



PRODUCT SPECIFICATIONS

Product : PCIe Gen5 x16 Switch Card.

Model : TST-PX16G5-01

CUSTOMER :

Amendment History

Version	Date	Description	Issued by
R1.0	2024.11.12	New Released.	Eric.Chang
R1.01	2024/12/9	Correct board height and content page.	Eric.Chang
R1.02	2025/1/13	Add L2 material description.	Eric.Chang

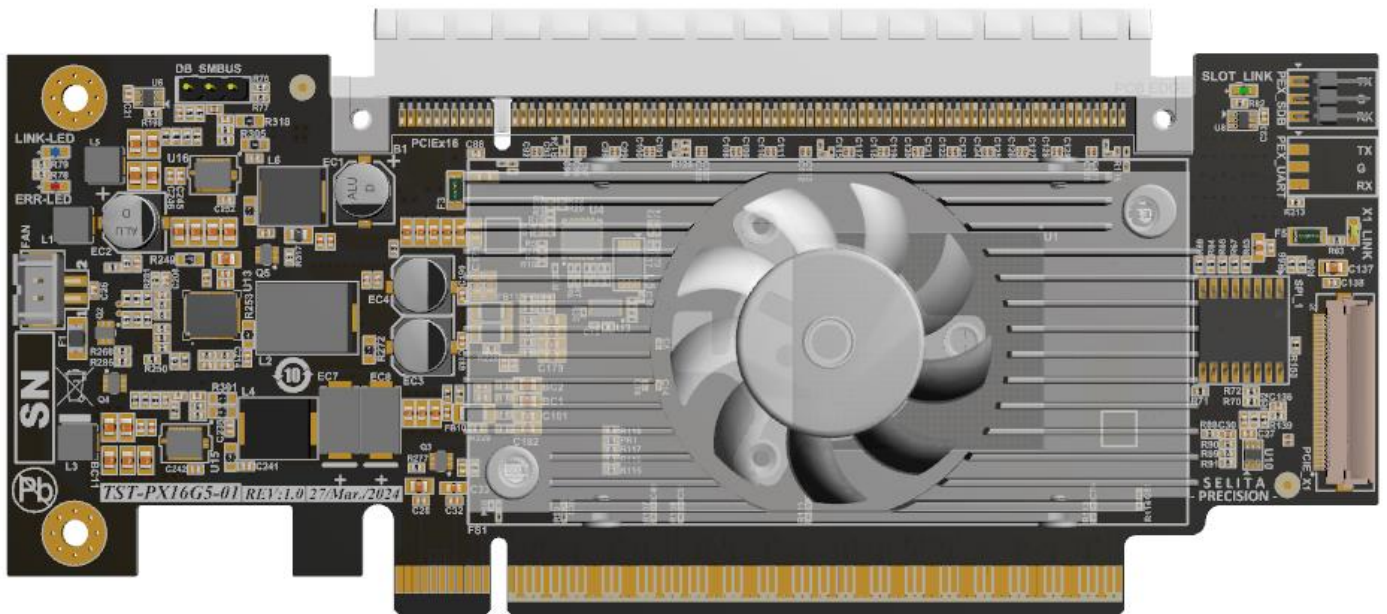
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Description

PCIe Gen5 x16 switch card with Broadcom PEX89048 ,Supports PCIe Gen5 x16 upstream and X16 connectors for downstream port, FFC connector supports extended PCIe x1 Slot fixture, Each port supports LED display of PCIe speed and link status.

Features



- Using Broadcom PEX89048 PCIe Gen5 Switch chip, compatible with PCIe Gen1~Gen4.
- Supports x16 Gen5 Upstream x1 and x16 Gen5 Downstream x1, x1 downstream x1
- Support SMBUS communication (MUX Address 0xE8 / Channel 2 ; TEMP. Sensor 0x3E)
- Provides PCIe connection status LED lights.
- Provide WINDOWS, UEFI, Linux test programs.

H/W Specification.

