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Datasheet

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Part No:
G52.A.0616BN11

Description:

Ultra-Flat LTE Antenna 700 to 3000 MHz with 628 mm RG58 Cable
Knox 50 Connector

Features:

Ultra-Flat LTE Antenna covering main LTE Bands for AT&T and Verizon carriers
Cable: 628 mm RG58 with Knox 50 Connector

RoHS & Reach Compliant

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Changelog

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Ireland ISO 9001: 2015 Certified
ISO 9001 CERTIFICATION EUROPE
Taiwan ISO 9001: 2015 Certified
RNATIONAL
UKAS QUALITY MANAGEMENT 046
QUALITY MANAGEMENT SYSTEM IATF16949

1. Introduction

The G52.A.0616BN11 antenna is an ultra-flat antenna for Pit-Lid and similar applications. It was designed to perform in the LTE AT&T and Verizon bands 2, 4, 12 and 13. This is a custom antenna solution and enclosure for water meters and gas meters. The antenna performs on metallic surfaces and non-metallic surfaces although the data presented here is with the metallic plane.

When tested on a 300 mm by 300 mm metal plane, the G52 delivers efficiencies of 52% for B12, 40% for B13, 45% for B4 and 46% for B2. The G52 is designed to be through-hole mounted on metal or plastic surfaces. It is ideal for low profile and resistant to environment applications.

All testing was done at the San Diego engineering facility in the Howland 3100 Anechoic Chamber.

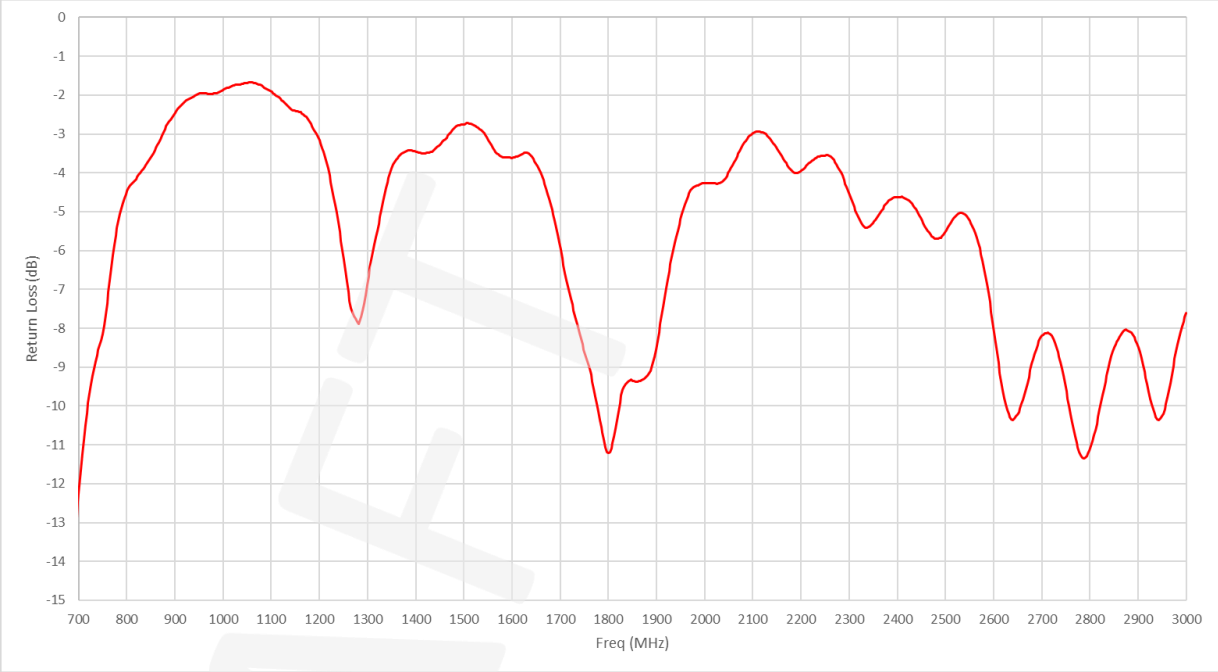
2. Specifications

Electrical						
Band	**Band 12**	**Band 13**	**ISM 900**	**Band 4 (TX)**	**Band 4 (RX)**	**Band 2**
Frequency (MHz)	699-746	746-787	902-928	1710-1755	2110-2155	1850-1990
Return Loss (dB)	-10	-7	-3	-8	-3.5	-9
Efficiency (%)	52	40	16	45	20	46
Average Gain (dB)	-3	-4	-8	-3.5	-7	-3.4
Peak Gain (dBi)	5.8	3.9	-0.8	1.9	0.4	3.2
Radiation Properties	Omnidirectional					
Max Input Power (W)	5					
Impedance	50 Ω					
Polarization	Linear					
Mechanical						
Dimensions	114.3 mm × 12.7 mm					
Connector	Knox 50					
Cable	628 mm of RG58 Coax					
Weight	1.9 g					
Environmental						
Operation Temperature	-40°C to 85°C					
Storage Temperature	-40°C to 85°C					
Humidity	Non-condensing 65°C 95% RH					

