# **SIR 5110**

#### HF digital broadband tuner



The SIR 5110, with an instantaneous analogue bandwidth of 29.5 MHz, covers the 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).

The SIR 5110 sets the benchmark for new generation HF search and interception receivers worldwide.

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

### Highlights

- Flexible sub-band concept with 16 x 768 kHz digital bandwidth (12.288 MHz overall)
- Excellent dynamic range: Spurius free dynamic range > 105 dB
- Wideband IQ data output for up to 16 channels with 768 kHz bandwidth each
- No internal spurious responses







Rear side of SIR 5110

Modular architecture with plug in cards

#### **Technical data**

#### Features

Frequency range	0.5 – 30 MHz
Coherent bandwidth	29.5 MHz analogue, 12.288 MHz digital in 16 sub-bands)
DDC channels Basic version: Optional: Optional:	4 x 20 kHz bandwidths 20 / 120 x 20 kHz bandwidths Wideband IQ 16 × 768 kHz
Tuning resolution (DDC)	< 1 Hz
Pre-selection	7 high- and low pass filters
Gain control VSWR	Automatic, manual or automatic with user defined shift (AGC + M) $< 2:1$
Maximum input level	+ 30 dBm (non-destructive)
Noise figure	$\leq$ 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 – 30 MHz, in-band) ≥ 95 dB (0.5 – 2 MHz, in-band)
Input IP2	$\geq$ 80 dBm (at 0 dBm and with AGC), pre-sel.: off
Input IP3	$\geq$ 43 dBm (at 0 dBm and with AGC)
BDR (Blocking Free Dynamic Range)	140 dB/Hz
Full dynamic range	169 dB
IF rejection	> 140 dB (direct sampling)
Image rejection	> 90 dB
Internal spurious	None
Frequency stability	±10 <sup>-7</sup>
Frequency drift	$< \pm 5^{*} 10^{-7}$ ageing/year
Phase noise	$\leq$ -150 dBc/Hz at 10 kHz offset
Interfaces	
Antenna input	N-connector female (nominal impedance 50 $\Omega$ )
Input for external reference frequency	BNC-female (10 MHz)
Input for time synchronization	BNC: pulse per second (PPS)
Network interface	3 x Gigabit Ethernet (for control and data)
Service connection	RS 232
Operating voltage	100 – 264 VAC (50 / 60 Hz)

Maximum power consumption	150 VA
Built In Test Equipment (BITE)	For every internal module, via SNMP interface
MTBF (according to MIL-HDBK)	At least 10,000 hours
Environmental data	
Permissible temperature range:	
Operating	0° C to +50° C
Storage	-40° C to +70° C
Humidity	$\leq$ 85% (non-condensing)
Environmental standards maintained	EN61010-1:2002, EN61000-6-2:2002, EN61000-6-3:2002
Integration data	
Width	19" (482.6 mm)
Height	1 RU (44.5 mm)
Depth	490 mm
Weight	7 kg
Order reference	SIR 4325.1

## **Optional features**

Feature	Order reference
Virtual narrowband monitoring channels and extended clients and channels	SIR 4325.1.2
Virtual narrowband monitoring channels and large numbers of channels	SIR 4325.1.3
Large numbers of channels and digital broadband output	SIR 4325.1.4
Virtual narrowband monitoring channels, large numbers of channels and digital broadband output	SIR 4325.1.5
Graphical user interface WinMON	on request
Panoramic monitoring view	on request
Advanced memory scan	on request



PLATH GmbH

Gotenstraße 18 20097 Hamburg Germany

Tel.: +49 40 237 34-0 Fax: +49 40 237 34-173

info@plath.de www.plath.de www.plathgroup.com