



EWQ24GW / 864D-24GW Antenna Datasheet

Manufacturer

Itron, Inc.
2401 N. State St.

Model Number

Itron integral PCB antennas do not have a part number. Integral antennas are part of the PCB layout files and internal layout libraries.

Electrical Specifications

Table 1: Antenna Specifications

Parameter	Typ.	Unit
Type	Meander	
Peak Gain	2.1	dBi
Frequency	900 - 930	MHz
Impedance	50	Ohms
Structure		

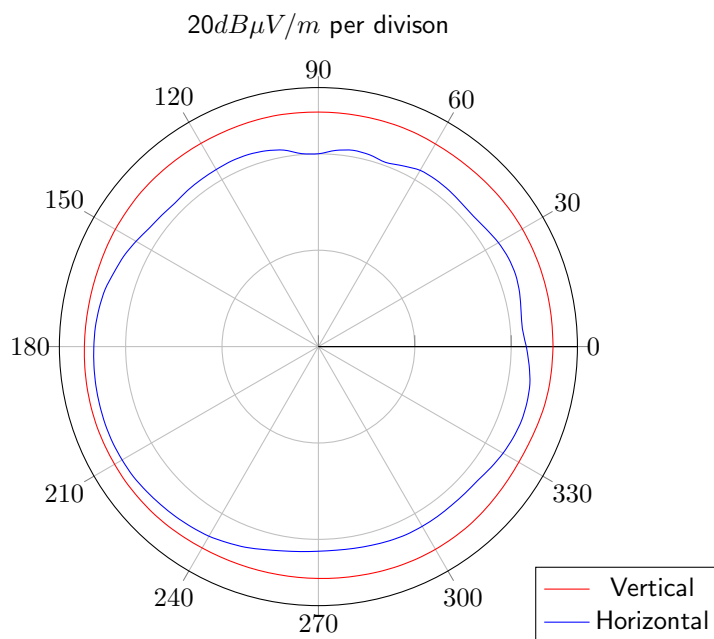


Figure 1: Radiation Pattern - Pit and Remote Mount Integral Antenna

External Antenna - Not for all models

An external antenna is only used with certain products. The products are

- ERW-1350-001
- ERW-1650-001
- ERW-1650-008

The external datasheet follows.

PROCUREMENT SPECIFICATION

TITLE: CFG, 900MHz Remote Antenna Kit, Through Lid with In-Line Connector

AUTHOR: Paul Goebel & Paul Walker

REV	CCO	DESCRIPTION OF CHANGE	DATE	APPROVALS	
005	WAS11490	Combine ASY-0900-003 drawing and CFG-0900-003 into a procurement spec.	6/27/14	Quality Engineer	Paul Walker
			7/8/14	Purchasing	Jackie Klokonos

REVISION HISTORY

006	WAS12003	This ECO change is to add acceptance criteria to the mechanical requirements for e-coat inspection after PH1 test.	2/12/15	Quality Engineer	Paul Walker
			2/16/15	Commodity Leader	Jackie Klokonos
007	WAS12369	Added Acceptable Criteria for Imperfections under section 8. Other minor updates to page numbers and added Pulse Electronics under section 1.0	9.10.2015	Quality Engineer	Paul Walker
			9.21.15	Purchasing Manager	Jackie Klokonos
008	WAS15837	Admin changes: 1) In Mech. Requirements section, added E-coat thickness note. 2) In Materials section, attached Pulse P/N prints/specs.	2-Jul-19	R/D Engineering	Paul Goebel

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1.0 SCOPE

This specification is the primary procurement document for a 900MHz Remote Antenna Kit supplied by Pulse Electronics (Pulse Electronics part number W2011), which installs through a pit lid and connects to an Itron product using an in-line connector.

