TB-68

68Pin Shielded Connector Block User Manual

User Manual Version: V1.0.2

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1. Overview

This chapter presents the information how to use this manual and how to operate the module.

1.1 Introduction

TB-68 is a basic shielded connector block suitable for SCSI-II 68 pin interface. This product supports to use all I/O pins of 68 pin DAQ equipment through terminals, and has two general panel package areas that can be used for custom circuits. TB-68 board is equipped with a temperature conditioning input circuit, which can convert the temperature into the single end analog voltage signal to obtain the temperature in the connector block.

1.2 Main Features

- Shielded I/O connector block
- 68 Pin SCSI II connector
- 2 general breadboard areas
- Onboard temperature conditioning input circuit

1.3 Abbreviation

AI：(Analog Input) Analog Input

AO：(Analog Input) Analog Input

DI：(Digital Input) Digital Input

DO：(Digital Output) Digital Output

PFI：(Programmable Function Interface) Programmable Function Interface

2. Hardware Specifications

2.1 Electrical Specifications

Connector	68Pin SCSI-II Female
Wares support	30-12AWG/0.05-3.31mm2
Rated Current (Any single Pin)	0.2A
Rated Voltage (Any Pin to Pin)	250V
Temperature conditioning input circuit	1ch
Operating temperature range (Temperature conditioning input circuit)	-10°C ～ 60°C

2.2 Pin Definition

J1	J2	J3	J4
43	51	59	68
9	17	25	34
42	50	58	67
8	16	24	33
41	49	57	66
7	15	23	32
40	48	56	65
6	14	22	31
39	47	55	64
5	13	21	30
38	46	54	63
4	12	20	29
37	45	53	62
3	11	19	28
36	44	52	61
2	10	18	27
35			60
1			26

2.3 Suitable Module

Interface	Model	Recommended use
PXIe/PCIe	5510	√
PXIe/PCIe	5511	√
PXIe/PCIe	5512	√
PXIe/PCIe	5515	√
PXIe/PCIe	5516	√
PXIe/PCIe	5517	√
PXIe/PCIe	6301	
PXIe/PCIe	6302	

3. Operation Guide

This chapter mainly introduces the related operation guide of TB-68, mainly including the temperature conditioning input circuit and operations when used with 5500 series module.

3.1 Temperature Conditioning Input Circuit

When used with DAQs supporting TB-68's temperature input, temperature conditioning input circuit can be enabled to get environment temperature of TB-68. The 68 pin of SCSI II connector will get the voltage signal of temperature, when temperature conditioning input circuit of TB-68 is enabled.

Notice, to use the temperature conditioning input circuit, the DAQS is needed for voltage measurement, the voltage of temperature conditioning input circuit cannot be measured at the terminal pin by using the instruments like multimeter or Oscilloscope.

3.1.1 Enabling Temperature Conditioning Input Circuit

When switch at default state (In Figure 1), the temperature conditioning input circuit is not working and the temperature sensor does not output. And the pin68 can be used as a common pin.
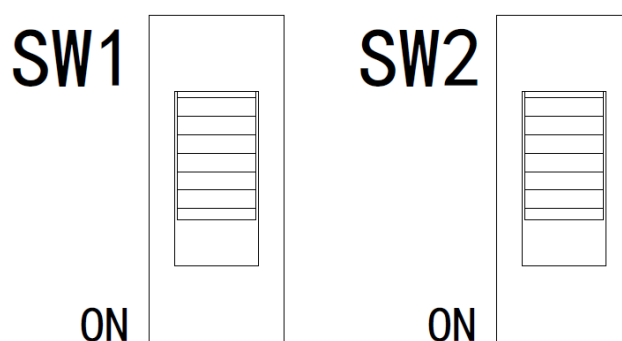
Figure 1

