Specification

Part Number: **iDAS.C.001**

Product Name: iDAS MIMO LTE Ceiling Mount Omni Antenna

Features: 2* LTE MIMO Antenna for Indoor Distributed Antenna Systems

High Performance, Low PIM Antenna

Ceiling Screw Mount, Compact Design

Covers Worldwide LTE Bands (Including 3G/2G)

699-960MHz / 1710-2700MHz / 3400-4000MHz

IP54 Rated Enclosure

Cables: 300mm Low Loss Plenum Rated RG-402 Equivalent

Connector: 4.3-10 mini-DIN [F]

Fully customizable cable and connectors

Dimensions: Ø218 * 38mm

RoHS & REACH Compliant

1.Introduction

The Taoglas iDAS LTE MIMO antenna is a compact circular ceiling mount antenna with high performance and low Passive Inter-Modulation (PIM) designed for use in indoor distributed antenna systems (iDAS) to address in-building coverage problems and increasing demand for constant connectivity.

The iDAS delivers powerful worldwide 4G LTE MIMO coverage while also covering the 3G and 2G bands and features a compact, easy-to-install design.

iDAS networks are an excellent solution to bring LTE coverage to areas traditional base stations cannot reach:

- Stadiums, Arenas, Convention Centers
- Hotels, Shopping Malls, Hospitals
- Factories, Warehouses
- Airports, Train Stations, Bus Stations
- Schools, College Campuses
- Office Buildings, High Density Residential Complexes

LTE 4G applications demand high speed data uplink and downlink. High efficiency and high gain MIMO antennas are necessary to achieve the signal to noise ratio and throughput required to solve these challenges. The iDAS antenna is also designed for high isolation and low PIM between the two MIMO antennas to prevent self-interference. Low loss plenum rated cables are used to keep efficiency high while complying with stringent fire rating standards.

The product ships with an RG-402 equivalent plenum rated cable with a temperature spec of up to 150C. The PTFE/FEP jacket is flexible yet chemical and fire resistant. Taoglas offers customizable cable lengths, cable types and connector types, contact your regional Taoglas sales office for support.

2. Specification

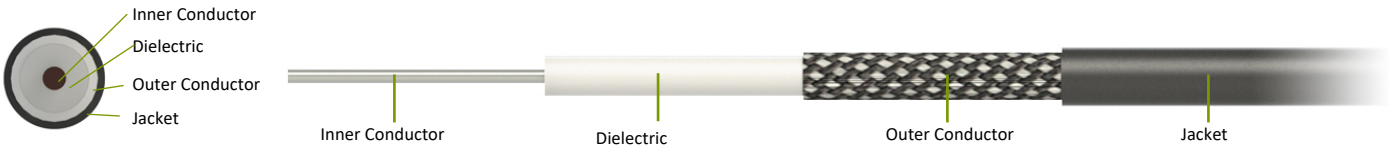
2.1 Antenna Specifications

ELECTRICAL								
Band		LTE 700	GSM	DCS	PCS	UMTS	LTE2600	LTE3500 & LTE 3700
		Band 12,13	850/900	1800	1900	1700/1800 1900/2100	Band 7	Band 42 & Band 43
Frequency (MHz)	Port	699~756	824~960	1710~1880	1850~1990	1710~2170	2500~2690	3400~3800
Peak Gain (dBi)	1	3.4	2.2	5.6	5.1	5.1	6.3	4.7
	2	3.8	2.9	5.0	5.0	4.9	6.5	4.7
Average Gain (dB)	1	-0.8	-0.7	-1.0	-0.7	-0.7	-0.6	-1.2
	2	-0.7	-0.7	-1.4	-0.6	-0.9	-0.5	-1.1
Return Loss (dB)	1	-15	-11	-18	-16	-17	-25	-13
	2	-14	-12	-18	-16	-16	-22	-15
Efficiency (%)	1	83	83	80	84	84	87	76
	2	85	84	75	86	82	87	77
Impedance	50 Ω							
Polarisation	Linear(H/V)							
Radiation Pattern	Omni-Directional							
Frequency (MHz)	699~756	824~960	1710~1880	1850~1990	1710~2170	2500~2690		
PIM Avg Rating @ 2*43	-163dBc		-164dBc					
PIM Max Rating @ 2*43dBm	-155dBc		-156dBc					
Max input Power	2*50W							

MECHANICAL	
Dimensions	Ø 218*38mm
Casing	UV Resistant ABS
Connector	4.3-10 mini-DIN (F)
Cable	2*300mm Low Loss Plenum Rated RG-402 Equivalent
Weight	0.5Kg
Colour	RAL 9003 White

ENVIRONMENTAL	
Flammability Rating	UL 94-V0
IP rating	IP54
Operating Temperature range	-40°C to +85°C
Storage Temperature range	-40°C to +90°C
Humidity	Non-condensing 65°C 95% RH

2.2 Cable Specifications



Part Designation	Material	Outer Diameter (mm)
Inner Conductor	Silver Plated Copper	0.94±0.01
Dielectric	PTFE	2.98±0.05
Outer Conductor	Tin Plated Copper Wire (16*6*0.12)	3.55±0.05
Jacket	FEP Blue	4.10±0.05

Electrical Characteristics	
Performance Property	Spec.
Capacitance (pF/m)	98
Impedance(Ohm)	50±2
Cutoff Frquency (GHz)	34
Time delay (ns/m)	4.7
Max Operating Voltage (KVrms)	3000

Mechanical Specifications	
Performance Properties	Spec.
Min. bending radius static, single(mm)	8
Weight (kg/km)	48
Environmental Specifications	
Operating Temperature (˚C)	-65~150

Attenuation @ 20 °C	
Frequency (GHz)	Attenuation (dB/m)
0.5	0.27
1	0.41
2	0.62
3	0.78
5	1.05
10	1.58
18	2.22

