

MAINTENANCE MANUAL

EDACS® CV² DIGITAL VOTER SHELF

188D6544P1

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SPECIFICATIONS*

DIMENSIONS (H x W x D)	13.3cm x 48.26cm x 24.03cm (5.22" x 19.00" x 9.5") (3 Rack Units x 220 mm Card Cage)
INPUT VOLTAGE	+5 Vdc, +12 Vdc, -12 Vdc
NUMBER OF CARD SLOTS	20
CONNECTORS:	
J1, J2, J4, J5, J9, J10	50 Pin
J3	24 Pin
J6, J7, J8	6 Pin
P1	15 Pin Power Connector
PS1 thru PS20	96 Pin DIN Connector

* These specifications are intended for use during servicing. Refer to appropriate Specification Sheet for the complete specification.

INTRODUCTION

This manual provides maintenance information for the EDACS Compact Vertical Voter (CV²) System's Digital Voter Shelf.

DESCRIPTION

The Digital Voter Shelf is a 3 Rack Unit VME card cage consisting of the Card Cage 19B235208P2 and Backplane ROA 117 2222.

Each shelf provides up to twenty-one (20) card slots. However, only 20 slots are used by the CV² for housing the Voter Selector, Digital Receivers and RMIC or RS232 Communication cards. A typical Digital Voter Shelf is shown in Figure 1.

Each plug-in card measures 100mm high by 220mm long with a 96 pin DIN connector for the card to backplane interface. The actual card configuration depends on the number of sites and channels. Refer to LBI-39149 and LBI-39153 for specific configuration details.

The Backplane, ROA 117 2222 is a four layered printed circuit board. Each backplane contains twenty (20) 96 pin DIN connectors to mate with the cards installed in the card

cage. The rear of the backplane has the input and output connectors, power connectors, and the input power fuses. Refer to the Outline Diagrams for location of the various components, and the schematic diagrams for pin and signal routing information.

Power is supplied to the shelf's power connector P1 from the Power Distribution Panel. The +5 Vdc, +12 Vdc, and -12 Vdc power is then routed through fuses F1, F2 and F3 respectively to the individual plug-in cards via the backplane. Pinouts for P1 are as follows:

Table 1 - Connector P1 Pinouts

P1-1	GND	P1-6	+12 Vdc	P1-11	+5 Vdc
P1-2	GND	P1-7	GND	P1-12	-12 Vdc
P1-3	GND	P1-8	+5 Vdc	P1-13	+5 Vdc
P1-4	GND	P1-9	+12 Vdc	P1-14	+5 Vdc
P1-5	GND	P1-10	+5 Vdc	P1-15	-12 Vdc

Outline Diagram (1078-ROA 117 2222 sheet 1) shows the front side of the board as seen through the front or open side of the card cage. The diagram shows the location of connectors PS1 thru PS20.

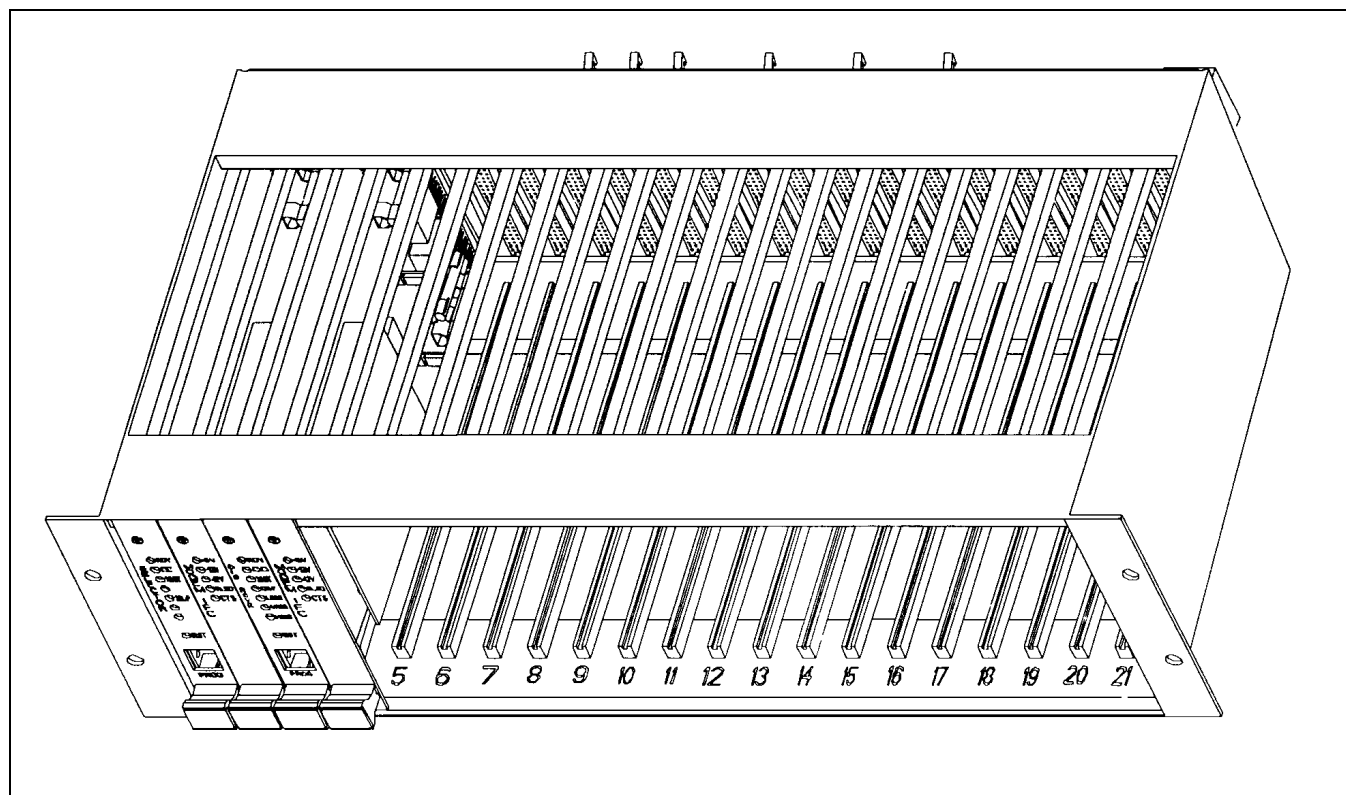


Figure 1 - Typical Digital Voter Shelf

Sheet 2 of the Outline Diagram show the back side of the board as seen from the rear or closed side of the card cage. This diagram shows the location of all input and output connectors, the input power connector and the three power fuses.

JUMPERS AND USES

There are three connectors on the back of the backplane (J6, J7, and J8) which, depending on the system configuration, may require installation of jumpers.

J6 Jumpers

Connector J6 is used to connect the BSL and Sync lines from slots 1 thru 10 (left channel or channel 1) to slots 11 thru 20 when the Voter is configured for one (1) channel per shelf.

One Channel Operation

For one (1) channel per shelf operation, install the following jumpers on J6.

- J6-1 to J6-2 (BACK_UP_RX_LINK)
- J6-3 to J6-4 (BACK_UP_TX_LINK)
- J6-5 to J6-6 (SYNC)

Two Channel Operation

For two (2) channels per shelf operation, no jumpers are required.

- Remove all jumpers from J6.

J7 Jumpers

Connector J7 is used to connect the RX Data from the RMIC or RS-232 Interface card in slot 2 to the Selector in slot 1 and the Digital Receiver in slot 3.

Under normal conditions, the Selector and Digital Receiver #1 share the RX Data and the following jumpers are installed on J7.

- J7-1 to J7-2 (routes RX Data from RMIC or RS-232 Interface card in slot 2 to Selector in slot 1)

- J7-3 to J7-4 (routes RX Data from RMIC or RS-232 in slot 2 to Digital Receiver in slot 3)

When the Selector and Digital Receiver receive different data, such as when used in a Voted Digital Interconnect configuration, jumpers are installed as follows:

- J7-1 to J7-2 (routes RX Data from RMIC or RS-232 Interface card in slot 2 to Selector in slot 1)
- Remove the jumper from J7-3 to J7-4. (routes RX Data from RMIC or RS-232 in slot 4 to Digital Receiver in slot 3)

J8 Jumpers

Connector J8 serves the same purpose as J7, except for the right channel in a two (2) channel configuration. J8 is used to connect the RX Data from the RMIC or RS-232 Interface card in slot 12 to the Selector in slot 11 and the Digital Receiver in slot 13.

Under normal conditions, the Channel 2 Selector and Digital Receiver #1 share the RX Data and the following jumpers are installed on J8.

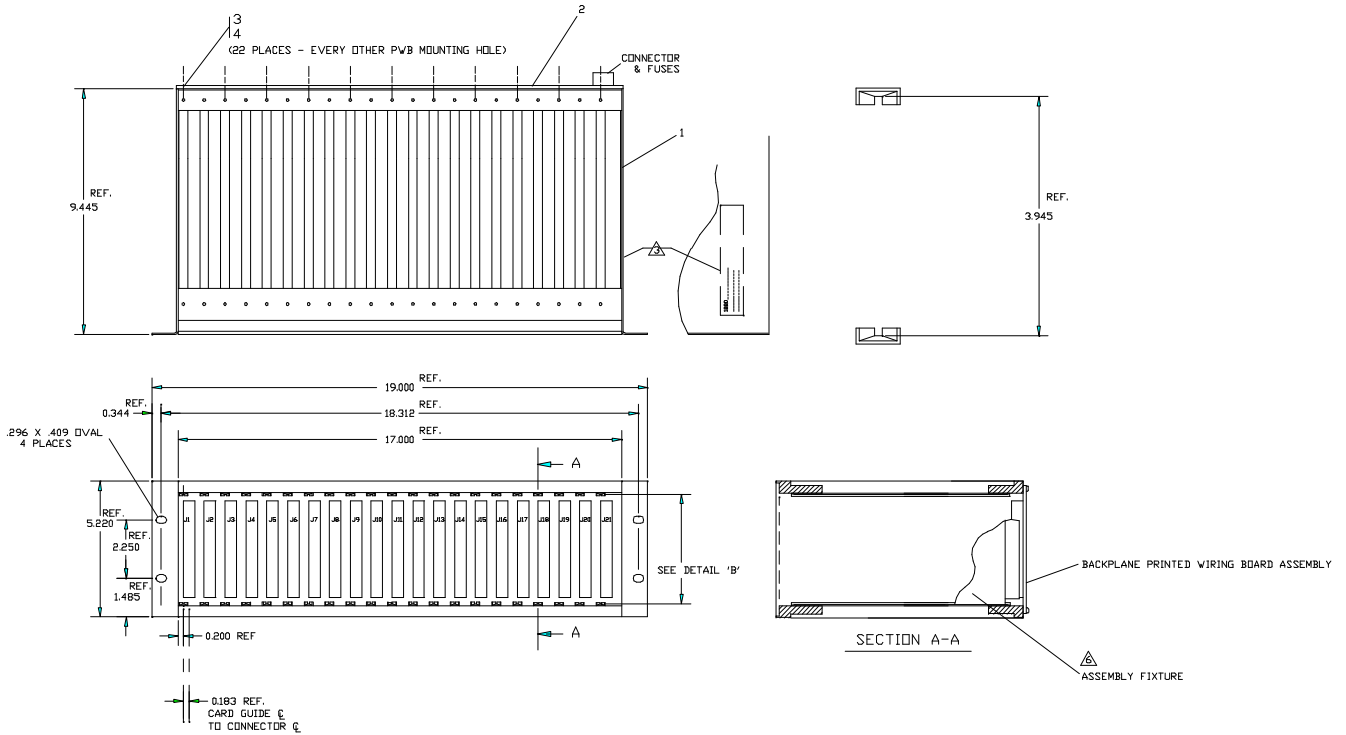
- J8-1 & 2 (routes RX Data from RMIC or RS-232 Interface card in slot 12 to Selector in slot 11)
- J8-3 & 4 (routes RX Data from RMIC or RS-232 in slot 12 to Digital Receiver in slot 13)

When the Selector and Digital Receiver receive different data, such as when used in a Voted Digital Interconnect configuration, jumpers are installed as follows:

- J8-1 to J8-2 (routes RX Data from RMIC or RS-232 Interface card in slot 12 to Selector in slot 11)
- Remove the jumper from J8-3 to J8-4. (routes RX Data from RMIC or RS-232 in slot 14 to Digital Receiver in slot 13)

NOTE

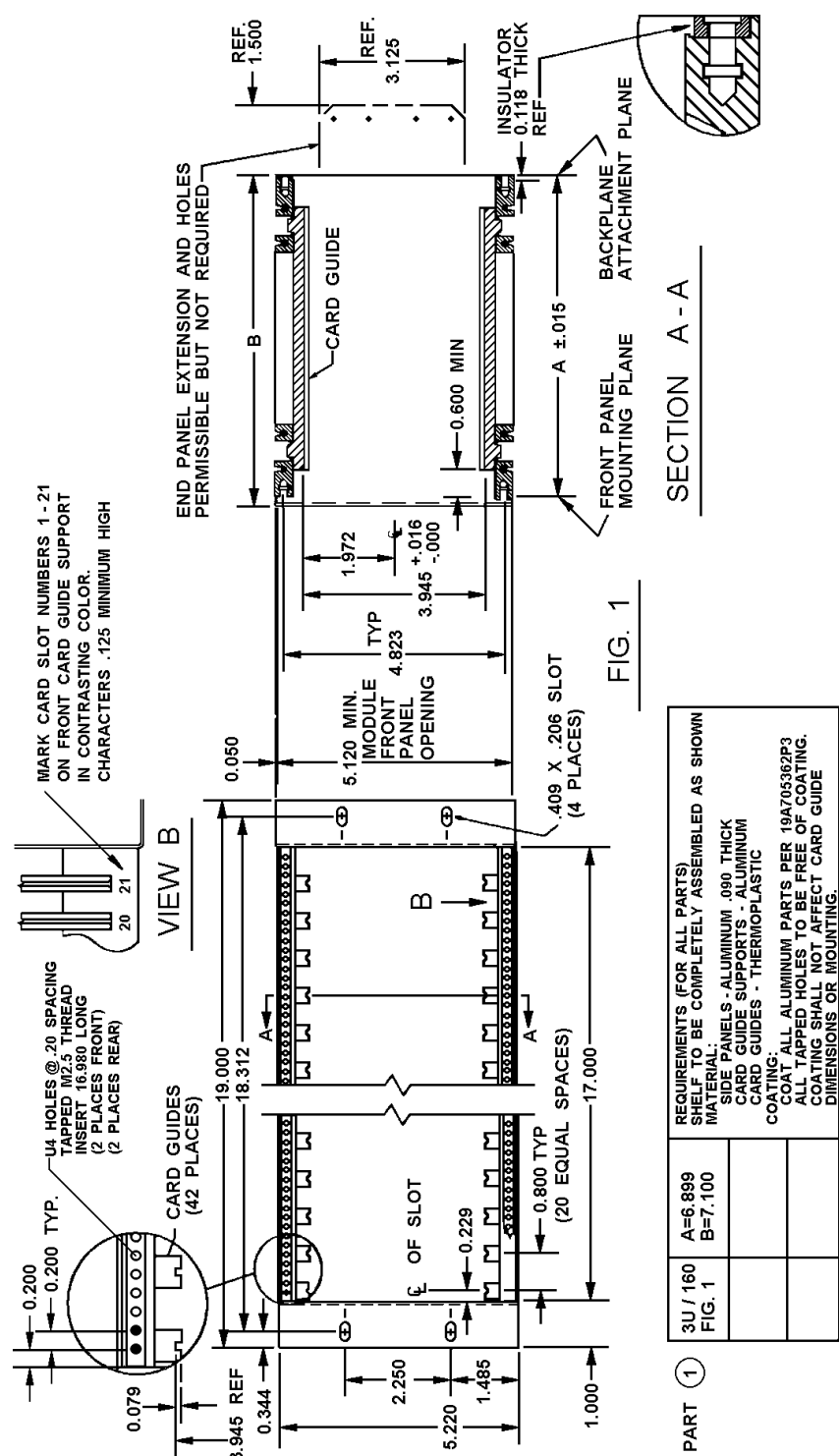
When the shelf is configured for one channel per shelf operation, remove all jumpers from J8.



