MicroComm DXI

MicroComm DXI Hardware

Quick Reference

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Section 1 - Connector Pinouts for DXI Hardware

1.1 Station Module (ICM-1XX and ICM-4XX)

MTA Pin	Signal
1	Audio +
2	Audio -
3	N/C
4	N/C

Wiring is polarity sensitive.

1.2 Master Station (IMS-1XX and IMS-4XX) and Master Audio Interface (MAI-120, MAI-125, MAI-420, and MAI-425) DB25 Connector

DB25 Pin Number	Signal	DB25 Pin Number	Signal
1*#	Main V+	14*#	Main V+
2*#	Main V- (Gnd)	15*#	Main V- (Gnd)
3	Network B+	16	Network B-
4	Earth Ground	17*#	Speaker -
5*#	Speaker +	18*#	Microphone -
6*#	Microphone +	19	PTT Switch + [1]
7	Relay 2 NO	20	Relay 2 COM
8	Relay 2 NC	21	Relay 1 NO
9	Relay 1 COM	22	Relay 1 NC
10	Earth Ground [2]	23*	Network A-
11*	Network A+	24	Backup V- (Gnd)
12	Backup V- (Gnd)	25	Backup V+
13	Backup V+		

Speaker and microphone wiring is polarity sensitive.
* Minimum connections required for IMS-1XX, IMS-4XX, MAI-120, and MAI-420.
# Minimum connections required for MAI-125 and MAI-425.
Note 1: PTT Switch – can be wired to any of the pins labeled (Gnd)
Note 2: Earth ground should be connected to local earth ground – but not to (Gnd). This earths the chassis to reduce the chance of static induced reset or damage.

1.3 MAI-120, MAI-125, MAI-420, and MAI-425 Handset Connector

Terminal Block Pin Number	Signal	Colour
1	Speaker +	White
2	Speaker - (Gnd)	White
3	PTT Switch +	Black
4	PTT Switch - (Gnd)	Black
5	Microphone +	Red
6	Microphone - (Gnd)	Red/Stripe

Microphone wiring is polarity sensitive.

1.4 MAI-120, MAI-125, MAI-420, and MAI-425 Hookswitch Connector

MTA Pin	Signal
1	* Microphone Mute Switch + (connect to pin 2 to mute)
2	* Microphone Mute Switch - (Gnd)
3	N/C
4	Connection to handset speaker (must connect to pin 5 when handset is off hook)
5	Speaker+ signal
6	Connection to headset speaker (must connect to pin 5 when handset is on hook)
7	On/off hook sense + (must connect to pin 8 when handset is off hook)
8	On/off hook sense - (Gnd)

* Only on MAI-125 and MAI-425

1.5 MAI-120, MAI-125, MAI-420, and MAI-425 Headset Connector

MTA Pin	Signal
1	Headset Speaker +
2	Headset Speaker - (Gnd)
3	PTT Switch +
4	PTT Switch - (Gnd)
5	Headset Microphone +
6	Headset Microphone - (Gnd)
7	Headset Sense + (must connect to pin 8 when headset is plugged in)
8	Headset Sense - (Gnd)

Microphone wiring is polarity sensitive.

1.6 MAI-120, MAI-125, MAI-420, and MAI-425 Phantom Power Microphone Connector

MTA Pin	Signal
1	Phantom Microphone +
2	Phantom Microphone -
3	Gnd
4	Gnd

Wiring is polarity sensitive.

1.7 MAI-120, MAI-125, MAI-420, and MAI-425 Speaker / Microphone Connector

MTA Pin	Signal	Color
1	Speaker +	Black
2	Speaker -	Red
3	Microphone - (Gnd)	Green
4	Microphone +	White

Microphone wiring is polarity sensitive.

1.8 IMS-1XX and IMS-4XX Headset Connector (Modular Jack)

Jack Pin	Signal
1	Headset Microphone - (Gnd)
2	Headset Speaker - (Gnd)
3	Headset Speaker +
4	Headset Microphone +

Microphone wiring is polarity sensitive.

1.9 Desktop Speaker Microphone (DSM-140)

DB-9 Pin Number	Signal
1	Microphone +
2	Speaker +
3	PTT switch +
4	LED output (24 Vdc) optional
5	
6	Microphone -
7	Speaker -
8	Gnd (LED output – and PTT switch -)
9	

1.10 Intercom Board Talkback Kit (ICB-100)

MTA Pin	Signal
1	Audio +
2	Audio -
3	N/C
4	N/C

Wiring is polarity sensitive.

Wire	Signal
White	Microphone +
Orange	Microphone -
Green	Speaker +
Black	Speaker -
Yellow	Switch B
Yellow	Switch B
Red	Switch A
Red	Switch A

Microphone wiring is polarity sensitive.

1.11 ACP-115, ACP-130 and ACP-135 Annunciation Control Panel

DB15 Pin Number	Signal	DB 25 Pin Number	Signal
1	Main V+	9	Main V-
2	Net A+	10	Net A-
3	Relay 1 NC	11	Relay 1 COM
4	Relay 1 NO	12	Relay 2 NC
5	Relay 2 COM	13	Relay 2 NC
6	Earth Ground	14	Net B-
7	Net B+	15	Backup V-
8	Backup V-		

1.12 RRB-100 Power Input

Terminal Block Pin Number	**Signal**
1	Common (for 24 Vdc supply)
2	-12V input
3	GND
4	+12V input
5	+24V input

For +24V input, use pins 1 & 5. For +/-12V input, use pins 2, 3 & 4.

