37	12	Audio To Matrix -
13	13	Audio To Matrix +
38	13	Audio To Matrix -
14	14	Audio To Matrix +
39	14	Audio To Matrix -
15	15	Audio To Matrix +
40	15	Audio To Matrix -
16	16	Audio To Matrix +
41	16	Audio To Matrix -
17	17	Audio To Matrix +
42	17	Audio To Matrix -
18	18	Audio To Matrix +
43	18	Audio To Matrix -
19	19	Audio To Matrix +
44	19	Audio To Matrix -

Telco Backcard - Telco Connector - J1		
Pin Number	Port	Function
20	20	Audio To Matrix +
45	20	Audio To Matrix -
21	21	Audio To Matrix +
46	21	Audio To Matrix -
22	22	Audio To Matrix +
47	22	Audio To Matrix -
23	23	Audio To Matrix +
48	23	Audio To Matrix -
24	24	Audio To Matrix +
49	24	Audio To Matrix -

Telco Backcard - Telco Connector - J2		
Pin Number	Port	Function
1	1	Audio From Matrix +
26	1	Audio From Matrix -
2	2	Audio From Matrix +
27	2	Audio From Matrix -
3	3	Audio From Matrix +
28	3	Audio From Matrix -
4	4	Audio From Matrix +
29	4	Audio From Matrix -
5	5	Audio From Matrix +
30	5	Audio From Matrix -
6	6	Audio From Matrix +
31	6	Audio From Matrix -
7	7	Audio From Matrix +
32	7	Audio From Matrix -
8	8	Audio From Matrix +
33	8	Audio From Matrix -

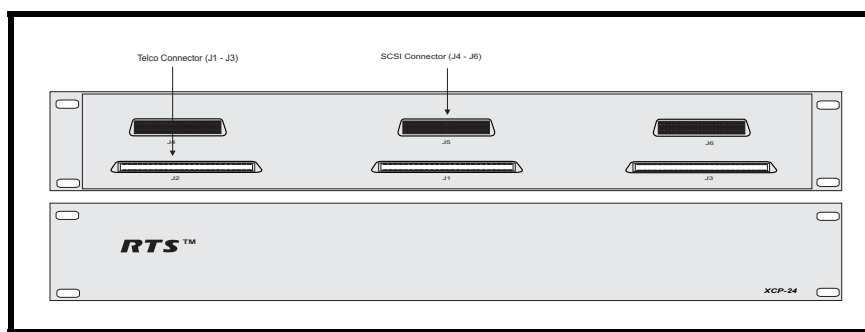
Telco Backcard - Telco Connector - J2		
Pin Number	Port	Function
9	9	Audio From Matrix +
34	9	Audio From Matrix -
10	10	Audio From Matrix +
35	10	Audio From Matrix -
11	11	Audio From Matrix +
36	11	Audio From Matrix -
12	12	Audio From Matrix +
37	12	Audio From Matrix -
13	13	Audio From Matrix +
38	13	Audio From Matrix -
14	14	Audio From Matrix +
39	14	Audio From Matrix -
15	15	Audio From Matrix +
40	15	Audio From Matrix -
16	16	Audio From Matrix +
41	16	Audio From Matrix -
17	17	Audio From Matrix +
42	17	Audio From Matrix -
18	18	Audio From Matrix +
43	18	Audio From Matrix -
19	19	Audio From Matrix +
44	19	Audio From Matrix -
20	20	Audio From Matrix +
45	20	Audio From Matrix -
21	21	Audio From Matrix +
46	21	Audio From Matrix -
22	22	Audio From Matrix +
47	22	Audio From Matrix -

Telco Backcard - Telco Connector - J2		
Pin Number	Port	Function
23	23	Audio From Matrix +
48	23	Audio From Matrix -
24	24	Audio From Matrix +
49	24	Audio From Matrix -

Telco Backcard - Telco Connector - J3		
Pin Number	Port	Function
1-8	1-8	Data +
25-33	1-8	Data -
9-16	9-16	Data +
34-41	9-16	Data -
17-24	17-24	Data +
42-49	17-24	Data -

XCP-24-USOC

9000-7559-001



The XCP-24-USOC Breakout Panel allows for the expansion of the ADAM frame using Telco connectors. When using the XCP-24-USOC breakout panel, you **MUST** use the SCSI backcard with the AIO-16 card

