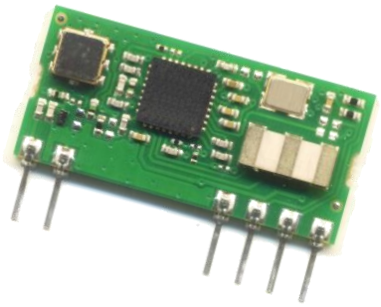
Wireless Transparent Modules Datasheet
32001423
OOK/ASK SUPER HETERODYNE COMPACT RECEIVER
Data Sheet



Overview

Low cost, high performance Super Heterodyne OOK/ASK receiver with very low profile and height.Suppression of image frequency without the use of front-end SAW filter.
Typical applications are remote control system, security systems, data transmission, industrial controls, home automation.

Contents

1. Description

Thanks to an efficient embedded noise cancellation filter, you get a good noise reduction and restoration of the integrity of the received signal, providing excellent performances. Suitable for all HCS, HT12 encodings and similar.

RSSI output proportional to received signal level.

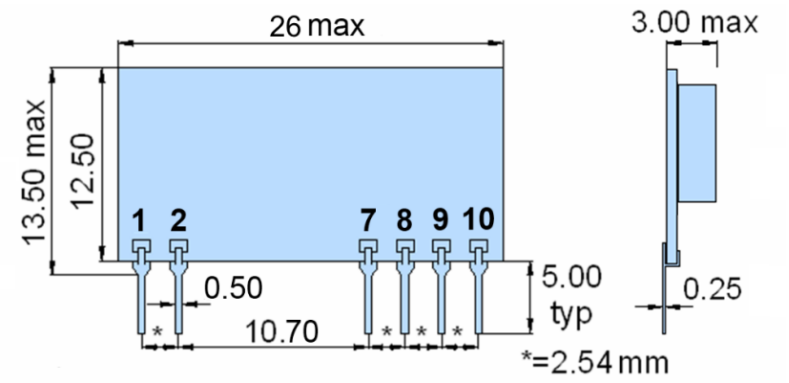
RF front-end filter assures great immunity to out-of-band interferers.

RSSI output proportional to received signal level.

Wide supply voltage range from 2.1 to 5.5 V.

Industrial temperature range from -40 to 85 °C.

2. Mechanical Dimensions



3. Pin Definition

1 = RF Input (50 Ω)
2 = GND
7 = GND
8 = RSSI OUT
9 = TTL Output – Data OUT
10 = +Vcc

4. Electrical characteristics

4.1 Absolute Maximum Ratings

Parameter	Max.	Unit
Supply voltage, +Vcc, pin 12:	5.5	V
Radio Frequency Input, pin 3:	10	dBm
Output pins voltage with respect to GND	+Vcc	V
Storage Temperature:	-40 ÷ 100	°C
Operating Temperature:	-20 ÷ 85	°C

4.2 Operating Condition

GENERAL ELECTRICAL CHARACTERISTICS @ 25 °C

Parameter	Min.	Typ.	Max.	Unit	Notes
Supply Voltage (Vcc)	2.1	3.0	5.5	V	
DC Current Drain	-	7.5	-	mA	
Operating Frequency	-	433.92	-	MHz	
Sensitivity	-	-112	-	dBm	See note 1
RF Bandwidth (-3dB)	-	200	-	kHz	See note 5
Selectivity (-6dB)			-		See note 5
Selectivity (-60dB)			-		See note 5
Image frequency rejection			-		See note 6
Spurious Radiated Emissions	-	-	-57	dBm	See note 7
Baud Rate	300	-	4800	Baud	
Start-up time	-	-	6	ms	See note 3
Settling time	-	-	5	ms	See note 4
Output Logic Low	GND	-	0.1	V	
Output Logic High	+Vcc-0.2	-	+Vcc	V	
Output load (pin14)	50	-	-	kΩ	

4.2.1 Notes:

Note 1: Test signal AM pseudo random code NRZ (mod. depth 100%) 2400 Baud. Result at BER=10-2 or better.

Note 2: Test signal AM pseudo random code NRZ (mod. depth 100%) 2400 Baud. Result at BER=10-2 or better.

