nooelec 100701 NESDR SMArt v5 RTL-SDR Software Defined Radio User Guide

Contents

nooelec 100701 NESDR SMArt v5 RTL-SDR Software Defined Radio

Ordering Information

SKU	Description	UPC
100701	NESDR SMArt	0616469145864

Description

The NESDR SMArt has been upgraded to cover a wider range of radio frequencies with a range from 100kHz to 1750MHz. The SMArt is a versatile software-defined radio (SDR) that features an extremely accurate TCXO with a high quality heat sink, thermal pads and ESD protection to ensure stable and precise operation.

Features

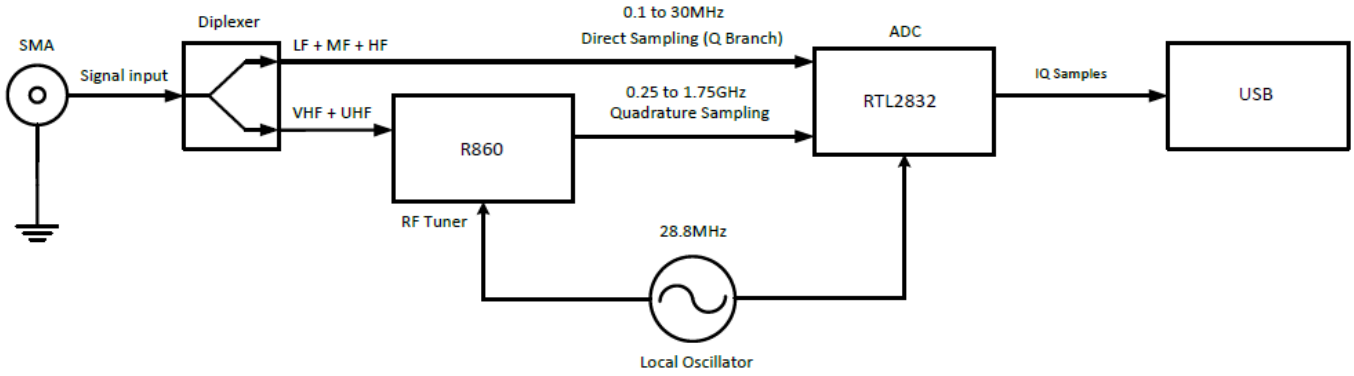
- 0.5PPM TCXO
- 0.1 to 25MHz direct sampling tuning range
- 25 to 1750MHz quadrature sampling tuning range
- 0 – 49.6dB tuner gain
- 7 Bit ADC
- Up to 3.2MSPS sample rate
- 50Ω input SMA connector
- USB type A output
- Lightweight
- FCC, CE and IC certified

Applications

- Software defined radio
- General purpose radio reception
- Low cost radio systems
- Spectrum analysis

- Wideband reception
- Embedded application
- Remote installations
- Lightweight systems

Simplified Schematic



Connectors

Installation Guide

Visit: https://www.nooelec.com/store/qs

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Input Voltage	VUSB	–	5	–	Volts
Input RF Power	Pin	–	–	+10	dBm

Electrical Specifications

Test conditions unless otherwise specified: 50 Ohm system.

Parameter	Symbol	Min	Typical	Max	Unit
Frequency Range (Direct Sampling Mode)	$f_L – f_H$	0.1	–	25	MHz
Frequency Range (Quadrature Sampling Mode)	$f_L – f_H$	25	–	1750	MHz
Instantaneous Bandwidth	BW_{IF}	0.25	2.4	3.2	MHz
User Controlled Tuner Gain	S21	0	–	49.6	dB
Input Return Loss @ 1 GHz	S11	-8	-12	-16	dB
Noise Figure @ 1 GHz	NF	–	10	–	dB
Operation Supply Current	Isupply	270	300	330	mA
TCXO Frequency Stability	–			±0.5	ppm
Phase Noise @ 1 kHz	–			-138	dBc/Hz
Phase Noise @ 10 kHz	–			-150	dBc/Hz
Phase Noise @ 100 kHz	–			-152	dBc/Hz
ESD Protection Level	IEC 6100-4		23		kV

Physical Specifications

Parameter	Value	Unit
Length	59.1 (2.33)	Millimeter (Inch)
Width	16.9 (0.66)	Millimeter (Inch)
Height	14.2 (0.56)	Millimeter (Inch)
Weight	34 (0.077)	Gram (Pound)

Accessories and Related Products

LaNA	SMA Attenuator Kit – 1dB to 42dB	Ham It Up Plus
SKU: 100812	**SKU**: 100815	**SKU**: 100769

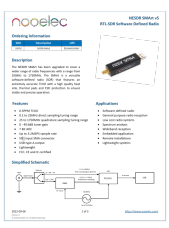
FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

2022-09-06
https://www.nooelec.com/
Revision 1

Documents / Resources

	nooelec 100701 NESDR SMArt v5 RTL-SDR Software Defined Radio [pdf] User Guide SMART-V5, SMARTV5, 2A8GD-SMART-V5, 2A8GDSMARTV5, 100701 NESDR SMArt v5 RTL-SDR Software Defined Radio, NESDR SMArt v5 RTL-SDR Software Defined Radio, v5 RTL-SDR Software Defined Radio, RTL-SDR Software Defined Radio, Software Defined Radio, Defined Radio

References

- Nooelec - Nooelec Home

- Nooelec - Getting Started with NESDR