Specifications

Dimensions:

18.98" (482mm) W x 1.69" (43mm) H x.354" (9mm) D

Weight:

1 lb. (.4535924 kg)

SCSI Connector - J4, J5, J6		
Pin Number	Port	Function
2		Data +
27		Data -

SCSI Connector - J4, J5, J6		
Pin Number	Port	Function
34	1	Audio To Matrix +
9	1	Audio To Matrix -
35	1	Audio From Matrix +
10	1	Audio From Matrix -
36	2	Audio To Matrix +
11	2	Audio To Matrix -
37	2	Audio From Matrix +
12	2	Audio From Matrix -
38	3	Audio To Matrix +
13	3	Audio To Matrix -
39	3	Audio From Matrix +
14	3	Audio From Matrix -
40	4	Audio To Matrix +
15	4	Audio To Matrix -
41	4	Audio From Matrix +

SCSI Connector - J4, J5, J6		
Pin Number	Port	Function
16	4	Audio From Matrix -
42	5	Audio To Matrix +
17	5	Audio To Matrix -
43	5	Audio From Matrix +
18	5	Audio From Matrix -
44	6	Audio To Matrix +
19	6	Audio To Matrix -
45	6	Audio From Matrix +
20	6	Audio From Matrix -
46	7	Audio To Matrix +
21	7	Audio To Matrix -
47	7	Audio From Matrix +
22	7	Audio From Matrix -
48	8	Audio To Matrix +
23	8	Audio To Matrix -
49	8	Audio From Matrix +
24	8	Audio From Matrix -

Telco Connector - J1		
Pin Number	Port	Function
1	1	Audio To Matrix -
26	1	Audio To Matrix +
2	1	Audio From Matrix -
27	1	Audio From Matrix +
3	1	Data -
28	1	Data +
4	2	Audio To Matrix -
29	2	Audio To Matrix +
5	2	Audio From Matrix -
30	2	Audio From Matrix +
6	2	Data -
31	2	Data +
7	3	Audio To Matrix -
32	3	Audio To Matrix +

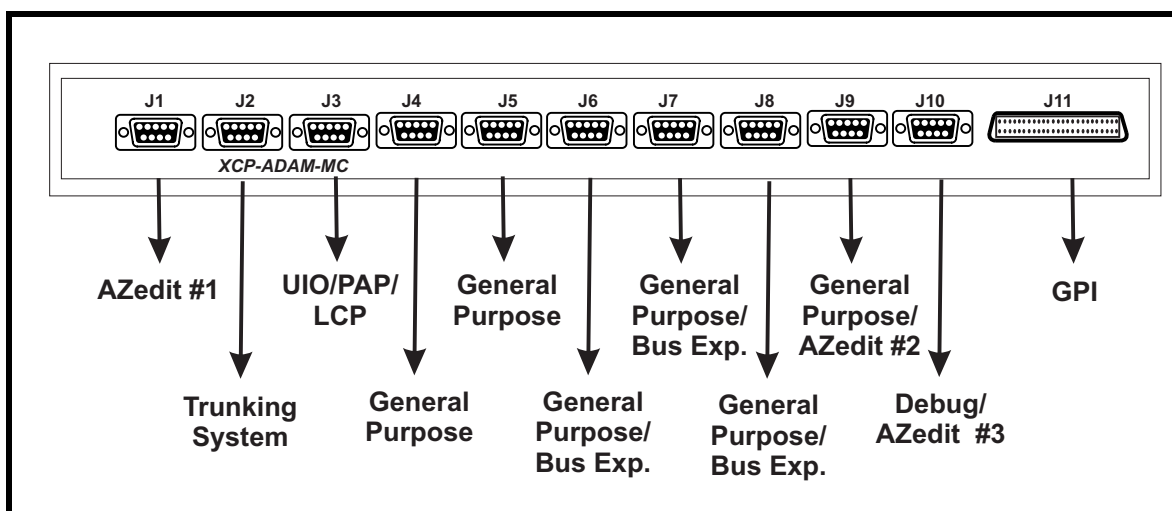
Telco Connector - J1		
Pin Number	Port	Function
8	3	Audio From Matrix -
33	3	Audio From Matrix +
9	3	Data -
34	3	Data +
10	4	Audio To Matrix -
35	4	Audio To Matrix +
11	4	Audio From Matrix -
36	4	Audio From Matrix +
12	4	Data -
37	4	Data +
13	5	Audio To Matrix -
38	5	Audio To Matrix +
14	5	Audio From Matrix -
39	5	Audio From Matrix +
15	5	Data -
40	5	Data +
16	6	Audio To Matrix -
41	6	Audio To Matrix +
17	6	Audio From Matrix -
42	6	Audio From Matrix +
18	6	Data -
43	6	Data +
19	7	Audio To Matrix -
44	7	Audio To Matrix +
20	7	Audio From Matrix -
45	7	Audio From Matrix +
21	7	Data -
46	7	Data +
22	8	Audio To Matrix -
47	8	Audio To Matrix +