DIGITAL VOTER SHELF

188D6544P1

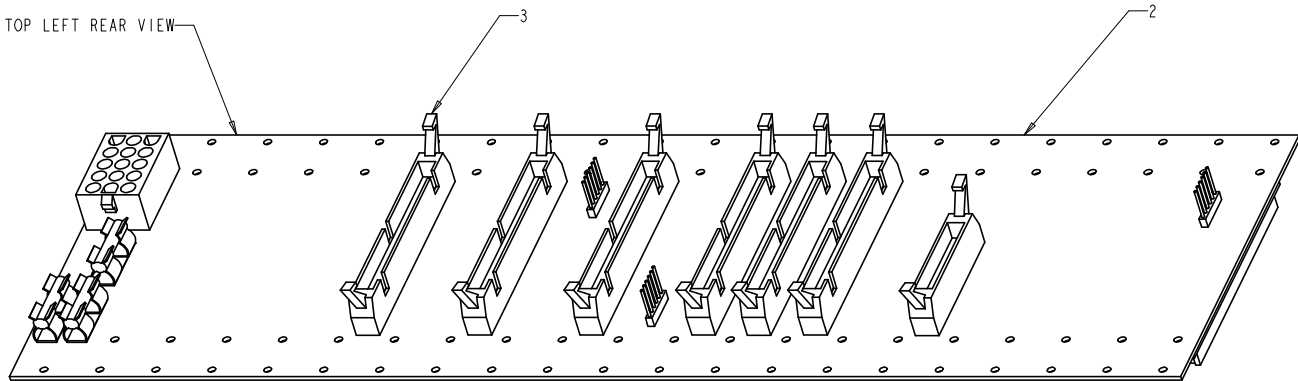
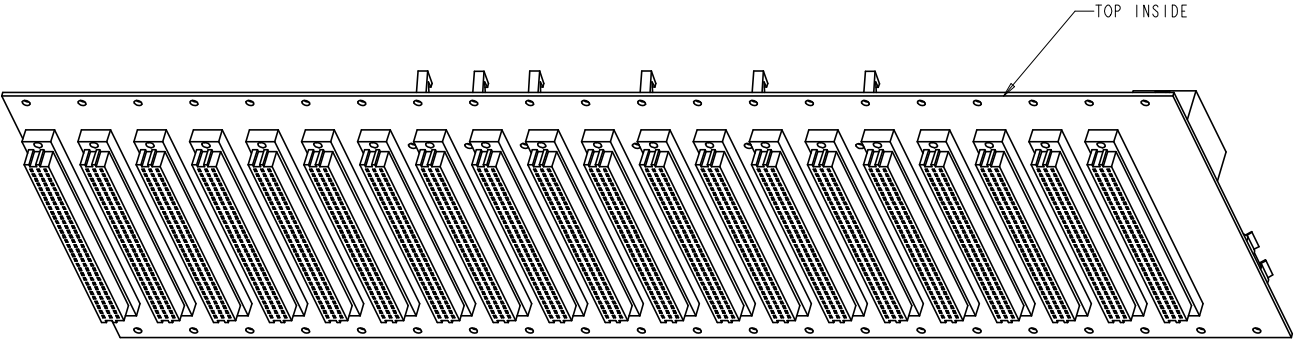
SYMBOL	PART NUMBER	DESCRIPTION
1	19B235208P2	Card Cage, VME Shelf.
2	ROA 117 2222	Backplane printed wiring board assembly. See separate parts list:
3	19A702364P213	Screw, M2.5 x 13, Pan head (qty: 22).
4	19A700032P3	Lock Washer, Internal tooth, M2.5 (qty: 22).



CARD CAGE ASSEMBLY

19B235208P2

(19B235208, Sh. 1, Rev. 1A)



BACKPLANE ASSEMBLY
131-32 ROA 117 2222, Revision A

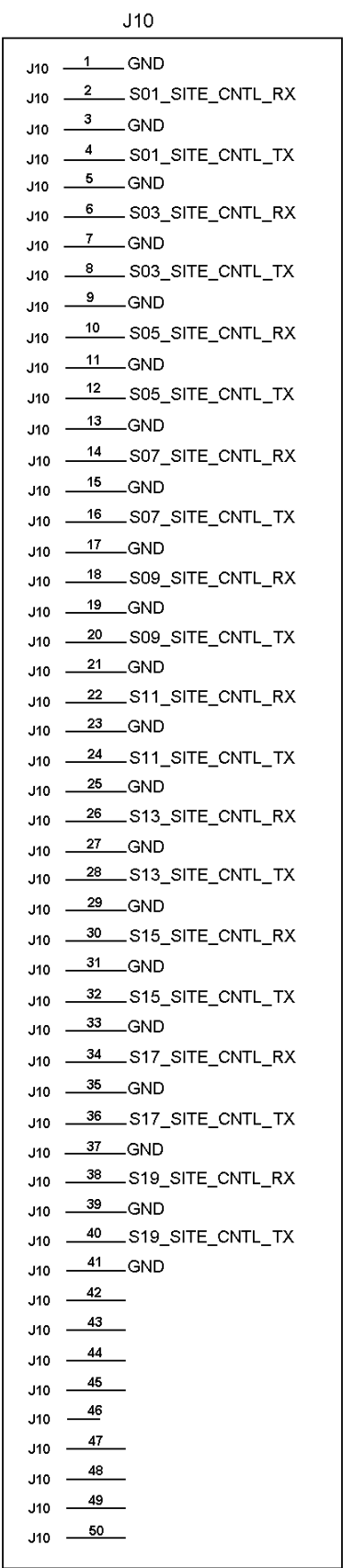
SYMBOL	PART NUMBER	DESCRIPTION
F1	NGH 241 14/125	Fuse, slow action, 12.5 Amp.
F2	NGH 241 13/8	Fuse, slow action, 800 mA.
F3	NGH 241 13/63	Fuse, slow action, 630 mA.
J1 and J2	RPV 403 148/50	Connector, Header Assembly.
J3	RPV 403 148/024	Connector, Header Assembly.
J4 and J5	RPV 403 148/50	Connector, Header Assembly.

SYMBOL	PART NUMBER	DESCRIPTION
J6 thru J8	RPV 380 40/006	Connector, 6 POL. press fit, straight.
J9 and J10	RPV 403 148/50	Connector, Header Assembly.
P1	RPT 403 407/015	Connector, 15 POL.
PS1 thru PS20	RNV 403 232/001	Connector, 96 POL. Press fit DIN 41612.
XF1 thru XF3	NFN 102 04	Fuse holder.
3	RPV 403 143/901	Locking spring (qty: 14).

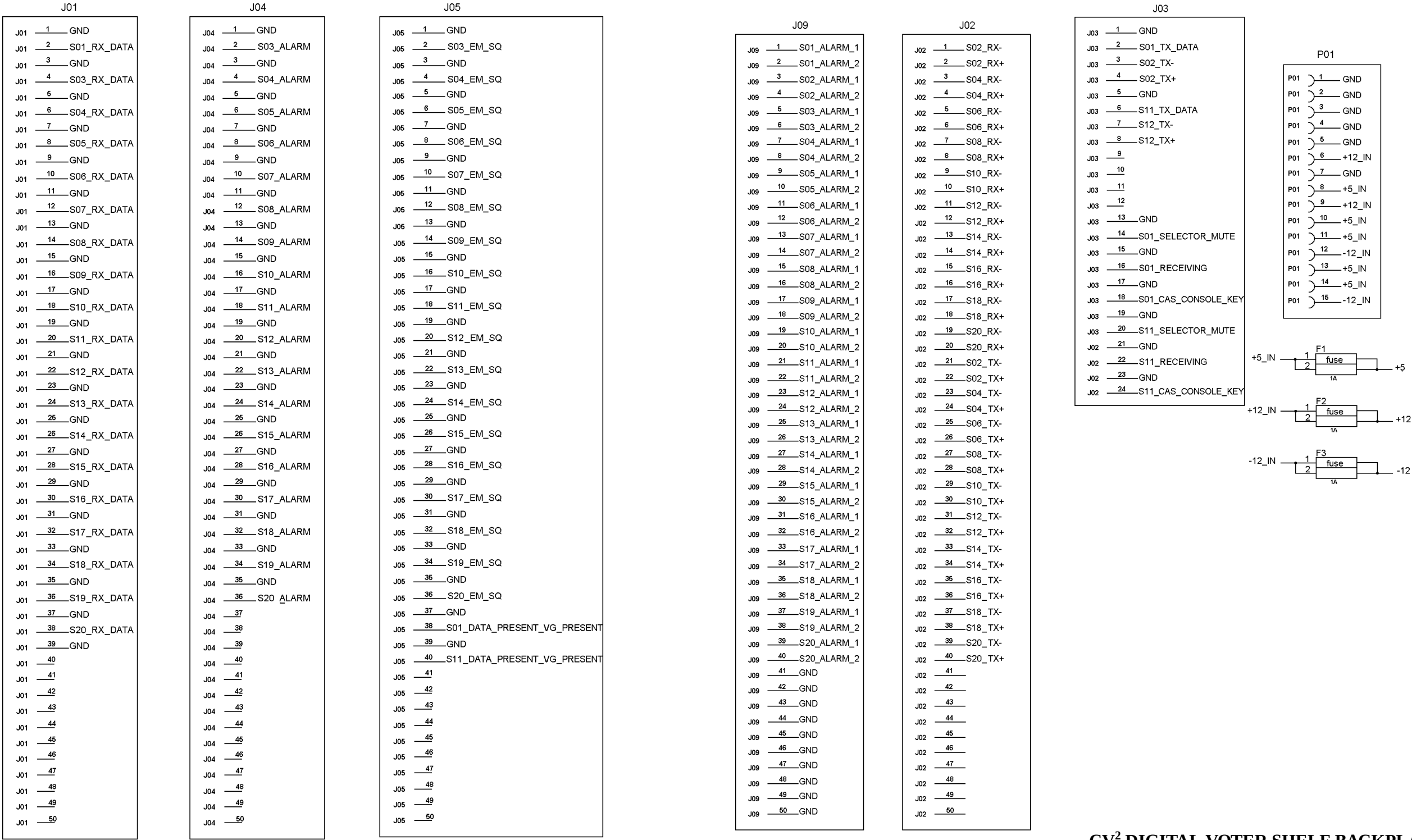
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CV² DIGITAL VOTER SHELF BACKPLANE
ROA 117 2222

(1911-ROA 117 2222, SH. 12, Rev. A)



Ericsson Inc.
Private Radio Systems
Mountain View Road
Lynchburg, Virginia 24502
1-800-528-7711 (Outside USA, 804-528-7711)