1.13 Remote Driver Board with Copper Interface (RDB-100-1) and Remote Receiver Board with Copper Interface (RRB-100-1)

DB9 Pin Number	**Signal**	**Wire Color CBL-160 Cable**
1	Rx 1+	White-Blue
2	Tx 1+	White-Orange
3	* Ground	
4	N/C	
5	N/C	
6	Rx 1-	Blue
7	Tx 1-	Orange
8	N/C	
9	N/C	

* Does not need to be connected

1.14 Audio Control Board (ACB-100) Copper Digital Audio Trunk Cable

DB50 Pin Number	Signal	Wire Colors*
47	Rx 2+	White-Blue
15	Rx 2-	Blue-White
32	Tx 2-	White-Orange
48	Tx 2+	Orange-White
16	Ground	Shield
33	Rx 1+	White-Green
49	Rx 1-	Green-White
17	Tx 1-	Brown-White
50	Tx 1+	White-Brown

*Note: The cable pairs may or may not have a stripe i.e. instead of the first pair being white/blue stripe and blue/white stripe it may be a white and blue pair.

1.15 Audio Control Board (ACB-101) Copper CEPT Digital Audio Trunk Cable

DB9 Pin Number	CEPT Signal	Wire Color
1	RTIP1	White/Blue Stripe
6	RRING1	Solid Blue
2	TTIP1	White/Orange Stripe
7	TRING1	Solid Orange
3	Ground	Shield
8	RTIP2	White/Green Stripe
4	RRING2	Solid Green
9	TTIP2	Solid Brown
5	TRING2	White/Brown Stripe

1.16 Audio Trunk Board (ATB-101) Copper Digital Audio Trunk Cable

DB9 Pin Number	CEPT Signal	Wire Color
1	RTIP1	White/Blue Stripe
6	RRING1	Solid Blue
2	TTIP1	White/Orange Stripe
7	TRING1	Solid Orange
3	Ground	Shield
8	RTIP2	White/Green Stripe
4	RRING2	Solid Green
9	TTIP2	Solid Brown
5	TRING2	White/Brown Stripe

1.17 Paging Amplifier Board (PAB-100 and PAB-400) and Talkback Amplifier Board (TAB-100 andTAB-400)

1.17.1 Wiring Table for Generic Terminal Block

Combicon Pin Number	**Signal**	**PAB/TAB Cable Wire Colors**	Terminal Block **Pin Number**
1-1	Audio 1+	Black	1
1-2	Audio 1-	Red	2
1-3	Audio 1 & 2 Shield	BR Shield	3
1-4	Audio 2+	Black	4
1-5	Audio 2-	White	5
1-3	Audio 1 & 2 Shield	BW Shield	6
1-6	Audio 3+	Black	7
1-7	Audio 3-	Green	8
1-8	Audio 3 & 4 Shield	BG Shield	9
1-9	Audio 4+	Black	10
1-10	Audio 4-	Blue	11
1-8	Audio 3 & 4 Shield	BBl Shield	12
2-1	Audio 5+	Black	13
2-2	Audio 5-	Red	14
2-3	Audio 5 & 6 Shield	BR Shield	15
2-4	Audio 6+	Black	16
2-5	Audio 6-	White	17
2-3	Audio 5 & 6 Shield	BW Shield	18
2-6	Audio 7+	Black	19
2-7	Audio 7-	Green	20
2-8	Audio 7 & 8 Shield	BG Shield	21
2-9	Audio 8+	Black	22
2-10	Audio 8-	Blue	23
2-8	Audio 7 & 8 Shield	BBl Shield	24

1.17.2 Wiring Table for BIX Terminal Block

Combicon Pin Number	Signal	PAB/TAB Cable Wire Colors	Terminal Block Pin Number
1-1	Audio 1+	Black	1
1-2	Audio 1-	Red	2
1-3	Audio 1 Shield	BR Shield	3
1-3	Audio 2 Shield	BW Shield	4
1-4	Audio 2+	Black	5
1-5	Audio 2-	White	6
1-6	Audio 3+	Black	7
1-7	Audio 3-	Green	8
1-8	Audio 3 Shield	BG Shield	9
1-8	Audio 4 Shield	BBl Shield	10
1-9	Audio 4+	Black	11
1-10	Audio 4-	Blue	12
2-1	Audio 5+	Black	13
2-2	Audio 5-	Red	14
2-3	Audio 5 Shield	BR Shield	15
2-3	Audio 6 Shield	BW Shield	16
2-4	Audio 6+	Black	17
2-5	Audio 6-	White	18
2-6	Audio 7+	Black	19
2-7	Audio 7-	Green	20
2-8	Audio 7 Shield	BG Shield	21
2-8	Audio 8 Shield	BBl Shield	22
2-9	Audio 8+	Black	23
2-10	Audio 8-	Blue	24

1.17.3 Previous Recommended Wiring

Combicon Pin Number	Signal	PAB/TAB Cable Wire Colors	Terminal Block Pin Number
1-1	Audio 1+	Black	1
1-2	Audio 1-	Red	2
1-3	Audio 1 & 2 Shield	BR & BW Shield	3
1-4	Audio 2+	Black	4
1-5	Audio 2-	White	5
1-6	Audio 3+	Black	6
1-7	Audio 3-	Green	7
1-8	Audio 3 & 4 Shield	BG & BBl Shield	8
1-9	Audio 4+	Black	9
1-10	Audio 4-	Blue	10
2-1	Audio 5+	Black	11
2-2	Audio 5-	Red	12
2-3	Audio 5 & 6 Shield	BR & BW Shield	13
2-4	Audio 6+	Black	14
2-5	Audio 6-	White	15
2-6	Audio 7+	Black	16
2-7	Audio 7-	Green	17
2-8	Audio 7 & 8 Shield	BG & BBl Shield	18
2-9	Audio 8+	Black	19
2-10	Audio 8-	Blue	20

