CAEN RFID

R1271C
Hadron mini

High Performance 1-port Embedded Reader

IMPINJ CONNECTED

BENEFITS	Ultra compact size	High Sensitivity	Surface mount device (SMD)	IOIOI Serial interface	

Features

- RAIN RFID (UHF EPC Class1 Gen2, ISO 18000-63) compliant
- ETSI and FCC versions available
- Ultra compact size
- Up to 27 dBm (500 mW) output power
- Serial interface (TTL Levels)
- Low power consumption

Applications

- Handheld devices
- Multiregional label printers and applicators
- Points of sale readers
- Voice operated gloves

Overview

The **Hadron**mini (Model R1271C), an embedded reader of the easy2read© product line, is an ultra compact reader for low power, high performance RAIN RFID applications.

With programmable output power from 10 dBm to 27 dBm, the reader can detect tags at more than 3 m of distance (depending on antenna and tag dimensions).

Due to its low power consumption, the module is specifically designed to be easily integrated in battery powered devices.

The radio frequency core of the module is based on the **Impinj R2000** chipset that permits to achieve fast reading speed and to be used in dense reader and dense tag environments for top-class rated performances.

The compactness of the device and the surface mount technology allow to embed the **Hadron**mini inside the new small form factor industrial handhelds, smartphone accessories and other compact form factor devices.

The **Hadron**mini is available in versions for both European and US regulatory environments and so it's ideal for the integration in devices requiring compliance to different geographical regions.

The **Hadron**mini is pin-to-pin and SW compatible with the **Impinj RS1000** and **RS500** module making it a perfect replacement for these devices.

Technical Specification Table

Frequency Range	• 865.600÷867.600 MHz (ETSI EN 302 208 v. 3.1.1) • 902÷928 MHz (FCC part 15.247)
RF Power	Configurable from 10 dBm to 27 dBm (from 10 mW to 500 mW) conducted power
RX Sensitivity	• -75 dBm - 1%PER, assuming 15 dB antenna RL @ 27 dBm output • -80 dBm - 1%PER, assuming 20 dB antenna RL @ 27 dBm output
Antenna VSWR Requir.	< 2:1 for optimal performance
Antenna Connectors	50 Ohm mono-static RF port on a single pin
Frequency Tolerance	± 10 ppm over the entire temperature range
Number of Channels	• 4 channels (compliant to ETSI EN 302 208 v. 3.1.1) • 50 hopping channels (compliant to FCC part 15.247)
Standard Compliance	EPC Class 1 Gen 2 - ISO18000-63

Connectivity	• UART Serial Port:
	  • Baudrate from 9.600 to 921.600 kbit/s, default 115.200 kbit/s
	  • Databits: 8
	  • Stopbit: 1
	  • Parity: none
	  • Flow control: none
	• 3.3 V I/O voltage level

I/O Interface	• 4 I/O lines 3.3 V level • Iout = 8 mA max.
Power Supply	3.6 to 5.25 V DC
Power Consumption	• 700 mA @ 5 V - RF out = 27 dBm • 1000 mA @ 3.6 V - RF out = 27 dBm • 55 mA in idle mode - Ready to receive IRI packets - Lower latency to return to Active mode. • 10 mA in idle mode - Ready to receive IRI packets • 0.45 mA - GPIO activity or WKUP rising edge required to wake up part. • 0.08 mA - WKUP rising edge required to wake up part.
Dimensions	• (W)29 x (L)32 x (H)3.8 mm³ • 1.14 x 1.26 x 0.15 inches³
Package Type	32 pin surface mount module (SMT compatible)
Operating Temperature	-20 °C to +70 °C
Weight	4.6 g

Ordering Options

WR1271CXEAAA	HadronMini - Hi-Perf Emb. Reader EU
WR1271CXUAAA	HadronMini - Hi-Perf Emb. Reader US
WRHML37XEVBX	R1271, Rx100 evaluation board
WRHML37XDKEU	R1271, Rx100 dev. kit - ETSI
WRHML37XDKUS	R1271, Rx100 dev. Kit - FCC