TEST REPORT

No. I20N02754-OTA

for

Pointer Telocation Inc

Cello CANiQ LTE

Model Name: Cello CANiQ LTE

With

Hardware Version: B

Software Version: 38

FCC ID: RI7ME910C1WW

Issued Date: 2020-12-15

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of SAICT.

REPORT HISTORY

Report Number	Revision	Description	Issued Date
I20N02754-OTA	Rev.0	1st edition	2020-12-08
I20N02754-OTA	Rev.1	2nd edition	2020-12-09
I20N02754-OTA	Rev.2	3rd edition	2020-12-15

Note: the latest revision of the test report supersedes all previous version.

CONTENTS

1. Summary of Test Report

1.1. Test Items

Description	Cello CANiQ LTE
Model Name	Cello CANiQ LTE
Applicant's name	Pointer Telocation Inc
Manufacturer's Name	Pointer Telocation Inc

1.2. Test Standards

CTIA Certification Program, Test Plan for Wireless Device Over-the-Air Performance, Method of Measurement for Radiated RF Power and Receiver Performance V3.8.2

1.3. Test Result

Please refer to section "5. Test Results".

1.4. Testing Location

Address: Building G, Shenzhen International Innovation Center, No.1006 Shennan Road, Futian District, Shenzhen, Guangdong, P. R. China 518000

1.5. Project Data

Testing Start Date: 2020-10-22 Testing End Date: 2020-10-24

1.6. Signature

Zeng Lingde
(Prepared this test report)

Zhang Yunzhuan
(Reviewed this test report)

Cao Junfei
(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name:	Pointer Telocation Inc
Address:	Pointer Telocation 7751 NW 48th street suite 395 Doral Florida 33166 Doral USA
Contact	Itamar Gohary
Email	ItamarG@pointer.com
Telephone:	+972-52-3080558

2.2. Manufacturer Information

Company Name:	Pointer Telocation Inc
Address :	Pointer Telocation 7751 NW 48th street suite 395 Doral Florida 33166 Doral USA
Contact	Itamar Gohary
Email	ItamarG@pointer.com
Telephone:	+972-52-3080558

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	Cello CANiQ LTE
Model Name	Cello CANiQ LTE
FCC ID	RI7ME910C1WW
HW Version	B
SW Version	38
Frequency Band	LTE Cat-M1 Band 2/4/5/12/13
Power class	LTE Cat-M1 Band 2/4/5/12/13:3
Condition of EUT as received	No abnormality in appearance

Note: Photographs of EUT are shown in ANNEX A of this test report. Components list, please refer to documents of the manufacturer; it is also included in the original test record of Shenzhen Academy of Information and Communications Technology.

3.2. Bands And Protocols Supported By Each Antenna

Antenna Label	Bands and Protocols for Which the Antenna Is Connected to the Transmitter	Bands and Protocols for Which the Antenna Is Connected to the Primary Receiver and Is Always Active	Bands and Protocols for Which the Antenna Is Connected to the Primary Receiver and Is Dynamically Active	Bands and Protocols for Which the Antenna Is Connected to the Secondary Receiver and Is Always Active	Bands and Protocols for Which the Antenna Is Connected to the Secondary Receiver and Is Dynamically Active	Protocol/Band Pairs Which Cannot Be Used for Single Point Offset Tests Because the Antenna Tuning Changes
A	LTE Cat-M1 Band 2/4/5/12/13	LTE Cat-M1 Band 2/4/5/12/13	/	/	/	/

3.3. EUT Used For Each Test

IMEI	CATL/ Chamber used	Band(s)	Test Type(s)	Test Condition(s)
353081091409402	SAICT (Futian District)/ AMS-8923	LTE Cat-M1 Band 2/4/5/12/13	TRP&TIS	FS

3.4. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of Receipt
UT01aa	353081091409402	B	38	2020-10-22

*EUT ID: is used to identify the test sample in the lab internally.

3.5. Internal Identification of AE

AE ID*	Description
AE1	Agilent Triple Output DC Power Supply
AE2	Power Line

3.6. General Description

The Cello CANiQ LTE, supporting LTE Cat-M1 Band 2/4/5/12/13, manufactured by Pointer Telocation Inc, is a new product for Radiated RF Power and Receiver Performance testing. And it is powered by a DC power supply.