Table 1

Itron Part Number and Box Label Number	Box Qty	Length	Antenna Cable		Environmental Cap		Antenna Assembly	
			QTY	Number	QTY	Number	QTY	Number
CFG-0900-003	24	5'	1	CBA-1301-006	1	MSC-0019-012	1	W2011

2.0 ELECTRICAL REQUIREMENTS

Reference Pulse spec - TDS W2011

3.0 MECHANICAL REQUIREMENTS

E-Coat thickness: Reference attached Die Cast Base dwg (Pulse # 070-2220.001) in Materials section.

Acceptance criteria for the e-coat adhesion to the die cast base after 10 days of PH1 standard chemical submersion testing. Die cast e-coat shall adhere to a minimum of 50% of the surface with no change in surface finish and have no single blister larger than 0.50 inch diameter.



Reference Pulse spec - TDS W2011 and W2011 Antenna DWG

Must have one each of the Antenna Cable, Environmental Cap and Antenna Assembly per Table 1

4.0 ENVIRONMENTAL REQUIREMENTS

Reference Pulse spec - TDS W2011

5.0 PHYSICAL REQUIREMENTS

Antenna Labeling (also refer to part specification for proper placement)

- Itron Logo to be cast into base
- Label, placed on bottom of the base during final step in process
 1. Itron Part Number (CFG-0900-003)
 2. Manufacturing location (Made in China)
 3. An 8 digit ID (YYWWXXXX) in both text and barcode. The ID provides a unique serial number which is coded with a Year/Week Date Code (YYWW) and weekly unit # (XXXX - 0001 to 9999) based on number of units being built that week.

6.0 PACKAGING/HANDLING

One shipping box will contain 24 antenna assemblies. They will be placed, 12 per layer in the box. There will be no bags or wrapping around each antenna. Plastic bag with nut inside is placed next to the antenna stem. See attachment for orientation of units in box.



A label is to be placed on each box pertaining the following.

- Itron Logo
- Itron P/N (CFG-0900-003)
- Description (900Mhz Remote Antenna Kit)
- Manufacturing location (Made in China)
- Qty=24
- Date code, must be the same as antennas in the box. Format is YYWW

No additional markings to box as Itron ships same box to final customer.

Pulse is not to place shipping labels directly on box.

Pulse places shrink-wrap around shipment with label for P/N CFG-0900-003 to identify shipment.

7.0 PROCUREMENT REQUIREMENTS

No change will be allowed in production material or processes used in manufacturing to the parts covered by this specification, without prior notification and approval by Itron.

8.0 REFERENCE DOCUMENTS

Itron:

ETP-0046-001

Pulse:

- Technical Document Specification, Design Assembly Drawing, and Calibration Adaptor

TDS W2011 –Issue 1207 (year/week)	 W2011-1207 TDS.pdf
W2011 Antenna – Dwg Rev A:	 W2011 Antenna DWG.pdf
Calibration Adaptor W2011-CONN-T-01711	 W2011-CONN-T-017 11.pdf
Shows Acceptable Criteria for Imperfections	 CFG-0900-003_COSM ETIC STANDARD FROI

- Materials:

Type	Pulse P/N	Rev	Description
081 Epoxy/Chemical And Paints	0010.0460	A	EPOXY DP-460 CARTRIDGE 37ml  3m-scotch-weld-dp 460-nordic.pdf
021 Fasteners/Hardware	021-2261.001	A	RADIATING ELEMENT  021-2261.001-REV5. PDF
021 Fasteners/Hardware	021-2262.001	A	CUSTOM PLASTIC WASHER OD 0.270", ID 0.126", 0.04" THK.  021-2262.001-REVA. PDF
043 Cases/Headers/Plastic Molded Parts	043-3105.001	C	RADOME  043-3105.001-REVA.  PDF 043-3105-001_RevB _PCNWAS11931.pdf
043 Cases/Headers/Plastic Molded Parts	043-3106.001	A	SPACER  043-3106.001-REVA. PDF
043 Cases/Headers/Plastic Molded Parts	043-3107.001	C	THREADED STEM  043-3107.001-3-4-1 0-UNC-REV B.PDF
043 Cases/Headers/Plastic Molded Parts	043-3108.001	D	CUSTOM NUT 3/4-10 UNC  043-3108.001-revD. PDF
043 Cases/Headers/Plastic Molded Parts	043-3211.001	A	ENVIRONMENTAL CAP, W2011 ITRON P/N MSC-0019-012. (Reference Itron P/N)
070 Special Hardware	070-2220.001	G	DIE CAST BASE  070-2220-001 Rev  F.pdf 070-2220-001_RevG _PCNWAS12277.pdf
080 Insulation Products And Labels	080-3001.001	B	TWO PART LIQUID EXPANDING POLYURETHANE FOAM  LD24 Spec Sheet_FOAM.doc
080 Insulation Products And Labels	080-3012.001	B	1.5"x0.5"x0.002" thick round corner, thermal transfer, gloss polyester label with

