

COMPASS

Coherent Multi-Channel Playback & Acquisition Streaming System

Fully Integrated Coherent
Multi-Channel Capture
and Playback

- 10 MHz to 20 GHz
- 1 GHz IBW
- Up to 4 Coherent Channels
- Up to 196 TB Storage



Capability for RADAR & EW Test



An oscilloscope and a spectrum analyzer are two of the most fundamental instruments in an RF

engineer's toolbox. Without them, they're basically running blind. While multi-channel scopes have been around for years, until now, there has been no equivalent of a multi-channel spectrum analyzer. Just as a multi-channel scope is essential for measuring behavioral relationships between circuit elements, a multi-channel spectrum recorder is needed to observe the RF relationships between RADAR and countermeasure devices.

With the new Giga-tronics COMPASS platform, you get a multi-channel streaming recorder that captures spectrum coherently across all channels without dropping samples along with deep memory storage that supports hours of collection for later off-line analysis. COMPASS can be configured with playback capability to recreate the spectrum just recorded or to recreate a spectrum recorded earlier on another platform.

COMPASS recording exhibits high dynamic range like you'd expect from a spectrum analyzer, but also has the wide instantaneous bandwidth (IBW) needed to observe modern RADAR and EW waveforms. With 1 GHz of IBW at RF and 2 GHz of IBW direct to digital, COMPASS can process today's signals, as well as, tomorrow's emerging threats.

Key Attributes

COHERENT

All Channels Time Synchronous

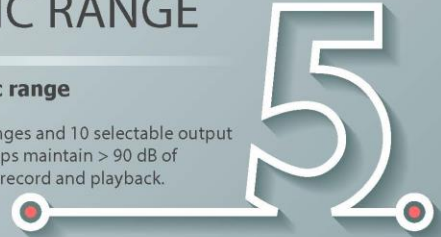
Skew between all channels remains constant and is always less than 1 nanosecond.



DYNAMIC RANGE

> 90 dB dynamic range

Six selectable input ranges and 10 selectable output attenuator settings helps maintain > 90 dB of dynamic range during record and playback.



MULTI-CHANNEL

Signal Capture and Playback

Up to four RF channels with any combination of record or playback functions.



OPEN ARCHITECTURE

Upgrade as Technology Improves

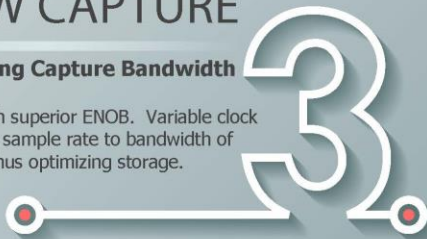
Add 3rd party hardware and software, such as, GPUs, GPS, IRIG, reflective memory and other IO.



WIDE IBW CAPTURE

1 GHz RF Streaming Capture Bandwidth

6 GSpS 12-bit ADC with superior ENOB. Variable clock speed allows matching sample rate to bandwidth of signals to be recored thus optimizing storage.



STORAGE

Up to 192 TB of RAID Storage

Configurable with up to 192 TB of solid state RAID storage supports > 7 hours of record or playback per channel at the maximum sample rate.



WIDE IBW PLAYBACK

1 GHz RF Streaming Data Playback

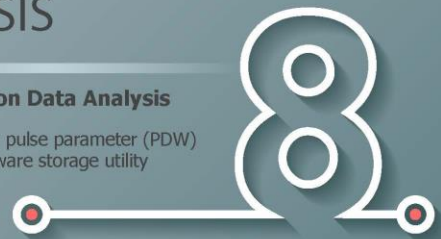
4.8 GSpS Dual -Channel 16-bit DAC with superior ENOB. Variable playback rates allows reuse of files recorded on different systems.



ANALYSIS

Post Run Mission Data Analysis

Received waveform pulse parameter (PDW) extraction and software storage utility available.



Industry Challenges Solved

Test & Validation of Coherent Electronic Attack Systems

- Multiple coherent transmit channels can simulate a single emitter as seen from multiple platforms.
- Simulate cooperative attack from multiple emitters

Ground Truth

- Coherent receive channels can record exactly what was transmitted
- Record responses from SUT for comparison with transmitted signals

Very Wide Bandwidth Situations

- Stagger tune multiple record or playback channels for simulating or capturing very wide instantaneous bandwidth signals
- Stitch inputs and outputs in the digital domain

