☰INTRIPLE

IZ245
Monitoring receiver

Receiver variants:

IZ245   Monitoring Receiver
IZ245J Follower/Responsive Jammer
IZ245F Direction Finder

The IZ245 receiver has software defined radio architecture based on FPGA. Powerful processing achieves very fast scanning speeds of 300 GHz/s or more. It can be used as a recording receiver, frequency scanner and with extension modules as a Direction Finder and Responsive Jammer. Receiver offers analysis bandwidth of up to 80 MHz available for demodulation, scanning and signal recording. IF preselection filters of various bandwidths are used to ensure high selectivity. Input of the receiver includes preselector to achieve excellent dynamic range with good sensitivity. Received IQ signals can be recorded to an internal fast NVMe disc drive with 2.5 TB capacity. The SSD is removable to protect sensitive data. Optical LAN interface together with hardware implemented TCP offers capability of 10 Gbit/s data transfer. VITA 49 protocol is supported for integration into large SIGINT systems. High stability reference oscillator can be disciplined by GPS through internal civilian GNSS receiver or external 1PPS signal. Built-in DAC with frequency range up to 6 GHz can be used as exciter for power amplifier to create responsive jammer. IQ signals stored on the SSD can be used as modulation signals for intelligent jamming. Direction finder antenna system can be controlled from the receiver to form a single channel direction finder. The receiver can be used as one of sensors for TDOA geolocation SIGINT system.

Features:

- Frequency range up to 8 GHz
  (from 100 kHz, 1 MHz, 20 MHz options)
- High sensitivity preamplifier
- Tuneable preselector with bypass functionality
- High stability reference oscillator with ability to synchronize to GPS 1PPS
- IF preselection filters wide 500 kHz, 10 MHz, 50 MHz and 80 MHz
- RF input protected with power limiter up to 30 W
- Built-in exciter 10 MHz – 6 GHz, output power up to 0 dBm
- Built-in civilian multi-standard GNSS receiver
- Connector for external GNSS receiver
- AUX connector for extension modules
- Built-in removable M.2 NVMe SSD for IQ recording
- Mini SAS connector for external HDD for IQ recording
- Mil Std connectors (power supply, external GNSS, LAN, AUX)
- Fibre optic 10 Gbit/s, 1 Gbit/s and metallic LAN interfaces
- OLED display 3.2"
- Space-saving system integration due to small dimensions
- Custom digital signal processing blocks for special applications
- Powerful digital signal processing in FPGA
- Supported in IP927, IP982, IP983 applications
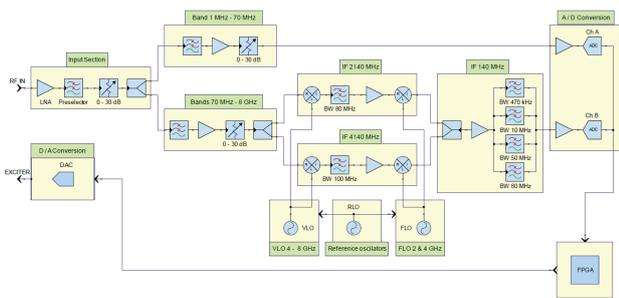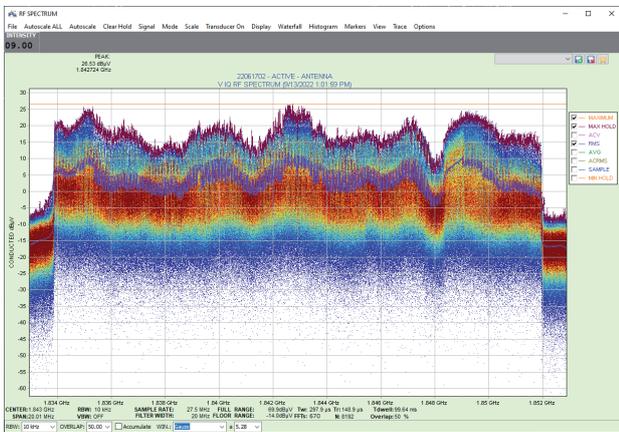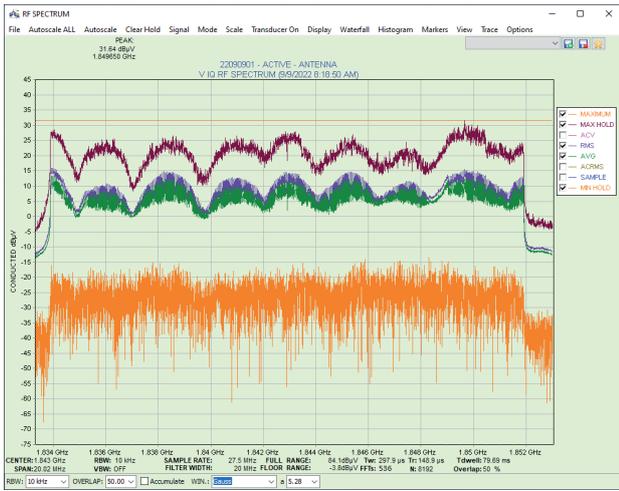
Parameter	Value
Frequency range	100 KHz to 8 GHz
Analogue IF bandwidth	500 kHz, 10 MHz, 50 MHz and 80 MHz
RF Input	TNC RF connector, 50 Ohm, max 25 V DC, RL > 10 dB
Number of subbands	9
Gain control	AGC, MGC, AGC+M
Tuning step	1 Hz
Tuneable preselector	20 MHz to 8 GHz
Noise figure (LNA OFF)	< 12 dB, 20 MHz to 70 MHz
	< 16 dB, 70 MHz to 2 GHz
	< 19 dB, 2 GHz to 4 GHz
	< 23 dB, 4 GHz to 5.2 GHz
	< 19 dB, 5.2 GHz to 6 GHz
	< 26 dB, 6 GHz to 7.4 GHz
	< 33 dB, 7.4 GHz to 8 GHz
Noise figure (LNA ON)	< 7 dB, 20 MHz to 70 MHz
	< 5 dB, 70 MHz to 1 GHz
	< 7 dB, 1 GHz to 2 GHz
	< 9 dB, 2 GHz to 4 GHz
	< 10.5 dB, 4 GHz to 5.2 GHz
	< 9.5 dB, 5.2 GHz to 6 GHz
	< 13 dB, 6 GHz to 7 GHz
	< 20 dB, 7 GHz to 8 GHz
Sensitivity (3 kHz BW, 10 dB S/N, LNA ON)	0.17 µV, 20 MHz to 70 MHz
	0.14 µV, 70 MHz to 1 GHz
	0.17 µV dB, 1 GHz to 2 GHz
	0.22 µV, 2 GHz to 4 GHz
	0.26 µV, 4 GHz to 5.2 GHz
	0.24 µV, 5.2 GHz to 6 GHz
	0.35 µV, 6 GHz to 7 GHz
	0.79 µV, 7 GHz to 8 GHz
Number of channels	Up to 20 (option) narrowband, 1 wideband
Bandwidth of channels	narrowband 5 kHz to 400 kHz, wideband up to 80 MHz
Audio demodulation	CW, AM, FM, USB, LSB, ISB
Demodulation bandwidth	50 Hz to 80 MHz
A/D convertor resolution	16 bits
FFT resolution	1 Hz to 1 MHz
Scanning speed	>100 GHz/s at resolution 12.5 kHz >300 GHz/s at resolution 50 kHz
Frequency stability	± 5 ppb ± 50 ppb/year
1st if frequency	4140 MHz / 2140 MHz, Bandwidth 80 MHz, selectivity >100 dB
2nd if frequency	140 MHz, Bandwidth 500 kHz, 10 MHz, 50 MHz and 80 MHz, selectivity >100 dB
Image frequency rejection	>100 dB
1st local oscilator range	2.21 GHz – 12.14 GHz
Sampling frequency	Programmable up to 230 MHz
Input attenuator	0 dB, 10 dB, 20 dB, max 2 W
Variable attenuator	0.25 dB step, 0 dB to 31.75 dB
Max input power	Uncompressed up to 13 dBm, Max incident power 30 W CW
Built in IQ exciter	10 MHz to 6 GHz, 0 dBm max, 6 channels
Internal bit synthesizer	25 MHz to 6 GHz, signal level - 40 dBm to -10 dBm
LAN interfaces	Metallic Ethernet 10/100/1000 Mbit/s SFP - Fibre optic 1 Gbit/s SFP - Fibre optic 10 Gbit/s
Operating temperature	-20°C to +55°C
Storage temperature	-40°C to +80°C
Protection class	IP20
Supply voltage	10 – 30 VDC, overcurrent protection, overvoltage protection up to 250 V
Power consumption	MAX: 70 W
Dimensions	360 mm x 205 mm x 80 mm
Weight	5.5 kg