

ARF19

7242A & 7245A

User Guide



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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 ($0.5\mu\text{V} / -113\text{dBm}$) ASK Superheterodyn with single frequency switch module.

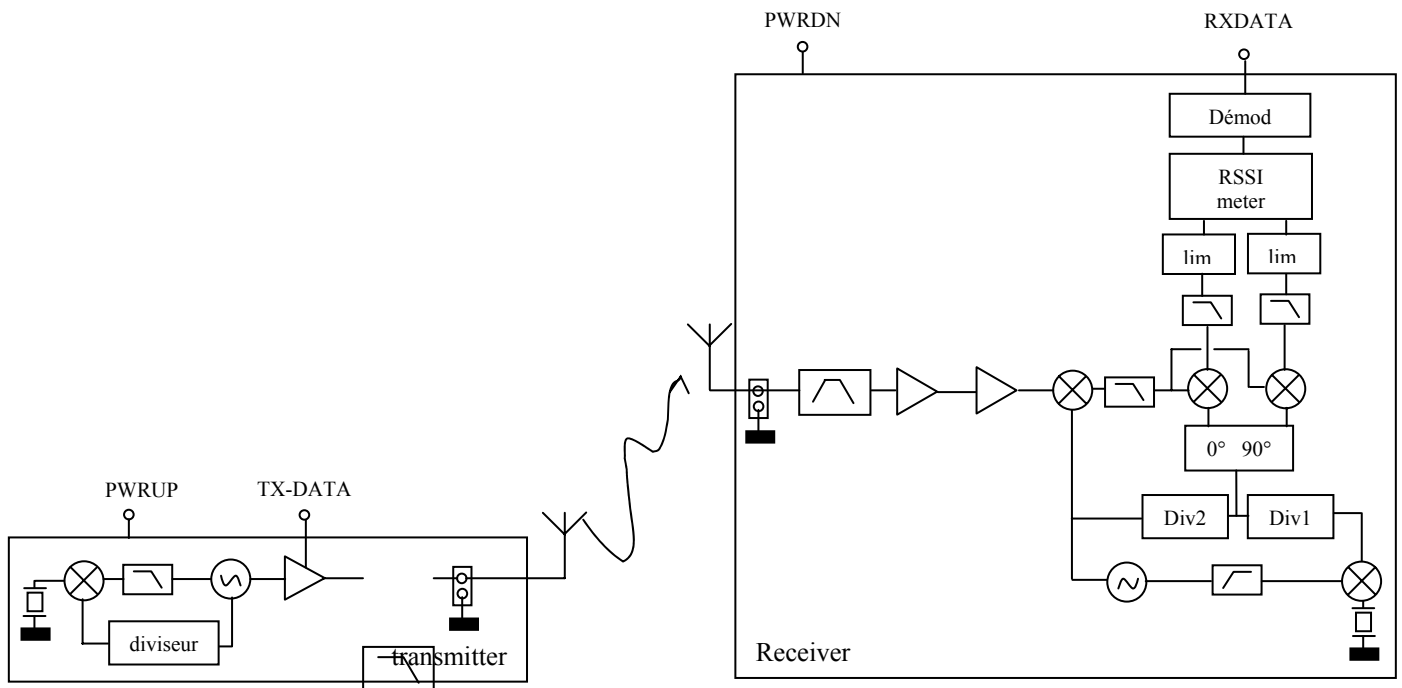
It could function with all ASK 100% Xtal based transmitter (bandwidth: 100kHz).

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	-

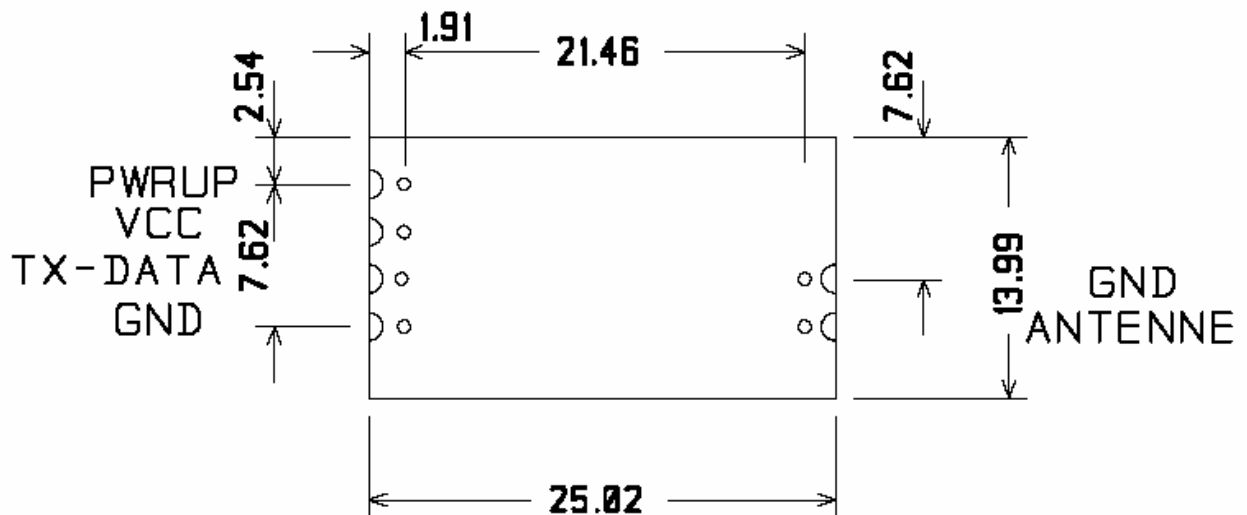
- Complete set

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.

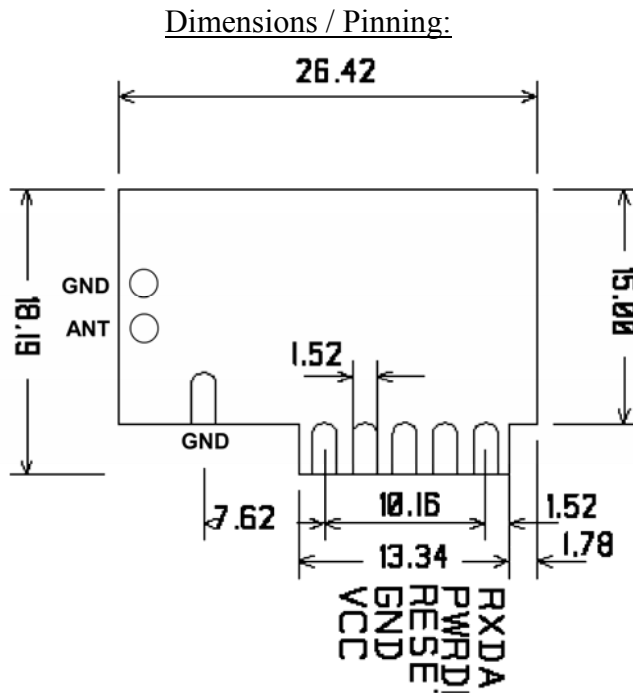
Notes

- 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 triggered 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



- 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 triggered 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).