Telco Connector - J1		
Pin Number	Port	Function
23	8	Audio From Matrix -
48	8	Audio From Matrix +
24	8	Data -
49	8	Data +

Telco Connector	Port
J2	9-16
J3	17-24

XCP-ADAM-MC

9002-7514-100



The XCP-ADAM-MC Breakout Panel affords the ADAM more connections to frame accessories without losing the connections to AZedit, and the ability to Trunk systems.

Specifications

Dimensions:

18.98" (482mm) W x 1.69" (43mm) H x .472" (12mm) D

Weight:

1 lb. (.4535924 kg)

AZedit #1		
68-pin Master Controller	J-1 of XCP-ADAM-MC	Assignment 2W
1	1	RS485 TX/ RX-
3	2	RS232C RX
37	3	RS232C TX
4	4	RS422 TX-
2	5	Ground
2	6	Ground
38	7	RS422 TX+
35	8	RS485 TX/ RX+
	9	

Trunking System		
68-pin Master Controller	J-2 of XCP-ADAM-MC	Assignment 2W
5	1	RS485 TX/ RX-
36	2	Ground
6	3	RS232C RX
	4	Not Used
41	5	RS422 TX+
39	6	RS485 TX/ RX+
36	7	Ground
40	8	RS232C TX
7	9	RS422 TX-

UIO-256/PAP/LCP		
68-pin Master Controller	J-3 of XCP-ADAM-MC	Assignment 2W
8	1	RS485 TX/ RX-
9	2	Ground
	3	Not Used
	4	Not Used
44	5	RS422 TX+

UIO-256/PAP/LCP		
68-pin Master Controller	J-3 of XCP-ADAM-MC	Assignment 2W
42	6	RS485 TX/ RX+
9	7	Ground
	8	Not Used
10	9	RS422 TX-

General Purpose		
68-pin Master Controller	J-4 of XCP-ADAM-MC	Assignment 2W
11	1	RS485 TX/ RX-
43	2	Ground
	3	Not Used
	4	Not Used
46	5	RS422 TX+
45	6	RS485 TX/ RX+
43	7	Ground
	8	Not Used
12	9	RS422 TX-

General Purpose		
68-pin Master Controller	J-5 of XCP-ADAM-MC	Assignment 2W
11	1	RS485 TX/RX-
14	2	Ground
	3	Not Used
	4	Not Used
	5	Not Used
47	6	RS485 TX/RX+
14	7	Ground
	8	Not Used
	9	Not Used

General Purpose / Bus Exp.		
68-pin Master Controller	J-6 of XCP-ADAM-MC	Assignment 2W
15	1	RS485 TX/RX-
48	2	Ground
	3	Not Used
	4	Not Used
	5	Not Used
49	6	RS485 TX/RX+
48	7	Ground
	8	Not Used
	9	Not Used

General Purpose / Bus Exp.		
68-pin Master Controller	J-7 of XCP-ADAM-MC	Assignment 2W
16	1	RS485 TX/RX-
17	2	Ground
	3	Not Used
	4	Not Used
	5	Not Used
50	6	RS485 TX/RX+
17	7	Ground
	8	Not Used
	9	Not Used

General Purpose / Bus Exp.		
68-pin Master Controller	J-8 of XCP-ADAM-MC	Assignment 2W
18	1	RS485 TX/RX-
51	2	Ground
	3	Not Used
	4	Not Used
	5	Not Used
52	6	RS485 TX/RX+
51	7	Ground

General Purpose / Bus Exp.		
68-pin Master Controller	J-8 of XCP-ADAM-MC	Assignment 2W
	8	Not Used
	9	Not Used

