AQS PSD/2 BOARD

H14107
User Manual

Version 001

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About This Manual 1

Introduction 1.1

This manual is included with the delivery of the AQS PSD/2 (EC00) board.

It provides instructions on how to:

- Install and configure the board.
- Wire and operate the board.
- Service and maintain the board.

Disclaimer 1.2

The board should only be used for its intended purpose as described in this manual. Use of the board for any purpose other than that for which it is intended is taken only at the users own risk and invalidates any and all manufacturer warranties.

Service or maintenance work on the board must be carried out by qualified personnel.

Read this manual before operating the board. Pay particular attention to any safety related information.

Safety Issues 1.3

The PSD/2 board is no more or less hazardous than any typical electronic or pneumatic hardware and should be treated accordingly.

Warnings and Notes 1.4

There are two types of information notices used in this manual. These notices highlight important information or warn the user of a potentially dangerous situation. The following notices will have the same level of importance throughout this manual.

Note: Indicates important information or helpful hints

WARNING: Indicates the possibility of severe personal injury, loss of life or equipment damage if the instructions are not followed.

Contact for Additional Technical Assistance 1.5

For further technical assistance on the PSD/2 Board, please do not hesitate to contact your nearest BRUKER dealer or contact us directly at:

BRUKER BioSpin GMBH
am Silberstreifen
D-76287 Rheinstetten
Germany

Phone: + 49 721 5161 0
FAX: + 49 721 5171 01
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Internet: www.bruker-biospin.de

Product Information

2

Product Identification 2.1

Description: AQS-PSD/2 Board

Part No.: H14107

Vendor: Bruker BioSpin GmbH
Silberstreifen
76287 Rheinstetten (Germany)

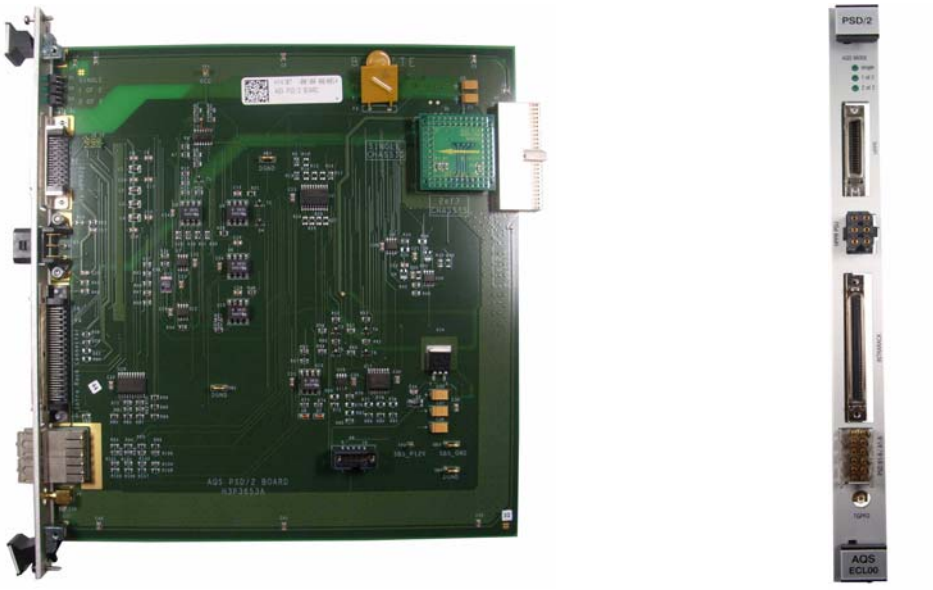

Figure 2.1. PSD/2 Board - Front and Side Views

Product Description 2.2

Spectrometers which have a DRU as the SBS-BUS Master and do not use the new IPSO require a PSD/2 Board (P/N H14107).

The board provides follow features.

