

Optical-to-Electrical Converters

▶ P6701B • P6703B



▶ P6701B, P6703B.

The Tektronix P6700 Series optical-to-electrical (O/E) converters change optical signals into electrical signals for convenient analysis on Tektronix TDS7000/5000/3000/500/600/700 Series oscilloscopes equipped with the TEKPROBE interface, or any other oscilloscope when used with the 1103 TEKPROBE power supply. The P6700 Series O/E converters are ideal for optical source characterization in the development, manufacture or service of optical communication systems and devices. Small, conveniently packaged P6701B and P6703B optical-to-electrical analog converters provide an accurate interface for optical pulse shape measurements. The high gain, large dynamic range and stable

output offset of these O/E converters make them ideal for performing eye-pattern analysis and extinction measurements.

The P6701B/P6703B optical input is a one meter, 62.5 μ m multimode fiber with an FC/PC connector. Using the standard assortment of hybrid fiber optic mating sleeves, these O/Es can accommodate the various industry connector standards.

The TEKPROBE interface provides power, auto-scaling, auto-termination and correct units (microwatts) when used with Tektronix TDS500/600/700 Series oscilloscopes.

▶ Features & Benefits

Broad Wavelength Response
500 to 950 nm or 1100 to 1700 nm

High Bandwidth DC up to 1.2 GHz

High Gain 1 V/mW

Low Noise <11 pW/square root Hz

Probe Connects Directly to TDS7000/5000/3000/500/600/700 Series Scope (TEKPROBE™) or Other 50 Ω Instruments with 1103 TEKPROBE® Power Supply

SONET/SDH and Fibre Channel Reference Receiver Performance: TDS500C/700C (Opt. 3C or 4C) P6701B: Fibre Channel up to 1063 Mb/s, P6703B: SONET/SDH up to 622 Mb/s

▶ Applications

Eye-pattern Testing of Optical Communication Signals (SONET/SDH and Fibre Channel)