J04

J04

1

GND

J04

2

S03_ALARM

J04

3

GND

J04

4

S04_ALARM

J04

5

GND

J04

6

S05_ALARM

J04

7

GND

J04

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S06_ALARM

J04

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GND

J04

10

S07_ALARM

J04

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GND

J04

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S08_ALARM

J04

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GND

J04

14

S09_ALARM

J04

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GND

J04

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S10_ALARM

J04

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GND

J04

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S11_ALARM

J04

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GND

J04

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S12_ALARM

J04

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S13_ALARM

J04

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S14_ALARM

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S15_ALARM

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S16_ALARM

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S17_ALARM

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S18_ALARM

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S19_ALARM

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S20_ALARM

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S03_EM_SQ

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S04_EM_SQ

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S05_EM_SQ

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S06_EM_SQ

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S07_EM_SQ

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S08_EM_SQ

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S09_EM_SQ

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S10_EM_SQ

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S11_EM_SQ

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S12_EM_SQ

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S13_EM_SQ

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S14_EM_SQ

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S15_EM_SQ

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S16_EM_SQ

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S17_EM_SQ

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GND

J05

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S18_EM_SQ

J05

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GND

J05

34

S19_EM_SQ

J05

35

GND

J05

36

S20_EM_SQ

J05

37

GND

J05

38

S01_DATA_PRESENT_VG_PRESENT

J05

39

GND

J05

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S11_DATA_PRESENT_VG_PRESENT

J05

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S01_ALARM_1

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S01_ALARM_2

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S02_ALARM_1

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S02_ALARM_2

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S03_ALARM_2

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S04_ALARM_1

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S04_ALARM_2

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S05_ALARM_1

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S05_ALARM_2

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S06_ALARM_1

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S06_ALARM_2

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S07_ALARM_1

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S07_ALARM_2

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S08_ALARM_1

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S08_ALARM_2

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S09_ALARM_1

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S09_ALARM_2

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S10_ALARM_1

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S10_ALARM_2

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S11_ALARM_1

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S11_ALARM_2

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S12_ALARM_1

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S12_ALARM_2

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S19_ALARM_2

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S20_ALARM_1

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S20_ALARM_2

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GND

J02

J02

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S02_RX-

J02

2

S02_RX+

J02

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S04_RX-

J02

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S04_RX+

J02

5

S06_RX-

J02

6

S06_RX+

J02

7

S08_RX-

J02

8

S08_RX+

J02

9

S10_RX-

J02

10

S10_RX+

J02

11

S12_RX-

J02

12

S12_RX+

J02

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S14_RX-

J02

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S14_RX+

J02

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S16_RX-

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S16_RX+

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S18_RX-

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S18_RX+

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S20_RX-

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S20_RX+

J02

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S02_TX-

J02

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S02_TX+

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S04_TX-

J02

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S04_TX+

J02

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S06_TX-

J02

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S06_TX+

J02

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S08_TX-

J02

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S08_TX+

J02

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S10_TX-

J02

30

S10_TX+

J02

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S12_TX-

J02

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S12_TX+

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S14_TX-

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S14_TX+

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S16_TX-

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S16_TX+

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S18_TX-

J02

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S18_TX+

J02

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S20_TX-

J02

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S20_TX+

J02

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J02

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J02

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J02

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J02

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J02

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J03

J03

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GND

J03

2

S01_TX_DATA

J03

3

S02_TX-

J03

4

S02_TX+

J03

5

GND

J03

6

S11_TX_DATA

J03

7

S12_TX-

J03

8

S12_TX+

J03

9

J03

10

J03

11

J03

12

J03

13

GND

J03

14

S01_SELECTOR_MUTE

J03

15

GND

J03

16

S01_RECEIVING

J03

17

GND

J03

18

S01_CAS_CONSOLE_KEY

J03

19

GND

J03

20

S11_SELECTOR_MUTE

J03

21

GND

J03

22

S11_RECEIVING

J03

23

GND

J03

24

S11_CAS_CONSOLE_KEY

P01

P01

1

GND

P01

2

GND

P01

3

GND

P01

4

GND

P01

5

GND

P01

6

+12_IN

P01

7

GND

P01

8

+5_IN

P01

9

+12_IN

P01

10

+5_IN

P01

11

+5_IN

P01

12

-12_IN

P01

13

+5_IN

P01

14

+5_IN

P01

15

-12_IN

F1

1

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fuse

1A

+5

F2

1

2

fuse

1A

+12

F3

1

2

fuse

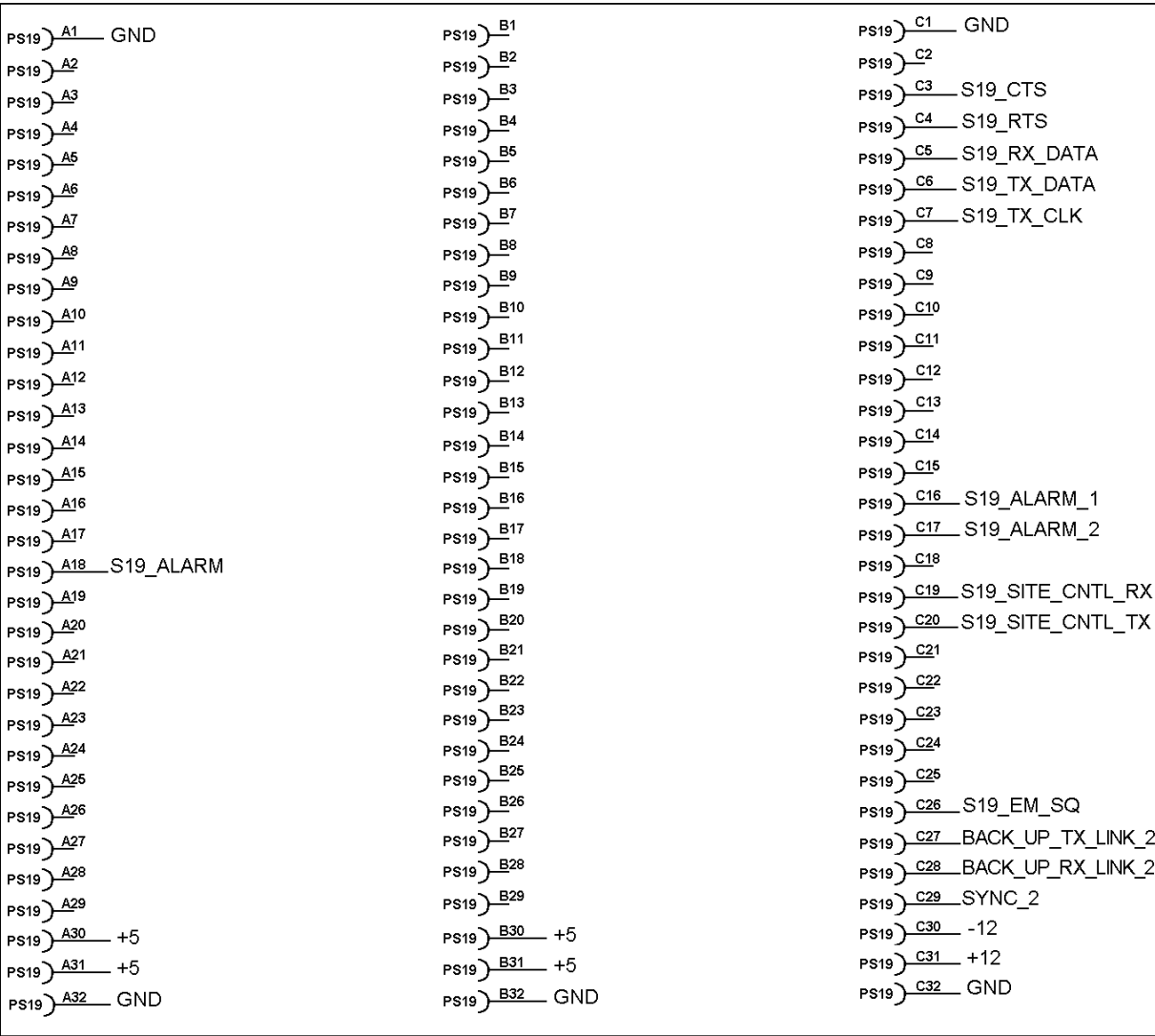
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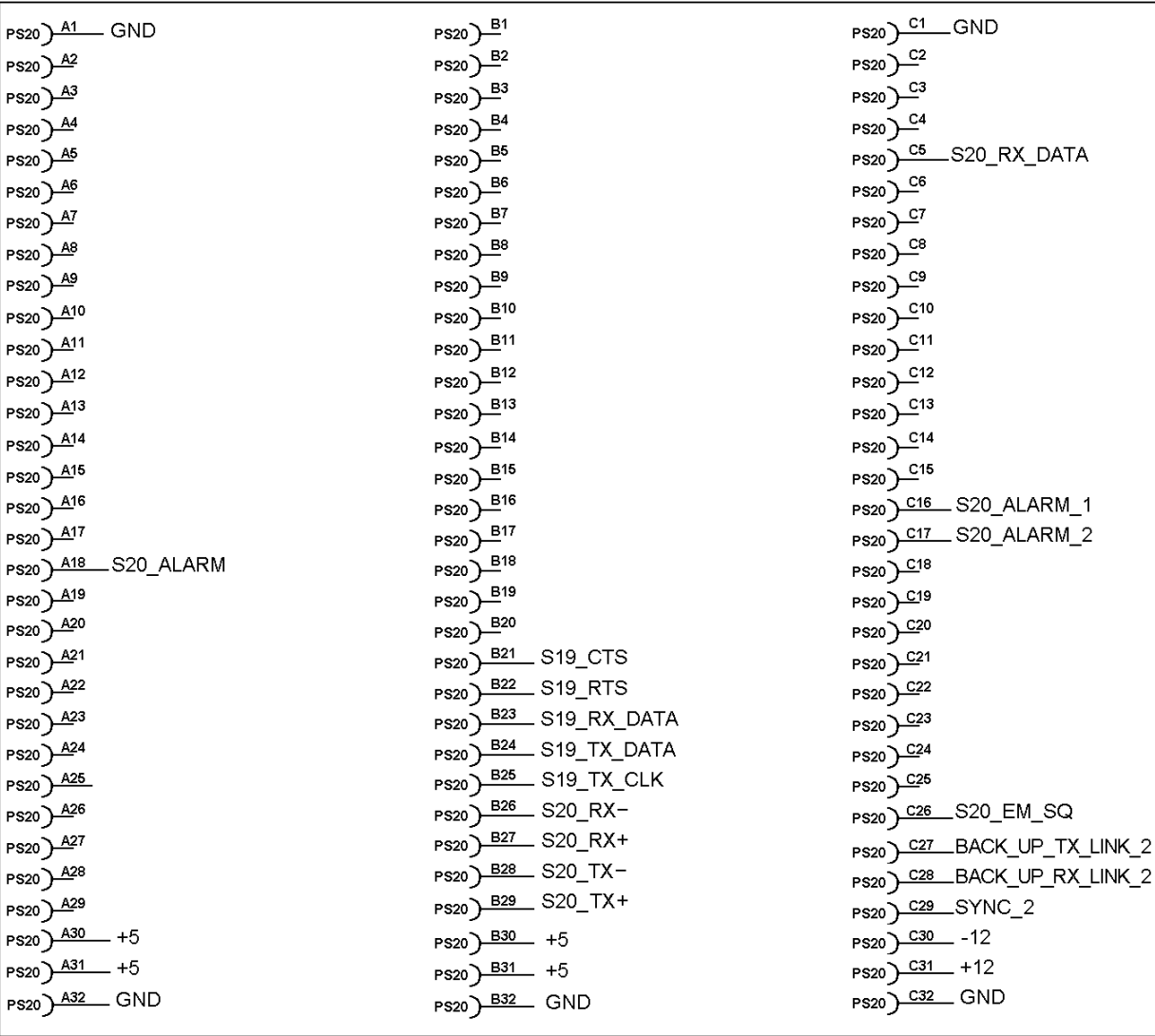
CV² DIGITAL VOTER SHELF BACKPLANE
ROA 117 2222

(1911-ROA 117 2222, SH. 11, Rev. A)

