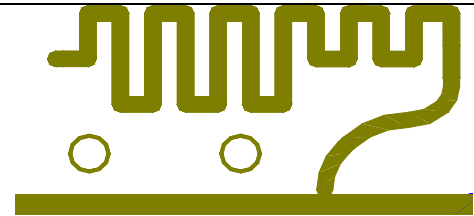


3. Antenna Specification

3.1. Antenna shape: snake type

3.2. Antenna plus= 0 dBi



Ratings

Absolute Maximum Ratings					
Parameter	Symbol	Rating			Unit
		MIN	TYP	MAX	
Operating Temp.	T _{OP}	-40		+85	°C
Storage Temp.	T _{STORAGE}	-55		+125	°C
V _{DD_IO} Supply Volt.	V _{DDIO_MAX}			+3.7	VDC
V _{DD} Supply Volt.	V _{DD_MAX}			+2.5	
Applied Voltages to Other Pins	V _{OTHER}	-0.3		+3.7	VDC
Input RF Level	P _{IN}			+10	dBm
Output Load mismatch (Z ₀ =50Ω)	VSWR _{OUT}			10:1	VSWR

Notes:

1. Absolute Maximum Ratings indicate limits beyond which damage to the device may occur. Recommended operating conditions indicate conditions for which the device is intended to be functional, but do not guarantee specific performance limits. For guaranteed specifications and test conditions, see the Electrical Characteristics section below.
2. These devices are electro-static sensitive. Devices should be transported and stored in anti-static containers. Equipment and personnel contacting the devices need to be properly grounded. Cover workbenches with grounded conductive mats.

Overall Transceiver						
Operating Frequency Range	F _{OP}	2400		2482	MHz	
Antenna port mismatch (Z ₀ =50Ω)	VSWR _I		<2:1		VSWR	Receive mode
	VSWR _O		<2:1		VSWR	Transmit mode

Parameter	Symbol	Specification			Units	Test Condition and Notes	
		MIN	TYP	MAX			
Receive Section						For BER ≤ 0.1%:	
Receiver sensitivity			-85	-80	dBm	Meas. at antenna pin of IC.	
Maximum useable signal		-20			dBm		
Input 3rd order intercept point	IIP ₃	-14	-11		dBm		
Data (Symbol) rate	T _s		1		us		
Min. Carrier/Interference ratio						For BER ≤ 0.1%	
Co-Channel Interference	CI _{_cochannel}		9	11	dB	-60 dBm desired signal.	
Adjacent Ch. Interference, 1MHz offset	CI _{_1}		-1.5	0	dB	-60 dBm desired signal.	
Adjacent Ch. Interference, 2MHz offset	CI _{_2}		-30		dB	-60 dBm desired signal. Interference at 2 MHz below desired signal.	
Adjacent Ch. Interference, ≥ 3MHz offset	CI _{_3}		-40		dB	-67 dBm desired signal.	
Image Frequency Interference	CI _{_image}		-23	-9	dB	-60 dBm desired signal. Image freq. is always 2 MHz higher than desired signal.	
Adjacent (1MHz) interference to image	CI _{_image_11}		-34	-20	dB	-67 dBm desired signal. Always 3 MHz higher than desired signal.	
Out-of-Band Blocking	OBB _{_1}	-10			dBm	30 MHz to 2000 MHz	Meas. with ACX ceramic filter on ant. pin.
	OBB _{_2}	-27			dBm	2000 MHz to 2400 MHz	
	OBB _{_3}	-27			dBm	2500 MHz to 3000 MHz	
	OBB _{_4}	-10			dBm	3000 MHz to 12.75 GHz	



Parameter	Symbol	Specification			Units	Test Condition and Notes	
		MIN	TYP	MAX			
RF VCO and PLL Section							
Typical PLL lock range	F _{LOCK}	2340		2560	MHz		
Tx, Rx Frequency Tolerance			--		ppm	Same as XTAL pins frequency tolerance	
Channel (Step) Size			1		MHz		
SSB Phase Noise			-95		dBc/Hz	550kHz offset	
			-115		dBc/Hz	2MHz offset	
Crystal oscillator freq. range (Reference Frequency)			12		MHz	Designed for 12 MHz crystal reference freq.	
Crystal oscillator digital trim range, typ.		-12		+12	ppm		
RF PLL Settling Time	T _{HOP}		75	150	uS		
Out-of-Band Spur. Emissions	OBS_1		< -75	-57	dBm	30 MHz ~ 1 GHz	IDLE state, Synthesizer and VCO ON.
	OBS_2		-68	-47	dBm	1 GHz ~ 12.75 GHz	
LDO Voltage Regulator Section							
Dropout Voltage	V _{do}			(tbd)	V	Measured during Receive state	
Quiescent current	I _q			6	uA	No-load current consumed by LDO reg.	
Max. Load Capacitance	Max_C _{out}			1.0	uF	Ensures stability of the high speed LDO V.R.	
Transmit Section							
						Reg. 9, bits 15-8 set to 00000000	
RF Output Power	P _{AV}		+2		dBm	Power Level 0.	
Modulation Characteristics							
Peak FM Deviation	00001111 pattern	Δf1 _{avg}	280	314	350	kHz	For at least 99.9% of all Δf2 _{max} meas.
	01010101 pattern	Δf2 _{max}	230			kHz	
ISI, % Eye Open	Δf2 _{avg} /Δf1 _{avg}	80				%	1010 data sequence referenced to 00001111 data sequence
Zero Crossing Error	ZCERR	-125		125	ns	+/- 1/8 of Symbol Period	
In-Band Spurious Emission							
(+/- 550kHz)	IBS_1			-20	dBc		
2MHz offset	IBS_2			-40	dBm		
>3MHz offset	IBS_3			-60	dBm		
Out-of-Band Spurious Emission, Operation	OBS_O_1		< -60	-36	dBm	30 MHz ~ 1 GHz	
	OBS_O_2		-45	-30	dBm	1 GHz ~ 12.75 GHz, excludes desired signal.	
	OBS_O_3		< -60	-47	dBm	1.8 GHz ~ 1.9 GHz	
	OBS_O_4		< -65	-47	dBm	5.15 GHz ~ 5.3 GHz	