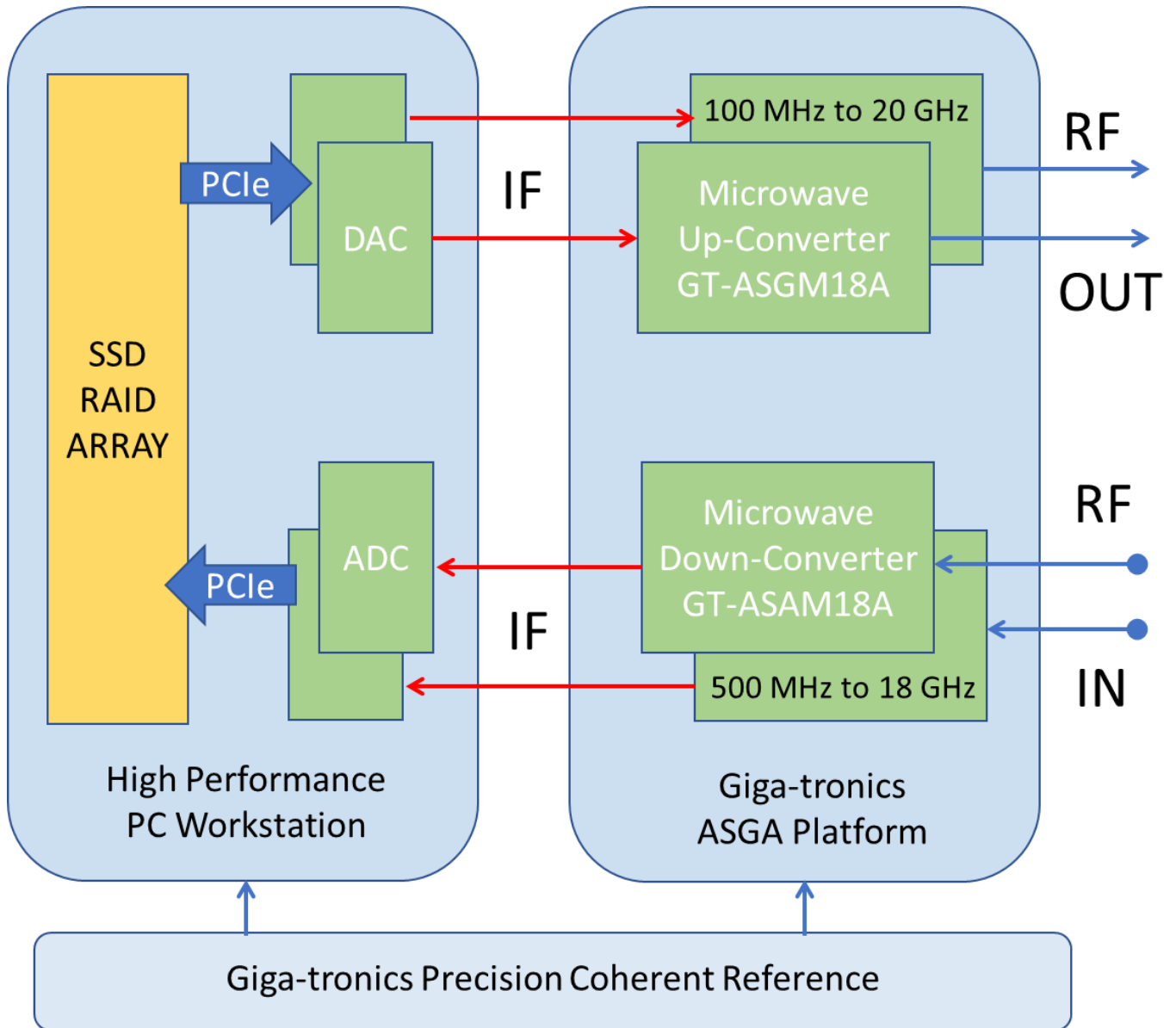
Legacy System Recording & Playback

- Record legacy and difficult to program simulator outputs for repeatable playback without the need for the original simulator
- Playback recorded signals at any frequency while maintaining the original spectral content and time/bandwidth parameters
- Investigate vulnerabilities across tactical platforms
- Use as a proxy for real hardware before capability becomes available