SAICT has verified that the performance of the tested device specified in section 3 of this test report is successfully evaluated according to the procedure and test methods as defined in type certification requirement listed in section 4 of this test report.

Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the Client.

4. Reference Documents

The following documents listed in this section are referred for testing.

Reference	Title	Version
CTIA	CTIA Certification Program, Test Plan for Wireless Device Over-the-Air Performance, Method of Measurement for Radiated RF Power and Receiver Performance	V3.8.2

5. Test Results

5.1. Testing Environment

Normal Temperature: 15-30℃

Relative Humidity: 30-60%

5.2. Summary of LTE Cat-M1 Total Radiated Power Test Results

The test results for the LTE Cat-M1 TRP testing are summarized below.

Band	Channel	UL RB Allocation	Frequency (MHz) [center of UL RB allocation]	FS		
				TRP(dBm)	NHPRP ±45° (dBm)	NHPRP ±30° (dBm)
BAND 2	18650	4 RB with RBstart=1	1851.04	22.3	20.9	19.5
	18900	4 RB with RBstart=25	1880.36	22.5	21.1	19.7
	19150	4 RB with RBstart=45	1908.96	22.3	20.9	19.5
BAND 4	20000	4 RB with RBstart=1	1711.04	20.7	19.4	18.0
	20175	4 RB with RBstart=25	1732.86	21.1	19.8	18.5
	20350	4 RB with RBstart=45	1753.96	21.2	19.9	18.5
BAND 5	20450	4 RB with RBstart=1	825.04	19.0	17.8	16.4
	20525	4 RB with RBstart=25	836.86	20.2	19.1	17.7
	20600	4 RB with RBstart=45	847.96	19.9	18.7	17.3
BAND 12	23035	1 RB with RBstart=0	699.34	19.2	18.1	16.5
	23095	1 RB with RBstart=13	707.68	19.6	18.3	17.0
	23155	1 RB with RBstart=24	715.66	19.7	18.5	17.1
BAND 13	23230	4 RB with RBstart=1	778.04	19.6	18.6	17.2
	23230	4 RB with RBstart=25	782.36	19.6	18.5	17.2
	23230	4 RB with RBstart=45	785.96	19.5	18.5	17.1

FS = Free Space

5.3. Summary of LTE Cat-M1 Total Isotropic Sensitivity Test Results

The test results for the LTE Cat-M1 C-TIS testing are summarized below.

Band	Channel	DL RB Allocation	Frequency (MHz) [center of DL RB allocation]	FS		
				TIS(dBm)	NHPIS ±45° (dBm)	NHPIS ±30° (dBm)
BAND 2	650	4 RB with RBstart=1	1931.04	-103.4	-102.0	-100.4
	900	4 RB with RBstart=31	1961.44	-102.2	-100.8	-99.2
	1150	4 RB with RBstart=43	1988.6	-105.7	-104.3	-102.9
BAND 4	2000	4 RB with RBstart=1	2111.04	-105.8	-104.5	-103.2
	2175	4 RB with RBstart=31	2133.94	-102.8	-101.5	-100.2
	2350	4 RB with RBstart=43	2153.6	-105.2	-103.9	-102.5
BAND 5	2450	4 RB with RBstart=1	870.04	-101.0	-99.8	-98.3
	2525	4 RB with RBstart=31	882.94	-100.4	-99.2	-97.8
	2600	4 RB with RBstart=43	892.6	-98.4	-97.3	-95.9
BAND 12	5035	4 RB with RBstart=0	729.61	-98.7	-97.4	-95.9
	5095	4 RB with RBstart=19	739.03	-97.0	-95.8	-94.3
	5155	4 RB with RBstart=19	745.03	-96.6	-95.3	-94.0
BAND 13	5230	4 RB with RBstart=1	747.04	-95.9	-94.7	-93.2
	5230	4 RB with RBstart=31	752.44	-95.3	-94.0	-92.5
	5230	4 RB with RBstart=43	754.6	-94.3	-93.0	-91.6