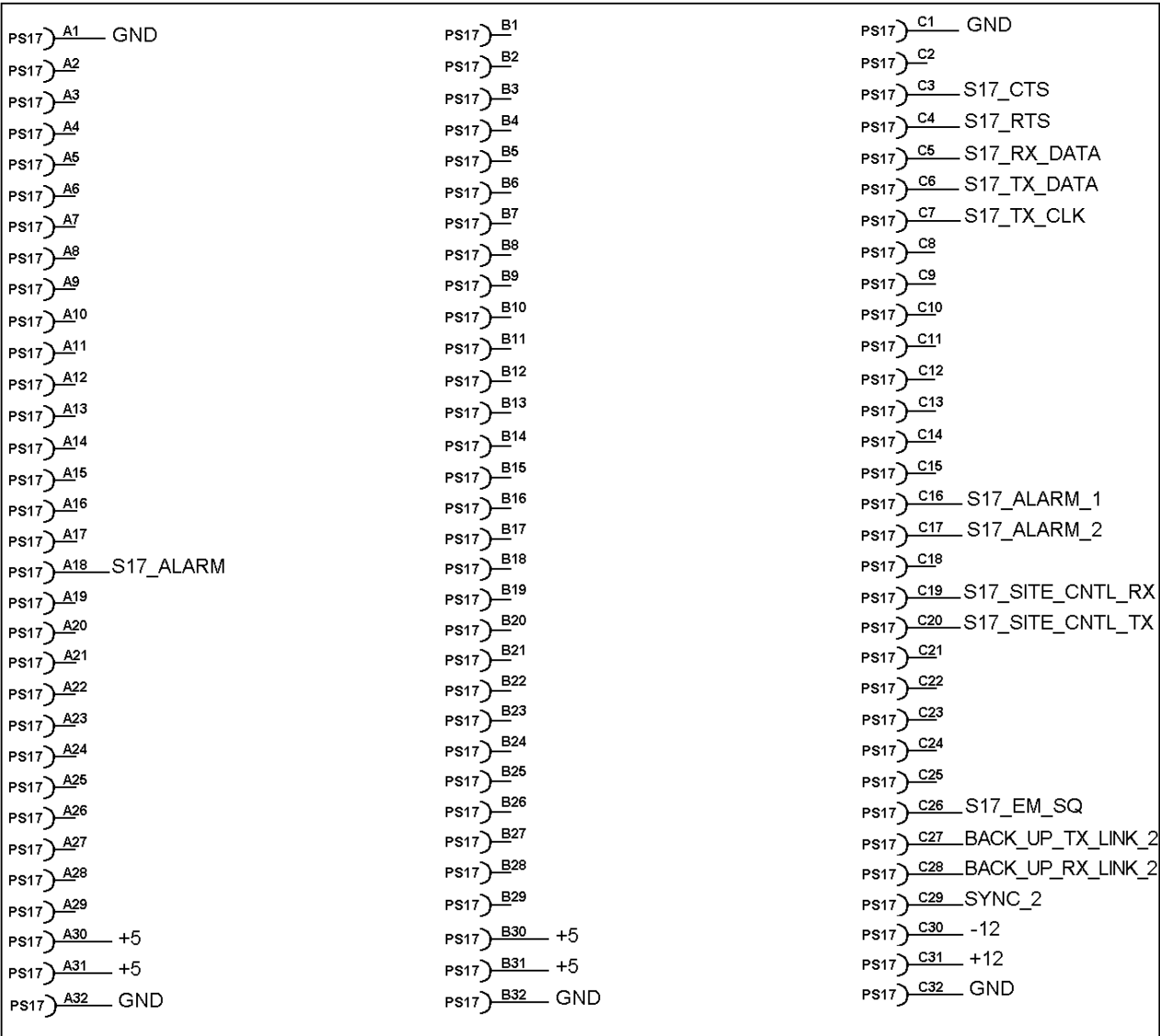
SLOT 19



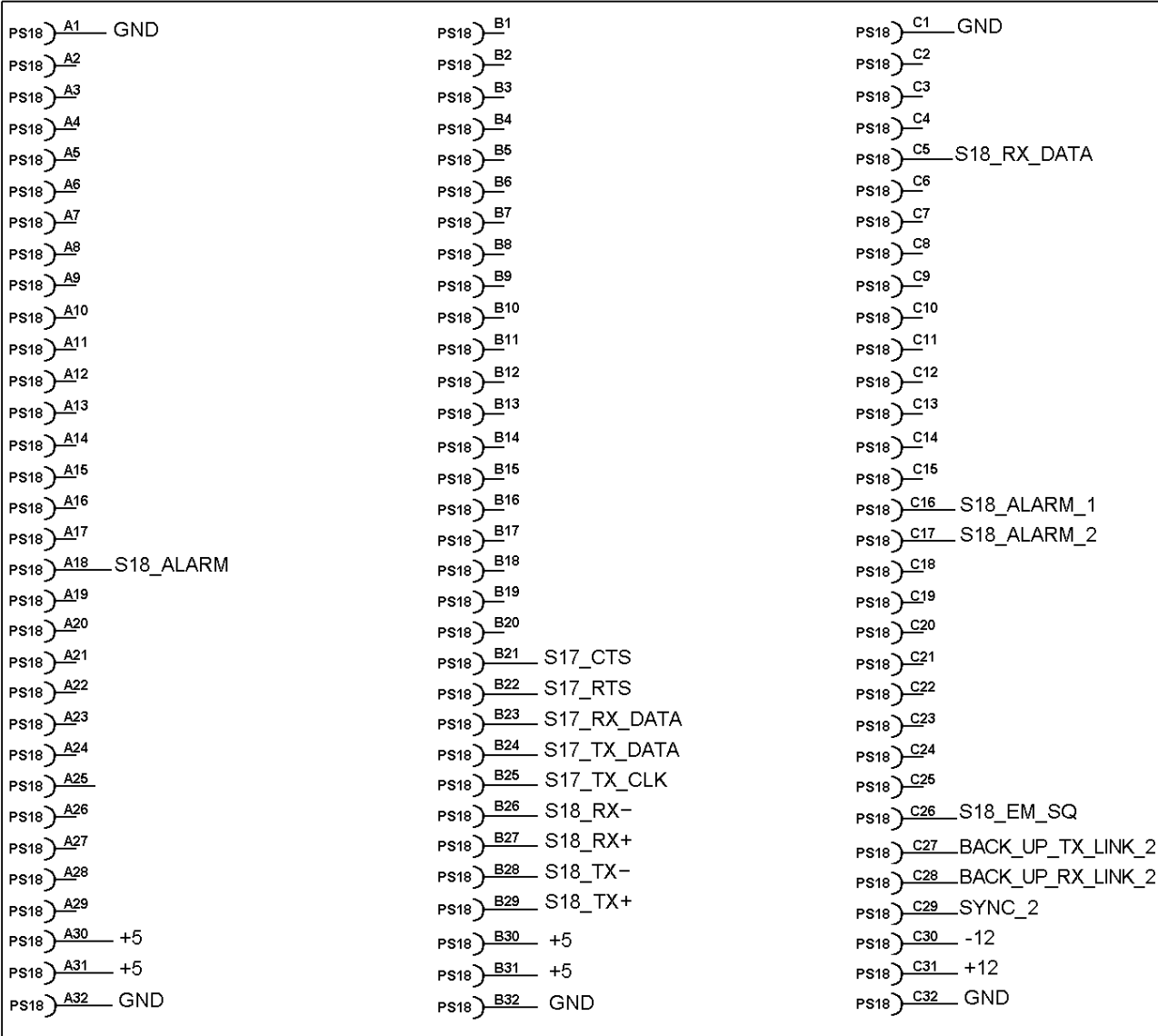
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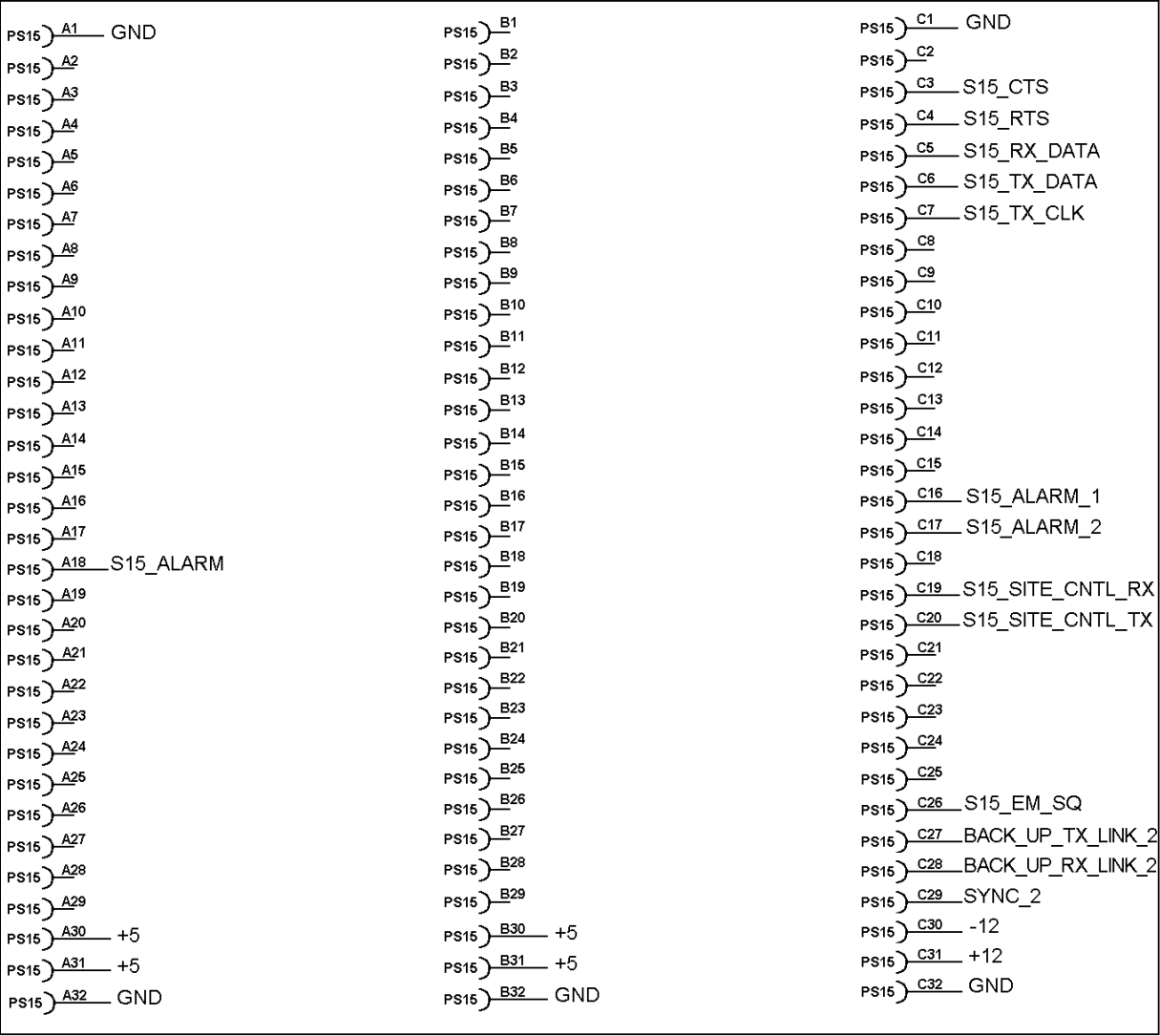
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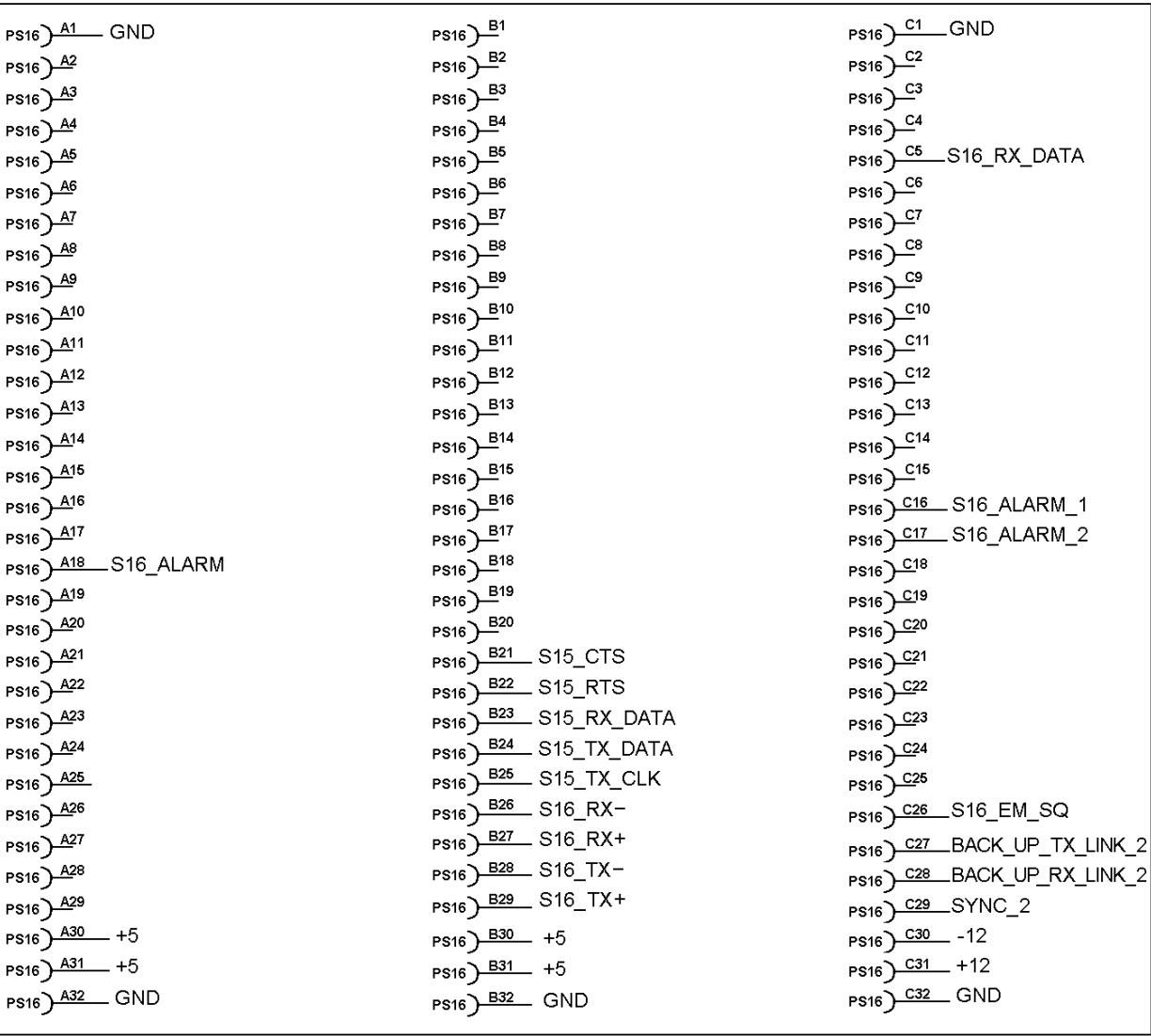
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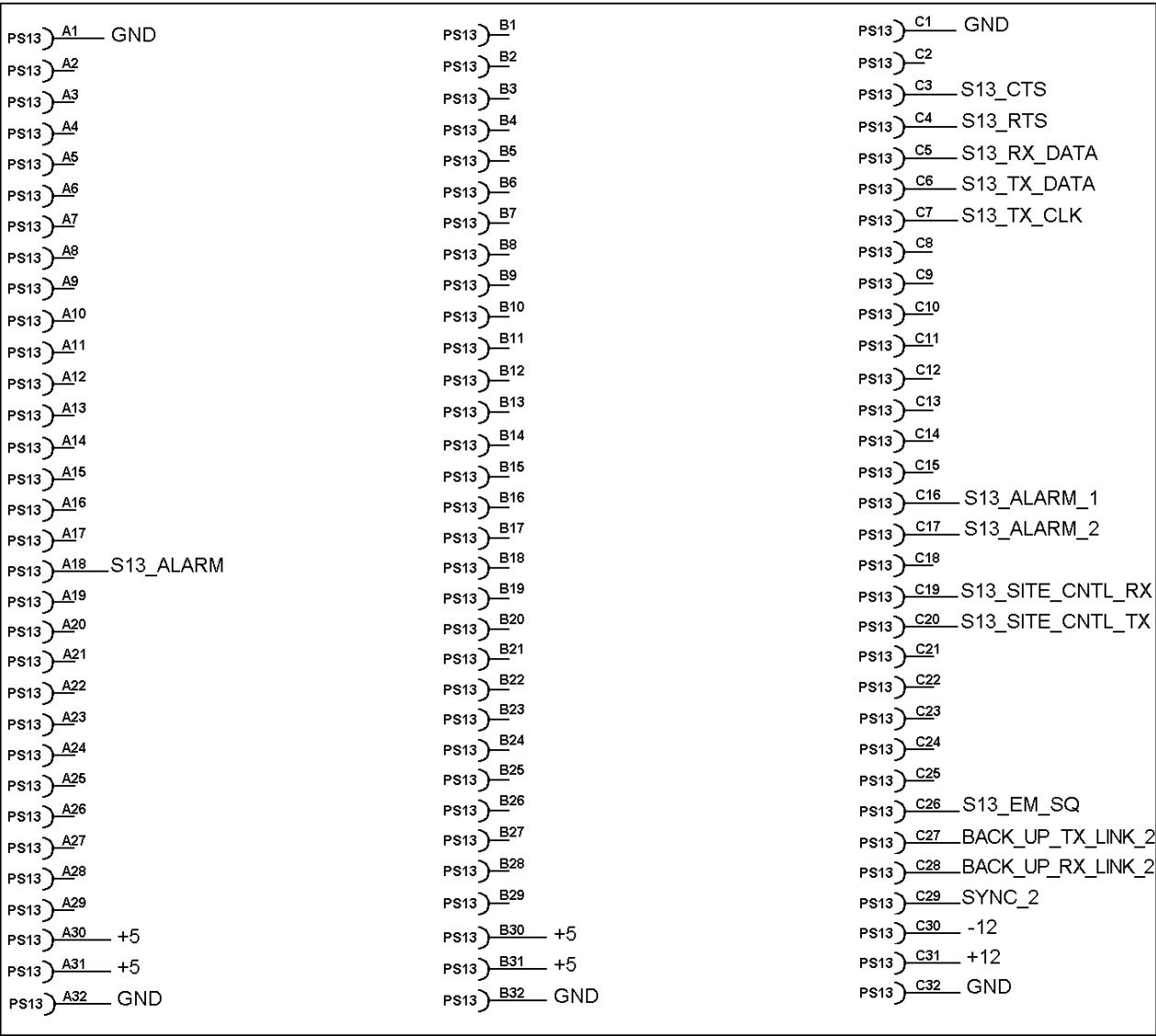
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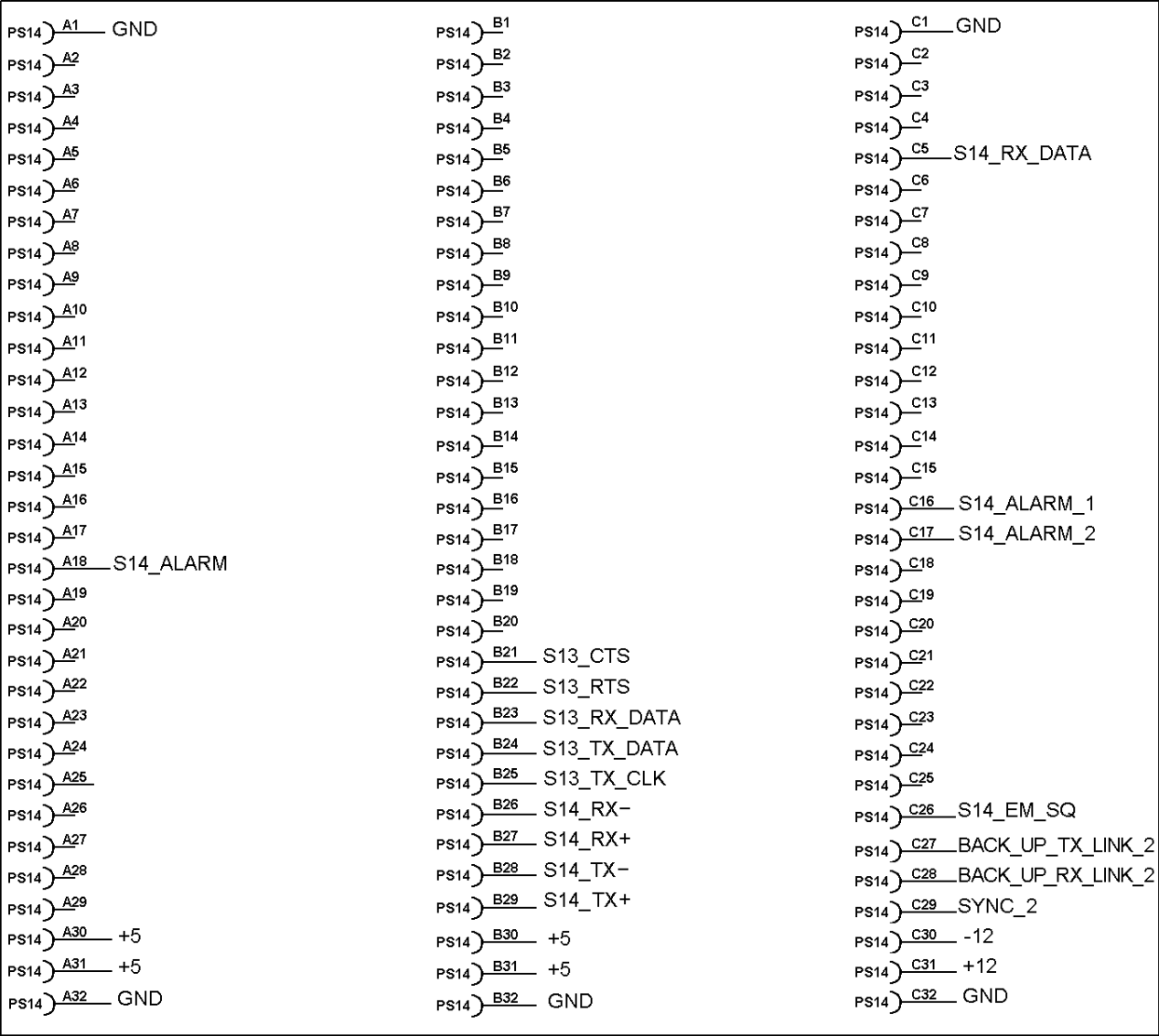
SLOT 16



