R9101CU

Lepton⁹x1-USB

30dBm 1-Port USB RAIN RFID Reader Module

BENEFITS	Compact size	High Sensitivity (-90dBm)	USB Type-C connector	IO|O| 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*
- *USB Type-C interface (Virtual COM)*
- *Low power consumption*

Applications

- *Handheld devices*
- *Autonomous vehicle mounted readers for inventory*
- *Long range reading points*
- *Overhead readers for industrial warehouses*

Overview

The **Lepton⁹x1-USB** (Model R9101CU), 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 **Lepton⁹x1-USB** inside industrial single antenna readers and other compact form factor devices.

The **Lepton⁹x1-USB** 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 **Lepton⁹x1-USB** 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.

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	MMCX jack
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	• USB Type-C Virtual COM Port
	• Communication parameters:
	  • 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	• 4.75 ÷ 5.25 V DC (Model R9101CU)
Power Consumption	• 8W max @ RF out = 30 dBm • 80 mW in idle mode - Ready to receive commands
Dimensions	• (L)61 x (W)42 x (H)9.1 mm3 /2.40 x 1.65 x 0.36 inches3 (Model R9101CU)
Operating Temperature	-20 °C to +70 °C
Weight	30 g

Ordering Options

WR9101CUXAAA	Lepton9x1-USB - 30dBm Reader Mod.		

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