FS = Free Space

6. PASS/FAIL result

6.1. LTE Cat-M1 Minimum TRP Level Requirements for the Primary Mechanical Mode

Device Worn on Wrist (Yes/No)	Band	Power Class	Channel	UL RB Allocation	Frequency (MHz) [center of UL RB allocation]	FS		
						Limit (dBm)	Test Results (dBm)	Pass / Fail / Info
NO	BAND 2	3	18650	4 RB with RBstart=1	1851.04	TBD	22.3	I
			18900	4 RB with RBstart=25	1880.36		22.5	I
			19150	4 RB with RBstart=45	1908.96		22.3	I
	BAND 4	3	20000	4 RB with RBstart=1	1711.04	TBD	20.7	I
			20175	4 RB with RBstart=25	1732.86		21.1	I
			20350	4 RB with RBstart=45	1753.96		21.2	I
	BAND 5	3	20450	4 RB with RBstart=1	825.04	TBD	19.0	I
			20525	4 RB with RBstart=25	836.86		20.2	I
			20600	4 RB with RBstart=45	847.96		19.9	I
	BAND 12	3	23035	1 RB with RBstart=0	699.34	TBD	19.2	I
			23095	1 RB with RBstart=13	707.68		19.6	I
			23155	1 RB with RBstart=24	715.66		19.7	I
	BAND 13	3	23230	4 RB with RBstart=1	778.04	TBD	19.6	I
			23230	4 RB with RBstart=25	782.36		19.6	I
			23230	4 RB with RBstart=45	785.96		19.5	I

P=Pass

F=Fail

I= Information only

6.2. LTE Cat-M1 Maximum TIS Level Requirements for the Primary Mechanical Mode

Device Worn on Wrist (Yes/No)	Band	Channel	DL RB Allocation	Frequency (MHz) [center of DL RB allocation]	FS		
					Limit (dBm)	Test Results (dBm)	Pass / Fail / Info
NO	BAND 2	650	4 RB with RBstart=1	1931.04	TBD	-103.4	I
		900	4 RB with RBstart=31	1961.44		-102.2	I
		1150	4 RB with RBstart=43	1988.6		-105.7	I
	BAND 4	2000	4 RB with RBstart=1	2111.04	TBD	-105.8	I
		2175	4 RB with RBstart=31	2133.94		-102.8	I
		2350	4 RB with RBstart=43	2153.6		-105.2	I
	BAND 5	2450	4 RB with RBstart=1	870.04	TBD	-101.0	I
		2525	4 RB with RBstart=31	882.94		-100.4	I
		2600	4 RB with RBstart=43	892.6		-98.4	I
	BAND 12	5035	4 RB with RBstart=0	729.61	TBD	-98.7	I
		5095	4 RB with RBstart=19	739.03		-97.0	I
		5155	4 RB with RBstart=19	745.03		-96.6	I
	BAND 13	5230	4 RB with RBstart=1	747.04	TBD	-95.9	I
		5230	4 RB with RBstart=31	752.44		-95.3	I
		5230	4 RB with RBstart=43	754.6		-94.3	I

P=Pass
F=Fail
I= Information only

7. Test Equipments Utilized

Name of test equipment	Model	Manufacturer	Cal. Due Date	Cal. Interval
Pattern Measurement Software	EMQuest™ EMQ-100	ETS-Lindgren	NA	NA
Anechoic Chamber	AMS8923 SN: Euroshield-CT001058-1202	ETS-Lindgren	November 13, 2020	One year
Spectrum Analyzer	E4445A SN: MY46181824	ETS-Lindgren	December 12, 2020	One year
Base Station Simulator	MT8821C SN: 6201563766	Anritsu	January 14, 2021	One year
Measurement Antenna	EMCO 3165-01	ETS-Lindgren	Included in Anechoic Chamber Calibration	Included in Anechoic Chamber Calibration
Communication Antennas	EMCO 3102	ETS-Lindgren	NA	NA
EMCenter	EM Control: 7001-002,7001-003 EM Switch:7006-001	ETS-Lindgren	NA	NA

8. Measurement Uncertainty

8.1 Measurement Uncertainty For TRP

The expanded measurement uncertainties (k = 2) for the TRP and NHPRP results reported above have been determined to be as follows:

Band	Free-Space	Phantom Head and Hand	Hand phantom only
LTE 700	1.20 dB	1.78 dB	1.22 dB
CELL	1.06 dB	1.69 dB	1.08 dB
AWS-1 Tx	1.21 dB	1.87 dB	1.23 dB
PCS	1.16 dB	1.76 dB	1.18 dB
LTE 41	1.34 dB	1.93 dB	1.36 dB

