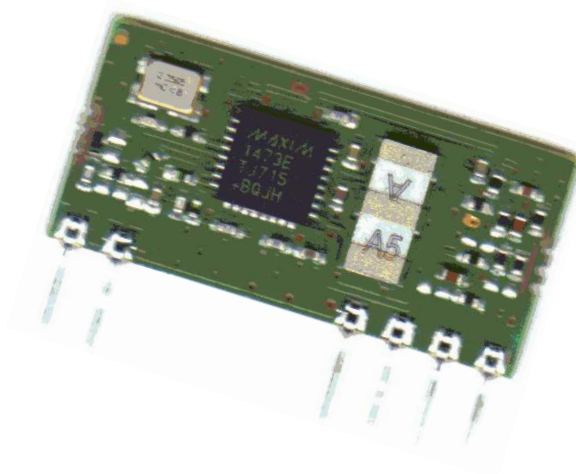


# Wireless Transparent Modules

## 32001522

### OOK/ASK 434 MHz SUPERHETERODYNE RECEIVER

## Datasheet



### Overview

High performance Superheterodyne OOK/ASK receiver with low profile and height in the 434 MHz SRD band.

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## 1 Product Features

### Mechanical highlights:

- ✓ Compact dimensions  
(26 mm x 13.50 mm)

### RF performances:

- ✓ -110 dBm Sensitivity
- ✓ Category 2 Receiver

### Additional features:

- ✓ RSSI output pin

### Applications:

- ✓ Remote control systems
- ✓ Data transmission
- ✓ Industrial controls
- ✓ Home automation

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 of the received signal, providing excellent performances.

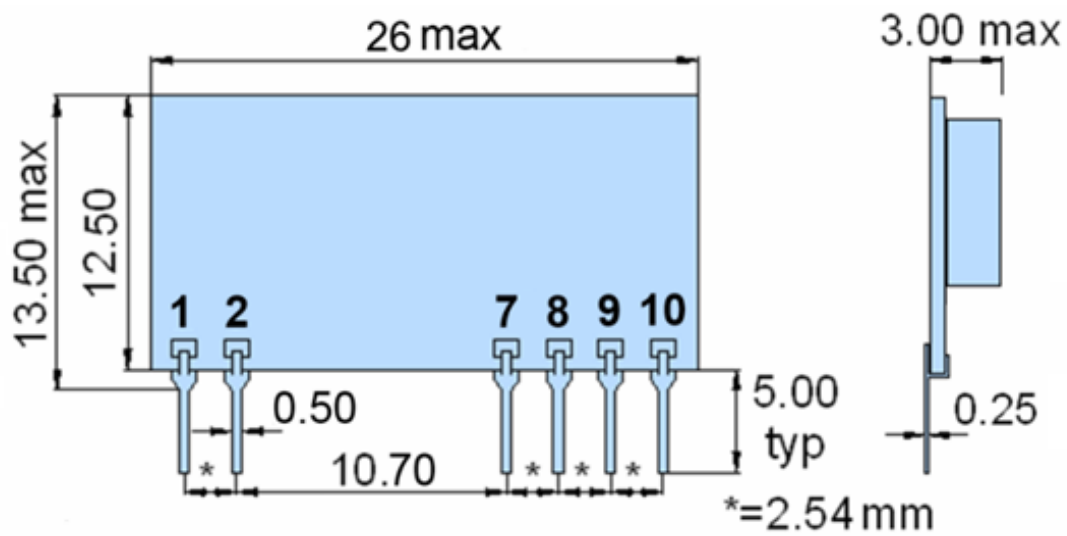
Suitable for all HCS, HT12 encodings and similar.

Standard supply voltage range from 4.5 V to 5.5 V. The module meets all the requirements in the industrial temperature range -40 / 85 °C.

**CATEGORY 2 RECEIVER** developed according to ETSI EN 300 220 European Standard. The module meets the Radio Equipment Directive (RED) 2014/53/EU.

Compliant with REACH and RoHS directives.

## 2 Mechanical Dimensions



## 3 Pin Definition

Pin	Name	Type
1	RF Input (50 Ω)	RF
2	GND	S
7	GND	S
8	RSSI Out	O
9	Data Out	O
10	+ VCC	S

**LEGEND:** S = Power supply, O = Output, I = Input, RF = Antenna port

## 4 Electrical Characteristics

### 4.1 Absolute Maximum Ratings

Parameter	Max.	Unit
Supply Voltage (VCC)	6.0	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

**Note:** All parameters measured with RF input (pin 1, 2) connected to a 50-Ω impedance signal source or load, Power Supply Voltage @ 5.0 V DC, Temperature 25 °C.

