



ARX-433-ULC Ultra Low Power AM Receiver Modules

The ARX-433-ULC AM receiver modules include SAW front end filtering and shielding can for high selectivity and high immunity to electromagnetic fields. These receiver modules offer ultra low current consumption making them a perfect choice for portable battery powered applications.

Features

- 3V operation
- Ultra low current consumption: 0.07mA
- High selectivity SAW front end filter
- EMI-RFI Shielding
- Wide operating temperature range
- Small size and low profile
- Compatible with our AM RF transmitter modules such as the AM-RT4/5, ATMT1, ATX-433IA and AM-TXHP

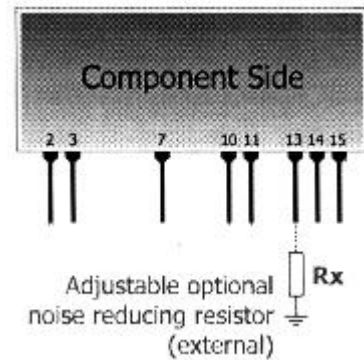
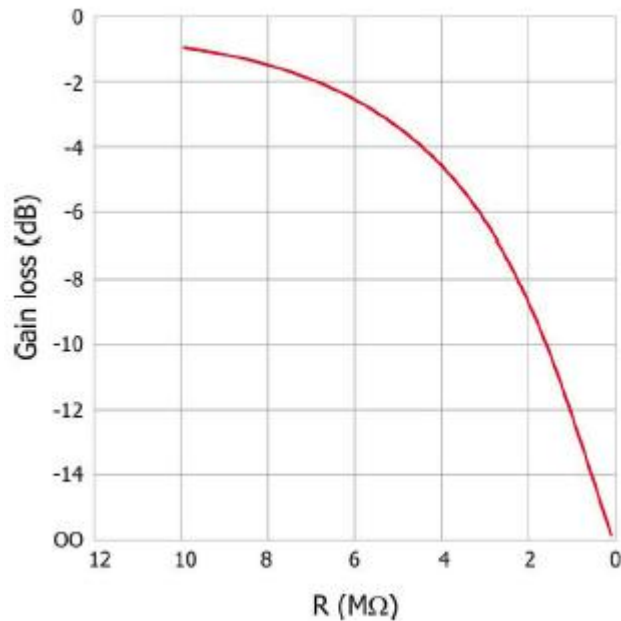


CHARACTERISTICS	MIN	TYP	MAX	UNIT
Supply Voltage	2.75	3.0	3.25	Vdc
Supply Current		0.07		mA
Receive Frequency		433.92		MHz
RF Sensitivity			-94	dBm
Interference Rejection		>80		dB
Square Wave Output		2	3	KHz
Output High Voltage	Vs-0.4			V
Output Low Voltage			GND+0.4	V
Antenna RF Emission			-60	dBm
Switch On Time			1	s
Operating Temperature	-20		+80	°C

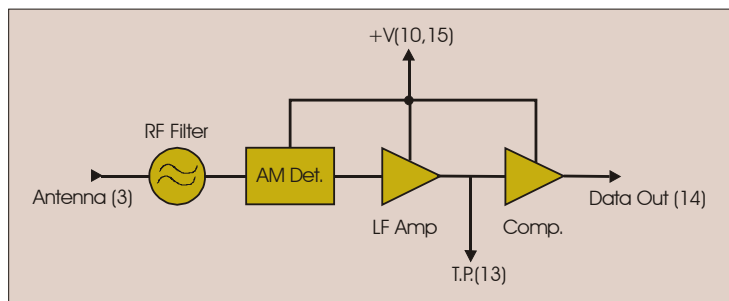
Squelch threshold adjustment

To achieve highest sensitivity, the **ARX-433-ULC** receivers exhibit random digital noise on the data output pin **in the absence of a transmission**. This is entirely normal operation, however, some applications may find this undesirable. In such cases, this noise level can be reduced by adding a resistor between Test Point (pin 13) and GND, with the trade-off of reducing the sensitivity of the receiver. As an example, a resistor value of 10M will result in (-1dB) loss in receiver sensitivity, but will result in a noise reduction at the data output. This noise reduction is often desired for microcontroller interfaces where a wakeup interrupt is required. The following information shows the loss in sensitivity of the receiver with different resistor values.

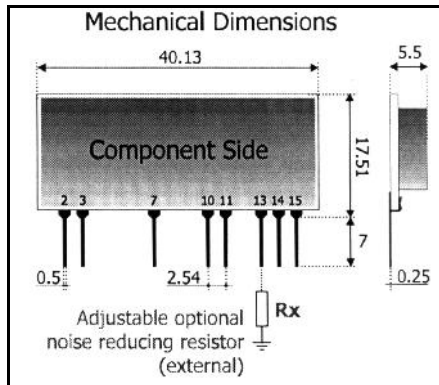
Model	Loss (-1dB)	Loss (-3dB)
ARX-433-ULC	Rx = 10M	Rx = 5.6M



Receiver Block Diagram



Pinout



Pin	Description
2, 7, 11	Ground
3	Antenna
10, 15	+V
13	Test Point
14	Data Output

Antenna

Several antenna options are available for use with the ARX-433-ULC receiver modules. The simplest and lowest cost antenna would be a 1/4 wave wire antenna connected as close to the antenna pin 3 as possible. The open (hot) end of the antenna should be kept well clear of surrounding objects, in particular, surrounding electronics and electrical circuits and should have as much surrounding free space as possible. This type of antenna may be constructed using for example 22 gauge solid core hookup wire cut to a length 16.5cm.

Alternatively, we offer a range of professionally manufactured and tuned antenna with RPSMA type connectors or BNC type connectors. For these types, consideration must be given to design layout to include a suitable antenna connector and antenna positioning.