8.2 Measurement Uncertainty For TIS

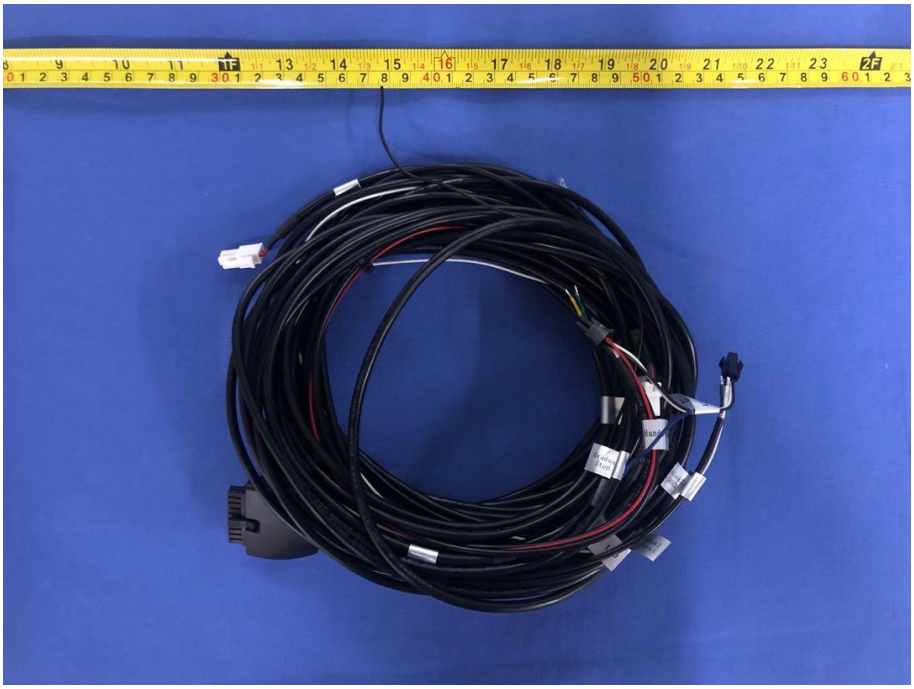
The expanded measurement uncertainties (k = 2) for the TIS and NHPIS results reported above have been determined to be as follows:

Band	Free-Space	Phantom Head and Hand	Hand phantom only
LTE 700	1.71 dB	2.13 dB	1.76 dB
CELL	1.62 dB	2.05 dB	1.67 dB
PCS	1.69 dB	2.11 dB	1.74 dB
AWS-1 Rx	1.65 dB	2.10 dB	1.71 dB
LTE 41	1.81 dB	2.27 dB	1.86 dB

