ARF19
7242A & 7245A
User Guide

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SA au capital de 345.000 euros – SIRET 430 190 496 00017 – RCS Grenoble – NAF 322A

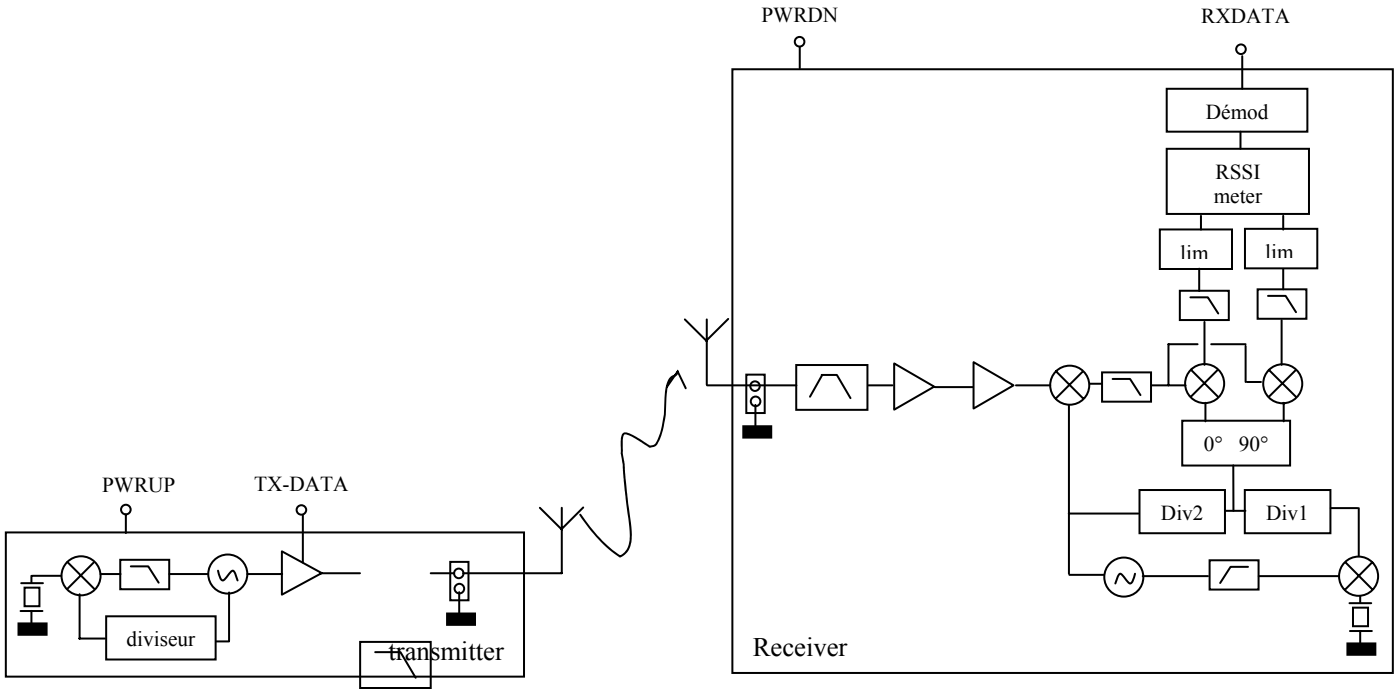
GENERAL PRESENTATION

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 ARF7245A (description enclosed)
The ARF7245A receiver is a very high sensitivity (0.5µV / -113dBm) ASK Superheterodyn with single frequency switch 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.

All these modules build rough radio links; bit coding and frame coding have to be managed by an associated digital controller.
They are all available as subassembly 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	26,4 x 15 x 7 without antenna	-