1.18 Station Audio Board 100 (SAB-100) Audio Cable

DB50 Pin Number	Signal	SAB Cable Wire Color	Terminal Block Pin Number
1	Audio 1 -	Black	1
18	Audio 1 +	Red	2
34	Audio 1 Shield	BR Shield	3
2	Audio 2 -	Black	4
19	Audio 2 +	White	5
35	Audio 2 Shield	BW Shield	6
3	Audio 3 -	Black	7
20	Audio 3 +	Green	8
36	Audio 3 Shield	BG Shield	9
4	Audio 4 -	Black	10
21	Audio 4 +	Blue	11
37	Audio 4 Shield	BBl Shield	12
5	Audio 5 -	Black	13
22	Audio 5 +	Yellow	14
38	Audio 5 Shield	BY Shield	15
6	Audio 6 -	Black	16
23	Audio 6 +	Brown	17
39	Audio 6 Shield	BBr Shield	18
7	Audio 7 -	Black	19
24	Audio 7 +	Orange	20
40	Audio 7 Shield	BO Shield	21
8	Audio 8 -	Red	22
25	Audio 8 +	White	23
41	Audio 8 Shield	RW Shield	24
9	Audio 9 -	Red	25
26	Audio 9 +	Green	26
42	Audio 9 Shield	RG Shield	27
10	Audio 10 -	Red	28
27	Audio 10 +	Blue	29
43	Audio 10 Shield	RBl Shield	30
11	Audio 11 -	Red	31
28	Audio 11 +	Yellow	32
44	Audio 11 Shield	RY Shield	33
12	Audio 12 -	Red	34
29	Audio 12 +	Brown	35
45	Audio 12 Shield	RBr Shield	36
13	Audio 13 -	Red	37
30	Audio 13 +	Orange	38
46	Audio 13 Shield	RO Shield	39
14	Audio 14 -	Green	40
31	Audio 14 +	White	41
47	Audio 14 Shield	GW Shield	42
15	Audio 15 -	Green	43
32	Audio 15 +	Blue	44
48	Audio 15 Shield	GBl Shield	45
16	Audio 16 -	Green	46
33	Audio 16 +	Yellow	47
49	Audio 16 & 17 Shield	GY Shield & GBr Shield	48
17	*Master Mic Audio +	Green	49
50	*Master Mic Audio -	Brown	50

*Master Audio pair is reverse polarity compared to other channels, all wiring is polarity sensitive.

1.19 Station Audio Board (SAB-300) Audio Cable

1.19.1 Wiring Table for Generic Terminal Block

DB50 Pin Number	Signal	SAB Cable Wire Color	Terminal Block Pin Number
1	Audio 1 +	Black	1
18	Audio 1 -	Red	2
34	Audio 1 Shield	BR Shield	3
2	Audio 2 +	Black	4
19	Audio 2 -	White	5
35	Audio 2 Shield	BW Shield	6
3	Audio 3 +	Black	7
20	Audio 3 -	Green	8
36	Audio 3 Shield	BG Shield	9
4	Audio 4 +	Black	10
21	Audio 4 -	Blue	11
37	Audio 4 Shield	BBl Shield	12
5	Audio 5 +	Black	13
22	Audio 5 -	Yellow	14
38	Audio 5 Shield	BY Shield	15
6	Audio 6 +	Black	16
23	Audio 6 -	Brown	17
39	Audio 6 Shield	BBr Shield	18
7	Audio 7 +	Black	19
24	Audio 7 -	Orange	20
40	Audio 7 Shield	BO Shield	21
8	Audio 8 +	Red	22
25	Audio 8 -	White	23
41	Audio 8 Shield	RW Shield	24
9	Audio 9 +	Red	25
26	Audio 9 -	Green	26
42	Audio 9 Shield	RG Shield	27
10	Audio 10 +	Red	28
27	Audio 10 -	Blue	29
43	Audio 10 Shield	RBl Shield	30
11	Audio 11 +	Red	31
28	Audio 11 -	Yellow	32
44	Audio 11 Shield	RY Shield	33
12	Audio 12 +	Red	34
29	Audio 12 -	Brown	35
45	Audio 12 Shield	RBr Shield	36
13	Audio 13 +	Red	37
30	Audio 13 -	Orange	38
46	Audio 13 Shield	RO Shield	39
14	Audio 14 +	Green	40
31	Audio 14 -	White	41
47	Audio 14 Shield	GW Shield	42
15	Audio 15 +	Green	43
32	Audio 15 -	Blue	44
48	Audio 15 Shield	GBl Shield	45
16	Audio 16 +	Green	46
33	Audio 16 -	Yellow	47
49	Audio 16 & 17 Shield	GY Shield & GBr Shield	48
17	Master Mic Audio +	Green	49
50	Master Mic Audio -	Brown	50

Master (Audio 16 and Master Mic) wiring is polarity sensitive.