SLOT 13



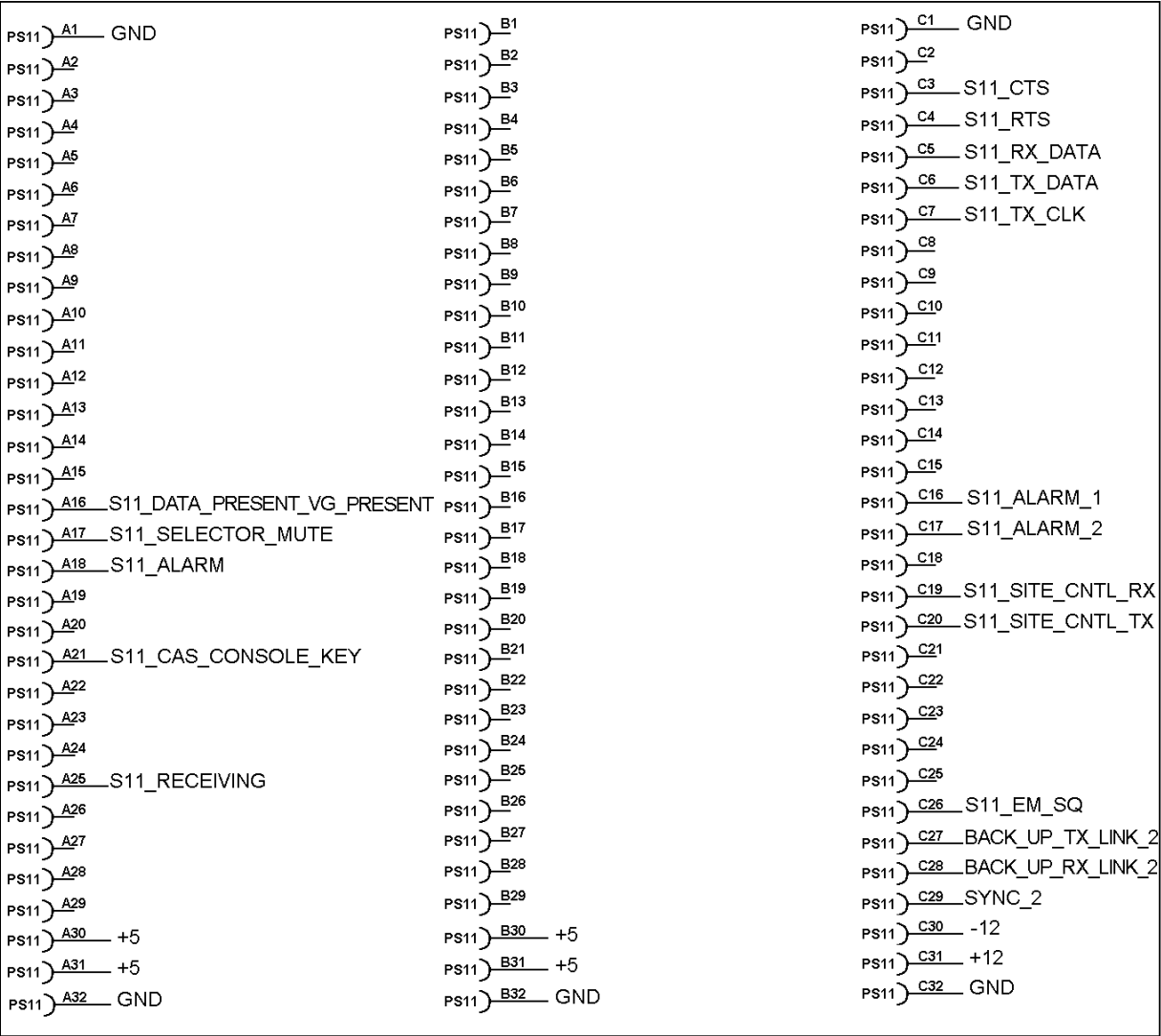
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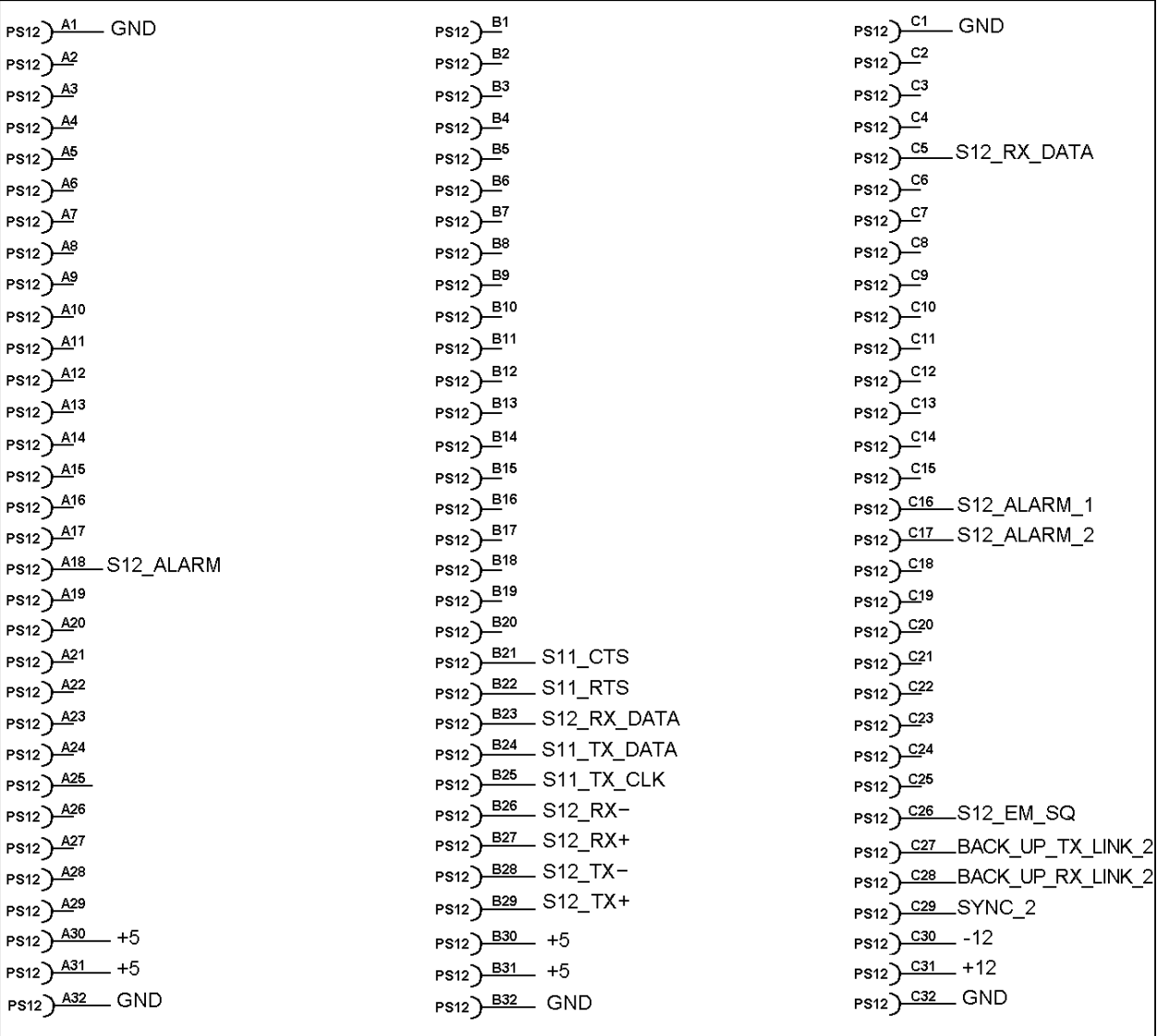
CV² DIGITAL VOTER SHELF BACKPLANE
ROA 117 2222

(1911-ROA 117 2222, SH. 7, Rev. A)