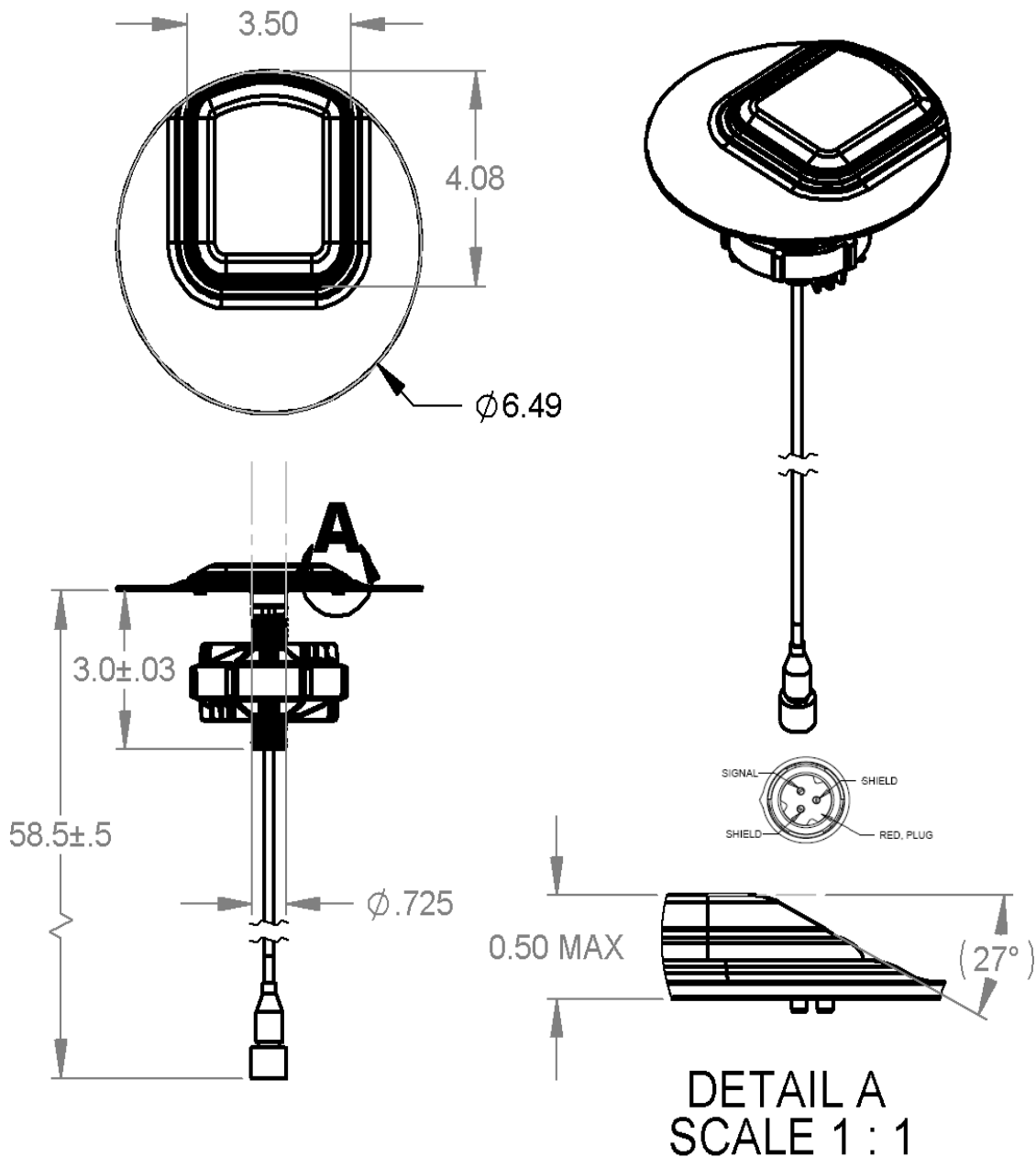
			a high-performance permanent acrylic adhesive. [label stock PN 6202.1274]
080 Insulation Products And Labels	080-3060.001	A	VENT MEMBRANE OD 7.6X ID 3.3 MM  PTV_Adhesive_Vent s_Datasheet_US_AU VE70308
081 Epoxy/Chemical And Paints	081-2235.001	A	Sealant, black silicone, Dow Corning 832  DowCorning_832.p df
155 Cable Sub Assembly	155-2196.001	B	CUSTOM RG-58 A/U COAXIAL SUBASSY CABLE WITH IN-LINE CONNECTOR ITRON P/N CBA-1301-006 (Reference Itron P/N)
070 Special Hardware	52014123B	A	FERRULE R141082000(161)  52014123B_Ferrule crimp.zip
081 Epoxy/Chemical And Paints	H98-00121	A	EPOXY, 3M 190 DP GRAY  Epoxy DP 190.pdf
075 Packing Material	J14-60312	A	Sealed bag 120mm x 180mm
075 Packing Material	J14-6162C	A	Length Divider 550x170mm
075 Packing Material	J14-6162D	A	Width Divider 378x170mm
075 Packing Material	J14-6162B	A	Cardboard 550x378mm
075 Packing Material	J85-6162A	A	Packing Box 558X386X376mm without logo
075 Packing Material	J14-61620	A	Cavity Divider 170x230mm
080 Insulation Products And Labels	J92-61621	B	Label 70*45mm, Itron mark  J92-61621_Rev B.pdf
052 Non-Magnet/Bonding/Bare Wire	J98-11451	A	Soldering Wire (SAC305- 0.6mm 500g/roll)
081 Epoxy/Chemical And Paints	J98-61621	A	Parting Agent (HIRI 741 Silicic)

