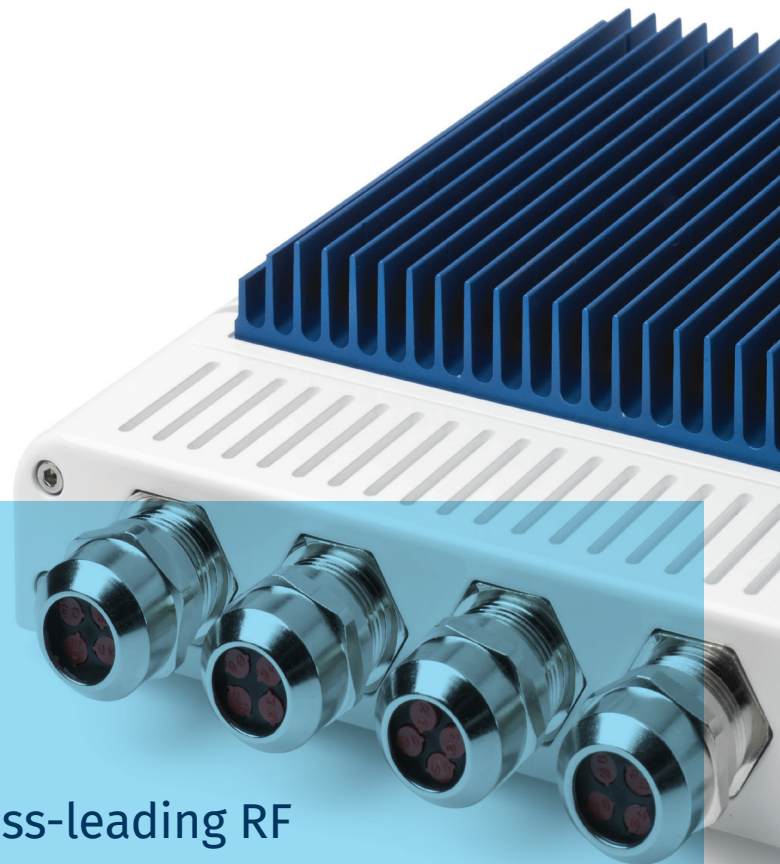


# RFeye Node

100-8

## Intelligent Wideband Receiver



The RFeye Node 100-8 offers class-leading RF performance and extended instantaneous bandwidth for 24/7 ITU-compliant spectrum monitoring and radio geolocation.

The RFeye Node 100-8 uses the latest superheterodyne receiver technology to provide outstanding quality and performance at a highly competitive price. It is a complete spectrum monitoring and geolocation system designed for remote deployment in distributed networks both indoors and outdoors, including in hostile environments. Packaged in a compact, rugged and a weatherproof housing, it has been optimized for size, weight and power (SWaP) and is simple to connect to power and network.

The Node 100-8 is characterized by outstanding phase noise, noise figure, channel retune time and spurious free dynamic range parameters, well above any other product in its class. It also offers all of the multi-mission capability of the RFeye product range allowing multiple concurrent measurements and geolocations to be performed and multiple users to connect simultaneously from remote locations. The Node 100-8 includes an on-board SSD for logging large data sets.

# RFeye Node

## 100-8 Specifications

### Single channel receiver

Switchable RF inputs 3 x SMA connectors

### Frequency

Range 9 kHz to 8 GHz

### 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

### Phase noise

Receiver input at 1 GHz -130 dBc/Hz at 20 kHz offset, typ.

Receiver input at 8 GHz -121 dBc/Hz at 20 kHz offset, typ.

### Signal analysis

Instantaneous bandwidth 100 MHz

Tuning resolution 1 Hz

### Internal frequency reference (pre-calibration)

Initial accuracy  $\pm 1.0$  ppm typ.

Stability  $\pm 1.5$  ppm typ.

Ageing  $\pm 0.5$  ppm per year

### Programmable sweep modes

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

User programmable modes free run continuous,  
single timed, user trigger  
and adaptive

Trigger-on-event modes user defined masks,  
actions and alarms

### Sampling

Resolution 16 bits per channel (I&Q)

Rate 125 MS/s I&Q

### Third order intercept points with AGC

0.1 GHz to 8 GHz +35 dBm typical

### Local oscillator

Re-radiation  $\leq -90$  dBm typical

### Frequency references

Selectable Internal, GPS or external

External input 10 MHz  $\pm 10$  ppm

Output 10 MHz

GPS holdover (option) Synchronisation Backup  
Module (SYN-SBM0002),  
 $\pm 1.5$   $\mu$ s / 8 hrs

### Processor sub-system

CPU Intel E3845 quad core

Level 2 cache 2 MB

Main memory 8 GB ECC DDR3

System disk 32 GB

### I/O

Network 1 x 1 GigE, with PoE

Universal Serial Bus 1 x USB 3.0, 1 x USB 2.0

2 x IEEE1394 expansion ports 2 x SyncLinc,  
trigger input, external  
peripheral control

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

### Data storage

External flash disk via USB interfaces

Internal storage 256 GB SSD

### System software

Boot firmware BIOS

Operating system Linux, kernel v 2.6

RFeye Node Control Protocol NCP Server (NCPd)

Node Apps (optional) Logger, Recorder,  
Threshold, Stations,  
Survey

### Size, weight and power

Dimensions (w, h, d) 200 x 50 x 192 mm  
without end plate or heat sink  
(7.9 x 2.0 x 7.6 inches)

Weight 2.4 kg (5.3 lbs)

without end plate or heat sink

DC power or PoE 10 to 48 VDC

### Power consumption

Typical 25 W

Maximum 40 W

### Environmental

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

Storage temperature -40 to +70 °C (-40 to 158 °F)

Ingress protection IP67 (with optional end  
plate)



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