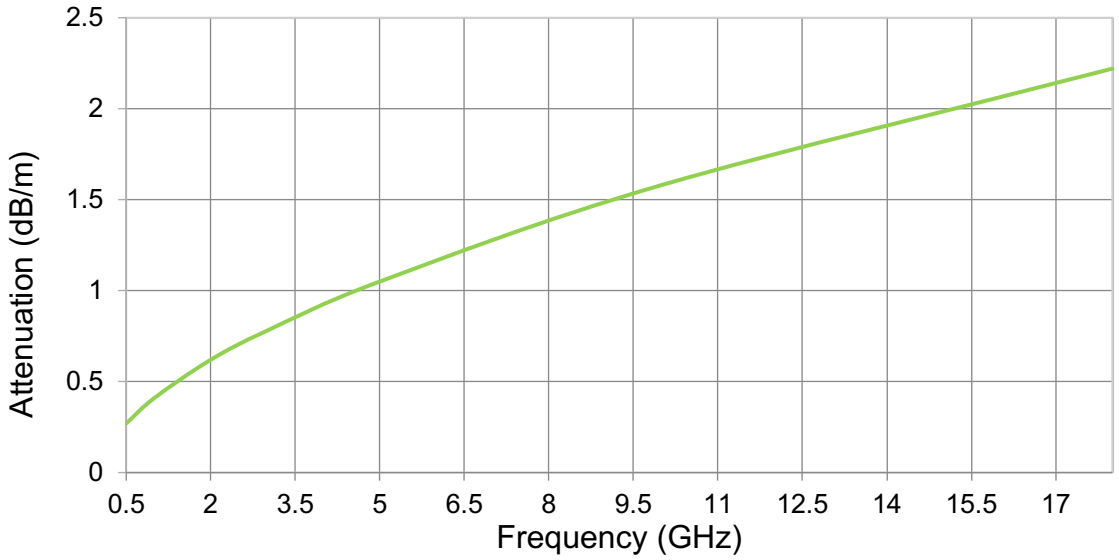


Figure 1 Attenuation vs. Frequency

3.Test Setup

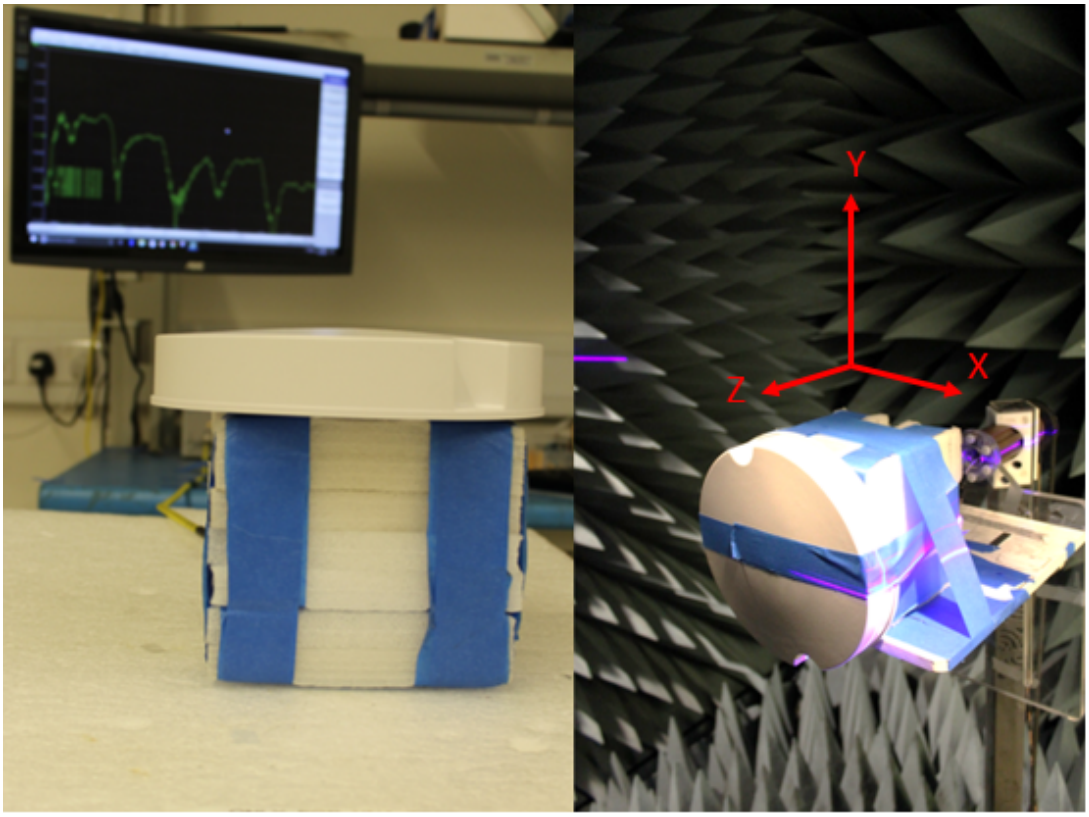


Figure 2. VNA test setup (left) and anechoic chamber test setup (right)

4.Antenna Performance

4.1 Return loss S11 (dB)

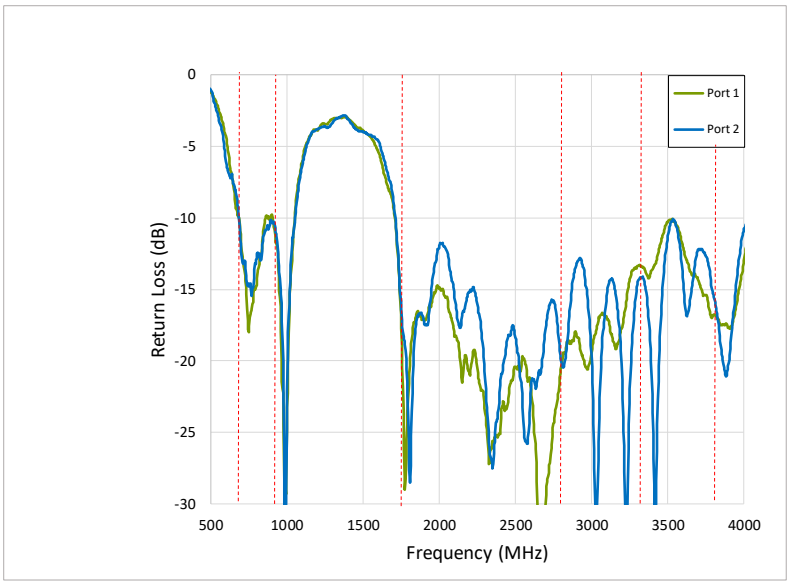


Figure 3. Return Loss (dB) S11

4.2 Isolation S21(dB)

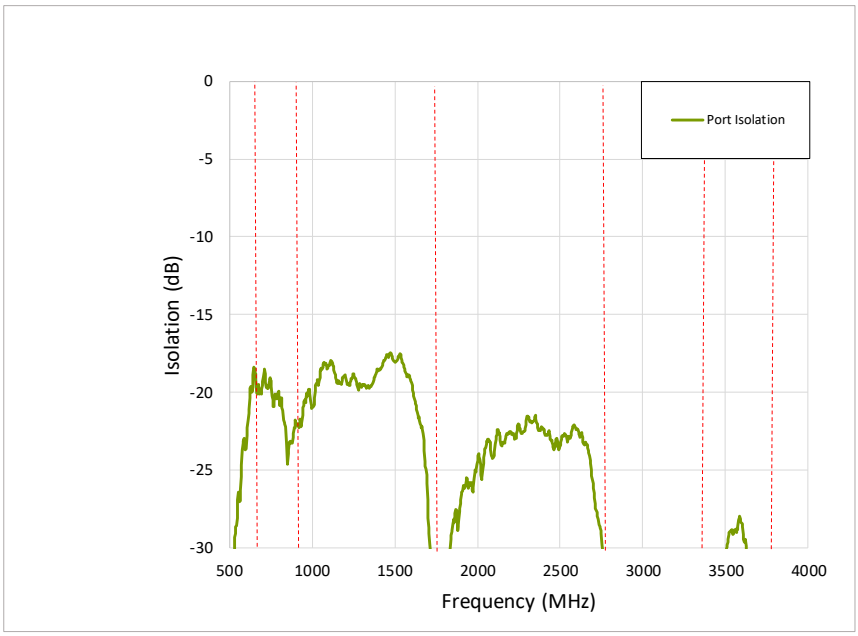


Figure 4. Isolation (dB) S21

4.3 Envelope Correlation Coeffiient

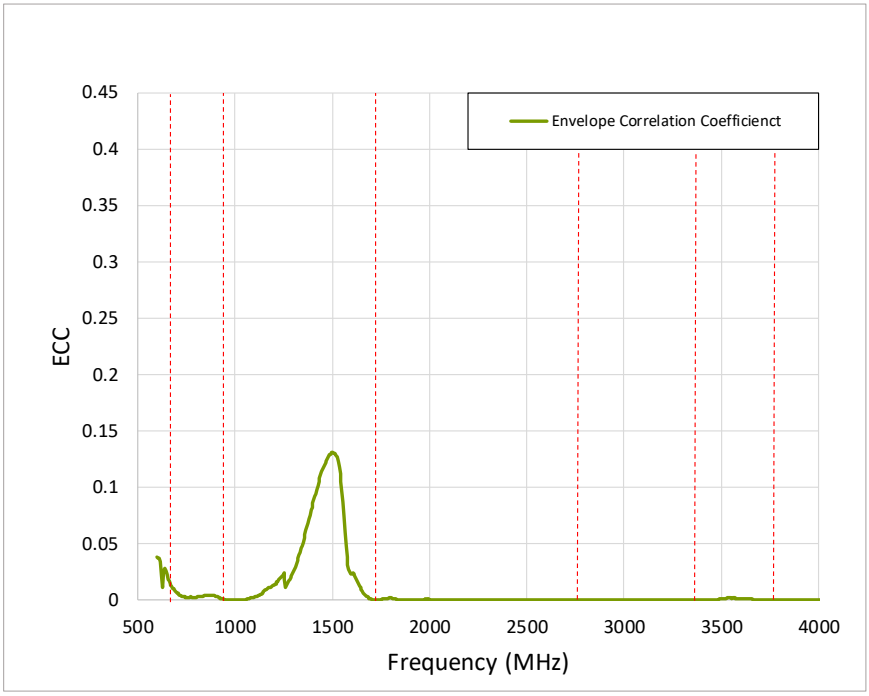


Figure 5. Envelope Correlation Coefficient (ECC)

4.4 Efficiency (%)

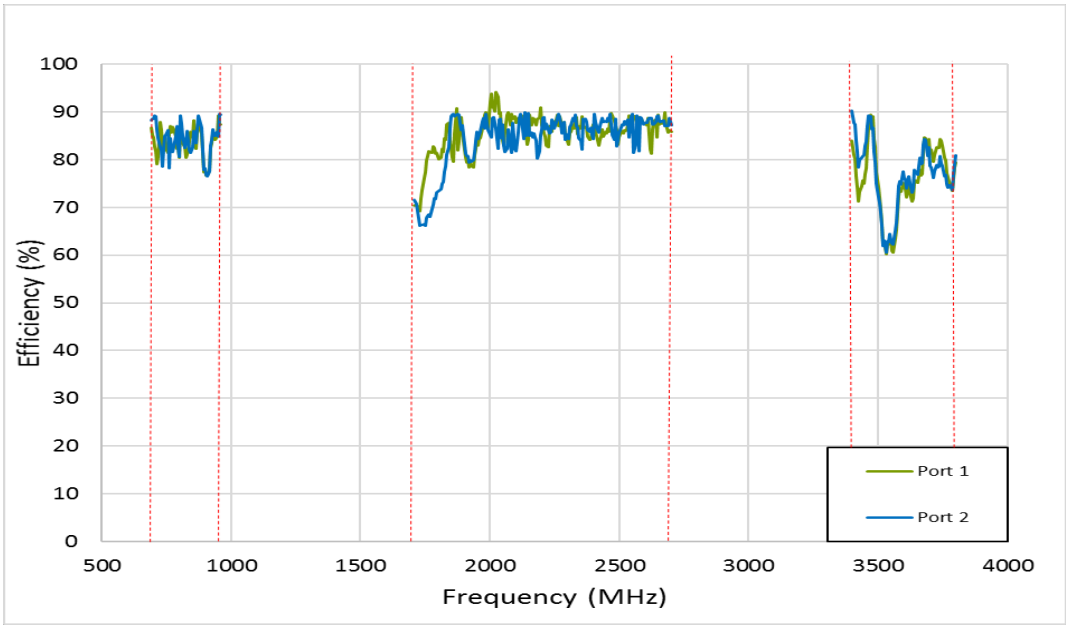


Figure 6. Efficiency (%)

