

SIR 5110

Multi-Channel HF Digital Broadband 1 RU Receiver



0.5 to 30 MHz

The benchmark for new generation HF receivers worldwide

The 1 RU HF receiver SIR 5110 covers the full frequency range from 0.5 to 30 MHz. Its modular and flexible design allows various configurations to incorporate different mission scenarios from manual interception to automatic communication intelligence (COMINT).

Multiple bands of interest can be covered simultaneously by freely selecting 16 precisely tuned digital sub-bands within the entire HF range. The virtual receiver concept allows the substitution of up to 120 narrow-band channels in the selected frequency range.

Features

- 100% high-resolution interception of signals from 0.5 to 30 MHz
- Excellent dynamic range of 169 dB; spurious free 105 dB
- Flexible sub-band concept with up to 120 virtual narrowband receivers and up to 16 wideband (768 kHz each) IQ streamer
- No internal spurious responses
- Built In Test Equipment (BITE) for every internal module / via SNMP interface



Specifications

SIR 5110 – Multi-Channel HF Digital Broadband 1 RU Receiver

Characteristics	
Frequency range	0.5 to 30 MHz
Coherent bandwidth	29.5 MHz analogue 12.288 MHz digital in 16 sub-bands
DDC channels	
Basic version:	4 x 20 kHz bandwidths
Optional (field upgradable):	20/120 x 20 kHz bandwidths
Optional (field upgradable):	wideband IQ 16 x 768 kHz
Tuning resolution (DDC)	< 1 Hz
Pre-selection	7 high- and low pass filters
Gain control	automatic, manual or automatic with user defined shift (AGC + M)
VSWR	< 2:1
Maximum input level	+ 30 dBm (non-destructive)
Noise figure	≤ 12 dB (without pre-selection)
MDS (Minimum Detectable Signal)	-139 dBm (at 125 Hz resolution, 500 ms integration)
SFDR (Spurious-Free Dynamic Range)	typ. 105 dB ≥ 100 dB (2 to 30 MHz, in-band) ≥ 95 dB (0.5 to 2 MHz, in-band)
Input IP2	≥ 80 dBm (at 0 dBm and with AGC)/pre-sel.: off
Input IP3	≥ 43 dBm (at 0 dBm and with AGC)
BDR (Blocking Free Dynamic Range)	140 dB/Hz
Full dynamic range	169 dB
IF rejection	n. a. (direct sampling)
Image rejection (related to ADC)	not measurable
Internal spurious	none
Frequency stability	±10 ⁻⁷
Frequency drift	< ±5* 10 ⁻⁷ ageing/year
Phase noise	≤ -150 dBc/Hz at 10 kHz offset

Interfaces	
Antenna input	N-connector female (nominal impedance 50 Ω)
Input for external reference frequency	BNC-female (10 MHz)
Input for time synchronisation	BNC: pulse per second (PPS)
Network interfaces	3 x Gigabit Ethernet (for control and data)
Service connection	RS 232
Operating voltage	100 to 264 VAC (50/60 Hz)
Power consumption	150 VA (integrated power supply)

Environmental data	
Operating temperature	0° C to +50° C
Storage temperature	-40° C to +70° C
Humidity	≤ 85% (non-condensing)
Environmental standards maintained	EN61010-1:2002 / EN61000-6-2:2002 / EN61000-6-3:2002

Mechanical data	
Width	19" (482.6 mm)
Height	1 RU (44.5 mm)
Depth	490 mm
Weight	7 kg