ON LID PIT ANTENNA

910-940MHz

W2011

Series : ANTENNA



All dimensions are in inches (mm)

Issue: 1207 (yr/wk)

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

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ON LID PIT ANTENNA

910-940MHz

W2011

Series : **ANTENNA**

ELECTRICAL SPECIFICATIONS

Antenna type	¼ Wave Inverted F Antenna; (All measurements made on 14"x24" metal ground plane)	
Frequency	910-940	MHz
Nominal Impedance	50	Ω
VSWR	2.5:1	Max
Gain	4	dBi ± .5 dB
Efficiency	55%	Min
Radiation Pattern		
3 dB beamwidth		
Horizontal Plane	OMNI	
Vertical Plane	42	° Avg
Polarization:	Vertical	
Power withstanding	20	W
Cable with Connector type	Itron designed in-line connector (Plug/Socket) PN CBA-1300-006	
Cable type	RG-58	
Length	58.5 [1485.9]	INCH [mm]
VWSR checking records at frequency in Manufacturing	910, 925, 940	MHz

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ON LID PIT ANTENNA

910-940MHz

W2011

Series : **ANTENNA**

MECHANICAL SPECIFICATIONS

Plastic radome	Makroblend UT-1018
Color	Black
Ingress Protection	IP68 (3 days at 6" deep)
Weight	327 [0.72] G [LBS]
Antenna Dimensions	0.5 x Ø 6.49 [12.7x Ø 164.85] INCHES [mm]
Cable Pull Off [Antenna]	10 [4.54] LBS [KG] Min
Supported Lid Thickness	.25" to 2.5" [6.35-63.5] INCH [mm]
Supported Hole Diameter	¾" and 1 ¾" – 2 ¼" INCH NOMINAL [19.05 and 44.45 – 57.15] [mm NOMINAL]
Mounting Mechanism	Hand Applicable ¾-10 Nut
Shaft Thread	Modified 3/4-10 UNC 1A (see individual part prints)
Torque to Complete Application or Removal of Custom Nut	Maximum 15 [17.3] LBS-IN [KG-CM]

ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-40 to +70 ° C
Storage Temperature	-40 to +75 ° C
High Storage Temperature per MIL STD 810F- Section 501.4, Procedure I	168 hrs @ 75 ° C
Low Storage Temperature per MIL STD 810F – Section 502.4, Procedure I	24 hrs @ -40 ° C

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ON LID PIT ANTENNA**910-940MHz****W2011**Series : **ANTENNA**

Pendulum Impact	15 strikes per orthogonal side x4 sides = 60 strikes/sample. Impact energy ~4 Joules (2.5 lbs hammer full swing at 13 inches high).
Transportation Vibration per MIL STD 810F- Section 501.4 Procedure I.	Frequency range 5-500Hz, one hour/axis, 3 axes on vibration table using fig 514.5C-3
Salt mist	5% NaCl spray for 2 hrs , @ +35°C, +95% RH @ +25°C for one week. 2 cycles
Drop test	Drop three times to concrete floor from 3 feet height on flat face, side face and edge

