



Datasheet

# **GUARDWALL ANTENNA**

## **READER ANTENNA DATASHEET**

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# 1 OVERVIEW

The Impinj Guardwall RAIN RFID antenna, deployed in pairs, provides a tightly controlled read zone designed to integrate into conveyor systems. The antenna provides a tightly controlled read zone and intense RF field for item-level reading of packed goods, critical to penetrating deep into packed cases. When used as a pair, the Guardwall antenna absorbs energy from its opposing mate so that very little passes beyond the exterior face. This configuration maximizes stray read rejection by constraining the read zone to the area within the two antennas. It also increases read reliability by maximizing the intensity within the read zone.

**Figure 1: Antenna Picture**



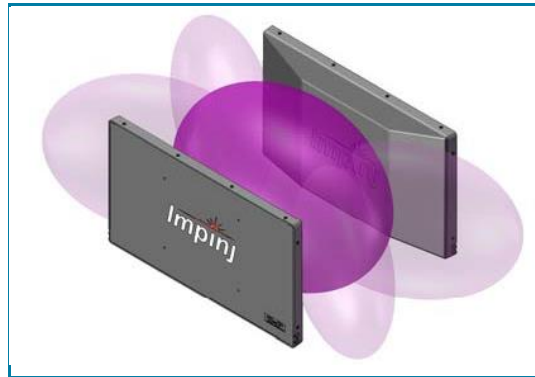
## 1.1 Features

- A pair of Guardwall antennas creates a tightly controlled read zone and intense RF field to penetrate boxes and cases of items
- Designed to smoothly integrate into conveyor systems
- FCC and ETSI versions available
- Designed to be used in a pair

# 2 READ ZONE CHARACTERISTICS

A pair of Guardwall antennas used together creates an intense, well-contained read zone, with little spillover beyond the exterior faces.

**Figure 2: Guardwall Read Zone Diagram**



## 3 SPECIFICATIONS

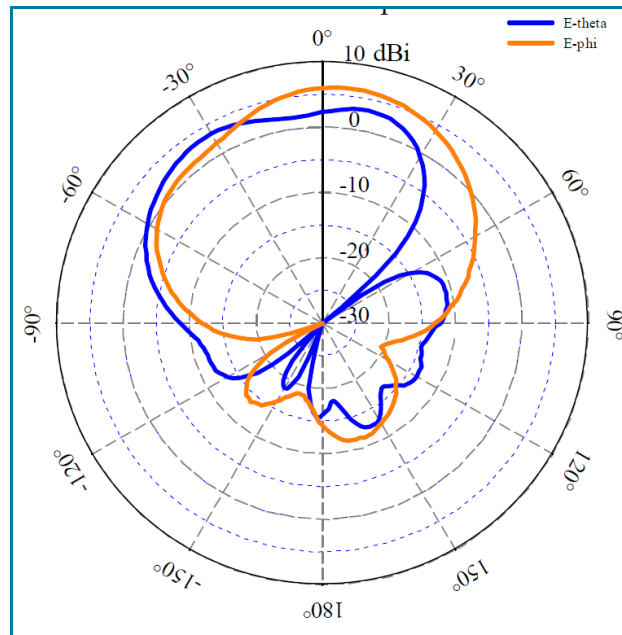
### 3.1 Electrical Specifications

**Table 1: Electrical Specifications**

PARAMETER	VALUE
Frequency Range	FCC: 902-928 MHz
	ETSI: 865-868 MHz
Polarization	RH Circular & LH Circular (Dual Elements)
Input Power	30 dBm
3 dB Beamwidth	55°
Far-Field Gain	6 dBi
VSWR Across Frequency Range	1.5:1
Front-to-Back Ratio	22 dB
Axial Ratio	3 dB
Nominal Impedance	50Ω

