SignalEye™

Real-Time Wide Bandwidth ELINT, Direction Finding, and Jamming Detection

SignalEye combines wideband ELINT, direction finding, AI/ML-assisted signal recognition, and electronic protection in a modular architecture optimized for persistent surveillance platforms.

Key Features

- **AI/ML-assisted signal recognition**
- **Simultaneous RTSA + DIFM processing**
- **0.5–18 GHz coverage**
- **1.6 GHz instantaneous bandwidth**
- **Real-time jammer detection**
- **Direction finding**
- **100G fiber remote RF architecture**
- **Modular open architecture**
- **SWaP optimized for aerostats**

SignalEye provides real-time electronic intelligence (ELINT) and electronic counter-counter measures (ECCM) for persistent surveillance platforms by detecting, classifying, direction finding, and tracking RF emitters while recognizing hostile jamming and interference.

Our latest SignalEye system provides a lightweight front end optimized for integration into the size, weight, and power (SWaP) constrained environment of the aerostat. The RF signals are digitized in the airborne section with the high-speed data transferred over 100G fiber optic interface to the processor at the ground station. Simultaneous RTSA and DIFM processing enables high probability of intercept across dense RF environments while accurately characterizing modern radar and communications emitters.

SignalEye real-time processing detects, classifies, and calculates a line of bearing for signals of interest. Our unique processing leverages both spectrum and PDW data to create a detailed definition of critical signal parameters including frequency, bandwidth, pulse width, pulse repetition interval, modulation types, and scan patterns. User programmable alarms allow signals to be classified in real-time with audio/visual alerts issued upon threat signal recognition. Automated modulation recognition for AM, FM, and PM signals ensures today's complex waveforms can be correctly segregated. Detailed log files for signals and system diagnostic data are collected and stored continuously to support post mission analysis. The signal data from SignalEye can be easily imported into a variety of user Command and Control (C2) systems using standard message formats.

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Receiver Performance

Frequency Range	0.5-18 GHz
Instantaneous BW	1.6 GHz
Sensitivity	-80 dBm
Dynamic Range	60 dB
DF Accuracy	10 deg RMS (nominal +15 dB SNR)

Signal Processing

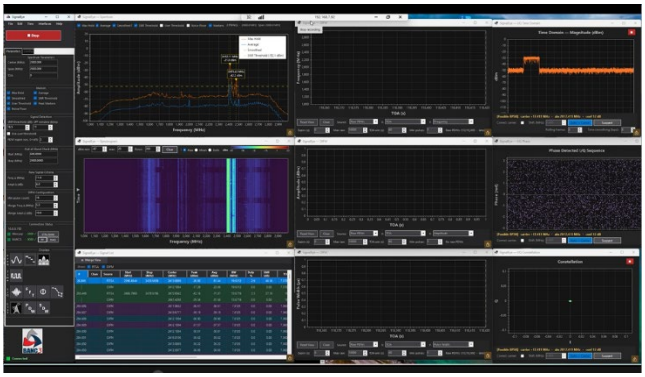
RTSA	Max, Mean, Waterfall Spectra
DIFM	PDW for TOA, RF, PA, PW, PRI
AI/ML Recognition	Communications & radar classification
Angle of Arrival	Spinning DF, Line of Bearing
Modulation Detect	AMOP, FMOP, PMOP

ECCM

High Power Protection	1 kW Limiter
Jamming Recognition	Barrage, Spot, Freq Agile

Size, Weight and Power

Airborne SWaP	18 x 12 x 12 in, 40 lbs, 50W
Ground SWaP	19 x 22 x 7 in, 50 lbs, 200W



SignalEye Analysis Software Application

Why SignalEye?

