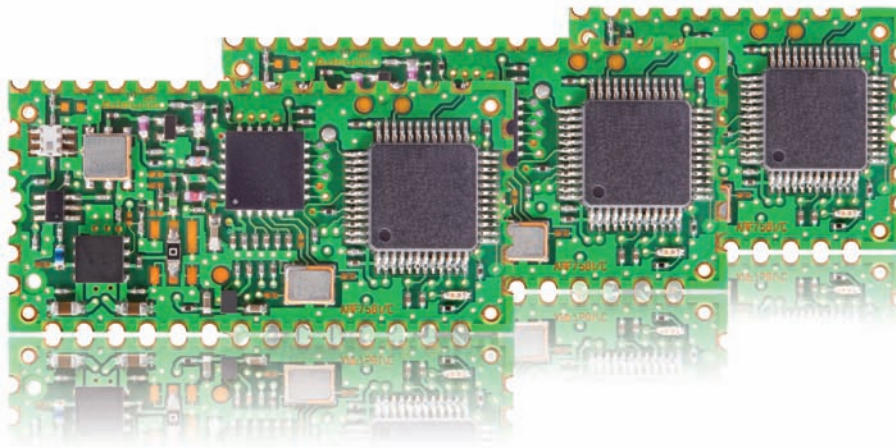


TWIMO



The most versatile
range of **wireless** modules

▶ **Ideal for all your applications**



▶ A (r)evolution

Modular, programmable, compatible, interoperable..., the new line of **ADEUNIS RF TWIMO** modules offers possibilities never before equaled in the world of Wireless.

ADEUNIS RF has made the technological choice to develop the most flexible range of RF modules, to offer customers a wide range of fully customizable services.

RF Power

TWIMO offers a wide range of power from 10 to 500 mW to optimize the distance / consumption ratio.

Frequencies

TWIMO offers you a wide range of frequencies, license free: 434 MHz, 869 MHz, 915 MHz.

Flexibility of the Micro-controller

All **TWIMO** modules include an **ARM Cortex-M3 core micro-controller**. It is **powerful** and **upgradable**, and offers you a choice of available memory space for your application or the ADEUNIS RF "Ready-to-use" application. The portability of your application is possible from one **TWIMO** module to another.

Module Compatibility

All **TWIMO** modules offer an identical footprint and I/O, for a total modularity.

API Libraries

TWIMO offers you API libraries for managing all radio functions.

Certifications

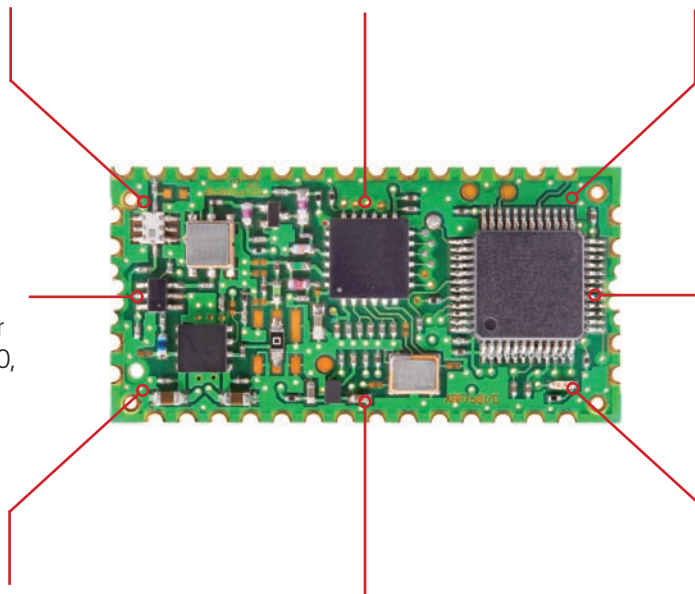
TWIMO has been developed in strict compliance with standards and regulatory aspects. ADEUNIS RF assists you in every step of certifying your finished products.

Flow Rates

TWIMO allows adjustment of UART data rate (from 9600 to 57600 baud) and RF air rate: Narrow band (10kbps), Middle band (38.4kbps) and Wide band (57.6kbps).

Protocols

TWIMO is the ideal platform to support all types of protocols (KNX M-Bus Dash7, One-Net, etc.).



Customers advantages

- ▶ Easy to use
- ▶ Cost reduction
- ▶ Development flexibility
- ▶ Long-lasting solutions
- ▶ Short time to market

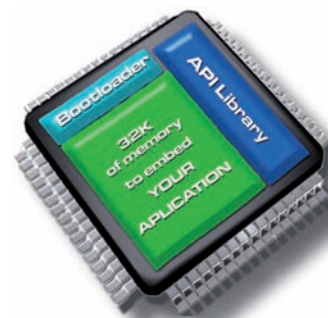


► A flexible offer

Our modules are available in two versions:

- **'Ready-to-use'**: a version with the ADEUNIS RF application. This version is a default configured radio gateway: 10kbps, 27dBm (HP868), 869.525MHz.

- **Programmable**: 16kB of available memory in which your application can be loaded. Accessible API library for an optimal RF link use.



Set of functions available as a library and offering a number of services and features for CUSTOMER applications.

Synchronous Mode (TDMA)



Time division mode for transmitting multiple signals over a single frequency. Recommended mode when sending a low volume of data to multiple receivers.

Asynchronous Mode



Mode allowing the fast transmission of data. With greater occupation of the channel, this mode is recommended for the management of large volumes of data.

Transparent Mode



Simple transfer of data in the air, without addressing.

Addressed Mode



Allows data transmission to a defined module (or a group of modules).

