



Datasheet

THRESHOLD ANTENNA

READER ANTENNA DATASHEET

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1 OVERVIEW

The Impinj Threshold RAIN RFID antenna provides wide zone coverage ideal for a road race course or other boundary or threshold crossings. The Impinj Threshold antenna has a very wide beam width to maximize zone coverage. Threshold antennas provide a consistent and continuous read zone when linearly distributed head-to-tail. At 46cm x 9cm x 2 cm, the Threshold antenna's planar form factor fits readily onto fencing or other borders.

Figure 1: Antenna Picture



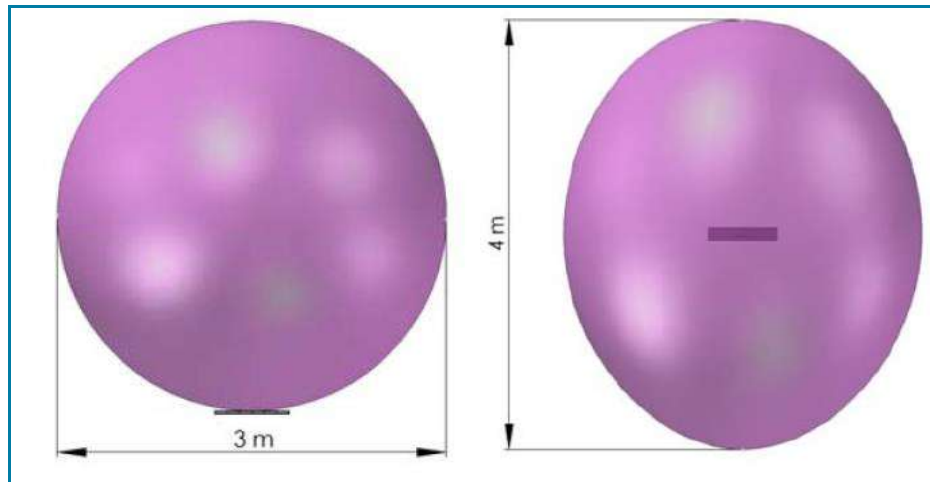
1.1 Features

- Bespoke design for boundary/threshold crossings
- Purpose built to provide a curtain of coverage across wider thresholds
- Low profile form factor of 46cm x 9cm x 2 cm,
- FCC and ETSI versions available

2 READ ZONE CHARACTERISTICS

The Threshold antenna's wide beam width provides extensive coverage across a boundary edge. By lining Threshold antennas up along the short edge, one continuous read zone may be established along a boundary line.