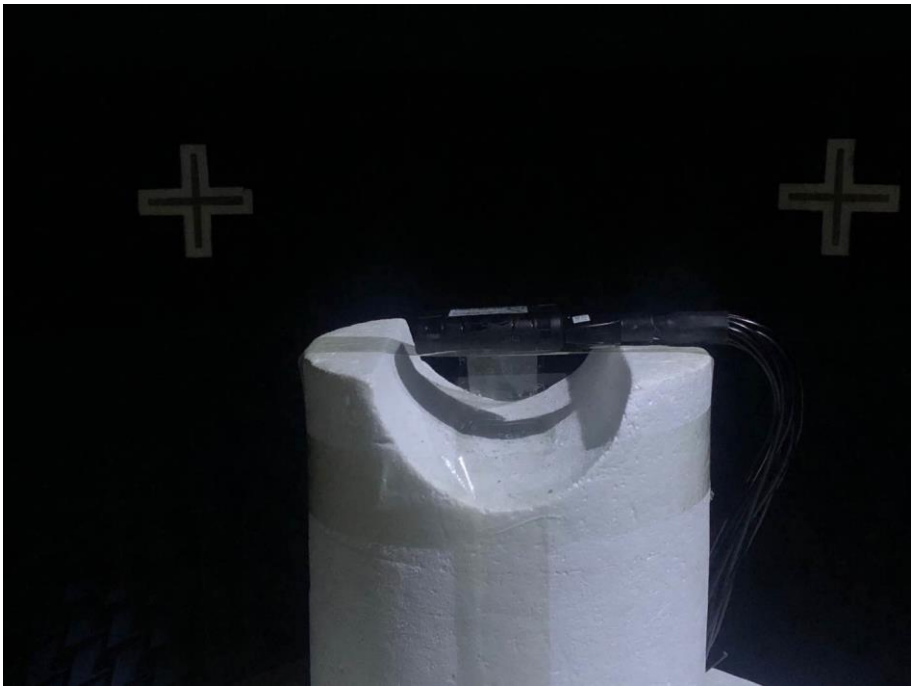
ANNEX A: EUT photographs

Pic 1 photo of EUT

Pic 2 photo of EUT



Pic 3 photo of the power line

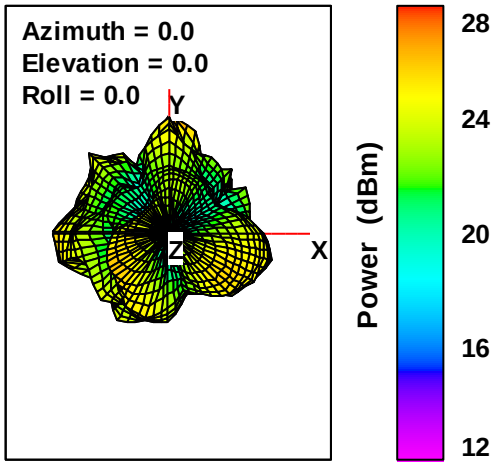


Pic 4 Typical Phone Mounting of Customer Phone

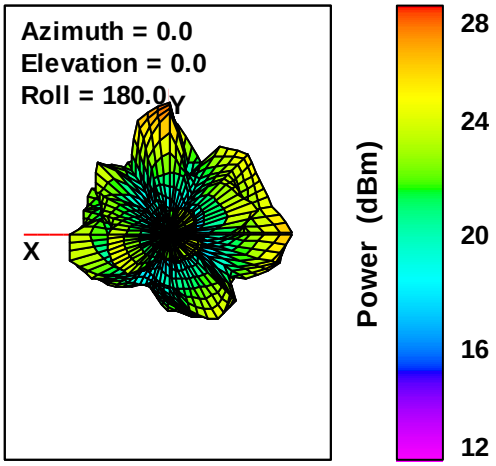
ANNEX B: Detailed 3D Pattern Plots Results

