

# DATA SHEET

## HDMI – Active Optical Cable HDFC-200D

### Contents

- Description
- Features
- Applications
- Absolute Maximum Ratings
- Recommended Operating Conditions
- Physical Characteristics
- Pin Description
- Connection Diagram
- Dimensions

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## ■ Description

Detachable HDMI 2.0 active optical cable, HDFC-200D, enables to transmit 4K (4096x2160) at 60Hz signal up to 100m (384feet) over plenum graded & LSZH hybrid cable. It avoids any scaling or data compression for lessening a burden of data transmission.

HDFC-200D is designed compact enough to be fitted into various installation environments with cutting edge technology performance.

HDFC-200D offers perfect flexibility during installation by separating HDMI connector part and Active Optical Cable part. It gives slim, light, easy installation like a general copper HDMI cable.

It can be operated by external USB power on the RX side of the cable. Optional USB power cable on TX side is available upon request.

High-Retention HDMI connector, which allows for more retention force than standard HDMI connector, prevents accidental disconnection.

HDFC-200D is compliant with HDMI standards features like CEC, EDID, and HDCP 2.2 for better installation flexibility and compatibility. It also supports HDR to deliver more realistic, and objective video signal.

## ■ Features

- Extends up to 4K (4096x2160) at 60Hz (RGB & YCbCr : 4:4:4)
- Transmits HDMI 2.0 data up to 100m (328feet) over hybrid cable
- Adopts plenum graded & LSZH (Low Smoke Zero Halogen) hybrid cable
- Offers perfect flexibility during installation by separating HDMI connector from cable
- Prevents accidental disconnection by using High-Retention HDMI connector
- Supports 3D contents transmission
- Supports HDMI2.0 standards feature
- Complies with CEC, EDID, and HDCP 2.2
- Supports HDR at 10 bit or 12 bit speeds respectively within its maximum bandwidth, 18Gbps

## ■ Applications

- Home AV system
- Digital Signage
- Control room
- Conference room
- Rental staging

## ■ 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 or 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> | -40 |     | 85  | °C    |
| Supply Volt <sup>1</sup>         | V <sub>CC</sub> |     | 5   | 6   | V     |
| Relative Humidity <sup>2</sup>   | RH              |     |     | 90  | %     |
| Electrostatic Discharge          | ESD             | -8  |     | +8  | KV    |

## ■ Recommended Operating Conditions

| Parameter                   | Symbol          | Min | Typ | Max | Units |
|-----------------------------|-----------------|-----|-----|-----|-------|
| Bitrate/Channel             | B               |     |     | 6   | Gbps  |
| Operation Temperature Range | T <sub>O</sub>  | 0   |     | 60  | °C    |
| Supply Voltage              | V <sub>CC</sub> | 4.8 | 5   | 5.2 | V     |
| Operating Current           | I <sub>CC</sub> |     | 290 | 320 | mA    |
| Differential Impedance      | R               |     | 100 |     | ohm   |

## ■ Physical Characteristics

| Parameter             | Description                                    |
|-----------------------|--|
| Cable Type            | Hybrid Cable<br>MMF(OM2) + 6C Electrical Wires |
| Cable Jacket          | LSZH/Plenum                                    |
| Cable Dimensions(WxH) | 3.9 x 2.7 mm                                   |
| Pull Strength         | 15 kg  |
| Minimum Bend Radius   | 70 mm  |

<sup>1</sup> Stresses listed may be applied without causing damage. Functionality at or above the values listed is not implied. Exposure to these values for extended periods may affect reliability.

<sup>2</sup> Non-condensing environment.

## ■ HDMI A-Type PIN Description

| Pin Number | Symbol    | Functional Description              |
|------------|-----------|-------------------------------------|
| 1          | CH2+      | TMDS Data Signal Channel 2 Positive |
| 2          | GND       | TMDS Data Signal Channel 2 Shield   |
| 3          | CH2-      | TMDS Data Signal Channel 2 Negative |
| 4          | CH1+      | TMDS Data Signal Channel 1 Positive |
| 5          | GND       | TMDS Data Signal Channel 1 Shield   |
| 6          | CH1-      | TMDS Data Signal Channel 1 Negative |
| 7          | CH0+      | TMDS Data Signal Channel 0 Positive |
| 8          | GND       | TMDS Data Signal Channel 0 Shield   |
| 9          | CH0-      | TMDS Data Signal Channel 0 Negative |
| 10         | CLK+      | TMDS Clock Channel Positive         |
| 11         | GND       | TMDS Clock Channel Shield           |
| 12         | CLK-      | TMDS Clock Channel Negative         |
| 13         | CEC       | CEC Consumer Electronics Control    |
| 14         | Utility   | NC                                  |
| 15         | SCL       | SCL HDCP/DDC                        |
| 16         | SDA       | SDA HDCP/DDC                        |
| 17         | GND       | DDC/CEC Ground & DDC/CEC shield     |
| 18         | +5V Power | +5V Power                           |
| 19         | HPD       | HEAC-                               |