Figure 2: Threshold Antenna Read Zone Diagram



3 SPECIFICATIONS

3.1 Electrical Specifications

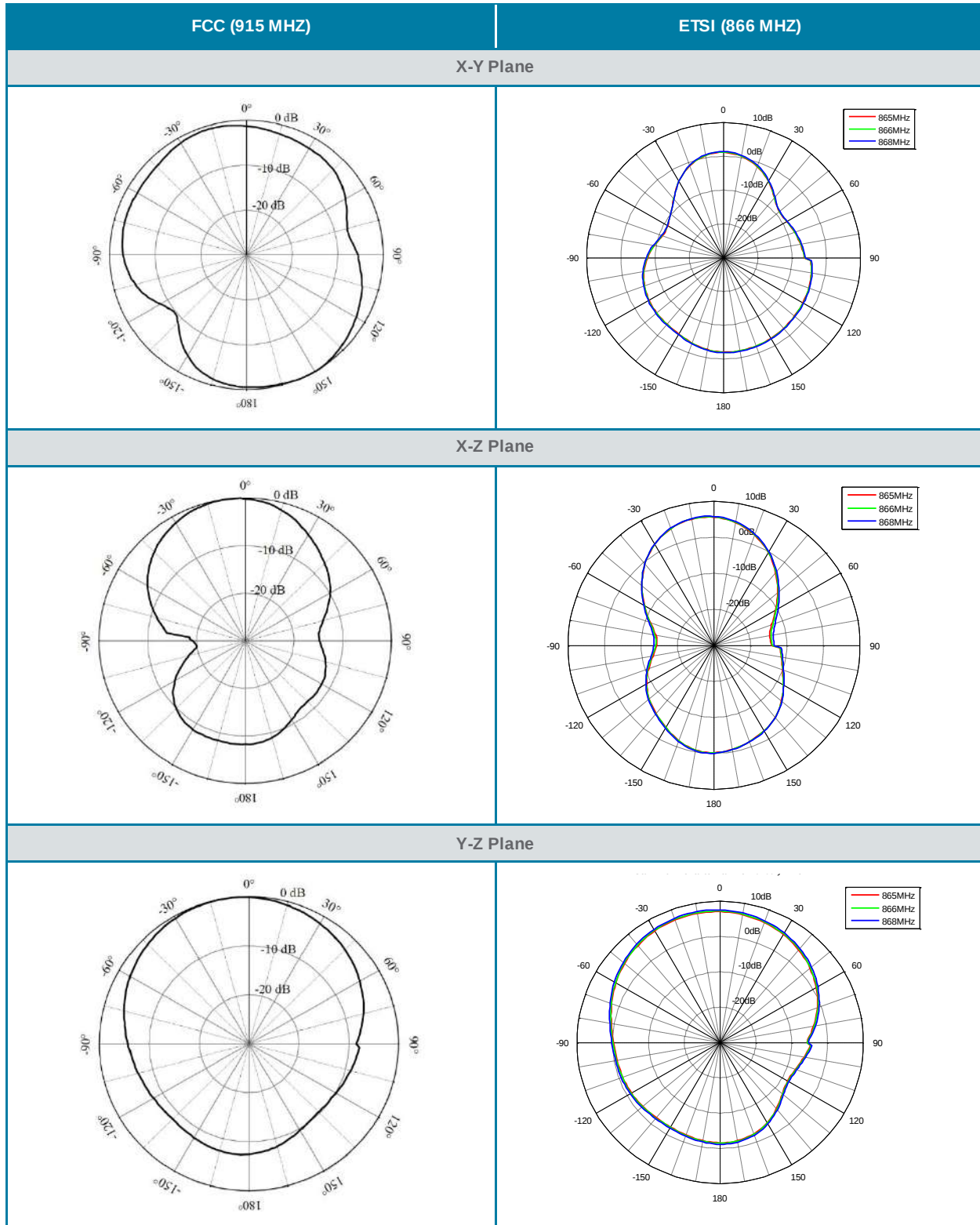
Table 1: Electrical Specifications

PARAMETER	VALUE
Frequency Range	FCC: 902-928 MHz
	ETSI: 865-868 MHz
Polarization	Linear (Parallel to Short Axis)
Far-Field Gain	5.0 dBi
Far-Field 3 dB Beamwidth	FCC: 60° +/- 3° (x-z plane), 120° +/- 3° (y-z plane)
	ETSI: 50° +/- 3° (x-z plane), 100° +/- 3° (y-z plane)
VSWR Across Frequency Range*	FCC: 2:1
	ETSI: 1.5:1
Pattern Variation (x-y plane)	FCC: 10 dBi
	ETSI: 1.5:1
Nominal Impedance	50 Ω
Electrostatic Discharge	2 kV (Human Body Model)

* Some item-level applications - where the tag is close to the reader antenna - can cause a 2:1 VSWR from the antenna to the reader. Users should ensure that their reader can tolerate a VSWR as high as 2:1.

3.1.1 Field Plots

Table 2: Threshold Antenna Radiation Patterns in FCC and ETSI



Please note that all radiation patterns are normalized. See mechanical dimension drawings to correlate the radiation patterns to the appropriate axes and planes of the antenna.

Figure 3: Radiation Pattern at 915 MHz (x-y plane)