4.5 Peak Gain (dBi)

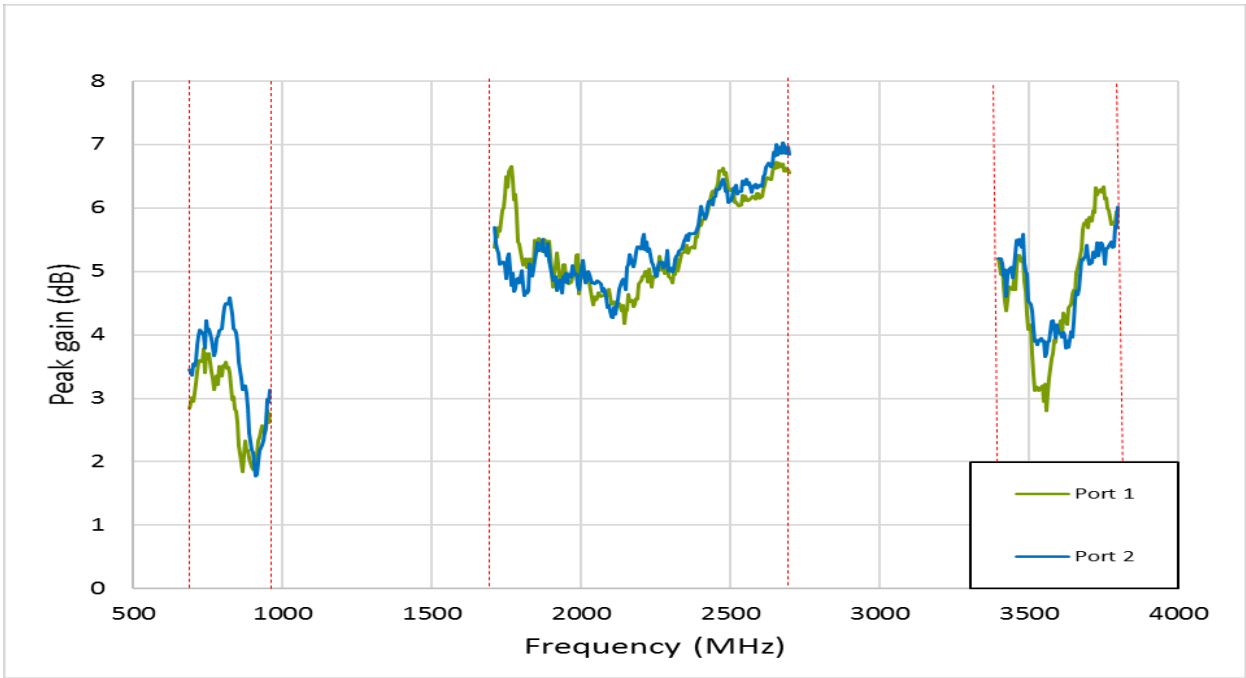


Figure 7. Peak gain (dBi)

4.6 Average gain (dB)

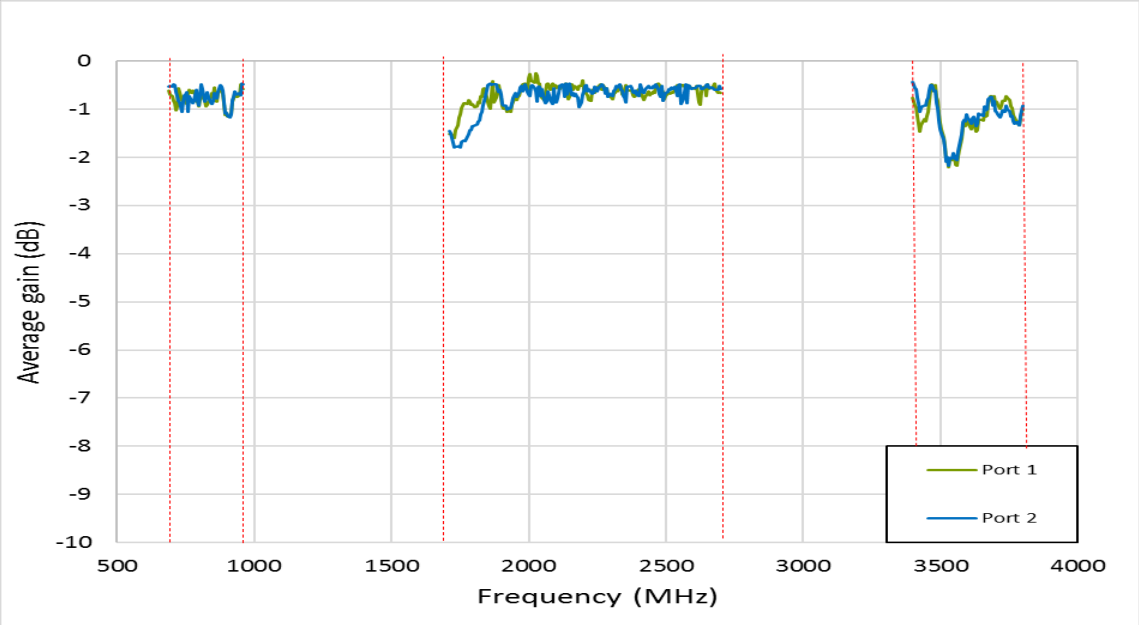


Figure 8. Average gain (dB)

