

Features

- Single-channel digital video and duplex data transmitters and receivers
- 9-bit uncompressed digital video
- High-quality video $\geq 63\text{dBw}$ SNR
- Compatible with NTSC and PAL standards
- 1 duplex user-configurable data channel
- Standalone and rack-mount versions
- Pelco in-dome version
- Network Management System (NMS) compatible



9221D Series

One-channel video, duplex data

Description

The Optelecom® 9221D series models transport one video signal and one duplex data signal over one optical fiber. They combine high-quality digital video transmission with duplex PTZ or other serial data in one easy-to-use unit.

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.

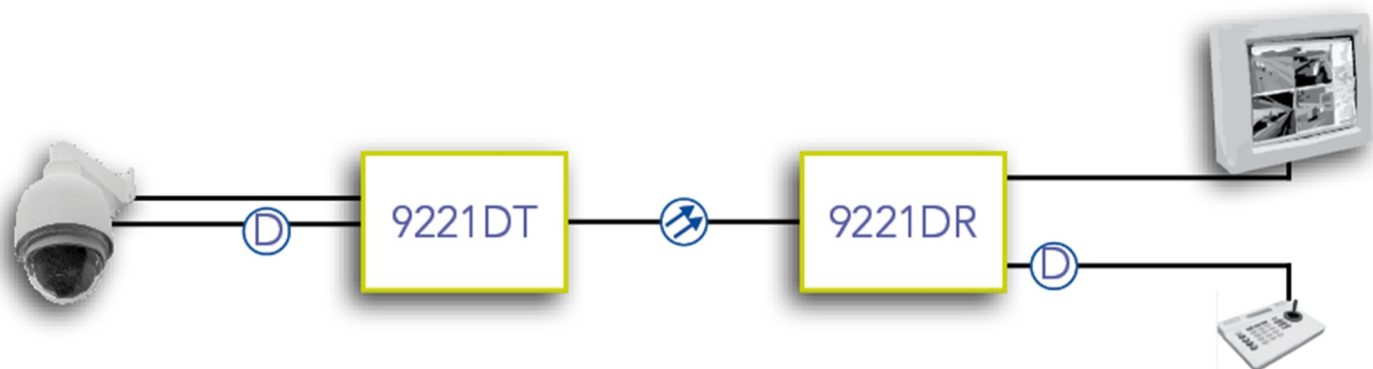
The wide operating temperature range of these units makes the 9221D series well-suited for environmentally harsh applications such as traffic monitoring, video surveillance in city centers, and federal and critical infrastructures.

The 9221 series comes as a rack-mount version suitable for a 9002 or 9008 power supply cabinet, or as a standalone unit (9225). The 9221 series modules are managed with the Optelecom Network Management System (NMS).

To create a standalone version of the 9221D rack-mount card, use the 9003-2 mini chassis.

Technical Specifications

9221D Series



Video

Video format	NTSC, PAL
Video input	1Vpp into 75Ω
Connector type	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

Data

Port	Data
Interface	Selectable duplex RS-232, RS-422 2- or 4-wire, RS-485 2- or 4-wire, Manchester, Bi-phase
Rate	RS-232, RS-422, and RS-485 up to 128kb/s (auto baud), Manchester Bi-phase 32kb/s
Connector type	5-pin removable screw terminal except the 9229DT-P that mounts directly to the camera PC board

Management

LED status indicators	
9221DT, 9225DT	Video in, sync, not sync, loop, RD
9221DR, 9225DR	Tx video in, loop, sync, not sync, RD
9229DT-P	Sync, not loop, RD
Management system	9900 Network Management System (NMS)

Technical Specifications

9221D Series

Power requirements

9221DT

Voltage	6VDC (chassis)
Current	500mA

9221DR

Voltage	6VDC (chassis)
Current	450mA

9225DT

Voltage	9 to 15VDC
Current	280mA

9225DR

Voltage	9 to 15VDC
Current	500mA

9229DT

Voltage	Supplied by camera
Current	160mA

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

9221D

Housing	1-slot card, 9000 series chassis
Dimensions (h x w x d)	154.9 x 20.3 x 218.4mm (6.1 x 0.8 x 8.6in)
Weight	272g (9.55oz)

9225D

Housing	Standalone
Dimensions (h x w x d)	40.6 x 81.3 x 127.0mm (1.6 x 3.2 x 5.0in)
Weight	363g (12.8oz)

9229DT-P

Housing	Pelco Spectra III internal mount
Dimensions (h x w x d)	78.7 x 19 x 121.9mm (3.1 x 0.75 x 4.8in)
Weight	90.7g (3.2oz)

Technical Specifications

9221D Series

Optical

	9221DT/DR-MMH TX/RX	9221DT/DR-SM TX/RX	9229DT/9221DR-SM TX/RX	9229DT/9221DR-MMH TX/RX
Fiber type	MM (62.5)	SM (09)	SM (09/125)	MM (62.5/125)
Output wavelength	1310nm/1550nm	1310nm/1550nm	1310nm/1550nm	1310nm/1550nm
Output power	-7dBm/-7dBm	-7dBm/-7dBm	-7dBm/-7dBm	-30dBm/-30dBm
Input sensitivity	-29dBm/-30dBm	-30dBm/-30dBm	-30dBm/-30dBm	-30dBm/-29dBm
System link budget	22dB ¹ /23dB ¹	23dB ¹ /23dB ¹	22dB/23dB ¹	23dB ¹ /23dB ¹
Fiber length (range) ²	19km	57km	57km	19km
Connector type	ST (others optional)	ST (others optional)	ST (others optional)	ST (others optional)

¹For 50/125µm fiber, subtract 4dB.

² Range may be limited by fiber bandwidth.

Ordering information

Models	Description	Fiber type
9221DT/MMH-ST	1-channel digital video transmitter, duplex data	1xMM
9225DT/SM-ST	1-channel digital video transmitter, duplex data	1xSM
9221DR/MMH-ST	1-channel digital video receiver, duplex data	1xMM
9225DR/SM-ST	1-channel digital video receiver, duplex data	1xSM
9229DT-P/MMH-ST	In-dome transmitter for Pelco Spectra III	1xMM
9221DT/SM-ST	1-channel digital video transmitter, duplex data	1xSM
9221DR/SM-ST	1-channel digital video receiver, duplex data	1xSM
9229DT-P/SM-ST	In-dome transmitter for Pelco Spectra III	1xSM
9225DT/MMH-ST	Standalone version of the 9221 models	
9225DR/MMH-ST	Standalone version of the 9221 models	
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.

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