

WBX Recorder

Wideband RF digitizer and recording system



*Shown with optional ruggedized enclosure.

Description

The WBX Recorder is a single channel RF digitizer and recording system with a 2.6 GHz input bandwidth and 12 TB of signal storage.

The system has one RF input, a 10 MHz reference and 1 pps input or output, and a 10 GbE output port. Signal processing functions include automatic gain control (AGC), and real to complex conversion. The 12 TB of signal storage accommodates just over a half hour of collection while digitizing the full input bandwidth (assuming 8-bit samples are stored).

Raw complex input data can be stored on the SSD blades and files can be played out the 10 GbE port.

The open system is powered by an AMD G-series processor (x/86 architecture) running Linux with 256 GB system storage with 8 GB DDR3 SDRAM.

System control is via multiple Ethernet ports. Command and control operations are exposed via a RESTful interface for easy tool integration.

Features

- 1 RF input for wideband analog signals
- 12 Terabytes (TB) of high speed SSD signal storage
- Frequency range 0.03–5.2 GHz, with signal bandwidths up to 2.6 GHz
- Analog to digital converter with 12-bit resolution
- Signal processing functions include automatic gain control (AGC) and real to complex conversion
- 10 GbE optical output
- 1 pps I/O and 10 MHz reference I/O via separate SMA connectors
- COTS Linux open system running on AMD G-series processor (2 or 4 cores)
- 120 or 240 GB SSD system storage and 4 or 8 GB DDR3 SDRAM system memory

Applications

- Signal surveillance
- Wideband signal acquisition and analysis
- Software-defined radio

Specifications

Data Format(s)	RF input stored as 8-bit I/Q data				
Signal Storage	NVMe SSD		12 TB		
FPGA Resources	Xilinx UltraScale+		XCKU11P		
Radio	RF Bandwidth		2.6 GHz		
	RF Input		SMA		
	Maximum input power without damage		19 dBm		
	Input frequency range		0.03–5.2 GHz		
	Input impedance		50 Ω		
	NF		< TBD (typical)		
	VSWR		< TBD (typical)		
	IIP3		\geq TBD*† with 10 MHz tone spacing		
	P1dB		> TBD		
	IMD2 / IMD3		\geq TBD / TBD dBc*		
	SFDR		\geq TBD dBc* (AGC on)		
	* Over input frequency range. † AGC off; AGC on enables higher values.				
ADC	Resolution		12 bits		
System Interfaces	System control, 1 GbE		RJ45		
	System control, 1 GbE		SFP		
	System control, USB 2.0 x2		microUSB		
	System display		MiniDP (HDMI, DVI with conversion cable)		
	10 MHz reference I/O		SMA		
	1 pps I/O		SMA		
	Ethernet, 10 GbE		SFP+		
System Processor	Device (x86-based)	Cores	Clock rate	Shared L2 cache	GPU clock rate
	AMD GX-210HA (default)	2 (10 W total)	1.0 GHz	1 MB	300 MHz
	AMD GX-420CA (optional)	4 (25 W total)	2.0 GHz	2 MB	600 MHz
Power	Input voltage range		10–50 VDC, 6-pin Lemo connector		
	Consumption		TBD (dependent on configuration)		
	Control		100 MbE, RJ45 connector		
Physical	Weight		TBD - about 3.5 lbs.		
	Dimensions		9.60 x 5.75 x 1.61 in. (including connectors)		
Environmental	Temperature (operating / non-operating)		0° to 55° C / -40° to 70° C (ambient)		
	Humidity (operating / non-operating)		1% to 90%, non-condensing at 40° C / 95%, non-condensing at 45° C		
System and Software	System comes preloaded with Linux and EDT software. For versions, see edt.com.				

Ordering Options

General

- System processor: **2** / 4 cores
- System memory (DDR3 SDRAM): **4** / 8 GB
- System storage (SSD): **120** / 240 GB
- Ruggedized enclosure: **0** / 1

Bold is default. **Ask** about custom options.