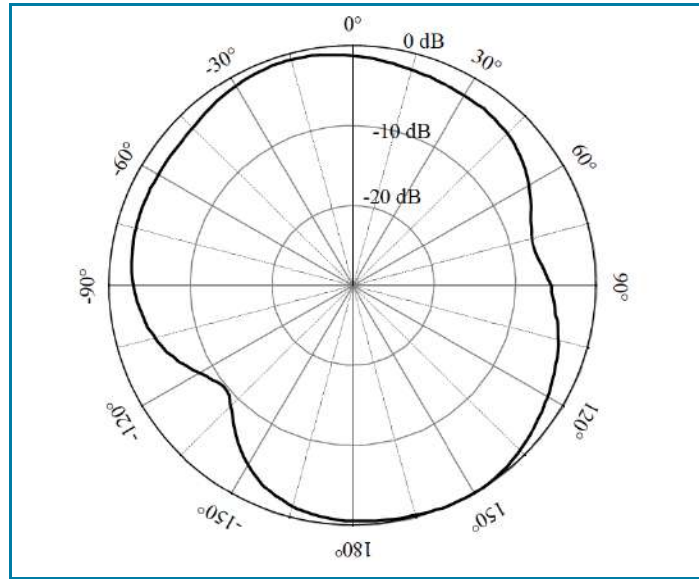


Figure 4: Radiation Pattern at 915 MHz (x-z plane)

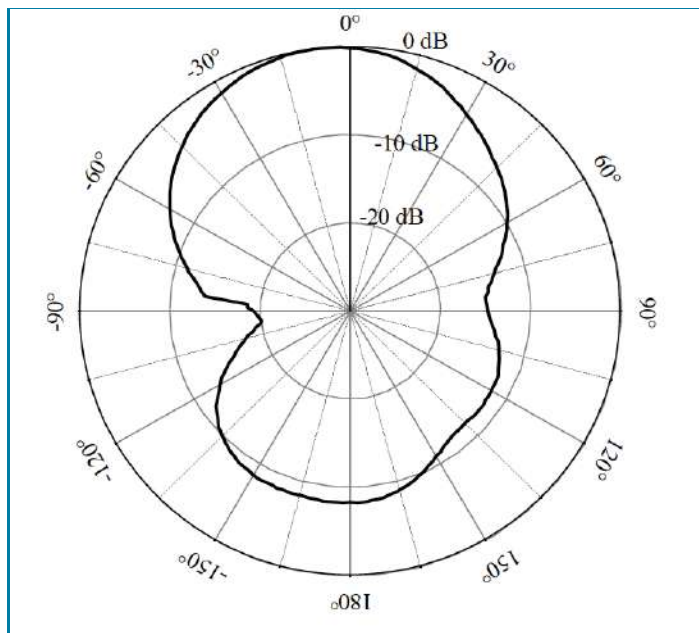


Figure 5: Radiation Pattern at 915 MHz (x-z plane)

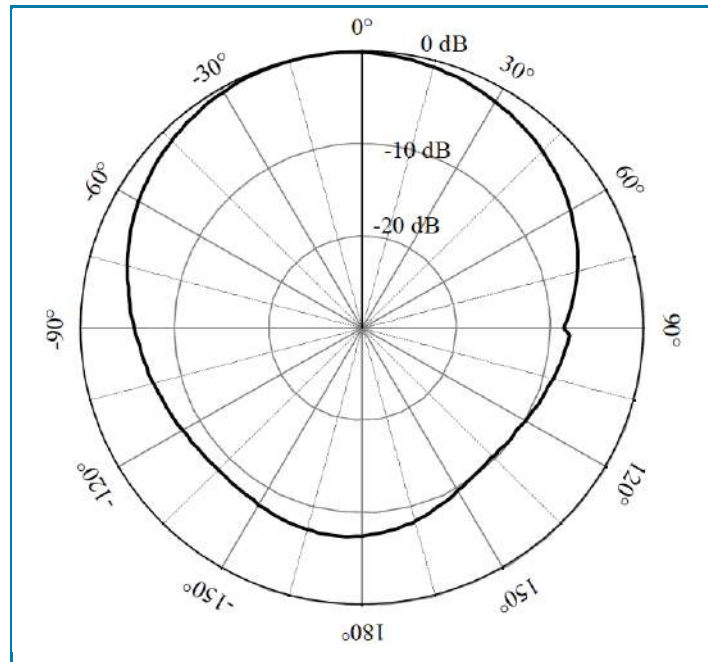


Figure 6: Radiation Pattern at 866 MHz (x-y plane)