### 3.1.1 Field Plots

**Figure 3: Guardwall Radiation Pattern (x-z plane)**



**Figure 4: Guardwall Radiation Pattern at 915 MHz (y-z plane)**

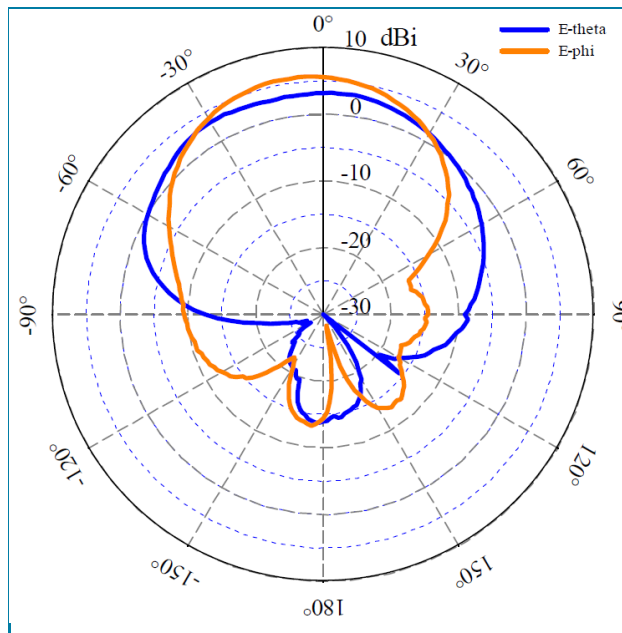
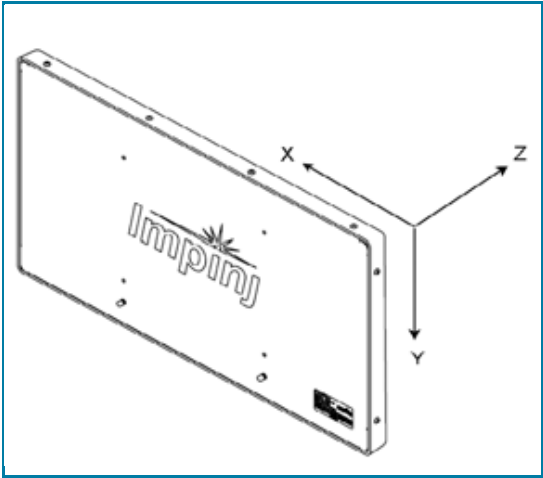


Figure 5: Guardwall Plane Coordinate Key



### 3.2 Environmental Specifications

Table 2: Environmental Specifications

PARAMETER	VALUE
Environmental Rating	IP51 (Indoor Use Only)
Operating & Storage Temperature	0 °C to 40 °C (32 °F to 104 °F)
Humidity	5% to 95% (Relative, Non-Condensing)

### 3.3 Mechanical Specifications

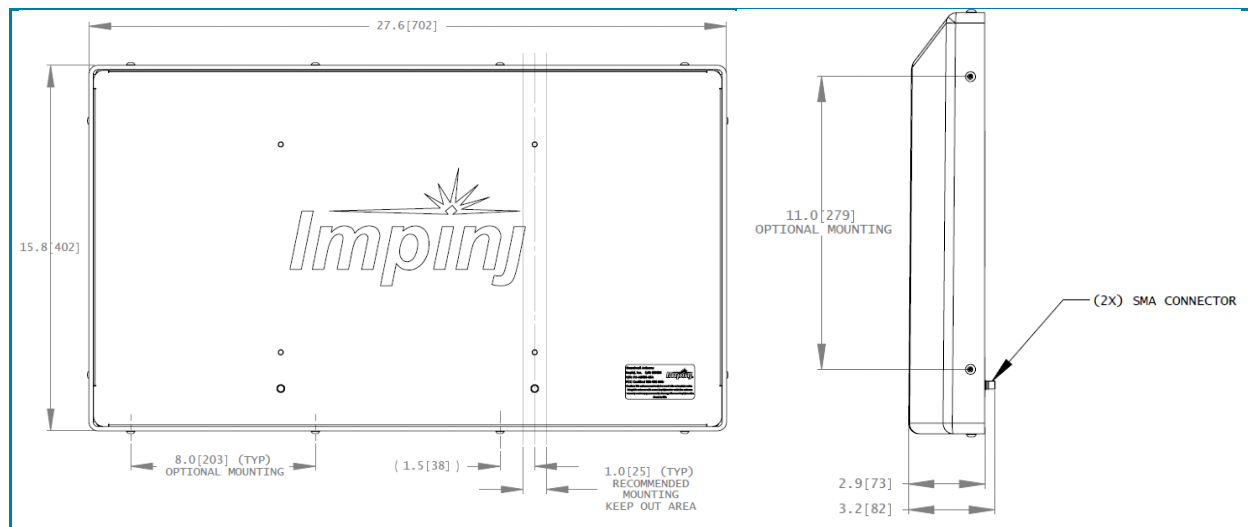
**Table 3: Mechanical Specifications**

PARAMETER	VALUE
Dimensions (L x W x D)	27.6 x 15.8 x 2.9 in
	70.2 x 40.2 x 7.3 cm
Weight	11 lbs (5 kgs)
Mounting	2X SMA female*
RoHS	RoHS Compliant
Radome	ABS
Enclosure	Aluminum
Mounting	Brackets sold separately
Connector Type	SMA Female (x2)

\*Requires accessory cable to connect to reader's RP-TNC connector

#### 3.3.1 Mechanical Drawings

**Figure 6: Guardwall Mechanical Drawings**



Included with the antenna are two cables and their connectors: 2x Cable, Male RP-TNC / Male SMA, RG58 (6.2 ft / 2 m)

## 4 ORDERING INFORMATION

**Table 4: Ordering Information**

PART NUMBER	DESCRIPTION
IPJ-A0402-USA	Guardwall (FCC) (70 x 40 x 10 cm)
IPJ-A0402-EU1	Guardwall (ETSI) (70 x 40 x 10 cm)

## 5 NOTICES

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