

Comparison IC-7300 - SunSDR2Pro



Common Settings

IC-7300: CW, B=500Hz, Preamp off, IP+ on

SunSDR2Pro: CW, B=500Hz, Preamp on, Dither/Random on

	IC-7300	SunSDR2Pro	Remarks
Receiver			
Direct-Sampling SDR	yes	yes	
ADC	14Bit	16Bit	
Frequency range	0,03-74,8MHz*	0,09-65MHz 96-148MHz	*Guaranteed Range 0,05-29,99MHz, 50-54MHz
MDS f=14,1MHz	-123dBm*	-120dBm**	*without preamplifier **with preamplifier
RMDR Offset f = 1kHz	99dBc	94dBc	
SBN Offset f = 1kHz	-126dBc/Hz	-121dBc/Hz	
IMD3 f1=7,050MHz, f2=7,051MHz Pi=2x-20dBm	103dBc	80dBc*	*IMD-products only 80dB below P _i . 40m-Bandpass-filter produces strong intermodulation products.
NPR IP+ resp. Dither/Rand switched off	76dB	69dB*	* NPR should be above 70dB
Transmitter			
Power, max. 14,1MHz	101,6W	19,5W	
IMD3 distance at full power 14.1MHz	38dBc	37dBc	
2nd harmonic suppression 14,1MHz	81dBc	77dBc	
Tuner, build in	yes	no	
Software, PC			
Needs PC and Software to drive	no	yes	
Easy connection to PC, Network and Internet	no	yes	

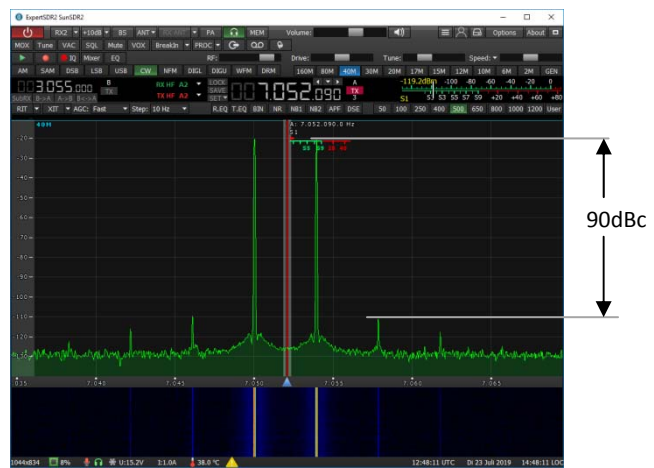
Hints

- To compare the specs, both radios should have the same sensitivity (MDS). Therefore I had to activate the +10dB preamplifier of the SunSDR2Pro. Without preamplifier the sensitivity of the SunSDR2Pro reaches a value of -112dBm/500Hz, which is much too low to compare with IC-7300.
- In all measurements both radios are below saturation (Clip).

Intermodulation

Requirement: With a 2-tone signal input of $P_i=2x-20dBm$ all resulting IMD-products should be smaller than -120dBm (>100dBc below the input signals) so that the IMD-products are not detectable (audible) at the output of the receiver. The SunSDR2Pro sun does not comply with this requirement.

The pictures show the intermodulation of the SunSDR2Pro with activated 40m-Bandpass-Filter (left) (standard setting) and with activated 0-64MHz Wide-RX-Filter (right):



**$P_i=2x-20dBm$, Bandpass-Filter On, $IMD3=80dBc$
 $ID3 > 20dB$ above noise (this is too much)**

**$P_i=2x-20dBm$, Wide RX-Filter On, $IMD3=90dBc$
 $ID3 > 10dB$ above noise (too much)**

Werner Schnorrenberg
 DC4KU
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