1.19.2 Wiring Table for BIX terminal Block

DB50 Pin	Signal	SAB Cable	Terminal Block

Number		Wire Colour	Pin Number
1	Audio 1 +	Black	1
18	Audio 1 -	Red	2
34	Audio 1 Shield	BR Shield	3
35	Audio 2 Shield	BW Shield	4
2	Audio 2 +	Black	5
19	Audio 2 -	White	6
3	Audio 3 +	Black	7
20	Audio 3 -	Green	8
36	Audio 3 Shield	BG Shield	9
37	Audio 4 Shield	BBl Shield	10
4	Audio 4 +	Black	11
21	Audio 4 -	Blue	12
5	Audio 5 +	Black	13
22	Audio 5 -	Yellow	14
38	Audio 5 Shield	BY Shield	15
39	Audio 6 Shield	BBr Shield	16
6	Audio 6 +	Black	17
23	Audio 6 -	Brown	18
7	Audio 7 +	Black	19
24	Audio 7 -	Orange	20
40	Audio 7 Shield	BO Shield	21
41	Audio 8 Shield	RW Shield	24
8	Audio 8 +	Red	23
25	Audio 8 -	White	24
9	Audio 9 +	Red	25
26	Audio 9 -	Green	26
42	Audio 9 Shield	RG Shield	27
43	Audio 10 Shield	RBl Shield	28
10	Audio 10 +	Red	29
27	Audio 10 -	Blue	30
11	Audio 11 +	Red	31
28	Audio 11 -	Yellow	32
44	Audio 11 Shield	RY Shield	33
45	Audio 12 Shield	RBr Shield	34
12	Audio 12 +	Red	35
29	Audio 12 -	Brown	36
13	Audio 13 +	Red	37
30	Audio 13 -	Orange	38
46	Audio 13 Shield	RO Shield	39
47	Audio 14 Shield	GW Shield	40
14	Audio 14 +	Green	41
31	Audio 14 -	White	42
15	Audio 15 +	Green	43
32	Audio 15 -	Blue	44
48	Audio 15 Shield	GBl Shield	45
49	Audio 16 & 17 Shield	GY Shield & GBr Shield	48
16	Audio 16 +	Green	46
33	Audio 16 -	Yellow	47
17	Master Mic Audio +	Green	49
50	Master Mic Audio -	Brown	50

Master (Audio 16 and Master Mic) wiring is polarity sensitive.

1.20 Station Audio Board 300 (SAB-300) Switch Cable

DB25 Pin Number	Signal	SAB Cable Wire Color [1]	Terminal Block Pin Number
1	Switch 1	White-Blue	1
9	Gnd	Red-Brown [2]	2
14	Switch 2	Blue-White	3
9	Gnd	Red-Brown [2]	4
2	Switch 3	White-Orange	5
9	Gnd	Red-Brown [2]	6
15	Switch 4	Orange-White	7
9	Gnd	Red-Brown [2]	8
3	Switch 5	White-Green	9
22	Gnd	Brown-Red [2]	10
16	Switch 6	Green-White	11
22	Gnd	Brown-Red [2]	12
4	Switch 7	White-Brown	13
22	Gnd	Brown-Red [2]	14
17	Switch 8	Brown-White	15
22	Gnd	Brown-Red [2]	16
5	Switch 9	White-Slate	17
10	Gnd	Red-Slate [2]	18
18	Switch 10	Slate-White	19
10	Gnd	Red-Slate [2]	20
6	Switch 11	Red-Blue	21
10	Gnd	Red-Slate [2]	22
19	Switch 12	Blue-Red	23
10	Gnd	Red-Slate [2]	24
7	Switch 13	Red-Orange	25
23	Gnd	Slate-Red [2]	26
20	Switch 14	Orange-Red	27
23	Gnd	Slate-Red [2]	28
8	Switch 15	Red-Green	29
23	Gnd	Slate-Red [2]	30
21	Switch 16	Green-Red	31
23	Gnd	Slate-Red [2]	32
			33
			34
			35
			36
			37
			38
			39
			40
			41
			42
			43
			44
			45
			46
			47
			48
			49
			50

Note 1: The cable pairs may or may not have a stripe i.e. instead of the first pair being white/blue stripe and blue/white stripe it may be a white and blue pair.
Note 2: Common ground are on Red-Brown, Brown-Red, Red-Slate and Slate-Red need tobe looped on terminal blocks as shown in this table

1.21 Station Audio Board 400 (SAB-400) Audio Cable

1.21.1 Wiring Table for Generic Terminal Block

DB37 Pin Number	Signal	SAB Cable Wire Color Provo 12110 18 Pair	SAB Cable Wire Color Belden Standard 19 Pair	Terminal Block Pin Number
1	Audio 1 +	Blue	Black	1
20	Audio 1 -	White	Red	2
	Gnd			3
2	Audio 2 +	Orange	Black	4
21	Audio 2 -	White	White	5
	Gnd			6
3	Audio 3 +	Green	Black	7
22	Audio 3 -	White	Green	8
	Gnd			9
4	Audio 4 +	Brown	Black	10
23	Audio 4 -	White	Blue	11
	Gnd			12
5	Audio 5 +	Slate	Black	13
24	Audio 5 -	White	Yellow	14
	Gnd			15
6	Audio 6 +	Blue	Black	16
25	Audio 6 -	Red	Brown	17
	Gnd			18
7	Audio 7 +	Orange	Black	19
26	Audio 7 -	Red	Orange	20
	Gnd			21
8	Audio 8 +	Green	Red	22
27	Audio 8 -	Red	White	23
	Gnd			24
9	Audio 9 +	Brown	Red	25
28	Audio 9 -	Red	Green	26
	Gnd			27
10	Audio 10 +	Slate	Red	28
29	Audio 10 -	Red	Blue	29
	Gnd			30
11	Audio 11 +	Blue	Red	31
30	Audio 11 -	Black	Yellow	32
	Gnd			33
12	Audio 12 +	Orange	Red	34
31	Audio 12 -	Black	Brown	35
	Gnd			36
13	Audio 13 +	Green	Red	37
32	Audio 13 -	Black	Orange	38
	Gnd			39
14	Audio 14 +	Brown	Green	40
33	Audio 14 -	Black	White	41
	Gnd			42
15	Audio 15 +	Slate	Green	43
34	Audio 15 -	Black	Blue	44
18	Gnd	* Green	* Green	45
16	Audio 16 +	Blue	Green	46
35	Audio 16 -	Yellow	Yellow	47
37	Gnd	* Yellow	* Orange	48
17	Master Audio Mic +	Orange	Green	49
36	Master Audio Mic -	Yellow	Brown	50