Repeater Mode



Data repetition mode in case of long distances (or hostile environments) where direct communication from point A to point B cannot be done.

Low Power Mode



Mode for applications requiring very low power consumption.

Secure Mode



Verification and acknowledgement of data integrity.

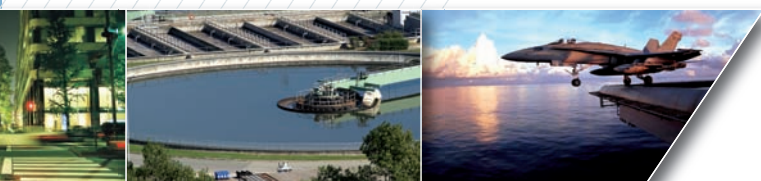
Packet size Adjustment



Allow to set packet size up to 250 bytes.






Markets

- Energy
- Industrial automation
- Transport
- Display management
- Lighting control
- Military
- Medical



► www.adeunis-rf.com

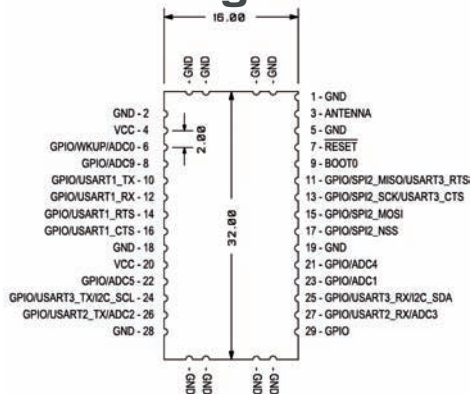
► Technical specifications

| Products | HP868 | MP868 | MP434 | LP868 | LP434 |
|--|---|---|---|---|---|
| |  |  |  |  |  |
| Power | 500mW | 50mW | 50mW | 10mW | 10mW |
| Range (with whip antenna, line of sight) | Up to 6000m | Up to 1000m | Up to 1000m | Up to 300m | Up to 300m |
| Hardware information | | | | | |
| UART data rate | 9600/38400/57600 bauds | 9600/38400/57600 bauds | 9600/38400/57600 bauds | 9600/38400/57600 bauds | 9600/38400/57600 bauds |
| UART | ● | ● | ● | ● | ● |
| I²C | ● | ● | ● | ● | ● |
| SPI | ● | ● | ● | ● | ● |
| A/D & D/A converters | ● | ● | ● | ● | ● |
| PWM timers | ● | ● | ● | ● | ● |
| Dimensions | 16x32mm | 16x32mm | 16x32mm | 16x26mm | 16x26mm |
| Operating voltage | 3-3.6V | 3-3.6V | 3-3.6V | 3-3.6V | 3-3.6V |
| Operating temperature | -20°C to +70°C | -20°C to +70°C | -20°C to +70°C | -20°C to +70°C | -20°C to +70°C |
| Consumption (Sleep) | 20 µA | 20 µA | ○ | 3 µA | ○ |
| Consumption (RX) | 18mA | 18mA | ○ | ○ | ○ |
| Consumption (TX) | 600mA (27dBm) | 150mA (17dBm) | ○ | ○ | ○ |
| LED status indicator | ● | ● | ● | ● | ● |
| Micro-controller | STM32 ARM Cortex-M3 | STM32 ARM Cortex-M3 | STM32 ARM Cortex-M3 | STM32 ARM Cortex-M3 | STM32 ARM Cortex-M3 |
| RF chip | Semtech SX1231 | Semtech SX1231 | Semtech SX1231 | Semtech SX1211 | Semtech SX1211 |
| Mounting | SMD | SMD | SMD | SMD | SMD |
| Software & provided APIs | | | | | |
| Synchronous (TDMA) | ● | ● | ● | ○ | ○ |
| Asynchronous | ● | ● | ● | ○ | ○ |
| Transparent mode | ● | ● | ● | ○ | ○ |
| Addressed mode | ● | ● | ● | ○ | ○ |
| Repeater mode | ○ | ○ | ○ | ○ | ○ |
| Low Power mode | ○ | ○ | ○ | ○ | ○ |
| Secure mode | ○ | ○ | ○ | ○ | ○ |
| Serial bootloader | ● | ● | ● | ○ | ○ |
| Adjustable packet size | Up to 255 bytes | Up to 255 bytes | Up to 255 bytes | Up to 255 bytes | Up to 255 bytes |
| Wireless Interface | | | | | |
| RF pin | ● | ● | ● | ● | ● |
| Frequency | 869.525MHz | 863 - 870MHz | 433.05 - 434.79MHz | 863 - 870MHz | 433.05 - 434.79MHz |
| Modulation | GFSK | GFSK | GFSK | GFSK | GFSK |
| RF data rate | 10/38.4/57.6 kbps | 10/38.4/57.6 kbps | 10/38.4/57.6 kbps | 10/38.4 kbps | 10/38.4 kbps |
| RF output power | Up to 27dBm | Up to 17dBm | Up to 17dBm | 10dBm | 10dBm |
| RF sensitivity | -110dBm | -110dBm | -110dBm | -107dBm | -107dBm |

● Available

○ Please contact us for availability

► Pin configuration & Dimensions



TWIMO HP & MP Modules

► Part numbers

| | |
|---------|---|
| ARF7581 | TWIMO Module HP868-RTU – 500mW – 869,525Mhz |
| ARF7580 | TWIMO Module MP868-RTU – 50mW – 863 - 870MHz |
| ARF7579 | TWIMO Module LP868-RTU – 10mW – 863 - 870MHz |
| ARF7690 | TWIMO Starter Kit |