



# Wavecard

## Product summary

### All the advantages of wireless ULP networking in a ready-to-use solution

Now you can add Wavenis wireless functionality to your products with a minimum integration effort. The full-featured Coronis Wavecard comes complete with the Wavenis RF transceiver and protocol stack so that you can plug it into your own assembly or motherboard and get started right away. You won't have to do any RF or communication protocol development in order to take advantage of the ultra low-power, long-range and flexible networking features Wavenis offers.

Wavecard can be used as easily as a modem connected to your software application via the standard UART interface. You can also use the Wavenis Product Development Kit (PDK) to export your own embedded applications to the Wavecard's processor, which offers on-board storage space. You can customize all stack and radio parameters to meet your requirements with either approach.

- Wireless communications for battery-operated products with extreme power consumption constraints
- Ad hoc networking for sensor network applications, smart objects, home automation, alarms and security, metering and more
- Open source Wavenis libraries for Windows and Linux platforms
- UART bus connection to your existing platform

### Try Wavenis and see

Try our fully functional product evaluation kit to see how Wavenis can give you the wireless functionality you've been looking for, with ultra low power consumption, long-range and reliability. You'll get everything you need to build a simple test network in a single package. In Smart Metering networks, strong last-mile wireless coverage and long battery life in the field are among the most important factors for success and low-cost of ownership over time.



*Easy Wavenis RF solution for your innovative products*



## Product specifications

- Supports asynchronous and synchronous modes
- Complex-Wakeup enabled (save battery life in dense network and fast reading)
- Daughter board mounting
- Wavenis SDK libraries and API to drive any Wavenis device
- Programmable access time:  
10ms < 1s (typical value) < 10s

## Wavenis properties overview

- Operates in license-free ISM 433, 868 or 915MHz
- EN300-220 / FCC15.247 certified & compliant
- Typical rate:
  - 9.6kbps (433 & 868MHz)
  - 19.2kbps (915MHz)
  - more on demand
- Frequency Hopping Spread Spectrum (FHSS)
- GFSK modulation
- Single channel operation for narrowband applications (alarms)
- Data interleaving, Forward error Correction BCH (31,21)
- Automatic Frequency Control (AFC) for optimal performances over operating lifetime
- Quality of Service management (RSSI) and output power control
- Point-to-Point, Point-to-Multipoint (broadcast, polling) modes and native repeater (up to 3 hops)
- Tree and star network topologies
- Designed for reliability, power savings, network coexistence
- Accesses hard-to-reach devices with link budget of 124dBm (25mW)
  - Line-of-sight range up to 1km (25mW / +14dBm)
  - Line-of-sight range up to 4km (500mW / +27dBm)
  - Sensitivity: -110dBm @ 9.6kbps

## General features

- Wavenis transceiver with protocol stack in onboard microcontroller (works like a modem)
- 500mW (868/915MHz), 25mW (868/915MHz) and 10mW (433MHz) versions
- 50 Ohm RF port for antenna connection
- Extreme power efficiency: 15µA average operating current with 1s access time
- Modem operation: UART to connect with your micro-controller platform
- Embedded operation
  - Up to 64kB available to merge application code with Wavenis stack in FLASH
  - Up to 512bytes RAM for parameters
  - Use UART for external connections
- Power Supply
  - Integrated linear regulator
  - I\_peak\_RX: 18mA typical (full run)
  - I\_peak\_TX\_25mW: 45mA typical
  - I\_peak\_TX\_500mW: 450mA typical
  - I\_sby : 3µA typical

## Physical description

- Operating temperature range: -20° to +70°C
- Dimensions:
  - 25mW & 10mW: 30 x 28 x 7mm
  - 500mW: 37 x 30 x 7mm



Wavecard 25mW actual size

## Product codes

	10mW	25mW	500mW
433 MHz	WCA433-OEM-10		
868 MHz		WCA868-OEM-25	WCA868-OEM-500
915 MHz		WCA915-OEM-25	WCA915-OEM-500



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