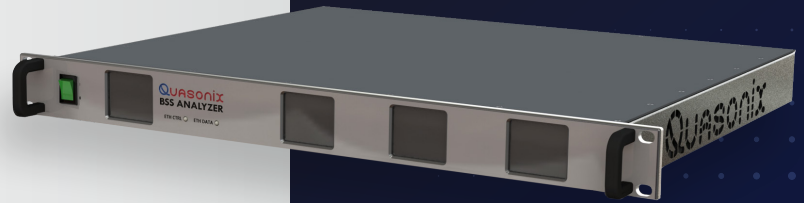


BSS Analyzer



“Do the best you can until you know better” – Maya Angelou
Now You Can Know Better

Best-source selection (BSS) has traditionally been as much art as science. It improves data accuracy... right? As much as it should? As much as it could? Now you can know. Introducing the Quasonix BSS Analyzer (BSSA), a unique tool to emulate real-world channel conditions across all received signals in a range, allowing precise, repeatable BSS testing. With the BSSA, you can evaluate the performance of different BSS units or settings, and you can compare results against theoretical best achievable performance. It's time to take the guesswork out of your mission-critical equipment. Quasonix is... Reinventing Telemetry™.

Flexible Testing – The Quasonix BSSA has 12 independent data generators capable of emulating a multitude of best source selection challenges such as channel delay, Doppler effects, variable bit error probability, receiver sync loss, and more. Twelve PCM I/O and twelve TMoIP I/O are independently configurable as input or output, with the ability to monitor and report results for up to four simultaneous channel groups.

Rigorous, Repeatable Evaluation – Tests are precisely repeatable, so it's easy to make valid comparisons of any equipment across a wide variety of scenarios. Evaluate strengths and weaknesses, focusing on the signal impairments most likely to occur on your range. By including DQE framing with the exact DQM based on dynamic error probability, it's possible to know with certainty how your BSS is performing not only in the absolute but also relative to theory.

System Optimization – The BSSA can help you to test and optimize your own specific BSS parameters, such as those you may be using for receiver data correlation and realignment. Refine and improve your system with no actual data lost.

Cost Savings – Whether you already own Best Source Selectors or are preparing to purchase new gear, you can use the BSSA's results to select the best equipment for your particular needs, ensuring efficient deployment of existing hardware and cost-effective procurement of new.

The BSS Analyzer is supported by lifetime software updates and is easily field upgradeable.

BSS Analyzer Specifications

| Core | |
|--------------------------------|---|
| Data rate | 24 Kbps to 46 Mbps per channel (TMOIP max aggregate rate of all channels limited depending on specific user settings) |
| Physical input/output channels | 12 PCM and 12 TMOIP available |
| Logical output channels | 12 available (Each logical input is assignable to one channel group) |
| Channel groups | 4 available |
| BERT | Bit error rate test capability using pre-defined patterns on each output and input channel |
| EBERT | Estimated BER based on DQM allows evaluating BSS combined DQE/DQM output |
| Programmable channel settings | Base delay (at least 1 second) Variable delay/Doppler (at least equivalent to mach 20) Variable bit error rate Receiver sync loss emulation (random bit rate offset within settable limits at least +/-1%) |

| PCM I/O | |
|-------------------------------------|---|
| Channels | 12, each independently configurable as output or input for BSS channel groups |
| BNC clock and data pairs | 12 (75 ohm, TTL) |
| MDM-25 ports | 2 (RS-422) |
| Clock/Data polarity user selectable | Yes |
| Auto clock edge detection | Yes |

| TMOIP I/O | |
|------------------------|--|
| Channels | 12, each can be an output or input for BSS channel groups |
| Packet format | IRIG 218-20 TMOIP |
| First bit timestamping | Based on Network Time Protocol (NTP) or Precision Time Protocol (PTP) time, via Ethernet |