*Ground wire pair. All wiring is polarity sensitive. Pin 19 is also ground.

1.21.2 Wiring Table for BIX Terminal Block

DB37 Pin Number	Signal	SAB Cable Wire Color Provo 12110 18 Pair	SAB Cable Wire Color Belden Standard 19 Pair	Terminal Block Pin Number
1	Audio 1 +	Blue	Black	1
20	Audio 1 -	White	Red	2
	Gnd			3
	Gnd			4
2	Audio 2 +	Orange	Black	5
21	Audio 2 -	White	White	6
3	Audio 3 +	Green	Black	7
22	Audio 3 -	White	Green	8
	Gnd			9
	Gnd			10
4	Audio 4 +	Brown	Black	11
23	Audio 4 -	White	Blue	12
5	Audio 5 +	Slate	Black	13
24	Audio 5 -	White	Yellow	14
	Gnd			15
	Gnd			16
6	Audio 6 +	Blue	Black	17
25	Audio 6 -	Red	Brown	18
7	Audio 7 +	Orange	Black	19
26	Audio 7 -	Red	Orange	20
	Gnd			21
	Gnd			22
8	Audio 8 +	Green	Red	23
27	Audio 8 -	Red	White	24
9	Audio 9 +	Brown	Red	25
28	Audio 9 -	Red	Green	26
	Gnd			27
	Gnd			28
10	Audio 10 +	Slate	Red	29
29	Audio 10 -	Red	Blue	30
11	Audio 11 +	Blue	Red	31
30	Audio 11 -	Black	Yellow	32
	Gnd			33
	Gnd			34
12	Audio 12 +	Orange	Red	35
31	Audio 12 -	Black	Brown	36
13	Audio 13 +	Green	Red	37
32	Audio 13 -	Black	Orange	38
	Gnd			39
	Gnd			40
14	Audio 14 +	Brown	Green	41
33	Audio 14 -	Black	White	42
15	Audio 15 +	Slate	Green	43
34	Audio 15 -	Black	Blue	44
18	Gnd	* Green	* Green	45
37	Gnd	* Yellow	* Orange	46
16	Audio 16 +	Blue	Green	47
35	Audio 16 -	Yellow	Yellow	48
17	Master Audio Mic +	Orange	Green	49
36	Master Audio Mic -	Yellow	Brown	50

*Ground wire pair. All wiring is polarity sensitive. Pin 19 is also ground.

1.22 Telephone Set Board 100 and 400 (TSB-100 and TSB-400) Audio Cable

DB50 Pin Number	Signal	TSB Cable Wire Color*	Terminal Block Pin Number
1	Tip 1	White-Blue	1
18	Ring 1	Blue-White	2
3	Tip 2	White-Orange	3
20	Ring 2	Orange-White	4
5	Tip 3	White-Green	5
22	Ring 3	Green-White	6
7	Tip 4	White-Brown	7
24	Ring 4	Brown-White	8
9	Tip 5	White-Slate	9
26	Ring 5	Slate-White	10
11	Tip 6	Red-Blue	11
28	Ring 6	Blue-Red	12
13	Tip 7	Red-Orange	13
30	Ring 7	Orange-Red	14
15	Tip 8	Red-Green	15
32	Ring 8	Green-Red	16
34	NC	Red-Brown	17
35	NC	Brown-Red	18
36	NC	Red-Slate	19
37	NC	Slate-Red	20
38	NC	Black-Blue	21
39	NC	Blue-Black	22
40	NC	Black-Orange	23
41	NC	Orange-Black	24
42	NC	Black-Green	25
43	NC	Green-Black	26
44	NC	Black-Brown	27
45	NC	Brown-Black	28
46	NC	Black-Slate	29
47	NC	Slate-Black	30
48	NC	Yellow-Blue	31
49	NC	Blue-Yellow	32
17	Earth Ground	Yellow-Orange	33
50	Earth Ground	Orange-Yellow	34
			35
			36
			37
			38
			39
			40
			41
			42
			43
			44
			45
			46
			47
			48
			49
			50

*Note: The cable pairs may or may not have a stripe i.e. instead of the first pair being white/blue stripe and blue/white stripe it may be a white and blue pair.

