

PatternSync Trigger Module for the TDS/CSA8000 Series Sampling Oscilloscope

► 80A06 PatternSync Trigger Module



PatternSync Trigger Module

The 80A06 PatternSync Trigger module is required for TDS/CSA8200 Series when using 80SJNB Advanced Jitter, Noise and BER Analysis software package. When this module is used with the 82A04 Phase Reference module, the jitter floor is ≤ 200 fs_{RMS}.

The PatternSync Trigger Module is programmable to pattern lengths of up to 2^{23} bits and accepts a user-supplied clock signal from 150 MHz to 12.75 GHz. The TDS/CSA8000 UI/PI for the 80A06 module offers pattern lengths from 2 to 2^{23} bits, and programs the module to within its hardware range (a pre-scaler followed by a counter with minimum count of 30) for the least-common-multiple count.

► Features & Benefits

Enables 80SJNB – the Advanced Jitter, Noise and BER Analysis Software

Provides Trigger on Repetitive Patterns from 2 to 2^{23} Bits Long

Provides Buffered Clock Output for Input to a Phase Reference Module or Other Devices

Accepts Clock from Clock Recovery Circuits (CR) in the 80A05 Electrical Clock Recovery Module and in the Optical Modules

Optional SlotSaver Adapter Provides Power and Control of the PatternSync Trigger Modules, External to the Mainframe, Saving Space for Additional Channels

► Applications

When Used in Combination with 80SJNB: Characterizing Jitter, Noise and BER Performance of High-speed Serial Designs from 1 Gb/s to 60 Gb/s Data Rates

Design Validation and Testing of Next Generation High-speed Serial Data Computer and Communications Components and Systems

When Used in Combination with 80SJNB: Jitter, Noise and BER Analysis of Multi-gigabit Standards such as Fibre Channel, OIF CEI, XFP, UXPi, SATA, PCI, Physical Layer, XAUI, Gigabit Ethernet, Rapid I/O, InfiniBand and Other Electrical or Optical Circuits

Enables Capture of Bits in a Repetitive Pattern for Bit Analysis when only a Clock is Available for Triggering

Enables FrameScan® of Repetitive Patterns when Only a Clock Signal is Available for Triggering

PatternSync Trigger Module for the TDS/CSA8000 Series Sampling Oscilloscope

► 80A06 PatternSync Trigger Module

► Characteristics

Acquisition Modes –

Standard, triggered phase reference and FrameScan®

Compatible Mainframes –

TDS/CSA8200, TDS/CSA8000B and TDS/CSA8000.

Mainframe Resources Required –

One small (electrical) module slot or TRIGGER PROBE POWER connector on the front panel of the oscilloscope (with available SlotSaver cable).

General Specifications

Input/Output Connectors –

Precision 18 GHz SMA female connector.

Input and Output Impedance – 50 Ω.

Absolute Maximum Input Voltage – 2.0 V_{p-p}.

Maximum DC Offset – ±5.0 VDC.

Input Electrical Return Loss –

- >15 dB (50 MHz to 10 GHz).
- >10 dB (10 GHz to 20 GHz).

Input/Output Coupling –

- Clock In: AC.
- Clock Out: AC.
- Trigger Out: DC.

Supported Clock Rates –

- Minimum: 150 MHz.
- Maximum: 12.5 GHz, 12.75 GHz (typical).

Prescaler Ratios –

Input clock (as selected in the UI/PI):

- 150 MHz to 3.5 GHz: 4.
- 3.5 GHz to 7 GHz: 8.
- 7 GHz to 12.75 GHz: 16.

Programmable Pattern Length –

- Minimum: 2.
- Maximum: 2²³ (8,388,608).

Front panel output amplitudes –

Clock Out output (50 Ω AC coupled):
150 MHz to 8.0 GHz: 500 mV_{p-p} (typical).
8.0 GHz to 12.75 GHz: 250 mV_{p-p} (typical).

Trigger Out output (50 Ω DC coupled, ground referenced):

- Output High Level: 0 V.
- Output Low Level: -550 mV (typical).

Front Panel Output Rise and Fall Times –

Clock Out: <60 ps (faster for fast input slew rate).
Trigger Out: <60 ps (faster for fast input slew rate).

System Jitter –

TDS/CSA8200 and TDS/CSA8000B with 80A06:

<1.3 ps_{RMS}, 850 fs_{RMS} (typical).

TDS/CSA8000 with 80A06:

<1.6 ps_{RMS}, 1.0 ps_{RMS} (typical).

TDS/CSA8200 with 80A06 and 82A04:

≤200 fs_{RMS} (determined by the 82A04, see 82A04 data sheet for more details).

Minimum Input Sensitivity – 200 mV_{pk-pk}*

Environmental and Mechanical

Weight	kg	lbs.
Net	0.4	0.6
Dimensions	mm	in.
Height	25	1.0
Width	79	3.1
Depth	135	5.3

Environmental Conditions –

Refer to the host instrument specification.

Electromagnetic –

Refer to the host instrument specification.

► Ordering Information

80A06

PatternSync Trigger Module.

Includes: User manual, 2 each 12" SMA cables (174-1364-00).

Service Options

Option R3 – Extend repair warranty to three years.

Option D1 – Calibration data reports.

Accessories

Sampling Module Extender Cable (1 meter length) – Order 012-1568-00.

Sampling Module Extender Cable (2 meter length) – Order 012-1569-00.

SlotSaver Adapter Extender Cable – Brings power and control to the 80A06 when operated externally from the TDS/CSA mainframe, saving slot space (compatible with 80A06 and 80A02). Order 174-5230-00.

Contact Tektronix:

ASEAN / Australasia / Pakistan (65) 6356 3900

Austria +41 52 675 3777

Balkan, Israel, South Africa and other ISE Countries +41 52 675 3777

Belgium 07 81 60166

Brazil & South America 55 (11) 3741-8360

Canada 1 (800) 661-5625

Central East Europe, Ukraine and the Baltics +41 52 675 3777

Central Europe & Greece +41 52 675 3777

Denmark +45 80 88 1401

Finland +41 52 675 3777

France & North Africa +33 (0) 1 69 86 81 81

Germany +49 (221) 94 77 400

Hong Kong (852) 2585-6688

India (91) 80-22275577

Italy +39 (02) 25086 1

Japan 81 (3) 6714-3010

Luxembourg +44 (0) 1344 392400

Mexico, Central America & Caribbean 52 (55) 56666-333

Middle East, Asia and North Africa +41 52 675 3777

The Netherlands 090 02 021797

Norway 800 16098

People's Republic of China 86 (10) 6235 1230

Poland +41 52 675 3777

Portugal 80 08 12370

Republic of Korea 82 (2) 528-5299

Russia & CIS 7 095 775 1064

South Africa +27 11 254 8360

Spain (+34) 901 988 054

Sweden 020 08 80371

Switzerland +41 52 675 3777

Taiwan 886 (2) 2722-9622

United Kingdom & Eire +44 (0) 1344 392400

USA 1 (800) 426-2200

For other areas contact Tektronix, Inc. at: 1 (503) 627-7111

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Our most up-to-date product information is available at:
www.tektronix.com



Product(s) are manufactured in ISO registered facilities.

Product(s) complies with IEEE Standard 488.1-1987, RS-232-C, and with Tektronix Standard Codes and Formats.

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