

SDR-KIT 2500B Module

SDR-KIT 2500B offers the ability to integrate 24GHz-26GHz K-band software-defined transmitter-receiver systems with the processor module SDR-PM 402 for various applications.

The SDR Evaluation Kit includes:

- One SDR-RF 2500B module
- One SDR-PM 402 processor module
- One copy of SDR-GUI graphical user interface software
- One AC/DC power adapter (5V, 3.0A)
- One mini USB retractable cable
- One pair of RF cables
- One pair of the transmitting and receiving antennas



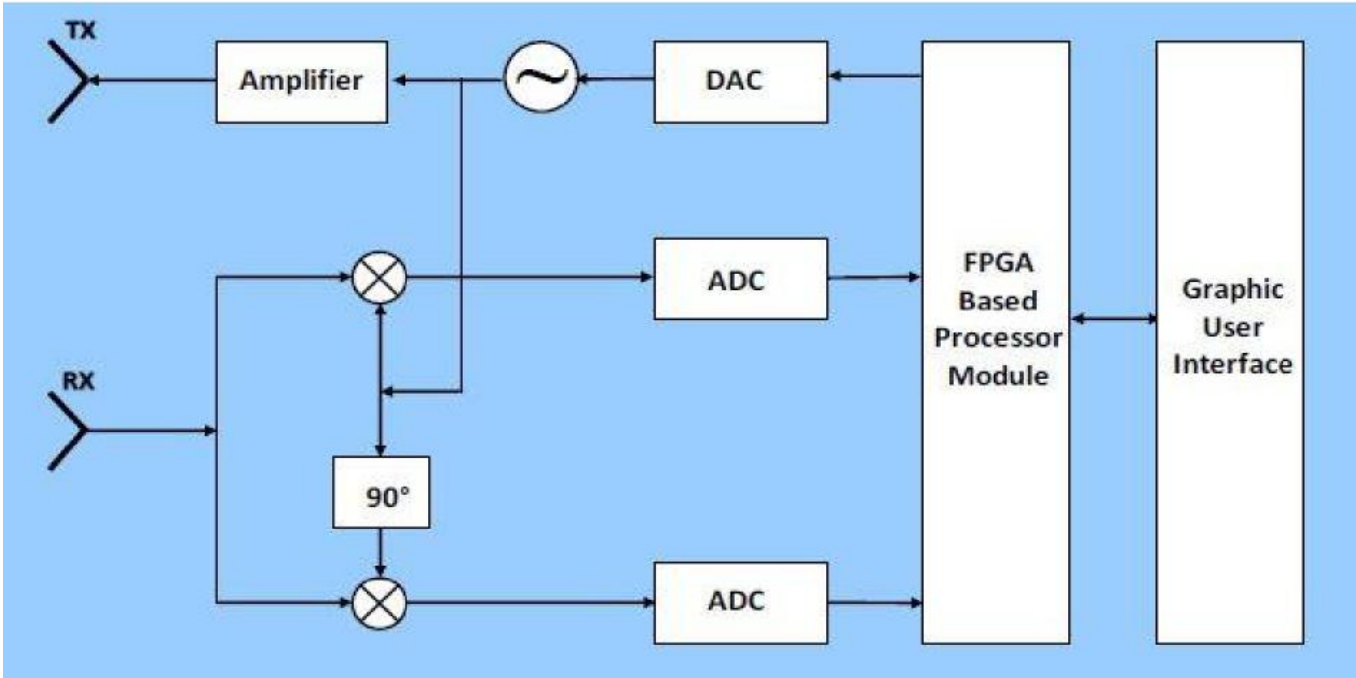
The SDR processor module (SDR-PM 402) is compatible with this SDR-RF 2500B module. The graphic user interface software SDR-GUI is for activating this RF module, selecting operation parameters, and collecting data.

The graphical user interface SDR-GUI is used to control the configuration of the SDR Evaluation Kit via a USB 2.0 cable. Digital samples of control voltage are generated by the FPGA firmware, and then converted to analog control voltage which directly feeds the voltage controlled oscillator (VCO). The output of the mixer in the receive chain is digitized and streamed to host computer for real-time processing.

FEATURES

- FMCW/FSK/CW waveforms
- Reconfigurable
- Wide bandwidth up to 2GHz (24GHz - 26 GHz)
- Output power >16dBm
- Low phase noise
- Low noise figure over receiver channel
- Low power consumption
- Suppression of cooling fan interference
- On-board automatic correction of VCO nonlinearity
- Compactness and flexibility

SDR-KIT 2500B Block Diagram



SDR-RF 2500B Module Specifications

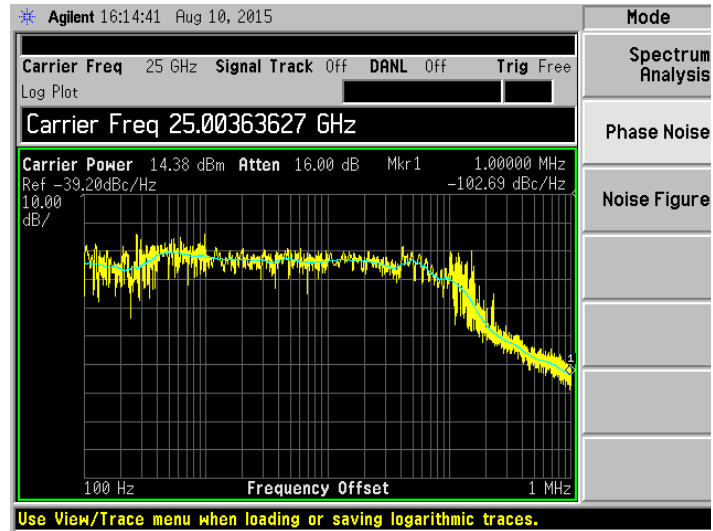
Parameter	Unit	Value
Waveform		CW/FMCW/FSK
Center Frequency	GHz	25
FM Swept Bandwidth	GHz	0.5, 0.75, 1.5, 2.0
FSK Frequency Step	MHz	6
Sweep Time	ms	0.5, 1, 4, 10
Number of Samples per Sweep		128, 256, 512, 1024
Power Output	dBm	16
Antenna Gain	dBi	18

SDR-KIT 2500B Sample Applications

- Anti-collision
- Obstacle detection
- Motion detection
- Environmental monitoring
- Distributed surveillance systems in airports, banks, or schools
- Non-contact industrial measurements
- High precision Level gauge
- Detection of biometric signatures
- Remote bio-signal detection for health care

SPECIFICATION

Parameter	Min.	Typ.	Max.	Unit
Frequency Range	24		26	GHz
Tune Voltage	0		5	V
Tuning Sensitivity @RF Port		1.5		GHz/V
Power Output	14	16	18	dBm
SSB Phase Noise @1MHz offset		-102		dBc
Conversion Gain Over Rx Channel	18	26	31	dB
Noise Figure over Rx channel		6.4		dB
Maximum input power		0		dBm
OIP3		32		dBm
IIP3		-4		dBm
IIP _{1dB}		-12		dBm
Supply voltage	4.75	5	5.25	V
Supply current	750	800	850	mA
Operating temperature	-40		85	C°
Storage temperature	-65		150	C°
RF Dimensions	L=79mm W=56mm H=13mm Weight=53g			
PM Dimensions	L=79mm W=76mm H=13mm Weight=184g			



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