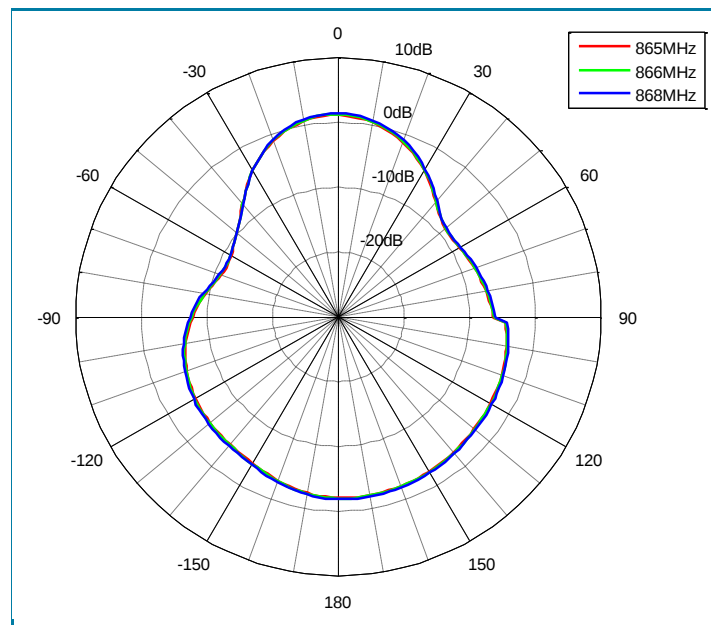


Figure 7: Radiation Pattern at 866 MHz (x-z plane)

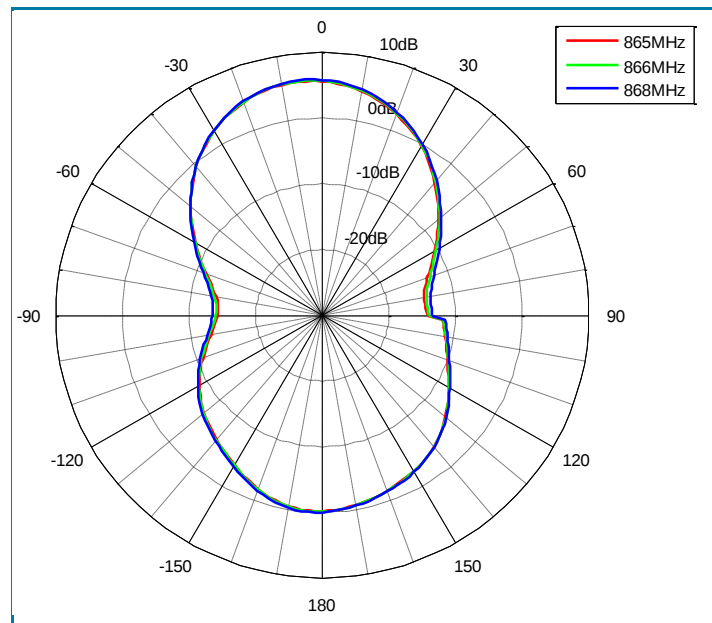
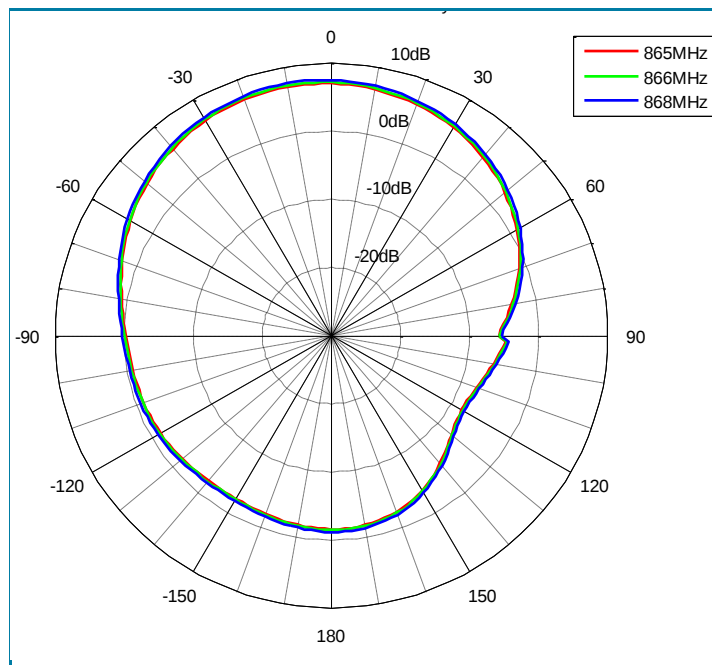


