

## Features

- Single-channel video transmitters and receivers
- 9-bit uncompressed digital video
- High-quality video  $\geq 63\text{dBw}$  SNR
- Transports duplex "up the coax" PTZ and camera control/data channel information
- Extended distance transmitter (-EX) overcomes distance limitations of standard "up the coax" systems (-EX version)
- Standalone and rack-mount versions
- Network Management System (NMS) compatible



## 9281D Series

### One-channel video with Up-the-Coax

#### Description

The Optelecom® 9281D series modules digitise and transport one video plus duplex data in "up the coax"-type camera control systems such as the Panasonic Proteus™, Pelco, TOA and other similar systems over one optical fiber.

The Extended distance transmitter (-EX), used with a standard receiver, overcomes the typical 1.5km distance limitation of standard copper and unbuffered fiber "up the coax" systems by buffering the data and properly injecting it onto the video signal in the subsequent frame.

Uncompressed 9-bit digitising, oversampling, and digital filtering ensure a very high transmission performance, exceeding the requirements of the EIA RS-250C short haul specification.

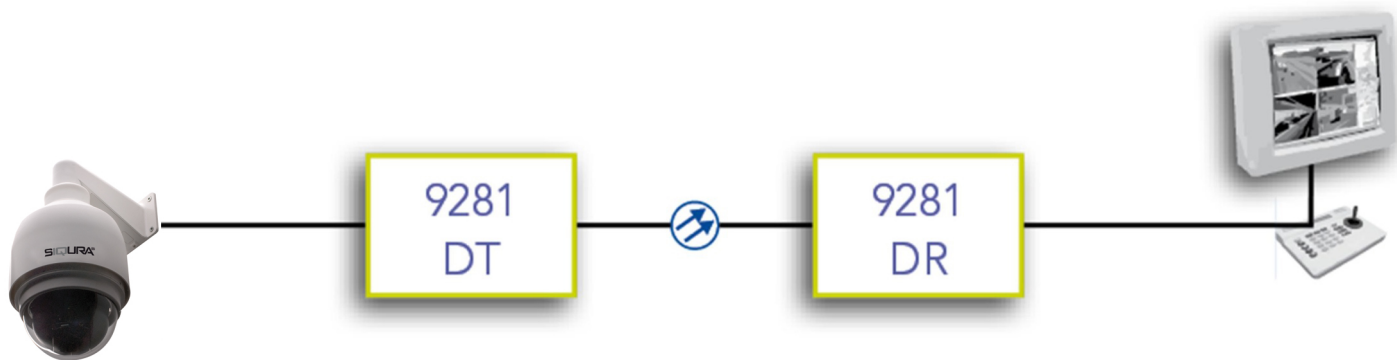
The wide operating temperature range of these units makes the 9281D series well-suited for environmentally harsh applications such as traffic monitoring, video surveillance in city centers, and federal and critical infrastructures.

The 9281D series comes as a rack-mount version, suitable for a 9002, 9003-2, or 9008 power supply cabinet, or as a standalone unit. The 9281D series modules are managed with the Optelecom® Network Management System (NMS).

To create a standalone version of the 9281D rack-mount card, use the 9003-2 mini chassis.

# Technical Specifications

## 9281D Series



### Video

|                       |                               |
|-----------------------|-------------------------------|
| Video format          | NTSC, PAL                     |
| Video input           | 1Vpp into 75Ω                 |
| Connector             | BNC                           |
| Bandwidth             | 5Hz to 6.5MHz (-3dB)          |
| Differential gain     | 1.0%                          |
| Differential phase    | 0.7°                          |
| Signal-to-noise ratio | ≥63dBw                        |
| Video encoding        | Uncompressed 9-bit linear PCM |
| Video sampling rate   | 16MHz                         |

### Power requirements

|             |                |
|-------------|----------------|
| 9281DT      |                |
| Voltage     | 6VDC (chassis) |
| Current     | 360mA          |
| 9281DT(-EX) |                |
| Voltage     | 6VDC (chassis) |
| Current     | 390mA          |
| 9281DR      |                |
| Voltage     | 6VDC (chassis) |
| Current     | 340mA          |
| 9285DT(-EX) |                |
| Voltage     | 8-15VDC        |
| Current     | 230mA at 12VDC |
| 9285DR      |                |
| Voltage     | 8-15VDC        |
| Current     | 150mA at 12VDC |