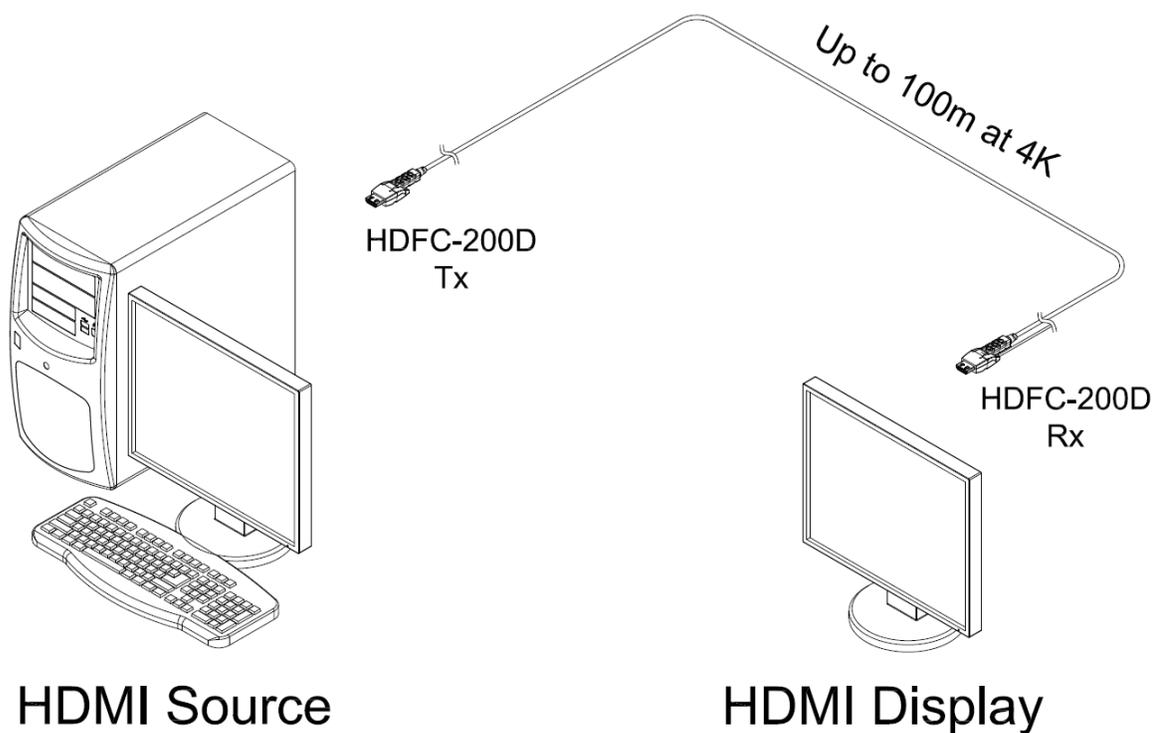
## ■ Micro HDMI Connector PIN Description

| Pin Number | Symbol | Functional Description              |
|------------|--------|-------------------------------------|
| 1          | CH2+   | TMDS Data Signal Channel 2 Positive |
| 2          | GND    | TMDS Data Signal Channel 2 Shield   |
| 3          | CH2-   | TMDS Data Signal Channel 2 Negative |
| 4          | CH1+   | TMDS Data Signal Channel 1 Positive |
| 5          | GND    | TMDS Data Signal Channel 1 Shield   |
| 6          | CH1-   | TMDS Data Signal Channel 1 Negative |
| 7          | CH0+   | TMDS Data Signal Channel 0 Positive |
| 8          | GND    | TMDS Data Signal Channel 0 Shield   |
| 9          | CH0-   | TMDS Data Signal Channel 0 Negative |
| 10         | CLK+   | TMDS Clock Channel Positive         |
| 11         | GND    | TMDS Clock Channel Shield           |

|    |             |                                  |
|----|-------------|----------------------------------|
| 12 | CLK-        | TMDS Clock Channel Negative      |
| 13 | CEC         | CEC Consumer Electronics Control |
| 14 | Utility     | NC                               |
| 15 | SCL         | SCL HDCP/DDC                     |
| 16 | SDA         | SDA HDCP/DDC                     |
| 17 | Utility_2   | 3.3V(internal pull up)           |
| 18 | +3.3V Power | +3.3V Power                      |
| 19 | HPD         | HEAC-                            |

