A RF09 AM
Transmitters & Receivers

User Guide

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About this Document

This guide describes the A^RF09 AM devices, their options and accessories.

Declaration of conformity

Manufacturer's name: **ADEUNIS R.F.**
Manufacturer's address Parc Technologique PRE ROUX IV
283 rue Louis NEEL
38920 CROLLES - FRANCE
declares that the product if used and installed according to the user guide available on our web site www.adeunis-rf.com

Product Name: **ARF09**
Product Number(s): **ARF6366A / ARF6374A / ARF6374I**
is designed to comply with the RTTE Directive 99/5/EC:
EMC: according to the harmonized standard EN 301 489.
Safety: according to the standard EN 60950-1/2001
Radio: according to harmonized standard EN 300-220 covering essential radio requirements of the RTTE directive.
Notes: - Conformity has been evaluated according to the procedure described in Annex III of the RTTE directive.
- Receiver class (if applicable): 3.

According to the 1999/519/EC recommendation, minimum distance between the product and the body could be required depending on the module integration.

Warnings: - CE marking applies only to End Products: Because this equipment is only a subassembly, conformity testing has been reduced (equipment has been design in accordance to standards but full testing is impossible). Manufacturer of End Products, based on such a solution, has to insure full conformity to be able to CE label marking.
- As the integration of a radio module requires wireless technological knowledge, ADEUNIS RF proposes its technical proficiency to its customers for a pre-compliance qualification of end products. In case of no-conformity, ADEUNIS RF will not be held back responsible if this stage has not been realised.

Crolles, November 6th, 2007
VINCENT Hervé / Quality manager

Download of the user guide

Thank you for having chosen the ADEUNIS RF products.
User guides can be uploaded directly on our web site www.adeunis-rf.com
Index **Products**
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Print version available upon request
- ✓ Tel : +33 4 76 92 07 77
- ✓ Email : arf@adeunis-rf.com

TOP

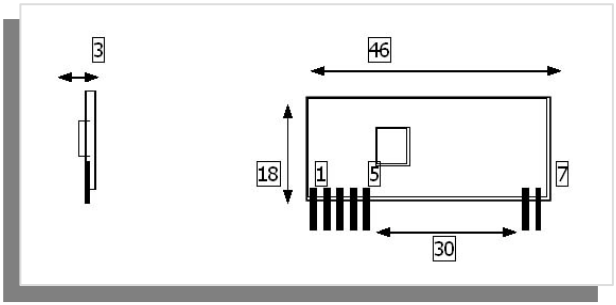
ARF09 AM Transmitter

General use

The TX A^RF09 AM transmitter is a SAW transmitter developing a power of 10 mW on 50Ω. The use of half wave or quarter wave antennas is important to get a high radiated power.

These transmitters are compatible with any ASK receiver able to handle 100% modulations.

Dimensions / Pin assignment



Pins with 1/10" inch pitch

1 - TXData	4 - GND	6 - GND RF
2 - GND	5 - VCC	7 - ANTENNA Output
3 - N.C.		

NOTE

- Transmitter is off when TXData = 0. The TXData input is directly the command of the RF transistor bases. It is therefore important that it be as close as possible to the Vdc (Minimum : Vdc – 0.5V)

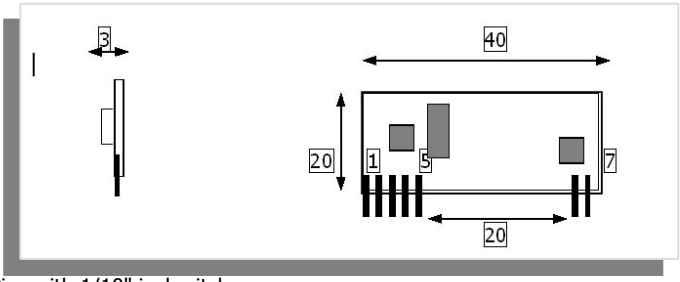
- Data to be transmitted are injected on TXData pin. Because ARF08 is a "rough" link, data rate has to be in the equivalent 500 / 2500 Hz range.
- For more informations about Radio Protocol : http://www.adeunis-rf.com/list_faq.php?lng=FR or http://www.adeunis-rf.com/list_faq.php?lng=EN
- A transmitter by definition generates a large electrical field. Avoid high-impedance circuits close to the antenna , they will have to be moved away or protected.

