



R7101C

# Lepton<sup>7</sup>x1

30dBm 1-Port  
RAIN RFID Reader Module



**IMPINJ**  
CONNECTED

## BENEFITS

Ultra compact  
size

High Sensitivity

Molex data  
connector

IOIO  
Serial interface

MMCX antenna  
connector

Wide voltage  
range

## Features

- RAIN RFID (UHF EPC Class1 Gen2, ISO 18000-63) compliant
- Multiregional support
- Ultra compact size
- Up to 30 dBm (1 W) output power
- Serial interface (TTL Levels)
- Low power consumption

## Applications

- High-performance, long-range RAIN RFID readers
- Handheld devices
- Multiregional label printers and applicators
- Points of sale readers
- Long range reading points

## Overview

The **Lepton<sup>7</sup>x1** (Model R7101C), an embedded reader of the easy2read<sup>®</sup> 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).

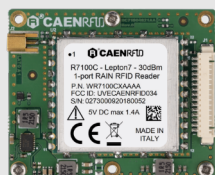
Due to its low power consumption, the module is specifically designed to be easily integrated in battery powered devices.

The radio frequency core of the module is based on the **Impinj E710** IC 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 allows to embed the **Lepton<sup>7</sup>x1** inside industrial handhelds, smartphone accessories and other compact form factor devices.

The **Lepton<sup>7</sup>x1** 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 **Lepton<sup>7</sup>x1** is designed on the basis of the **Lepton<sup>7</sup>** 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 **Lepton<sup>7</sup>x1** has also a wider power supply voltage range to permit to connect it directly to battery packs.



## Technical Specification Table

<b>Frequency Range</b>	<ul style="list-style-type: none"> <li>• 865.600÷867.600 MHz (ETSI EN 302 208 v. 3.3.1)</li> <li>• 902÷928 MHz (FCC part 15.247)</li> </ul>
<b>RF Power</b>	Configurable from 0 dBm to 30 dBm (from 1 mW to 1 W) conducted power
<b>RX Sensitivity</b>	• -85 dBm - 10%PER, assuming 20 dB antenna RL @ 30 dBm output
<b>Antenna VSWR Requir.</b>	< 2:1 for optimal performance
<b>Antenna Connectors</b>	MMCX jack
<b>Frequency Tolerance</b>	± 10 ppm over the entire temperature range
<b>Number of Channels</b>	<ul style="list-style-type: none"> <li>• 4 channels (compliant to ETSI EN 302 208 v. 3.3.1)</li> <li>• 50 hopping channels (compliant to FCC part 15.247)</li> </ul>
<b>Standard Compliance</b>	EPC Class 1 Gen 2 - ISO18000-63
<b>Connectivity</b>	<ul style="list-style-type: none"> <li>• UART Serial Port</li> <li>• Communication parameters: <ul style="list-style-type: none"> <li>• Baudrate from 9.6 to 921.6 kbps, default 921.6 kbps</li> <li>• Databits: 8</li> <li>• Stopbit: 1</li> <li>• Parity: none</li> <li>• Flow control: none</li> </ul> </li> <li>• 3.3 V I/O voltage level</li> </ul>
<b>I/O Interface</b>	<ul style="list-style-type: none"> <li>• 4 I/O lines 3.3 V level</li> <li>• Iout = 8 mA max.</li> </ul>
<b>Power Supply</b>	3.2 ÷ 5.25 V DC
<b>Power Consumption</b>	<ul style="list-style-type: none"> <li>• 8W max @ RF out = 30 dBm</li> <li>• 80 mW in idle mode - Ready to receive commands</li> </ul>
<b>Dimensions</b>	• (L)51 x (W)42 x (H)8.1 mm <sup>3</sup> / 2.01 x 1.65 x 0.32 inches <sup>3</sup>
<b>Operating Temperature</b>	-20 °C to +70 °C
<b>Weight</b>	30 g

## Ordering Options

<b>WR7101CXAAAA</b>	Lepton7x1 - 30dBm Reader Module		
<b>WR4320CXDKU</b>	Hadron, Rx101, Rx104 - ETSI Dev. Kit		
<b>WR4320CXDKUS</b>	Hadron, Rx101, Rx104 - FCC Dev. Kit		
<b>WR4320CXEBX</b>	Hadron, Rx101, Rx104 Eval. Board		



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