OTHER SPECIFICATIONS**Issue: 1207 (yr/wk)**

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ON LID PIT ANTENNA

910-940MHz

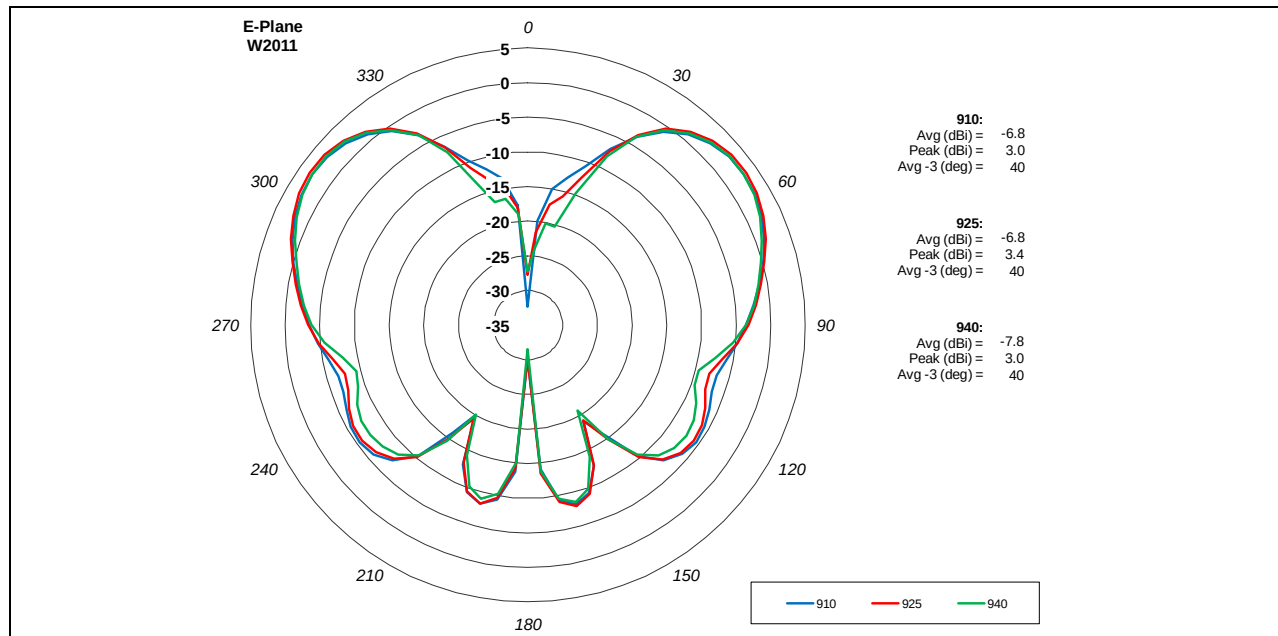
W2011

Series : ANTENNA