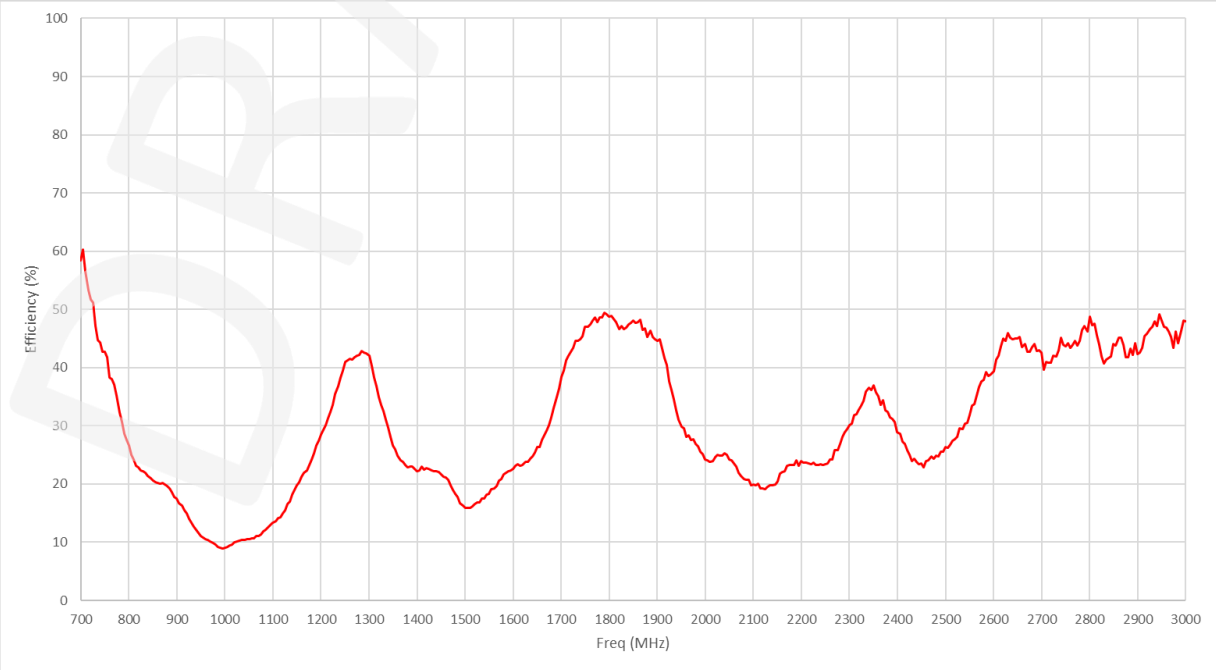
*All testing done on a 300 mm by 300 mm metal plane

3. Antenna Characteristics

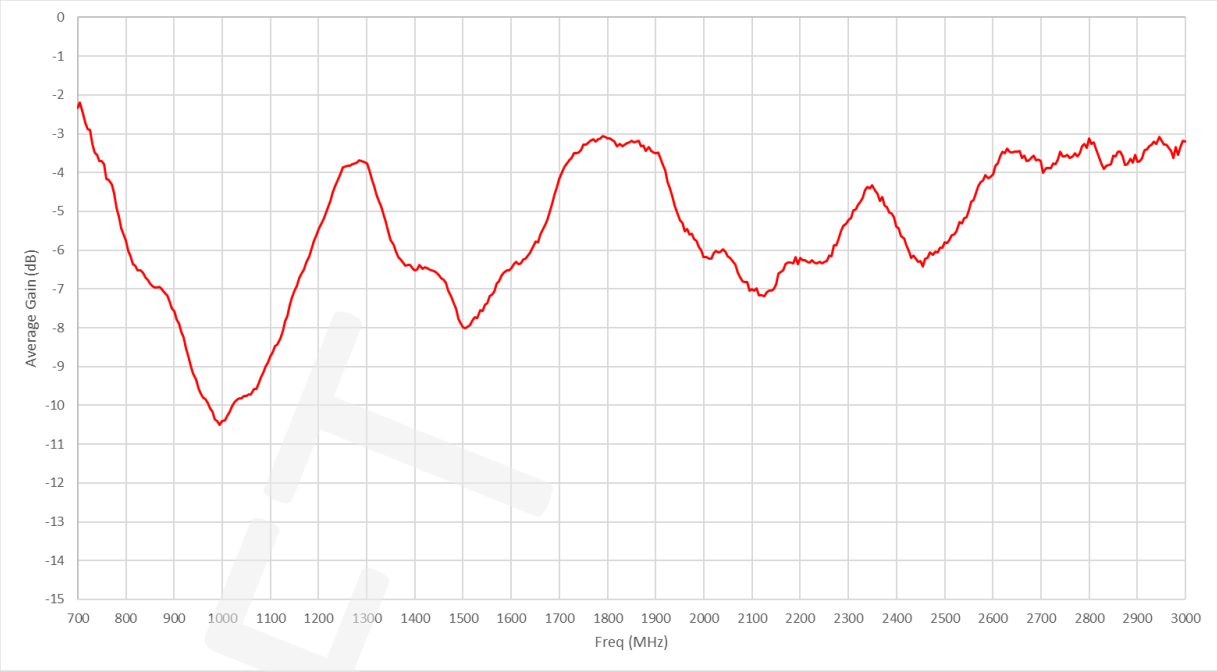
3.1 Return Loss (dB)