5.2D Radiation Patterns

5.1 2D radiation patterns (freq. range: 698 to 3800 MHz), Port 1

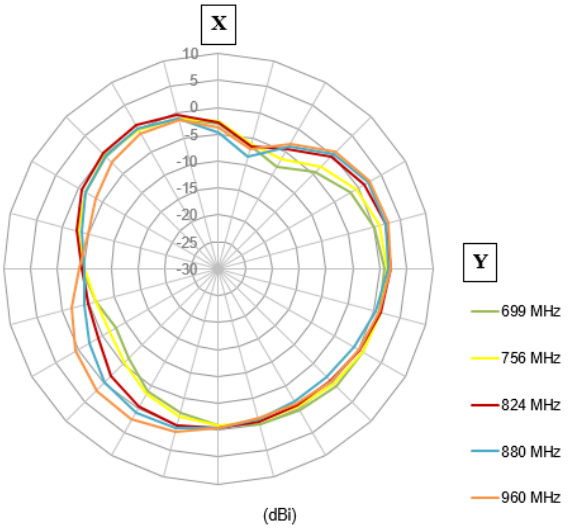


Figure 9. X-Y polar plot showing target bands

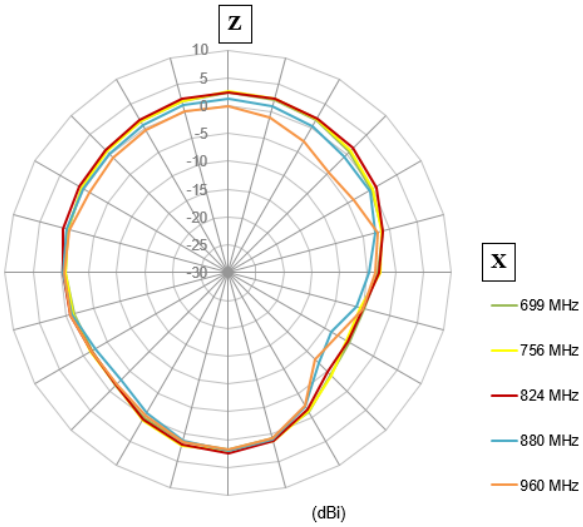


Figure 10. Z-X polar plot showing target bands

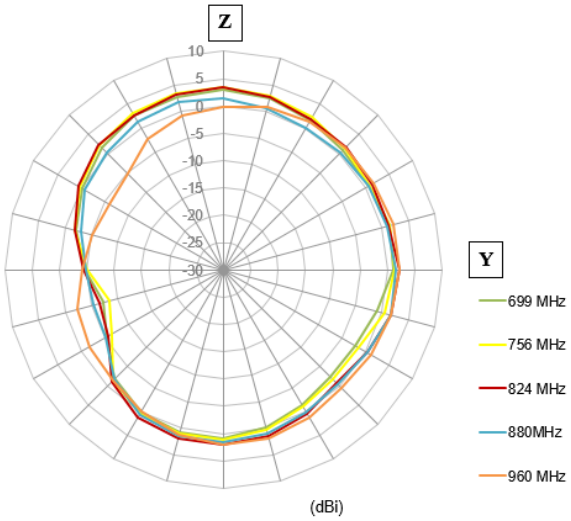


Figure 11. Z-Y polar plot showing target bands

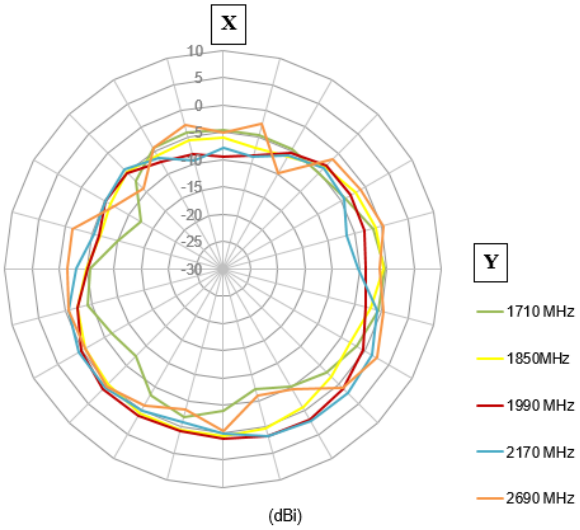


Figure 12. X-Y polar plots showing target bands

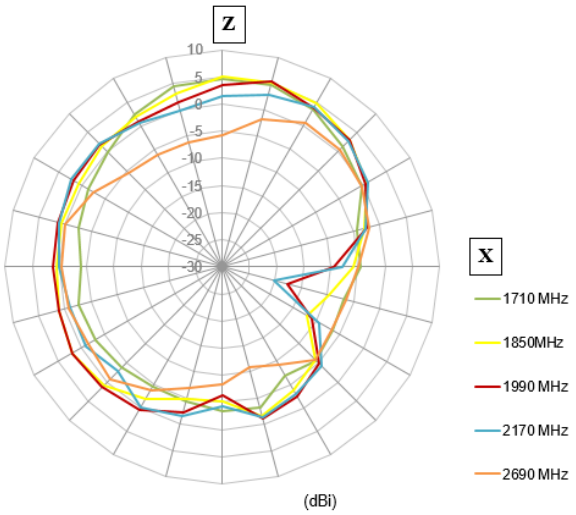


Figure 13. Z-X polar plots showing target bands

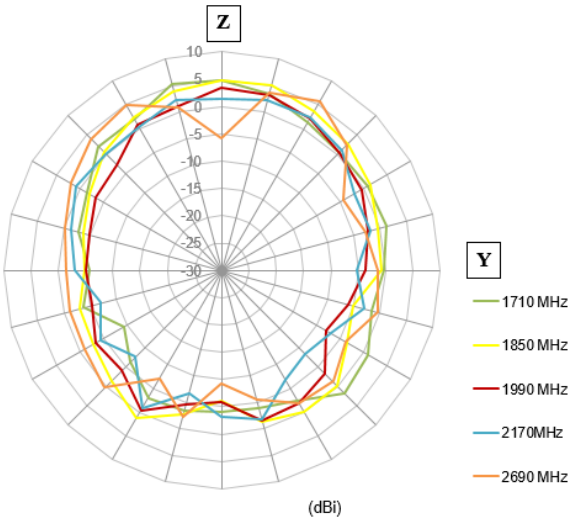


Figure 14. Z-Y polar plots showing target bands

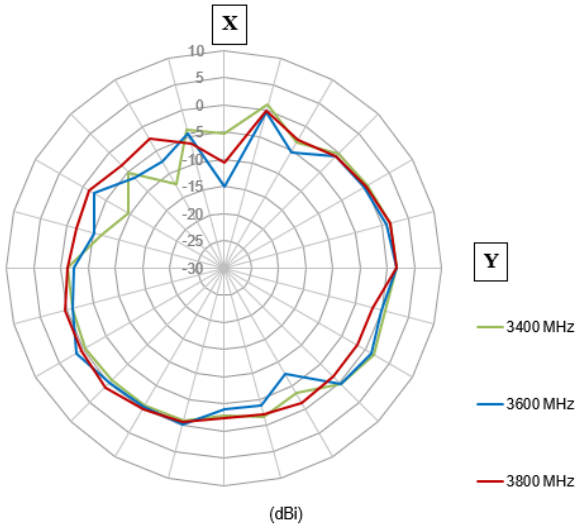


Figure 15. X-Y polar plots showing target bands

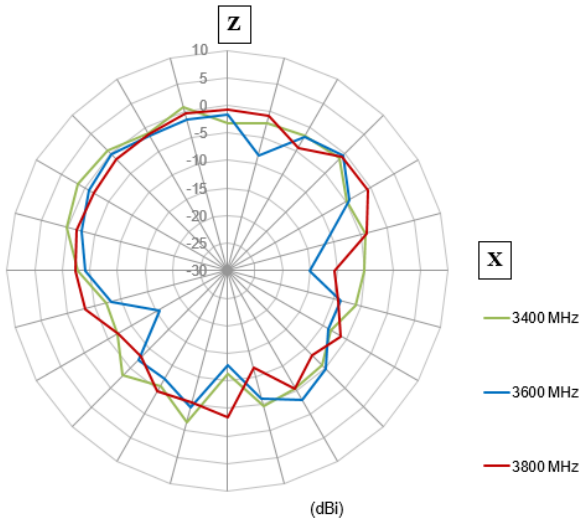


Figure 16. Z-X polar plot showing target bands

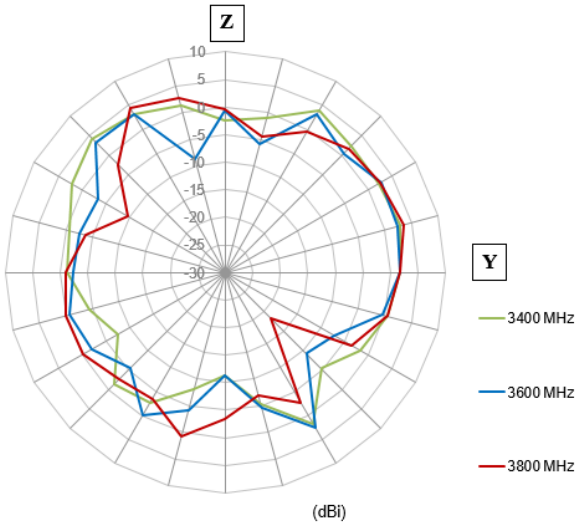


Figure 17. Z-Y polar plot showing target bands

