



# NBS-2500 ELINT SYSTEM

*with Demodulated IF Receiver*

## General Description

The NBS-2500 ELINT system represents the latest in ELINT receiver and signal analysis technology. The system architecture stresses modularity making extensive use of commercial-off-the-shelf (COTS) equipment, allowing future modular technology refresh and insertion without requiring total system replacement.

The basic NBS-2500 system consists of:

- ✓ Omni acquisition antenna
- ✓ Spinning DF antenna
- ✓ Scanning and set-on microwave receiver(s)
- ✓ Pulse Analyzer
- ✓ Rack mounted display and keyboard / mouse

## Applications

- ✓ Range Monitoring.
- ✓ ELINT collection and analysis.
- ✓ Geolocation using multiple installations.
- ✓ Laboratory test tool.

## Features

- ✓ Offers both pulse (PDW) and Intra-pulse (IDW) collection and analysis features.
- ✓ Low latency real time displays as well as post analysis of collected pulses.
- ✓ Integrated signal search plan and emitter library database.
- ✓ Generic microwave receiver interface allows integration with a number of receiver manufacturers.
- ✓ Scalable – supporting multiple simultaneous receiver channels.
- ✓ Digital IF version available (See NBS-2501).



## Advantages

- ✓ Extensive use of COTS equipment.
- ✓ Runs on Unix, Linux and Windows operating systems.
- ✓ Highly tailorable using PMC based interfaces and VME plug-in capabilities.
- ✓ High reliability, easy maintenance, and fully supported with training material and operators' manual.
- ✓ Suitable for many applications:
  - ✓ Fixed sites
  - ✓ Land Mobile
  - ✓ Airborne
  - ✓ Surface
  - ✓ Sub-surface
  - ✓ Carry-on / carry-off

## Operational ELINT Signal Analysis

### NBS-2500 Rack Configuration



- *Automatic Parameter Extraction (Deinterleaver)* Frequency, Frequency Modulation and Type, PRI, PRI Modulation and Type, Pulse Width, Amplitude AOA, FMOP Indication, Scan Type, Scan Time Stable, Agile, CW
- *Signal Types– RF* Stable, Stagger (32 levels), Jitter (up to 15%) Switch and Dwell, CW
- *Signal Types– PRI* Circular, Sector, Steady, Conical, Complex Supports Master Library with up to 15,000 modes. User create / edit custom scratch pads. Tracks 500 signals
- *Scan Types* All of the above plus:
  - AMOP (Minimum, Maximum, and Pattern)
  - FMOP (Minimum, Maximum, and Pattern)
- *Library*
- *Number of Emitters*
- *Manual Parameter Extraction (Analysis Displays)*

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**ISO 9001: 2000**

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## Technical ELINT Analysis Capability

### MANUAL DISPLAY TYPES:

- Spectrum Display
- Sparkle
- X-Y Plot
- Real Time Raster

- IDW Analysis
- Deinterleaver Summary
- Polar Display

### AUTOMATIC FUNCTIONS:

- Signal Search and Acquisition
- Tip Commands

Real time RF and IF pan display showing received energy across the spectrum.

Real time scatter plot of received data with signal isolation features.

Analysis display of collected pulse data. Any / all parameters plotted against any one parameter.

Real time, continuous, PRI vs. time display with data alignment / analysis tools.

Analysis display of collected intra-pulse data.

Display segment with deinterleaver results from pulse data.

Direction finding display showing signal activity over Azimuth.

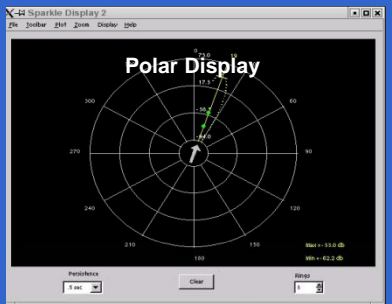
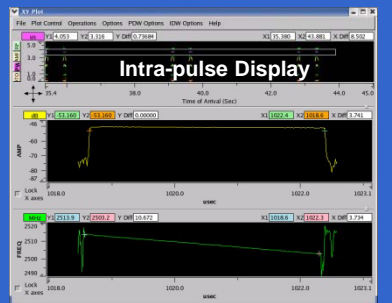
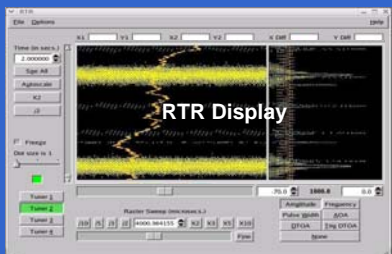
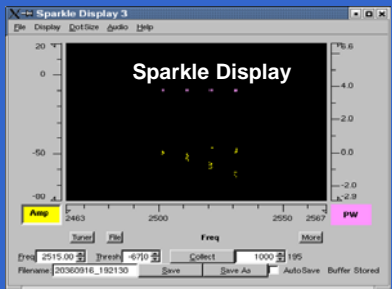
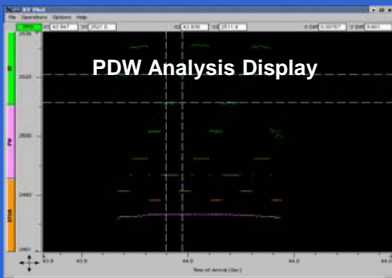
Tuner channel(s) allocated to a step-dwell function over user selected frequency range in support of automatic signal detection and reporting.

Accepted from external source over Ethernet.

## Performance Characteristics

PARAMETER	DEMODULATED IF RECEIVER	
	Baseband (Log and FM Video)	
Input Signal	Baseband (Log and FM Video)	
Instantaneous Bandwidth	80 MHz (Developed from 160 MHz IF)	500 MHz (Developed from 1 GHz IF)
A / D Sample Rate	213 MHz	213 MHz
Number of Bits	14	14
Instantaneous Dynamic Range	70 dB	60 dB
<b>PRI:</b>		
Range	300 ns to 100 ms	300 ns to 100 ms
Resolution	9.4 ns	9.4 ns
Accuracy (Threshold Crossing)	± 9.4 ns	± 9.4 ns
Display Resolution	0.1 ns	0.1 ns
<b>Pulse Width:</b>		
Range	50 ns to 300 µs	50 ns to 300 µs
Resolution	9.4 ns	9.4 ns
Accuracy (Threshold Crossing)	± 9.4 ns	± 9.4 ns
<b>TOA:</b>		
Resolution	9.4 ns	9.4 ns
Stability	10 <sup>-7</sup> internal 10 <sup>-13</sup> with external referenced	
Accuracy (Threshold Crossing)	± 9.4 ns	± 9.4 ns
Synchronization	1 pps conditioned	1 pps conditioned
Throughput	3 mpps	3 mpps
<b>Real Time Storage Capacity</b>		
PDW	1M PDWs	1M PDWs
IDW	2 Million	2 Million

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