

RFeye Node 100-40

“Prepare for the expanded future”

The RFeye Node 100-40 is the world's first rugged 40GHz RF receiver

Users of the RF spectrum are looking at higher frequencies to address the ever-increasing demands on congested data and communications networks. Previously, frequencies over 18GHz have been under-utilized, but now 20, 30 and even 40GHz are being used. With a 40GHz frequency range and 100MHz instantaneous bandwidth, the RFeye Node 100-40 answers the needs of customers who are looking to monitor these higher frequencies, and not just in the test lab, but in the real world.

Applications:

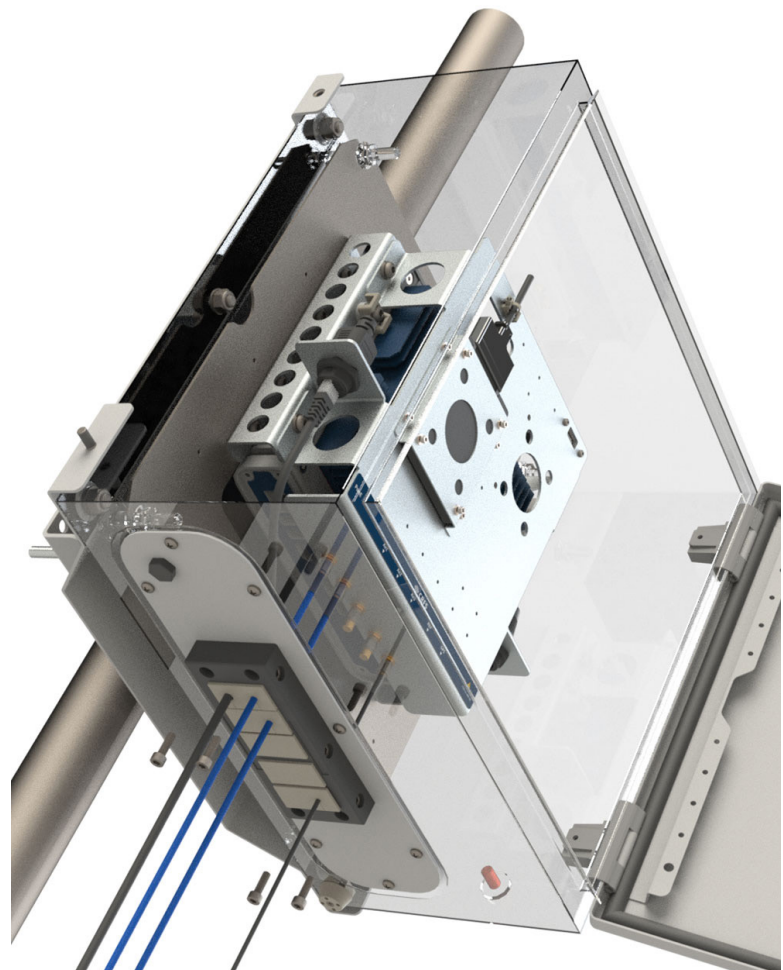
- Military - Test range monitoring, EMCON
- Satellite monitoring
- Upper 5G monitoring
- Technical Surveillance Counter Measures (TSCM)

Rugged, flexible deployment

With its low Size, Weight and Power (SWaP) the 100-40 can be deployed wherever it is needed, in remote hostile environments both indoors and outdoors for spectrum monitoring and signals collection.



The RFeye 100-40 extends your capabilities to help you prepare for the next generation of RF technologies and future proof your spectrum monitoring.



RFeye Node

100-40 Preliminary Specifications

Single channel receiver

Switchable RF inputs	2 x SMA (9 kHz -18 GHz) 1 x K2.92 (16 kHz - 40 GHz)
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Frequency

Range	9 kHz to 40 GHz
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Noise figures at maximum sensitivity

9 kHz to 120 MHz	12 dB typical
120 MHz to 6 GHz	8.5 dB typical
6 GHz to 10 GHz	10 dB typical
10 GHz to 18 GHz	13 dB typical
18 GHz to 40 GHz	16 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
Receiver input at 40 GHz	-104 dBc/Hz at 20 kHz offset, typ *

Signal analysis

Instantaneous bandwidth	100 MHz
Tuning resolution	1 Hz (retune time 0.2 msec)

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 at 2 MHz RBW	390 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 ≤ 8 GHz	+20 dBm typical
> 8 GHz to ≤ 40 GHz	+20 dBm typical *

Local oscillator

Re-radiation	≤ -90 dBm typical
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Frequency references

Selectable	Internal, GPS or external
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Processor sub-system

CPU	Intel E3845 quad core
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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 ext peripheral control
GPS / GNSS antenna input	1 x SMA passive or active (3.3 VDC)

Data storage

External SSD (optional)	via USB interfaces
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System software

Boot firmware	BIOS
Operating system	Linux, kernel v 2.6
RFeye Node Control Protocol	NCP Server (NCPd)

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)
Weight (Node Only)	3.5 kg (5 lbs)
Weight (with end plate & heat sinks)	6.2kg (13.7 lbs)

DC power or PoE	10 to 48 VDC
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Power consumption

Typical	50 W
Maximum	57 W *

Environmental

Operating temperature	-30 to +50 °C (-22 to 122 °F)
Storage temperature	-40 to +71 °C (-40 to 160 °F)
Ingress protection	IP67 (with optional end plate)



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* Preliminary specifications subject to change

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