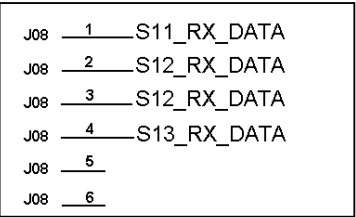
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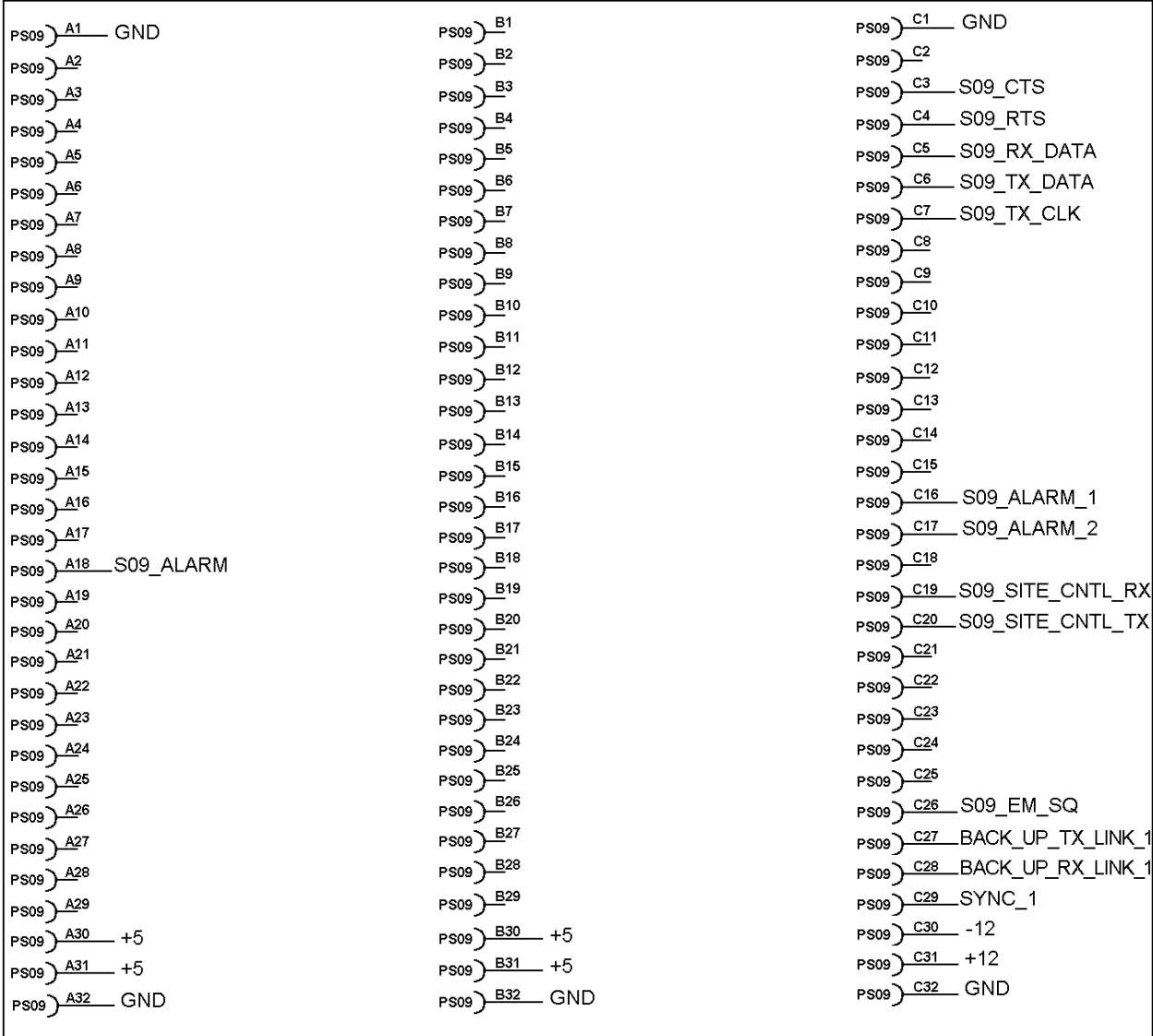
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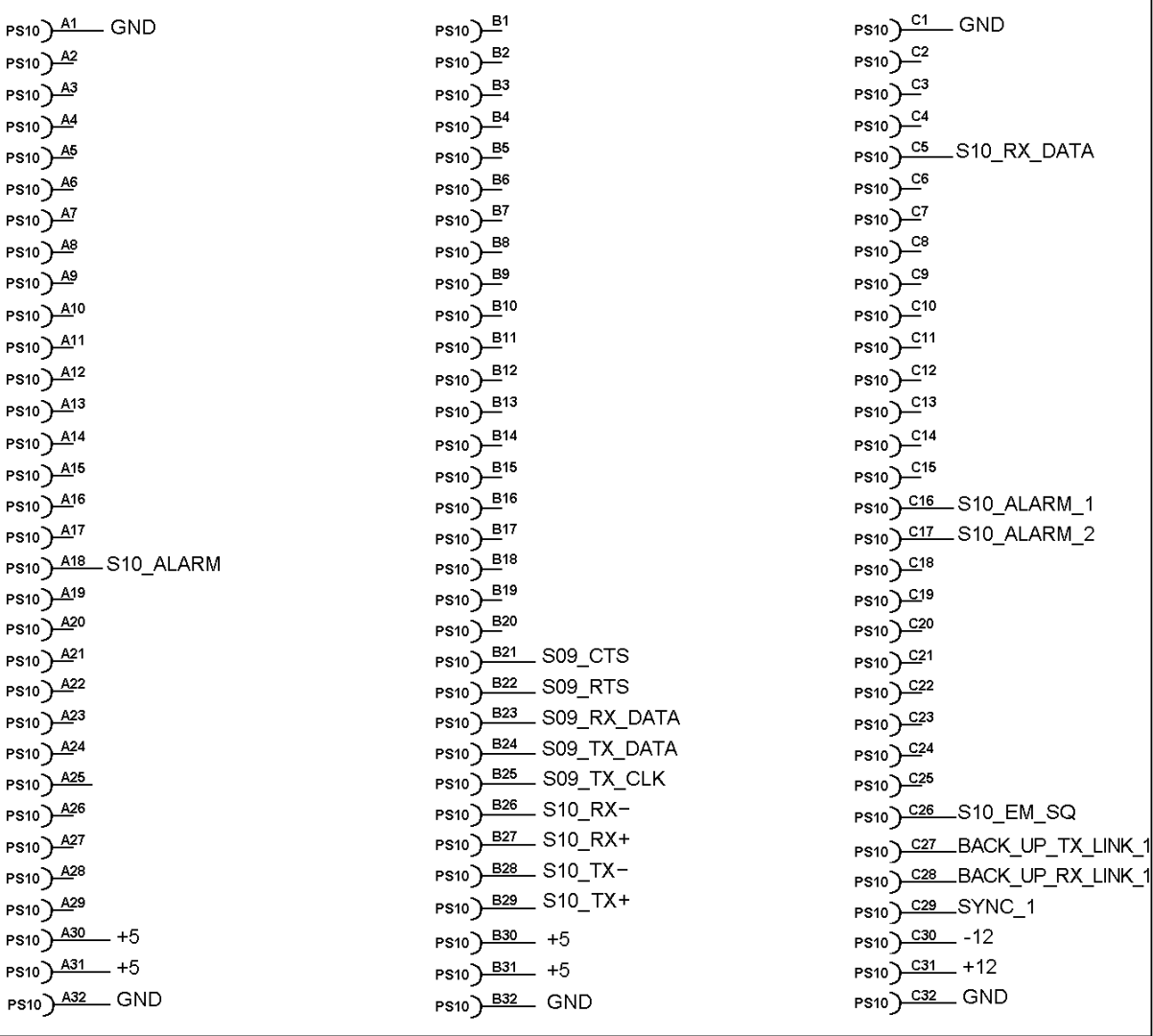
J08



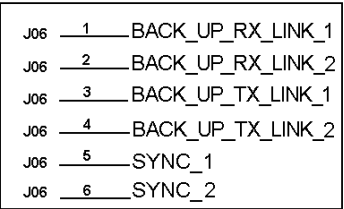
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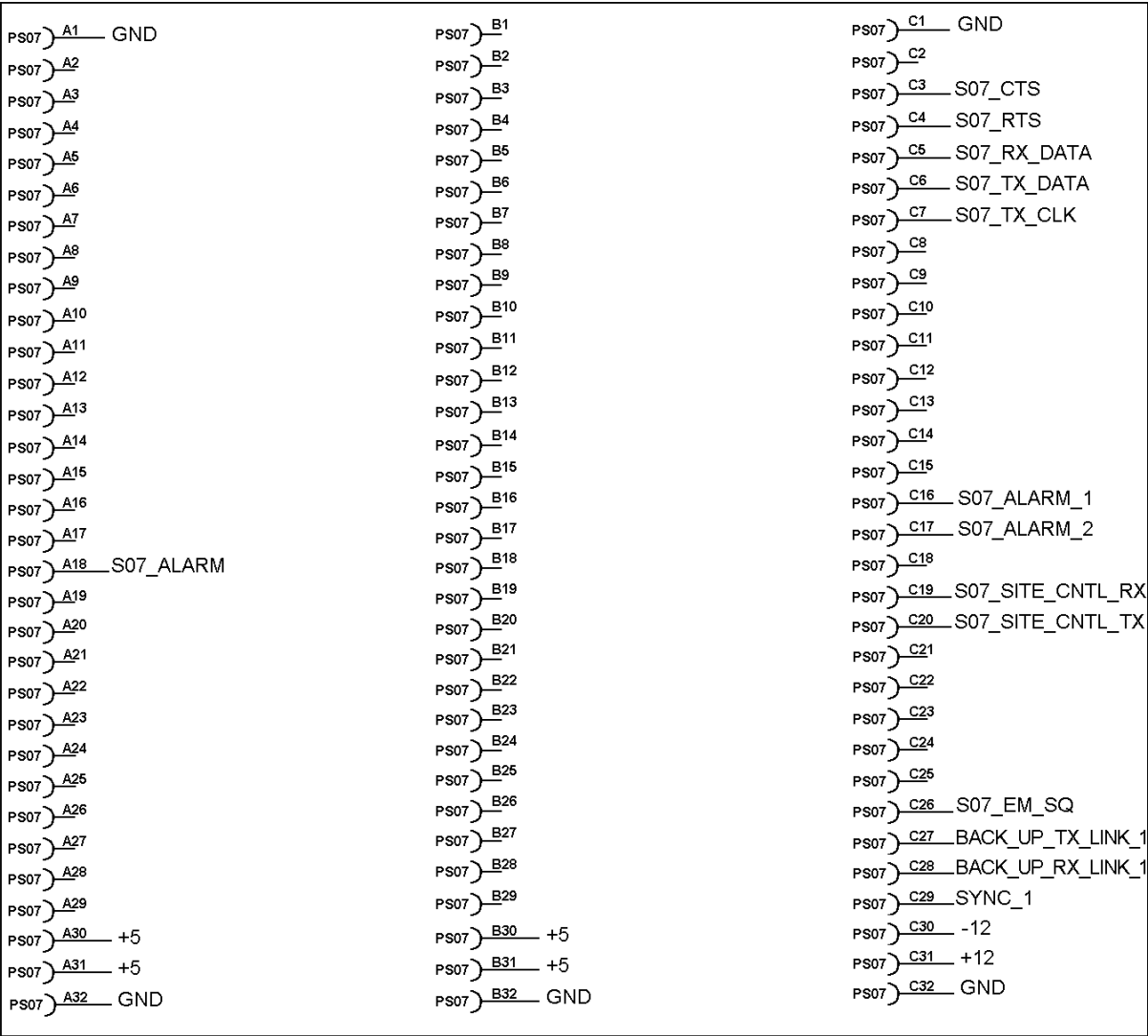
SLOT 10