Model appearance	
Dimensions (L x W x H)	PCBA : 158.3mm x 69.7mm x 20.5mm
Weight	PCBA ≈ 108g
Power parameter	
Power Consumption	Worst case 33.5W.
Operating temperature	-40°C ~ +85°C
Main chips	
PCIe Switch	Broadcom PEX89048 PCI Express PCIe 5.0 switch.
I/O Port	
Location	Description
PClex16	PCIe X16 Gen5 downstream slot.
PCIE_X1	PCIe X1 FFC connector. (Requires exclusive accessories)
PEX_SDB	Serial hardware debug port (1.8V UART.)
LED	
Location	Description
Link-LED	PCIe X16 Upstream link up and link speed LED (Blue light)
Link-LED2 (PCB bottom)	PCIe X16 Upstream link up and link speed LED (Blue light)
ERR-LED	System error LED, System failure or CPU detects parity errors. (Red light)
SLOT_LINK	PCIe X16 Downstream slot link up and link speed LED (Green light)
X1_LINK	PCIe X1 Downstream slot link up and link speed LED (Yellow light)
DIP 4 Position Switch	
PX_SEL (PCB bottom)	PCIe PRSNT2 Pin Switch, Default only No.4 ON , 1_2_3 OFF. (X16 mode.)

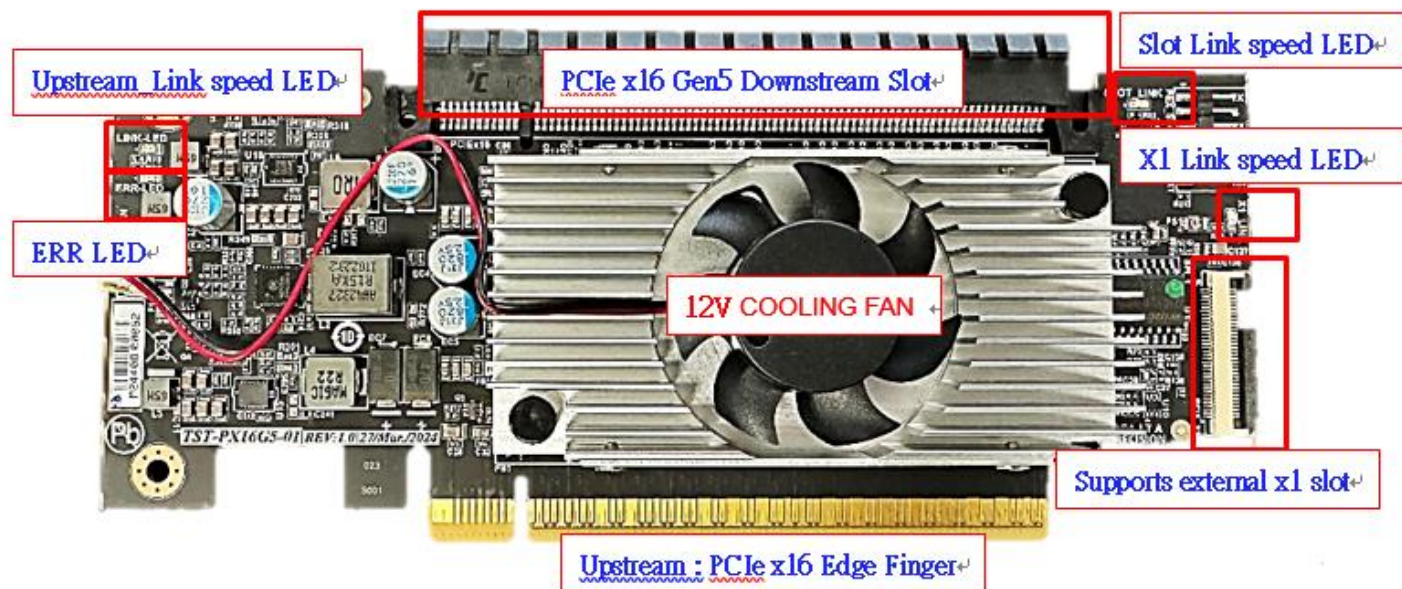
Please refer to the following description for each rate LED status.

