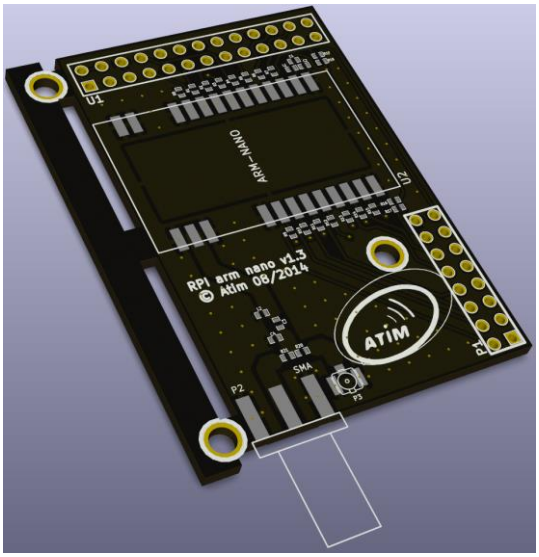
atim cloud wireless™
PRODUCT LINE

ACW-DUINO-2016-05-18

Atim Cloud Wireless

ACW-RPI

User Guide



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Version History

Version	Date	Description	Auteur
0.1	17/05/2016	Creation	AM
0.2	03/06/2016	Review	YL

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Technical support

For all information or technical problems, you can contact our technical support by e-mail of phone:

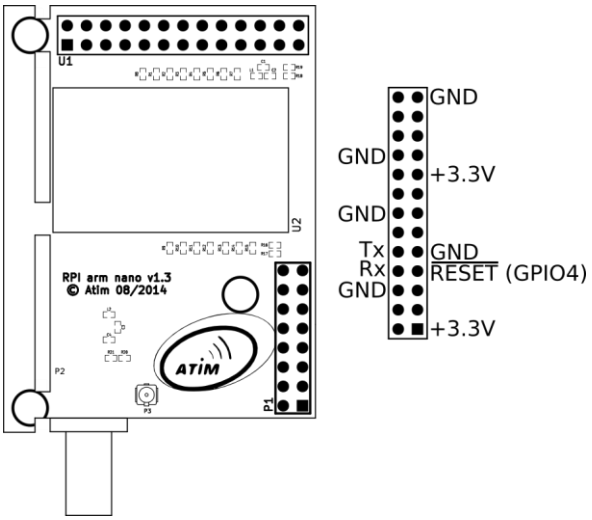
Tel : 0820 950 975
E-mail : tech@atim.com

Technical features

Dimensions	67 x 35 x 13 mm		
Antenna	50Ω via SMA/UFL		
Radio Regulation	EN 300 220 V2.4.1		
Temperature	-30°C à +70°C		
Frequency	865 – 870 MHz		
Output power	25 mW (14 dBm)		
Data rate	Local : 1.2 à 115 Kbit/s		
	Sigfox : 100 bps		
	LoRaWan : 300 bit/s à 10 Kbit/s		
Consummation (ARM)	Local :	Sigfox :	LoRa :
Mode Tx	60 mA	60 mA	50 mA
Mode sleep	7 µA	7 µA	7 µA
Mode Rx	35 mA	35 mA	18 mA
Mode SNIFF	300 µA		

Shield Pinout

Location of pins:



Pins	Description
+3.3V	Power3.3V
GND	Ground
$\overline{RESET}$	Reset of module by low state.
Rx	Rx UART
Tx	Tx UART

Quick start « shield »

The ACW-RPI shield is intended to be plugged on raspberry-pi board. The communication with the shield is done by UART interface, there are both way to do this: directly through the AT commend or by an application programming interface ARMAPI.

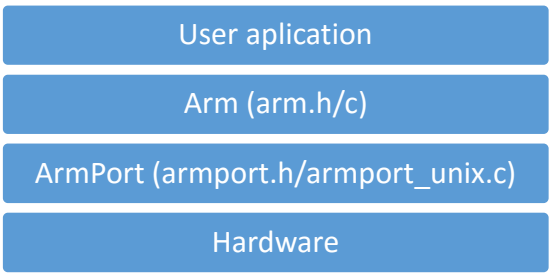
The RESET is forced by the shield, you are need to driver at low the REST pin (GPIO4) before use the module. You will need to disable the UART terminal on raspberry-pi connector.

Documentation of ARM module:

The ACW-RPI shield support the ARM-NANO module (ARM-Nx-xx) from ATIM. Please see the 'RF Modules' section of 'Documentation' page from http://www.atim.com website to get the full documentation about the module.

Library C/C++ (ARMAPI):

A C and C++ API (ARMAPI) is freely available on github http://atim-radiocommunications.github.io/armapi/. You will found the examples and the documentation of API. For raspberry-pi use the unix port (armport_unix.c). The hierarchy of API is show below:



Example « Hello world » with the API ARMAPI in C

The below example send the message« Hello world » to a selected radio network.

```
1.  //Include API
2.  #include <arm.h>
3.  //Instance of ARM class
4.  Arm myArm;
5.  //The message to sand
6.  uint8_t msg[] = "Hello world";
7.
8.  int main()
9.  {
10.     //Initialize of API and check the error code.
11.     if (armInit(&myArm, "/dev/ttyAMA0") != ARM_ERR_NONE)
12.         return 1;
13.
14.     //If we want use the Sigfox network:
15.     armSetMode(&myArm, ARM_MODE_SFX);
16.     //If we want use the LoraWan network:
17.     //armSetMode(&myArm, ARM_MODE_LORAWAN);
18.     //If we want use the local mode:
19.     //armSetMode(&myArm, ARM_MODE_SFK);
20.
21.     //After to send the message, we need to send the configuration to the radio modem.
22.     armUpdateConfig(&myArm);
23.
24.     //Send of message.
25.     armSend(&myArm, msg, sizeof(msg)-1);
26.
27.     return 0;
28. }
```

For more details/information/examples please see the documentation of library http://atim-radiocommunications.github.io/armapi/doc/html/index.html

Schema of ACW-RPI

