CRFS | EXTRAORDINARY RF TECHNOLOGY

DATA SHEET

RFEYE ARRAY 300

DF & SPECTRUM MONITORING SYSTEM

High performance twin channel system for simultaneous wideband radiomonitoring and direction finding.

The Array 300 is an intermediate sized system for fixed (recommended) installations. It is available in two different receiver configurations based on the RFeye Node 100-8 with 100 MHz IBW and 8 GHz upper frequency, or Node 100-18 with 100 MHz IBW and 18 GHz upper frequency.

The Array 300 uses a unique multi-layer approach that is more sophisticated and versatile than traditional direction finding. High performance spiral directional antenna modules are optimized for different frequency bands and arranged in multiple orientations. The Array is sensitive to the majority of incoming signal polarizations including all linear polarizations, allowing reliable detection of signals including those invisible to most DF systems.

Timing and synchronization features enable combined AOA, TDOA and POA techniques allowing all signal types in the range to be mapped, irrespective of signal power, bandwidth or frequency.

ARRAY 300 SPECIFICATIONS

Receivers, Option 1: Array 300-8

Channels	
Dual	2 x Node 100-8
Frequency	
Range	9 kHz – 8 GHz
Programmable sweep modes	
Sweep speed at 2 MHz RBW	390 GHz/s typ.
Sweep speed at 61 kHz RBW	320 GHz/s typ.
Noise figures at maximum sensitivity (typical)	
9 kHz to 83 MHz	11 dB
83 MHz to 1 GHz	9 dB
1 GHz to 2.9 GHz	8 dB
2.9 GHz to 5.9 GHz	7 dB
5.9 GHz to 8 GHz	9.5 dB
Signal analysis	
Instantaneous bandwidth	100 MHz
Tuning resolution	1 Hz
Sampling	
Resolution	16 bits per channel (I&Q)
Rate	125 MS/s I&Q

Receivers, Option 2: Array 300-18

Channels	
Dual	2 x Node 100-18
Frequency	
Range	9 kHz – 18 GHz
Sweep speed	
At 2 MHz resolution bandwidth	390 GHz/s typ.
At 61 kHz resolution bandwidth	320 GHz/s typ.
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
Sampling	
Resolution	16 bits per channel (I&Q)
Rate	125 MS/s I&Q

DF and Geolocation

Direction finding method	
Angle of arrival (AOA)	Switched directional arrays
Geolocation frequency range	
AOA DF	300 MHz – 8/18 GHz
VHF DF extender option	20 MHz – 300 MHz
Time difference of arrival (TDOA)	9 kHz – 8/18 GHz (external omni antenna)
Power on arrival (POA)	9 kHz – 8/18 GHz (external omni antenna)
DF coverage and accuracy	
Polarization sensitivity	Vertical below 300MHz. All linear above 300MHz (circular polarized Rx antennas)
Azimuth coverage	360°
Antenna switch time	1.5 µs (typical)

Array 300 System

I/O	
Auxiliary RF input build options	3 or 4 x N-type or SMA (9 kHz – 8/18 GHz)
Omni antennas (option)	3 or 4 x external / 1 x internal (factory option)
Network	2 x GbE with POnE
USB	2 x USB 3.0
Location	Internal GPS module & antenna (standard)
Heading	Internal digital compass (option)
Data storage	
External SSD	via external USB interfaces
Internal SSD inside radome	1 TB (per Node)
Size, weight and power	
Dimensions (Ø, h) with radome	1.1 m x 0.8 m (43 x 31 in)
Weight	80 kg (176 lbs)
POnE	56V DC
Power consumption	
Nominal	140 W
Environmental	
Operating temperature range	-30 – +55°C (-22 – 131°F)
Storage temperature range	-40 – +71°C (-40 – 160°F)
Ingress protection	Node & electronics: IP67, system: IP55

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bsi. ISO 9001:2015 Quality Management
UK Certificate number: FS576625