

IPJ-A0402-USA

# Guardwall ILT Antenna Datasheet



Guardwall antenna front (active) side



Guardwall antenna back side

## Overview

For item-level reading of packed goods, the Guardwall antenna provides a tightly controlled read zone and intense RF field, 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.

## Features

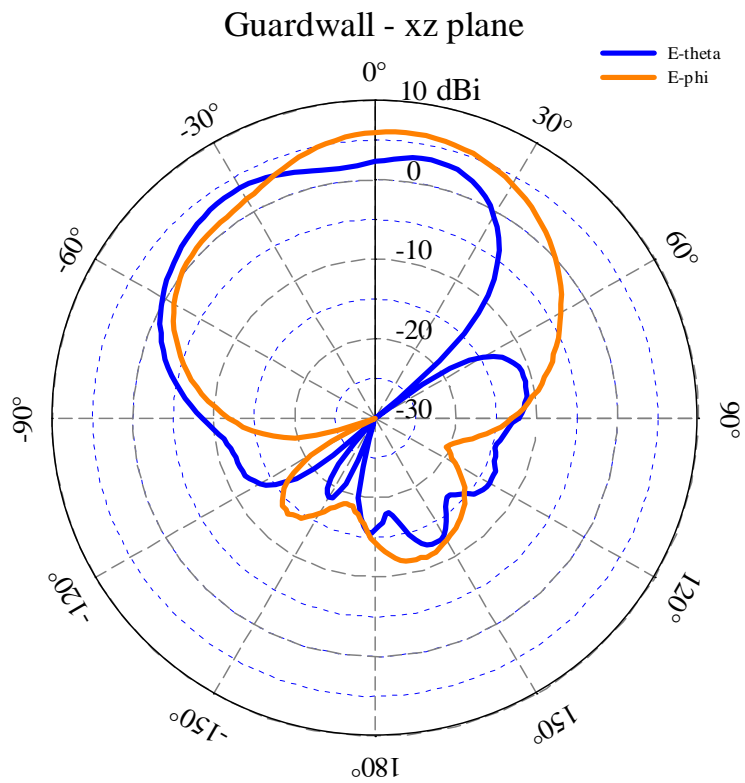
- Well-controlled read zone minimizes stray reads
- Optimized for reading item-level tags packed in cases
- Designed for RoHS compliance

## Read Zone Characteristics

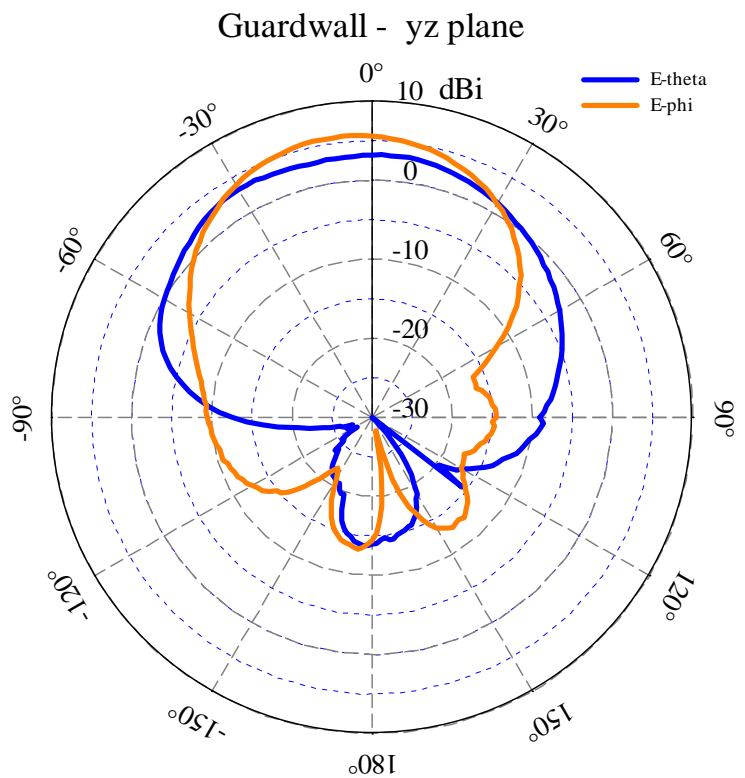
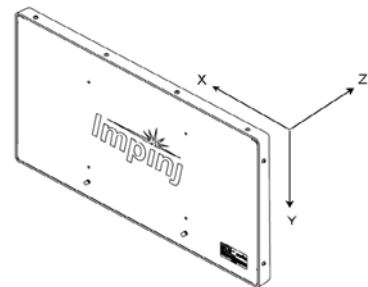