When switch at enabled state (In Figure 2), the output of temperature sensor is connected to pin68, which can be known by measuring the voltage at pin68 through the DAQS.
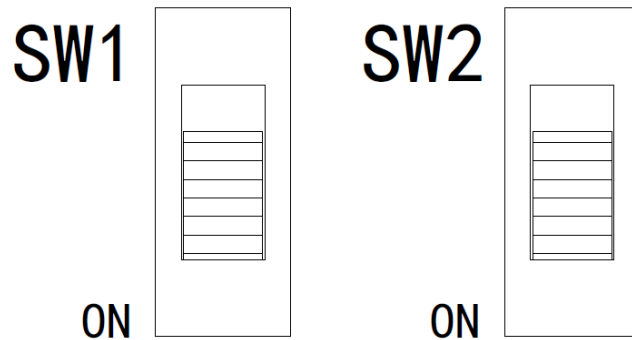
Figure 2

Note: When using the TB-68 temperature conversion module, it is recommended not to exceed a sampling rate of 400 Samples/sec for the PCIe/PXIe-5500 series cards.

3.1.2 Temperature Conversion relationship

When temperature input is used, the voltage of pin68 and temperature satisfies:

$$T = aV^2 + bV + c$$

Among them：

T—The temperature of temperature conditioning input circuit

V—The voltage of temperature conditioning input circuit

a,b,c—Coefficient

When the environment temperature is between - 10 ℃ and 110 ℃, the following values are used for the coefficients a, b, c：

$$a = -7.857923E - 6$$

$$b = -1.777501E - 1$$

$$c = 2.043937E + 2$$

3.1.3 Temperature Conditioning Input Circuit Suitbale Module

Interface	Model
PXIe/PCIe	5510
PXIe/PCIe	5511
PXIe/PCIe	5512
PXIe/PCIe	5515
PXIe/PCIe	5516
PXIe/PCIe	5517

3.2 Use with 5500 Series Module

3.2.1 Use with 5510/5511/5512 Module

Connector0							
J1		J2		J3		J4	
43	PFI2	51	P0.5	59	AIGND	68	AI0
9	DGND	17	P0.1	25	AI6	34	AI8
42	PFI3	50	DGND	58	AI14	67	AIGND
8	+5V	16	P0.6	24	AIGND	33	AI1
41	PFI4	49	P0.2	57	AI7	66	AI9
7	DGND	15	DGND	23	AI15	32	AIGND
40	PFI13	48	P0.7	56	AIGND	65	AI2
6	PFI5	14	+5V	22	AO 0	31	AI10
39	PFI15	47	P0.3	55	AOGND	64	AIGND
5	PFI6	13	DGND	21	AO1	30	AI3
38	PFI7	46	PFI11	54	AOGND	63	AI11
4	DGND	12	DGND	20	NC	29	AIGND
37	PFI8	45	PFI10	53	DGND	62	AISNS
3	PFI9	11	PFI0	19	P0.4	28	AI4
36	DGND	44	DGND	52	P0.0	61	AI12
2	PFI12	10	PFI1	18	DGND	27	AIGND
35	DGND					60	AI5
1	PFI14					26	AI13
Connector1							
J1		J2		J3		J4	
43	P2.2	51	P1.5	59	AIGND	68	AI16
9	DGND	17	P1.1	25	AI22	34	AI24
42	P2.3	50	DGND	58	AI30	67	AIGND
8	+5V	16	P1.6	24	AIGND	33	AI17
41	P2.4	49	P1.2	57	AI23	66	AI25
7	DGND	15	DGND	23	AI31	32	AIGND
40	P3.5	48	P1.7	56	AIGND	65	AI18
6	P2.5	14	+5V	22	AO2	31	AI26
39	P3.7	47	P1.3	55	AOGND	64	AIGND
5	P2.6	13	DGND	21	AO3	30	AI19
38	P2.7	46	P3.3	54	AOGND	63	AI27
4	DGND	12	DGND	20	NC	29	AIGND
37	P3.0	45	P3.2	53	DGND	62	AISNS
3	P3.1	11	P2.0	19	P1.4	28	AI20
36	DGND	44	DGND	52	P1.0	61	AI28
2	P3.4	10	P2.1	18	DGND	27	AIGND
35	DGND					60	AI21
1	P3.6					26	AI29