1.23 Audio Input/Output Board (AIB-100, AIB-400, AOB-100, AOB-400, AIO-100 and AIO-400)

DB50 Pin Number	Signal	Wire Colors 4 pair shielded cable	Wire Colors* 6 pair unshielded cable	Terminal Block Pin Number
1	Audio 1 +	Black		1
18	Audio 1 -	Red		2
34	Audio 1 Shield (Gnd) / Input Common 1	BR Shield		3
2	Input 1		White-Blue	4
19	Relay Common 1		Blue-White (Blue)	5
35	Relay Output 1		White-Orange	6
3	Audio 2+	Black		7
20	Audio 2-	White		8
36	Audio 2 Shield (Gnd) / Input Common 2	BW Shield		9
4	Input 2		Orange-White (Orange)	10
21	Relay Common 2		White-Green	11
37	Relay Output 2		Green-White (Green)	12
5	Audio 3+	Black		13
22	Audio 3-	Green		14
38	Audio 3 Shield (Gnd) / Input Common 3	BG Shield		15
6	Input 3		White-Brown	16
23	Relay Common 3		Brown-White (Brown)	17
39	Relay Output 3		White-Grey	18
7	Audio 4 +	Black		19
24	Audio 4 -	Blue		20
40	Audio 4 Shield (Gnd) / Input Common 4	BBl Shield		21
8	Input 4		Grey-White (Grey)	22
25	Relay Common 4		Red-Blue (Red)	23
41	Relay Output 4		Blue-Red	24
9	Audio 5+	Black		25
26	Audio 5 -	Red		26
42	Audio 5 Shield (Gnd) / Input Common 5	BR Shield		27
10	Input 5		White-Blue	28
27	Relay Common 5		Blue-White (Blue)	29
43	Relay Output 5		White-Orange	30
11	Audio 6+	Black		31
28	Audio 6-	White		32
44	Audio 6 Shield (Gnd) / Input Common 6	BW Shield		33
12	Input 6		Orange-White	34
29	Relay Common 6		White-Green (Green)	35
45	Relay Output 6		Green-White	36
13	Audio 7+	Black		37
30	Audio 7 -	Green		38
46	Audio 7 Shield (Gnd) / Input Common 7	BG Shield		39
14	Input 7		White-Brown	40
31	Relay Common 7		Brown-White (Brown)	41
47	Relay Output 7		White-Grey	42
15	Audio 8 +	Black		43
32	Audio 8 -	Blue		44
48	Audio 8 Shield (Gnd) / Input Common 8	BBl Shield		45
16	Input 8		Grey-White (Grey)	46
33	Relay Common 8		Red-Blue (Red)	47
49	Relay Output 8		Blue-Red	48
17	Gnd	N/C	N/C	49
50	Gnd	N/C	N/C	50

*Note: Two variations of the cable are manufactured. One variation is for the both wires of a pair to be striped i.e. the first pair consists of a white/blue striped wire and a blue/white striped wire. A second variation is for each cable pair to consist of a solid color wire and a striped wire i.e. the first pair has a solid blue wire and a blue/white striped wire (the solid color for the pair is shown in brackets).

1.24 Discrete I/O Board (DIO-1XX)

Contact Inputs, Contact Outputs and SMM Audio

DB50 Pin Number	DIO Card Digital Input Name	DIO Card Digital Output Name	SMM Card Audio Name	Industry Standard 25 Pair Cable Color*	Terminal Block Pin Number
1	Input 1	Output 1	Audio 1	White-Blue	1
18	Input 2	Output 2	Audio 2	Blue-White	2
34	Input 3	Output 3	Audio 3	White-Orange	3
2	Input 4	Output 4	Audio 4	Orange-White	4
19	Input 5	Output 5	Audio 5	White-Green	5
35	Input 6	Output 6	Audio 6	Green-White	6
3	Input 7	Output 7	Audio 7	White-Brown	7
20	Input 8	Output 8	Audio 8	Brown-White	8
36	Input 9	Output 9	Audio 9	White-Slate	9
4	Input 10	Output 10	Audio 10	Slate-White	10
21	Input 11	Output 11	Audio 11	Red-Blue	11
37	Input 12	Output 12	Audio 12	Blue-Red	12
5	Input 13	Output 13	Audio 13	Red-Orange	13
22	Input 14	Output 14	Audio 14	Orange-Red	14
38	Input 15	Output 15	Audio 15	Red-Green	15
6	Input 16	Output 16	Audio 16	Green-Red	16
23	Input 17	Output 17	Audio 17	Red-Brown	17
39	Input 18	Output 18	Audio 18	Brown-Red	18
7	Input 19	Output 19	Audio 19	Red-Slate	19
24	Input 20	Output 20	Audio 20	Slate-Red	20
40	Input 21	Output 21	Audio 21	Black-Blue	21
8	Input 22	Output 22	Audio 22	Blue-Black	22
25	Input 23	Output 23	Audio 23	Black-Orange	23
41	Input 24	Output 24	Audio 24	Orange-Black	24
9	Input 25	Output 25	Audio 25	Black-Green	25
26	Input 26	Output 26	Audio 26	Green-Black	26
42	Input 27	Output 27	Audio 27	Black-Brown	27
10	Input 28	Output 28	Audio 28	Brown-Black	28
27	Input 29	Output 29	Audio 29	Black-Slate	29
43	Input 30	Output 30	Audio 30	Slate-Black	30
11	Input 31	Output 31	Audio 31	Yellow-Blue	31
28	Input 32	Output 32	Audio 32	Blue-Yellow	32
44	Input 33	Output 33	Audio 33	Yellow-Orange	33
12	Input 34	Output 34	Audio 34	Orange-Yellow	34
29	Input 35	Output 35	Audio 35	Yellow-Green	35
45	Input 36	Output 36	Audio 36	Green-Yellow	36
13	Input 37	Output 37	Audio 37	Yellow-Brown	37
30	Input 38	Output 38	Audio 38	Brown-Yellow	38
46	Input 39	Output 39	Audio 39	Yellow-Slate	39
14	Input 40	Output 40	Audio 40	Slate-Yellow	40
31	Input 41	Output 41	Audio 41	Violet-Blue	41
47	Input 42	Output 42	Audio 42	Blue-Violet	42
15	Input 43	Output 43	Audio 43	Violet-Orange	43
32	Input 44	Output 44	Audio 44	Orange-Violet	44
48	Input 45	Output 45	Audio 45	Violet-Green	45
16	Input 46	Output 46	Audio 46	Green-Violet	46
33	Input 47	Output 47	Audio 47	Violet-Brown	47
49	Input 48	Output 48	Audio 48	Brown-Violet	48
17	Gnd	Gnd	Master	Violet-Slate	49
50	Gnd	Gnd	Gnd	Slate-Violet	50