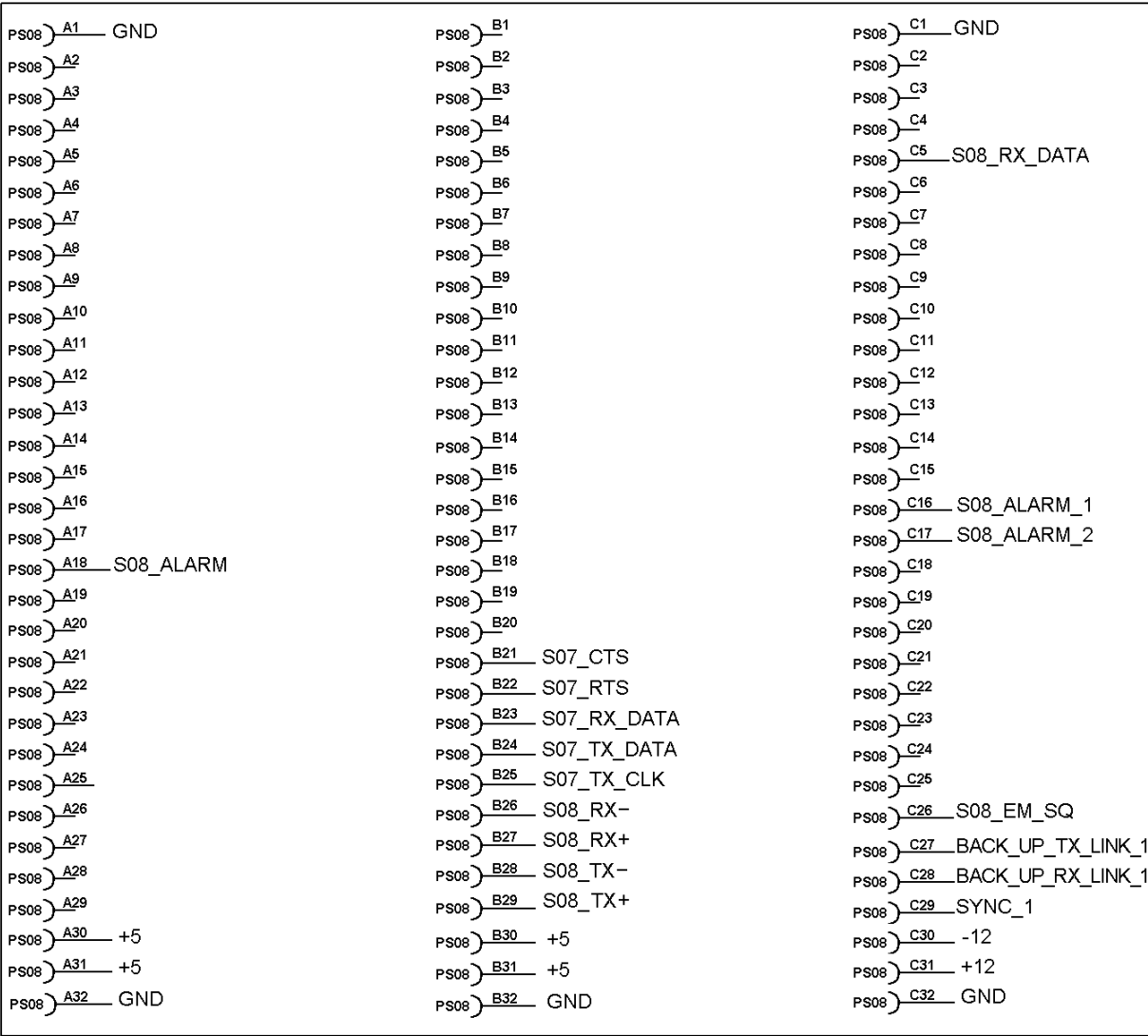
J06



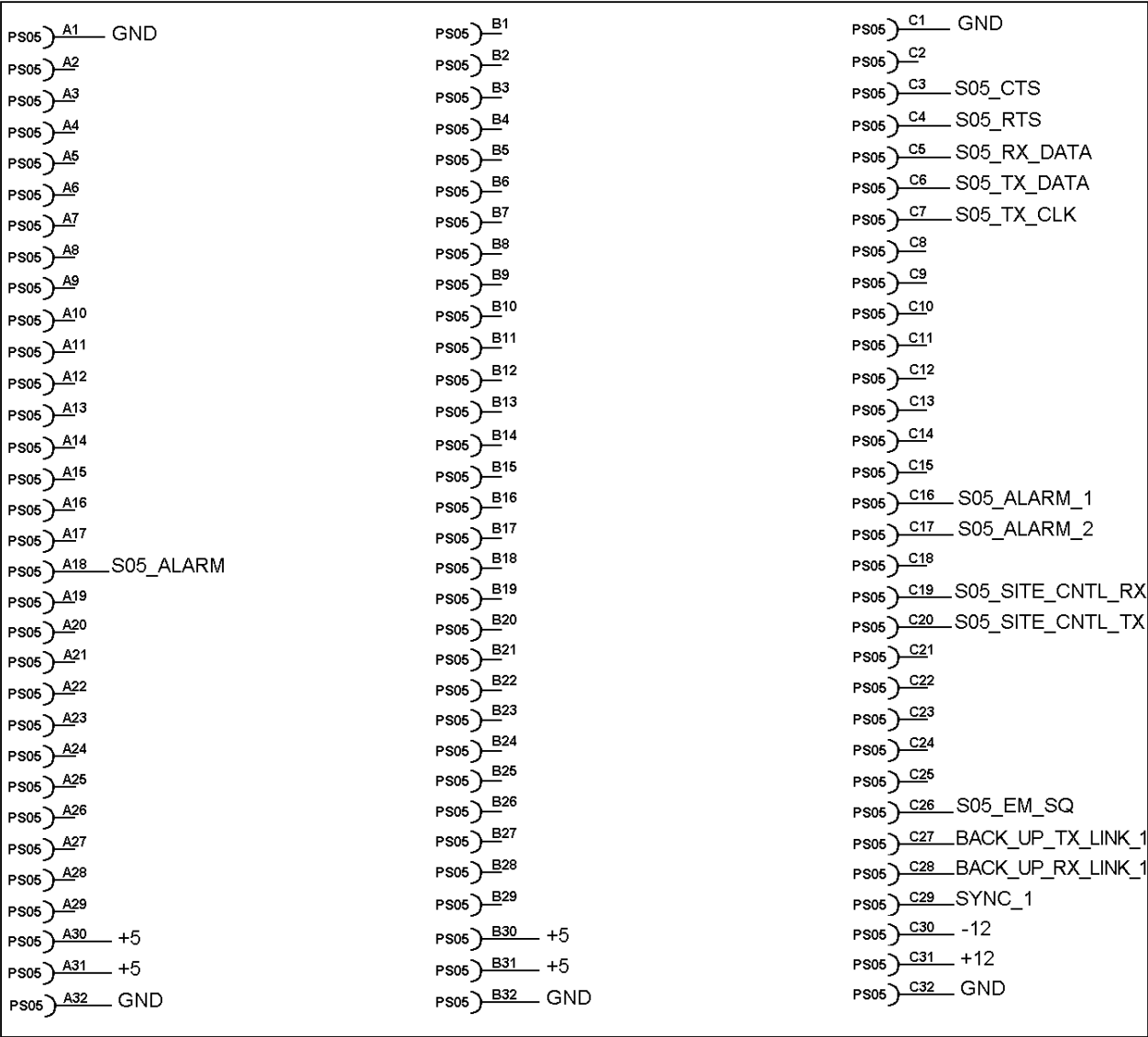
SLOT 7



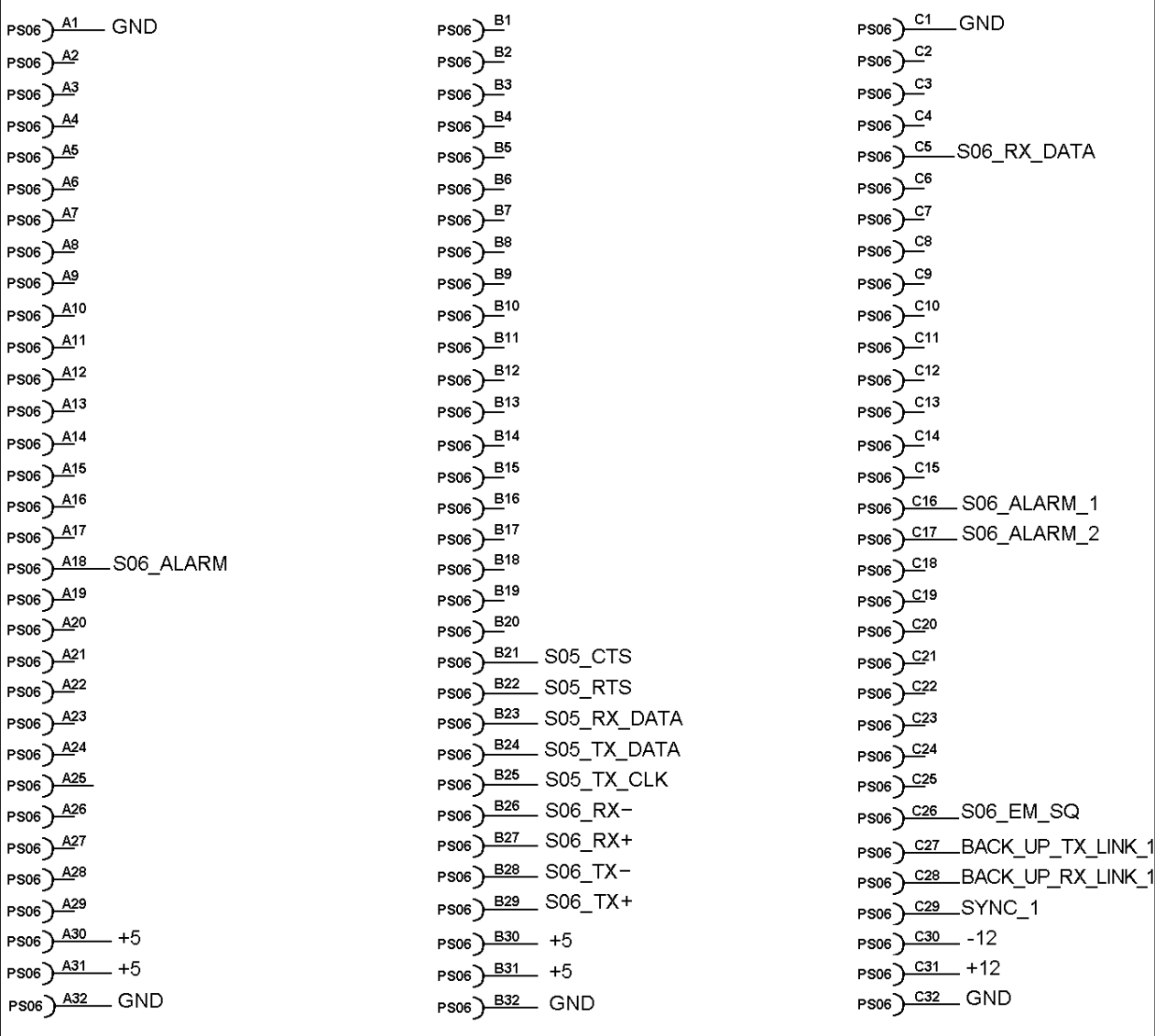
SLOT 8



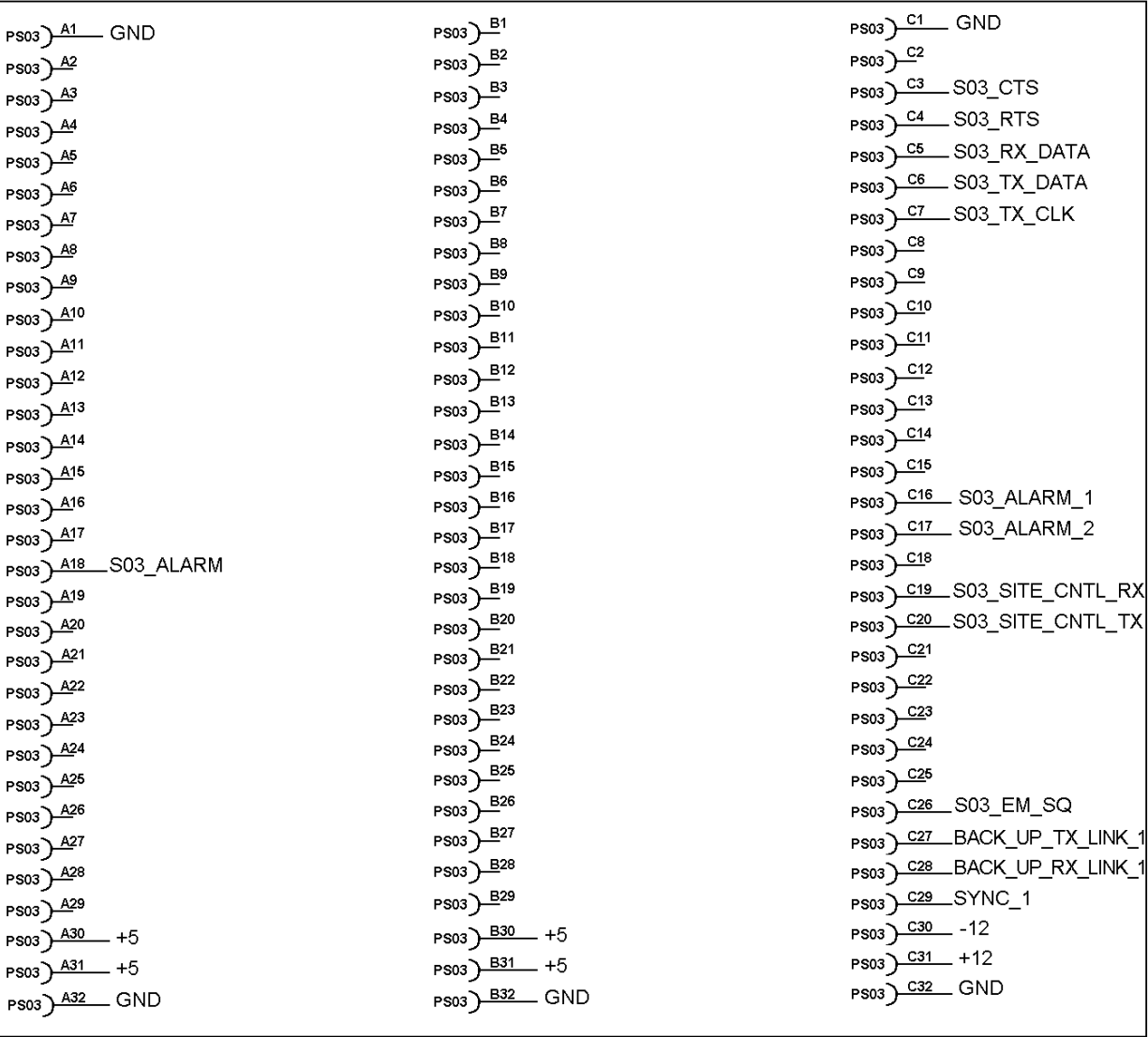
SLOT 5



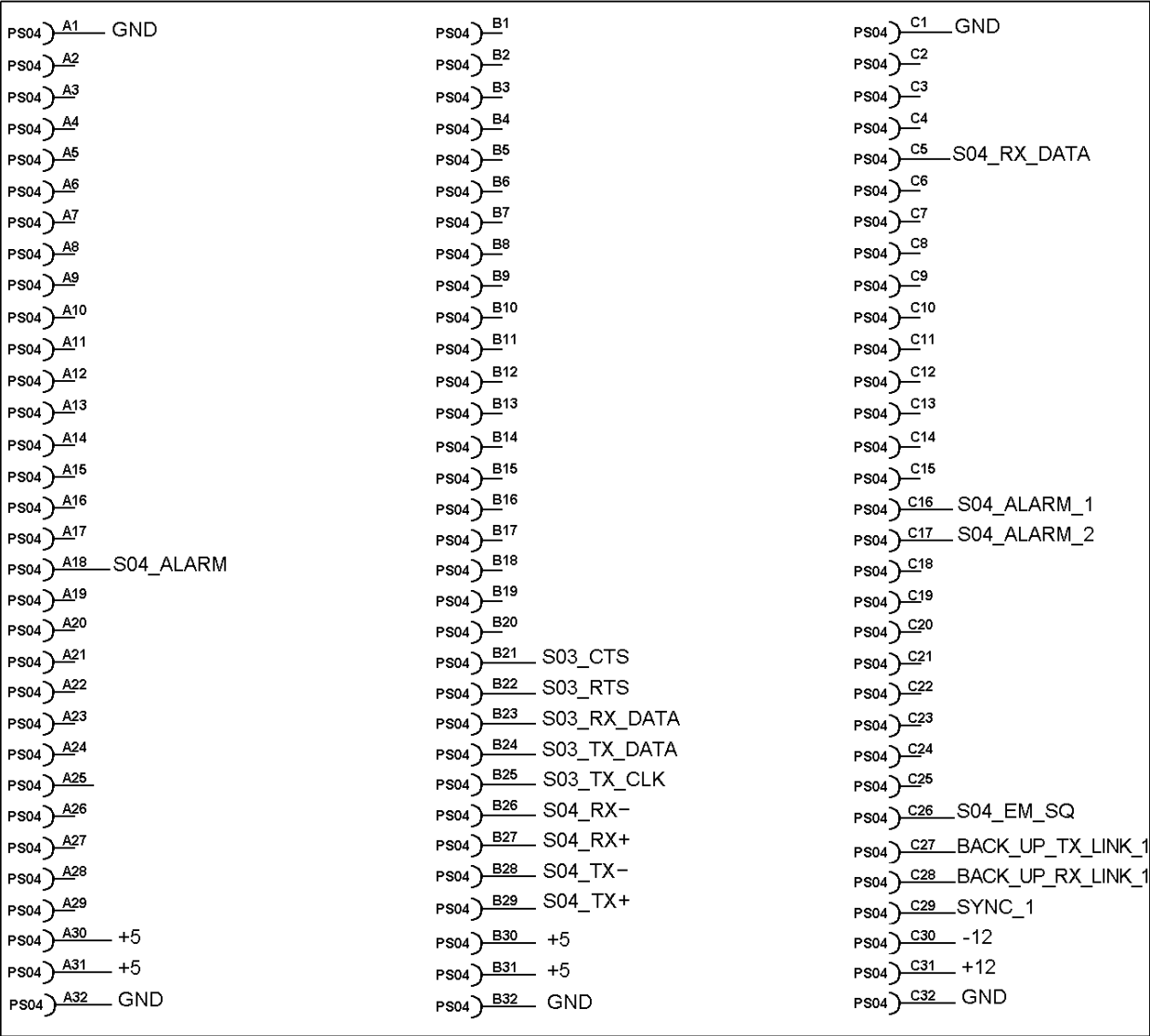
SLOT 6



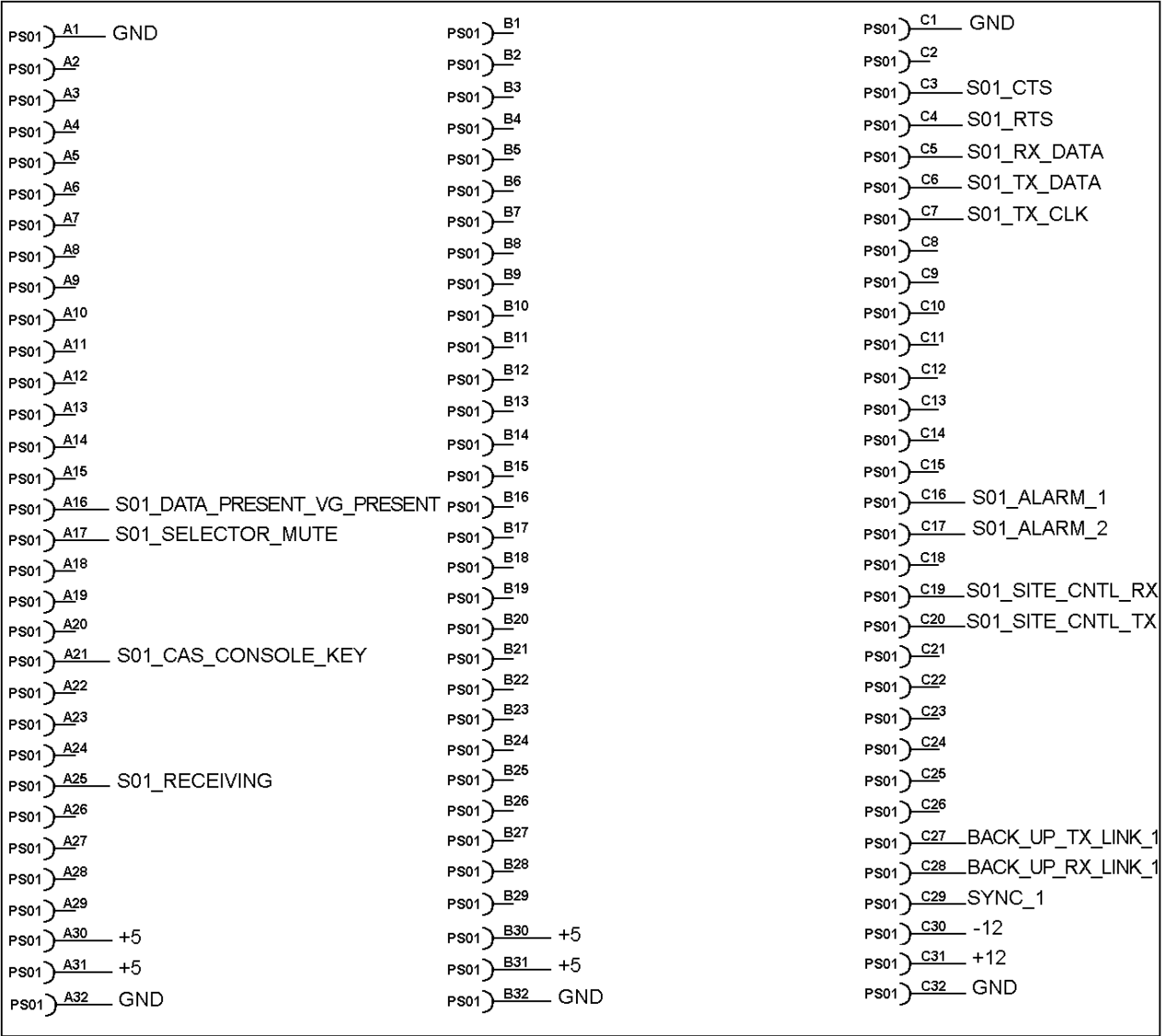
SLOT 3



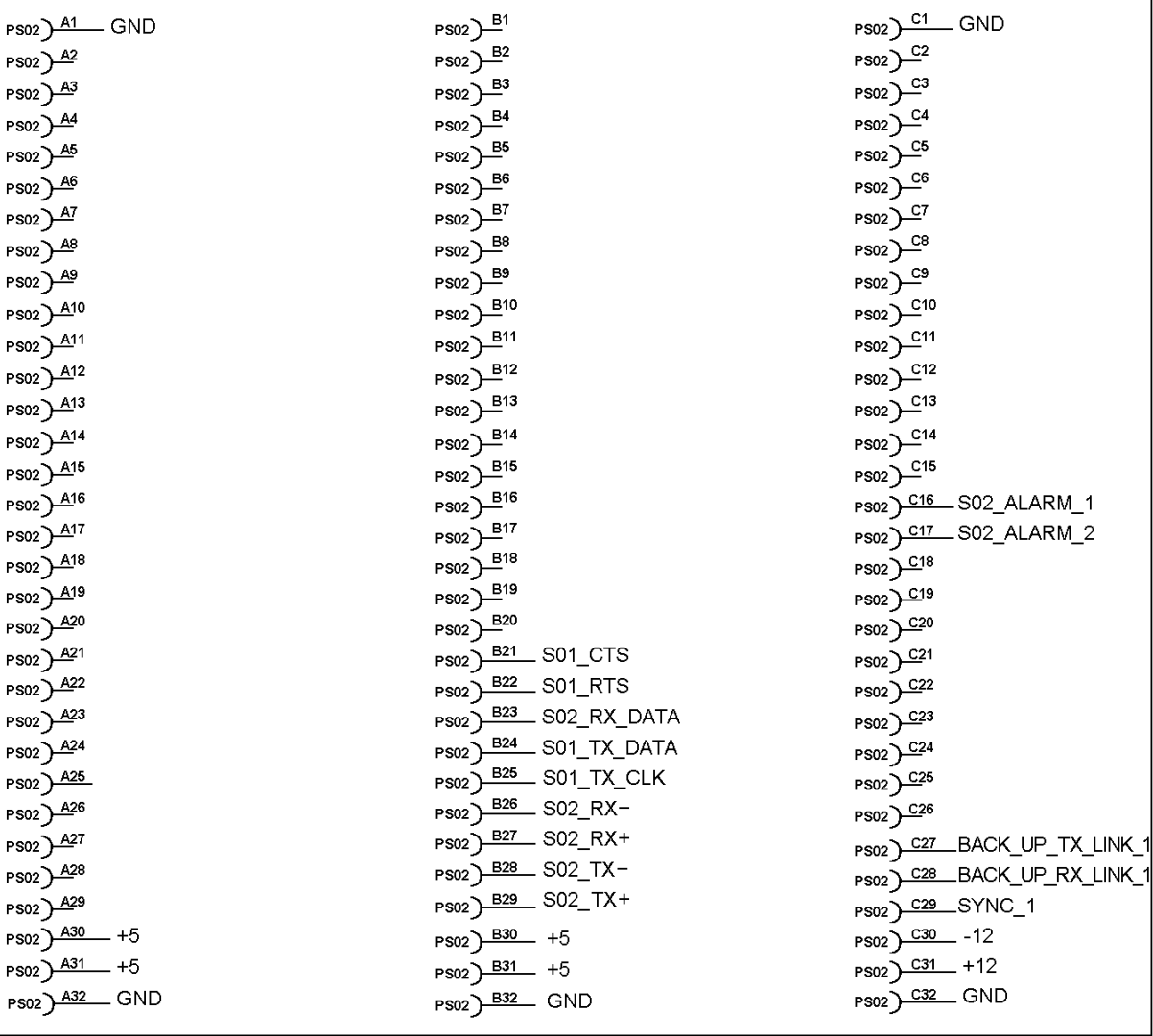
