



A^{RF18}
Remote control receiver
(serial / USB)



User Guide

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About this document

This guide describes the A^{RF18} devices, their options and accessories.

Declaration of conformity



Manufacturer's name: ADEUNIS R.F.
Manufacturer's address: Parc Technologique PRE ROUX IV
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 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: ARF18
Product Number(s): ARF7263J / ARF7263K / ARF7263R / ARF7263S

Product options:

Complies with the RTTE Directive 99/5/EC:

EMC: conformity is proven by compliance to the harmonized standard EN 301-489
Safety: conformity to the standard EN 60950-1/2001
Radio: conformity is proven by compliance to harmonized standard EN 300-220 covering essential radio requirements of the RTTE directive.

Exposure to radio frequency signals according to the council recommendation 1999/519/EC on the limitation of exposure of general public to electromagnetic field.

Notes: - Conformity has been evaluated according to the procedure described in Annex III of the RTTE directive.

- Receiver class (if applicable): 3.
 Crolles, November 6th, 2007
 VINCENT Hervé / Quality manager

A handwritten signature in black ink, appearing to be 'V. Hervé'.

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Presentation

The ARF7263J/K/R/S radio receiver converts radio frame coming from a remote control transmitter.

The ARF7263J/K sends the remote control information on the RS232 serial link. The ARF7263R/S is doing the same by the emulation of a COM port over the USB bus.

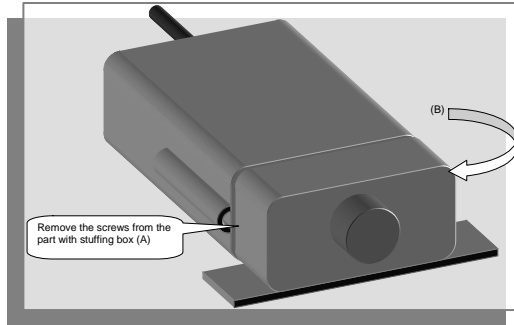
The operating parameters of the ARF7293 (RS232 serial link) can be updated through AT commands via the RS232 serial link. The default settings are 9600, 8, n, 1.

The products are available either in board version to be integrated in an assembly, or standalone in an IP65 housing.



Product installation

The ARF7263J/K/R/S receivers are fixed by the fixing lugs onto the top (antenna) and bottom (stuffing box) parts of the housing. Any operation (drilling...) performed on the housing makes it lose its IP65 tightness rating. Remove the two stainless steel screws (A and B) and take the bottom part off to access the power supply terminal blocks and contacts.



USB wiring and driver installations

This chapter applies for USB version of the remote control receiver.

For the first connection

On first connection to the PC, the user is prompted for USB driver installation. Refer to our “USB driver installation guide” to process.

For every new connection

This receiver is seen as a virtual serial COM port available via the USB bus. The user has to query the serial COM port number affected to the receiver to be able to communicate with it. Please, refer to our “USB driver installation guide” to get the COM port serial number.

IMPORTANT NOTE

If the receiver was previously connected on your PC, be sure it has not been disconnected without closing the terminal session. In such a case, the driver would appear has badly installed in the windows peripheral manager - this is

shown by the “!” icon. If this situation appears, close the terminal session previously opened on the tool, disconnect the remote control receiver and then restart the connection procedure.

Supply voltage

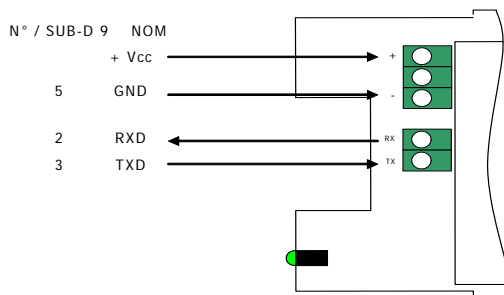
The remote control receiver is self powered and does not require any external power.

Serial link wiring

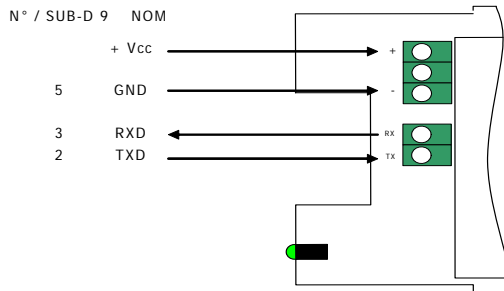
This chapter applies for RS232 version of the remote control receiver.

Connect the receiver as a DTE on RS232

This is for example the case of a remote control receiver connected to a PC.

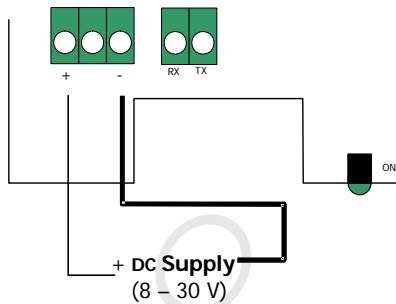


Connect a receiver as a DCE on RS232



Supply voltage

Turn off the voltage supply, then wire the power supply up to the screw terminals marked + and - .