Annex B.1 3D Pattern Plots of TRP test

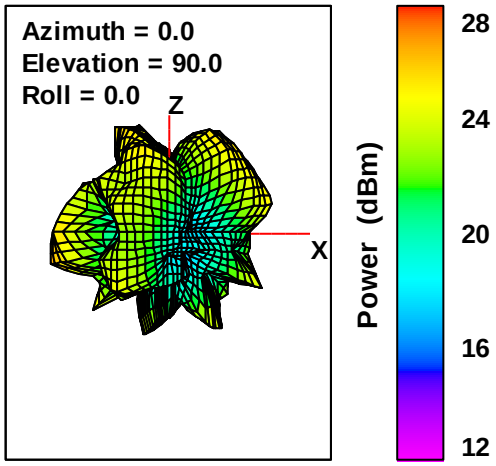
Total EIRP, Top View



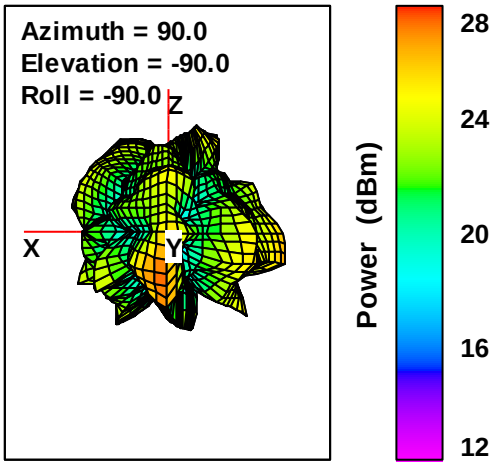
Total EIRP, Bottom View



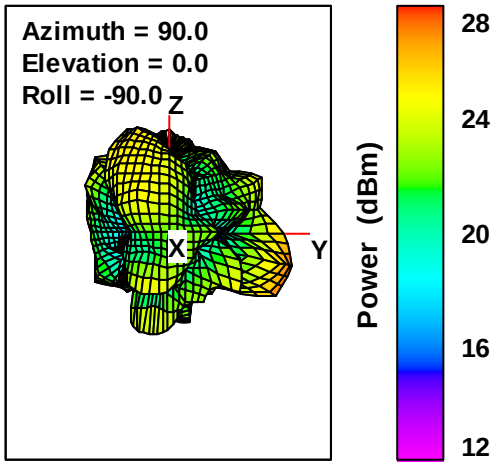
Total EIRP, Right Side View



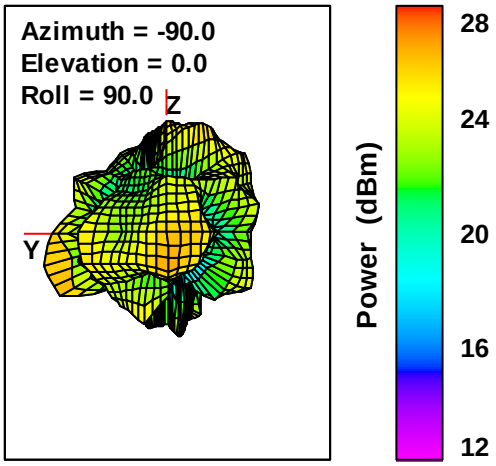
Total EIRP, Left Side View



Total EIRP, Front Face View

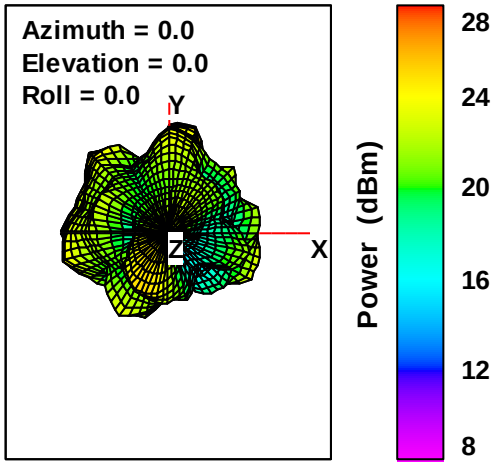


Total EIRP, Back Face View

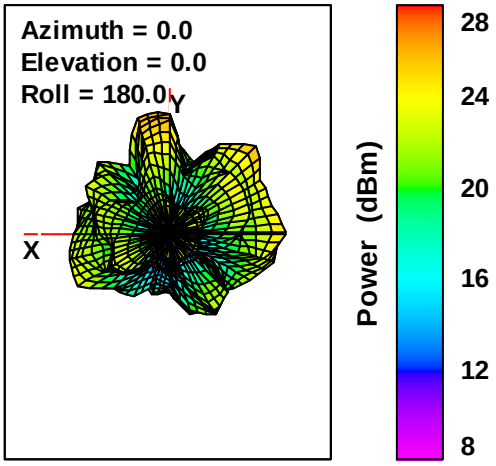