- Gen1 (2.5 GHz) : Blinks at 0.25 Hz
- Gen2 (5 GHz) : Blinks at 0.5 Hz
- Gen3 (8 GHz) : Blinks at 1.0 Hz
- Gen4 (16 GHz) : Blinks at 2.0 Hz
- Gen5 (32 GHz) : always on

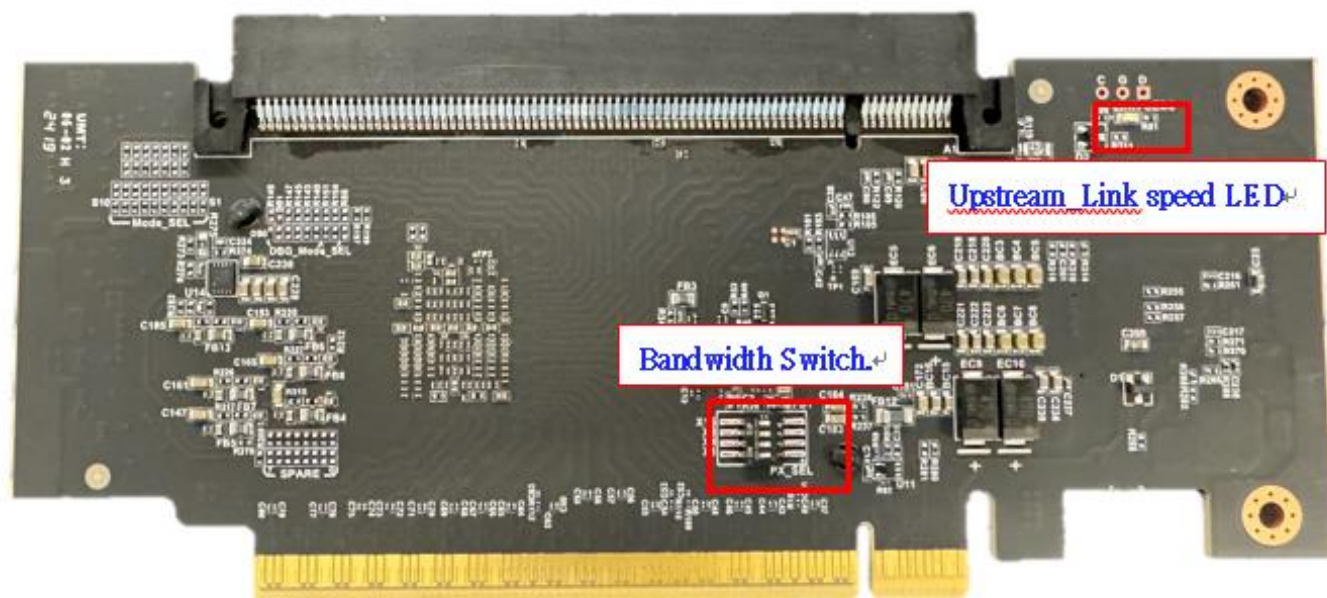
If the links is down,the Link LED is off.

