

SDR 980AD2

C-Band | One-Channel Tx / Two-Channel Rx | Kit or Embedded

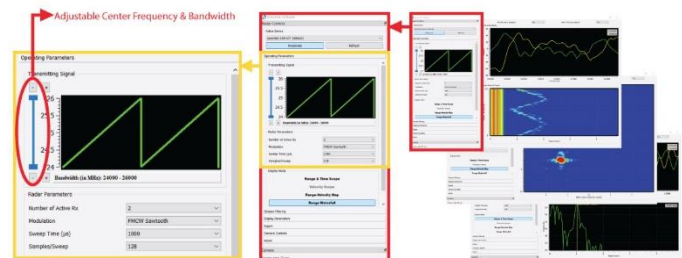
SDR 980AD2 is an advanced low-power and compact software-defined one-channel transmitter and two-channel receiver radar in X-band. It is designed to support interferometric radar and direction of arrival (DOA) measurement. It is suitable for human activity monitoring, occupancy sensing, gesture sensing, and many other indoor and outdoor monitoring.



The **RF module** is implemented with phase-locked loop (PLL) to achieve linearity in frequency modulations. The center frequency and the bandwidth of transmitted signals are selectable and adjustable within a wide frequency band of 9-10 GHz.

The **FPGA-based processor module** functions as a microcontroller, processor and power management unit and offers ultimate design flexibility with industry-leading programmable logic. It has four 40-MSPS ADCs to support two receiving channels. A high-speed USB peripheral controller enables digitized raw data streaming to a memory storage for post-processing. It interfaces with the RF module with a 24-pin flat flex cable (FFC) to form a standalone system.

The **graphical user interface (GUI)** allows the flexibility and adjustability in selecting desired signal waveform, center frequency, bandwidth, sampling rate, filtering, display parameters, and record/export I/Q data.



Typical output power of the transmitter is 19 dBm. Three single-ended SMA female connectors are installed for easy connection to external antenna units.

Specifications

| Specifications | Min. | Typ. | Max. | Units |
|------------------------------|---------------------------------------|------|------|--------|
| No. of Tx/No. of Rx | Single-channel Tx/Dual-channel Rx | | | |
| Waveforms | FMCW Sawtooth/FSK/CW | | | |
| Typical Frequency Limits | 9.6 | | 10 | GHz |
| Typical Bandwidth | 0 | | 400 | MHz |
| Expandable Frequency Limits | 9 | | 10 | GHz |
| Expandable Bandwidth | 0 | | 1 | GHz |
| FMCW Sweep Time | 0.125/0.25/0.5/1/2/4/8 (ms) | | | |
| Number of Samples/Sweep | 8/16/32/64/128/256/512/1024/2048/4096 | | | |
| Tuning Voltage | 0 | | 5 | V |
| Tuning Sensitivity @RF Port | | 0.4 | | GHz/V |
| Transmit Power | 17 | 19 | 21 | dBm |
| SSB Phase Noise @1MHz offset | | -109 | | dBc/Hz |
| Noise Figure | | 1.8 | | dB |
| Maximum input power | | 22 | | dBm |
| Supply voltage | 4.75 | 5 | 5.25 | V |
| Supply current | 1980 | 2030 | | mA |
| Operating temperature | -40 | | 85 | °C |
| Dimensions | L=138 W=103 H=30 | | | mm |

Features

- X-band 9 -10 GHz
- Dual-channel receiver
- Flexibility and adjustability in selecting center-frequency and bandwidth
- Moderate output power
- Low phase noise
- Single +5V DC supply voltage
- Low power consumption
- SMA connectors for antennas
- Fractional-N phase-locked loop of VCO nonlinearity compensation

Embedded Version Available

- Embedded Linux OS
- Custom-designed battery management system – up to **4 hours** on a single charge
- 7-inch touch-screen display
- Remotely controllable – suitable for field trials

