

### **ADD-SHPASHU-PDAC5M**

HP® 537963-B21 to Huawei® 02310QPR Compatible TAA Compliant 10GBase-CU SFP+ to SFP+ Direct Attach Cable (Passive Twinax, 5m)

#### **Features**

- Up to 10 Gbps bi-directional data links
- Compliant with SFF-8431
- Compliant with 10GFC
- 100 Ohm differential impedance
- Enhanced EMI design
- AC coupled inputs and outputs
- Operating Temperature Range: 0 to 70 Celsius
- Single 3.3V power supply
- RoHS Compliant and Lead-Free



#### **Applications**

- 10G Fiber Channel
- 10GBase Ethernet
- Serial Data Transmission

#### **Product Description**

This HP® 537963-B21 to Huawei® 02310QPR dual oem compatible 10GBase-CU SFP+ to SFP+ passive direct attach cable has a maximum reach of 5.0m (16.4ft). It is 100% HP® to Huawei® compatible and has been programmed, uniquely serialized, data-traffic and application tested to ensure that it is compliant and functional. This cable will initialize and perform identically to HP® and Huawei®'s individual cables and is built to meet or exceed OEM specifications. This product complies with MSA (Multi-Source Agreement) standards and is TAA (Trade Acts Agreement) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

AddOn's transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products."



## General Specifications

| Parameter             | Symbol | Min. | Typ.    | Max.       | Unit | Notes |
|-----------------------|--------|------|---------|------------|------|-------|
| Data Rate             | DR     |      | 10.3125 |            | Gbps | 1     |
| Bit Error Rate        | BER    |      |         | $10^{-12}$ |      |       |
| Operating Temperature | Tc     | 0    |         | 70         | °C   | 2     |
| Storage Temperature   | Tstg   | -40  |         | 85         | °C   | 3     |
| Power Supply Voltage  | Vcc    | 3.14 | 3.30    | 3.46       | V    | 4     |

### Notes:

1. IEEE 802.3ae.
2. Case Temperature.
3. Ambient Temperature.
4. For the electrical power interface.

## Cable Specifications

| Parameter              | Symbol | Min. | Typ.  | Max. | Unit     |
|------------------------|--------|------|-------|------|----------|
| Wire Gauge             |        |      | 24AWG |      | AWG      |
| Cable Impedance        | Z      | 90   | 100   | 110  | $\Omega$ |
| Cable Diameter         | OD     |      | 6.0   |      | mm       |
| Minimum Bending Radius | R      |      | 28    |      | mm       |
| Tolerance Range $\pm$  |        |      | 6     |      | cm       |