- Power Supply and SBS-BUS Interface to the HPPR/2,

  EMERGENCY_STOP signal from HPPR/2, INTERLEAVE_INCR, RGP_HPPR_OUT, LOCK_PP signals to HPPR/2.
- The Blanking Signals 1..8 to the external amplifiers.
- The 20MHZ source (reference frequencies).
- Intra rack connection between 2 chassis.

Environmental Operating Conditions *2.3*

Maximum elevation:	2000 meters above sea level.
Temperature range:	Between +5°C and +40°C.
Highest relative humidity:	80% for temperature up to 31°C, linear decreasing until 50% relative humidity at 40°C.
Storage temperature:	Between 0°C and +40°C.

Dimensions and Weights *2.4*

Height:	262 mm
Depth	250 mm
Breath:	23 mm
Weight:	350g

Cleaning Instructions *2.5*

Instructions for cleaning the board:

1. Switch off the rack.
2. Disconnect all lines and cables.
3. Pull out the board from the slot.
4. Clean the board with oil free compressed air.
5. Clean the front plate with a dry or moist lint-free cloth.
6. Wait until all the parts are dry before reconnecting the board and connectors.

Acceptable Usage *2.6*

The PSD/2 board is designed as a slot board for BRUKER NMR spectrometers.

The slot for the board is on the rear side of the AQS/2 rack on the left (see ***Figure 3.1.***).

The board is connected to the AQS/2 backplane inside the rack and is connected outside via cables to the HPPR/2, external amplifiers, the BSMS wiring and the second rack (if present).

For more information about the AQS/2 rack refer to the manuals on the BASH 8.0 CD.

Installation 3

Usage of the correct PSD Board 3.1

At the present time there are three PSD boards in use:

1. PSD - P/N H9530
2. PSD/2 - P/N H14107
3. PSD/3 - P/N H14109

The PSD board P/N H9530 is for spectrometer systems where a CCU is configured as the SBS BUS MASTER in the rack.

The PSD board P/N H14107 is for spectrometer systems where a DRU is configured as the SBS BUS MASTER in the rack and no IPSO is used.

The PSD board P/N H14109 is for spectrometer systems with an IPSO.

Before Installation 3.2

Before placing the PSD/2 board into the AQS/2 rack check the position of the routing board. The mounted AQS PSD ROUTING BOARD must be aligned in the proper direction so that all signals are routed correctly.

The AQS PSD ROUTING BOARD position used is indicated by the 3 LED's on the front panel (see ***Figure 3.4.***). The position can also be determined from the arrow position on the AQS PSD ROUTING BOARD, in relation to the marker on the AQS PSD/2 BOARD (see ***Figure 3.3.***).

Place in Spectrometer *3.3*

The PSD/2 board must be situated in the left slot of the AQS/2 rack on the rear side see ***Figure 3.1.***

- The PSD/2 connector „HPPR“ is linked using cable P/N HZ10174 to the HPPR/2 back panel.
- The PSD/2 connector „HPPR PSU“ is linked using cable P/N HZ10109 to the HPPR/2 back panel.
- The PSD/2 connector „INTRA RACK“ is linked using cable P/N HZ13413 (HZ10360 medical) to the PSD/2 „INTR RACK“ in rack 2 (only by 2 rack version).
- The PSD/2 connector „PSD A1-6 is linked using cable P/N HZ10148 to the BLA’s (BLANKING 1-6).
- The PSD/2 connector „PSD B1-6 is linked using cable P/N HZ10146 (Variant 0 if Blanking 7-8 is not in use; and P/N HZ10146 Variant 1 if Blanking 7-8 is in use) to the PSD/2 „PSD B1-6“ in Rack 2 (only by 2 rack version).
- The PSD/2 connector „TGPF0“ is linked using cable P/N HZ13635 to the BSMS wiring.