5.2. 2D radiation patterns (Freq. range: 698 to 3800 MHz), Port 2

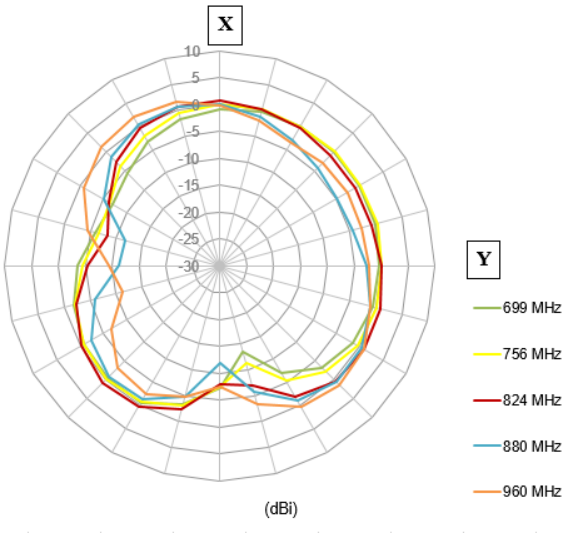


Figure 18. X-Y polar plots showing target bands

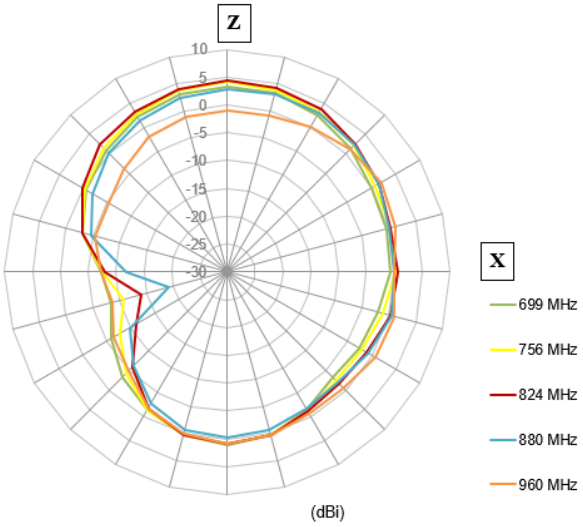


Figure 19. Z-X polar plots showing target bands

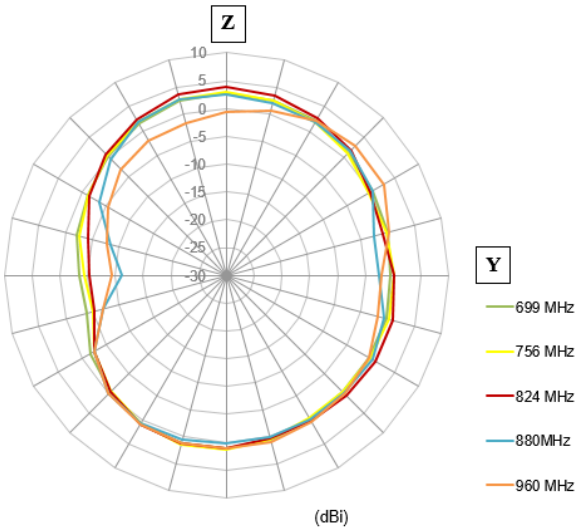


Figure 20. Z-Y polar plot showing target bands

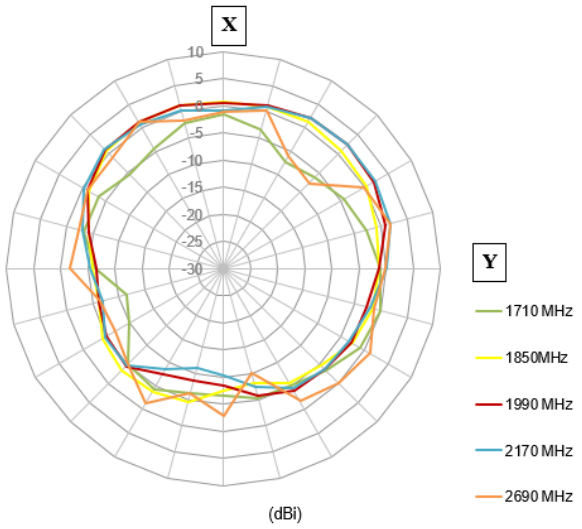


Figure 21. X-Y polar plot showing target bands

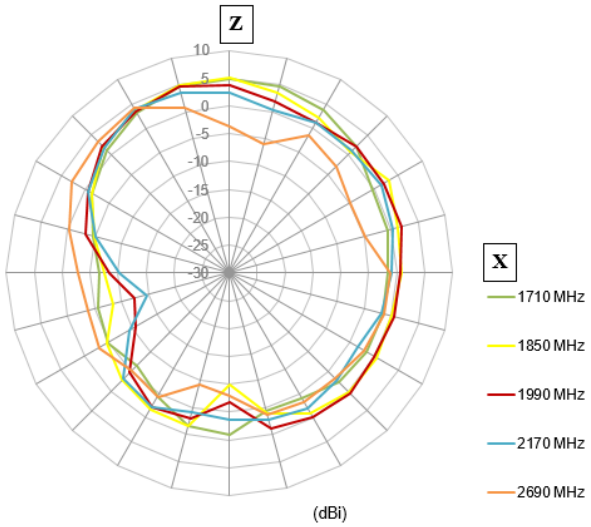


Figure 22. Z-X polar plot showing target bands

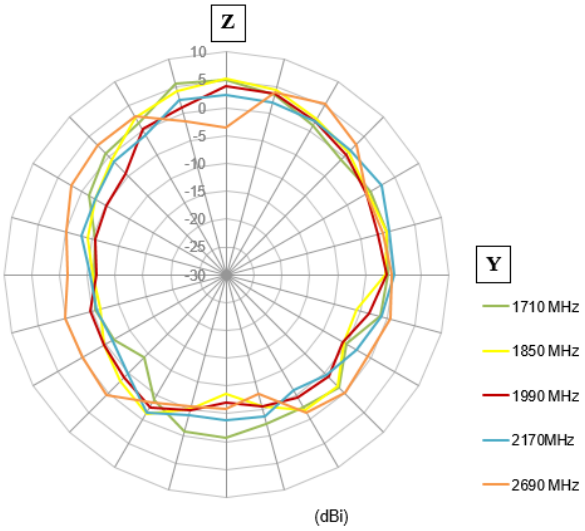


Figure 23. Z-Y polar plot showing target bands

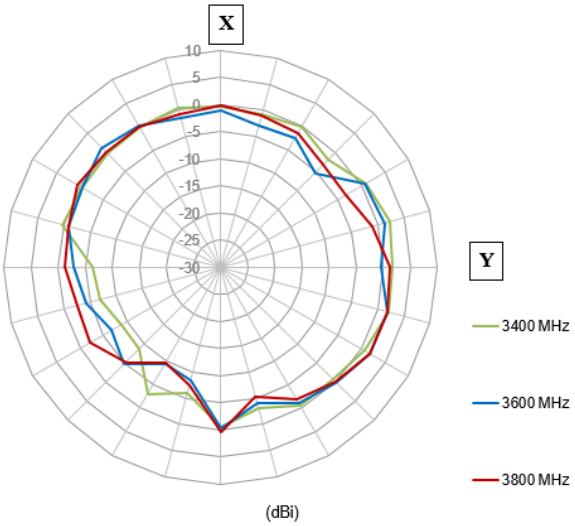


Figure 24. X-Y polar plot showing target bands

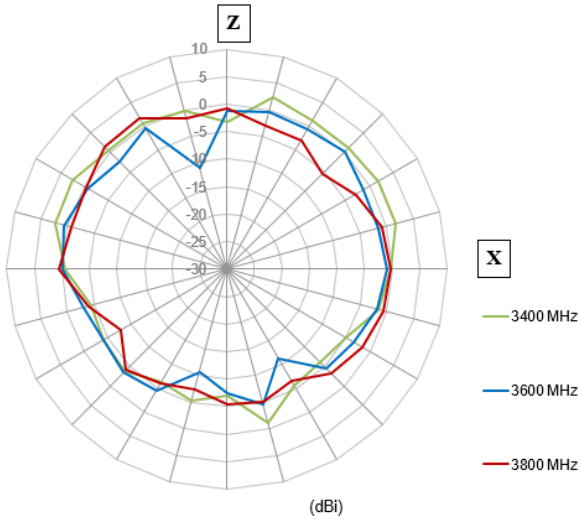


Figure 25. Z-X polar plot showing target bands

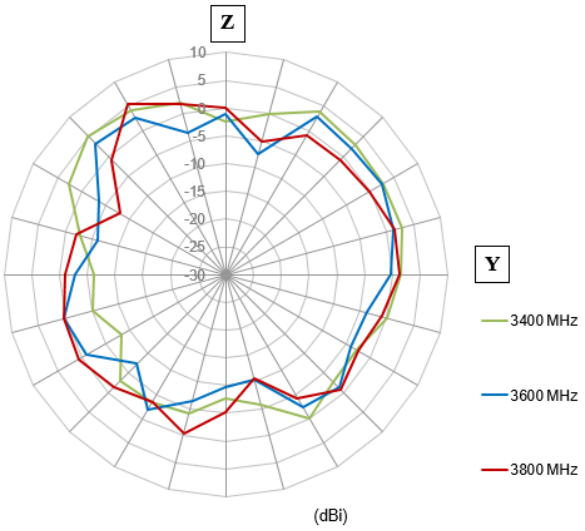
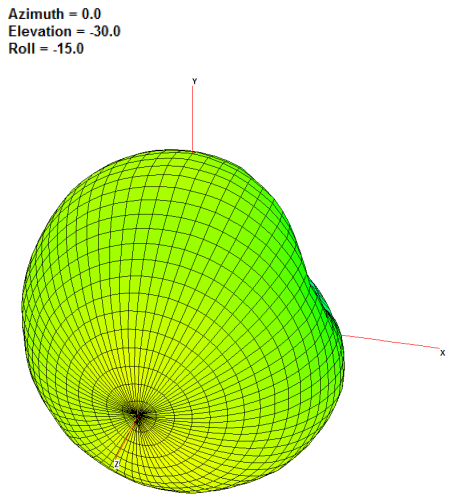


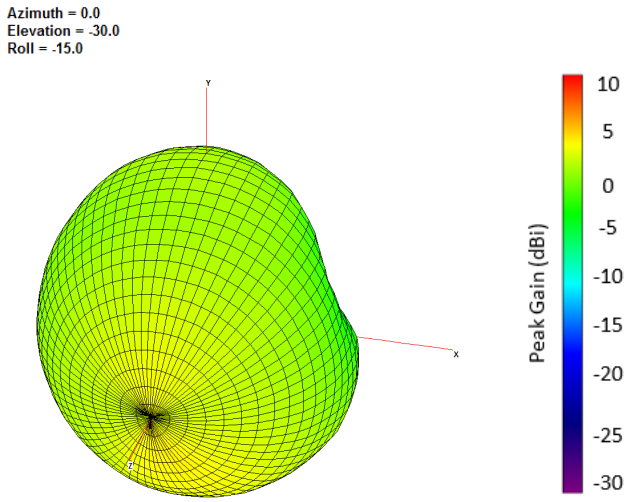
Figure 26. Z-Y polar plot showing target bands