Plot 1. LTE Cat-M1 Band 2 FS Total EIRP, 1880.36 MHz

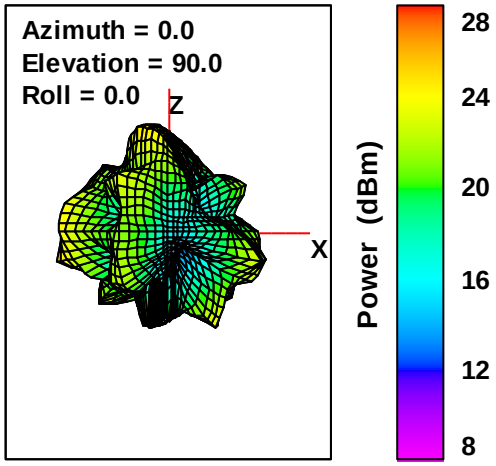
Total EIRP, Top View



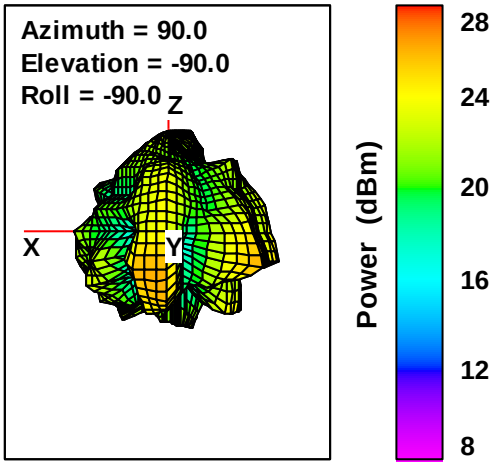
Total EIRP, Bottom View



Total EIRP, Right Side View



Total EIRP, Left Side View



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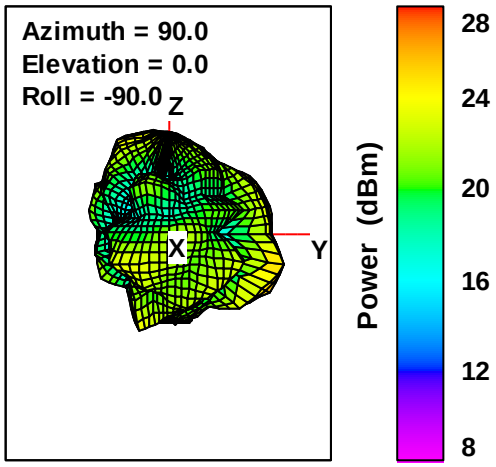
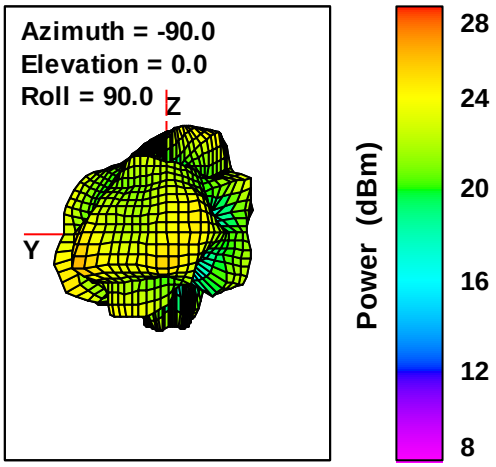
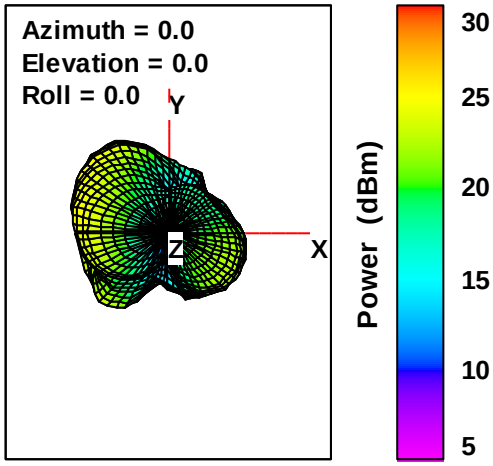