Interface Description

PCBA TOP

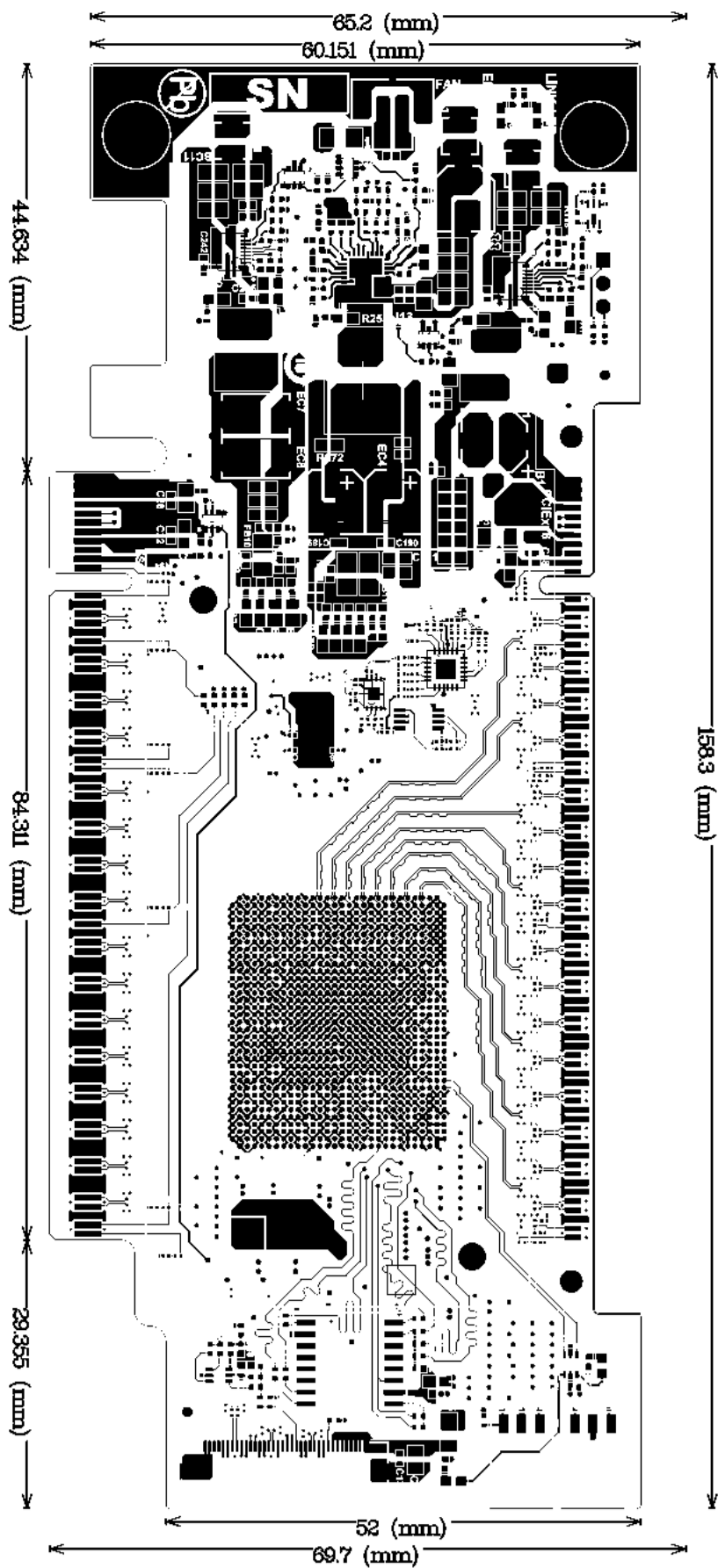


PCBA Bottom



PCBA Outline Specification.

