

RFEYE ARRAY 125

DF & SPECTRUM MONITORING SYSTEM

Transportable direction finding system combining broadband monitoring and DF on wideband signals to 8 GHz.

The RFeye Array 125 is a portable system designed for vehicle mounted, transportable or ground-fixed installations. It is a fully integrated plug-and-play system containing a high performance RFeye Node 100-8 (100MHz IBW, 8GHz frequency range), spiral antenna modules and high speed switch within an IP55 radome. It is also available with a mounting kit. The RFeye receiver commutates at very high speed around the antennas to make near-simultaneous AOA measurements in multiple directions.

In addition, timing and synchronization features allow correlation of data between multiple Arrays or between Arrays and Nodes for accurate geolocation of target signals using combined AOA, TDOA and POA techniques. Measurements can be overlaid onto a wide variety of maps, satellite images and 2D / 3D GIS datasets, to give a unique positional display showing source geolocation probabilities. All signal types in the range can be mapped, irrespective of signal power, bandwidth or frequency.



ARRAY 125 SPECIFICATIONS



Receiver

Channels

Single 1 x Node 100-8

Frequency

Range 9 kHz to 8 GHz

Sweep speed

Sweep 280 GHz/s @ 2 MHz RBW
245 GHz/s @ 61 kHz RBW

Noise figures at maximum sensitivity

9 kHz to 0.1 GHz 10 dB typical

0.1 GHz to 2.4 GHz 6 dB typical

2.4 GHz to 6 GHz 7 dB typical

6 GHz to 8 GHz 8 dB typical

Signal analysis

Instantaneous bandwidth 100 MHz

Tuning resolution 1 Hz

Internal frequency reference

Initial accuracy @20°C ±0.1 ppm typ.

Stability over temperature ±0.3 ppm

Ageing over 1 day ±0.04 ppm

Sampling

Resolution 16 bits per channel (I&Q)

Rate 125 MS/s I&Q

DF and Geolocation

Direction finding method

Angle of Arrival (AOA) 6-way switched array

Geolocation frequency range

AOA DF 500 MHz - 8 GHz

Time Difference of Arrival (TDOA) 9 kHz - 8 GHz
(optional omni antenna)

Power on Arrival (POA) 9 kHz - 8 GHz
(optional omni antenna)

DF coverage and accuracy

Polarization sensitivity All linear (circular polarized Rx antennas)

Azimuth coverage 360°

Array 125 System

I/O

Auxiliary RF inputs 2 x N-type

Omni antennas (option) 2 x external and/or
1 x internal (factory option)

Network 1 x 1 GigE, with PoE

USB 1 x USB 3.0, 1 x USB 2.0

GPS antenna input 1 x SMA passive or active
(+3.3 VDC)

Data storage

External SSD via external USB
interfaces

Internal SSD inside radome 512 GB SSD

Size, weight and power

Dimensions (∅, h) 650 mm x 420 mm
(25.59 x 16.53 in)

Weight 28 kg (61.7 lbs)

DC power 12V DC (limit +30V DC
max)

PoE 56V DC

Power consumption

Typical 30 W

Maximum 50 W

Environmental

Operating temperature -30 to +55°C (-22 to 131°F)

Storage temperature -40 to +71°C (-40 to 160°F)

Ingress protection IP55 Nominal



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