

# DATA SHEET

## DVI Active Optical Cable, DVFC-100

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## Description

New active optical DVI cable, DVFC-100 is designed compact enough to be fitted into various installation environments. The DVFC-100 enables to transmit WUXGA (1920x1200) or 1080p at 60Hz signal up to 150m (492feet) over optical hybrid cable, avoiding any tricks such as scaling or data compression for lessening a burden of data transmission.

The DVFC-100 gives slim, light, easy installation like a general copper DVI cable. With low power consumption technology in OPTICIS, the DVFC-100 can be operated by DDC 5V in DVI port without any external DC power or USB power.

There are male DVI-D connectors at each end. The high-speed graphic data transmission is accomplished by using a VCSEL array inside the transmitter connector, and a Pin-PD array inside the receiver connector.

The shipping items are shown as follows;

- 1) One (1) DVI AOC cable
- 2) User Manual

## Features

- Extends WUXGA (1920x1200) at 60Hz or 1080p at 60Hz (36bit, 3.4 Gbps/ch).
- Operated by DVI source without external power.
- Transmits DVI data up to 150m (492feet) over Optical hybrid cable.
- Supports HDMI1.4, 36bit color depth (4K 30Hz).
- Supports 3D contents transmission.
- Complies with EDID, HDCP
- Certifications: FCC /CE standards for EMI/RFI emission.

## Applications

- Home AV
- Digital signage
- Control room / AV Rental Staging
- Conference room
- Any High Definition Display Application

## Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these of any other conditions in excess of those given in the operational sections of the datasheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

| Parameter                        | Symbol                         | Min  | Typ | Max | Units |
|----------------------------------|--------------------------------|------|-----|-----|-------|
| Storage Temperature <sup>1</sup> | T <sub>ST</sub>                | -30  |     | 70  | °C    |
| Volt Supply <sup>1</sup>         | V <sub>CC-V<sub>EE</sub></sub> | -0.3 |     | 12  | V     |
| Relative Humidity <sup>2</sup>   | RH                             | 8    |     | 90  | %     |
| Electrostatic Discharge(Air)     | ESD                            | -8   |     | +8  | KV    |

## Recommended Operating Conditions

| Parameter                        | Symbol                            | Min | Typ | Max  | Units |
|----------------------------------|-----------------------------------|-----|-----|------|-------|
| Bitrate                          | B                                 |     |     | 3.4  | Gbps  |
| Operation Temperature Range      | T <sub>O</sub>                    | 0   |     | 50   | °C    |
| Supply Voltage                   | V <sub>CC</sub>                   | 4   | 5   | 6    | V     |
| Supply Current                   | I <sub>CC</sub>                   |     | 45  | 50   | mA    |
| Differential Impedance           | R                                 |     | 100 |      | ohm   |
| <b>TX</b>                        |                                   |     |     |      |       |
| Input Voltage differential (P-P) | V <sub>IP</sub> – V <sub>IN</sub> | 400 |     | 1500 | mV    |
| Input Rise / Fall time           | T <sub>R</sub> , T <sub>F</sub>   | 50  |     | 75   | Ps    |
| Input Skew between differential  |                                   |     |     | 25   | Ps    |
| <b>RX</b>                        |                                   |     |     |      |       |
| Output differential Voltage(P-P) | V <sub>OP</sub> -V <sub>ON</sub>  | 500 | 600 | 800  | mV    |
| Output pull-up resistor          | R <sub>P</sub>                    | 40  | 50  | 60   | ohm   |

## Cable Fabric

4 channel Optical Ribbon Fiber  
 6 channel Copper Ribbon Cable  
 Shield jacket & shield cable  
 PVC cable jacket