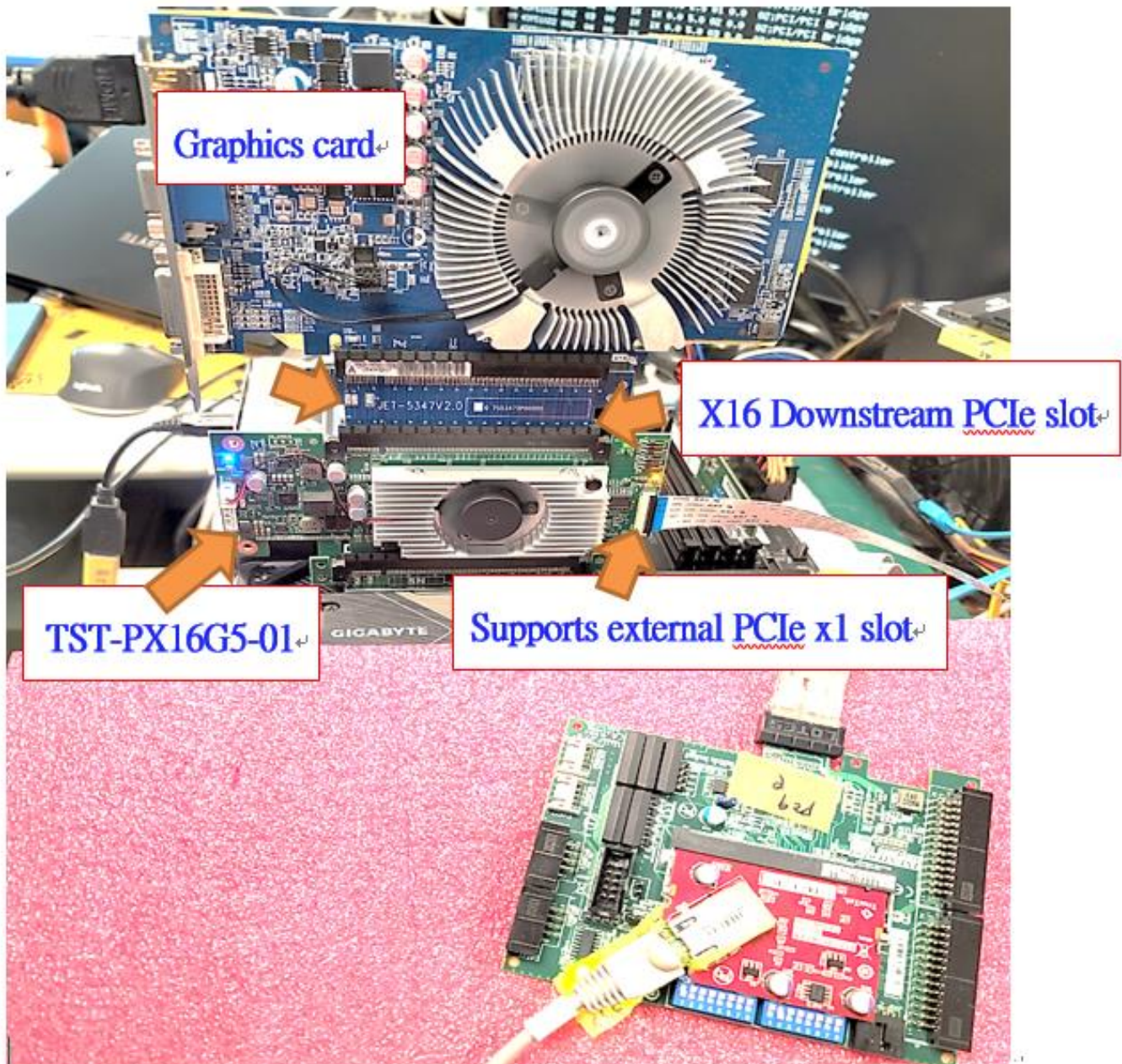
Unit: millimeter





Application Description

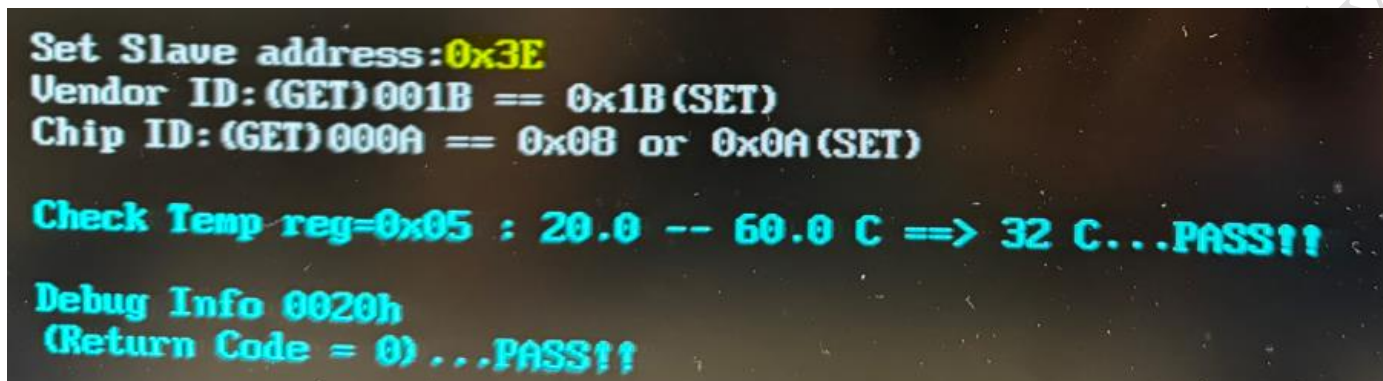
1. Insert the PX16G5 card into the PCIe x16 slot of the motherboard and use the PCIe test program to check the connection status.
2. The PX16G5 card has x16 Downstream Slot, which can support plugging in other PCIe devices or graphics cards for testing.
3. The PX16G5 card supports the FFC kit to extend a PCIe x1 Slot.



