

MAINTENANCE MANUAL

I/O BACKPLANE BOARD

P29/7720039000

(350A1371P21)

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DESCRIPTION

I/O Backplane Board P29/7720039000 is installed within the Enhanced Audio Enclosure. Mounted inside the unit on the rear panel, it furnishes interconnections between the Audio System Board within the enclosure and all external devices used with the unit such as microphones, headsets, speakers and the audio lines to and from the CEC/IMC Digital Audio Switch. It also furnishes dc power interconnections from the power supply to the Audio System Board.

Nineteen (19) I/O Backplane Board connectors extend through the Enhanced Audio Enclosure's rear panel to provide interconnect points for the external devices used with the unit. See Table 1. For example, DB-25 connector J1 provides input and output interconnect points for the audio lines to and from the CEC/IMC and DB-9 connector J6 provides interconnections for the dispatch operator's headset jack box. As shown in Table 1, these connectors are labeled "LINES 1 - 4" and "OPER H/S" respectively. J1 is shown on sheet 1 of the schematic diagram. J6 is shown on sheet 2. Since rear panel space is somewhat limited, it should be noted that rear panel connector labeling *does not, in all cases*, directly match schematic diagram connector labeling show within parenthesis.

If a particular external device is not used with the C3 Maestro console, no connections are required at the respective external connector on rear panel. For example, if no boom or gooseneck microphone is used with the console, no connections are required at the boom/gooseneck mic DB-9 connector J4. This connector is labeled "B/G MIC" on the rear panel and its pin-out is shown on sheet 2 of the schematic diagram.

Two of the three internal connectors – J21 and J22 – directly mate with the Audio System Board. These two 96-pin rectangular DIN-type connectors carry all signals between the Audio System Board and the I/O Backplane Board's external connectors. The remaining internal connector – J23 – provides dc connections for the power supply located under the Audio System Board. DC power is routed into the Audio System Board via DIN interconnections. See sheets 4 and 5 of the schematic diagram for pin-out details.

Table 1 summarizes connector utilization. See the schematic diagram for pin-out details. In addition, LBI-39101, the *Installation And Set-Up* manual, includes tables which list the connectors' pin-outs.

Table 1 – I/O Backplane Board Connectors

IDENTIFICATION	REAR PANEL LABELING	TYPE / STYLE	NO. OF CONTACTS & GENDER	USED FOR / CONNECTIONS FOR
J1	LINES 1-4	DB-25 subminiature	25, female	CEC/IMC line inputs and outputs
J2	PAGING 1 4	removable terminal block	4, screw terminals	pager audio and PTT inputs
J3	CALL DIR	DB-9 subminiature	9, female	Call Director patch equipment inputs and outputs
J4	B/G MIC	DB-9 subminiature	9, female	boom/gooseneck microphone
J5	DESK MIC	DB-9 subminiature	9, female	desk microphone
J6	OPER H/S	DB-9 subminiature	9, female	operator's headset (jack box)
J7	SUPER H/S	DB-9 subminiature	9, female	supervisor's headset (jack box)
J8	SEL SPKR	DB-9 subminiature	9, male	select speaker (audio output and dc power)
J9	UNSEL SPKR1	DB-9 subminiature	9, male	1st unselect speaker (audio output and dc power)
J10	UNSEL SPKR2	DB-9 subminiature	9, male	2nd unselect speaker (audio output and dc power)
J11	UNSEL SPKR3	DB-9 subminiature	9, male	3rd unselect speaker (audio output and dc power)
J13	RECORDER 1 4	removable terminal block	4, screw terminals	select and unselect recorder audio outputs
J14	FT. SW. OPER	DB-9 subminiature	9, female	operator's footswitch
J15	FT. SW. SUPER	DB-9 subminiature	9, female	supervisor's footswitch
J16	I/O	DB-9 subminiature	9, female	optional serial expansion I/O (RS-422)
J17	PC	DB-9 subminiature	9, female	Personal Computer serial I/O (RS-232)
J18	KBD	DB-9 subminiature	9, female	Dispatch Keyboard
J19	RELAYS 1 18	removable terminal block	18, screw terminals	relay outputs (Form-C)
J20	DIG IN 1 18	removable terminal block	18, screw terminals	digital inputs (optically coupled)
J21	n/a	rectangular DIN	96, female	Audio System Board interconnections
J22	n/a	rectangular DIN	96, female	Audio System Board interconnections
J23	n/a	AMP Mate-N-Lok	2, male	+12 Vdc power connections from power supply