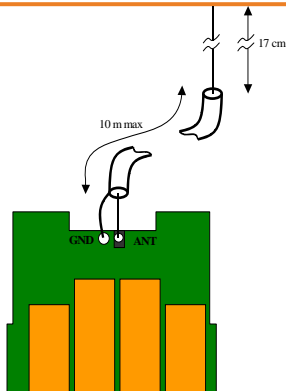


Antenna wiring

In daughter-board version, an antenna has to be added to achieve correct communication between the products.

This antenna should be a wire with a length of $\frac{1}{4}$ wave, i.e. about 17 cm. This length is that which has to extend outside the housing if the latter is metallic.

This antenna can be located remotely using a coaxial cable with its braid stripped over the last 17 centimeters.



Command mode

When delivered the receiver is fully operational (default factory configuration is 9600,n,8,1).

Nevertheless the module parameters can be customised using the serial input (RS232 or USB) which is dedicated for the AT commands. These commands can be sent from a terminal (with a delay between each character lower than 10 seconds).

The command mode is used to read and update the module configuration registers. The registers are shared in 2 types: write only (W) or read/write (R/W) (see chapter. « registers description » document)

Commands

A command starts with the 2 ASCII 'AT' characters. 'AT' means 'Attention' followed with one or several characters or other data.

Each command must be ended with <cr> (carriage return, ASCII code 0x0D).

The response sent on the serial output for each command corresponds to the ASCII character 'O' for an accepted command and ASCII character, 'E' for error.

Set of commands

Commands	Registers management
ATS _n ?	Display the S _n register content where n represents the register number. The response has the following format: S _n =y<cr><lf>
ATS _n =m	Set the S _n register value with 'm'. n represents the register number (example, selection of number of stop bits: ATS213=1).
AT/S	Display registers value. The response has the following format: S _{xxx} =y<cr><lf> for each register.
AT/V	Software version display. The response has the following format: Adeunis RF : One way smart remote control receiver V _x .y _y <cr><lf>
ATR	All the registers are initialised with their default value
AT&W	To save the new configuration in EEPROM. Each time you switch on the serial receiver, the EEPROM configuration will be loaded in the serial receiver registers.

Registers description

The register value can be updated using the `ATSn=m<cr>` command and displayed using `ATSn?<cr>` command.

The value of the registers is located in RAM. The parameters are lost in case of power off. To save the registers, it is necessary to use the `AT&W<cr>` command.

Access	Registers	Function	Description
	Serial link		
R/W	S210	Baudrate	Serial link data rate: '2' : 2400 bits/s '3' : 4800 bits/s '4' : 9600 bits/s (default value) '5' : 19200 bits/s '6' : 38400 bits/s '7' : 57600 bits/s '8' : 115200 bits/s
R/W	S211	Data length	Number of bits '7' : 7 bits '8' : 8 bits (default value)
R/W	S212	Parity	Parity '1' : none (default value) '2' : even '3' : odd
R/W	S213	Number of Stop bits	Number of stop bits (serial link) '1' : 1 stop (default value) '2' : 2 stops

Normal mode

During normal operation, the module sends on the serial output the serial number and the key number of remote control received on its radio link. The format of the ASCII received frame is the following:

:<serial number> <Key number> <CR><LF>

: (ASCII code 0x3A)

Serial number is the remote control serial number in decimal format (1 to 8 digits)

Followed by a space (ASCII code 0x20)

Key number is the key pressed number of the remote control (2 digits from 01 for key 1 up to 24 for key 24)

CR (ASCII code 0x0D), LF (ASCII code 0x0A)

Specifications

Radio characteristics

Frequency :	433,92 MHz
Modulation :	ASK
Sensitivity :	-104 dBm

Electrical characteristics (RS232 products)

Power supply (VCC) :	8 to 30 V _{DC}
Consumption (Rx permanent listening) :	16mA under 8V

Electrical characteristics (USB products)

Power supply (VCC) :	Powered by bus USB
Consumption (Rx permanent listening) :	32mA

Mechanical characteristics

Size (mm) :	Board : 65 x 90 x 25mm
IP65 box :	104 x 300 x 35mm
Operating temperature :	-20 to +70 °C

References

ARF7263J : RS232 remote control receiver board

ARF7263K : RS232 remote control receiver in IP65 housing

ARF7263R : USB remote control receiver board (self powered)

ARF7263S : USB remote control receiver in IP65 housing (self powered)

ARF7291A : 1-key remote control

ARF7291B : 2-key remote control

ARF7291C : 3-key remote control

ARF7291D : 4-key remote control

ARF7291R : 8/24-key remote control