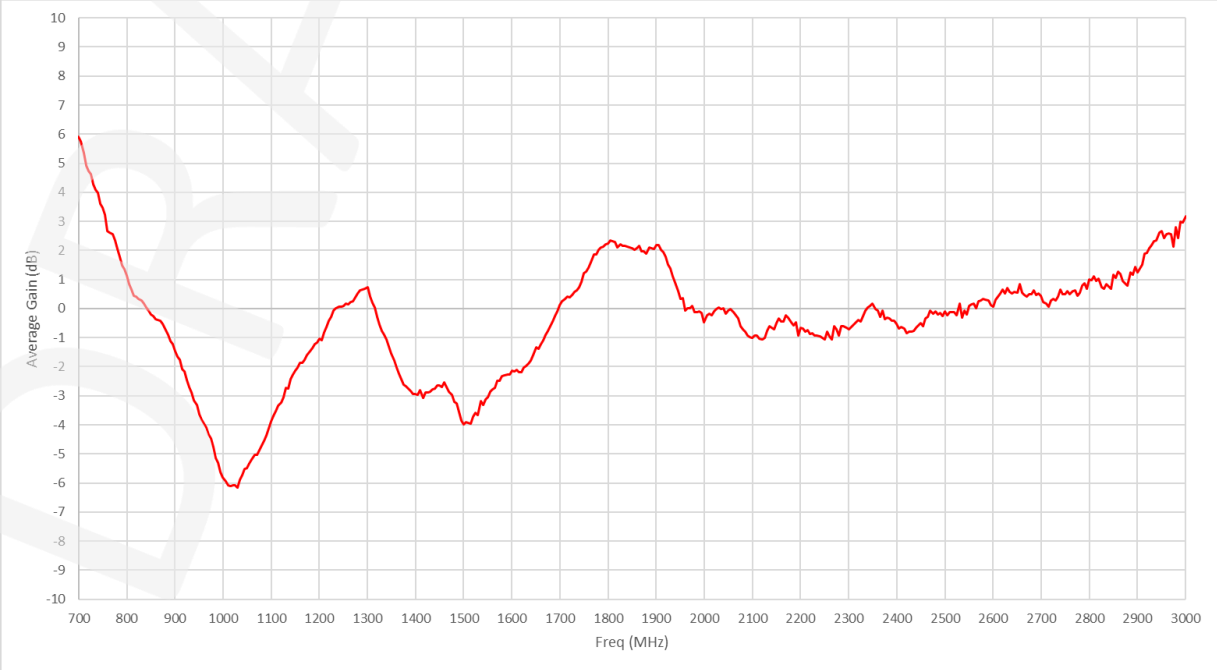
3.2 Efficiency (%)



