BNC Panel Installation Guide

High Performance Simultaneous Data Acquisition

BNCPANEL

32 Channel BNC panel
Rack Mount

Revision History

Revision	Date	Author(s)	Description
1	7/4/2023	JMcL	Re-Issue on updated format

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1 Overview

1.1 Product Description

BNCPANEL is a 32-channel BNC breakout panel in 2U 19” form factor providing connectivity for various D-TACQ products which use SCSI-68 or VHDCI connectors. The panel accepts up to 32 differential or single-ended channels and is compatible with products including:

ACQ196CPCI

ACQ424ELF

ACQ435ELF

ACQ465ELF

DIO432ELF/DIO432FMC

DIO482ELF/ DIO482FMC

The panel provides additional Transient Overvoltage Protection for the D-TACQ modules connected to the panel. This is in the form of Transient Voltage Suppressor diodes on the panel. The characteristics of these diodes can be found in Section 5.

2 Mounting Options

BNCPANEL mounts in a 19” rack. Mounting points for the 19” lugs are on both the left and right of the panel.

3 Front Panel Connections

This is the standard Front Panel, the appearance is shown below

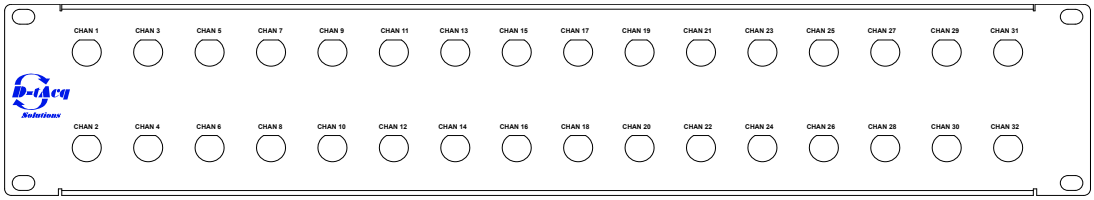

Figure 1: Front Panel

BNC channel numbers are numbered logically and are marked on the front panel.

4 Rear Connections

The rear of the Panel has a standard 68 way male Micro D (SCSI-II Type), 4-40 screw lock, for connection back to the Digitiser/DIO Board. The panel is supplied with an appropriate cable, contact support@d-tacq.com for details on the cable.

The panel is also supplied with a standard ring terminal cable for connection to chassis ground.

⚠WARNING

For protection from electrical shock and ESD, the chassis ground cable connection must be attached to an Earthing point. Failure to make a connection may result in damage to the Panel and attached system as this will defeat the transient over voltage protection system.

4.1 Connector Pin Outs for AIO Differential modules

The BNC Connectors have the following Pin Out

Pin	Description
Centre Pin	+ve Analog I/O signal
Shell	-ve Analog I/O signal

Table 1: AIO Differential BNC Connector Pin Out

The SCSI Connector has the following Pin Out

Pin Number	Description	Pin Number	Description
1	AGND	35	AGND
2	AGND	36	AGND
3	+ve AIO Channel 1	37	-ve AIO Channel 1
4	+ve AIO Channel 2	38	-ve AIO Channel 2
5	+ve AIO Channel 3	39	-ve AIO Channel 3
6	+ve AIO Channel 4	40	-ve AIO Channel 4
7	+ve AIO Channel 5	41	-ve AIO Channel 5
8	+ve AIO Channel 6	42	-ve AIO Channel 6
9	+ve AIO Channel 7	43	-ve AIO Channel 7
10	+ve AIO Channel 8	44	-ve AIO Channel 8
11	+ve AIO Channel 9	45	-ve AIO Channel 9
12	+ve AIO Channel 10	46	-ve AIO Channel 10
13	+ve AIO Channel 11	47	-ve AIO Channel 11
14	+ve AIO Channel 12	48	-ve AIO Channel 12
15	+ve AIO Channel 13	49	-ve AIO Channel 13
16	+ve AIO Channel 14	50	-ve AIO Channel 14
17	+ve AIO Channel 15	51	-ve AIO Channel 15
18	+ve AIO Channel 16	52	-ve AIO Channel 16
19	+ve AIO Channel 17	53	-ve AIO Channel 17
20	+ve AIO Channel 18	54	-ve AIO Channel 18
21	+ve AIO Channel 19	55	-ve AIO Channel 19
22	+ve AIO Channel 20	56	-ve AIO Channel 20
23	+ve AIO Channel 21	57	-ve AIO Channel 21
24	+ve AIO Channel 22	58	-ve AIO Channel 22
25	+ve AIO Channel 23	59	-ve AIO Channel 23
26	+ve AIO Channel 24	60	-ve AIO Channel 24
27	+ve AIO Channel 25	61	-ve AIO Channel 25
28	+ve AIO Channel 26	62	-ve AIO Channel 26
29	+ve AIO Channel 27	63	-ve AIO Channel 27
30	+ve AIO Channel 28	64	-ve AIO Channel 28
31	+ve AIO Channel 29	65	-ve AIO Channel 29
32	+ve AIO Channel 30	66	-ve AIO Channel 30
33	+ve AIO Channel 31	67	-ve AIO Channel 31
34	+ve AIO Channel 32	68	-ve AIO Channel 32