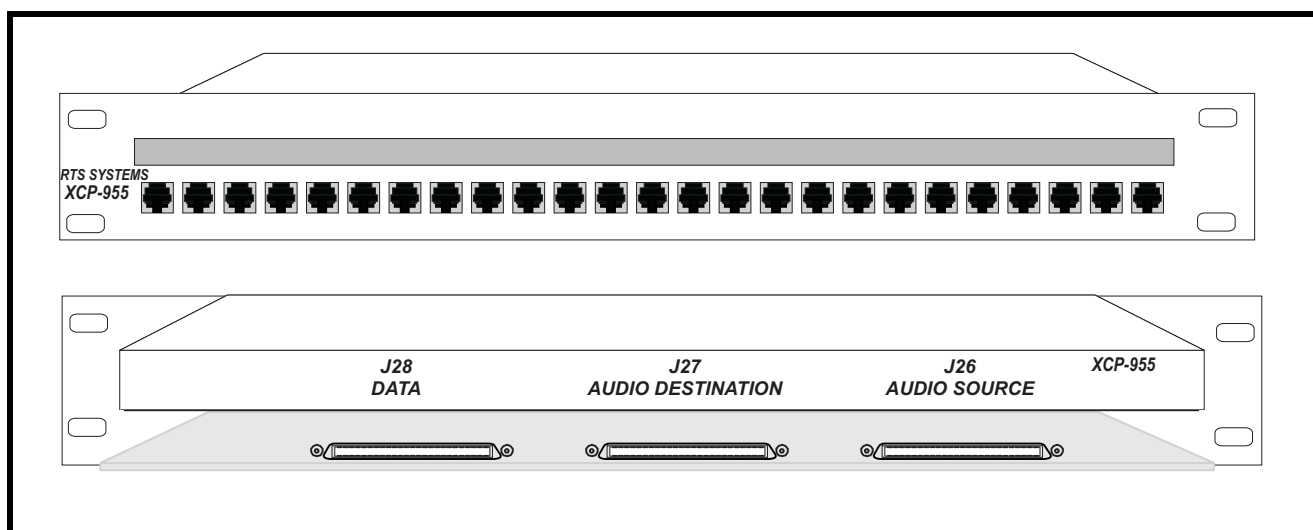
AZedit #2		
68-pin Master Controller	J-9 of XCP-ADAM-MC	Assignment 2W
	1	Not Used
19	2	Ground
20	3	RS232C RX
	4	Not Used
	5	Not Used
	6	Not Used
19	7	Ground
53	8	RS232C TX
	9	Not Used

AZedit #3		
68-pin Master Controller	J-10 of XCP-ADAM-MC	Assignment 2W
	1	Not Used
67	2	Ground
21	3	RS232C RX
	4	Not Used
	5	Not Used
	6	Not Used
67	7	Ground
54	8	RS232C TX
	9	Not Used

General Purpose			
68-pin Master Controller	J-11 of XCP-ADAM-MC	Assignment	Signal
22	1	MI (0)	Logical Input (0)
23	2	MI (1)	Logical Input (1)
24	3	MI (2)	Logical Input (2)
25	4	MI (3)	Logical Input (3)
26	5	MI (4)	Logical Input (4)
27	6	MI (5)	Logical Input (5)
28	7	MI (6)	Logical Input (6)
29	8	MI (7)	Logical Input (7)
30	9	Ground	Ground
31	10	Ground	Ground
32	11	Ground	Ground
33	12	Ground	Ground
34	13	Ground	Ground
55	14	MO (0)	Logical Output (0)
56	15	MO (1)	Logical Output (1)
57	16	MO (2)	Logical Output (2)
58	17	MO (3)	Logical Output (3)
59	18	MO (4)	Logical Output (4)
60	19	MO (5)	Logical Output (5)
61	20	MO (6)	Logical Output (6)
62	21	MO (7)	Logical Output (7)
63	22	Ground	Ground
64	23	Ground	Ground
65	24	Ground	Ground
66	25	Ground	Ground

XCP-955

8800303674



The XCP-955 is the 25-port RJ-11 breakout panel with SCSI connector for the ADAM.