ARF09 AM Receiver

General use

The RX A^RF09 AM receiver is a superheterodyne receiver with a sensitivity better than 0.7µV. The use of a whip antenna is compulsory to obtain suitable characteristics on receipt.
This receiver is compatible with any 100% ASK transmitter using a quartz or SAW frequency reference.

Dimensions / Pin assignment



Pins with 1/10" inch pitch

1 - VCC
2 - RXData
3 - Audio (For Test Only)
4 - VCC
5 - GND
6 - ANTENNA Input
7 - GND RF

NOTE

- Receiver sampling is performed by direct switching of its VCC power supply. For more information : http://www.adeunis-rf.com/list_faq.php?lng=FR or http://www.adeunis-rf.com/list_faq.php?lng=EN
- The AUDIO output cannot be used for analogue transmission; the demodulator in fact provides the modulation logarithm !
- A receiver is by definition sensitive at very low electrical levels. It should therefore be kept away from any known radioelectrical source (fast time base, logic clock, PWM power supply, address / data bus...). Likewise particular care should be taken over decoupling of its VDC (10☐ / 100 nF RC circuit recommended) For more information : http://www.adeunis-rf.com/list_faq.php?lng=FR or http://www.adeunis-rf.com/list_faq.php?lng=EN

Specifications

A^RF09 AM transmitter

Frequency	433.9 MHz / ARF6374A & I (433.4 MHz / ARF6374B on request)
Developed power / ANT. Out.	10 mW / 50□
Modulation	ASK 100 %
Digital input / TXData	0 / VCC (Input Load 5 k□)

NOTE
Transmitter is off (I < 100 nA) when TXData = 0.

Operating voltage / VCC	3 V ± 10% / ARF6374I 5 V ± 10% / ARF6374A & B
Consumption	< 14 mA
Dimensions	46 x 18 x 3

Electrically & Pin compatible with Old ARF4006A & B & I Transmitters

A^RF09 AM Receivers

Frequency	433.9 MHz / ARF6366A (433.4 MHz / ARF6366B on request)
Sensitivity	/ ANT. In. 0.7µV (-110 dBm for 10^{-2}/PN9)
Demodulation	ASK > 75 %
Bandwith	400 kHz
Digital Output / RXData	0 / VCC (10 k□Impedance)
Settling Time	< 10 ms
Operating voltage / VCC	4.5 to 6 V
Consumption	7 mA
Dimensions	40 x 20 x 3

NOTE
Electrically & Pin compatible with Old ARF4001A & B Receivers

Complete set

Binary throughput	1.2 to 2.4 kbps Manchester coding
Operating Temperature	- 20 to + 70 °C
Regulating standards	Radio : RTTE Direct. (EN 300 220-3) EMC : EN 301 489 -1 & -3

Standard compliance

When using transmitters end receivers sub assemblies, the standard compliance relates to the finished equipment.

In Europe, equipments has to comply to the RTTE directive. For this kind of Low Power applications, the RTTE directive compliance will be established with the respect of :

- EN300-220 radio standard .
- EN301-489 ECM standard .
- EN60950 Electric security (when usable).

IMPORTANT

if A^RF09 AM daughter boards comply with the limits of the EN300-220 radio standard, their integration inside a mother board may change some radioelectrical characteristics. (Harmonic levels, R.F leackage...)

The final equipment, before the laboratory testing, has to be examined in ADEUNIS RF lab to verify the compliance. After official testing, equipment and test reports had to be archived to justify the compliance.