Note 3: Time by test signal at RF input to valid data reception

Note 4: RSSI measurement: AM modulation 100 %, square wave, 1.2 kHz frequency; the linearity of RSSI level is not maintained in the -55 dBm to -45 dBm range due to AGC circuit

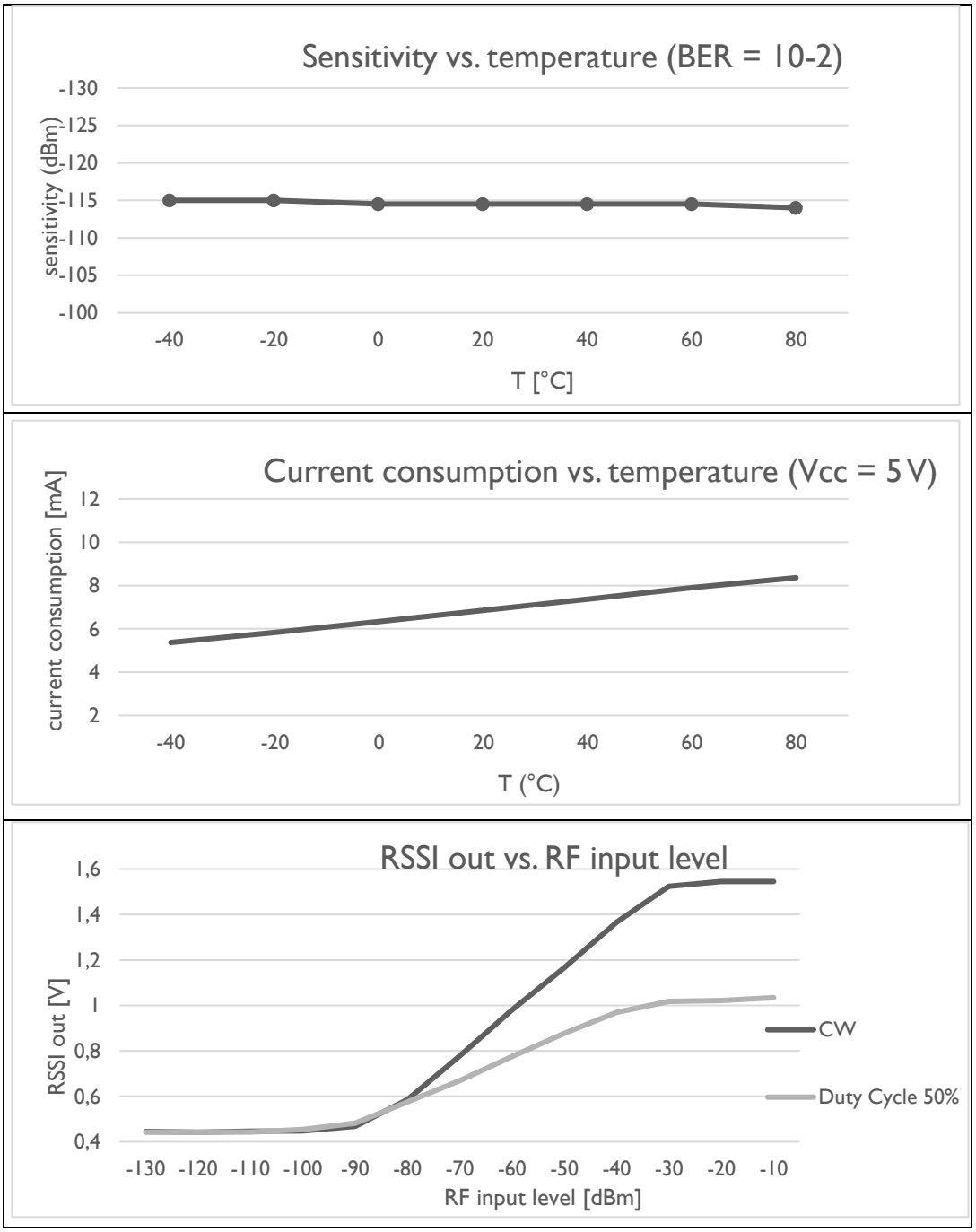
Note 5: All RF parameters measured with input (pin 3) connected to 50-Ω impedance signal source or load

Note 6: Measured as per ETSI 300 220-1, 5.17.3.3 "Spurious response rejection – Conducted measurement", test signal ASK 2400 Baud, 100 %, fi @ 412.52 MHz

Note 7: No significant emission detected. As per ETSI 300 220-1, 5.9.3.3.1 "UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN - Conducted measurement" and 5.9.3.3.2 "UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN - Radiated measurement"; f < 1 GHz: < -57 dBm; f > 1 GHz: < -47 dBm

4.3 Temperature Range Curves

Note: All RF parameters measured with input (pin 3) connected to a 50-Ω impedance signal source or load.



5. Application Notes

Title	Description	Doc
PCB Layout Guidelines	Hints how to make a good RF design	AN_RF_001.pdf

6. Regulatory Approvals

Doc	Title	Description
32001423_DoC.pdf	Declaration of Conformity	Declaration of the conformity with the essential requirements of the European Directive 2014/53/EU

7. Revision History

Revision	Date	Description
1.0	19.12.2018	First Release
1.1	03.11.2020	Final Release