TEKTRONIX

82A04B

The Tektronix 82A04B Phase Reference Module is a high-performance timing and synchronization module designed for Tektronix Digital Serial Analyzers and Sampling Oscilloscopes. It enables extremely low-jitter measurements by establishing a phase reference from a continuous-wave (CW) clock, achieving system jitter of less than 100 fs RMS when paired with high-bandwidth sampling modules.

SPECIFICATIONS

General

Interfaces	Tektronix proprietary sampling module interface (rear-plane connection), 1.85 mm female RF Input (front panel)
Display	None (utilizes mainframe display)
Warm-up Time	20 minutes

Physical

Power Supply	Powered directly by the mainframe slot
Operating Temperature	10 °C to 40 °C °C
Dimensions (W×H×D)	79 mm × 25 mm × 135 mm mm
Weight	0.4 kg kg

RF, Electrical & Calibration Performance

Frequency Range	2 GHz to 60 GHz
Nominal Impedance	50 Ω
Number of Ports	1 (Phase Reference Input)
Connector Type	1.85 mm female
Recommended Input Signal Level	-10 dBm to +6 dBm (0.2 V p-p to 1.3 V p-p)
Maximum Safe Input Voltage	2.0 V p-p
Input Coupling	AC coupled
Compatible Filter Bands	2 GHz to 8 GHz, 8 GHz to 25 GHz, 25 GHz to 60 GHz (via external filters)

Timing & Synchronization

System Jitter with 80E09B / 80E11	< 100 fs RMS (80 fs RMS typical)
System Jitter with 80E07B / 80E08B / 80E10B	< 140 fs RMS (110 fs RMS typical)

System & Chassis Architecture

Form Factor	Tektronix Small Module Slot
Compatible Mainframes	DSA8300, DSA8200, CSA8200, TDS8200
Slot Compatibility	Fits in any small module slot of compatible Tektronix mainframes

Environmental Specifications

Storage Temperature Range	-22 °C to +60 °C
Operating Humidity	20% to 80% RH (non-condensing)
Operating Altitude	Up to 3,000 m (9,843 ft)

Performance

Horizontal Resolution	10 fs

Environmental

Operating Vibration	0.22 g RMS, 5 Hz to 500 Hz
Non-operating Vibration	2.28 g RMS, 5 Hz to 500 Hz
Non-operating Shock	30 g, 11 ms half-sine

Electrical Characteristics

Input VSWR	1.5:1 (2 GHz to 20 GHz, typical), 2.0:1 (20 GHz to 32 GHz, typical), 2.5:1 (32 GHz to 60 GHz with Option 60G, typical)
Minimum Input Signal Level	100 mV p-p (-16 dBm) at 2 GHz to 32 GHz; 200 mV p-p (-10 dBm) at 32 GHz to 60 GHz (Option 60G)
Maximum Input Signal Level	2.0 V p-p (+10 dBm)

System Requirements

Required Mainframe Software Version	Tektronix DSA8300 Product Software Version 5.0 or higher, or DSA8200 Product Software Version 2.0.1 or higher

TECHNOLOGY

Sampling Oscilloscope Phase Reference

APPLICATIONS

Ultra-low jitter electrical and optical signal characterization