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**BACKPLANE BOARD
P29/7720039000 (350A1371P21), Rev. A**

ISSUE 1

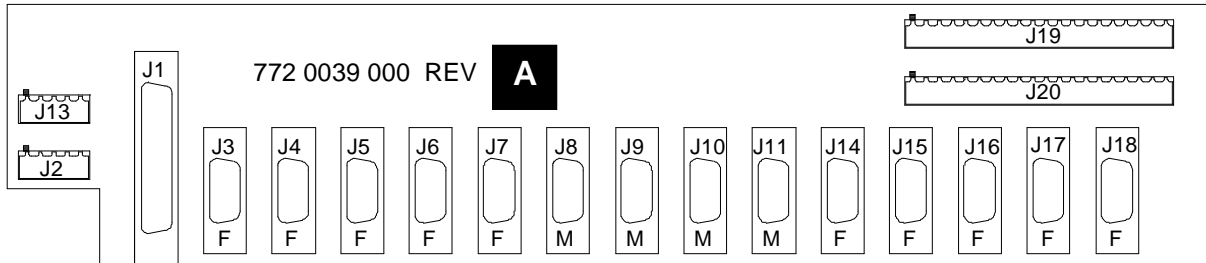
PRODUCTION CHANGES

Changes in the equipment to improve performance or to simplify circuits are identified by a "Revision Letter" which is stamped after the model number of the unit. The revision stamped on the unit includes all previous revisions. Refer to the Parts List for the descriptions of parts affected by these revisions.

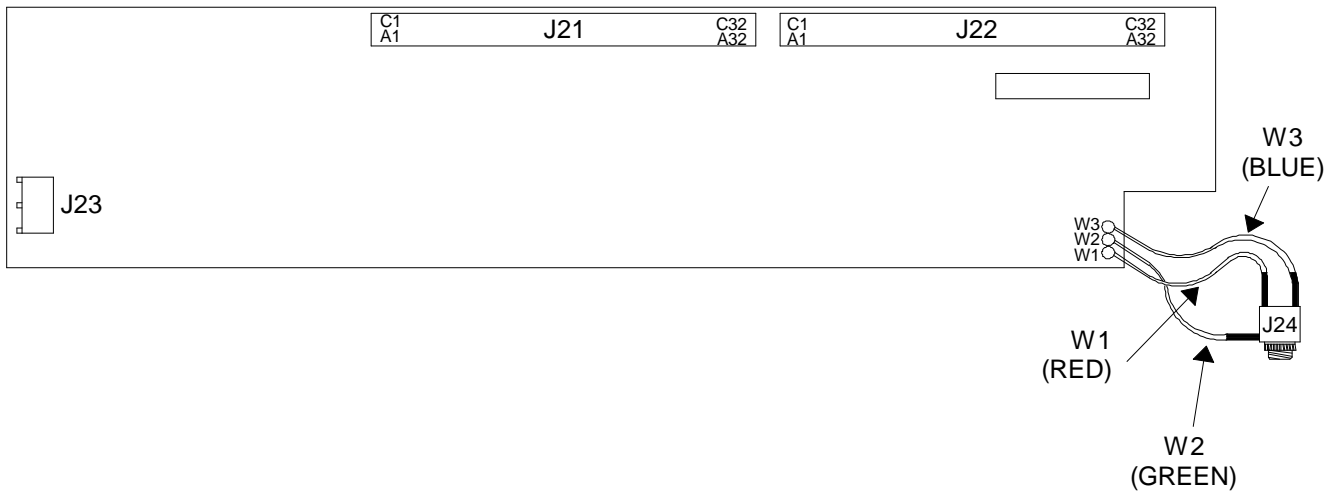
Rev. A – BACKPLANE BOARD P29/7720039000
Initial production release.