Table 2: AIO Differential SCSI Connector Pin Out

4.2 Connector Pin Outs for AIO Single-Ended Modules

The BNC Connectors have the following Pin Out

Pin	Description
Centre Pin	Analog I/O signal
Shell	AGND

Table 3: AIO Single-Ended BNC Connector Pin Out

The SCSI Connector has the following Pin Out

Pin Number	Description	Pin Number	Description
1	AGND	35	AGND
2	AGND	36	AGND
3	AIO Channel 1	37	AGND
4	AIO Channel 2	38	AGND
5	AIO Channel 3	39	AGND
6	AIO Channel 4	40	AGND
7	AIO Channel 5	41	AGND
8	AIO Channel 6	42	AGND
9	AIO Channel 7	43	AGND
10	AIO Channel 8	44	AGND
11	AIO Channel 9	45	AGND
12	AIO Channel 10	46	AGND
13	AIO Channel 11	47	AGND
14	AIO Channel 12	48	AGND
15	AIO Channel 13	49	AGND
16	AIO Channel 14	50	AGND
17	AIO Channel 15	51	AGND
18	AIO Channel 16	52	AGND
19	AIO Channel 17	53	AGND
20	AIO Channel 18	54	AGND
21	AIO Channel 19	55	AGND
22	AIO Channel 20	56	AGND
23	AIO Channel 21	57	AGND
24	AIO Channel 22	58	AGND
25	AIO Channel 23	59	AGND
26	AIO Channel 24	60	AGND
27	AIO Channel 25	61	AGND
28	AIO Channel 26	62	AGND
29	AIO Channel 27	63	AGND
30	AIO Channel 28	64	AGND
31	AIO Channel 29	65	AGND
32	AIO Channel 30	66	AGND
33	AIO Channel 31	67	AGND
34	AIO Channel 32	68	AGND

Table 4: AIO Single-Ended SCSI Connector Pin Out

4.3 Connector Pin Outs for DIO Modules

The BNC Connectors have the following Pin Out

Pin	Description
Centre Pin	Digital I/O signal
Shell	DGND

Table 5: DIO BNC Connector Pin Out

The SCSI Connector has the following Pin Out

Pin Number	Description	Pin Number	Description
1	DGND	35	DGND
2	DGND	36	DGND
3	DIO Channel 1	37	DGND
4	DIO Channel 2	38	DGND
5	DIO Channel 3	39	DGND
6	DIO Channel 4	40	DGND
7	DIO Channel 5	41	DGND
8	DIO Channel 6	42	DGND
9	DIO Channel 7	43	DGND
10	DIO Channel 8	44	DGND
11	DIO Channel 9	45	DGND
12	DIO Channel 10	46	DGND
13	DIO Channel 11	47	DGND
14	DIO Channel 12	48	DGND
15	DIO Channel 13	49	DGND
16	DIO Channel 14	50	DGND
17	DIO Channel 15	51	DGND
18	DIO Channel 16	52	DGND
19	DIO Channel 17	53	DGND
20	DIO Channel 18	54	DGND
21	DIO Channel 19	55	DGND
22	DIO Channel 20	56	DGND
23	DIO Channel 21	57	DGND
24	DIO Channel 22	58	DGND
25	DIO Channel 23	59	DGND
26	DIO Channel 24	60	DGND
27	DIO Channel 25	61	DGND
28	DIO Channel 26	62	DGND
29	DIO Channel 27	63	DGND
30	DIO Channel 28	64	DGND
31	DIO Channel 29	65	DGND
32	DIO Channel 30	66	DGND
33	DIO Channel 31	67	DGND
34	DIO Channel 32	68	DGND

Table 6: DIO SCSI Connector Pin Out

5 Specifications

The table below describes the Transient/ESD protection provided by BNCPANEL

Rating	Value	Test Condition
Nominal Working Voltage	±10V	
Nominal Protection Voltage	±33V	
ESD Protection [1]	30KV	Contact
ESD Protection Voltage	30KV	Air
Peak pulse power dissipation	400W	10/1000µs waveform
Steady state power dissipation	3.3W	TA=50°C

[1] Protection Diode Type is SMAJ33CA as per IEC61000-4-2

Table 7: Specifications

See Section 4 For Ring Terminal Cable required for ESD protection.

6 Warranty

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