Wireless Transparent Modules Datasheet
32001520V3
OOK/ASK SUPERHETERODYNE RECEIVER
Datasheet

Overview

Low cost, high performance Superheterodyne OOK/ASK receiver with low profile and height in the 434 MHz SRD band.

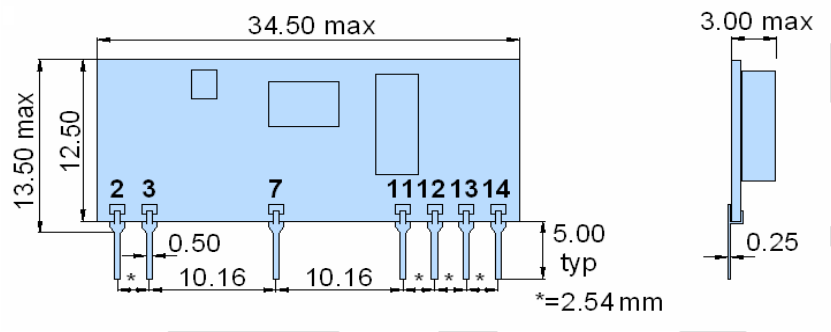
Typical applications are remote control system, security systems, data transmission, industrial controls, home automation.

Contents

1. Description

This module is equipped with a differential image rejection mixer for a good out of band interference immunity.
Thanks to an efficient embedded noise cancellation filter, this receiver reaches 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 is proportional to the received signal level.
Supply voltage range from 3.0 to 3.6 V.
Industrial temperature range -40/85 °C.
CATEGORY 1.5 RECEIVER developed according to **ETSI EN 300 220** European Standard.
The module meets with the Radio Equipment Directive **(RED) 2014/53/EU.**

2. Mechanical Dimensions



3. Pinout

Pin functions:

2 = GND
3 = RF Input (50 Ω)
7 = GND
11 = GND
12 = + VCC
13 = RSSI Out
14 = Data OUT

4. Electrical characteristics

4.1 Absolute Maximum Ratings

Parameter	Max.	Unit
Supply Voltage (VCC)	4.0	V
Output pins voltage with respect to GND	VCC	V
Radio Frequency Input, pin 1:	10	dBm
Storage Temperature	-40 ÷ 100	°C
Operating Temperature	-40 ÷ 85	°C

4.2 Operating Condition

RECEIVER ELECTRICAL CHARACTERISTICS @ 25 °C

Parameter	Min.	Typ.	Max.	Unit	Notes
Supply Voltage (VDD)	3.0	-	3.6	V	
DC Current drain	-	5.7	6.8	mA	See note 4
Operating Frequency	-	433.92	-	MHz	
Channel Frequency Precision	-	±30	-	kHz	
Sensitivity	-	-115	-	dBm	See notes 2,3
-3 dB RF Bandwidth	-	-	300	kHz	
Spurious response rejection	-	1	-	dBm	See note 5
Spurious radiated level	-	-	-57	dBm	
Start-up time	-	60	170	ms	See note 6
Settling time	-	-	5	ms	See note 7
Data Rate	300	-	4800	bit/s	
Output Logic low	GND	-	0.4	V	
Output Logic high	VCC - 0.4	-	VCC	V	

~~4.2.1~~

4.2.1 Notes:

Note 1: VCC = 3.0 V

Note 2: All RF parameters measured with input (pin 1, RF Input) connected to 50 Ω impedance signal source or load.

Note 3: Pseudo random code NRZ, OOK BER (bit error rate) = 0.1 % or better, OOK modulation, Bit Rate = 2400 bit/s.