# Technical Specifications

## 9281D Series

### Management

|                       |  |
|-----------------------|--|
| LED status indicators |  |
| 9281DT, 9281DT-EX     | Sync, video present, data active, VD2 active                   |
| 9285DT, 9285DT-EX     | Sync/not sync, loop, video present, data active, VD2 active    |
| 9281DR                | Sync, Tx video present, data active, VD2 active                |
| 9285DR                | Sync/not sync, loop, Tx video present, data active, VD2 active |
| Management system     | 9900 Network Management System (NMS)                           |

### Environmental

|                       |                                  |
|-----------------------|----------------------------------|
| Operating temperature | -40°C to +74°C (-40°F to +165°F) |
| Storage temperature   | -55°C to +85°C (-67°F to +185°F) |
| Relative humidity     | <95% with no condensation        |

### Mechanical

|                        |  |
|------------------------|--|
| 9281DT, 9281DR         |  |
| Housing                | 1-slot card, 9000 series chassis           |
| Dimensions (h x w x d) | 154.9 x 40.6 x 218.4mm (6.1 x 1.6 x 8.6in) |
| Weight                 | 272.0g (9.59oz)                            |
| 9285DT, 9285DR         |  |
| Housing                | Standalone chassis (size 5)                |
| Dimensions (h x w x d) | 40.6 x 81.3 x 127.0mm (1.6 x 3.3 x 5.0in)  |
| Weight                 | 453.6g (1.0lb)                             |

### Optical

|                                   | 9281DT/DR-MMH<br>TX/RX               | 9281DT/DR-SM<br>TX/RX      | 9281DT-EX/DR-SM<br>TX/RX |
|-----------------------------------|--------------------------------------|----------------------------|--------------------------|
| Fiber type                        | MM (62.5)                            | SM (09)                    | SM (09)                  |
| Output wavelength                 | 1310nm/1550nm                        | 1310nm/1550nm              | 1310nm/1550nm            |
| Output Power                      | -7dBm/-7dBm                          | -7dBm/-7dBm                | -7dBm/-7dBm              |
| Input sensitivity                 | -29dBm/-30dBm                        | -32dBm/-32dBm              | -32dBm/-32dBm            |
| System link budget                | 22dB <sup>1</sup> /23dB <sup>1</sup> | 23dB/25dB                  | 25dB/25dB                |
| Fiber length (range) <sup>2</sup> | approx. 1.5km <sup>3</sup>           | approx. 1.5km <sup>3</sup> | 62km                     |
| Connector type                    | ST (others optional)                 | ST (others optional)       | ST (others optional)     |

<sup>1</sup>For 50/125µm fiber, subtract 4dB.

<sup>2</sup>Range may be limited by modal and chromatic dispersion, fibre quality, and fiber bandwidth.

<sup>3</sup>Varies slightly depending on the "up-the-coax" camera system used.

# Technical Specifications

## 9281D Series

### Ordering information

| Models          | Description                                      | Fiber type |
|-----------------|--|------------|
| 9281DT/MMH-ST   | 1-channel "Up-the-Coax"                          | 1xMM       |
| 9281DR/MMH-ST   | 1-channel "Up-the-Coax"                          | 1xMM       |
| 9281DR/SM-ST    | 1-channel "Up-the-Coax"                          | 1xSM       |
| 9281DT-EX/SM-ST | Extended distance transmitter                    | 1xSM       |
| 9285DT/XX-ST    | Standalone version of the 9281 transmitter model |            |
| 9285DR/XX-ST    | Standalone version of the 9281 receiver model    |            |
| PSA-UN12DC      | Wall-Wart, switching power supply                |            |
| PSR-12DC        | DIN rail mounting, switching power supply        |            |



The quality management system used in the development, production, sales, and support of this product is ISO 9001:2008 certified by LRQA.

© Siquira B.V. - January 2013 Version 1.0 - Subject to modification.

