

## 487658-B21-10MA-C

HP® 487658-B21-10MA Compatible TAA Compliant 10GBase-CU SFP+ Direct Attach Cable (Active Twinax, 10m)

### Features:

- Up to 10Gbps bi-directional data links
- Dual SFP Connectors
- Industry Standard small form pluggable
- Hot Pluggable
- Single Power Supply 3.3V
- Operating Temperature: 0 to 70 Celsius
- RoHS Compliant and Lead-Free



### Applications:

- 10G Ethernet
- 10G Fibre Channel

### Product Description

This is a HP® 487658-B21-10MA compatible 10GBase-CU SFP+ to SFP+ direct attach cable that operates over active copper with a maximum reach of 10.0m (32.8ft). It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. This direct attach cable is TAA (Trade Agreements Act) compliant, and is built to comply with MSA (Multi-Source Agreement) standards. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

ProLabs' 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 Case Temperature | T <sub>c</sub>   | 0    |         | 70         | °C    | 2     |
| Storage Temperature        | T <sub>stg</sub> | -40  |         | 85         | °C    | 3     |
| Input Voltage              | V <sub>cc</sub>  | 3.14 | 3.3     | 3.46       | V     | 4     |
| Supply Current             | I <sub>cc</sub>  |      | 100     | 300        | mA    | 4     |
| Cable Impedance            | Z                | 90   | 100     | 110        | Ω     |       |
| Product Weight             | GD               |      | 88      |            | g/PCS |       |
| Cable Weight               | GC               |      | 42      |            | G/M   |       |
| Dust Cap Weight            | GS               |      | 0.80    |            | g/PCS |       |
| Wire Gauge                 |                  |      | 28      |            | AWG   |       |
| Tolerance Range            |                  |      | 8       |            | ±cm   |       |

### Notes:

1. IEEE 802.3ae compatible.
2. Case temperature.
3. Ambient temperature.
4. For electrical power interface.

## Pin Descriptions

| Pin | Symbol     | Name/Description                                                | Notes |
|-----|------------|-----------------------------------------------------------------|-------|
| 1   | VeeT       | Transmitter ground. Common with receiver ground.                | 1     |
| 2   | Tx_Fault   | Transmitter Fault.                                              |       |
| 3   | Tx_Disable | Transmitter Disable. Laser output disabled on "high" or "open." | 2     |
| 4   | SDA        | Data line for Serial ID.                                        | 3     |
| 5   | SCL        | Clock line for Serial ID.                                       | 3     |
| 6   | MOD_ABS    | Module absent. Grounded within the module.                      | 3     |
| 7   | RS0        | No connection required.                                         |       |
| 8   | LOS        | Loss of Signal. Logic 0 indicated normal operation.             | 4     |
| 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 NonInverted 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. Circuit ground is isolated from chassis ground.
2. Disabled: Tdis>2V or open, Enabled Tdis<0.8V.
3. Should be pulled up with 4.7k $\Omega$ -10k $\Omega$  on host board to a voltage between 2V and 3.6V.
4. LOS is open collector output.

Electrical Pad Layout



Block Diagram



Mechanical Specifications



## About ProLabs

Our extensive experience comes as standard. For over 20 years ProLabs has delivered optical connectivity solutions that give our customers freedom and choice through our ability to provide seamless interoperability. At the heart of our company is the ability to provide state-of-the-art optical transport and connectivity solutions that are compatible with more than 100 optical switching and transport platforms.

## A Complete Portfolio of Network Solutions

ProLabs is focused on innovations in optical transport and connectivity. The combination of our knowledge of optics and networking equipment enables ProLabs to be your single source for optical transport and connectivity solutions from 100Mb to 1.6T while providing innovative solutions that increase network efficiency. We provide the optical connectivity expertise that is compatible with and enhances your switching and transport equipment.

## The Trusted Partner

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure compatible products, and immediate answers to your questions. With Engineering and Manufacturing offices in the U.K. and U.S. augmented by field offices throughout the U.S., U.K. and Asia, ProLabs is able to be our customers best advocate 24 hours a day.



## Contact Information

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