3.3 Average Gain (dB)

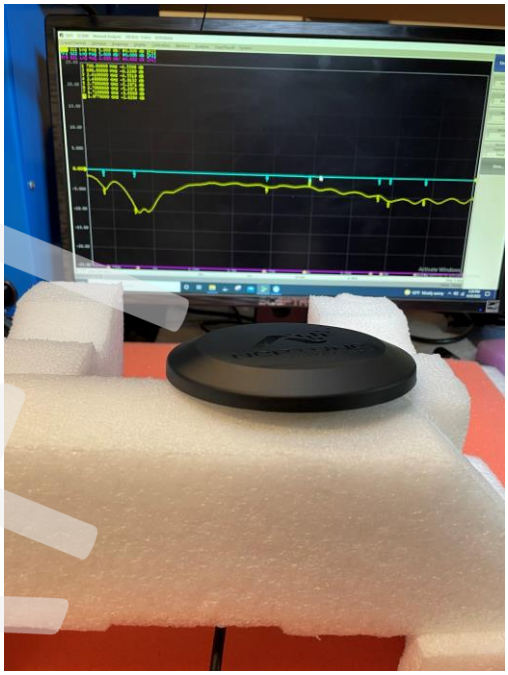


3.4 Peak Gain (dBi)

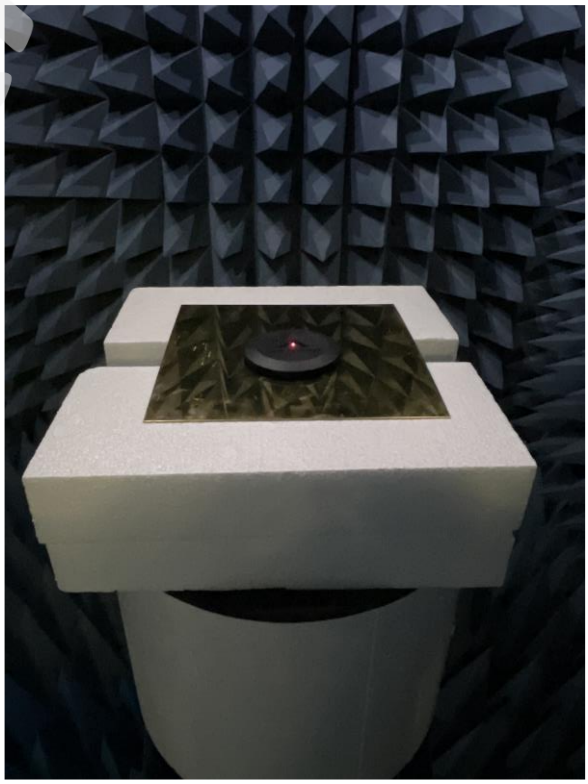


4. Radiation Patterns

4.1 Test Setup



Return Loss Test Setup of the G52



OTA Setup of the G52 in the Howland 3100 Test System

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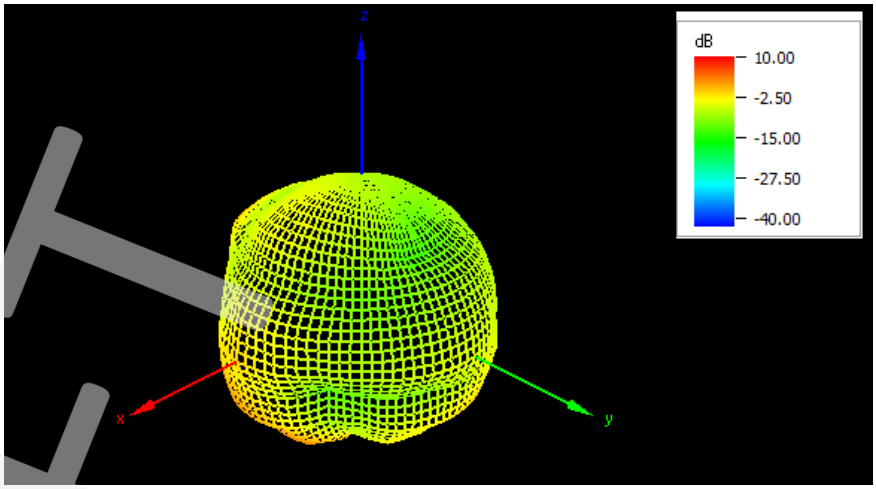
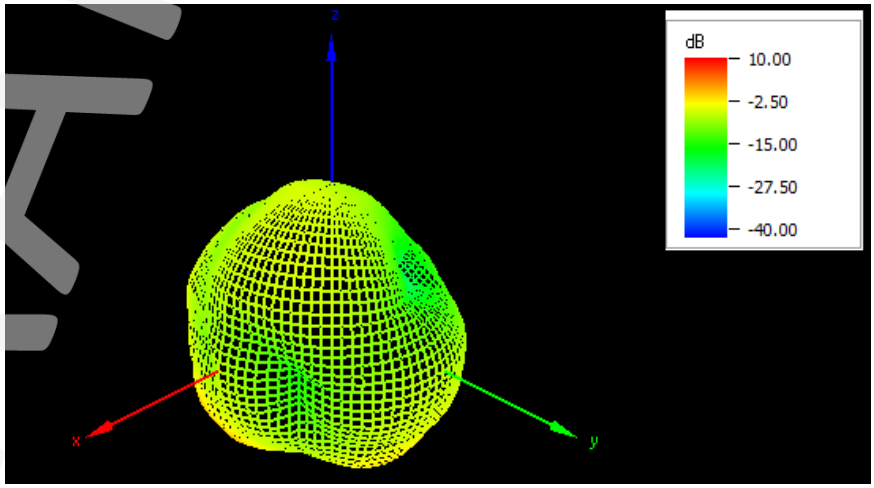
4.2 Radiation Patterns

