COMPASS

Coherent Multi-Channel Playback, Acquisition & Storage System

Fully Integrated Coherent Multi-Channel Capture and Playback

- 500 MHz to 18 GHz
- 1 GHz IBW
- Up to 4 Coherent Channels
- 2 hours/Channel 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 analyzer is needed to observe the RF relationships between RADAR and countermeasure devices.

With the new Giga-tronics COMPASS multi-channel capture and playback system, you get the equivalent of a multi-channel spectrum analyzer with the added benefit of deep memory storage for later off-line analysis. In addition, because test equipment is often a proxy for real hardware before it becomes available, COMPASS can repeatedly playback previously recorded or synthesized signals to stimulate devices under test for developing algorithms or troubleshooting anomalies.

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

COHERENT
All Channels Time Synchronous
Skew between channels remains constant and is always less than 1 nanosecond.

MULTI-CHANNEL
Signal Capture and Playback
Up to four RF channels with any combination of record or playback functions.

CAPTURE
Real-Time Streaming Data Capture
56 GS/s 12-bit ADC with superior ENOB.

PLAYBACK
Real-Time Streaming Data Playback
Dual-Channel 16-bit DAC with superior ENOB

WIDE IBW
1 GHz RF Instantaneous Bandwidth
Real-Time streaming digitized data storage and playback.

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.

STORAGE
Up to 192 TB of RAID Storage
Configurable with up to 192 TB of solid state RAID storage supports > 5 hours of record or playback time per channel.

ANALYSIS
Run Mission Data Analysis
Received waveform pulse parameter (PDW) extraction and software storage utility available.
COMPASS Architecture

- SSD RAID ARRAY
  - High Performance PC Workstation
  - PCIe

- DAC
- ADC
- IF

- Microwave Up-Converter GT-ASGM18A
  - 100 MHz to 20 GHz

- Microwave Down-Converter GT-ASAM18A
  - 500 MHz to 18 GHz

- Giga-tronics ASGA Platform
- RF
- OUT
- RF
- IN

Giga-tronics Precision Coherent Reference
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.

Example Custom Configuration

- 2 Channel RF recorder
- 1 GHz IBW
- 192 TB SSD RAID Array
- 5 hrs/CH record time
- Rugged transit case
### Ordering Information

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GT-COMPASS-18A</td>
<td>Coherent Multi-Channel Playback, Acquisition and Storage System</td>
</tr>
<tr>
<td></td>
<td>2.0 to 18 GHz Frequency Coverage</td>
</tr>
<tr>
<td></td>
<td>1 GHz Instantaneous Bandwidth</td>
</tr>
<tr>
<td></td>
<td>32TB SSD RAID Storage</td>
</tr>
<tr>
<td></td>
<td>Includes Playback, Record, Analysis &amp; Display SW</td>
</tr>
<tr>
<td>OPT-LOW</td>
<td>Adds 500 MHz to 2.0 GHz Frequency Range</td>
</tr>
<tr>
<td></td>
<td>2 GHz Instantaneous Bandwidth</td>
</tr>
<tr>
<td>OPT-CAP</td>
<td>Adds 1 Channel of Capture</td>
</tr>
<tr>
<td>OPT-PLAY</td>
<td>Adds 1 Channel of Playback</td>
</tr>
<tr>
<td>OPT-32TB</td>
<td>Adds 32 TB of additional Storage</td>
</tr>
<tr>
<td>EWS20</td>
<td>Extended 2 Year Warranty</td>
</tr>
<tr>
<td>EWS40</td>
<td>Extended 4 Year Warranty</td>
</tr>
<tr>
<td>Consultancy</td>
<td>Professional Consultation</td>
</tr>
</tbody>
</table>
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

Specifications subject to change without notice.
©2020 Giga-tronics Incorporated, USA. All Rights Reserved.
COMPAS Brochure | Document 36491 Rev A / US020320
go-asg.gigatronics.com