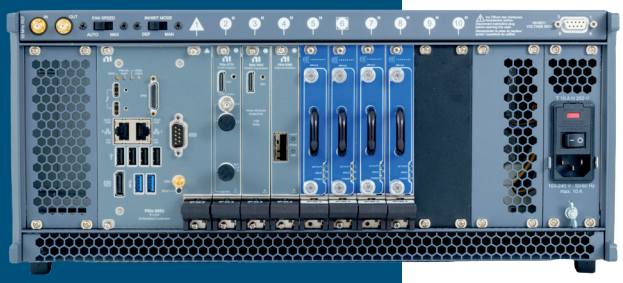
Gapless, Wideband ELINT Recorder | MUNIN 1005-IF

MUNIN 1005-IF is the wideband IF recorder platform from Novator Solutions. Built upon modular, commercial-off-the-shelf hardware, MUNIN 1005-IF is the ideal solution for gapless recording of narrowband and wideband IF (intermediate frequency) signals with 2 MHz to 1000 MHz real-time bandwidth. MUNIN 1005-IF is optimised for mission-critical ELINT and wideband COMINT applications, supporting precise time difference of arrival (TDOA) measurements and enabling offline spectrum analysis.

MUNIN 1005-IF

- Selection of 4 narrowband and wideband IF inputs
- 2 MHz to 1000 MHz instantaneous bandwidth
- 8 to 96 TB storage capacity
- Superior timing precision
- Real-time spectrum monitoring



Gapless Recording

In signals intelligence, capturing potential new emitters is essential for thorough offline analysis and accurate signal classification. To achieve reliable results, it is crucial to record IQ data without any gaps. MUNIN 1005-IF features an advanced buffer and streaming architecture that compensates for potential latencies, enabling lossless, continuous recording for extended periods. Additionally, its buffer stores all pre-trigger events, ensuring truly gapless recording of RF signals.

Superior Timing Precision

Accurate timing is critical for geopositioning using TDOA measurements. MUNIN 1005-IF supports Network Time Protocol (NTP) to synchronise timing information across all modules on both the server and client sides. For high-precision timekeeping, the system can be synchronized with a GPS source. When combined with a pulse-per-second (PPS) signal, this setup achieves timestamp accuracy better than 10 microseconds.

Scalability and Flexibility

The modular, COTS-based architecture makes MUNIN 1005-IF a flexible and scalable solution. Its IF inputs and storage capacity can be tailored to meet specific mission requirements. Choose from removable or non-removable storage modules, each starting at 8 TB, and scaling to 96 TB and beyond within a single chassis.

Operators can configure, monitor and control MUNIN 1005-IF via the built-in client interface, which includes an optional real-time spectrum monitor. Alternatively, third-party applications can interface with the system using the intuitive TCP/IP API, supported by a comprehensive Interface Control Document (ICD).

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Technical Specifications MUNIN 1005-IF

IF Receiver		
	Narrowband input	Wideband input
IF receiver channels (Rx)	1 - 2, SMA connectors	1 - 2, SMA connectors
ADC resolution	16 bits	12 bits
ADC clock	500 MHz	2.8 GHz - 3.2 GHz
SFDR	88 dBc (@ 70 MHz bandwidth)	71 dBc (@ 500 MHz bandwidth)
IF centre frenquency (default)	160 MHz	1000 MHz
Frequency range (-3 dB)	0.1 MHz - 225 MHz	0.1 MHz - 6 GHz
Instantaneous bandwidth	2 MHz - 100 MHz	500 / 1000 MHz
IF output		
IF channel (Tx)	1, SMA connector	
DAC resolution	12 bits	
Update rate	6.4 GS/s	
SFDR	-62.4 dBc @ 1.01 GHz	
General		
Recording modes	Manual, software trigger and hardware trigger	
Data format	Real or IQ, 16-bit	
File format	TDMS or Midas Blue 2.0	
Time source	GPS antenna, IEEE 1588 PTP, or external NTP server	
Time reference	GPS, PPS	
Disk storage		
	M.2 storage	U.2 storage
Form factor	Single-slot module	Single-slot module
Removable disk(s)	No	Yes
Total storage capacity	8 - 32 TB	7.68 / 15.2 TB
Mechanical / Environmental		
Form factor	4U - 19" rack mountable chassis	
Operating altitude	3000 m	

Novator Solutions AB, part of Novator Consulting Group, is at the forefront of SIGINT and EW technology. Our highly skilled R&D team combines expertise in high-speed data processing and software defined radio (SDR) technology to develop cutting-edge monitoring receivers and RF signal recorders. Our software proficiency, combined with modular hardware designs, allows us to create customised solutions that meet specific project and mission needs.

Mail: info@novatorsolutions.se
Call: +46 8-622 63 50
Visit: novatorsolutions.com

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