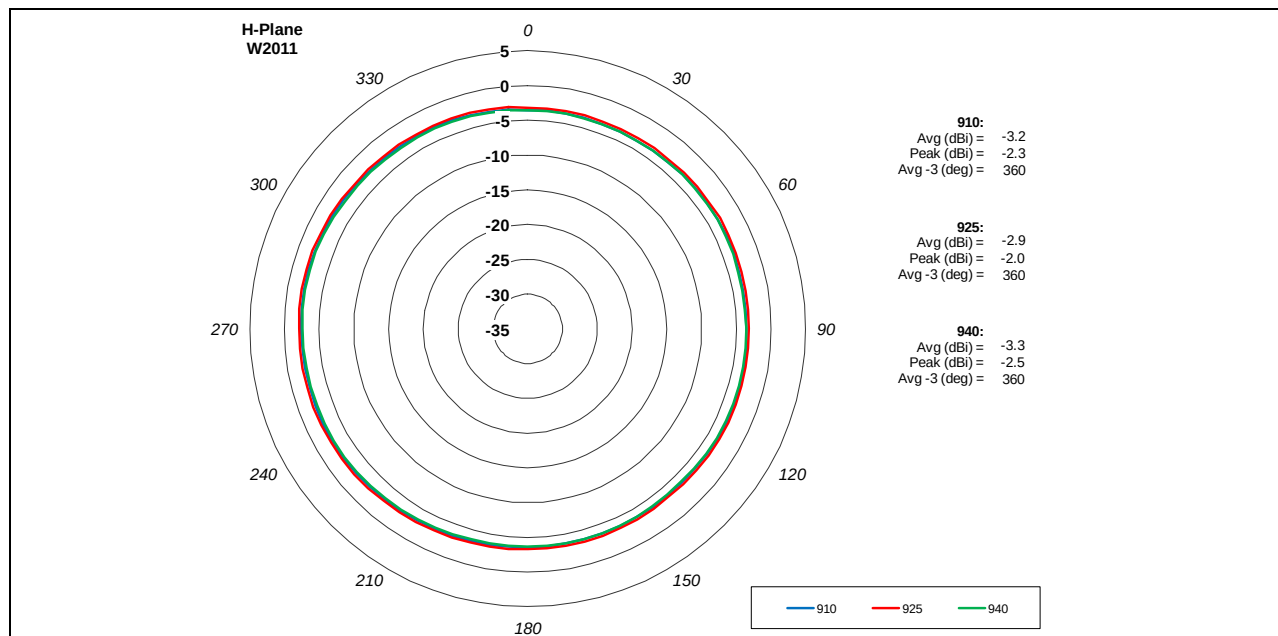
Charts

All measurements (VSWR, Gain, Efficiency) made on 14" x 24" metal ground plane and 6" cable with SMA connector

Vertical Plane



Horizontal Plane



Issue: 1207 (yr/wk)

