



X-COM WARP™

Wideband Acquisition,
Record and
Playback System

Overview:

The X-COM Wideband Acquisition, Record and Playback (WARP) System can directly digitize, store and playback RF or IF signals for long periods of time. The system provides 100% Probability of Intercept and will support continuous capture for RF/IF bandwidths as large as 6 GHz. WARP's high speed digitizer operates up to 12 Giga-samples/second (Gs/s) or can simultaneously digitize two independent channels at up to 6 Gs/s each. The system has a standard memory capacity of 32 Terabytes which can store signals digitized at the maximum rate for 44 minutes. Additional memory banks can be added to increase storage capacity.

WARP™ has an integral analog playback capability that allows the system to re-create stored signals at RF/IF with a sample rate up to 12 Gs/s. Signal data is stored in a non-proprietary format to allow analysis by virtually any customer desired signal analysis toolset.

X-COM's SigAnalyst™ Workstation and WaveCAFE™/Spectro-X can provide a powerful turn-key high speed signal analysis capability, including the ability to down-load recorded signal information very rapidly. Housed in a standard 19 inch equipment rack, WARP can be used for a variety of laboratory and mobile applications.



Specifications:

Configuration:	19" rack mount, 23U [40"high] including 32 TB of memory
Analog Input:	+/- 256 mV pk-pk (differential); 100 ohm; AC coupled; Will reject common mode noise up to 350 mV pk-pk
ADC and DAC	
Sample Rate:	Up to 12 Gs/sec (single channel); 6 Gs/s (dual channel)
Sample Resolution:	ADC: 8 bit DAC: 10 bit
Record Duration:	44 min. at max rate (per 32 TB DataPack bank)
Storage Capacity:	32 TB per DataPack bank Additional DataPack banks can be added to increase capacity
Capture Interface:	RF Type N, one or two channels
Playback Interface:	RF Type N, single channel
External Interfaces:	IRIG Timing Source; GPS position and time; Trigger; Marker
Weight:	200 lbs
Power:	1.5 KW
Operating:	5° to 50° C
Non-Operating:	-20° to 70° C

Options Available for X-COM WARP™

Additional DataPacks: Additional storage capacity, in blocks of 32 TB, can be added to increase capture time.

X-COM SigAnalyst™ Workstation: Provides turn-key high performance digital signal processing capability including ability to rapidly transfer signal information for off-line storage and analysis.

WaveCAFE™ and Spectro-X™ Signal Analysis Tools: High performance signal analysis tool kit that is optimized for very large data sets.

Preliminary Specifications Subject to Change X-COM Systems Proprietary

FEATURES

- Sample rate of up to 12 Gs/s – RF/IF bandwidth up to 6 GHz
- 32 Terabyte data storage - Expandable
- Up to 44 minutes of signal capture at max sample rate – can be increased by adding DataPacks
- Network-enabled
- Powerful X-COM SigAnalyst Workstation and WaveCAFE™/ Spectro-X software

