ARF19
7242A & 7246A
User Guide

DECLARATION OF CONFORMITY

according to ISO/IEC Guide 22 and EN45014

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

Product Name: ARF19
Product Number(s): ARF7242 – ARF7245
Product options:

conforms to the RTTE Directive 99/5/EC :

EMC: conformity is proven by compliance to the standard EN 301 489 according to the requirements of EMC Directive 89/336/EEC.

Safety: conformity to the standard EN 60950 according to the requirements of Low Voltage Directive 73/23/EEC.

Radio: conformity is proven by compliance 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.
- The use of the spectrum is harmonized by the fact that the product never falls in one of the restrictions listed in appendix 3 (Annex 1, band E) of the CEPT recommendation 70-03.
- Receiver class (if applicable) : 2.

Restrictions: - 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.

Crolles, March 7th, 2005
VINCENT Hervé / Quality manager

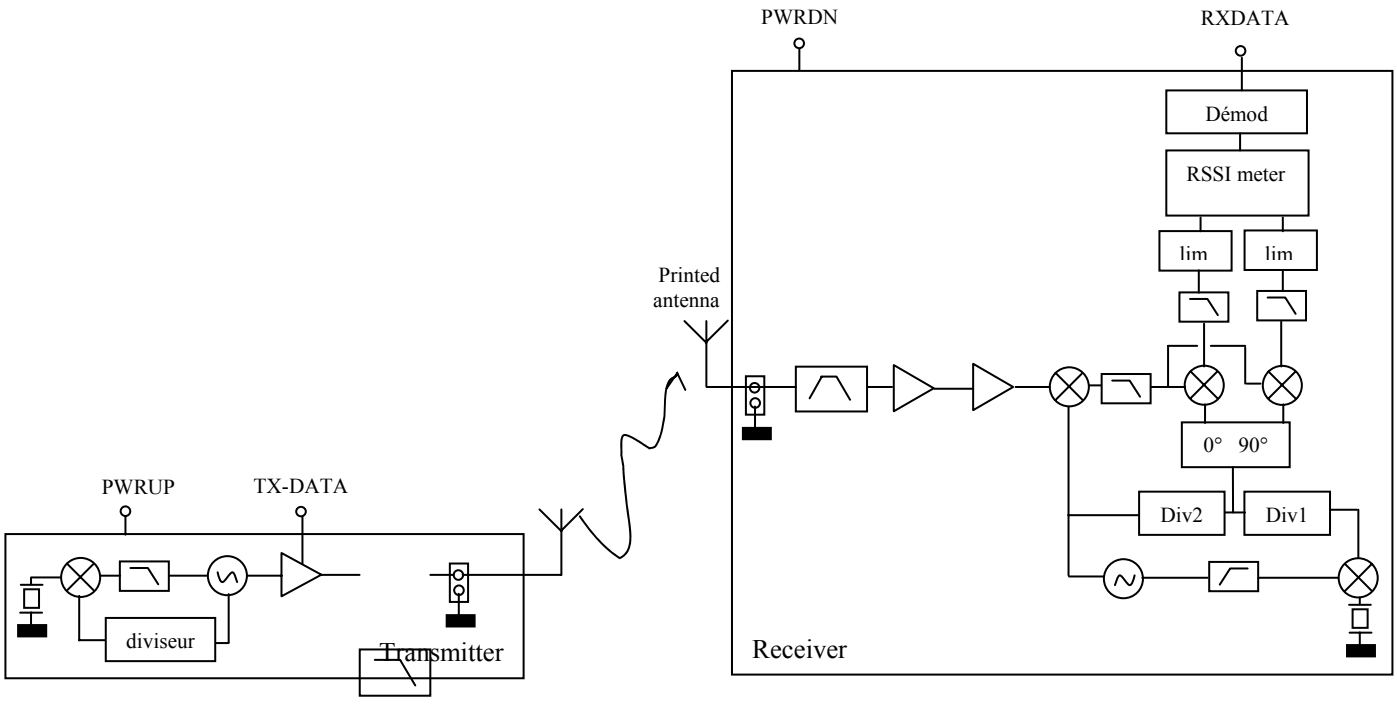
GENERAL PRESENTATION

The ARF7242A module is a Xtal based reference 869.525MHz – 10mW ASK transmitter These transmitters are compatible with any ASK receiver able to handle 100% modulations as the ARF7246A (description enclosed)
The ARF7246A receiver is a very high sensitivity (0.5µV / -113dBm on 50Ω) ASK single heterodyne module.
It could function with all ASK 100% Xtal based transmitter (bandwidth: 100kHz).