A pair of Guardwall antennas used together creates an intense, well-contained read zone, with little spillover beyond the exterior faces.

## Radiation Patterns



Key for planes:



## Environmental Specifications


Parameter	Typical	Units	Conditions/Notes
IP Rating	IP51		Indoor use only
Temperature	0–40	°C	Indoor use only
Humidity	5–95	%	Relative, non-condensing
RoHS	N/A		Designed to meet RoHS, not certified RoHS

## Electrical Specifications

Parameter	Typical	Units	Conditions/Notes
Frequency Range (FCC)	902–928	MHz	North America
Far Field Gain	6	dBi	
Polarization	RHCP & LHCP		Dual elements with separate connectors for two circular polarizations (RHCP and LHCP)
Axial Ratio (Max)	3	dB	
3-dB Beamwidth	55	Deg	
Front to Back Ratio	22	dB	
VSWR <sup>1</sup>	1.5:1		50 Ω reference
Input Power	30	dBm	30 dBm absolute max

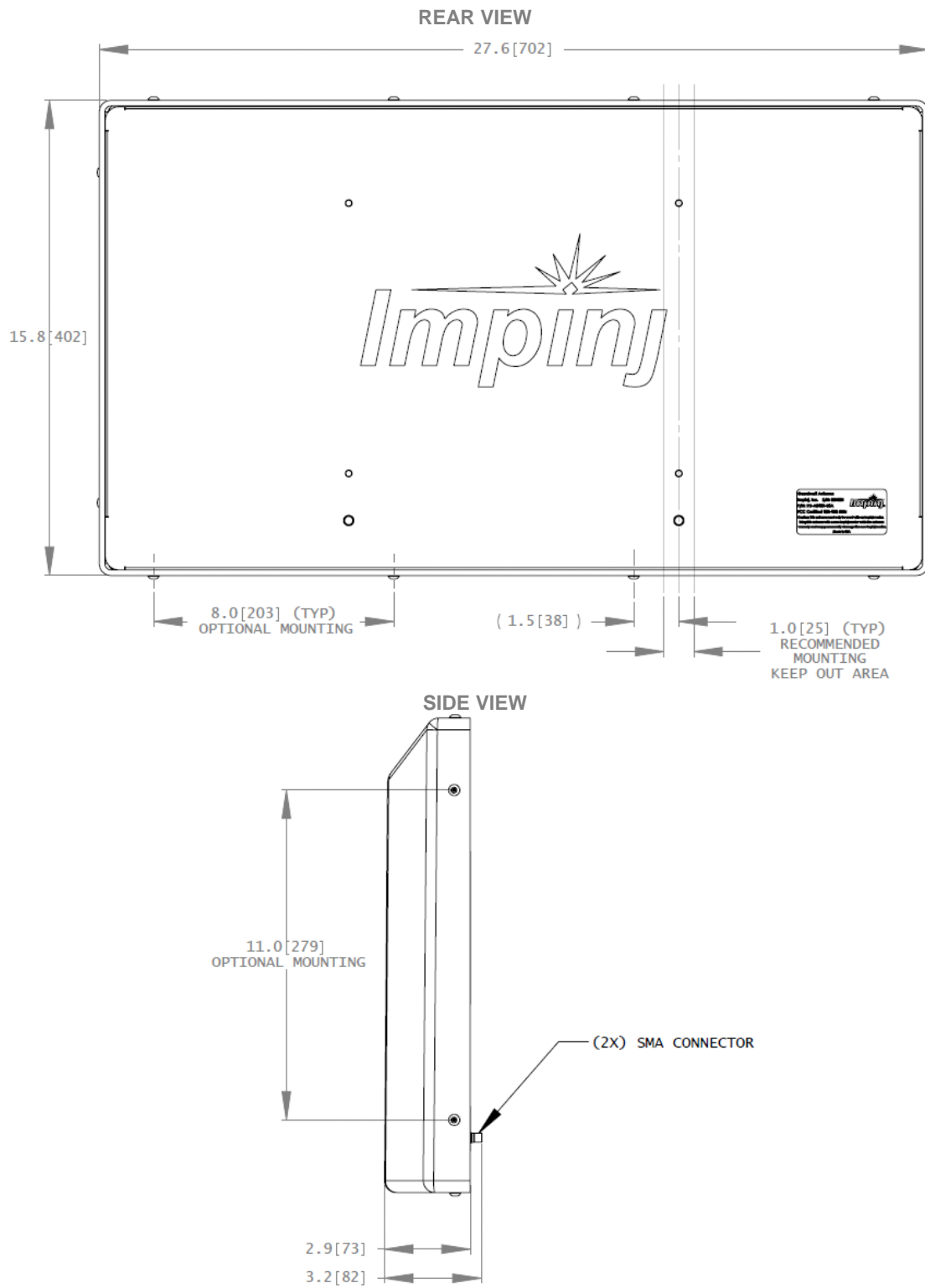
<sup>1</sup> Some item-level applications—where the tag is close to the reader antenna—can cause a 2:1 VSWR from the antenna to the reader. Users should ensure that their reader can tolerate a VSWR as high as 2:1.

