

## SDR-RF 2500B Module

SDR-RF 2500B module is a low power and high performance RF transmitter-receiver solution designed for operation in K-band centered at 25GHz. It is intended to interface with the processor module SDR-PM 402, which functions as a micro controller, processor and power management with a 24-pin flat flex cable (FFC) to form a standalone system.



Typical output power of the transmitter channel is 16dBm. Single-ended SMA female connectors are installed for easy connection to antennas.

The receiver has an overall 6.4dB noise figure with one stage of low-noise amplifier and exceptionally linear response with a flat gain of 28dB.

The ability of wide-range frequency-tuning makes this RF module ideal for applications from unlicensed ISM band to high-resolution wide-band.

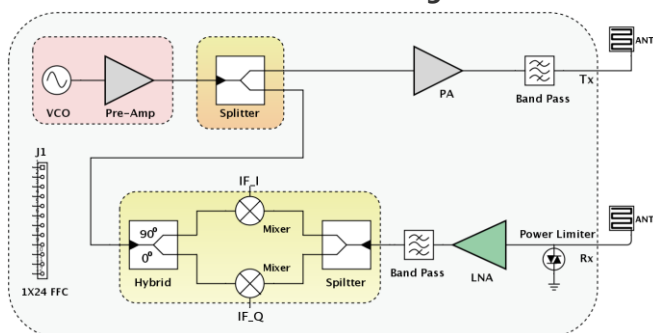
### FEATURES

- Coverage of the K-band frequency centered at 25GHz
- FMCW/FSK/CW waveforms
- Wide bandwidth up to 2GHz
- High conversion gain in the receiver channel
- Low overall noise figure
- Moderate output power
- Low phase noise
- Single +5V DC supply voltage
- Low power consumption
- SMA connectors for antennas
- 24-pin FFC cable for connecting to our processor module
- Suppression of cooling fan interference
- On-board automatic correction of VCO nonlinearity
- RF Shielding

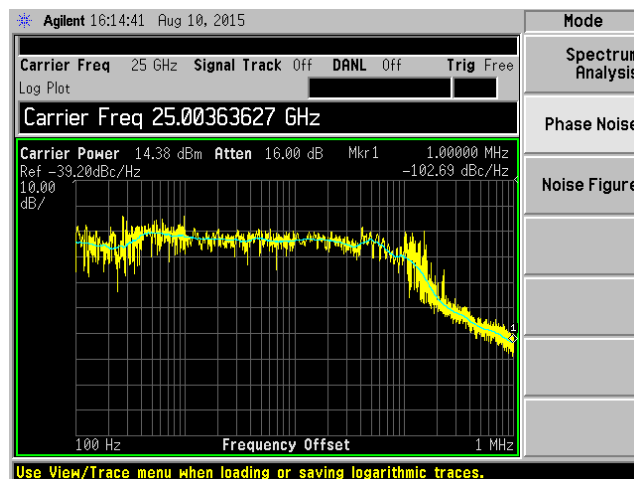
## Description of FFC Connector Pins

Pin	Name	Direction	Description
1	GND	comm	Ground
2	3.3V	in	3.3V
3	1.8V	in	1.8V
4	GND	comm	Ground
5	Vcc	in	+5V
6	GND	comm	Ground
7	I/001	in/out	Spare
8	I/002	in/out	I2C_SCL
9	I/003	in/out	Spare
10	I/004	in/out	I2C_SDA
11	I/005	in/out	Spare
12	I/006	in/out	Spare
13	I/007	in/out	Spare
14	I/008	in/out	Spare
15	I/009	in/out	Spare
16	I/010	in/out	Spare
17	I/011	in/out	Spare
18	I/012	in/out	Spare
19	Vtune	in	Vtune for VCO
20	IF_I	out	IF in phase
21	IF_Q	out	IF quadratic
22	GND	comm	Ground
23	Vcc	in	+5V
24	Vcc	in	+5V

## SDR-RF 2500B Module Block Diagram



## SSB Phase Noise



## SDR-RF 2500B Module Specifications

Parameter	Min.	Typ.	Max.	Units
Frequency Range	24		26	GHz
Expandable Frequency Range	23		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		-100		dBc
Conversion Gain Over Rx Channel	18	26	31	dB
Noise Figure		6.4		dB
Maximum input power		0		dBm
OIP3		32		dBm
IIP3		-4		dBm
IIP <sub>1dB</sub>		-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°
Dimensions	L=79	W=56	H=13	mm

## To Purchase:

### Ancortek Inc.

11092 B Lee Highway  
Suite 104  
Fairfax, VA 22030

+1-703-531-8997

[info@ancortek.com](mailto:info@ancortek.com)

[www.ancortek.com](http://www.ancortek.com)

### We offer customization!

Please contact us  
regarding your custom  
development needs.