These modules are supplied without antenna. To increase the performances, we recommend the use of a « Whip » antenna.
The receiver is equipped with an antenna printed directly on the PCB. The antenna performances directly depend on the module integration on the motherboard (avoid high components close to the antenna).

All these modules build rough radio links; bit coding and frame coding has to be processed by the associated digital controller.
They are all available as sub-assembly daughter boards to complete an electronic digital motherboard.

SYNOPTICS



SPECIFICATIONS

- **Transmitter**

Parameters	Values	Notes
Operating Frequency	869.525 MHz	-
Conducted power	10 mW (+10 dBm)	On 50Ω at 5V
Modulation	ASK	-
Operating voltage (VCC)	from 2V to 5V	Nominal: 3V
Digital input levels	0 / VCC	-
Electric consumption	15 mA	-
Standby current	<2 µA	-
Start time	2 ms	-
Pinning	See chapter 4.1	-
Size	25 x 14 x 7 without antenna	-

- **Receiver**

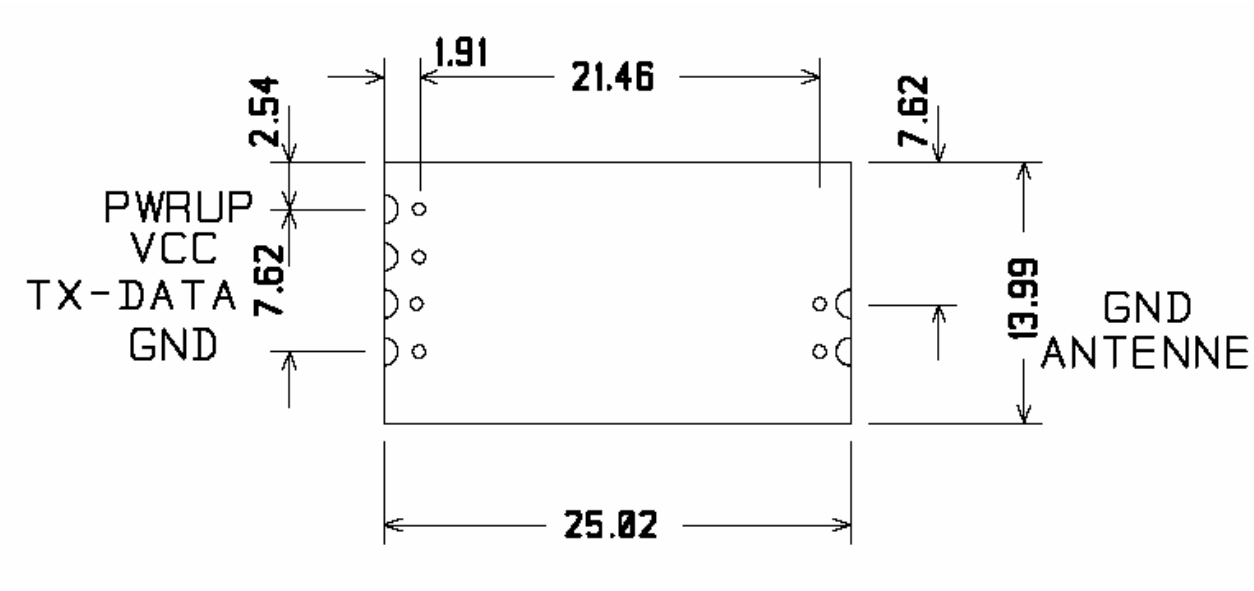
Parameters	Values	Notes
Frequency	869.525 MHz	-
Sensitivity	0.5µV (-113dBm)	On 50Ω
Demodulation	ASK	-
Bandwidth	100 kHz	-
Operating voltage (VCC)	from 2.2V to 5V.	Nominal: 3V
Serial digital output	0 / VCC	-
Consumption	10 mA	-
Standby current	<1 µA	-
Start time	5 ms	-
Pinning	see chapter 4.2	-
Size	48 x 15 x 7 with printed antenna	-