## Mechanical Specifications

Parameter	Typical	Units	Conditions/Notes
Weight	11 lbs. 5 kgs.	lbs/kgs	
Connector	2X SMA female		Requires accessory cable to connect to reader's RP-TNC connector
Radome	ABS		Designed to meet RoHS, not certified RoHS
Backplane	Aluminum, Alloy 5052 H32		Class 3 iridite finish
Enclosure	Aluminum, painted black		Designed to meet RoHS, not certified RoHS
Dimensions	27.6 in. x 15.8 in. x 2.9 in. 702 mm. x 402 mm. x 73 mm.	in/mm	See drawing for detailed dimensions
Mounting Brackets			Available from McMasterCarr ( <a href="http://www.mcmaster.com/">http://www.mcmaster.com/</a> ) Part Number: 8809T64

## Mechanical Enclosure

Dimensions are in inches, with millimeters shown in brackets.



**Note:** Included with the antenna are two cables and their connectors—2X CABLE, MALE RP-TNC/ MALE SMA, RG58, (6.2/2m)

## Ordering Information

Part number	Frequency Range
IPJ-A0402-USA	(902 – 928MHz)

## Notices:

Copyright © 2010, Impinj, Inc. All rights reserved.

This antenna may only be used with an Impinj reader or “Powered by Impinj” reader. Using this antenna with any other device voids the antenna warranty and may cause damage to the antenna or device.

Impinj assumes no responsibility for determining if the antenna and operation of the antenna with a reader product complies with laws, guidelines, and regulations of the region in which the antenna is located and operated.

This document is conditionally issued, and neither receipt nor possession hereof confers or transfers any right in, or license to, use the subject matter of any drawings, design, or technical information contained herein, nor any right to reproduce or disclose any part of the contents hereof, without the prior written consent of Impinj and the authorized recipient hereof.

Impinj reserves the right to change its products and services at any time without notice.

Impinj assumes no responsibility for customer product design or for infringement of patents and/or the rights of third parties, which may result from assistance provided by Impinj. No representation of warranty is given and no liability is assumed by Impinj with respect to accuracy or use of such information.

These products are not designed for use in life support appliances, devices, or systems where malfunction can reasonably be expected to result in personal injury.