SYMBOL	PART NUMBER	DESCRIPTION
		----- JACKS -----
J1	P29/3800723000	D-subminiature: 25-position, PC board mount, female contacts.
J2	P29/3800665000	Header, terminal block: 2-piece, 4-position; sim WeidMuller SL3.5/180/4G.
J3 thru J7	P29/3800551000	D-subminiature: 9-position, PC board mount, female contacts.
J8 thru J11	P29/3800667000	D-subminiature: 9-position, PC board mount, male contacts.
J13	P29/3800665000	Header, terminal block: 2-piece, 4-position; sim WeidMuller SL3.5/180/4G.
J14 thru J18	P29/3800551000	D-subminiature: 9-position, PC board mount, female contacts.
J19 and J20	P29/3800663000	Header, terminal block: 2-piece, 18-position; sim WeidMuller SL3.5/180/18G.
J21 and J22	P29/3800707096	DIN: 96-position, female contacts.
J23	P29/3800154000	Socket: 2-position; sim to AMP Mate-N-Lok 641964-1.
J24	P29/3800501000	Connector: 1/8-inch stereo, panel mount.
		----- MISCELLANEOUS -----
	P29/1050038000	Tubing, heat shrink.
	P29/2160002000	Tie, wire: 4-inch, natural color.

**VIEWED FROM OUTSIDE
(OUTSIDE OF CASE)**



**VIEWED FROM INSIDE
(AUDIO SYSTEM BOARD SIDE)**



**I/O BACKPLANE BOARD
P29/7720039000**

(772-0039-XXX-HD, Sh. 1, Rev. A)
(772-0039-XXX-HD, Sh. 2, Rev. A)

J23 (POWER CONNECTOR)

1 ← PS_GND_IN
 2 ← +12V

J1 (LINES IN/OUT)

1 > LINE_1_IN+
 2 > LINE_1_IN-
 3 > N.C.
 4 > LINE_2_IN+
 5 > LINE_2_IN-
 6 > N.C.
 7 > LINE_3_IN+
 8 > LINE_3_IN-
 9 > N.C.
 10 > LINE_4_IN+
 11 > LINE_4_IN-
 12 > N.C.
 13 > N.C.
 14 > LINE_1_OUT+
 15 > LINE_1_OUT-
 16 > N.C.
 17 > LINE_2_OUT+
 18 > LINE_2_OUT-
 19 > N.C.
 20 > LINE_3_OUT+
 21 > LINE_3_OUT-
 22 > N.C.
 23 > LINE_4_OUT+
 24 > LINE_4_OUT-
 25 > N.C.

J8 (SELECT SPEAKER OUT)

1 ← SELECT_SPEAKER_OUT
 2 ← SELECT_SPKR_OUT_GND
 3 ← N.C.
 4 ← +12V
 5 ←
 6 ←
 7 ← PS_GND_IN
 8 ←
 9 ← N.C.

J10 (UNSELECT SPEAKER 2 OUT)

1 ← USELECT_SPEAKER_2_OUT
 2 ← USEL_SPEAKER_2_OUT_GND
 3 ← N.C.
 4 ← +12V
 5 ←
 6 ←
 7 ← PS_GND_IN
 8 ←
 9 ← N.C.

J9 (UNSELECT SPEAKER 1 OUT)

1 ← USELECT_SPEAKER_1_OUT
 2 ← USEL_SPEAKER_1_OUT_GND
 3 ← N.C.
 4 ← +12V
 5 ←
 6 ←
 7 ← PS_GND_IN
 8 ←
 9 ← N.C.

J11 (UNSELECT SPEAKER 3 OUT)

1 ← USELECT_SPEAKER_3_OUT
 2 ← USEL_SPEAKER_3_OUT_GND
 3 ← N.C.
 4 ← +12V
 5 ←
 6 ←
 7 ← PS_GND_IN
 8 ←
 9 ← N.C.