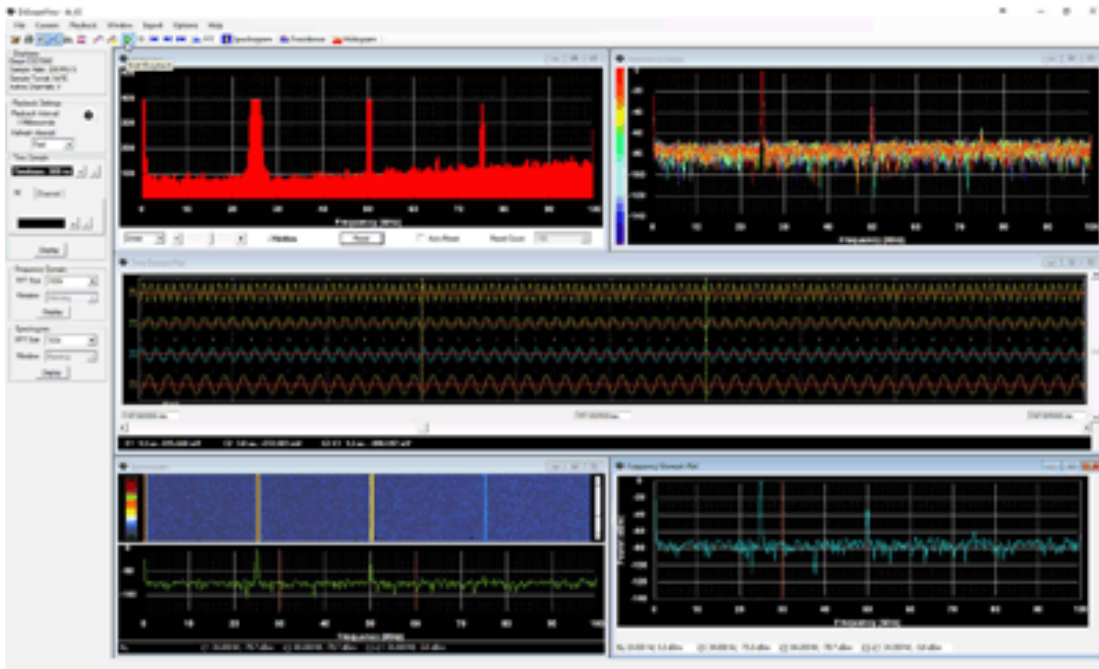
Agile Coherent Capture

- Track desired signal with one channel while searching adjacent frequency segments for spurious signals with the 2nd channel.
- Track the “emitter of interest” and compare with SUT response

COMPASS Architecture



Post Run / Mission Data Analysis



- Turnkey Software Utility with Graphical User Interface
- Received Waveform Pulse Parameter Extraction (PDW)
- PDW Storage Software Available
- In-line DSP for Real-Time Analysis and Display of Signal Parameters in both Time and Frequency

The Answer is Yes!

The COMPASS solution was designed to be easily configured to meet a range of applications. It can be ordered as capture only, playback only or a combination of capture and playback all in a single integrated solution. And although the modular architecture supports customizing the features, such as, the number of channels, whether the channels are for recording or playback and the amount of storage, it is built from standard off-the-shelf components. That's why it's available within 16 weeks after receipt of order.

However, if your application falls outside of what a standard COMPASS configuration can deliver, such as, more channels, smaller size, longer record times or if you must operate in a rugged environment, for example, just give Giga-tronics a call – the answer will likely be YES! Our engineers will engage with you in a conversation to understand your requirements and to design a configuration tailored to your specific needs. Inquiries can begin by simply contacting Giga-tronics at sales@gigatronics.com.



- 2 Channel RF recorder
- 1 GHz IBW
- 192 TB SSD RAID Array
- 7 Hours/CH record time
- Rugged transit case

Example Custom Configuration

Standard Warranty



Giga-tronics warrants to the Customer that all manufactured products conform to published specifications and are free from defects in material and workmanship for one year. The period begins on the date of shipment and only applies to normal operation of the product within the appropriate service condition. Giga-tronics shall have no responsibility hereunder for any defect or damage caused by improper storage, improper installation, unauthorized modification, misuse, neglect, inadequate maintenance, accident, or any part which has been repaired or altered by anyone other than Giga-tronics or its authorized representative, or not in accordance with Giga-tronics furnished instructions. <https://go-asg.gigatronics.com/warranty>

Extended Warranty



Extended warranty (Service and Calibration) can only be purchased at time of ordering or within 30 days after the ship date. Service for extended warranties will be performed by Giga-tronics Incorporated, its Microsource subsidiary; or, an authorized Giga-tronics Service Center. Prices do not include freight, insurance, handling, taxes, duties or any other related shipping charges. Extended warranty service and extended calibration options are based on the original ship date of the product. Extended calibration option requires that units be calibrated annually, if applicable. <https://go-asg.gigatronics.com/warranty>



American Systems Registrar, LLC
 certified ISO 9001:2008
 Certification: <https://go-asg.gigatronics.com/quality>

ISO 9001:2008

Giga-tronics Support Services

At Giga-tronics, we understand the challenges you face. Our support services begin from the moment you call us. We help you achieve both top-line growth and bottom-line efficiencies by working to identify your precise needs and implement smart and result orientated solutions. We believe and commit ourselves in providing you with more than just our superior test solutions. For technical support, contact:

Phone: +1 925.328.4650 | Email: asg-info@gigatronics.com

All data is subject to change without notice. For the latest information on Giga-tronics products and applications, please visit : <http://go-asg.gigatronics.com>