

SIR 2115

Digital Broadband Receiver



9 kHz to 3 GHz

New class of high-end broadband receiver for signal search and interception

The SIR 2115 covers the VLF - UHF frequency range from 9 kHz to 3 GHz. Its top-notch modular and flexible design and the remarkable high scan speed of 100 GHz/s allow various configurations to incorporate different scenarios from manual interception to automatic communication intelligence (COMINT).

The extended frequency range enables new use cases in signal search and analysis. In comparison with other receivers, the fast scan of 100 GHz/s over the entire frequency range significantly reduces the time needed to create a list of emissions before final analysis. The signal search and alert feature is a very efficient and flexible tool for observation of multiple signals of interest at the same time. These outstanding benefits, combined in just one device, allow the user to save and focus on resources.

Features

- Multiband receiver from VLF to UHF
- Fast scan of 100 GHz per second for signal search and detection
- Broadband I/Q data output of 80 MHz (4 x 20 MHz)
- 20 integrated virtual narrowband receivers (DDC)
- Optional: 3 to 6 GHz extension

Use Cases

- With the frequency range from 9 kHz to 3 GHz, signals can be monitored and intercepted in one device.
- Broadband acquisition: the coherent analogue bandwidth of 80 MHz can be digitised and streamed for recording and later analysis.
- Signal interception: up to 20 signals with a bandwidth of 50/100/200/400 kHz can be intercepted and processed in parallel.
- Spectrum monitoring: with fast scan and the signal search and alert, the receiver becomes future-proof and well prepared for new upcoming tasks in signal search and monitoring.

Specifications

SIR 2115 – Digital Broadband Receiver

Characteristics	
Frequency range	9 kHz to 3 GHz (option: 3 GHz to 6 GHz extension)
Coherent bandwidth	80 MHz (30 MHz HF)
DDC channels	Broadband IQ 4 x 20 MHz 20 narrowband channels (50/100/200/400 kHz)
Tuning resolution DDC	< 1 Hz
Preselection	10 high and low pass filters
Maximum input level	+15 dBm (non-destructive)
Noise figure	typically 9 dB (degraded performance for 9 kHz to 30 MHz, 3 GHz to 6 GHz)
VSWR	2:1
MDS (Minimum Detectable Signal)	-137 dBm (at 500 Hz resolution)
SFDR	> 90 dB (9 kHz to 3 GHz, in-band)
IP2	> 70 dBm (at 0 dBm and with AGC)
IP3	> 30 dBm (at 0 dBm and with AGC)
Frequency stability	$\pm 10^{-7}$
IF rejection	typically > 130 dB
Image rejection	typically > 120 dB

Interfaces	
Antenna input	3 x N-Type connector (female, nominal impedance 50 Ω)
Input/output for external reference frequency	2 x BNC female (10 MHz)
Input for time synchronisation	BNC female pulse per second (PPS)
Network interface	1 x 10 GBASE-SR, OM3 MM fibre (data – UDP) 1 x 1000 Base-T (control, data – TCP/IP)
Service connection	RS-232
Operating voltage	85 to 264 V AC (50/60 Hz)
Power consumption	200 VA (integrated power supply)

Environmental data	
Operating temperature	0 °C to +50 °C
Storage temperature	-40 °C to +70 °C
Humidity	\leq 85% (non-condensing)
Environmental standards maintained	EN 61010-1:2002 EN 61000-6-2:2002 EN 61000-6-3:2002

Mechanical data	
Width	19" (482.6 mm)
Height	1 RU (44.5 mm)
Depth	490 mm
Weight	10 kg