CAENRFID

R9104C

Lepton⁹x4

30dBm 4-Port
RAIN RFID Reader Module

IMPINJ CONNECTED

BENEFITS	Ultra compact size	High Sensitivity (-90dBm)	Molex data connector	IOIOI Serial interface	MMCX antenna connector	Wide voltage range

Features

- *RAIN RFID (UHF EPC Class1 Gen2, ISO 18000-63) compliant*
- *Up to 30 dBm (1 W) output power*
- *-90dBm sensitivity*
- *Multiregional support*
- *Compact size*
- *4 antenna ports*
- *Serial interface (TTL Levels)*
- *Low power consumption*

Applications

- *Handheld devices*
- *Autonomous vehicle mounted readers for inventory*
- *Fixed mount readers for scan tunnels and logistic portals*
- *Overhead readers for industrial warehouses*

Overview

The **Lepton⁹x4** (Model R9104C), 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 30 dBm, the reader can detect tags at more than 5 m of distance (depending on antenna and tag dimensions).

The radio frequency core of the module is based on the **Impinj E910** IC that permits to achieve fast reading speed and to be used in dense reader and dense tag environments for top-class rated performances.

Due to its high sensitivity, the module is well suited to design industry-leading, dense tag environment RAIN RFID readers.

The compactness of the device allows to embed the **Lepton⁹x4** inside industrial handhelds, smartphone accessories and other compact form factor devices.

The **Lepton⁹x4** complies with and can operate in both European and US regulatory environments and, thanks to its multiregional capabilities, it's ideal for integration in devices requiring compliance to different geographical regions.

The **Lepton⁹x4** is designed on the basis of the **Lepton⁹** with the aim to facilitate the integration for those who prefer to use connectors instead of automatic manufacturing required by the SMD form factor. The **Lepton⁹x4** has also a wider power supply voltage range to permit to connect it directly to battery packs.
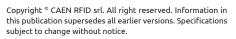
Technical Specification Table

Frequency Range	• 865.600÷867.600 MHz (ETSI EN 302 208 v. 3.3.1) • 902÷928 MHz (FCC part 15.247)
RF Power	Configurable from 10 dBm to 30 dBm (from 10 mW to 1 W) conducted power
RX Sensitivity	• -90 dBm - 10%PER, assuming 20 dB antenna RL @ 30 dBm output
Antenna VSWR Requir.	< 2:1 for optimal performance
Antenna Connectors	4 MMCX jacks
Frequency Tolerance	± 10 ppm over the entire temperature range
Number of Channels	• 4 channels (compliant to ETSI EN 302 208 v. 3.3.1) • 50 hopping channels (compliant to FCC part 15.247)
Standard Compliance	EPC Class 1 Gen 2 - ISO18000-63

Connectivity	• UART Serial Port:
	  • Baudrate from 9.6 to 921.6 kbps, default 921.6 kbps
	  • 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	3.2 ÷ 5.25 V DC
Power Consumption	• 8W max @ RF out = 30 dBm • 80mW in idle mode - Ready to receive commands
Dimensions	• (L)60 x (W)42 x (H)8.1 mm^3 • 2.36 x 1.65 x 0.32 inches^3
Operating Temperature	-20 °C to +70 °C
Weight	34 g

Ordering Options

WR9104CXAAAA	Lepton9x4 - 30dBm Reader Module
WR4320CXDKEU	Hadron, Rx101, Rx104 - ETSI Dev. Kit
WR4320CXDKUS	Hadron, Rx101, Rx104 - FCC Dev. Kit
WR4320CXEVBX	Hadron, Rx101, Rx104 Eval. Board