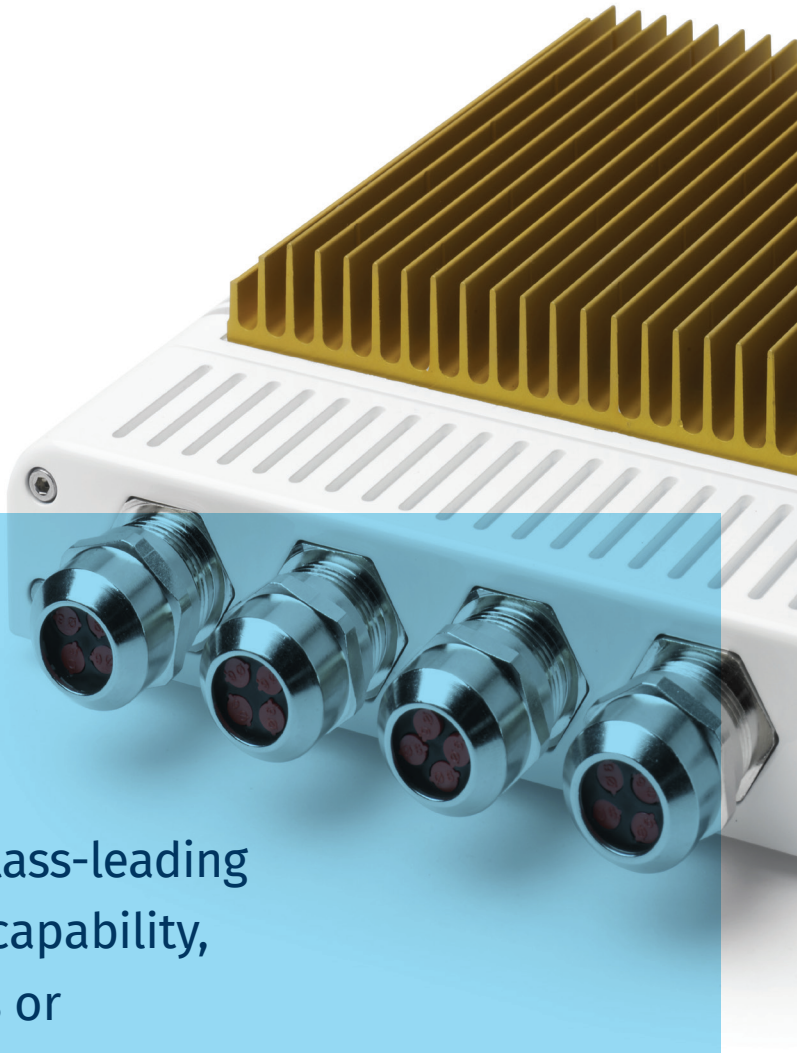
RFeye Node

100-18

Intelligent Wideband Receiver



The RFeye Node 100-18 offers class-leading RF performance for advanced capability, real-time spectrum operations or deployment on any spectrum critical site.

The RFeye Node 100-18 offers the capabilities of the Node 50-8 but with extended instantaneous bandwidth of 100 MHz and frequency range up to 18 GHz. Like the other RFeye Nodes in the family, 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 100-18 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. Its multi-mission capability allows multiple concurrent measurements and geolocations to be performed and multiple users to connect simultaneously from remote locations. The Node 100-18 includes an on-board SSD for logging large data sets.

RFeye Node

100-18
Specifications

Single channel receiver

Switchable RF inputs	3 x SMA connectors

Frequency

Range	9 kHz to 18 GHz

Noise figures at maximum sensitivity

9 kHz to 0.12 GHz	12 dB typical
0.12 GHz to 6 GHz	8.5 dB typical
6 GHz to 10 GHz	10.5 dB typical
10 GHz to 18 GHz	13 dB typical

Phase noise

Receiver input at 1 GHz	-126 dBc/Hz at 20 kHz offset, typ.
Receiver input at 5 GHz	-121 dBc/Hz at 20 kHz offset, typ.
Receiver input at 18 GHz	-110 dBc/Hz at 20 kHz offset, typ.

Signal analysis

Instantaneous bandwidth	100 MHz
Tuning resolution	1 Hz

Internal frequency reference (pre-calibration)

Initial accuracy	±1.0 ppm typ.
Stability	±1.5 ppm typ.
Ageing	±0.5 ppm per year

Programmable sweep modes

Sweep speed at 2 MHz RBW	390 GHz/s typ.
Sweep speed at 61 kHz RBW	320 GHz/s typ.
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

≤ 1 GHz	+20 dBm typical
> 1 GHz to ≤ 6 GHz	+15 dBm typical
> 6 GHz to ≤ 18 GHz	+20 dBm typical

Local oscillator

Re-radiation	≤ -90 dBm typical

Frequency references

Selectable	Internal, GPS or external
External input	10 MHz or 100 MHz ±1 kHz
GPS holdover *(option)*	Synchronisation Backup Module (SYN-SBM0002), ±1.5 µs / 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 POnE
Universal Serial Bus	1 x USB3.0, 1 x USB2.0
2 x IEEE1394 expansion ports configurable as:	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) without end plate or heat sink	200 x 75 x 192 mm (7.9 x 2.0 x 7.6 inches)
Weight without end plate or heat sink	2.4 kg (5.3 lbs)
DC power or POnE	10 to 48 VDC

Power consumption

Typical	40 W
Maximum	55 W

Environmental

Operating temperature	-30 to +50 °C (-22 to 122 °F)
Storage temperature	-40 to +70 °C (-40 to 158°F)
Ingress protection	IP67 (with optional end plate)

CRFS

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