*Note: The cable pairs may or may not have a stripe i.e. instead of the first pair being white/blue stripe and blue/white stripe it may be a white and blue pair.

1.25 Discrete I/O Board (DIO-1XX)

Relay Outputs #1 - 16

DB50 Pin Number	DIO Card Digital Output Name	Industry Standard 25 Pair Cable Color*	Terminal Block Pin Number
1	Relay 1 NO	White-Blue	1
18	Relay 1 COM	Blue-White	2
34	Relay 1 NC	White-Orange	3
2	Relay 2 NO	Orange-White	4
19	Relay 2 COM	White-Green	5
35	Relay 2 NC	Green-White	6
3	Relay 3 NO	White-Brown	7
20	Relay 3 COM	Brown-White	8
36	Relay 3 NC	White-Slate	9
4	Relay 4 NO	Slate-White	10
21	Relay 4 COM	Red-Blue	11
37	Relay 4 NC	Blue-Red	12
5	Relay 5 NO	Red-Orange	13
22	Relay 5 COM	Orange-Red	14
38	Relay 5 NC	Red-Green	15
6	Relay 6 NO	Green-Red	16
23	Relay 6 COM	Red-Brown	17
39	Relay 6 NC	Brown-Red	18
7	Relay 7 NO	Red-Slate	19
24	Relay 7 COM	Slate-Red	20
40	Relay 7 NC	Black-Blue	21
8	Relay 8 NO	Blue-Black	22
25	Relay 8 COM	Black-Orange	23
41	Relay 8 NC	Orange-Black	24
9	Relay 9 NO	Black-Green	25
26	Relay 9 COM	Green-Black	26
42	Relay 9 NC	Black-Brown	27
10	Relay 10 NO	Brown-Black	28
27	Relay 10 COM	Black-Slate	29
43	Relay 10 NC	Slate-Black	30
11	Relay 11 NO	Yellow-Blue	31
28	Relay 11 COM	Blue-Yellow	32
44	Relay 11 NC	Yellow-Orange	33
12	Relay 12 NO	Orange-Yellow	34
29	Relay 12 COM	Yellow-Green	35
45	Relay 12 NC	Green-Yellow	36
13	Relay 13 NO	Yellow-Brown	37
30	Relay 13 COM	Brown-Yellow	38
46	Relay 13 NC	Yellow-Slate	39
14	Relay 14 NO	Slate-Yellow	40
31	Relay 14 COM	Violet-Blue	41
47	Relay 14 NC	Blue-Violet	42
15	Relay 15 NO	Violet-Orange	43
32	Relay 15 COM	Orange-Violet	44
48	Relay 15 NC	Violet-Green	45
16	Relay 16 NO	Green-Violet	46
33	Relay 16 COM	Violet-Brown	47
49	Relay 16 NC	Brown-Violet	48
17	Gnd	Violet-Slate	49
50	Gnd	Slate-Violet	50

*Note: The cable pairs may or may not have a stripe i.e. instead of the first pair being white/blue stripe and blue/white stripe it may be a white and blue pair.

Relay Outputs #17 - 32

DB50 Pin Number	DIO Card Digital Output Name	Industry Standard 25 Pair Cable Color*	Terminal Block Pin Number
1	Relay 17 NO	White-Blue	1
18	Relay 17 COM	Blue-White	2
34	Relay 17 NC	White-Orange	3
2	Relay 18 NO	Orange-White	4
19	Relay 18 COM	White-Green	5
35	Relay 18 NC	Green-White	6
3	Relay 19 NO	White-Brown	7
20	Relay 19 COM	Brown-White	8
36	Relay 19 NC	White-Slate	9
4	Relay 20 NO	Slate-White	10
21	Relay 20 COM	Red-Blue	11
37	Relay 20 NC	Blue-Red	12
5	Relay 21 NO	Red-Orange	13
22	Relay 21 COM	Orange-Red	14
38	Relay 21 NC	Red-Green	15
6	Relay 22 NO	Green-Red	16
23	Relay 22 COM	Red-Brown	17
39	Relay 22 NC	Brown-Red	18
7	Relay 23 NO	Red-Slate	19
24	Relay 23 COM	Slate-Red	20
40	Relay 23 NC	Black-Blue	21
8	Relay 24 NO	Blue-Black	22
25	Relay 24 COM	Black-Orange	23
41	Relay 24 NC	Orange-Black	24
9	Relay 25 NO	Black-Green	25
26	Relay 25 COM	Green-Black	26
42	Relay 25 NC	Black-Brown	27
10	Relay 26 NO	Brown-Black	28
27	Relay 26 COM	Black-Slate	29
43	Relay 26 NC	Slate-Black	30
11	Relay 27 NO	Yellow-Blue	31
28	Relay 27 COM	Blue-Yellow	32
44	Relay 27 NC	Yellow-Orange	33
12	Relay 28 NO	Orange-Yellow	34
29	Relay 28 COM	Yellow-Green	35
45	Relay 28 NC	Green-Yellow	36
13	Relay 29 NO	Yellow-Brown	37
30	Relay 29 COM	Brown-Yellow	38
46	Relay 29 NC	Yellow-Slate	39
14	Relay 30 NO	Slate-Yellow	40
31	Relay 30 COM	Violet-Blue	41
47	Relay 30 NC	Blue-Violet	42
15	Relay 31 NO	Violet-Orange	43
32	Relay 31 COM	Orange-Violet	44
48	Relay 31 NC	Violet-Green	45
16	Relay 32 NO	Green-Violet	46
33	Relay 32 COM	Violet-Brown	47
49	Relay 32 NC	Brown-Violet	48
17	Gnd	Violet-Slate	49
50	Gnd	Slate-Violet	50