3D Patterns

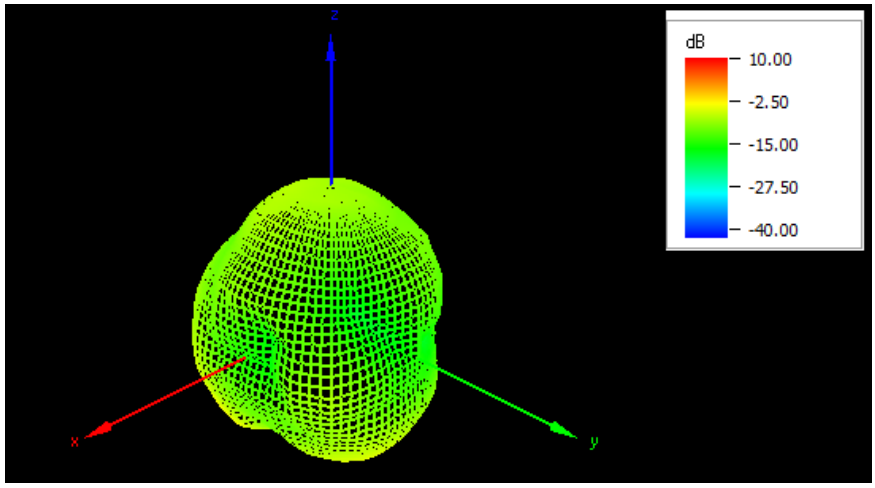
710 MHz



780 MHz



915 MHz



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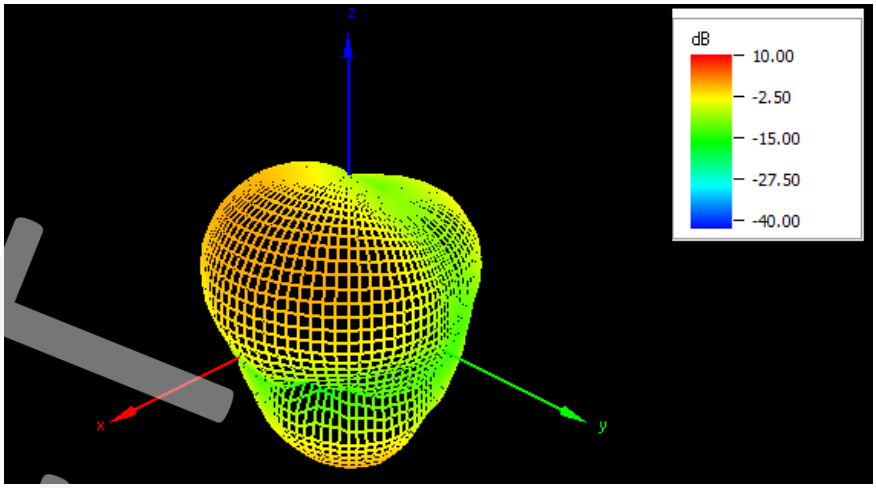
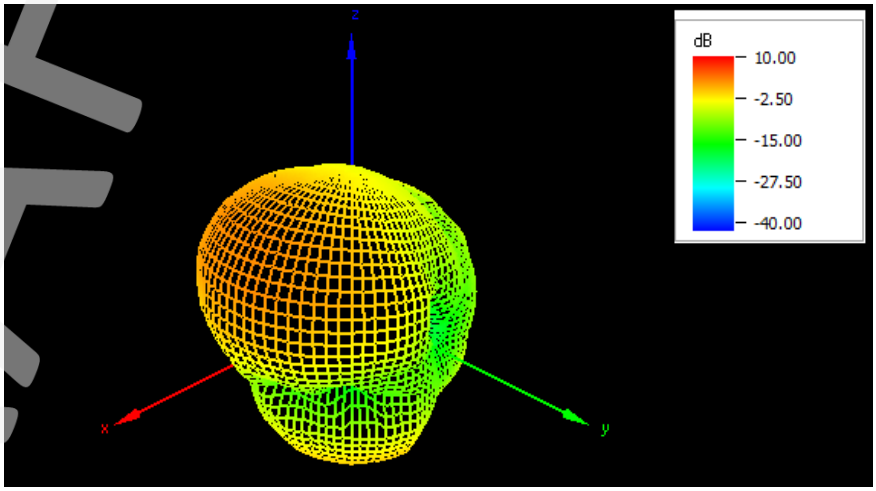
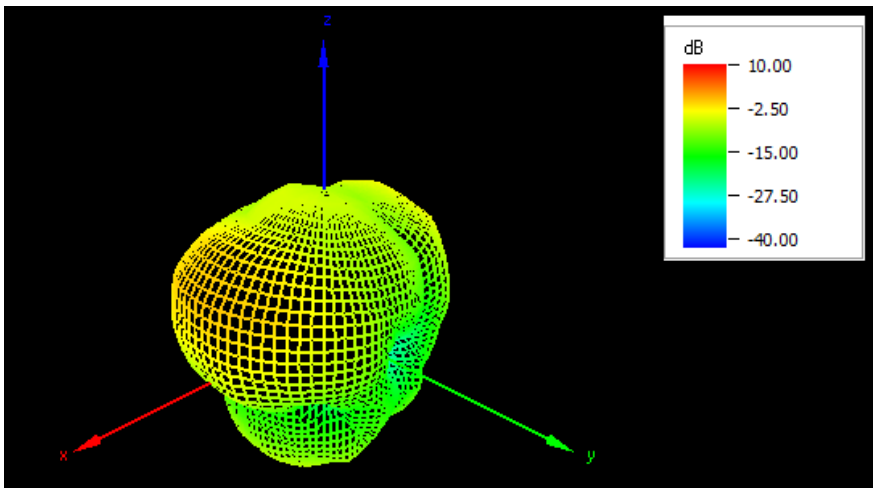
1730 MHz