### 4.3 Electrical characteristics @ 25 °C

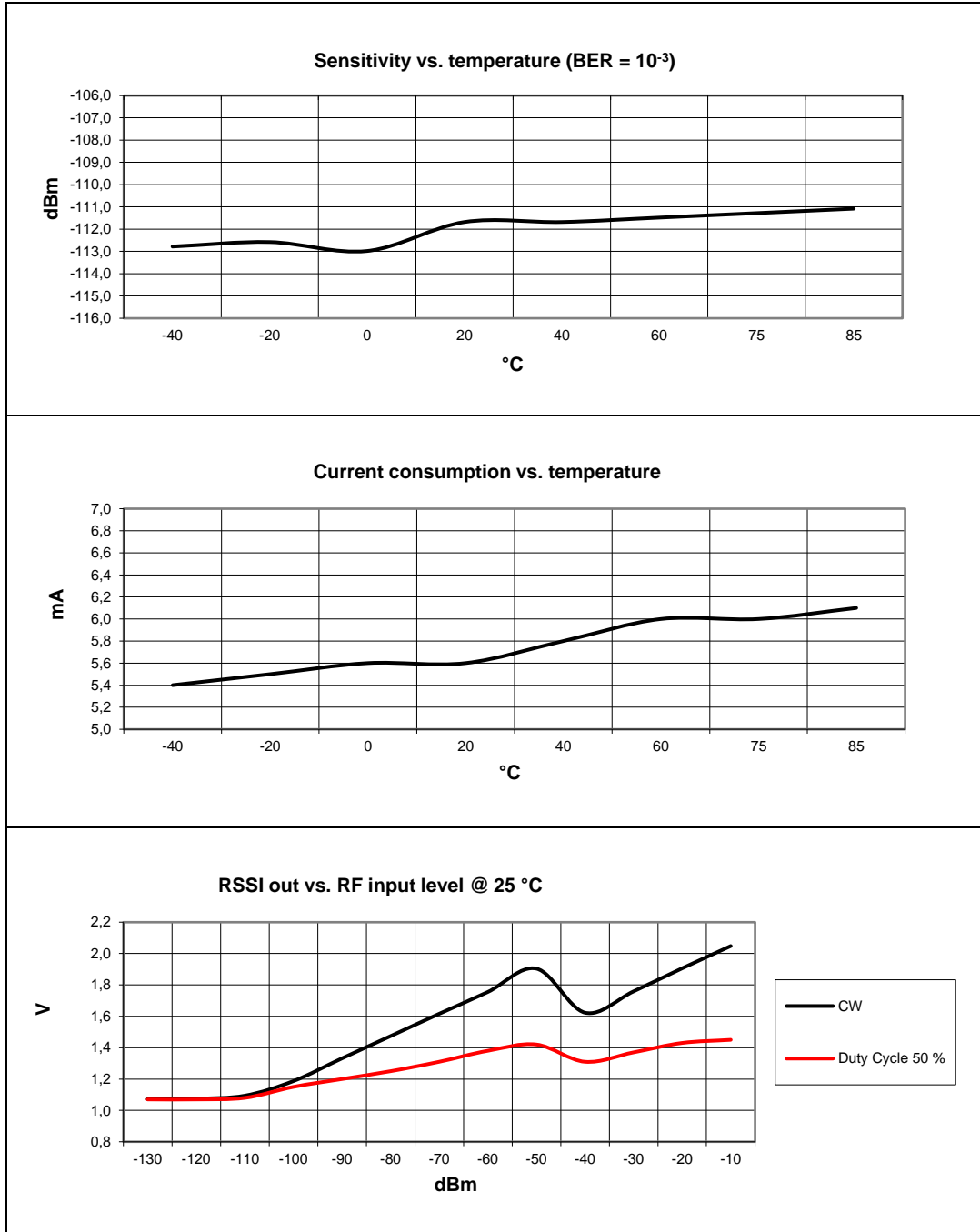
Parameter	Min.	Typ.	Max.	Unit	Notes
Supply Voltage (VCC)	4.5	-	5.5	V	
DC Current drain	-	5.7	-	mA	1,4
Operating Frequency	-	433.92	-	MHz	
Channel Frequency Precision	-	±30	-	kHz	
Sensitivity	-110	-	-	dBm	2,3
-3 dB RF Bandwidth	-	-	300	kHz	
RF input impedance	-	50	-	Ω	
Spurious response rejection	-	-39	-	dB	5
Spurious radiated level	-	-	-57	dBm	
Start-up time	-	60	170	ms	6
Settling time	-	-	5	ms	7
Data Rate	300	-	4800	bit/s	
Output Logic low	GND	-	0.4	V	
Output Logic high	VCC - 0.4	-	VCC	V	
Load impedance for Data Out signal	47	-	-	kΩ	
Load impedance for RSSI Out signal	1	-	-	MΩ	8

**4.3.1 Notes:**

- 1) VCC = 5.0 V.
- 2) All RF parameters measured with input (pin 1, RF Input) connected to 50- $\Omega$  impedance signal source or load.
- 3) Pseudo random code NRZ, BER (bit error rate) = 0.1 % or better, OOK modulation, Bit Rate = 2400 bit/s.
- 4) Typical consumption is measured with -100 dBm OOK 1.2 kHz square modulated signal.
- 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.
- 6) Time by power-on to valid data reception.
- 7) Time by test signal at RF input to valid data reception.
- 8) In order to read RSSI values, use a high-impedance input buffer. If this pin is not used, leave floating; do not connect to ground.

## 5 Temperature Range Curves

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



## 6 Application Notes

Title	Description	Doc
Frame Structure for Radio Communication	Description on data encoding techniques	AN_RF_001.pdf
PCB Layout Guidelines	Hints how to make for a good RF design	AN_RF_002.pdf

## 7 Regulatory Approvals

Doc	Title	Description
32001522_DoC.pdf	Declaration of Conformity	Declaration of the conformity with the essential requirements of the European Directive 2014/53/EU

## 8 Revision History

Revision	Date	Description
0.1	20.09.2021	First release
0.2	27.05.2022	Template change
0.3	20.09.2023	Defined load impedance values for RF, data out and RSSI pins