

SDR-KIT 2400AD2

SDR-KIT 2400AD2 is an advanced low-power and compact software-defined **one-channel transmitter and two-channel receiver** radar kit in **K-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 **24-26 GHz**.

The FPGA-based processor module SDR-PM 404 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 the 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 18 dBm. Three single-ended SMA female connectors are installed for easy connection to external antenna units.



FEATURES

- K-band 24-26 GHz
- Two-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

SPECIFICATIONS

Specifications	Min.	Typ.	Max.	Units
No. of Tx/No. of Rx	Single-channel Tx/Two-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			
Tuning Voltage	0		5	V
Tuning Sensitivity @RF Port		0.8		GHz/V
Transmit Power	16	18	20	dBm
SSB Phase Noise @1MHz offset		-102		dBc/Hz
Noise Figure		5		dB
Maximum input power		5		dBm
IIP3		-4		dBm
IIP _{1dB}		-12		dBm
Supply voltage	4.75	5	5.25	V
Supply current	1130	1140		mA
Operating temperature	-40		85	C°
Dimensions	L=138 W=103 H=30			mm