

HF USB Transceiver ZS-1



The ZS-1 is a HF all-mode fully software defined amateur radio. It features direct sampling receiver, direct digital synthesis based transmitter and USB 2.0 interface.

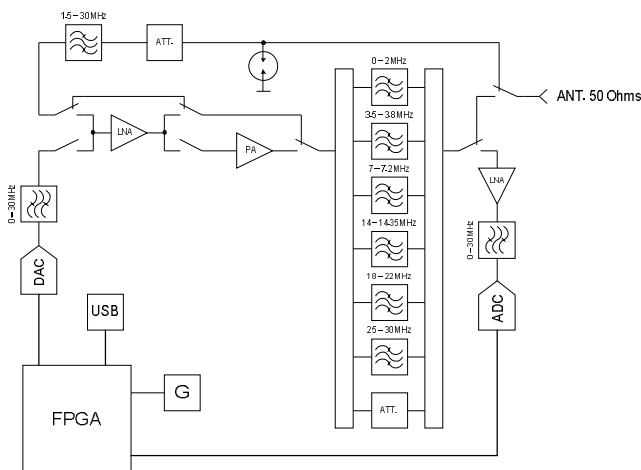
The receiver has been developed for the most demanding users. It utilizes 16-bit 100 MS/s analog-to-digital converter and high dynamic range low noise front-end. That allows to achieve a receiver dynamic range of 130 dB.

High-Q ham bands filters, also used in TX mode, minimize potential interference from strong out-of-band signals.

High-performance FPGA is used for digital down conversion, passband forming and communication with PC.

The same FPGA, combining with 14-bit 100 MS/s digital-to-analog converter, is also used for direct digital synthesis of output transmitter signal. By means of this technique desired signal bandwidth with negligible out-of-band emissions and in-band distortion is obtained.

The AB class 10 W power amplifier is able to drive the most commonly used high-power amplifiers and it is completely enough for QRP operation.



The ZS-1 PC software performs DSP, modulation, demodulation, narrow band filtering and control functions for the radio. Also it is able to work with SDR-Console or SDRMAX III using TCP/IP connection or any other software using virtual CAT interface.

ZS-1 specifications

№	Parameter	Value
Receiver		
1	Frequency range, MHz	1,5 - 30
2	Sensitivity (MDS, preamp on), dBm	-141
3	Sensitivity (MDS, preamp off), dBm	-135
4	Blocking level (preamp on),dBm	-22
5	Blocking level (preamp off),dBm	-5
6	IIP2 (preamp off), dBm	63
7	IIP3 (preamp off), dBm	28
8	Attenuators, dB	4, 10, 14
9	Bandwidth, kHz	10, 20, 40, 100
10	Viewing bandwidth, kHz	160, 320, 800, 1600, 4000
11	IQ data bitwidth	24, 32
Transmitter		
12	Frequency range, MHz	HF HAM bands
13	Output power, W	10
14	Harmonics level, dB	< -50
15	Non harmonics level, dB	< -78
16	Bandwidth, kHz	10
17	IQ data bitwidth	16
Common characteristics		
19	PC interface (data & control)	USB 2.0
20	Supply voltage, V	12 - 15
21	Supply current (receive), A	0.5
22	Supply current (transmit), A	2.2
23	Size, mm	240 x 170 x 34
24	Weight, kg	1.2