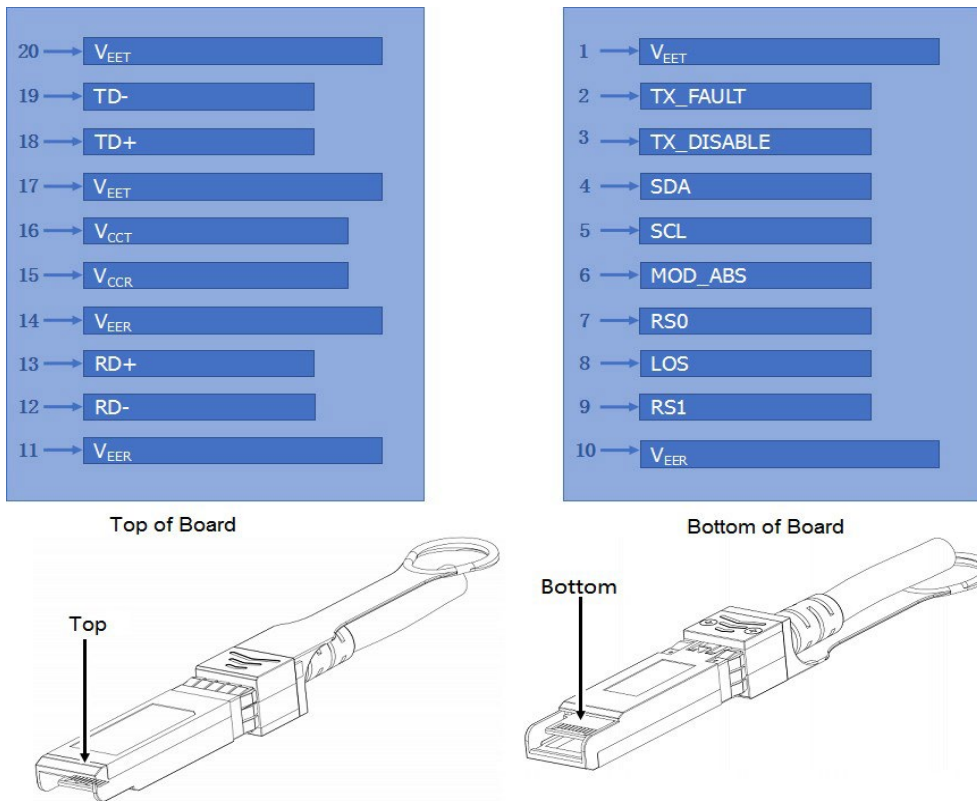
## Pin Descriptions

| Pin | Symbol     | Name/Description                                                                   | Notes |
|-----|------------|------------------------------------------------------------------------------------|-------|
| 1   | VeeT       | Transmitter Ground (Common with Receiver Ground).                                  | 1     |
| 2   | Tx_Fault   | Transmitter Failure Alarm. Not Used.                                               |       |
| 3   | Tx_Disable | Not Used. The signal turns off the module transmitter when it is “high” or “open.” |       |
| 4   | SDA        | Data Line for Serial ID.                                                           | 2     |
| 5   | SCL        | Clock Line for Serial ID.                                                          | 2     |
| 6   | MOD_ABS    | Module Absent. Grounded within the module.                                         | 2     |
| 7   | RS0        | No Connection Required.                                                            |       |
| 8   | LOS        | Loss of Signal Indication. “Logic 0” indicates normal operation.                   |       |
| 9   | RS1        | No Connection Required.                                                            |       |
| 10  | VeeR       | Receiver Ground (Common with Transmitter Ground).                                  | 1     |
| 11  | VeeR       | Receiver Ground (Common with Transmitter Ground).                                  | 1     |
| 12  | RD-        | Receiver Inverted Data Out. AC Coupled.                                            |       |
| 13  | RD+        | Receiver Non-Inverted Data Out. AC Coupled.                                        |       |
| 14  | VeeR       | Receiver Ground (Common with Transmitter Ground).                                  | 1     |
| 15  | VccR       | Receiver Power Supply.                                                             |       |
| 16  | VccT       | Transmitter Power Supply.                                                          |       |
| 17  | VeeT       | Transmitter Ground (Common with Receiver Ground).                                  | 1     |
| 18  | TD+        | Transmitter Non-Inverted Data In. AC Coupled.                                      |       |
| 19  | TD-        | Transmitter Inverted Data In. AC Coupled.                                          |       |
| 20  | VeeT       | Transmitter Ground (Common with Receiver Ground).                                  | 1     |

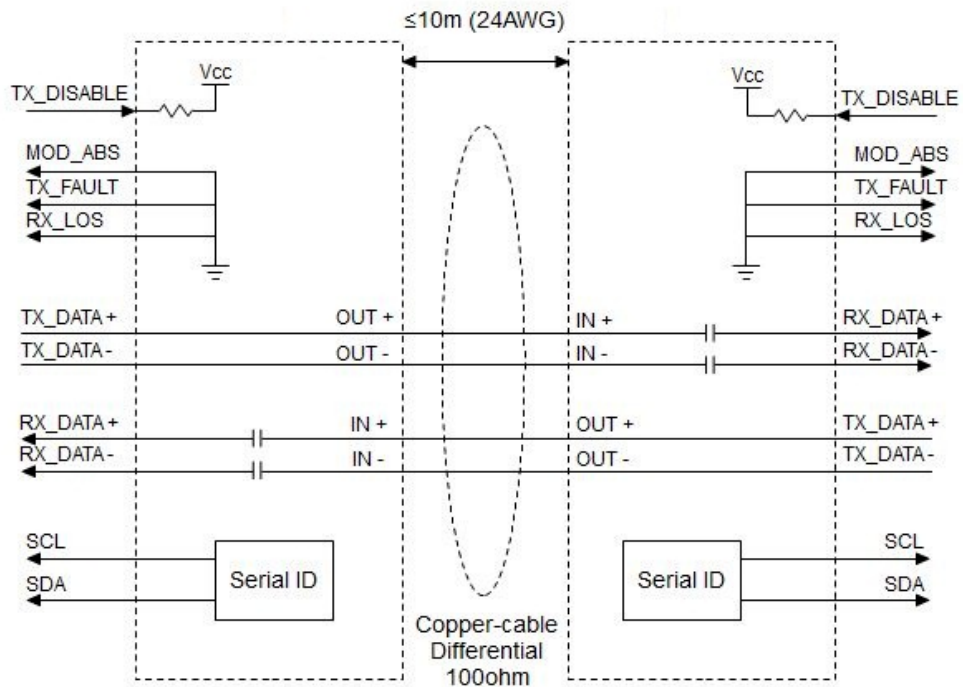
### Notes:

1. The circuit ground is isolated from the chassis ground.
2. Should be pulled up with 4.7k $\Omega$  to 10k $\Omega$  on the host board to a voltage between 2V and 3.6V.

## Electrical Pad Layout



## Block Diagram of Transceiver



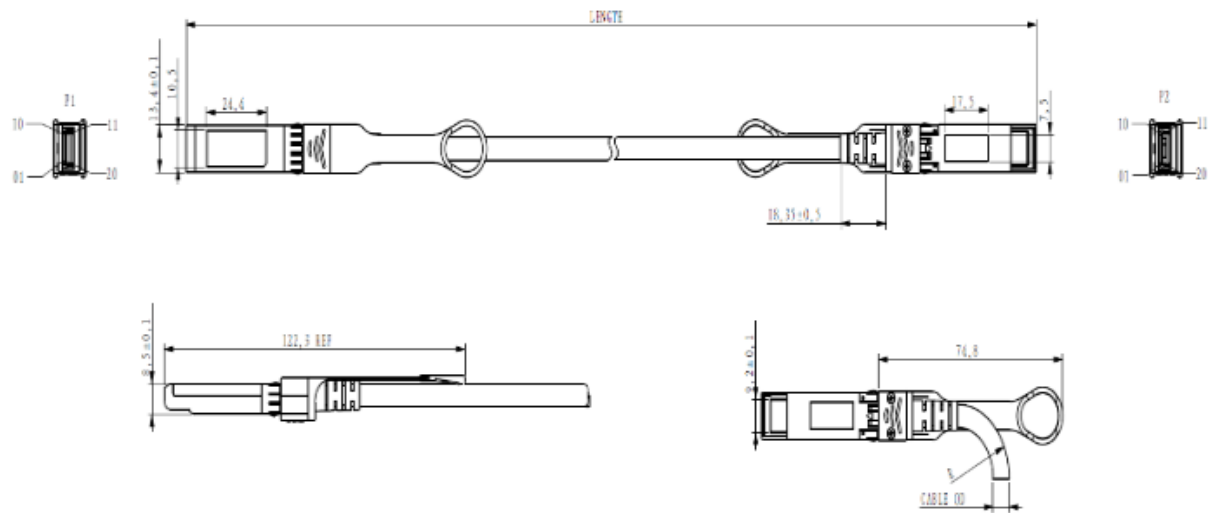
Weight

| Parameter            | Symbol | Typ. | Unit  | Notes |
|----------------------|--------|------|-------|-------|
| 24AWG Product Weight | GD24   | 96   | g/PCS | 1     |
| 24AWG Cable Weight   | GC24   | 50   | g/M   |       |
| Dust Cap Weight      | GS     | 0.80 | g/PCS |       |

Notes:

1. For example, the weight of a 6m cable with 24AWG is  $96+50*(6-1) + 0.80*2=347.6g$ .

Mechanical Specifications



All Dimensions are ±0.2mm Unless Otherwise Specified  
Unit: mm

## About AddOn Networks

In 1999, AddOn Networks entered the market with a single product. Our founders fulfilled a severe shortage for compatible, cost-effective optical transceivers that compete at the same performance levels as leading OEM manufacturers. Adhering to the idea of redefining service and product quality not previously had in the fiber optic networking industry, AddOn invested resources in solution design, production, fulfillment, and global support.

Combining one of the most extensive and stringent testing processes in the industry, an exceptional free tech support center, and a consistent roll-out of innovative technologies, AddOn has continually set industry standards of quality and reliability throughout its history.

Reliability is the cornerstone of any optical fiber network and is ingrained in AddOn's DNA. It has played a key role in nurturing the long-term relationships developed over the years with customers. AddOn remains committed to exceeding industry standards with certifications from ranging from NEBS Level 3 to ISO 9001:2005 with every new development while maintaining the signature reliability of its products.



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