J3 (CALL DIRECTOR)

1 > ON_HOOK_NO
 2 > CD_HOOK_SENSE_IN
 3 > CD_JACK_SENSE_IN
 4 > PS_GND_IN
 5 > CALL_DIRECTOR_IN-
 6 > ON_HOOK_COMMON
 7 > CALL_DIRECTOR_OUT+
 8 > CALL_DIRECTOR_OUT-
 9 > CALL_DIRECTOR_IN+

J4 (B/G MIC)

1 > AGND
 2 > PS_GND_IN
 3 > B/G_MIC_SENSE_IN
 4 > B/G_MIC_IN_GND
 5 > B/G_MIC_IN_GND
 6 > B/G_PTT_IN
 7 > N.C.
 8 > N.C.
 9 > B/G_MIC_IN

J5 (DESK MIC)

1 > N.C.
 2 > PS_GND_IN
 3 > MONITOR_PTT_IN
 4 > DESK_MIC_IN_GND
 5 > DESK_MIC_IN_GND
 6 > DESK_MIC_PTT_IN
 7 > N.C.
 8 > N.C.
 9 > DESK_MIC_IN

J6 (OPR HEADSET)

1 > N.C.
 2 > N.C.
 3 > OPR_JACK_SENSE_IN
 4 > PS_GND_IN
 5 > OPR_HEADSET_MIC_IN_GND
 6 > OPR_PTT_IN
 7 > OPR_HEADPHONE_OUT
 8 > OPR_HEADPHONE_OUT_GND
 9 > OPR_HEADSET_MIC_IN

J7 (SUPR HEADSET)

1 > N.C.
 2 > N.C.
 3 > SUPR_JACK_SENSE_IN
 4 > PS_GND_IN
 5 > SUPR_HEADSET_MIC_IN_GND
 6 > SUPR_PTT_IN
 7 > SUPR_HEADPHONE_OUT
 8 > SUPR_HEADPHONE_OUT_GND
 9 > SUPR_HEADSET_MIC_IN

J14 (OPR FOOT SWITCH)

1 > N.C.
 2 > PS_GND_IN
 3 > N.C.
 4 > MONITOR_PTT_IN
 5 > N.C.
 6 > B/G_PTT_IN
 7 > N.C.
 8 > N.C.
 9 > N.C.

J15 (SUPER FOOT SWITCH)

1 > N.C.
 2 > PS_GND_IN
 3 > N.C.
 4 > MONITOR_PTT_IN
 5 > N.C.
 6 > SUPR_PTT_IN
 7 > N.C.
 8 > N.C.
 9 > N.C.

J16 (RS485)

1 > N.C.
 2 > N.C.
 3 > N.C.
 4 > TX_RS485_DATA_OUT+
 5 > RX_RS485_DATA_IN+
 6 > PS_GND_IN
 7 > N.C.
 8 > TX_RS485_DATA_OUT-
 9 > RX_RS485_DATA_IN-

J17 (PC SERIAL RS232)

1 > N.C.
 2 > TX_PC_DATA_OUT
 3 > RX_PC_DATA_IN
 4 > N.C.
 5 > PS_GND_IN
 6 > PS_GND_IN
 7 > N.C.
 8 > POWER_STATUS_OUT
 9 > N.C.

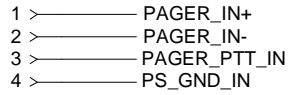
J18 (CUSTOM KEYBOARD)

1 > +5V_KB_OUT
 2 > RX_KEYBOARD_DATA_IN
 3 > TX_KEYBOARD_DATA_OUT
 4 > PS_GND_IN
 5 > N.C.
 6 > N.C.
 7 > N.C.
 8 > N.C.
 9 > N.C.