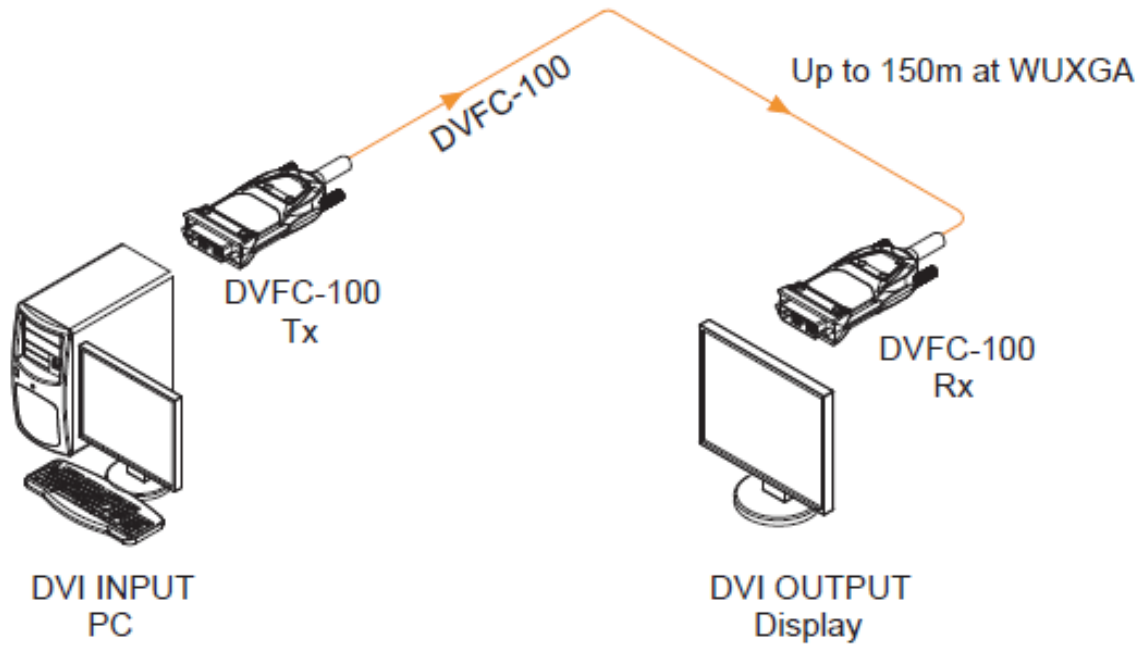
## DVI PIN Description

| Pin | Symbol          | Functional Description   |
|-----|-----------------|--|
| 1   | CH2-            | TMDS Data Signal Channel 2 Negative  |
| 2   | CH2+            | TMDS Data Signal Channel 2 Positive  |
| 3   | GND             | TMDS Data Signal Channel 2 Shield  |
| 4   |                 |  |
| 5   |                 |  |
| 6   | DDC Clock       | DDC Clock line for DDC2B communication   |
| 7   | DDC Data        | DDC Data line for DDC2B communication  |
| 8   | N.C.            |  |
| 9   | CH1-            | TMDS Data Signal Channel 1 Negative  |
| 10  | CH1+            | TMDS Data Signal Channel 1 Positive  |
| 11  | GND             | TMDS Data Signal Channel 1 Shield  |
| 12  |                 |  |
| 13  |                 |  |
| 14  | 5 V             | 5 V Input for Transmitter from Host<br>5 V Output for Monitor from Receiver            |
| 15  | GND             | Ground   |
| 16  | Hot plug Detect | Signal is driven by monitor to enable the system to identify the presence of a monitor |
| 17  | CH0-            | TMDS Data Signal Channel 0 Negative  |
| 18  | CH0+            | TMDS Data Signal Channel 0 Positive  |
| 19  | GND             | TMDS Data Signal Channel 0 Shield  |
| 20  |                 |  |
| 21  |                 |  |
| 22  | GND             | TMDS Clock Signal Shield   |
| 23  | CLK+            | TMDS Clock Channel Positive  |
| 24  | CLK-            | TMDS Clock Channel Negative  |

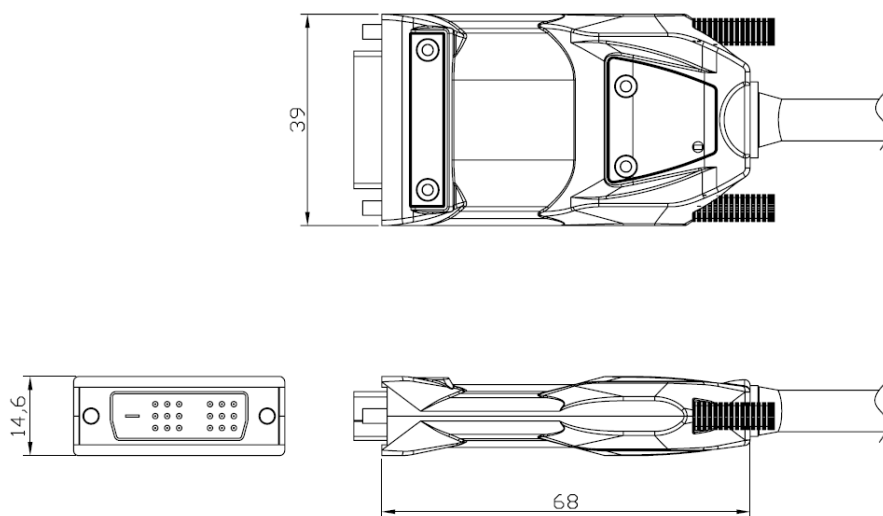
## Reliability TEST

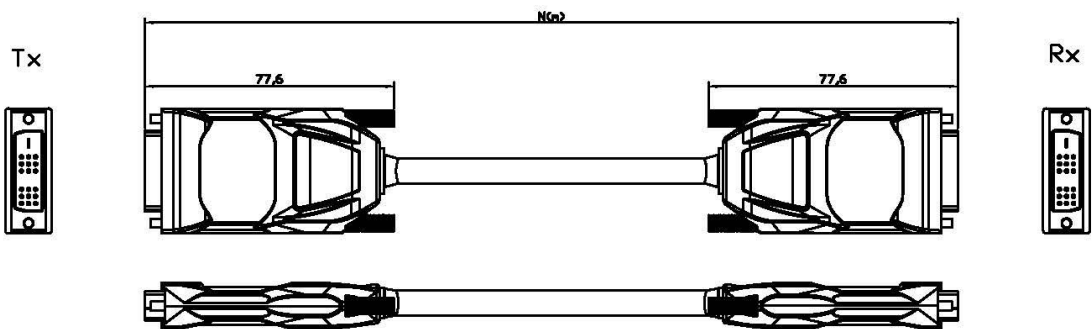
| Parameter                 | Specification                        |
|---------------------------|--------------------------------------|
| Cable                     |                                      |
| Endurance at Bend Radius  | Over 10k cycles at 50 mm Radius      |
| Pull Strength             | 44 pounds                            |
| Minimum Bend Radius       | 78mm                                 |
| Operation                 |                                      |
| High Temp & High Humidity | 40 °C / 95% / 120hr                  |
| Temp cycling              | -10~60°C / 30min / 20 cycle          |
| High Temp                 | 60 °C / 168hr                        |
| Storage                   |                                      |
| Thermal Shock             | - 20 °C / 75 °C Each 30min (20cycle) |

### Connection Diagram



**Dimensions (L\*W\*H):** 68 x 39 x 14.6mm





| Cable length<br>N(m) |
|----------------------|
| 10                   |
| 15                   |
| 20                   |
| 30                   |
| 40                   |
| 50                   |
| 70                   |
| 100                  |

