

RFeye Node

100-8

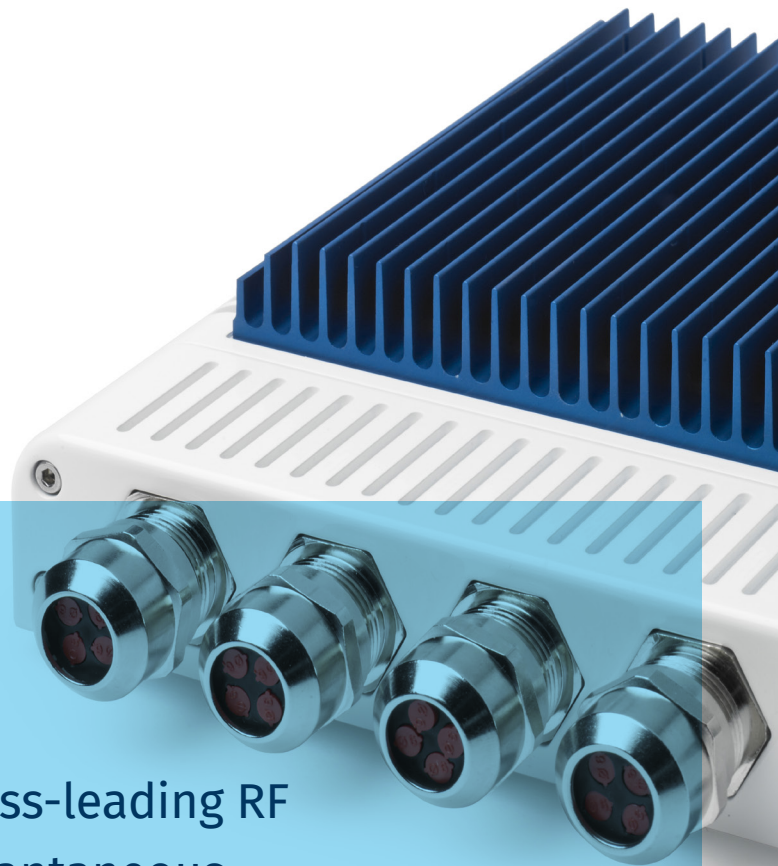
Intelligent Wideband Receiver



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 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 re-tune 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.



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

Initial accuracy @20°C ±0.1 ppm typ.

Stability over temperature ±0.3 ppm

Ageing over 1 day ±0.04 ppm

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 ≤ -90 dBm typical

Frequency references

Selectable Internal, GPS or external

External input 10 MHz ±10 ppm

GPS holdover (option) Synchronisation Backup
Module ±1.5 µs / 8 hrs

Processor sub-system

CPU Intel E3845 quad core

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
configurable as: 2 x SyncLinc with <10ns
RMS accuracy typical,
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

System software

Boot firmware BIOS

Operating system Linux

RFeye Node Control Protocol NCP Server (NCPd)

Node Apps (optional) Logger, Emp, Detectors

Size, weight and power

Dimensions (w, h, d) (Node only) 200 x 50 x 192 mm
(7.9 x 2.0 x 7.6 inches)

Dimensions (w, h, d)
(with end plates and heat sinks) 200 x 98 x 395 mm
(7.9 x 2.0 x 15.6 inches)

Weight (Node Only) 2.4 kg (5.3 lbs)

(with end plates or heat sinks) 5.8 kg (12.8 lbs)

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 +71 °C (-40 to 160 °F)

Ingress protection IP67 (with optional end
plates)



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