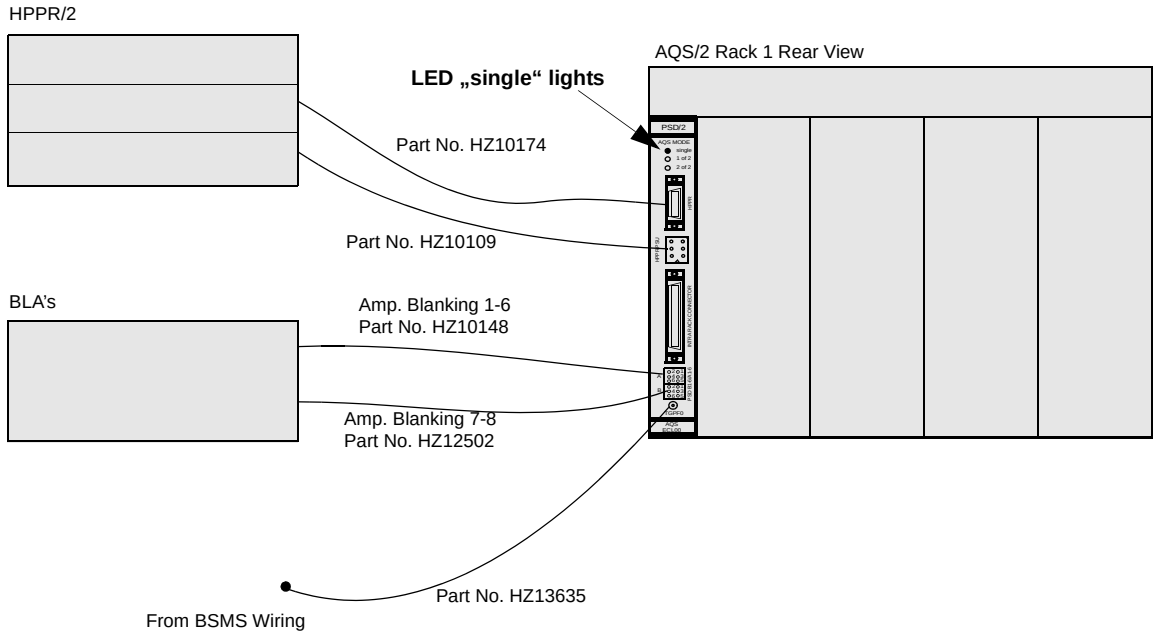

Figure 3.1. PSD/2 Wiring in a Single Chassis Mode

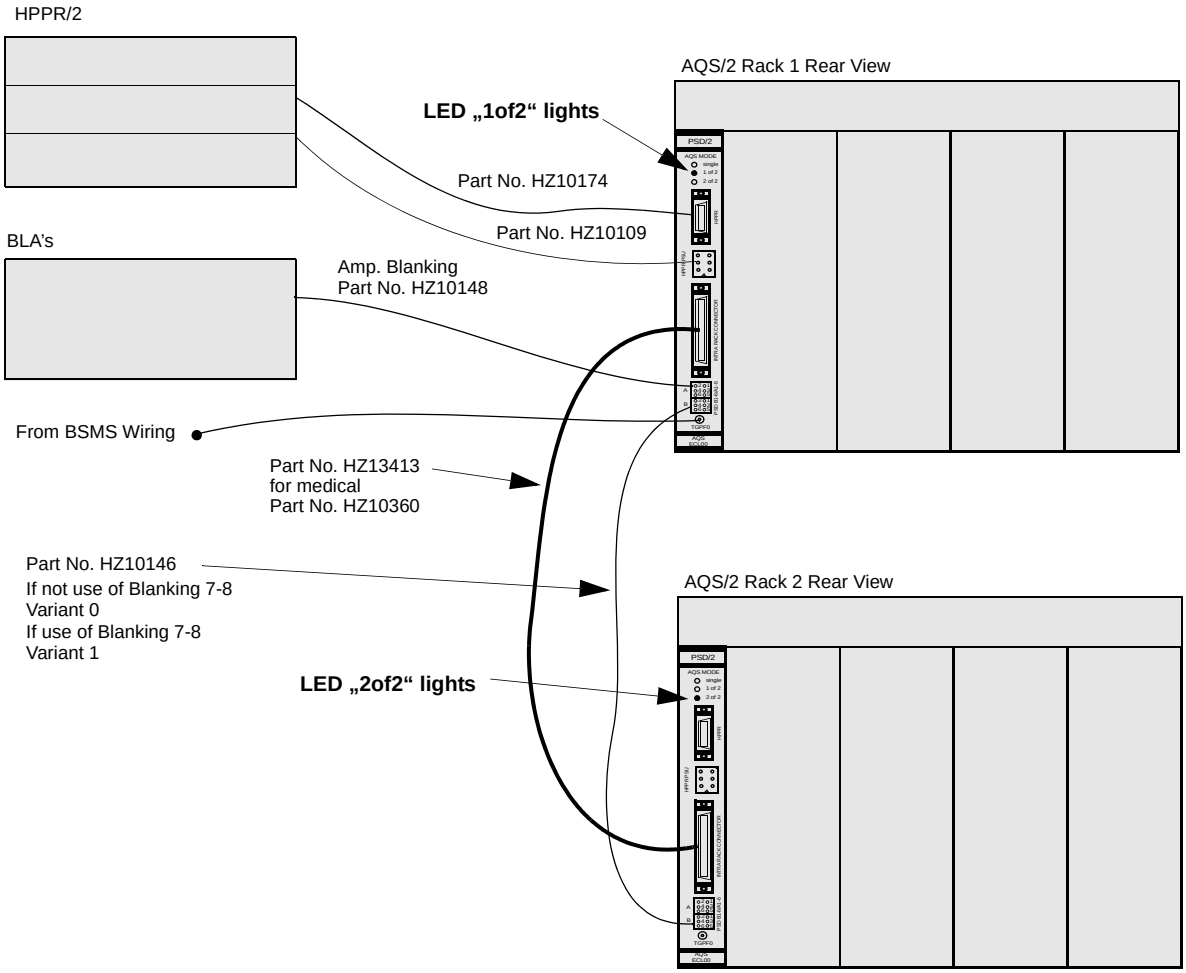

Figure 3.2. PSD/2 Wiring in a Double Chassis Mode

Part Numbers *3.4*

Table 3.1. Part Numbers

Part Description	Part Number
PSD/2 Board	H14107
Power supply / interface cable HPPR/2	HZ10174
Additional power supply cable HPPR/2	HZ10109
Intra rack cable	HZ13413
Intra rack cable (medical)	HZ10360
Cable to BLA's (Blankings1-6)	HZ10148
20MHZ source PSD B1-6 If not using Blankings 7-8	HZ10146 Variant 0
20MHZ source PSD B1-6 If using Blankings 7-8	HZ10146 Variant 1

