



## FEATURES

- Tuning range 0.45 to 18 GHz
- 1GHz IF with 500 MHz BW and 160 MHz or 140 MHz IF with 100 MHz BW
- Integrated digitizer provides digital output over VITA-49, 10 GigE interface
- Tuning speed: Contact for information
- Supports independent and phase coherent operation

iRF introduces the iWR-6500 Wideband Digital Receiver, a member of the WIDERAIL/LITERAIL family of Wideband Digital Microwave Tuners/ Receivers. WIDERAIL solutions focus on ELINT/ Wideband COMINT application. The unit provides frequency tuning from 0.45 to 18 GHz. The pre-detected IF outputs of 1 GHz (500 MHz BW) and either 160 or 140 MHz (100 MHz) are provided to interface with existing post processing architectures.

The iWR-6500 offers superior spur free dynamic range (>65 dB single-tone) in the microwave frequency range while maintaining low power consumption. The standard unit is configured to support single or multi-channel, phase coherent applications. All local oscillators and reference signals are available on the rear panel for daisy chained interconnection of multiple units. This capability enables monopulse DF, cross-polarization, interference cancellation, and “N”

channel DF. The operating mode can be selected from master/slave or independent via ethernet control.

The compact package houses iRF's SMART RF Deck and the iDSP SMART Processor module. The iDSP Processor performs digitization of either the 1 GHz and 160 (alternately 140 or 70 MHz) MHz IFs with 12- and 16-bit precision respectively. The iDSP processor is a dual ARM core Zynq-based FPGA which offers significant programmable resources. The Linux based operating system provides web based services of user GUIs and control. The baseband I/Q digital output is an SFP+, 10 GigE, VITA - 49, and can be time-stamped when proper timing signals are provided to the unit. The 10 GigE port supports approximately 8 Gigabits real-time payload transfers inclusive of overhead.

Single or multi-channel, A/C powered rack mount configurations of the iWR-6500 are also available.

## SPECIFICATIONS (AT 25° C)

**Frequency Range:** 0.45 to 18 GHz

**Max signal amplitude:** +20 dBm without damage

**Noise Figure:** 15 dB, max. 12 dB Typ.

**Input IP3:** > +5 dBm

**Second order input intercept point:** >+50 dBm

**IF Outputs:** 160 MHz , 140 MHz optional, 1 GHz

**IF Bandwidths:** 500 MHz @ 1 GHz, 100 MHz @ 160 MHz or 140 MHz

**Image and IF Rejection:** >70dB, min.

**Frequency stability:** < ±1 ppm

**Tuning Speed:** ITAR CONTROLLED

**Integrated Phase Noise:** < 0.5o rms (100 Hz to 10 MHz)

**Single Tone Spurious Free Dynamic Range:** > 60 dB, 65 dB typ.

**RF to IF Gain:** +15 dB

**RF Attenuation:** 0 to 20 dB

**IF attenuation:** 0 to 30 dB

**LO leakage:** < -90 dBm

**Internally generated spurious:** <-90 dBm

**Phase Coherent:** Through use of daisy chained LOs

**Linear Dynamic Range:** > 90 dB in a 1MHz bandwidth

**Passband Flatness:** ± 1dB typ. over 100 MHz BW, ± 1.5dB typ. over 500 MHz BW

## DIGITAL IF DATA

**ADC options:** 213.3 MS/sec 16 bit, 1.33 GS/sec 12 bit

**>80 MHz BW Output data rate:** 106.6 MS/sec complex I/Q; selectable decimation by powers of 2 to 128

**500 MHz BW Output data rate:** Based on 10 GigE maximum throughput

**Output data format:** VITA-49 over 10G Ethernet

**Digital transceiver support:** SFP+ Cage compatible

**Time stamp:** Per VITA-49, valid when time reference

**Power:** +12 VDC, nom. (+9 to +16 VDC)

## MECHANICAL

**Weight:** 5 Lbs.

**Dimensions:** 1.6H x 5.5W x 10D