FT85041/FR85041 Fiber Transmitter and Receiver

FOUR-CHANNEL DIGITALLY ENCODED VIDEO WITH BIDIRECTIONAL DATA

Product Features

- 8-Bit Digitally Encoded Video for High-Quality Multichannel Video Transmission over a Single Fiber

- Bidirectional Data Channel That Supports RS-232, RS-422, RS-485 (2-wire/4-wire), Manchester, and Bi-Phase Communication

- Wavelength Division Multiplexing (WDM) in a Single Fiber

- Multimode Fiber Support for Distances up to 2 km

- Single-Mode Fiber Support for Distances up to 30 km

- Exceeds All Requirements for the RS-250C Medium-Haul Transmission Specification

- Compatible with NTSC, PAL, and SECAM Video Standards

- Designed to meet NEMA TS 2 and Caltrans Traffic Signal Control Equipment Environmental Standards

- No Performance Adjustments Required

- 12 VDC or 24 VAC Power Supply

- Stand-Alone and Rack-Mountable Modular Design

- LED Indicators for Monitoring of Signal Status, Laser Status, Data Activity, and Operating Power

The **FT85041/FR85041** fiber transmitter and receiver provide the ability to transmit up to four unidirectional composite video channels and one bidirectional data channel over one optical fiber. The **FT85041** transmitter and the **FR85041** receiver are available in multimode and single-mode versions.

Modular in design, the **FT85041** and **FR85041** units can be rack mounted or can be used as stand-alone modules. Rack mounting is accomplished using the RK5000 Series rack mount chassis. Stand-alone modules can be placed on a desktop or can be mounted to a wall.

FOUR VIDEO INPUTS → **FT85041 TRANSMITTER** ← ONE FIBER → **FR85041 RECEIVER** → FOUR VIDEO OUTPUTS

DATA ← → DATA

MODELS

Model No.		Fiber Optic Connector Type	Wavelength (Video/Data)	Optical Power Budget	Maximum Transmission Distance
Transmitter	Compatible Receiver				
Multimode (62.5/125 µm)					
FT85041MSTR	FR85041MSTR	ST	1310/850 nm	20 dB*	2 km (1.2 mi)†
Single-Mode (9/125 µm)					
FT85041SSTR	FR85041SSTR	ST	1310/1550 nm	20 dB	30 km (18.6 mi)‡
FT85041SFCR	FR85041SFCR	FC	1310/1550 nm	20 dB	30 km (18.6 mi)‡

*When using 50/125 µm multimode fiber, subtract 3 dB from the optical power budget.
†Maximum transmission distance is limited by fiber bandwidth.
‡Maximum transmission distance is based on attenuation of 0.5 dB/km plus a 5 dB buffer for connector and splice losses.

Notes:
- For conformal coated models, replace the first letter *F* in the model number with the letter *C*. The conformal coated version of FT85041MSTR, for example, is CT85041MSTR.
- For models with higher optical power budgets, contact the factory.

Supplied Accessories
- Regulated switching power supply with multiple plug adapters (North American, Australian, United Kingdom, and European); 100-240 VAC, 50-60 Hz input, 12 VDC output

  Note: In extreme temperature conditions, it is recommended that an industrial-rated outdoor power supply such as the Pelco® WCS1-4 power supply be used.
- Wall clip for attachment of single module to wall

VIDEO
Number of Channels	4
Modulation Type	Pulse code modulation, 8-bit resolution
Video Input (FT85041)/ Video Output (FR85041)	1.0 Vp-p, 75 ohms; NTSC, PAL, and SECAM
Bandwidth	6.5 MHz
Gain	Unity
Crosstalk	-50 dB typical at 3.58 MHz
Differential Gain	<1%
Differential Phase	<1.2°
Tilt	<1%
Signal-to-Noise Ratio	>60 dB (CCIR weighted)

DATA
Number of Channels	1
Data Communication	RS-232, RS-422, RS-485 (2-wire/4-wire), Manchester, Bi-Phase
Maximum Baud Rate	500 kbps

GENERAL
Operating Temperature	-40° to 167°F (-40° to 75°C)
Input Power Requirements	12 VDC or 24 VAC, 400 mA
LED Indicators	Power / Video Present (per channel) / Optic Fault / Data Tx / Data Rx
Dimensions	8.75" D x 2.28" W x 4.81" H (22.23 x 5.79 x 12.22 cm)
Unit Weight	2.54 lb (1.58 kg)
Shipping Weight	4 lb (1.81 kg)

MECHANICAL
Connectors
Video	BNC (per channel)
Rack Power/Alarm	4-pin connector
Stand-Alone Power	2-pin connector, screw terminal
Data	9-pin connector, screw terminal
Fiber Optic	ST for multimode fiber / ST or FC for single-mode fiber

CERTIFICATIONS
- CE, Class A
- UL Listed
- UL Listed to Canadian safety standards
- FCC, Class A
- C-Tick
- Complies with FDA requirements for Class 1 laser products
- Designed to meet NEMA TS 2 and Caltrans traffic signal control equipment standards for ambient operating temperature, mechanical shock and vibration, humidity with condensation, high-line/low-line voltage conditions, and transient voltage protection (certification pending)

  Note: Conformal coating is required for operation in environments with relative humidity above 95% (condensing).

OPTIONAL ACCESSORIES
WM5002-3U	Wall mount base kit for double-width module
WM5002-3UEXP	Wall mount expansion kit for double-width module
RK5000-3U	19-inch rack mount chassis for 14 slots, no power (3 RUs)
RK5000PS-3U	19-inch rack mount chassis for 12 slots with power (3 RUs)
EPS5000-120	External rack power supply, 1 RU, dual 120 W power outputs
RK5001B-3U	Blank filler panel, single width
RK5002B-3U	Blank filler panel, double width
RK5002-1UEXP	Adapter kit that allows a 3 RU double-width fiber module to be used in RK5000PS-5U rack mount chassis