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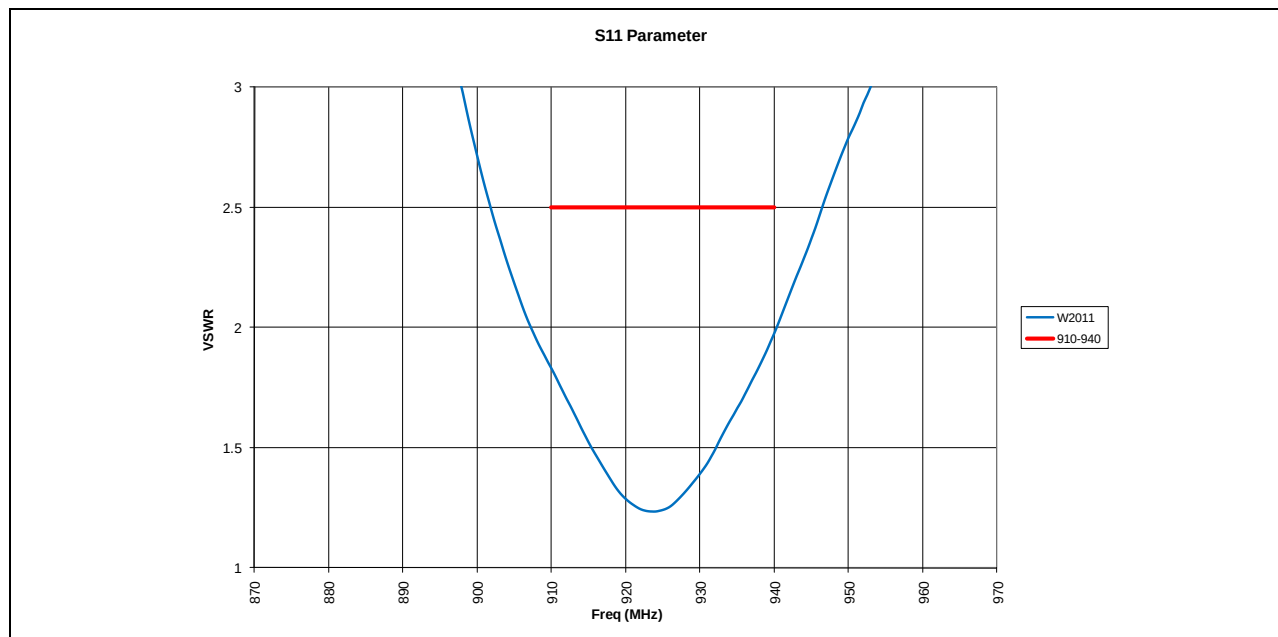
ON LID PIT ANTENNA

910-940MHz

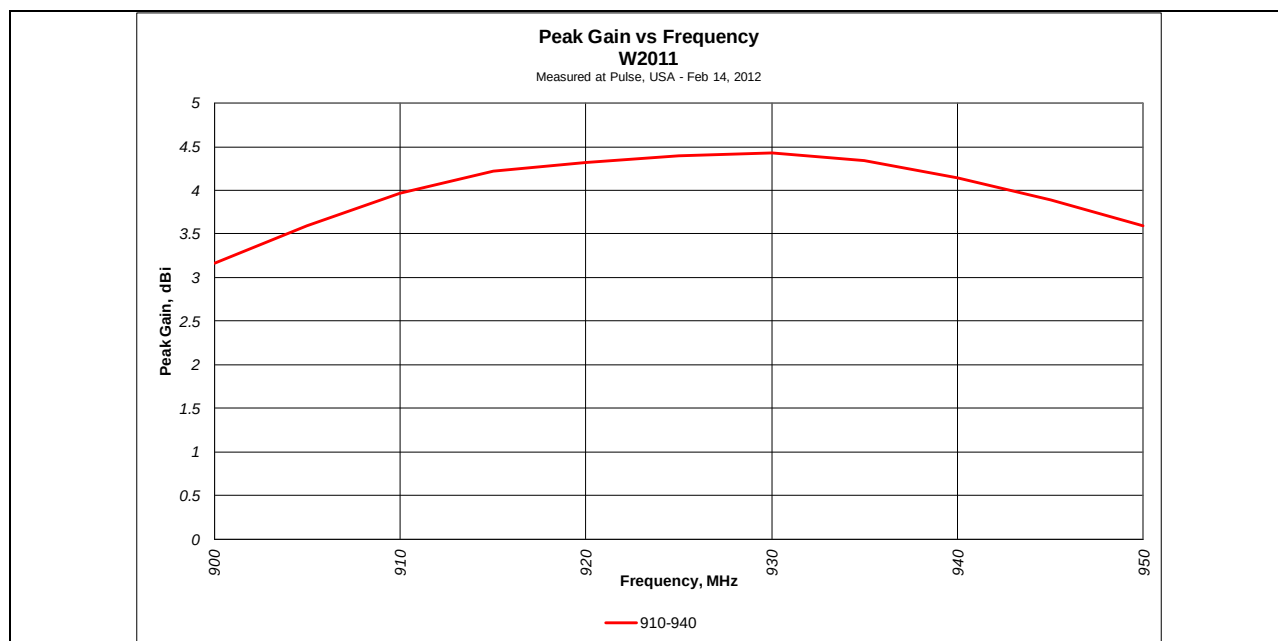
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Series : ANTENNA

