



FEATURES

- Tuning range 0.5 to 26.5 GHz
- 1GHz IF with 500 MHz BW and 160 MHz or 140 MHz IF with 80 MHz BW
- Low phase noise <math><0.5^\circ</math> RMS
- 3U VPX form factor
- Tuning Speed: Contact factory information
- Optional: Strobe-driven tuning/feed back via discrete backplane signals

The iWR-6800 Single Channel 3U VPX Microwave Tuner is based on iRF's SMART receiver technology which addresses SWAP while maintaining superior RF performance. The iWR-6800 provides industry leading SWAP with a fully synthesized 0.5 to 26.5 GHz microwave tuner on a 3U VPX single slot card. The unit requires less than 30 watts of power while maintaining superior Spur Free Dynamic Range (>60 dB). All RF interconnections are via VITA 67 blind mate connectors.

The iWR-6800 converts the 0.5 to 26.5 GHz frequency range to a 1GHz IF with 500 MHz of signal bandwidth. The signal is further down-converted to an IF at 160 MHz with 80 MHz bandwidth. The tuner operates in both single and multi-channel (frequency and amplitude coherent) systems through use of a self-contained LO distribution system.

The iWR-6800 is capable of performing in a variety of applications, supporting both wideband/narrowband collection systems and architectures.

iWR-6800 Applications

- SIGINT / EW
- DIRECTION FINDING
- BEAM FORMING

SPECIFICATIONS (AT 25° C)

Frequency Range: 0.5 to 26.5 GHz

Max Signal Amplitude: +20 dBm without damage

Noise Figure: <18GHz: 15dB max., 13dB typ. Above 18GHz, 3dB degradation

Input IP3: +3 dBm typ., +2 dBm min.

Second Order Input Intercept Point: $\geq +50$ dBm

IF Outputs: 1GHz, 160MHz, 140MHz (optional)

IF Bandwidths: 1 GHz WBIF Output: 500MHz for tuned frequencies above 1.25GHz. Bandwidth decreases to 100MHz for tuned frequencies below 1.25GHz
160MHz, 140MHz NBIF Output: 80MHz min.

Image and IF Rejection: <18GHz: ≥ 70 dB, 18-26.5GHz: 70dB typical, 60dB min.

Frequency Stability: 2ppm standard, ± 5 ppb higher stability option.

Tuning Speed: Contact factory for more details
Tuning Resolution: 1 kHz

Integrated Phase Noise: $\leq 0.5^\circ$ rms max.
(100 Hz to 100 MHz) typ.

Single Tone Spurious Free Dynamic Range: >55 dB, 60dB typ. for ≤ -20 dBm input
50dB typical: 7.4-7.5GHz

RF to IF Gain: +20 dB \pm 1dB

RF Attenuation: 0 to 20 dB, 10dB steps (optional)

IF Attenuation: 0 to 30 dB, 1dB steps
(independent control for each IF output)

LO Leakage: ≤ -90 dBm
Exceptions: 5.2GHz: -85dBm, 3.9GHz: -75dBm, 1.25GHz: -70dBm, <1.05GHz: -50dBm

Internally Generated Spurious: ≤ -90 dBm EIL
>1.25GHz: -85dBm max., ≤ 1.25 GHz: -80dBm max.

Phase Coherent: Through use of daisy chained LOs

Linear Dynamic Range: ≥ 90 dB in a 1MHz BW
<18GHz. ≥ 87 dB in a 1MHz BW 18-26.5GHz

IF Passband Flatness:
 ± 1 dB typical over centered 80MHz BW. ± 1.5 dB max.
 ± 1.5 dB typical over 500MHz BW. ± 3 dB max.

OPERATING INFORMATION

Operating Temperature Range: 0°C to +50°C

Control Interface: 1 GigE via the VPX control plane

Built In Test: Monitoring of internal voltages and phase-lock status

Power Consumption: 30 watts

Packaging: 3U VPX form factor

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