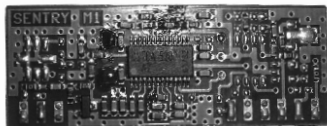


SENTRY

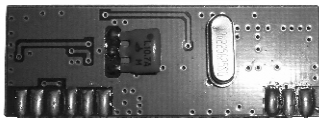
OEM PRODUCTS

433MHz M1 SUPERHET RECEIVER MODULE

The SENTRY M1 module is a compact superheterodyne receiver module designed for the reception of ASK (amplitude shift keying) remote controls operating at 433.92MHz. It is based around the Infineon TDA5200 and features excellent sensitivity and frequency stability despite the small size of the module. It is designed to mount horizontally or vertically on a printed circuit board.



M1 FRONT VIEW

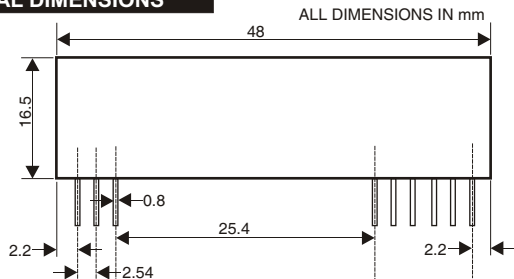


M1 BACK VIEW

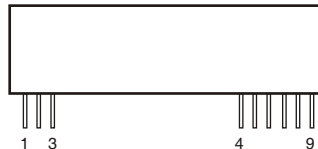
PRODUCT SPECIFICATIONS

Parameter	Min	Typ	Max	Unit
Supply Voltage	4.0	5.0	5.5	VDC
Receive Frequency	-	433.92	-	MHz
Sensitivity	-107	-115	-118	dBm
Ic (current draw)	3.9	4.6	6.1	mA
RF input levels	-120	-	-13	dBm

PHYSICAL DIMENSIONS



PIN CONNECTIONS



Pin No	Function
1	Antenna Input (wire antenna)
2	GND
3	GND
4	Not Used
5	Not Used
6	GND
7	Vcc Supply Voltage
8	GND
9	TTL DATA Output

USING THE M1

The SENTRY M1 is designed to interface directly to the I/O pin of any microcontroller or decoder IC (MC145028, HT12, etc...). The module has an integrated data slicer, which provides clean demodulation (to TTL) levels of ASK signals typically generated by wireless remote controls. A level shifter may be required for use with microcontrollers that have 3.3V or lower I/O requirements.

Data Output Pin

The data output pin is not muted in the absence of a carrier, it will contain random noise, until the carrier is sensed in which case it will go low. The demodulated datastream will then be output on the pin as it arrives. The data pin does not need any pull-up resistor and it is advisable not to load this pin in any way.

Demodulation

To ensure good performance, it is highly recommended that a 100nF bypass capacitor, be fitted as close as possible to the Vcc pin (PIN 7)

USING THE M1 (continued)

Antenna

The M1 is designed to operate with a wire antenna. A typical antenna shall be a length of wire (0.75mm²) 178mm long. This will ensure optimal performance. A PCB trace antenna may be used, provided its length is equal to 178mm and it is clear of ground planes and other sources of interference, particularly power traces.

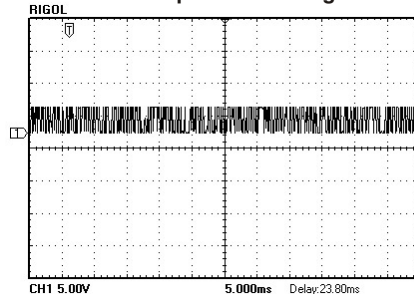
PCB Mounting

To ensure good performance, it is highly recommended that the M1 be placed as far away as possible from interference sources, such as motors, power transformers and oscillator circuits. The module is typically mounted vertically on the PC board, horizontal mounting is possible by preforming the leads at a 90-degree angle, but it is important to ensure there are no components underneath the module. Also avoid traces, and do not lay a ground plane beneath the module.

Data Output Characteristics

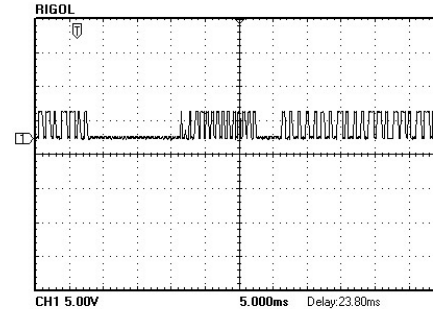
In the presence of noise and interference introduced by mounting near motors and transformers, **the quality of the demodulated data will degrade**. It is very important to ensure the module is integrated correctly into the end equipment. The following shows what good data signals should look like:

Data Output Pin - No Signal



USING THE M1 (continued)

Data Output Pin - ASK Demod Signal from a SENTRY Code-Hopping Remote



In the presence of noise, the above demodulated waveform will degrade substantially, leading to decoding errors.

Type Approvals



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