

# SDR 2400AD4

*K-Band | One-Channel Tx / Four-Channel Rx | Kit or Embedded*

SDR 2400AD4 is an advanced low-power and compact software-defined single-channel transmitter and four-channel receiver radar in K-band. It is designed to support digital beamforming for applications in direction of arrival (DOA)

measurement, radar interferometry, and digital beamforming. It is suitable for human activity monitoring, occupancy sensing, gesture sensing, and many other cases.

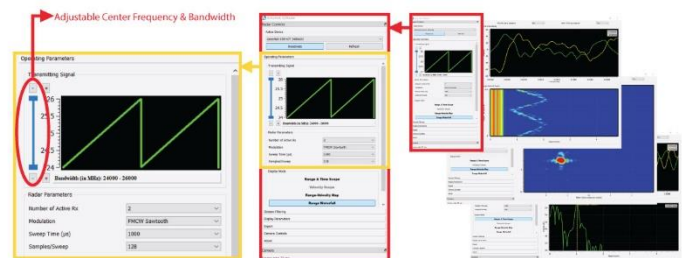


The **RF module** is implemented with phase-locked loop (PLL) to achieve linearity of frequency modulations. The center frequency and the bandwidth of transmitted signals are selectable and adjustable within a wide frequency band of 24-26 GHz.

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 four 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 18 dBm. Five single-ended SMA female connectors are installed for easy connection to external antenna units.



## Specifications

Specification	Min.	Typ.	Max.	Units
No. of Tx/No. of Rx	Single-channel Tx/Four-channel Rx			
Waveforms	FMCW Sawtooth/FSK/CW			
Typical Frequency Limits	24		26	GHz
Typical Bandwidth	0		2000	MHz
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			
Tune Voltage	0		5	V
Tuning Sensitivity @RF Port		0.8		GHz/V
Transmit Power	16	18	20	dBm
SSB Phase Noise @1MHz offset		-99		dBc
Noise Figure		12		dB
Maximum input power		5		dBm
IIP3		-4		dBm
IIP <sub>1dB</sub>		-12		dBm
Supply voltage	4.75	5	5.25	V
Supply current	1120	1250		mA
Operating temperature	-40		85	°C
Dimensions	L=138 W=103 H=30			mm

## Features

- K-band 24-26 GHz
- Four-channel receiver
- Flexibility and adjustability in selecting center-frequency and bandwidth
- Moderate output power
- Low phase noise
- Low power consumption
- SMA connectors for external antennas
- Fractional-N phase-locked loop for 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