Figure 8: Radiation Pattern at 866 MHz (y-z plane)



3.2 Environmental Specifications

Table 3: Environmental Specifications

PARAMETER	VALUE
Operating & Storage Temperature	-25 °C to 55 °C (-13 °F to 131 °F)
Humidity	5% to 95% (Relative, Non-Condensing)

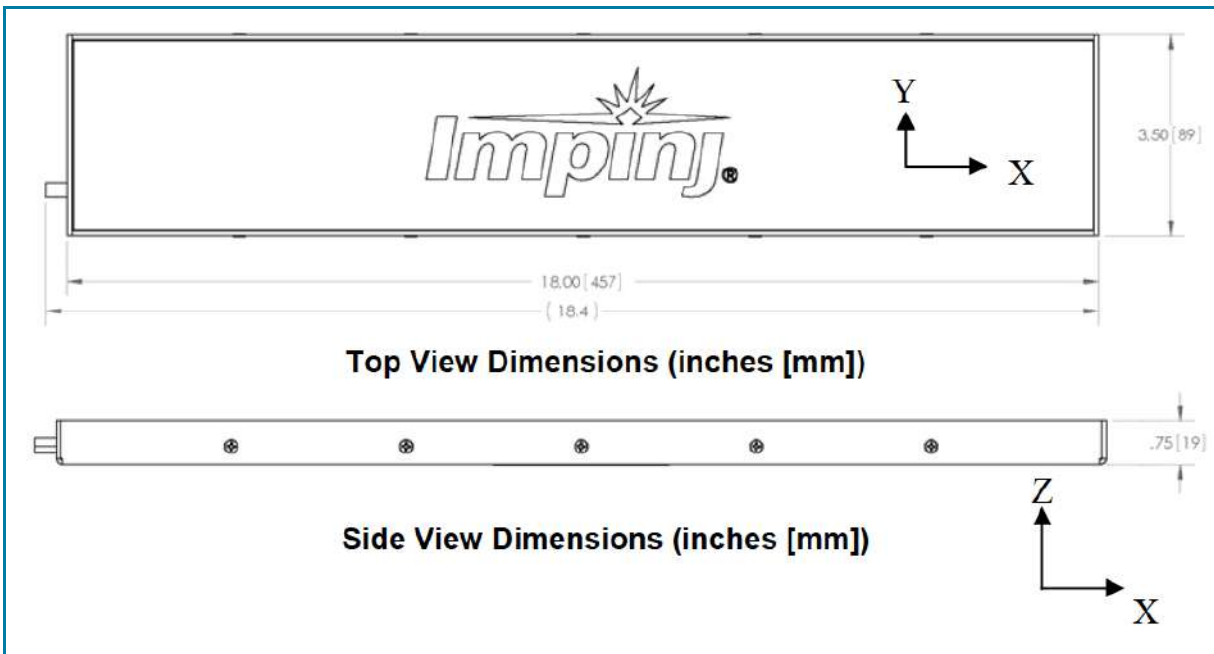
3.3 Mechanical Specifications

Table 4: Mechanical Specifications

PARAMETER	VALUE
Dimensions (L x W x D)	18 in x 3.5 in x 0.75 in
	45.7 cm x 8.9 cm x 1.9 cm
Weight	1.57 lbs. (0.71 g)
Mounting	Recommended to be recessed within a cable mat
RoHS	RoHS Compliant
Radome	ABS
Enclosure	Bent sheet aluminium, clear finish
Connector Type	SMA female
Cable Length	305 mm (+/- 12 mm)

3.3.1 Mechanical Drawings

Figure 9: Threshold Antenna Mechanical Drawing



4 ORDERING INFORMATION

Table 5: Ordering Information

PART NUMBER	DESCRIPTION
IPJ-A0311-USA	Threshold Antenna (FCC)
IPJ-A0311-EU1	Threshold Antenna (ETSI)

5 NOTICES

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