6. 3D Radiation Patterns

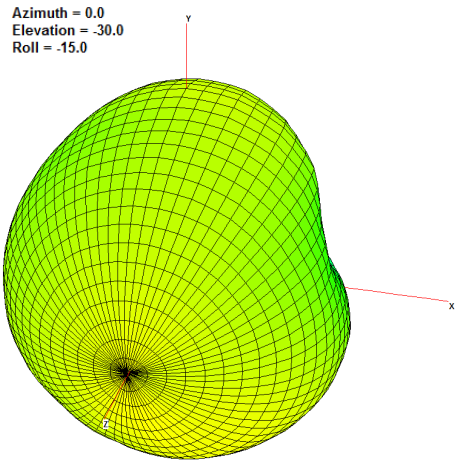
6.1 3D Radiation Patterns Port 1



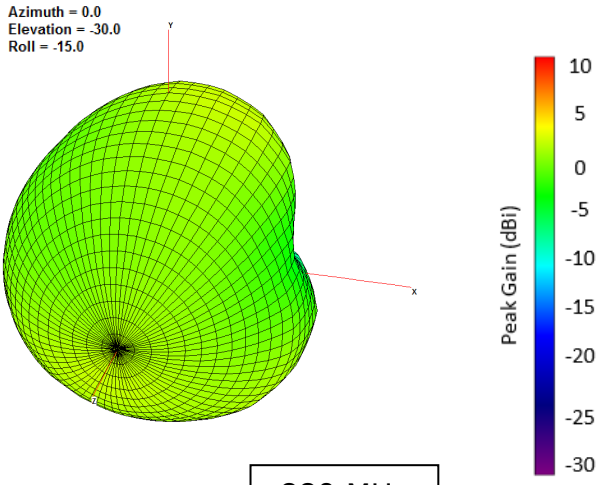
699MHz



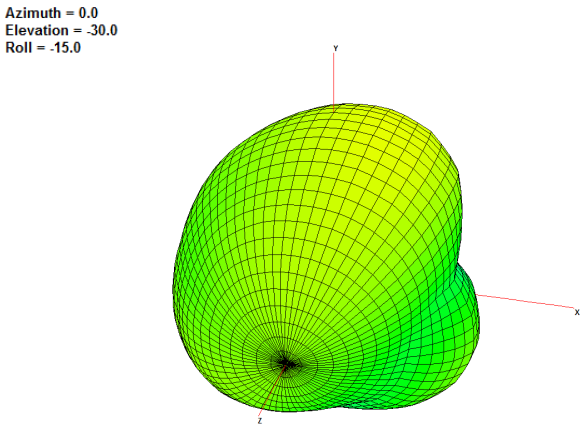
756MHz



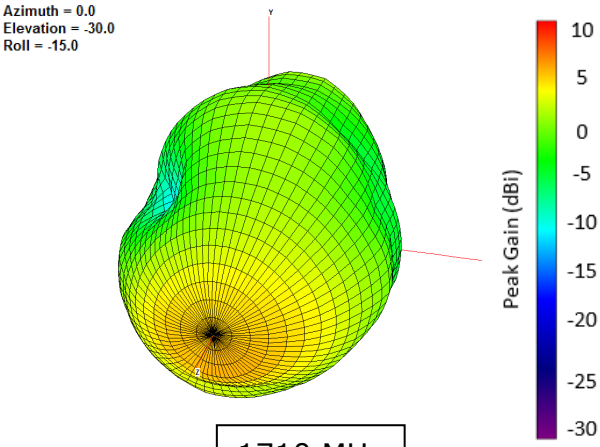
824MHz



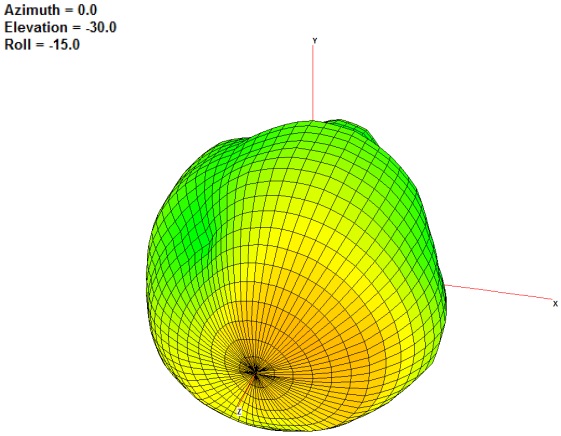
880 MHz



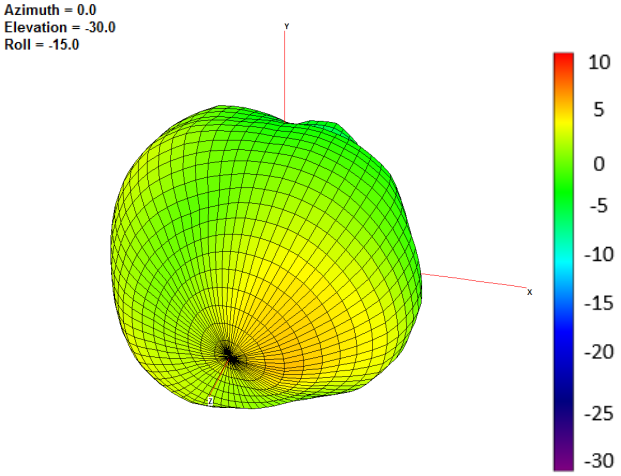
960 MHz



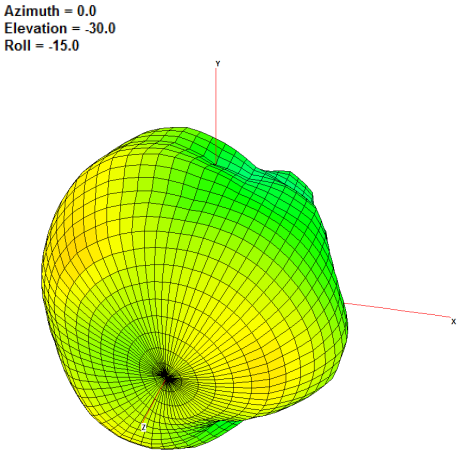
1710 MHz



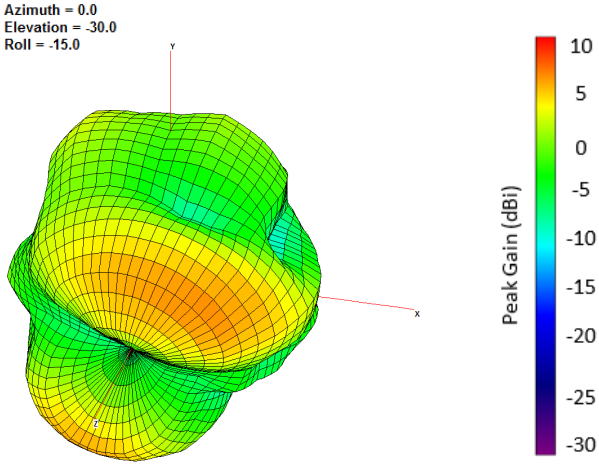
1850 MHz



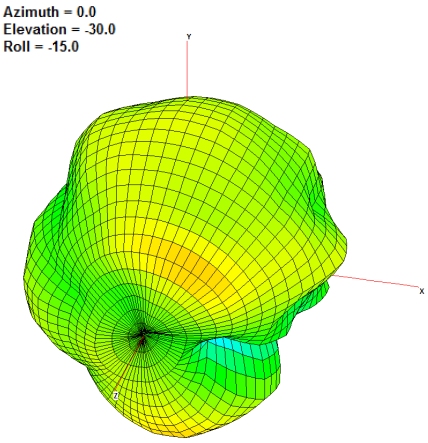
1990 MHz



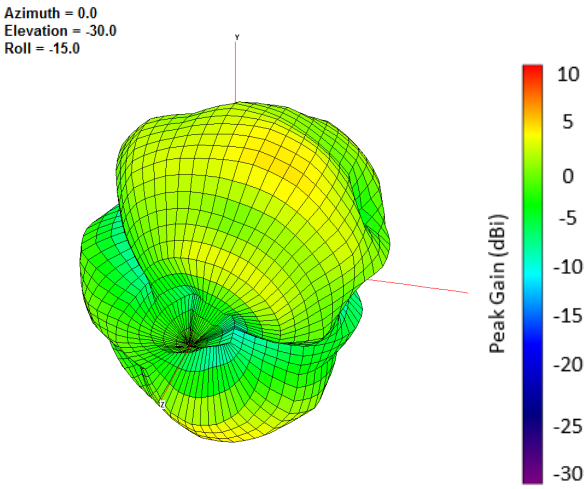
2170 MHz



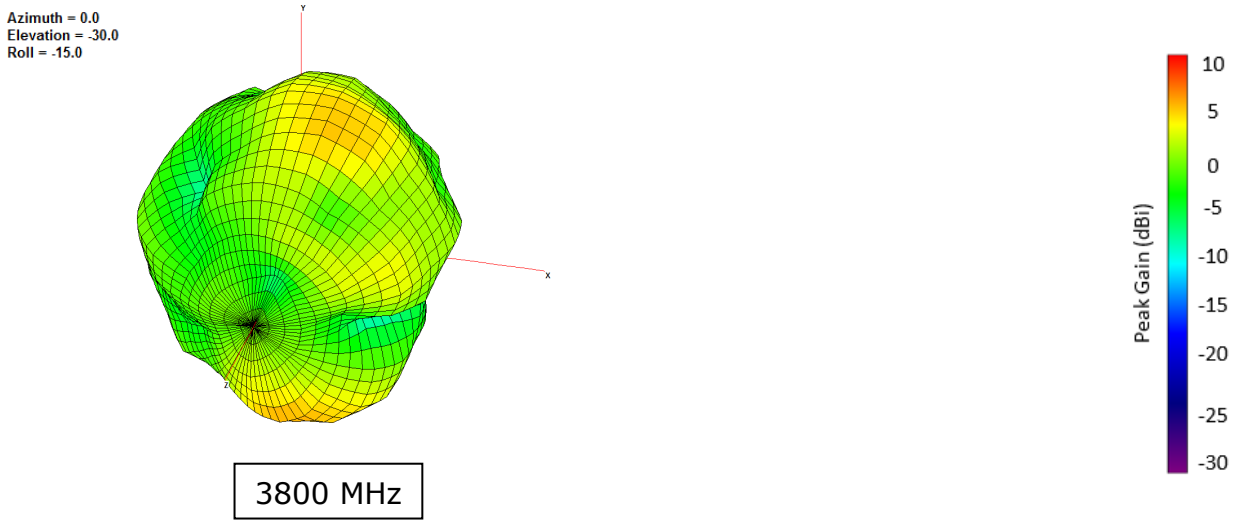
2690 MHz



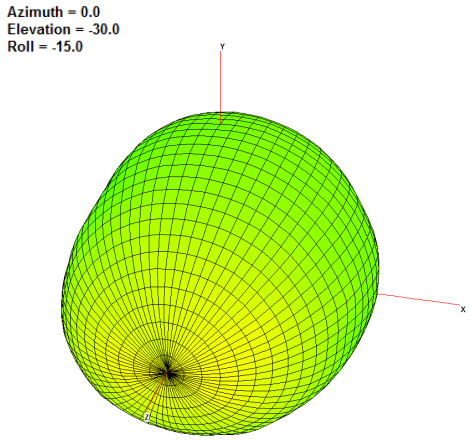
3400 MHz



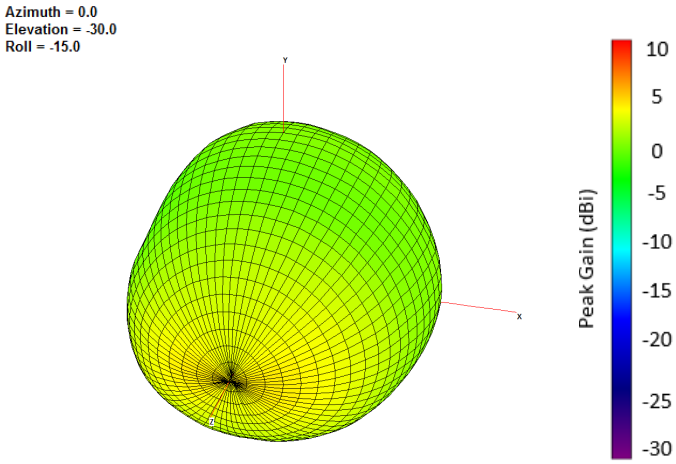
3600 MHz


Azimuth = 0.0
Elevation = -30.0
Roll = -15.0
Y
X
Z
Peak Gain (dBi)
10
5
0
-5
-10
-15
-20
-25
-30
3800 MHz