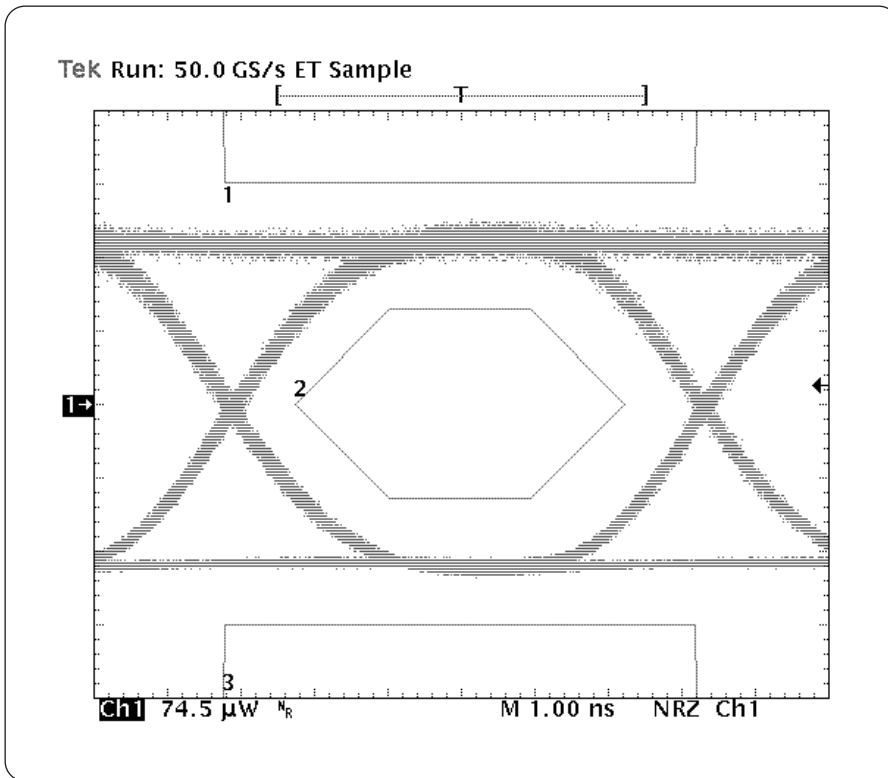
COMPUTING

COMMUNICATIONS

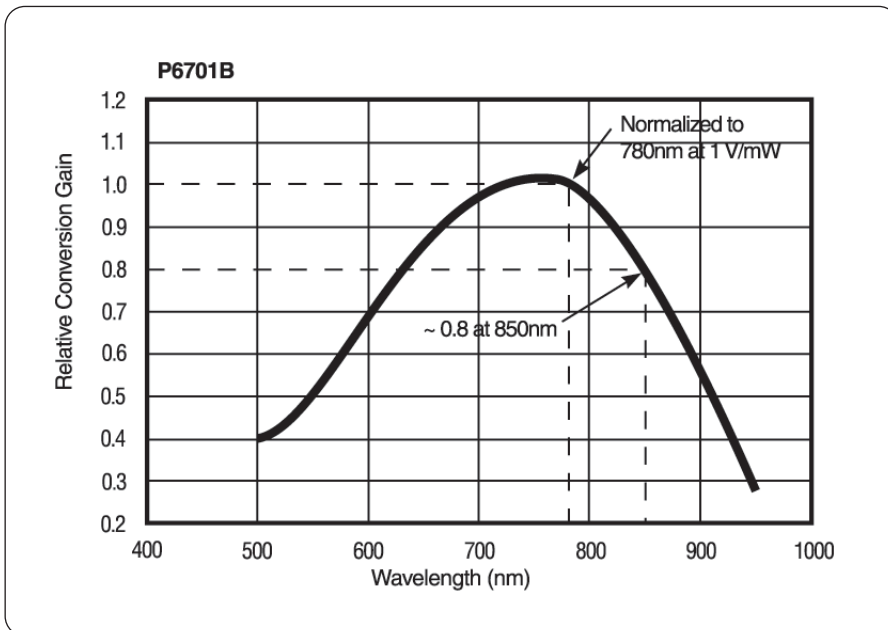
VIDEO

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▶ OC-3/STM-1 SONET/SDH transmitter eye pattern test.



▶ P6701B: Typical wavelength dependent gain (at 25 °C).

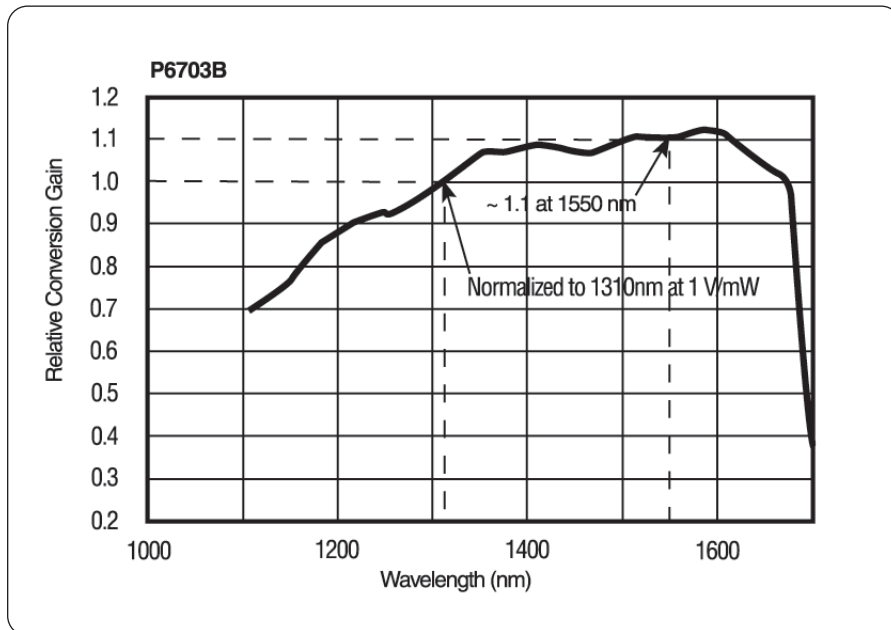
SONET/SDH and Fibre Channel Reference Receiver Performance

The P6701B and P6703B can be transformed into ITU G.957 or ANSI FC-PH reference receivers when they are either ordered as an option (3C - P6701B, 4C - P6703B) to the latest Tektronix TDS500C/700 Series digitizing oscilloscopes or as a stand-alone hardware solution (nominal).

The TDS Option 3C provides a calibrated P6701B reference receiver for Fibre Channel data rates from 133 Mb/s up to 1063 Mb/s. Option 4C provides a calibrated P6703B reference receiver for SONET/SDH data rates from 52 Mb/s up to 622 Mb/s. The optical-to-electrical converters are matched and calibrated to a specific scope channel which ensures complete system compliance with the fourth-order Bessel-Thompson frequency response.

The P6703B, when used in conjunction with the FS52, FS156 or FS622 SONET/SDH hardware filters, provide customers with a nominal reference receiver performance for 51.84 Mb/s, 155.52 Mb/s, and 622 Mb/s.

The standard P6701B has a nominal frequency response which follows the fourth-order Bessel-Thompson for Fibre Channel 1063 Mb/s. The 1103 TEKPROBE power supply can be used to connect these products to the 11800 Series or CSA803 Series sampling oscilloscopes.



▶ P6703B: Typical wavelength dependent gain (at 25 °C).

▶ Characteristics

	P6701B	P6703B
Wavelength Response	500 to 950 nm	1100 to 1650 nm
Bandwidth*1 (Typical)	DC to 1.0 GHz	DC to 1.2 GHz
Rise Time (Typical)	≤500 ps	≤395 ps
Conversion Gain	1 V/mW	1 V/mW
Max. Input Optical Power	1 mW (0 dBm)*2	1 mW (0 dBm)*2
	10 mW (10 dBm)*3	10 mW (10 dBm)*3
	20 mW (13 dBm)*4	20 mW (13 dBm)*4
Max. Output Modulation Depth for Reference Receiver Performance	≤200 mV _{p-p}	≤200 mV _{p-p}
Noise Equivalent Power	≤0.87 μW (RMS)*5	≤0.59 μW (RMS)*5
	≤28 pW per square root Hz	≤19 pW per square root Hz
Max. Input Fiber Core Diameter	62.5 μm	62.5 μm

*1 Optical Bandwidth (-6 dB electrical).

*2 Maximum average operating power.

*3 Max average nondestruct.

*4 Max peak nondestruct.

*5 1 GHz low pass filter in series with output.

▶ Ordering Information

P6701B

Optical-to-electrical Converter with FC/PC Connector.

Includes: Hard Case, User Manual (English, French, German, and Japanese), Assorted Fiber Optic Hybrid Connectors (FC/FC, FC/ST and FC/SC), Certificate of Traceable Calibration. Please specify power plug when ordering.

P6703B

Optical-to-electrical Converter with FC/PC Connector.

Includes: Hard Case, User Manual (English, French, German, and Japanese), Assorted Fiber Optic Hybrid Connectors (FC/FC, FC/ST and FC/SC), Certificate of Traceable Calibration. Please specify power plug when ordering.

Service

Opt. C3 – Calibration Service 3 Years.

Opt. C5 – Calibration Service 5 Years.

Opt. D1 – Calibration Data Report.

Opt. D3 – Calibration Data Report 3 Years (with Option C3).

Opt. D5 – Calibration Data Report 5 Years (with Option C5).

Opt. R3 – Repair Service 3 Years.

Opt. R5 – Repair Service 5 Years.

Power Plug Options

Opt. A0 – US Plug, 115 V, 60 Hz.

Opt. A1 – Euro Plug, 220 V, 50 Hz.

Opt. A2 – UK Plug, 240 V, 50 Hz.

Opt. A3 – Australian Plug, 240 V, 50 Hz.

Opt. A5 – Swiss Plug, 220 V, 50 Hz.

Accessories

Single-mode Fiber Optic Cables – (9 μm)

FC/PC to FC/PC. Order 174-1387-00.

FC/PC to ST. Order 174-1386-00.

FC/PC to SC/PC. Order 174-3921-00.

FC/PC to Diamond (2.5). Order 174-1497-00.

FC/PC to Diamond (3.5). Order 174-1385-00.

Multimode Fiber Optic Cables – (62.5 μm)

FC/PC to FC/PC. Order 174-2322-00.

FC/PC to SC/PC. Order 174-4093-00.

FC/PC to SMA. Order 174-2324-00.

90/10, 3 Port Single-mode Optical Splitter

FC/PC Connectors – Order 174-3737-00.

10 dB, In-line Single-mode Optical Attenuator

FC/PC Connectors – Order 119-5118-00.

DIN/FC Fiber Optic Hybrid Connector –

Order 020-2209-00.

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www.tektronix.com

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in ISO registered facilities.



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10/06 DV/WOW

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