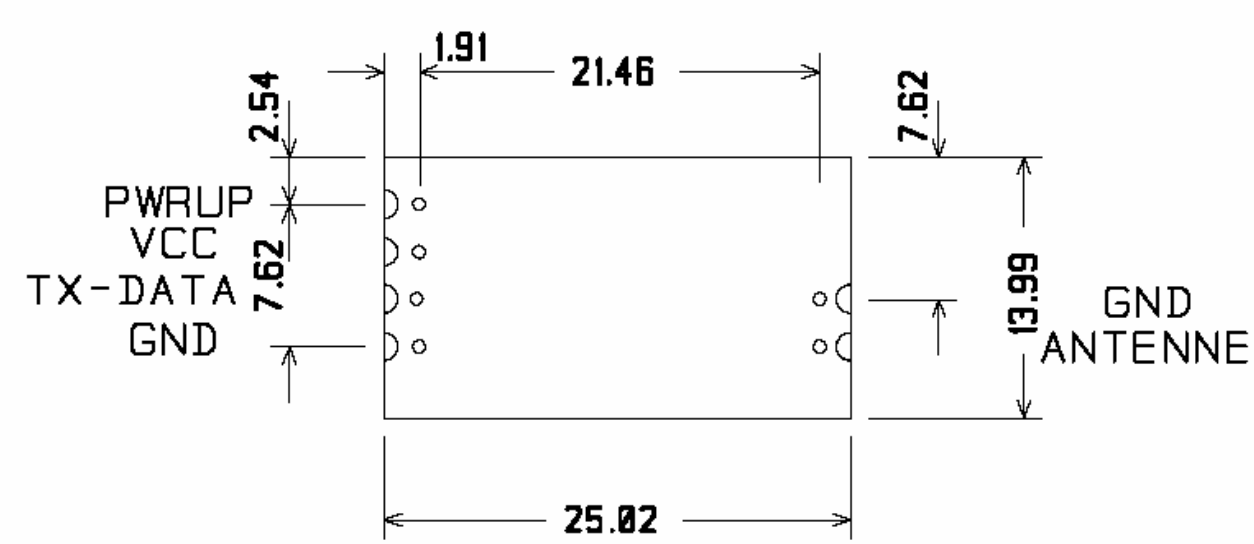
- **Complete set**

Parameters	Values
Link settling time	2.5ms
Range	400m
Binary rate	de 500 to 2400 bps Manchester
Temperature	De -20°C to +70°C
Standards	Radio: EN300220 CEM: EN301489

PRODUCT INTERFACE

- **Transmitter**

Size / Electric pin assignment



- **PWRUP:** Power up input.
- **TX-DATA:** Data input.

Notes
- Dimensions are given in mm
- SMD pads pitch is 2.54 mm.

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). No component can be located under the module when using SMD mounting.

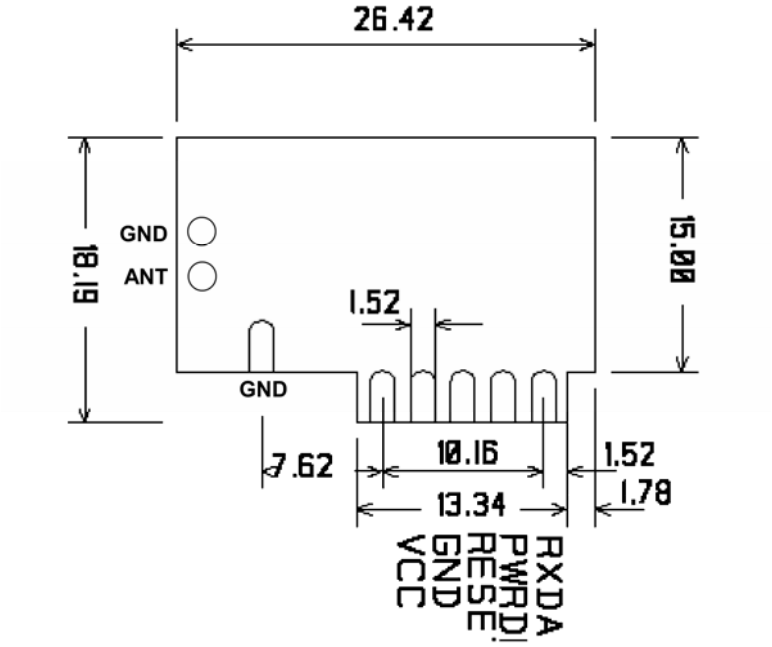
- Radio module has to be powered using an external power supply connected between VCC and GND. Operating voltage has to be in the 2 – 5V range.

- 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**

Dimensions / Pinning:



RESET: Not used. Do not connect.
PWRDN: Standby mode (when 1).
RXDATA: Received data

Notes
- Dimensions are given in mm
- SMD pads pitch is 2.54 mm.
- PCB thickness: 1,6mm.

Notes
- Plugged mounting needs a 1.6mm fence in the motherboard. Electrical connections are made by simple manual or wave soldering on the soldering face of MB.
- Radio module has to be powered using an external power supply connected between VCC and GND. Operating voltage has to be in the 2.2 – 5V range.
- Power is trigged using the PWRDN pin:
  - PWRDN = ″1″ → Receiver off.
  - PWRDN = ″0″ → Receiver on.

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).