Routing Schematic (20MHZ+I2C-BUS) *3.5*

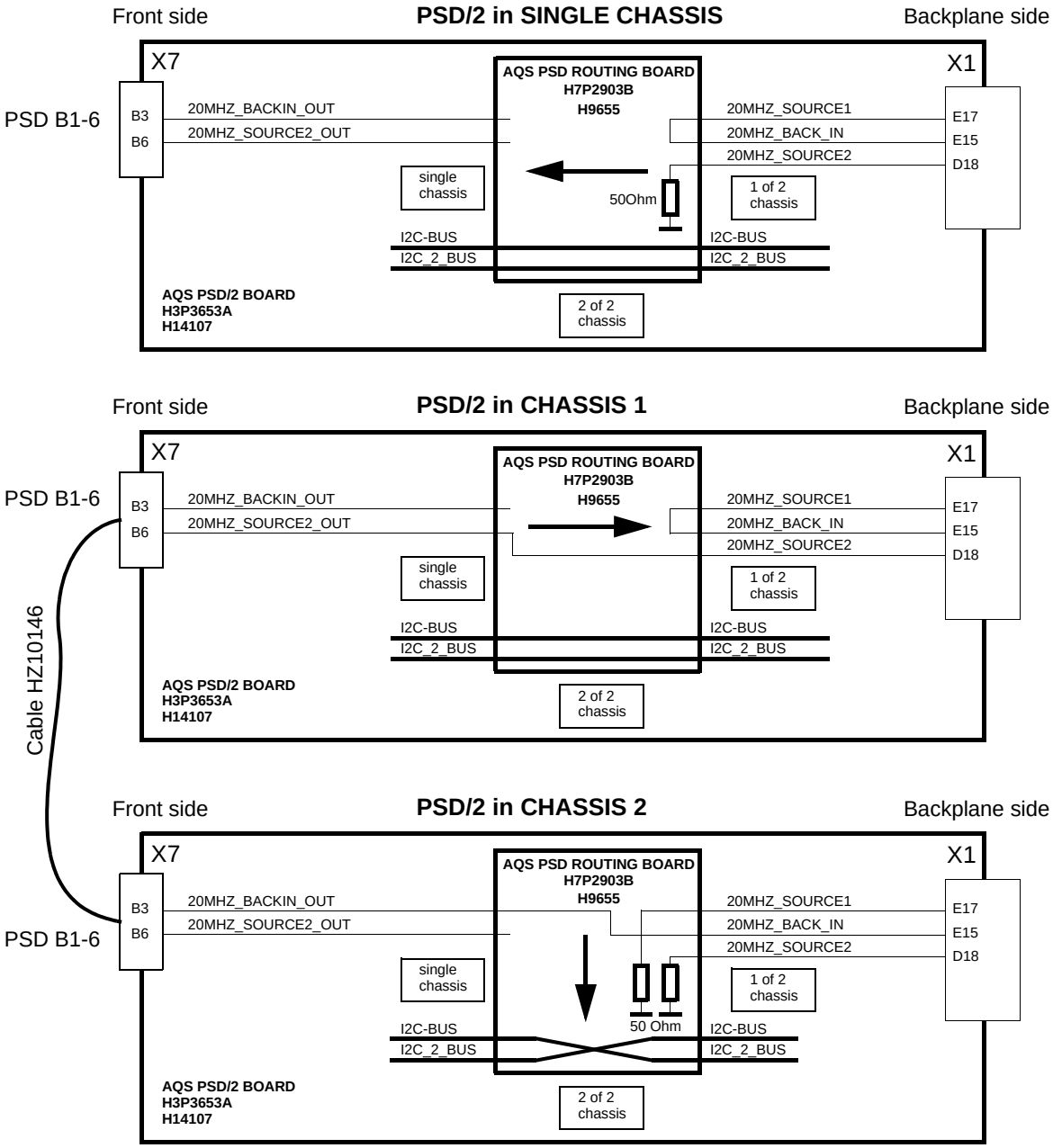

Figure 3.3. Position of Routing Board on PSD/2 Board

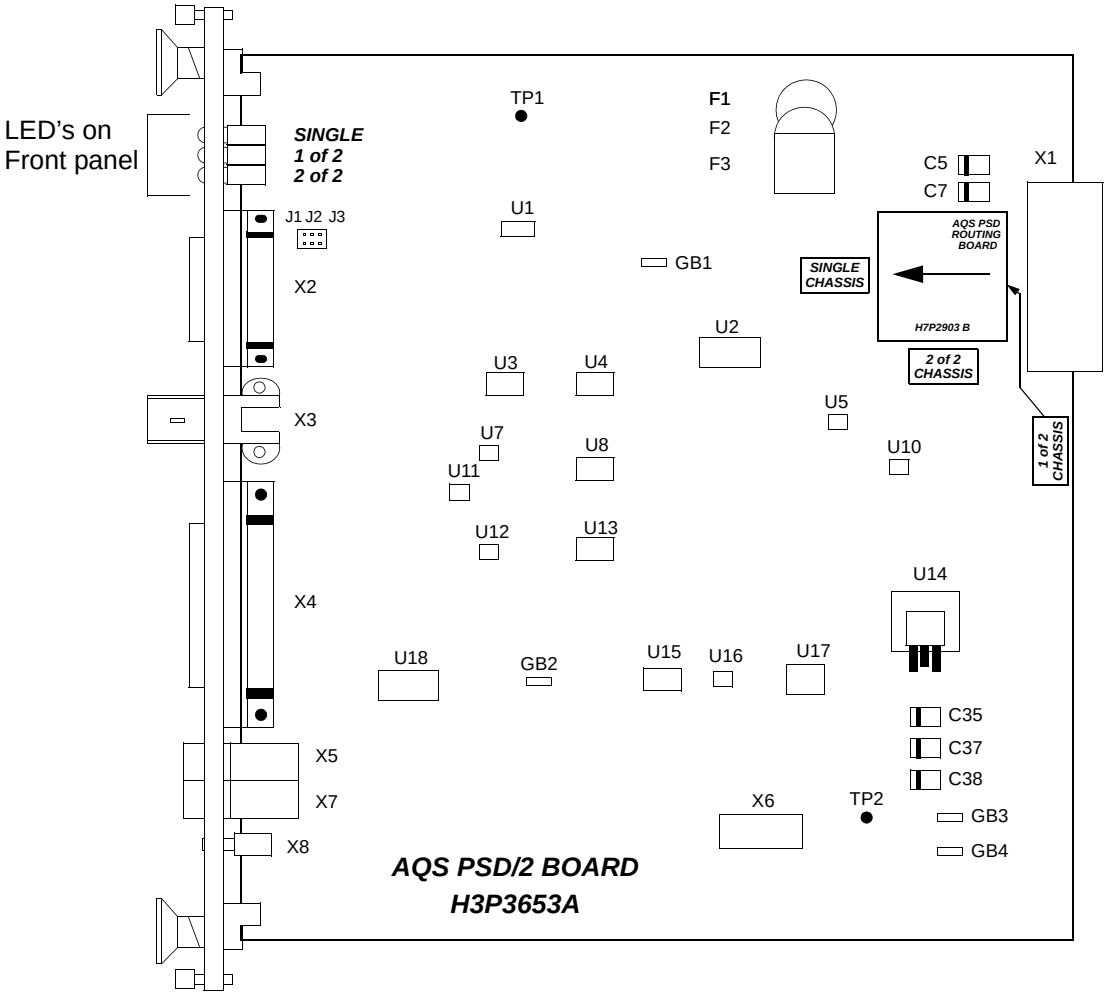

Figure 3.4. Schematic PSD/2 Board

Pinout Connectors 4

HPPR/2 Connector 1 4.1

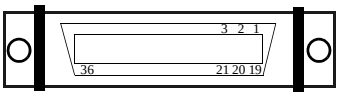

Figure 4.1. HPPR/2 Connector 1

Table 4.1. Pinout HPPR/2 Connector 1

Pin No.	Signals
1	HPPR_P19V_OUT
2	HPPR_P19V_OUT
3	HPPR_P9V_OUT
4	HPPR_P9V_OUT
5	$\overline{\text{HPPR\_STATUS\_INT}}$
6	HPPR_P9V_OUT
7	HPPR_P9V_OUT
8	HPPR_P9V_OUT
9	SBS_P12V
10	RXDP_1
11	TXDP_1
12	$\overline{\text{WUP\_1}}$
13	HPPR_GND
14	$\overline{\text{EMERGENCY\_STOP\_IN}}$
15	HPPR_GND

Table 4.1. Pinout HPPR/2 Connector 1

Pin No.	Signals
16	INTERLEAVE_INCR_OUT
17	LOCK_PP
18	RGP_HPPR_OUT
19	HPPR_N19V_OUT
20	HPPR_N19V_OUT
21	HPPR_GND
22	HPPR_GND
23	HPPR_GND
24	HPPR_GND
25	HPPR_GND
26	HPPR_GND
27	SBS_GND
28	RXDM_1
29	TXDM_1
30	SBS_GND
31	HPPR_GND
32	EMERGENCY_STOP_IN
33	HPPR_GND
34	$\overline{\text{INTERLEAVE\_INCR\_OUT}}$
35	$\overline{\text{LOCK\_PP}}$
36	$\overline{\text{RGP\_HPPR\_OUT}}$

