CRFS | EXTRAORDINARY RF TECHNOLOGY

DATA SHEET

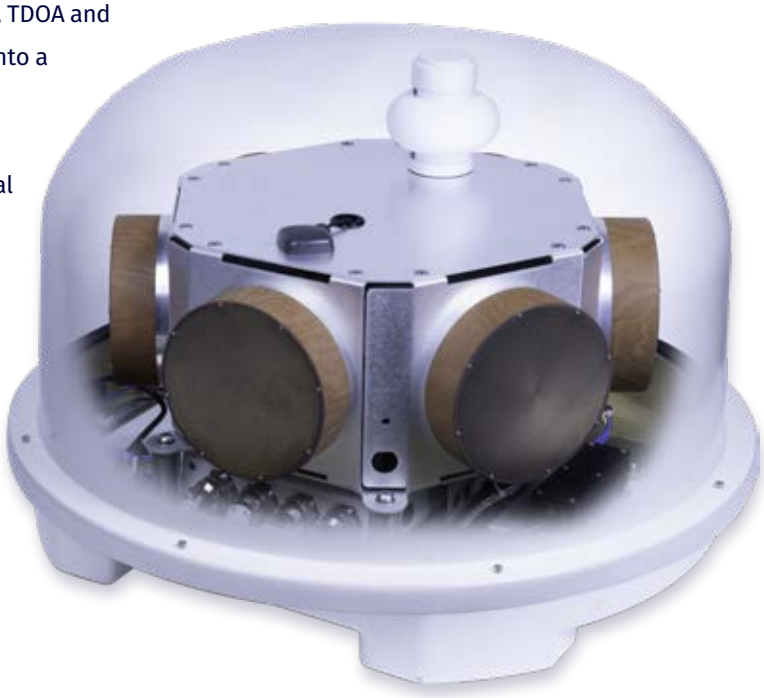
RFEYE ARRAY 150

DF & SPECTRUM MONITORING SYSTEM

Transportable direction finding system combining broadband monitoring and DF on wideband signals to 18 GHz.

The RFeye Array 150 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 100-18 (100MHz IBW, 18GHz 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 150 SPECIFICATIONS

DF and Geolocation

Direction finding method

Angle of Arrival (AOA)	6-way switched array

Geolocation frequency range

AOA DF	500 MHz – 18 GHz
Time Difference of Arrival (TDOA)	9 kHz – 18 GHz (optional omni antenna)
Power on Arrival (POA)	9 kHz – 18 GHz (optional omni antenna)

DF coverage and accuracy

Polarization sensitivity	All linear (circular polarized Rx antennas)
Azimuth coverage	360°

Array 150 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 POnE
USB	1 x USB 3.0, 1 x USB 2.0
GPS antenna input	1 x SMA passive or active (+3.3 VDC)
Location	Internal GNSS module & antenna (standard)
Heading	GNSS compass (opt.)

Data storage

External SSD	via external USB
Internal SSD inside radome	1 TB SSD

Size, weight and power *(excl. radome)*

Dimensions (Ø, 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)
POnE	56V

Power consumption

Typical	40 W
Maximum	55 W

Environmental

Operating temperature	-30 – +50°C (-22 – 122°F)
Storage temperature	-40 – +71°C (-40 – 160°F)
Ingress protection	IP55 Nominal

Receiver

Channels

Single	1 x Node 100-18

Frequency

Range	9 kHz to 18 GHz

Sweep speed

Sweep	390 GHz/s @ 2 MHz RBW 320 GHz/s @ 61 kHz RBW

Noise figures at maximum sensitivity

9 kHz – 83 MHz	11 dB typical
83 MHz – 1 GHz	9 dB typical
1 GHz – 2.9 GHz	8 dB typical
2.9 GHz – 5.9 GHz	7 dB typical
5.9 GHz – 10 GHz	9.5 dB typical
10 GHz – 15 GHz	12 dB typical
15 GHz – 16 GHz	13 dB typical
16 GHz – 17 GHz	18 dB typical
17 GHz – 18 GHz	21 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

CRFS Inc
Chantilly,
VA, USA
+1 571 321 5470

CRFS Ltd
Cambridge,
United Kingdom
+44 (0) 1223 859 500