(Internal design of PIN arrangement)

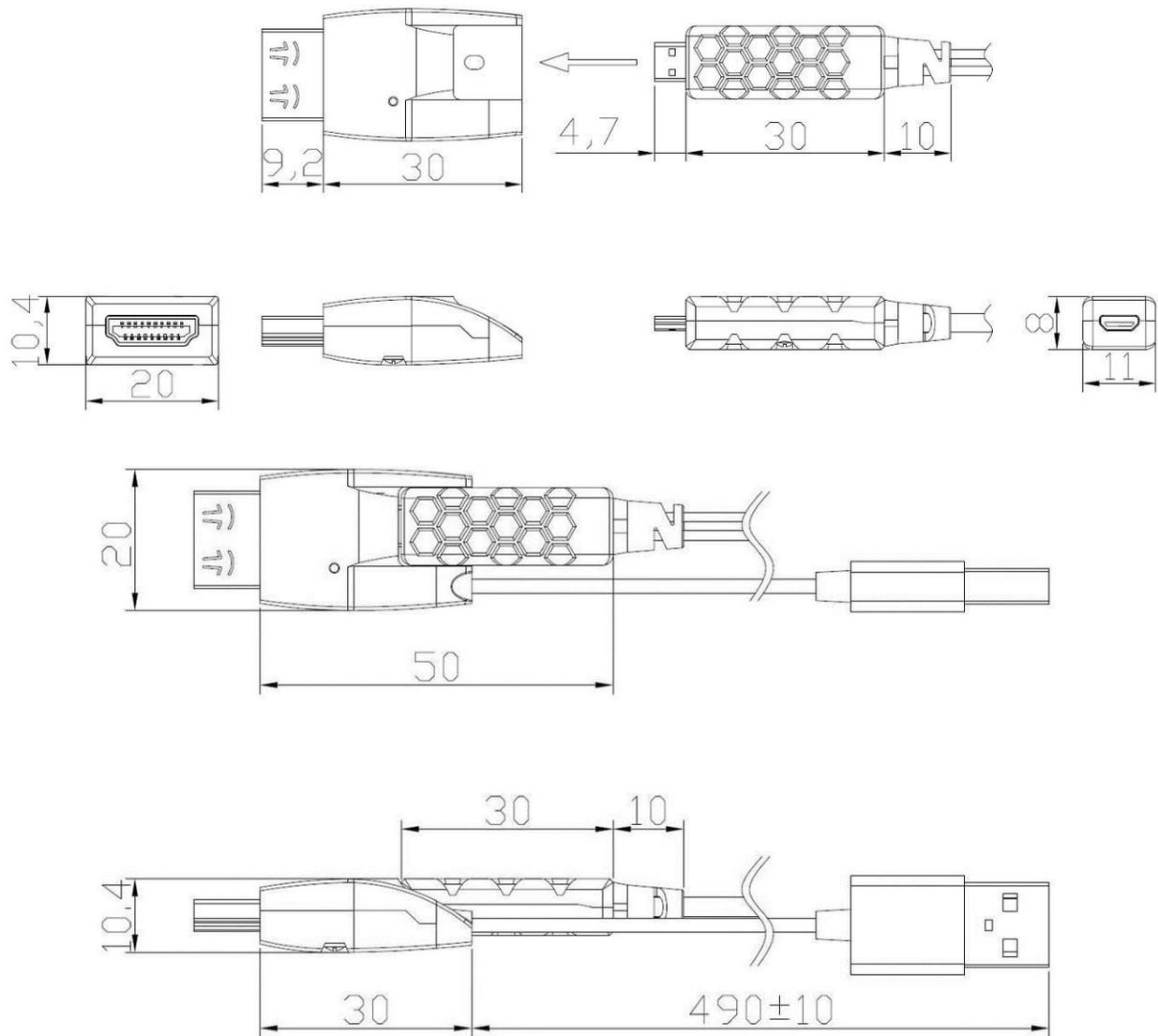
## ■ Connection Diagram



Example : PC to HDMI Monitor Set-up

- Source : DVD, PC, Set-top box, Console
- Display : UHD TV, Projector, 4K monitor

■ Dimensions



Dimensions (L\*W\*H): 50 x 20 x 10.4mm