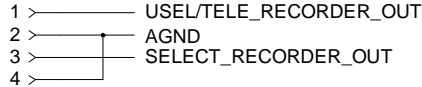
I/O BACKPLANE BOARD**P29/7720039000****Sheet 2 of 5 - Headset, Mic, Footswitch, Serial and Call Director Connectors**

(772-0039-XXX-EC, Sh. 3, Rev. A)

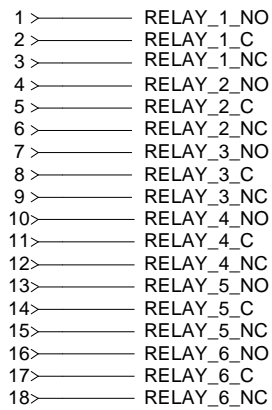
J2 (PAGER)



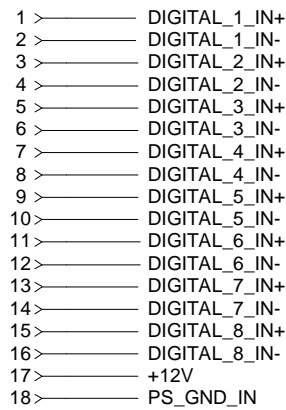
J13 (RECORDERS)



J19 (RELAYS)



J20 (DIGITAL IN)



**I/O BACKPLANE BOARD
 P29/7720039000**

Sheet 3 of 5 - Pager, Recorders, Relay Outputs and Digital Input Connectors

(772-0039-XXX-EC, Sh. 4, Rev. A)

J21

1 >	+12V
2 >	DIGITAL_5_IN+
3 >	RELAY_3_NC
4 >	DIGITAL_5_IN-
5 >	RELAY_1_NC
6 >	RELAY_6_C
7 >	RELAY_5_C
8 >	RX_RS485_DATA_IN+
9 >	DIGITAL_6_IN+
10 >	DIGITAL_7_IN+
11 >	DIGITAL_2_IN+
12 >	DIGITAL_2_IN-
13 >	RX_PC_DATA_IN
14 >	DIGITAL_7_IN-
15 >	DIGITAL_3_IN+
16 >	DIGITAL_8_IN+
17 >	DIGITAL_3_IN-
18 >	DIGITAL_1_IN+
19 >	DIGITAL_4_IN-
20 >	DIGITAL_4_IN+
21 >	PS_GND_IN
22 >	PS_GND_IN
23 >	+12V
24 >	PS_GND_IN
25 >	N.C.
26 >	AGND
27 >	AGND
28 >	AGND
29 >	N.C.
30 >	N.C.
31 >	USEL_SPEAKER_1_OUT_GND
32 >	USELECT_SPEAKER_1_OUT

J21

33 >	RELAY_1_NO
34 >	+5V_KB_OUT
35 >	TX_PC_DATA_OUT
36 >	DIGITAL_6_IN-
37 >	DIGITAL_8_IN-
38 >	RX_KEYBOARD_DATA_IN
39 >	TX_KEYBOARD_DATA_OUT
40 >	PAGER_PTT_IN
41 >	SUPR_PTT_IN
42 >	DESK_MIC_PTT_IN
43 >	B/G_PTT_IN
44 >	MONITOR_PTT_IN
45 >	OPR_PTT_IN
46 >	RELAY_1_C
47 >	RELAY_6_NC
48 >	ON_HOOK_NO
49 >	ON_HOOK_COMMON
50 >	RX_RS485_DATA_IN-
51 >	TX_RS485_DATA_OUT-
52 >	TX_RS485_DATA_OUT+
53 >	DIGITAL_1_IN-
54 >	PS_GND_IN
55 >	PS_GND_IN
56 >	PS_GND_IN
57 >	N.C.
58 >	AGND
59 >	AGND
60 >	N.C.
61 >	N.C.
62 >	N.C.
63 >	N.C.
64 >	USEL_SPEAKER_2_OUT_GND