- **Maximizes high probability of intercept in dense RF environments**
- **Improves spectrum awareness for jamming/interference and threat signals**
- **AI/ML-assisted signal recognition reduces operator cognitive load**
- **Scalable airborne and ground configurations**
- **Software-defined architecture evolves for new missions and different theaters of operation without replacing the hardware**

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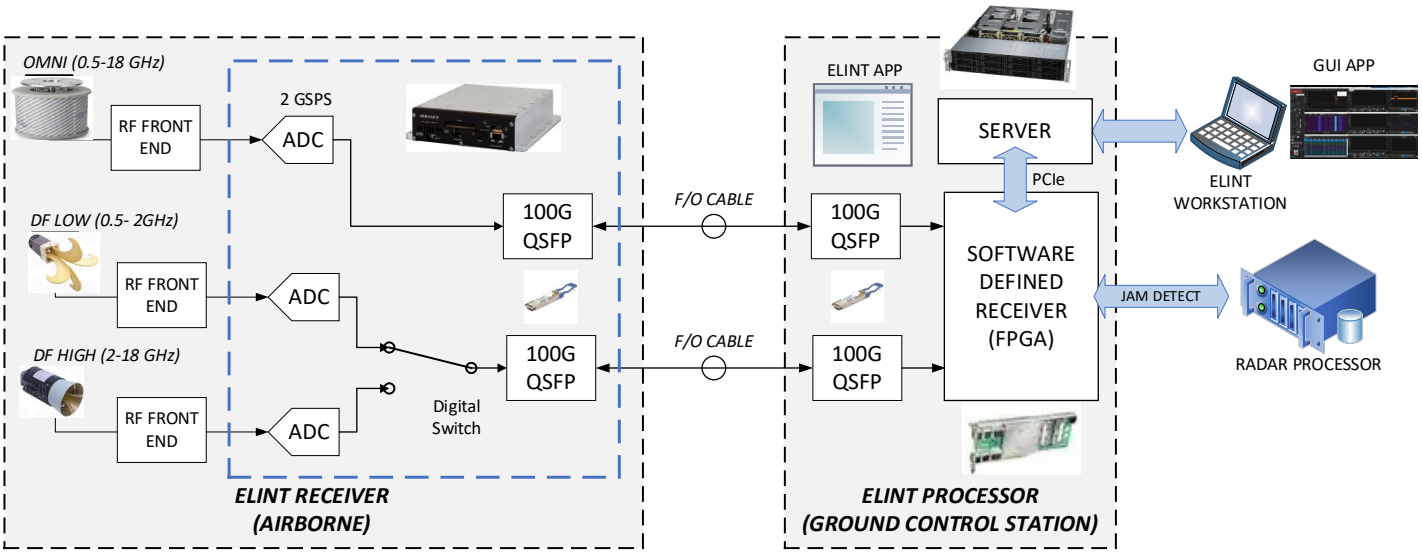
SignalEye™

Real-Time Wide Bandwidth ELINT, Direction Finding, and Jamming Detection

AI/ML-Enabled Features • Automatic Signal Recognition • Jamming Classification • Automated Alerting



Distributed airborne/ground architecture enables high-performance RF collection with low airborne SWaP while providing scalable ground-based AI/ML processing.

Customer Outcomes … *Delivering Actionable Intelligence and Electronic Protection for Mission Success*

DETECT EMITTERS SOONER
Wideband coverage and real-time processing maximize probability of intercept.

IMPROVE PROBABILITY OF INTERCEPT
Simultaneous RTSA and DIFM deliver complete signal visibility across dense RF environments.

RECOGNIZE JAMMING IN REAL TIME
Detects and classifies jamming types to support rapid response and radar adaptation.

REDUCE OPERATOR WORKLOAD
AI-assisted signal recognition and automation accelerate decision making and focus on threats.

ENABLE RADAR ADAPTATION
Timely electronic support allows radars to maintain performance under electronic attack.

SEAMLESS SYSTEM INTEGRATION
Open architecture and standard interfaces simplify integration into existing C2 systems.

PRESERVE MISSION DATA
Continuous logging of signals and system diagnostics supports post-mission analysis and debrief.

INCREASE MISSION EFFECTIVENESS
Actionable intelligence and electronic protection enhance situational awareness and mission success.

Typical Missions

AEROSTAT ISR & PERSISTENT SURVEILLANCE | BORDER & COASTAL SURVEILLANCE | COUNTER-UAS OPERATIONS | GROUND SURVEILLANCE RADAR SUPPORT | MARITIME DOMAIN AWARENESS | ELECTRONIC WARFARE SUPPORT | SIGNAL INTELLIGENCE (SIGINT) COLLECTION | TEST & EVALUATION RANGES

For additional information or demonstration scheduling … contact BANC3.

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