3.2.2 Use with 5515/5516/5517 Module

J1		J2		J3		J4	
43	PFI2	51	P0.5	59	AIGND	68	AI0
9	DGND	17	P0.1	25	AI6	34	AI8
42	PFI3	50	DGND	58	AI14	67	AIGND
8	+5V	16	P0.6	24	AIGND	33	AI1
41	PFI4	49	P0.2	57	AI7	66	AI9
7	DGND	15	DGND	23	AI15	32	AIGND
40	PFI13	48	P0.7	56	AIGND	65	AI2
6	PFI5	14	+5V	22	AO 0	31	AI10
39	PFI15	47	P0.3	55	AOGND	64	AIGND
5	PFI	13	DGND	21	AO1	30	AI3
38	PFI7	46	PFI11	54	AOGND	63	AI11
4	DGND	12	DGND	20	NC	29	AIGND
37	PFI8	45	PFI10	53	DGND	62	AISNS
3	PFI9	11	PFI0	19	P0.4	28	AI4
36	DGND	44	DGND	52	P0.0	61	AI12
2	PFI12	10	PFI1	18	DGND	27	AIGND
35	DGND					60	AI5
1	PFI14					26	AI13

4. About JYTEK

4.1 JYTEK China

Founded in June 2016, JYTEK China is a leading Chinese test & measurement company, providing complete software and hardware products for the test and measurement industry. The company is a joint venture between Adlink Technologies and a group of experienced professionals form the industry. JYTEK independenly develop the software and hardware products and is entirely focused on the Chinese market. Our Shanghai headquarters and production service center have regular stocks to ensure timely supply; we have R&D centers in Xi'an and Chongqing to develop new products; we also have highly trained direct technical sales representatives in Shanghai, Beijing, Tianjin, Xi'an, Chengdu, Nanjing, Wuhan, Haerbin, and Changchun.   We also have many patners who provide system level support in various cities.

4.2 JYTEK Korea and JYTEK in Other Countries

JYTEK Korea was the first JYTEK enterprise outside China to promote JYTEK products. Together with Adlink Technologies and JYTEK China, JYTEK is expanding to other countries.   Each JYTEK location is an independently owned and operated franchise. It shares JYTEK's philosophy and business approach. Together JYTEK entities promote the JYTEK brand, technology, and products.

4.3 JYTEK Hardware Products

According to JYTEK's agreement with our equity paNEGer Adlink Technologies, JYTEK's hardware is manufactured by the state-of-art manufacturing facility located in Shanghai Zhangjiang Hi-Tech Park. Adlink has over 20 years of the world-class low-volumn and high-mix manufacturing expertise with ISO9001-2008, China 3C, UL, ROHS, TL9000, ISO-14001, ISO-13485 certifications. Its 30,000 square meters facilities and three high-speed Panasonic SMT production lines can produce 60,000 pieces boards/month; it also has full supply chain management - planning, sweeping, purchasing, warehousing and

distribution.   Adlink's manufacturing excellence ensures JYTEK's hardware has word-class manufacturing quality.

One core technical advantage is JYTEK's pursue for the basic and fundamental technology excellence. JYTEK China has developed a unique PCIe, PXIe, USB hardware driver architecture, FirmDrive, upon which many our future hardware will be based.

In addition to our own developed hardware, JYTEK also rebrands Adlink's PXI product lines. In addition, JYTEK has other rebranding agreements to increase our hardware coverage. It is our goal to provide the complete product coverage in PXI and PCI modular instrumentation and data acquisition.

4.4 JYTEK Software Platform

JYTEK has developed a complete software platform, SeeSharp Platform, for the test and measurement applications. We leverage the open sources communities to provide the software tools. Our platform software is also open sourced and is free, thus lowering the cost of tests for our customers. We are the only domestic vendor to offer complete commercial software and hardware tools.

4.5 JYTEK Warranty and SupportServices

With our complete software and hardware products, JYTEK is able to provide technical and sales services to wide range of applications and customers. In most cases, our products are backed by a 2-year warranty. For technical consultation, pre-sale and after-sales support, please contact JYTEK of your country.s

5. Statement

The hardware and software products described in this manual are provided by JYTEK China, or JYTEK in short.

This manual provides the product review, quick start, some driver interface explaination for PCIe/PXIe-6301 family of temperature sensor data acquisition cards. The manual is copyrighted by JYTEK.

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While we try to keep this manual up to date, there are factors beyond our control that may affect the accuracy of the manual.   Please check the latest manual and product information from our website.

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