- **Complete set**

Parameters	Values
Link settling time	2.5ms
Range in open filed	300 m
Binary rate	from 1.2 to 2.4 kbps Manchester
Temperature	from -20°C to +70°C
Standards	Radio: EN300220 CEM: EN301489

- **Transmitter**

Size / Electric pin assignment



- **PWRUP:** power up input
- **TX-DATA:** Data input

Notes

- Dimensions are given in mm
- SMD pads pitch is 2,54mm.

Notes

- The interface with the mother board has to be achieved through copper pads on both PCB sides or with 2 HE13 or HE14 SIL pins (non-supplied). In the 1st solution, the economy of connectors imposes a perfect ground plane under the transmitter board.

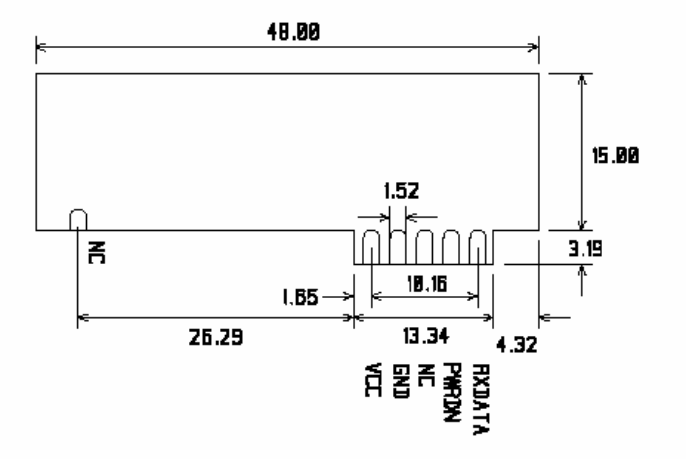
- Radio module has to be powered using an external power supply connected between VCC and GND. Operating voltage has to be in the 2 – 5V range.

- Power is trigged using the PWRUP pin:
  - PWRUP = ″1″ → Transmitter on.
  - PWRUP = ″0″ → Transmitter off.

- When in standby mode, “TX-DATA” pin has also to be logical 0.

- **Receiver**

Size / Electric pin assignment



- **PWRDN:** Wake up / standby mode
- **RXDATA:** Received data
- **NC:** Not used

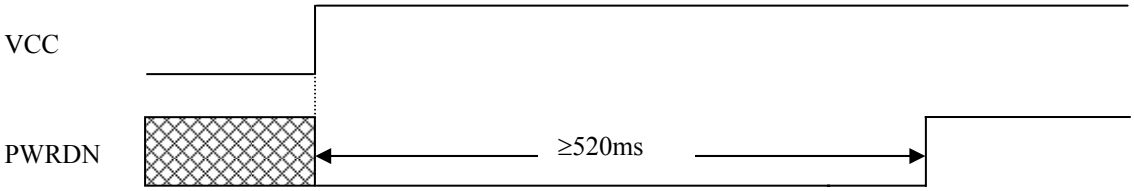
Notes
- Dimensions are given in mm
- SMD pads pitch is 2,54mm.
- PCB thickness: 1,6mm.

Notes

- A slot in the mother board could be done for the receiver. The soldering has to be done on the opposite side of the radio module.
- Radio module has to be powered using an external power supply connected between VCC and GND. Operating voltage has to be in the 2 – 5V range.
- Power is trigged using the PWRUP pin:
  - PWRUP = ″1″ → Transmitter on.
  - PWRUP = ″0″ → Transmitter off.

ATTENTION: If using a pull down resistor on PWRDN, its value has to be less than 220 Ohms!

If the receiver stand-by mode is activated immediately after powering up the equipment, please use timings below (for good receiver IC internal Reset).



- The antenna is directly printed on the PCB. (avoid any high components close to the antenna).