VSWR



Peak Gain



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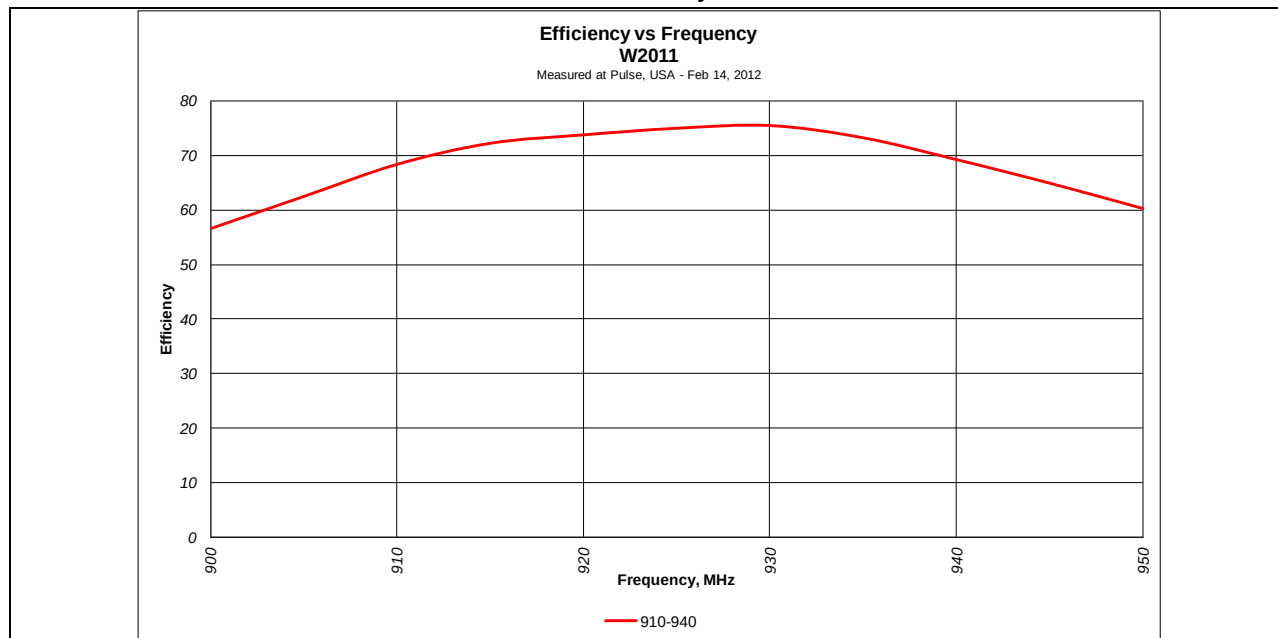
ON LID PIT ANTENNA

910-940MHz

W2011

Series : ANTENNA

Efficiency



Issue: 1207 (yr/wk)

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