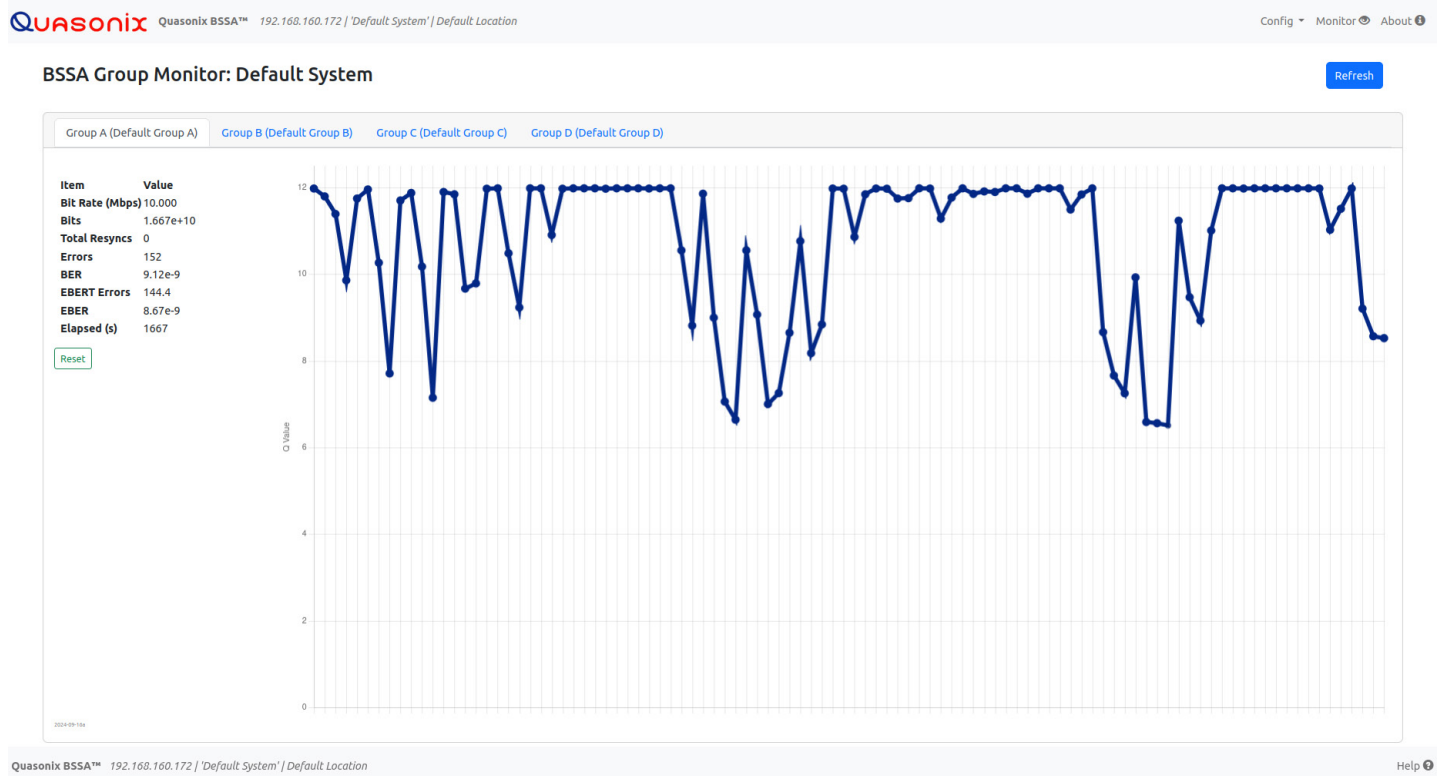
| Network | |
|----------------------|--|
| Network interface | 1000BASE-T |
| Number of interfaces | 2, separate ports for configuration and TMOIP data |

User Interfaces

| | |
|--------------------------------------|--|
| Local front panel interface | 4 displays for health and status monitoring: presentation of DQM, time skew, and BSS state |
| Browser interface | Command, control, health, and status |
| Integrated status reporting, logging | Yes |
| Easy field updates | Yes |

Physical

| | |
|--------|----------------------------|
| Size | Rack Units: 1U, Depth: 14" |
| Weight | 7.4 lbs. |
| Power | 90-264 V-RMS, 47-63 Hz |

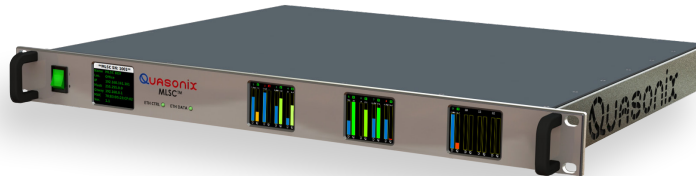


Sample browser interface Group Monitor page

Meet the Powerhouse that BSSA Built

“Best” Just Got Better

The Maximum Likelihood Stream Combiner™ is a new approach to Best Source Selection that extracts optimal data from multiple received signals. The MLSC™ leverages Data Quality Encapsulation (DQE), Maximum Likelihood Bit Detection (MLBD), and proprietary Quasonix algorithms to improve your received data accuracy under the most challenging conditions. How do we know? While we're extremely confident of our theoretical approach, there's no substitute for empirical testing. The BSSA provided that, allowing rigorous analysis and honing of the MLSC throughout its development.



Scan for more product details

Industry-Leading Implementation of the DQM/DQE Industry Standard

— The MLSC faithfully implements MLBD, using the Data Quality Metric (DQM) for each bit of every bit stream to determine the most likely correct output bit. Not only does the MLSC derive the lowest achievable output bit error rate possible, it also constructs accurate DQM for the output stream, which can be used in cascaded MLSC™ arrangements or by other downstream equipment.

Easy to Set Up and Use — Automatic DQE frame detection; local front panel interface with four displays for health and status monitoring, including presentation of DQM, time skew, and source-selection state; browser interface for health status monitoring, including integrated status reporting and logging such as input and output quality and quantifications of improvement.

Superior Dynamic Acquisition and Tracking Performance

— MLBD is only optimal if all received data streams are able to participate in the combining process at all times. This requires seamlessly maintaining stream alignment at the bit level, while tracking signals through the deep fades that are typical of serial streaming telemetry channels, and almost instantly reacquiring and realigning those streams that lose lock. The resulting system can easily track Doppler rate differentials due to the fastest of targets, well above Mach 25.

Affordable and Scalable — Twelve PCM I/O and twelve TMoIP I/O are independently configurable as input or output for MLSC groups, with up to twelve input channels and four channel groups (outputs) per unit. MLSC units can be cascaded to achieve any number of channels for larger systems and can be paralleled to support any number of channel groups.

If Quasonix is going to build a source selector, we're going to make sure it's the best it can be. The BSSA is the equipment that makes that possible.

QUASONIX

All Quasonix products are under U.S. Dept. of Commerce jurisdiction. Receiver products are categorized as 5A991.
ISO 9001:2015 Certified | Specifications subject to change without notice.

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