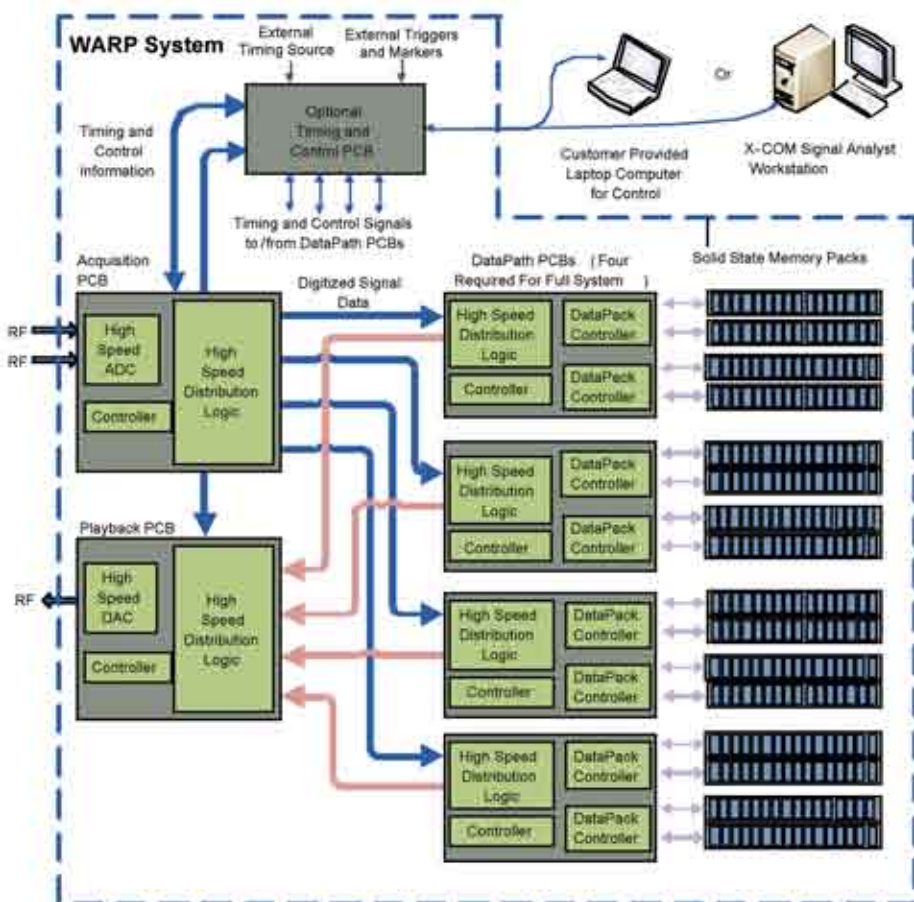
APPLICATIONS

- Real-time Signal Recording and Playback
 - SIGINT
 - ELINT
 - COMINT
 - Telemetry
 - Sonar
 - Radar
 - System Validation
- Simulation, Training and Signal Library Development
- Wideband RF Storage

Input and Output Signals: (All on rear except where noted)

RF/IF Input:	(Front Panel) Type N (two); 256 mV pk-pk differential; AC coupled; Common mode rejection up to 350 mV pk-pk; May be configured as single or dual channel
RF/IF Output:	Type N (one); 500 mV pk-pk nominal; 270 mV minimum; 530 mV maximum; Used to replay recorded RF/IF signals
Reference In:	BNC; 10MHz external reference
Reference Out:	BNC; 10MHz internal reference output
Control In/Out:	Gigabit Ethernet; RJ145
Trigger In:	BNC; User programmable
Trigger Out:	BNC; User programmable
Marker In:	BNC; User programmable
Marker Out:	BNC; User programmable
IRIG-B In:	Analog - BNC; IRIG B122 or B123; Precision timing reference Digital - DB15; IRIG B 00X
External GPS In:	DB15; NMEA 183; Location and/or timing reference
External Clock In:	SMA; Used to synchronize DRFM internal clock with other systems
Internal Clock Out:	SMA; Used to synchronize other systems with DRFM internal clock
SAS Control and Data:	Mini SAS; Used to link DataPath module controller in primary unit to external Memory units; Additional memory modules can be chained from primary pack

Simplified Block Diagram:



- RF/IF signals are digitized using one of the highest performance ADCs available, at rates up to 12 Gs/s
- High speed digital signal data stream is allocated to multiple banks of solid state or rotating media data storage units
- System can support additional DataPack banks to increase storage capacity
- Stored signal information can be recalled and converted back to RF/IF using the system's 12 Gs/s DAC
- X-COM's SigAnalyst Workstation and WaveCAFE/Spectro-X analysis and visualization tools can rapidly off-load stored information and provide powerful signal processing features
- Signal information is stored in a non-proprietary format so that the information can be analyzed by either X-COM signal analysis tools or virtually any customer desired digital signal analysis method.

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