1880 MHz



2130 MHz



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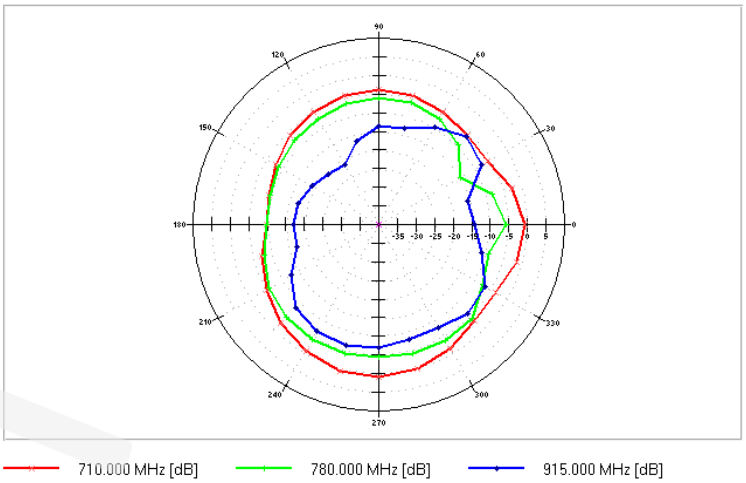
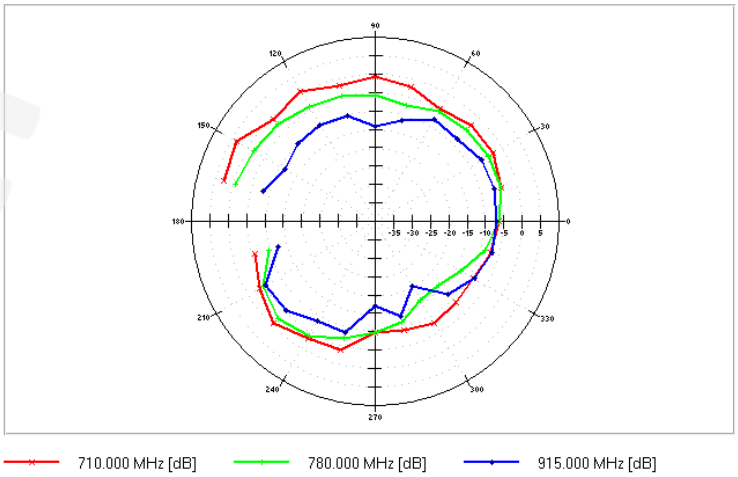
2D Patterns