Note 4: Typical consumption is measured with -100 dBm OOK 1.2 kHz square modulated signal

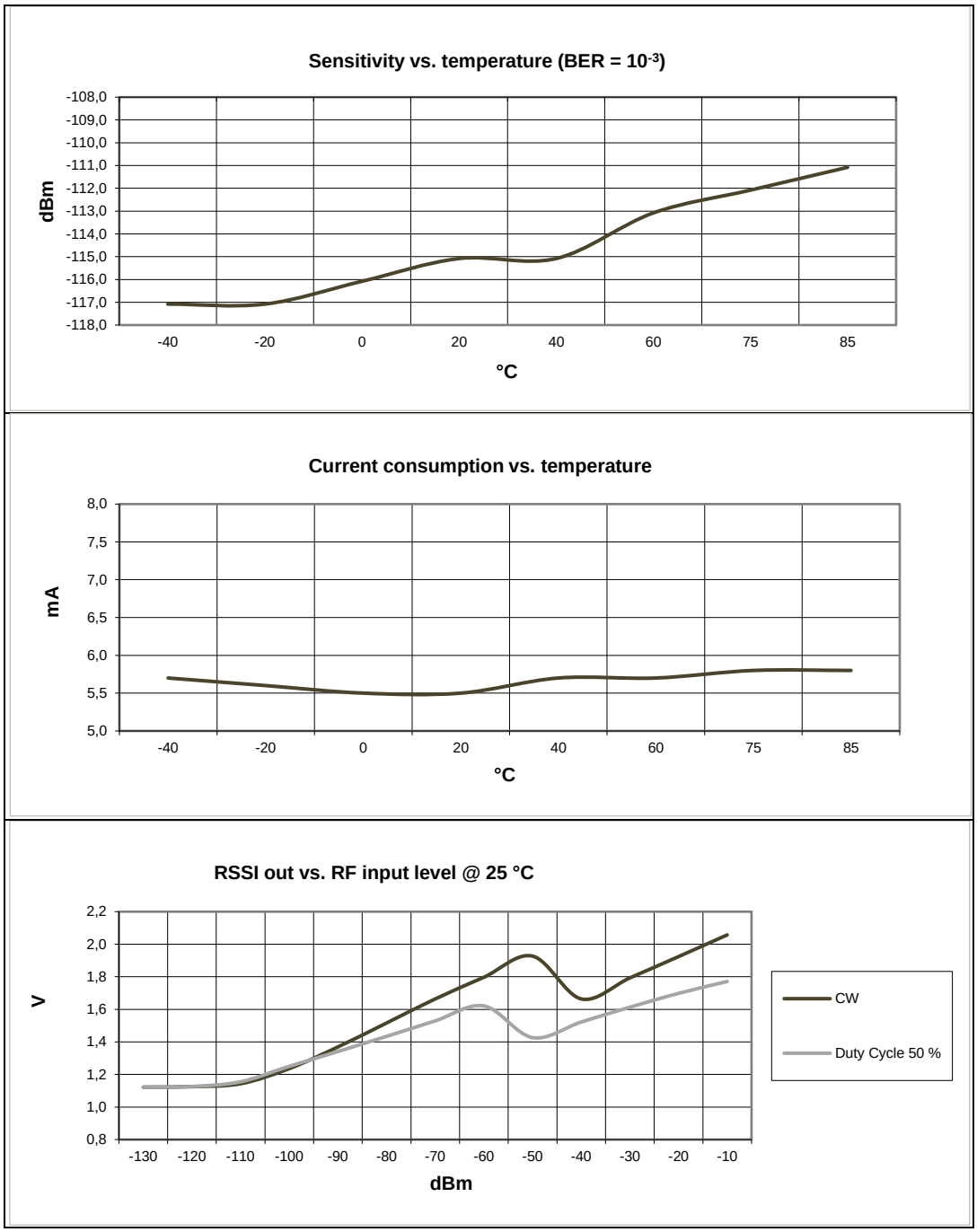
Note 5: Spurious response rejection, given for a single tone interferer and referenced to sensitivity + 6 dB, test performed with unmodulated signal measured as per ETSI 300 220-1

Note 6: Time by power-on to valid data reception.

Note 7: Time by test signal at RF input to valid data reception.

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 for a good RF design	AN_RF_001.pdf

6. Regulatory Approvals

Doc	Title	Description
32001520V3_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
0.1	29.10.2021	First Release