Specifications

Dimensions:

18.98" (482mm) L x 1.69" (43mm) H x 0.55" (104mm) D

Weight:

1.6 lb (.725 kg)

RJ-12 Connector	
Pin 1	Keypanel Data -
Pin 2	Audio Out +
Pin 3	Audio In +
Pin 4	Audio In -
Pin 5	Audio Out -
Pin 6	Keypanel Data +

Telco Backcard - Telco Connector - J26		
Pin Number	Port	Function
1	1	Audio From Matrix +
26	1	Audio From Matrix -
2	2	Audio From Matrix +
27	2	Audio From Matrix -
3	3	Audio From Matrix +
28	3	Audio From Matrix -
4	4	Audio From Matrix +
29	4	Audio From Matrix -
5	5	Audio From Matrix +
30	5	Audio From Matrix -
6	6	Audio From Matrix +
31	6	Audio From Matrix -
7	7	Audio From Matrix +
32	7	Audio From Matrix -
8	8	Audio From Matrix +
33	8	Audio From Matrix -
9	9	Audio From Matrix +
34	9	Audio From Matrix -
10	10	Audio From Matrix +
35	10	Audio From Matrix -
11	11	Audio From Matrix +
36	11	Audio From Matrix -
12	12	Audio From Matrix +
37	12	Audio From Matrix -
13	13	Audio From Matrix +
38	13	Audio From Matrix -
14	14	Audio From Matrix +
39	14	Audio From Matrix -

Telco Backcard - Telco Connector - J26		
Pin Number	Port	Function
15	15	Audio From Matrix +
40	15	Audio From Matrix -
16	16	Audio From Matrix +
41	16	Audio From Matrix -
17	17	Audio From Matrix +
42	17	Audio From Matrix -
18	18	Audio From Matrix +
43	18	Audio From Matrix -
19	19	Audio From Matrix +
44	19	Audio From Matrix -
20	20	Audio From Matrix +
45	20	Audio From Matrix -
21	21	Audio From Matrix +
46	21	Audio From Matrix -
22	22	Audio From Matrix +
47	22	Audio From Matrix -
23	23	Audio From Matrix +
48	23	Audio From Matrix -
24	24	Audio From Matrix +
49	24	Audio From Matrix -

Telco Backcard - Telco Connector - J27		
Pin Number	Port	Function
1	1	Audio To Matrix +
26	1	Audio To Matrix -
2	2	Audio To Matrix +
27	2	Audio To Matrix -
3	3	Audio To Matrix +
28	3	Audio To Matrix -
4	4	Audio To Matrix +

Telco Backcard - Telco Connector - J27		
Pin Number	Port	Function
29	4	Audio To Matrix -
5	5	Audio To Matrix +
30	5	Audio To Matrix -
6	6	Audio To Matrix +
31	6	Audio To Matrix -
7	7	Audio To Matrix +
32	7	Audio To Matrix -
8	8	Audio To Matrix +
33	8	Audio To Matrix -
9	9	Audio To Matrix +
34	9	Audio To Matrix -
10	10	Audio To Matrix +
35	10	Audio To Matrix -
11	11	Audio To Matrix +
36	11	Audio To Matrix -
12	12	Audio To Matrix +
37	12	Audio To Matrix -
13	13	Audio To Matrix +
38	13	Audio To Matrix -
14	14	Audio To Matrix +
39	14	Audio To Matrix -
15	15	Audio To Matrix +
40	15	Audio To Matrix -
16	16	Audio To Matrix +
41	16	Audio To Matrix -
17	17	Audio To Matrix +
42	17	Audio To Matrix -
18	18	Audio To Matrix +
43	18	Audio To Matrix -

Telco Backcard - Telco Connector - J27		
Pin Number	Port	Function
19	19	Audio To Matrix +
44	19	Audio To Matrix -
20	20	Audio To Matrix +
45	20	Audio To Matrix -
21	21	Audio To Matrix +
46	21	Audio To Matrix -
22	22	Audio To Matrix +
47	22	Audio To Matrix -
23	23	Audio To Matrix +
48	23	Audio To Matrix -
24	24	Audio To Matrix +
49	24	Audio To Matrix -

Telco Backcard - Telco Connector - J28		
Pin Number	Port	Function
1-8	1-8	Data +
25-33	1-8	Data -
9-16	9-16	Data +
34-41	9-16	Data -
17-24	17-24	Data +
42-49	17-24	Data -