710MHz, 780 MHz, 915 MHz

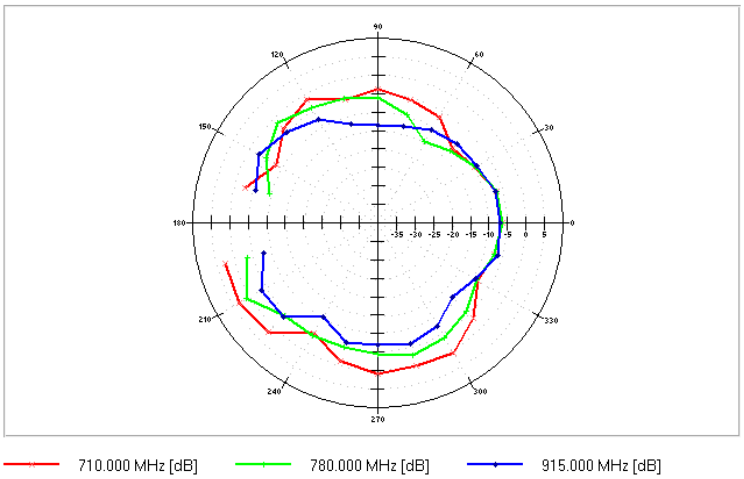
XY Cut



XZ Cut



YZ Cut



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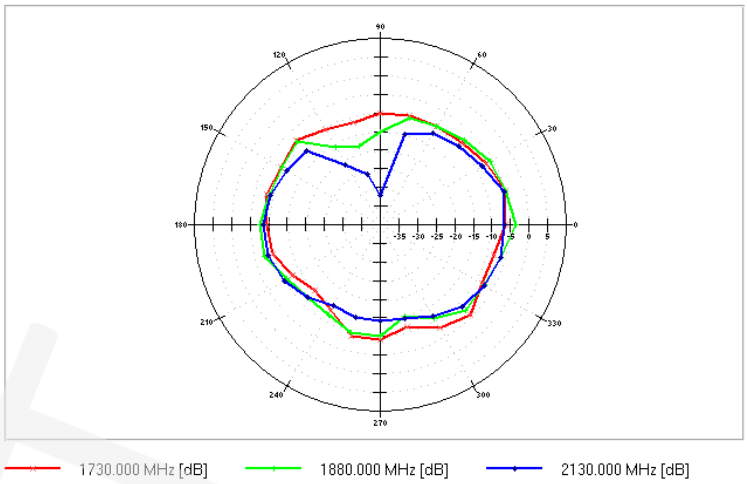
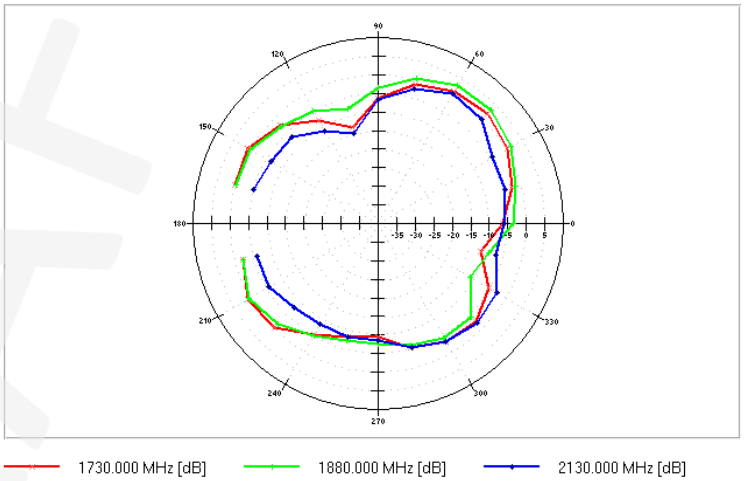
1730MHz, 7180 MHz, 2130 MHz

