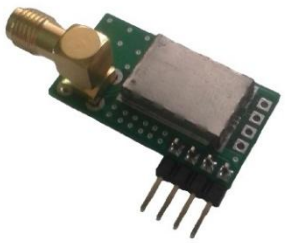
EGN Elektronik

RF Wireless Modules

NRX05RSA3 315MHz FSK/GFSK RF Receiver Module

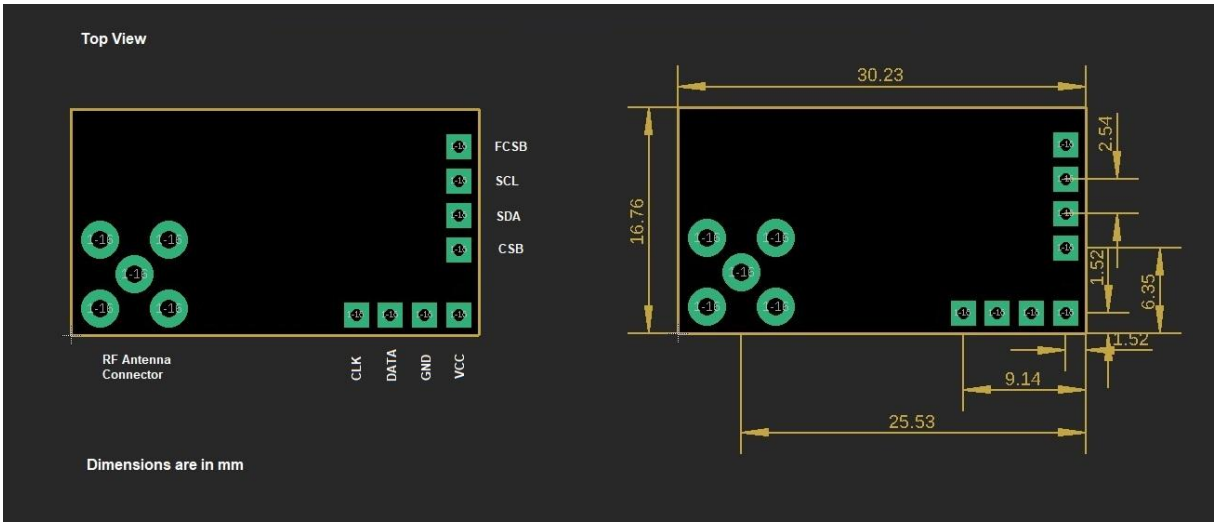
(with RF Frontend SAW Filter, RF Shield and SMA RF Antenna Connector)



Brief

NRX05RSA3 is a small size, compact, low power and easy to use 315MHz FSK/GFSK RF Receiver module based on Cmostek Microelectronics CMT2219A RF IC.

Size and Pin Diagram



CONNECTORS		
Pin No	**Pin Name**	**Pin Function**
CA	ANT	RF Output/Antenna
For Standalone Plug&Play Receiver Use		
J1-4	CLK	Clock
J1-3	DATA	Data
J1-2	GND	0V/Ground
J1-1	VCC	Supply Input
Optional for Advanced Use with MCU/SPI Interface & Programming		
J2-4	FCSB	4-wire SPI chip select input
J2-3	SCL	4-wire SPI clock input
J2-2	SDA	4-wire SPI data input and output
J2-1	CSB	4-wire SPI FIFO select input

RF Radio Receiver Characteristics

Symbol	Parameter	Test Conditions	Min	Typical	Max	Unit
F_{op}	Operational Frequency/Band	-	-	315	-	MHz
$S_{RFIN-FSK}$	Sensitivity	$SR_{FSK} - 9.6ksps$ BER-0.1%	-	-112	-	dBm
P_{RF-sat}	Saturation Input Signal Level		-	10	-	dBm
P_{STEP}	Receiver Bandwidth		50	-	500	kHz
$t_{Startup}$	Receiver Starting Time		-	7.3	-	ms
F_{dev}	Frequency Deviation		1		200	kHz
BT	Bandwidth-Time Product		-	0.5	-	
SR_{FSK}	FSK Data Rate		0.1	-	100	ksps
BI_{CW}	Blocking Immunity	$SR_{OOK} - 1kbps$ @1MHz offset, CW	-	52	-	dB
		$SR_{OOK} - 1kbps$ @2MHz offset, CW	-	74	-	
		$SR_{OOK} - 1kbps$ @10MHz offset, CW	-	75	-	
IIP_3	Third Order Intercept Point	Two tone test	-	-25	-	dBm
IMR	Image Rejection Ratio	IF=280kHz	-	35	-	dB

Electrical Specifications

Symbol	Parameter	Test Conditions	Min	Typical	Max	Unit
V_{dd}	Supply Voltage	-	1.8	3.3	3.6	V
I_{dd-FSK}	Current–Normal mode		-	4.1	-	mA
T_{op}	Operational Temperature	-	-40	-	+85	ºC

Absolute Maximum Ratings

"Absolute maximum ratings" may cause permanent damage to the device and is a stress rating only, functional operation of the device under these conditions for extended periods may affect device reliability.

Symbol	Parameter	Max	Unit
VDD	Supply voltage	3.6	V
T_{op}	Operational Temperature	-40~+85	ºC
T_{stg}	Storage Temperature	-50~+150	ºC
ESD	ESD Rating	2(HBM)	kV

References

1) CMT2219A Datasheet – https://www.egn-elektronik.com.tr/EN/Datasheets/CMT2219A.pdf