

Enterprise 3 (E3)

EPIC Native RAIN RFID Reader — Technical Datasheet

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Product Overview

The Enterprise 3, or E3, is SensThys' third-generation EPIC Native RAIN RFID reader, combining the industry's highest-performance Impinj E710 reader IC with an integrated 9.0 dBic broadband antenna, a built-in PoE++ network switch, and native support for SensThys' proprietary EPIC data-integrity protocol. The E3 retains the proven 10" × 10" form factor of the Enterprise while adding a USB-C port for external device control, improved antenna gain, and a broadband antenna that covers both FCC and ETSI regions in a single unit — making it the definitive upgrade for manufacturing, logistics, and industrial deployments.

Key Features

- Impinj E710 reader IC — latest-generation dense reader architecture
- EPIC Native: guaranteed data integrity, infinite tag life, native passive sensor support
- 9.0 dBic integrated broadband antenna (860–930 MHz), RHCP
- 3 additional external RP-SMA antenna ports (4 ports total)
- Industry-leading +31.5 dBm transmit power
- EPC Class 1 Gen 2v2 and ISO 18000-6C/63 protocol support
- Integrated PoE++ switch: powers up to 25 downstream PoE devices from one cable
- 4-in / 4-out powered GPIO, 24 VDC / 1.25 A (30 W)
- USB-C port — control of external USB devices and USB thumbdrives
- RESTful API, C#, Java, AutoSens automation support
- Bare-metal security — no OS attack surface; NIST 8259A compliant
- -40°C to +50°C operating range, non-condensing
- 15 W at +31.5 dBm / 5 W idle

Power and Interface Specifications

Parameter	Specification
Data Interface	TCP/IP — 4× RJ-45
PoE Input	Port 0: PoE++ PD, Class 8, 90 W input
PoE Output	Ports 1 & 2: PSE output to downstream PoE/PoE+/PoE++ devices
PoE Power Supply	PN SPOE90WC8
USB-C	1× USB-C — control of external USB devices and USB thumbdrives
GPIO	4 input / 4 output, provides 24 VDC, 1.25 A (30 W)
Software Support	RESTful API, DLL, C#, Java sample code, ProSens Configurator, PhySens, EPIC, AutoSens
LED Status Indicator	<p>Red flashes during boot-up.</p> <p>Green flashes when operational, not reading.</p> <p>When AutoSens / ProSens is reading: first flash (long pause before and after) = data server status — Green if connected, Red if not. Next 4 flashes = per-antenna status — Green if reading, Red if antenna not detected, Blue if not in read sequence.</p> <p>During firmware update: Blue flashes while firmware is written; Red lights periodically during inter-step reboots.</p>
Power Consumption	15 W at +31.5 dBm transmit; 5 W idle

RF Specifications

Parameter	FCC (North America)	ETSI (Europe)	Notes
Reader IC	Impinj E710	Impinj E710	
Protocol	EPC C1G2v2, ISO 18000-6C/63	EPC C1G2v2, ISO 18000-6C/63	
Frequency	902.75–927.25 MHz	865.6–867.6 MHz	Field-assignable
Hopping Channels	50	4	
Channel Spacing	500 kHz	600 kHz	
Channel Dwell Time	< 0.4 s	< 0.4 s	
TX Power	+31.5 dBm	+31.5 dBm	
Modulation	PR-ASK, DB-ASK	PR-ASK, DB-ASK	
20 dB Mod. Bandwidth	< 100 kHz	< 100 kHz	
Integrated Antenna	9.0 dBic RHCP, 860–930 MHz	9.0 dBic RHCP, 860–930 MHz	Global frequency coverage
External Antenna Ports	3× RP-SMA	3× RP-SMA	

Physical and Environmental Specifications

Parameter	Specification
Dimensions	25.4 × 25.4 × 3.5 cm (10.0" × 10.0" × 1.4")
Weight	Approximately 1 kg (2.2 lbs)
Operating Temperature	-40°C to +50°C, non-condensing
Max Duty Cycle (30 dBm, Max Temp)	> 25% with proper heatsinking
Mounting	Flat/through-hole standard; optional VESA 100 mm studed bracket

Compliance and Certifications

Parameter	Specification
FCC	FCC Part 15 Module FCC ID: 2ANPR-M-PWRSENS3 Reader FCC ID: 2ANPR-SAE3
Safety	IEC 60950-1
Security	NIST 8259A (IoT Cybersecurity) — report available
Supported Regions	FCC (North America), ETSI (Europe), additional global regions available

What's New vs. Enterprise (Previous Generation)

Parameter	Enterprise	E3	Improvement
Reader IC	Impinj R2000	Impinj E710	Latest gen silicon
USB	None	Included	Interface with USB memory
Broadband Antenna	8.5 dBic (FCC or ETSI)	9.0 dBic broadband	+0.5 dBic gain; global capability
Form Factor	10" × 10" × 0.8"	10" × 10" × 1.4"	Slightly taller to accommodate the wideband antenna
Reset feature	None	Included	Allows field reset for unresponsive readers

Specifications are subject to change without notice.

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