SMBUS Description.

TST-PX16G5-01 SMBUS address :

1. SMBUS_MUX : 0xE8 / Channel 2
2. Temperature sensor : 0x3E



=>0x05

Table 9. THE TS REGISTERS

Register Address	Register Name		Power-On Default	Read/Write
0x00	Capability Register		0x007F	Read
0x01	Configuration Register		0x0000	Read/Write
0x02	High Limit Register		0x0000	Read/Write
0x03	Low Limit Register		0x0000	Read/Write
0x04	Critical Limit Register		0x0000	Read/Write
0x05	Temperature Data Register		Undefined	Read
0x06	Manufacturer ID Register		0x1B09	Read
0x07	Device ID/Revision Register	Rev. B	0x0813	Read
		Rev. C	0x0A00	

=>an LSB of 0.0625°C

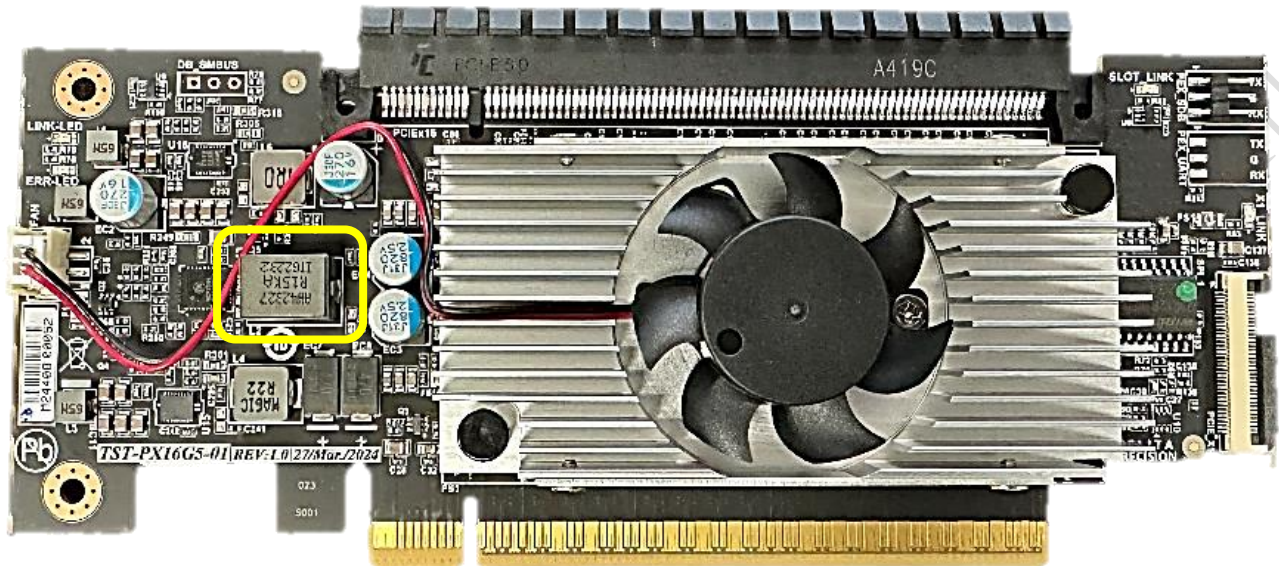
Table 16. 12-BIT TEMPERATURE DATA FORMAT

Binary (B12 to B0)	Hex	Temperature
1 1100 1001 0000	1C90	-55°C
1 1100 1110 0000	1CE0	-50°C
1 1110 0111 0000	1E70	-25°C
1 1111 1111 1111	1FFF	-0.0625°C
0 0000 0000 0000	000	0°C
0 0000 0000 0001	001	+0.0625°C
0 0001 1001 0000	190	+25°C
0 0011 0010 0000	320	+50°C
0 0111 1101 0000	7D0	+125°C

Note.

L2 Differential Material Description.

L2 = 10LC4-81150C-00R CORE 150nH 81A ITG SMD 10.7*7.8*8mm DCR=0.18m



L2 = 10LC4-63150C-00R CORE 150nH 63A/75A EATON SMD 10.8*8*8mm DCR=0.17m