J21

65 >	RELAY_3_NO
66 >	RELAY_3_C
67 >	RELAY_4_NO
68 >	RELAY_4_C
69 >	RELAY_4_NC
70 >	RELAY_2_C
71 >	CD_HOOK_SENSE_IN
72 >	B/G_MIC_SENSE_IN
73 >	N.C.
74 >	SUPR_JACK_SENSE_IN
75 >	CD_JACK_SENSE_IN
76 >	OPR_JACK_SENSE_IN
77 >	RELAY_2_NO
78 >	RELAY_2_NC
79 >	RELAY_5_NO
80 >	RELAY_6_NO
81 >	RELAY_5_NC
82 >	POWER_STATUS_OUT
83 >	N.C.
84 >	W1
85 >	AUX_RIGHT_IN
86 >	SELECT_RECORDER_OUT
87 >	USEL/TELE_RECORDER_OUT
88 >	N.C.
89 >	N.C.
90 >	W2 W3
91 >	AUX_IN_GND
92 >	AUX_LEFT_IN
93 >	N.C.
94 >	USEL_SPEAKER_3_OUT_GND
95 >	USELECT_SPEAKER_3_OUT
96 >	N.C.
97 >	N.C.
98 >	USELECT_SPEAKER_2_OUT

J22

1 >	N.C.
2 >	N.C.
3 >	N.C.
4 >	N.C.
5 >	N.C.
6 >	N.C.
7 >	N.C.
8 >	N.C.
9 >	N.C.
10 >	N.C.
11 >	N.C.
12 >	N.C.
13 >	N.C.
14 >	N.C.
15 >	N.C.
16 >	N.C.
17 >	N.C.
18 >	N.C.
19 >	N.C.
20 >	N.C.
21 >	N.C.
22 >	CALL_DIRECTOR_OUT+
23 >	N.C.
24 >	N.C.
25 >	N.C.
26 >	N.C.
27 >	N.C.
28 >	PAGER_IN+
29 >	LINE_4_OUT+
30 >	LINE_3_OUT+
31 >	LINE_2_OUT+
32 >	LINE_1_OUT+

J22

33 >	N.C.
34 >	N.C.
35 >	N.C.
36 >	N.C.
37 >	N.C.
38 >	N.C.
39 >	N.C.
40 >	N.C.
41 >	N.C.
42 >	N.C.
43 >	N.C.
44 >	SUPR_HEADSET_MIC_IN_GND
45 >	N.C.
46 >	N.C.
47 >	N.C.
48 >	N.C.
49 >	N.C.
50 >	DESK_MIC_IN_GND
51 >	OPR_HEADSET_MIC_IN_GND
52 >	N.C.
53 >	B/G_MIC_IN_GND
54 >	CALL_DIRECTOR_OUT-
55 >	CALL_DIRECTOR_IN+
56 >	N.C.
57 >	N.C.
58 >	LINE_4_IN-
59 >	LINE_3_IN-
60 >	PAGER_IN-
61 >	LINE_4_OUT-
62 >	LINE_3_OUT-
63 >	LINE_2_OUT-
64 >	LINE_1_OUT-

J22

65 >	SELECT_SPKR_OUT_GND
66 >	SELECT_SPEAKER_OUT
67 >	SUPR_HEADPHONE_OUT_GND
68 >	SUPR_HEADPHONE_OUT
69 >	N.C.
70 >	OPR_HEADPHONE_OUT_GND
71 >	N.C.
72 >	OPR_HEADPHONE_OUT
73 >	N.C.
74 >	N.C.
75 >	N.C.
76 >	SUPR_HEADSET_MIC_IN
77 >	N.C.
78 >	N.C.
79 >	N.C.
80 >	N.C.
81 >	N.C.
82 >	DESK_MIC_IN
83 >	OPR_HEADSET_MIC_IN
84 >	N.C.
85 >	B/G_MIC_IN
86 >	N.C.
87 >	CALL_DIRECTOR_IN-
88 >	N.C.
89 >	N.C.
90 >	N.C.
91 >	LINE_4_IN+
92 >	LINE_3_IN+
93 >	LINE_2_IN-
94 >	LINE_2_IN+
95 >	LINE_1_IN-
96 >	LINE_1_IN+

I/O BACKPLANE BOARD

P29/7720039000

Sheets 4 & 5 of 5 - Audio System Board Connectors (96-Pin DIN)

(772-0039-XXX-EC, Sh. 5 & 6, Rev. A)