



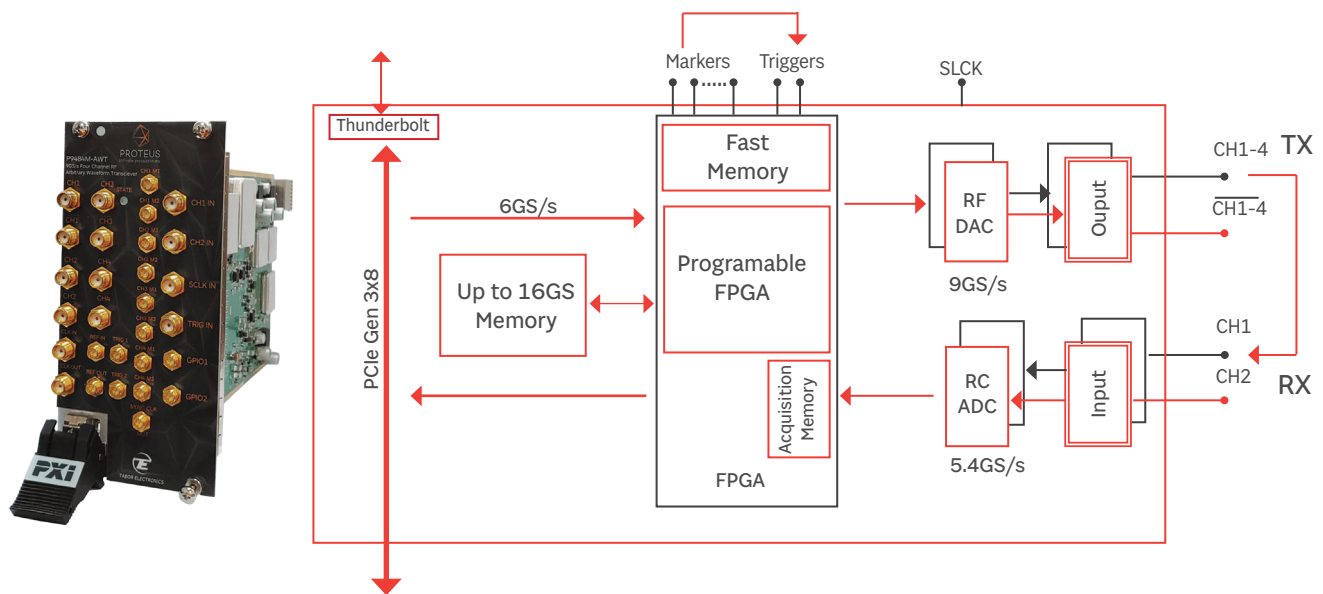
PROTEUS

Infinite possibilities

The SDR9484A is an instrument-grade Software Defined Radio (SDR)

It integrates ultra-wideband signal generation (DAC) and high-speed acquisition (ADC) with an onboard FPGA for real-time, closed-loop processing.

- Next-Gen Prototyping (5G/6G): Supports >1 GHz instantaneous bandwidth and direct RF synthesis up to 4 GHz (S-band/C-band) without external mixers.
- Real-Time Closed-Loop Control: Integrated ADC and FPGA allow for immediate signal reaction, essential for research in Adaptive Beamforming, Electronic Warfare, and Quantum Control.
- High-Fidelity MIMO: 4 phase-coherent channels with <10 ps skew provide the precision needed for Massive MIMO and antenna array testing.
- Reduced Complexity: Built-in Digital Up-Converters (DUC) and Down-Converters (DDC) simplify IQ modulation and eliminate the need for manual analog nulling/balancing.



Specifications

MAIN SPECIFICATIONS	
SAMPLE RATE	9 GSa/s Max
NUMBER OF CHANNELS TX	2/4
NUMBER OF CHANNELS RX	2/44
VERTICAL RESOLUTION	Max 16 bits
MAXIMUM INSTANTANEOUS BANDWIDTH	Max 4 GHz (Analog)
WAVEFORM MEMORY	8 GSa 16 Bits Resolutio

OUTPUT CHARACTERISTICS	
OUTPUT TYPE	Differential or Single-Ended (DC coupled)
OUTPUT IMPEDANCE	50 Ohms
AMPLITUDE	600 mVp-p
RISE/FALL TIME (20% TO 80%)	< 60 ps
OVERSHOOT	< 5%
SKEW BETWEEN CHANNELS	< 10 ps (adjustable with 1 ps resolution)
HARMONIC DISTORTION	* <-60 dBc (at 1 GHz)
SFDR (SPURIOUS FREE DYNAMIC RANGE)	* <-70 dBc (at 1 GHz, excluding harmonics)
PHASE NOISE (1 GHz carrier)	100 Hz offset: -105 dBc/Hz. 10 kHz offset: -120 dBc/Hz. 10 MHz offset: -150 dBc/Hz.

Input Characteristics	
CHANNELS	2 Channels (standard) or 4 Channels (optional)
SAMPLE RATE	Up to 5.4 GSa/s (High-Speed mode)
VERTICAL RESOLUTION	12 bits
MAXIMUM BANDWIDTH (ANALOG)	2.7 GHz
INPUT RANGE (FULL SCALE)	500 mVp-p to 2 Vp-p (programmable)
INPUT IMPEDANCE	50 Ω (nominal, DC coupled)
MEMORY DEPTH	8 GSa 16 Bits Resolution
DIGITIZER DSP FUNCTIONS DIGITAL DOWN-CONVERSION (DDC) DECIMATION FACTORS	Real-time IQ demodulation with internal NCO x1, x2, x4, x8, up to x1024
TRIGGERING TRIGGER MODES TIMESTAMPING	Internal (from AWG), External, and Threshold-based 10 ps resolution for precise event correlation
SIGNAL PURITY SNR SFDR	>55 dB (at 1 GHz input) >65 dBc (excluding harmonics).

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Signal Purity

INTEGRATED DIGITAL SIGNAL PROCESSING (DSP)	
DIGITAL UP/DOWN-CONVERTER (DUC)	Complex IQ modulation with internal NCO (Numerical Controlled Oscillator).
INTERPOLATION FACTORS	x2, x4, x8
NCO FREQUENCY CONTROL	48-bit resolution
PHASE OFFSET CONTROL	0 to 360° with 16-bit resolution

Sequencing & Triggering	
SEQUENCE ENGINE	Advanced sequencing
SEQUENCER MODES	Continuous, Once, Stepped, and Advanced Link
TRIGGER INPUTS	2 independent inputs
TRIGGER LATENCY:	< 500 ns.
TRIGGER JITTER	< 100 ps.
MARKER OUTPUTS	8 per channel (32 total), programmable position and width, < 10 ps jitter

CLOCKING & SYNCHRONIZATION	
INTERNAL CLOCK ACCURACY	±1.0 ppm
EXTERNAL REFERENCE INPUT	10 MHz / 100 MHz (selectable)
SAMPLING CLOCK INPUT	External high-speed clock input supported
MULTI-INSTRUMENT SYNC	Dedicated "Sync-Link" for phase-coherent operation across multiple units

CONNECTIVITY & PHYSICAL DATA	
REMOTE CONTROL	LAN (10G/1G), USB 3.0, and PCIe Gen3 x8
STANDARD PROGRAMMING	SCPI (Standard Commands for Programmable Instruments), and MATLAB/Python support
DIMENSIONS	4U High, 19" wide (Rackmount kit included)
POWER REQUIREMENTS	100 to 240 VAC, 50/60 Hz, 450W max.

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