HPPR/2 Connector 2 4.2

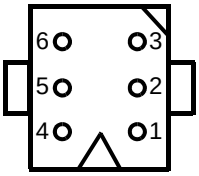

Figure 4.2. HPPR/2 Connector 2

Table 4.2. Pinout HPPR/2 Connector 2

Pin No.	Signals
1	SRING
2	HPPR_P9V_OUT
3	HPPR_N19V_OUT
4	HPPR_GND
5	HPPR_GND
6	HPPR_P19V_OUT

Intra Rack Connector 4.3

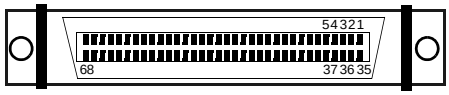

Figure 4.3. Intra Rack Connector

Table 4.3. Pinout Intra Rack Connector

Pin No.	Signals
1	$\overline{\text{BLNKTR1}}$
2	$\overline{\text{BLNKTR2}}$
3	$\overline{\text{BLNKTR3}}$
4	$\overline{\text{BLNKTR4}}$
5	$\overline{\text{BLNKTR5}}$
6	$\overline{\text{BLNKTR6}}$
7	$\overline{\text{BLNKTR7}}$

Table 4.3. Pinout Intra Rack Connector

Pin No.	Signals
8	$\overline{\text{BLNKTR8}}$
9	$\overline{\text{EMERGENCY\_STOP}}$
10	I2C_SCL_OUT
11	I2C_SDA_OUT
12	I2C_2_SCL_OUT
13	I2C_2_SDA_OUT
14	$\overline{\text{INTERLEAVE\_INCR}}$
15	$\overline{\text{I2C\_BUS\_REQ}}$
16	LOCAL_TX
17	LOCAL_RX
18	$\overline{\text{RGP\_LO}}$
19	$\overline{\text{RGP\_HPPR}}$
20	$\overline{\text{RGP\_ADC}}$
21	$\overline{\text{RGP\_RX}}$
22	$\overline{\text{DWL\_CLK}}$
23	NC
24	NC
25	NC
26	NC
27	NC
28	ADC_SEL0
29	$\overline{\text{WUP\_1}}$
30	RXDP_1
31	RXDM_1
32	TXDP_1
33	TXDM_1
34	5MHZ_SYNC
35	GND
36	GND
37	GND
38	GND

Table 4.3. Pinout Intra Rack Connector

Pin No.	Signals
39	GND
40	GND
41	GND
42	GND
43	GND
44	GND
45	GND
46	GND
47	GND
48	GND
49	GND
50	GND
51	GND
52	GND
53	NC
54	NC
55	SBS_GND
56	SBS_GND
57	$\overline{\text{STATUS\_INT}}$
58	$\overline{\text{I2C\_STATUS\_INT}}$
59	RESERVE_3
60	RESERVE_4
61	RESERVE_5
62	GND
63	RESERVE_6
64	RESERVE_7
65	NC
66	GND
67	GND
68	GND

PSD B1-6/A1-6 Connector *4.4*

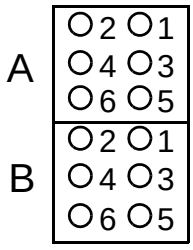

Figure 4.4. PSD B1-6/A1-6 Connector

Table 4.4. Pinout PSD B1-6/A1-6 CONNECTOR

Pin No.	Signals
A1	$\overline{\text{BLNKTR2}}$
A2	$\overline{\text{BLNKTR1}}$
A3	$\overline{\text{BLNKTR4}}$
A4	$\overline{\text{BLNKTR3}}$
A5	$\overline{\text{BLNKTR6}}$
A6	$\overline{\text{BLNKTR5}}$
B1	$\overline{\text{BLNKTR8}}$
B2	$\overline{\text{BLNKTR7}}$
B3	20MHZ_BACKIN_OUT
B4	$\overline{\text{EMERGENCY\_STOP}}$
B5	NC
B6	20MHZ_SOURCE2_OUT

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Notes: