Tektronix®

PatternSync Trigger Module for the DSA8200*1 Series

80A06 PatternSync Trigger Module Datasheet

Notice to EU Customers

This product is not updated to comply with the RoHS 2 Directive 2011/65/ EU and will not be shipped to the EU. Customers may be able to purchase products from inventory that were placed on the EU market prior to July 22, 2017 until supplies are depleted. Tektronix is committed to helping you with your solution needs. Please contact your local sales representative for further assistance or to determine if alternative product(s) are available. Tektronix will continue service to the end of worldwide support life.

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 and 80A07 Electrical Clock Recovery Modules, 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, Inf niBand, 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

80A06 PatternSync Trigger module is required for the DSA8200 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 f oor 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 DSA8200 UI/PI for the 80A06 module offers pattern lengths from 2 to 2^{23} bits and programs the module to within it's hardware range (a prescaler followed by a counter with minimum count of 30) for the least-common-multiple count.

Performance You Can Count On

Depend on Tektronix to provide you with performance you can count on. In addition to industry-leading service and support, this product comes backed by a one-year warranty as standard.

*1 Also compatible with TDS/CSA8200, TDS/CSA8000B, and TDS/CSA8000 sampling oscilloscopes. Not compatible with DSA8300. Order DSA8300 ADVTRIG Option for pattern synchronization in the DSA8300.

Characteristics

Characteristic	Description
Acquisition Modes	Standard, Triggered Phase Reference, and FrameScan™
Compatible Mainframes	DSA8200, TDS/CSA8200, TDS/CSA8000B, and TDS/CSA8000 (Not compatible with DSA8300)
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

Characteristic	Description
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 V DC
Input Electrical Return Loss	
50 MHz to 10 GHz	>15 dB
10 GHz to 20 GHz	>10 dB
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	2^{23} (8,388,608)
Front-panel Output Amplitudes	
Clock Out (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 (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)

Characteristic	Description
System Jitter	
DSA8200, 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)
DSA8200 and 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_{p-p}

Physical Characteristics

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

Environmental Conditions

Refer to the host instrument specif cation.

Electromagnetic

Refer to the host instrument specif cation.

Ordering Information

80A06
PatternSync Trigger Module.
Includes: User manual, 2 each 12 in. SMA cables (174-1364-xx), one-year warranty.

Service Options

Option	Description
Opt. D1	Calibration Data Reports
Opt. R3	Repair Service 3 Years

Accessories

Accessory	Description
80N01	Sampling Module Extender Cable (2 meter length)
174-5230-xx	SlotSaver Adapter Extender Cable. Brings power and control to the 80A06 when operated externally from the DSA mainframe, saving slot space (compatible with 80A06 and 80A02)

Tektronix is registered to ISO 9001 and ISO 14001 by SRI Quality System Registrar.

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

For Further Information. Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit **www.tektronix.com**

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