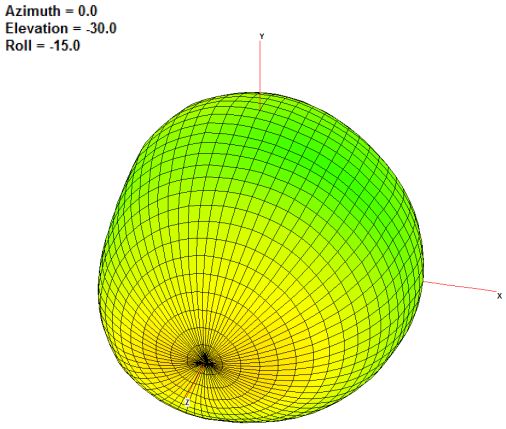
6.2 3D Radiation Patterns Port 2



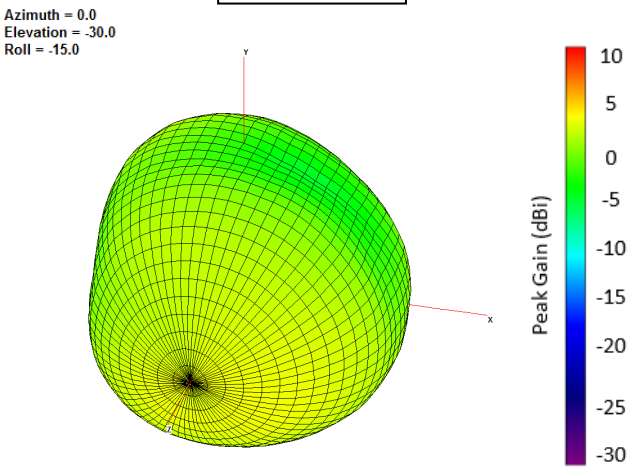
699 MHz



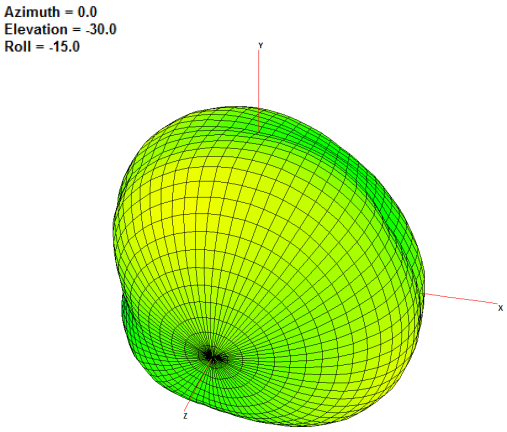
756 MHz



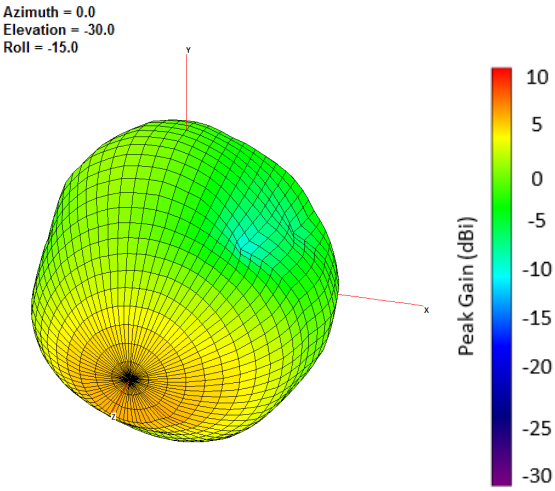
824 MHz



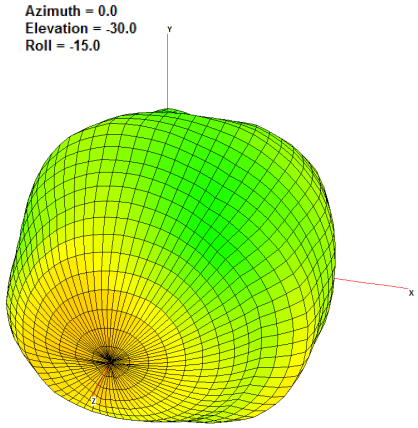
880 MHz



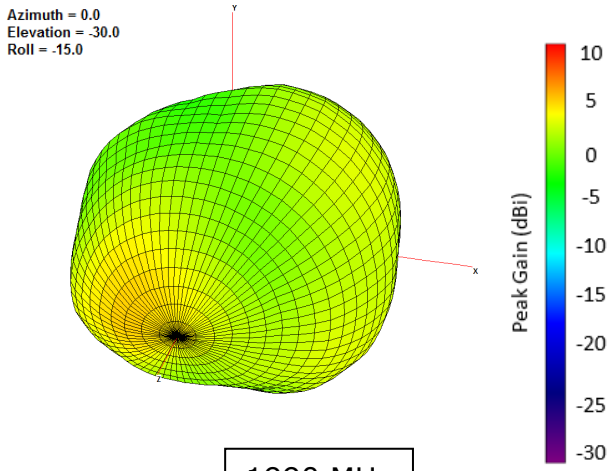
960 MHz



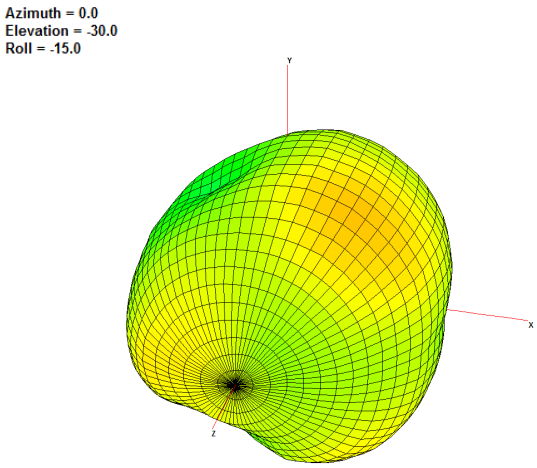
1710 MHz



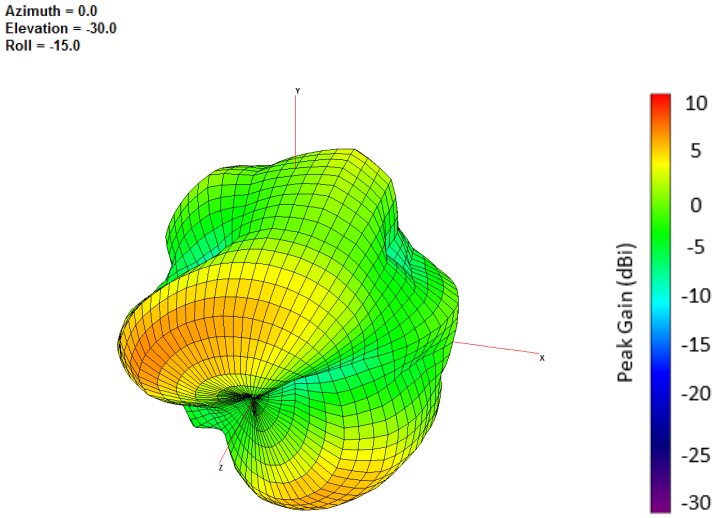
1850 MHz



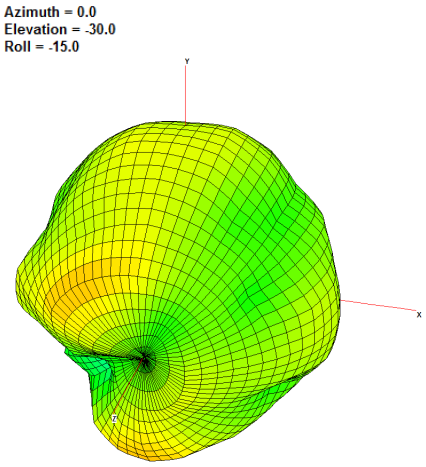
1990 MHz



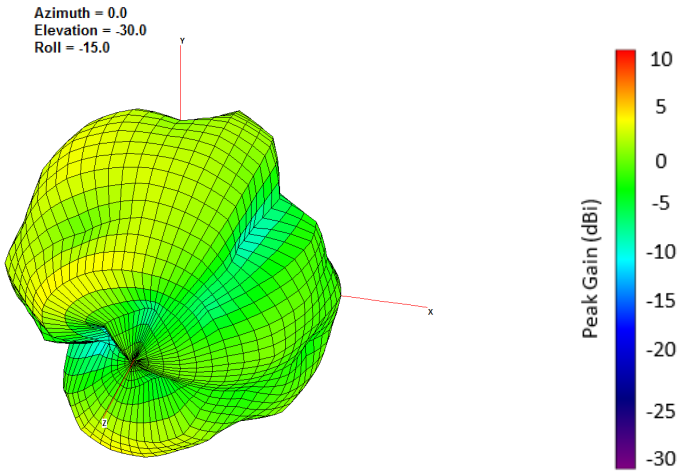
2170 MHz



2690 MHz



3400 MHz

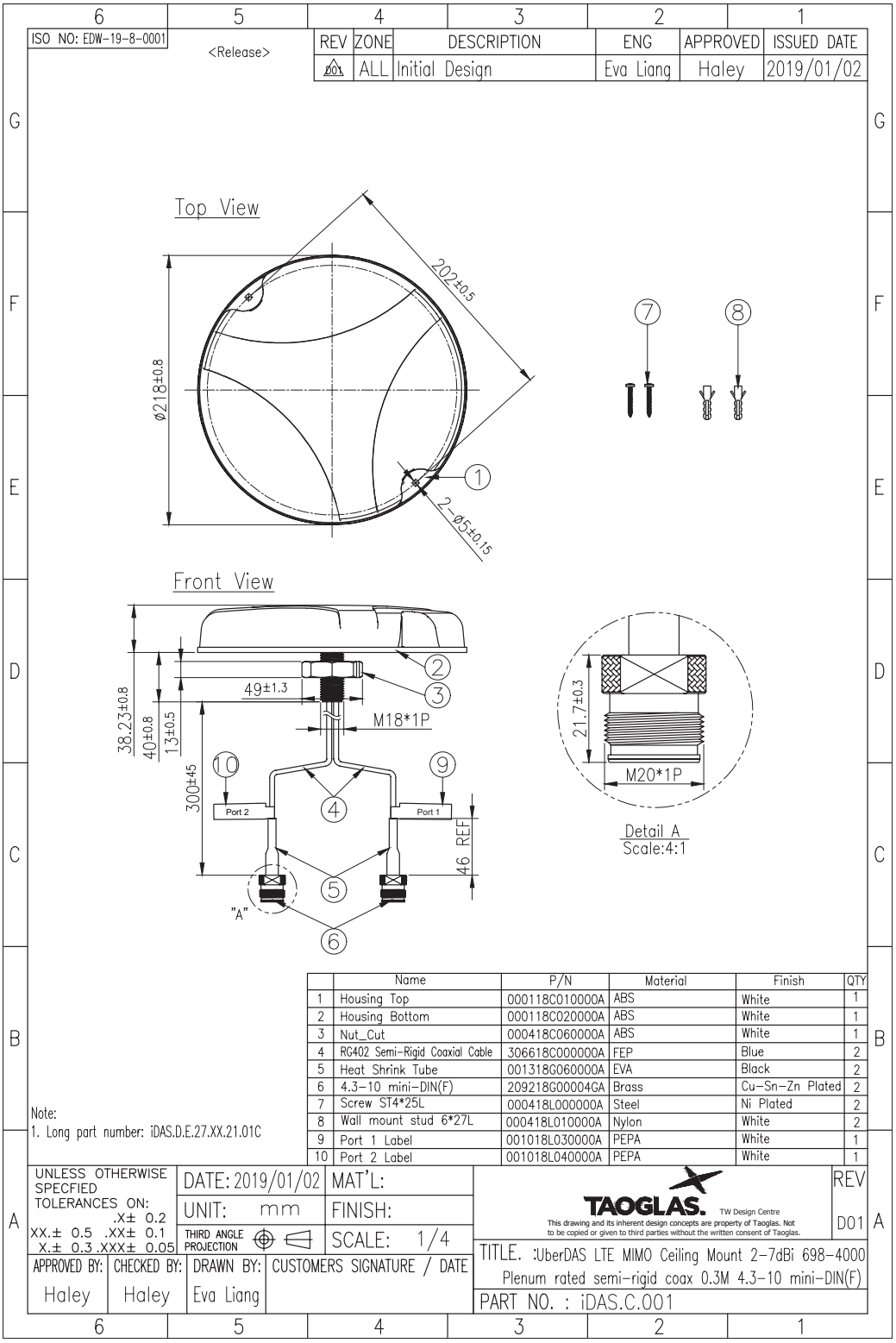


3600 MHz

Azimuth = 0.0
Elevation = -30.0
Roll = -15.0
Y
X
Z
Peak Gain (dBi)
10
5
0
-5
-10
-15
-20
-25
-30

3800 MHz

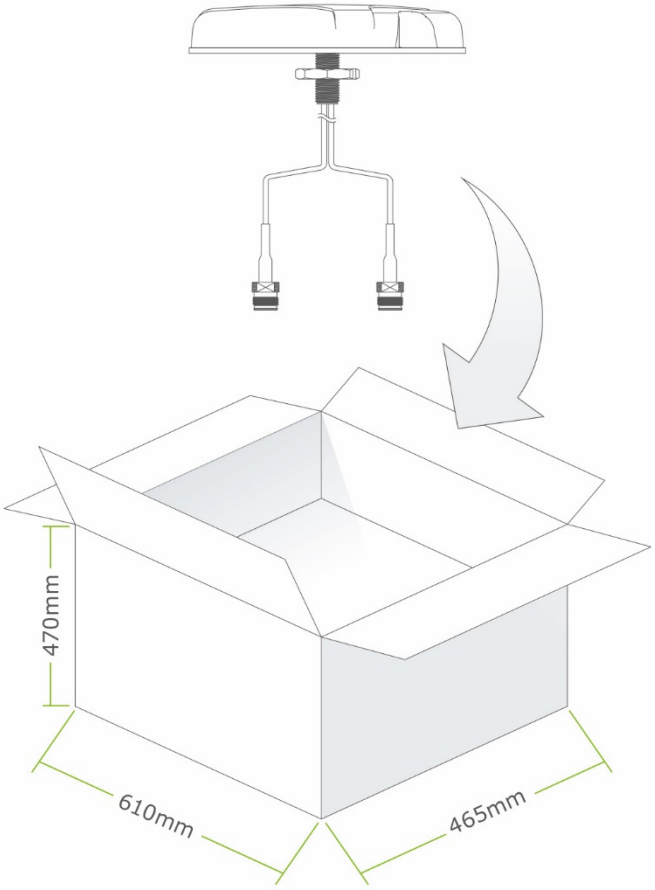
7. Mechanical Drawing (Unit: mm)



	Name	P/N	Material	Finish	QTY
1	Housing Top	000118C010000A	ABS	White	1
2	Housing Bottom	000118C020000A	ABS	White	1
3	Nut_Cut	000418C060000A	ABS	White	1