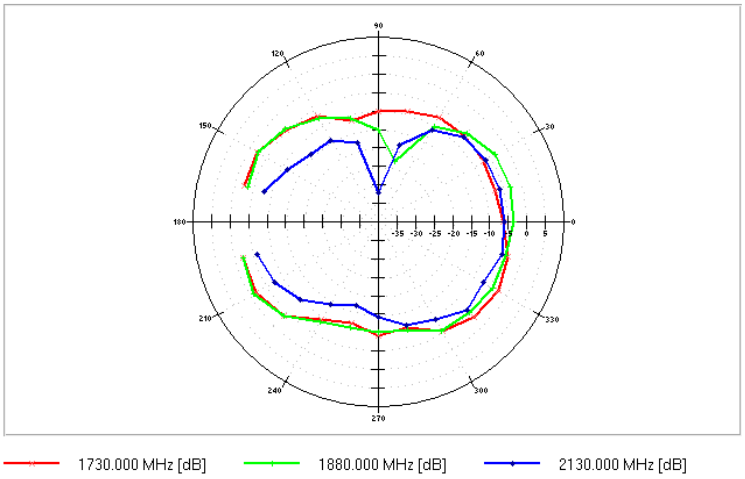
XY Cut



XZ Cut



YZ Cut



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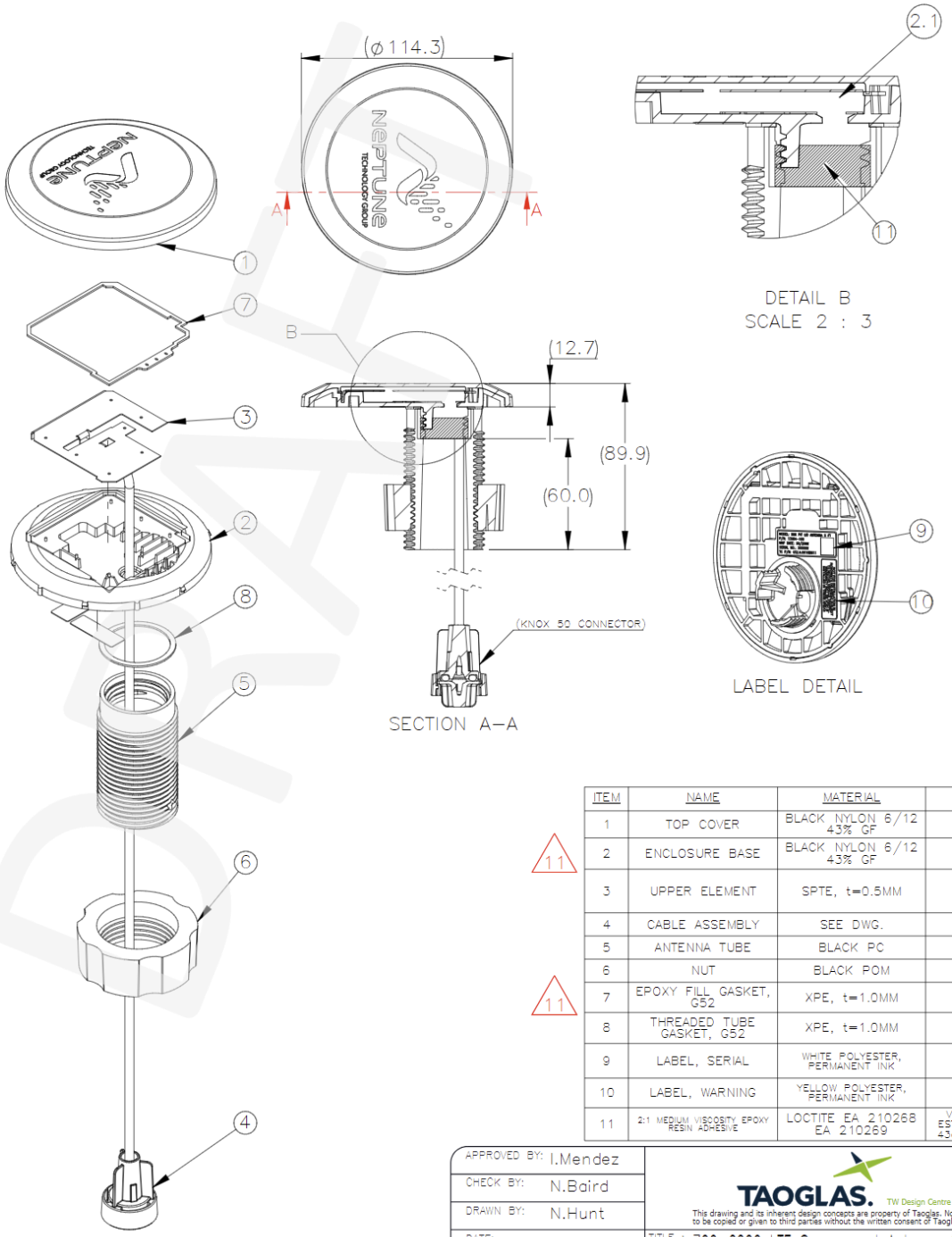
5. Mechanical Drawing

ISO NO.: EDW-21-8-1419
STATE: Released
NOTES:
1. All material must be RoHS compliant.
2. Potting notes:
   2.1. Interior volume to be fully purged of air then potted.
3. Customer: Neptune Technology Group
   Customer Part #: 13984-100 PIT ANTENNA, 2FT, CELLULAR, KNOX 50

REV	ZONE	DESCRIPTION	ENG	APPROVED	DATE
D07	All	Intial release.	N.Hunt	I.Mendez	12/9/2021
D08	All	Antenna and enclosure updated	N.Hunt	I.Mendez	2/22/2022
D09	All	BOM updated	N.Hunt	I.Mendez	2/25/2022
D10	All	BOM updated	N.Hunt	I.Mendez	8/10/2022
D11	All	BOM updated	N.Hunt	I.Mendez	9/14/2022



ITEM	NAME	MATERIAL	QTY
1	TOP COVER	BLACK NYLON 6/12 43% GF	1
2	ENCLOSURE BASE	BLACK NYLON 6/12 43% GF	1
3	UPPER ELEMENT	SPTE, t=0.5MM	1
4	CABLE ASSEMBLY	SEE DWG.	1
5	ANTENNA TUBE	BLACK PC	1
6	NUT	BLACK POM	1
7	EPOXY FILL GASKET, G52	XPE, t=1.0MM	1
8	THREADED TUBE GASKET, G52	XPE, t=1.0MM	1
9	LABEL, SERIAL	WHITE POLYESTER, PERMANENT INK	1
10	LABEL, WARNING	YELLOW POLYESTER, PERMANENT INK	1
11	2:1 MEDIUM VISCOSITY EPOXY RESIN ADHESIVE	LOCTITE EA 210268 EA 210269	VOLUME: ESTIMATED 43cc/UNIT

APPROVED BY: I.Mendez
CHECK BY: N.Baird
DRAWN BY: N.Hunt
DATE: 12/9/2021
UNLESS OTHERWISE SPECIFIED TOLERANCES ON: XX.±0.5 X.±0.3 .X±0.2 .XX±0.1 .XXX±0.05
THIRD ANGLE PROJECTION

TAOGLAS. TW Design Centre
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TITLE : 700-2200 LTE Screwmount Antenna 4.5in 2ft(610mm) RG-58 Knox 50 connector
PART NO. : G52.A.0616BN11
UNIT: mm | SCALE: 1:3 | PAGES: 1/1 | REV. D11

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