

# IMPINJ<sup>®</sup>

## READER CHIPS

This product is not recommended for new designs.

### Impinj Indy R500 RAIN RFID Reader Chip

Impinj Indy RAIN RFID reader chips set the performance standard for more than a decade. Together, the Indy R2000 and R500 reader chips power a wide range of RAIN RFID devices.



### Embedded RAIN RFID chips enable a broad spectrum of devices and solutions

The Impinj Indy R500 reader chip contains a complete RAIN RFID front-end and modem, and requires minimal external components to implement a RAIN RFID reader circuit.

The Impinj Indy R500 provides a low-cost alternative for proximal use cases, and has the same dimensions and pinout as the Impinj R2000 to enable easy migration between the two. Together the two Impinj Indy reader chips power a wide range of RAIN RFID devices, including handhelds, tablets, POS, access control, shelf readers, gateways, fixed readers, and more.

### Why Use Impinj Indy R500?

#### Low System Cost

Integrates up to 90% of the components in a traditional discrete modem design

#### Flexibility

Design custom RAIN RFID enabled devices or IoT solutions, optimized for size, mobility, and cost

#### Compatibility

Pin compatibility with Impinj Indy R2000 enables single hardware design for both high-performance and cost-sensitive applications

### Key Features

- **Worldwide Compliance**  
An easy path to regulatory compliance with market-proven reference designs
- **Typical Read Range**  
Designed for applications requiring greater than 3 meters of read range
- **Customization**  
Modem accessibility enables optimization on form or function

### Primary Uses

- **Baggage Tracking**  
Optimize baggage handling operations, improve passenger experience, and reduce bag mishandling costs
- **Loss Prevention**  
Improve security and process control for people and assets with Impinj Indy R500-enabled fixed portal or handheld readers
- **Shopper Experience**  
Expand point of sale solutions at retail checkout stations

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# Impinj RAIN RFID Reader Chips Embed Connectivity into Devices

Impinj reader chips provide a foundation for designing devices with embedded RAIN RFID read/write capability. The Impinj Indy R2000 and R500 are pin- and software-compatible for easy performance upgrades and design reuse.

Impinj partner-built reader modules enable accelerated product development, time to market, and government certifications worldwide.

R2000 and R500 are not recommended for new designs.

## Impinj Reader Chip Portfolio

						
	E710	E510	E310	R2000	R500	
SPECIFICATIONS	Air interface protocol					
	RAIN RFID / ISO 18000-63 and EPCglobal Gen2v2 compliant					
	Receive sensitivity <sup>1</sup> (dBm)	-88	-82	-75	-84	-68
	Maximum read rate (tags/second)	950 <sup>2</sup>	550	250	900	190
	Typical power consumption (watts)	0.5			1.5	1.1
	Package type	56-pin QFN			64-pin QFN	
Package size (mm)	6 x 6			9 x 9		
FEATURES	Self-jammer cancellation	✓	✓	✓	✓	
	Reader modes	8	7	5	4	4
	Impinj adaptive tag access	✓	✓	✓		
	RAIN RFID integration	Radio, Modem, MAC, Baluns, and Power Detectors			Radio + Modem	
	Pin- and software-compatible	E710, E510, E310			R2000, R500	
	Worldwide region support	✓	✓	✓	✓	✓

<sup>1</sup>Sensitivity measured with 10dBm antenna reflection, at chip receive pins, FCC DRM RF Mode, 99% success rate

<sup>2</sup>950 tag per-second RF Mode in Impinj E710 firmware version 1.1

Impinj product performance is based on Impinj's modeling and test data, actual results may vary.

For a list of supported regions and geographies please go to: [www.impinj.com/supported\\_regions](http://www.impinj.com/supported_regions).

## Ready to discuss how Impinj can help your business?

**CONTACT US**

[WWW.IMPINJ.COM](http://WWW.IMPINJ.COM)

Impinj (NASDAQ: PI) helps businesses and people analyze, optimize, and innovate by wirelessly connecting billions of everyday things—such as apparel, automobile parts, luggage, and shipments—to the Internet. The Impinj platform uses RAIN RFID to deliver timely data about these everyday things to business and consumer applications, enabling a boundless Internet of Things.