4	RG402 Semi-Rigid Coaxial Cable	306618C000000A	FEP	Blue	2
5	Heat Shrink Tube	001318G060000A	EVA	Black	2
6	4.3-10 mini-DIN(F)	209218G00004GA	Brass	Cu-Sn-Zn Plated	2
7	Screw ST4*25L	000418L000000A	Steel	Ni Plated	2
8	Wall mount stud 6*27L	000418L010000A	Nylon	White	2
9	Port 1 Label	001018L030000A	PEPA	White	1
10	Port 2 Label	001018L040000A	PEPA	White	1

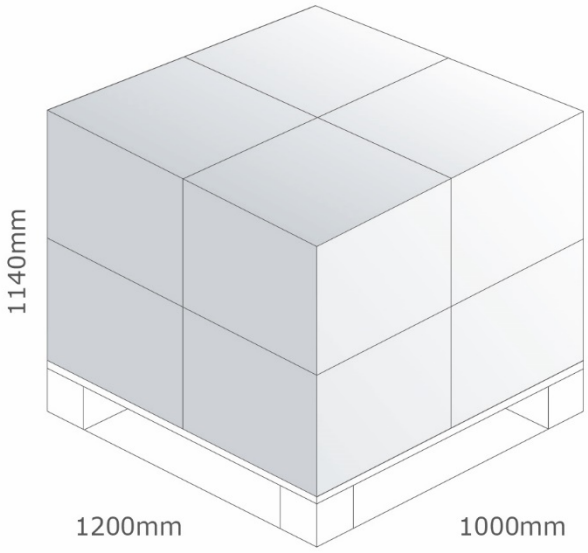
8. Packaging

1pcs iDAS.C.001 per Box
Dimensions - 220*115*225mm
Weight - 0.650Kg



20pcs iDAS.C.001 per Carton
Dimensions - 610*465*470mm
Weight - 15Kg

Pallet Dimensions:
1200mm*1000mm*1140mm
8 Cartons per Pallet
4 Cartons per Layer, 2 Layers



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Океан Электроники
Поставка электронных компонентов

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения **«JONHON»**, а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов **«FORSTAR»**.

AVIC JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).

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