*Note: The cable pairs may or may not have a stripe i.e. instead of the first pair being white/blue stripe and blue/white stripe it may be a white and blue pair.

Relay Outputs #33 - 48

DB50 Pin Number	DIO Card Digital Output Name	Industry Standard 25 Pair Cable Color*	Terminal Block Pin Number
1	Relay 33 NO	White-Blue	1
18	Relay 33 COM	Blue-White	2
34	Relay 33 NC	White-Orange	3
2	Relay 34 NO	Orange-White	4
19	Relay 34 COM	White-Green	5
35	Relay 34 NC	Green-White	6
3	Relay 35 NO	White-Brown	7
20	Relay 35 COM	Brown-White	8
36	Relay 35 NC	White-Slate	9
4	Relay 36 NO	Slate-White	10
21	Relay 36 COM	Red-Blue	11
37	Relay 36 NC	Blue-Red	12
5	Relay 37 NO	Red-Orange	13
22	Relay 37 COM	Orange-Red	14
38	Relay 37 NC	Red-Green	15
6	Relay 38 NO	Green-Red	16
23	Relay 38 COM	Red-Brown	17
39	Relay 38 NC	Brown-Red	18
7	Relay 39 NO	Red-Slate	19
24	Relay 39 COM	Slate-Red	20
40	Relay 39 NC	Black-Blue	21
8	Relay 40 NO	Blue-Black	22
25	Relay 40 COM	Black-Orange	23
41	Relay 40 NC	Orange-Black	24
9	Relay 41 NO	Black-Green	25
26	Relay 41 COM	Green-Black	26
42	Relay 41 NC	Black-Brown	27
10	Relay 42 NO	Brown-Black	28
27	Relay 42 COM	Black-Slate	29
43	Relay 42 NC	Slate-Black	30
11	Relay 43 NO	Yellow-Blue	31
28	Relay 43 COM	Blue-Yellow	32
44	Relay 43 NC	Yellow-Orange	33
12	Relay 44 NO	Orange-Yellow	34
29	Relay 44 COM	Yellow-Green	35
45	Relay 44 NC	Green-Yellow	36
13	Relay 45 NO	Yellow-Brown	37
30	Relay 45 COM	Brown-Yellow	38
46	Relay 45 NC	Yellow-Slate	39
14	Relay 46 NO	Slate-Yellow	40
31	Relay 46 COM	Violet-Blue	41
47	Relay 46 NC	Blue-Violet	42
15	Relay 47 NO	Violet-Orange	43
32	Relay 47 COM	Orange-Violet	44
48	Relay 47 NC	Violet-Green	45
16	Relay 48 NO	Green-Violet	46
33	Relay 48 COM	Violet-Brown	47
49	Relay 48 NC	Brown-Violet	48
17	Gnd	Violet-Slate	49
50	Gnd	Slate-Violet	50

*Note: The cable pairs may or may not have a stripe i.e. instead of the first pair being white/blue stripe and blue/white stripe it may be a white and blue pair.

Section 2 - Typical Voltage Measurements

2.1 Voltages on SAB Board Outputs (measured at the SAB terminal blocks)

SAB-100 and SAB-400 Intercom Audio Voltage and SAB-300 Intercom Switch Voltage

Intercom Speaker Audio State	SAB-100 Voltage	SAB-400 Voltage	SAB-300 Voltage
CRQ (SWB)	7V	10V	1.7V
Other (SWA)	20V	6V	4.0V
Normal (Idle)	14V	16V	7.1V
Open Circuit Fault	24V	24V	12V
Short Circuit Fault	0V	0V	0V

SAB-100 and SAB-300/400 Master Speaker Audio Voltage

Master Speaker Audio State	SAB-100 Voltage	SAB 300/400
PTT (SWA)	20V	6V
Mic Mute (SWB)	7V	10V
Normal (Idle)	14V	16V
Open Circuit Fault	24V	24V
Short Circuit Fault	0V	0V

SAB-100 and SAB-300/400 Master Microphone Audio Voltage

Master Microphone Audio State	SAB-100 Voltage	SAB 300/400
On Hook (SWA)	20V	6V
CRQ/Other (SWB)	7V	10V
Off Hook (Idle)	14V	16V
Open Circuit Fault	24V	24V
Short Circuit Fault	0V	0V