SLOT 4



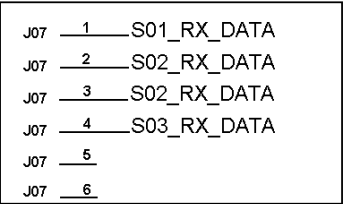
SLOT 1

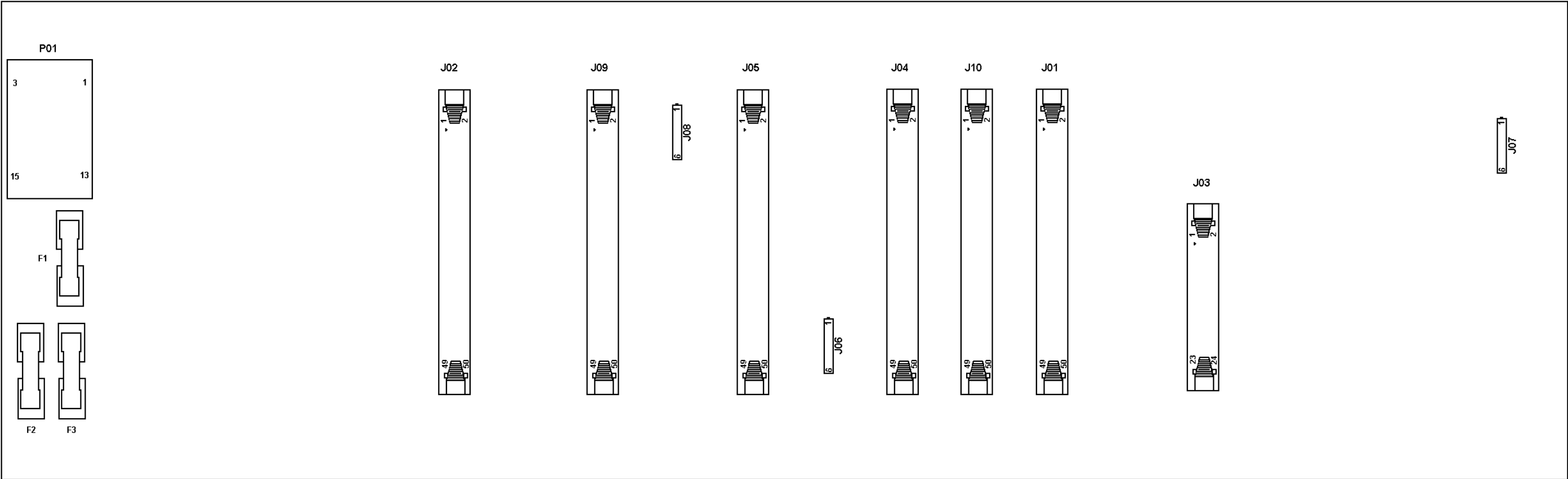


SLOT 2



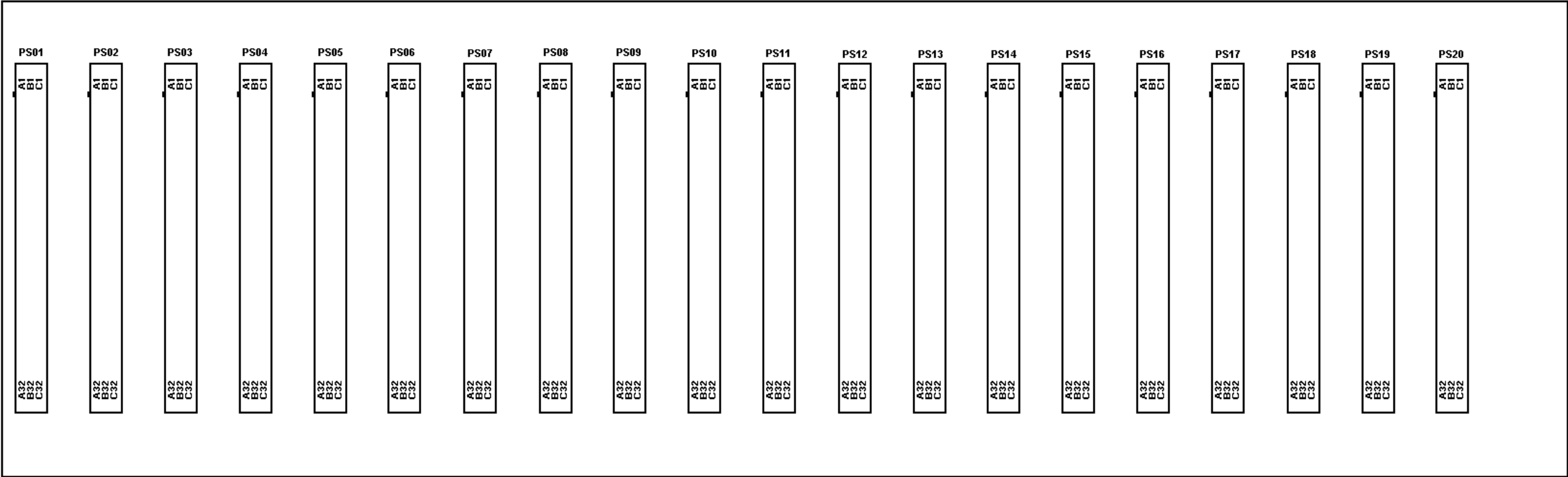
J07





CV² DIGITAL VOTER SHELF BACKPLANE
ROA 117 2222

(1078-ROA 117 2222, SH. 2, Rev. A)



CV² DIGITAL VOTER SHELF BACKPLANE
ROA 117 2222

(1078-ROA 117 2222, SH. 1, Rev. A)