Total EIRP, Back Face View

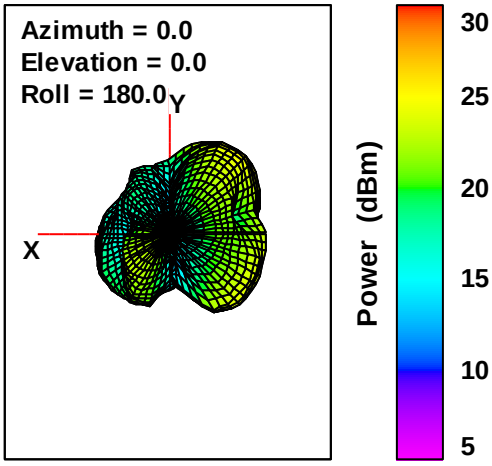


Plot 2. LTE Cat-M1 Band 4 FS Total EIRP, 1732.86 MHz

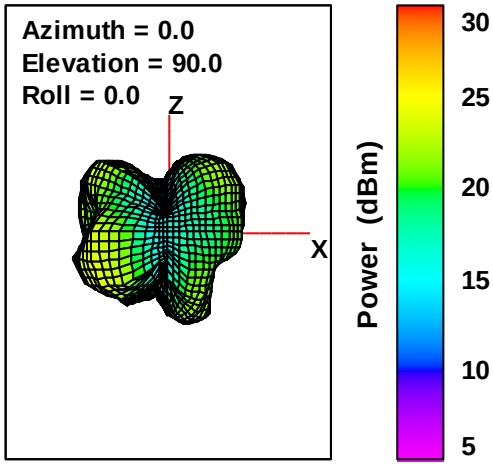
Total EIRP, Top View



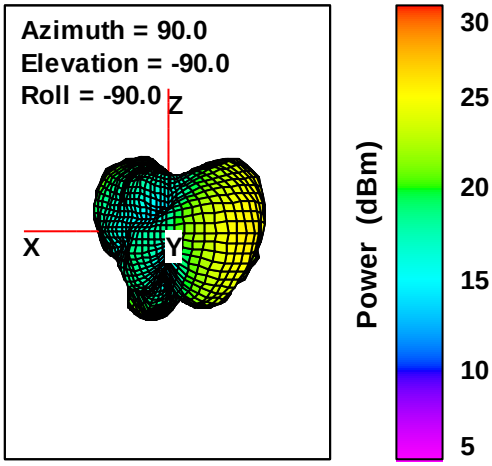
Total EIRP, Bottom View



Total EIRP, Right Side View



Total EIRP, Left Side View



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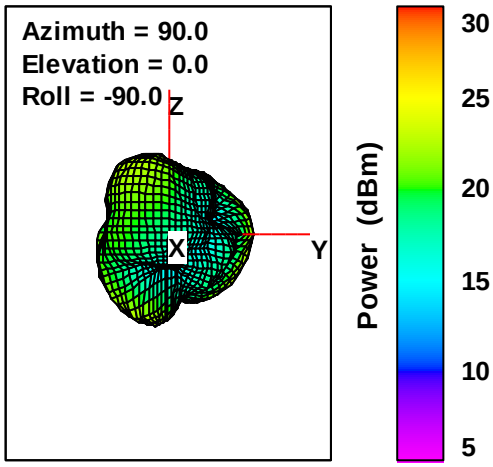
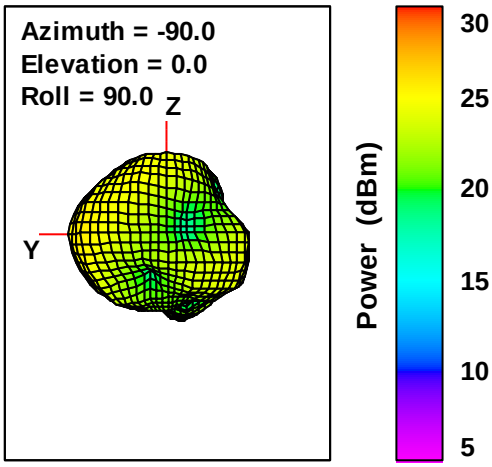
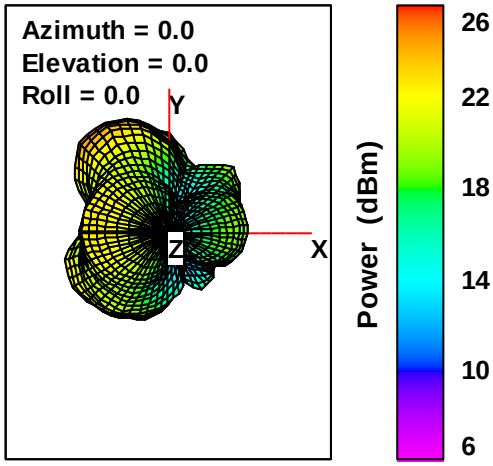


Total EIRP, Back Face View

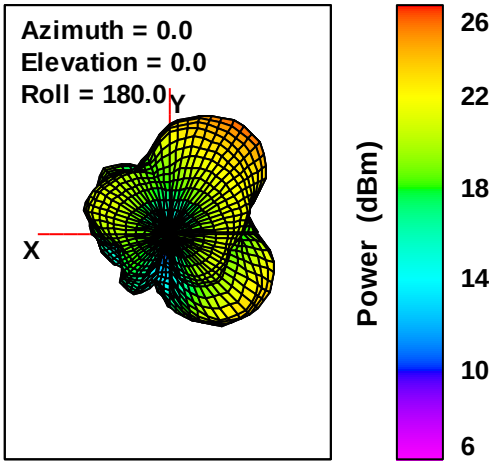


Plot 3. LTE Cat-M1 Band 5 FS Total EIRP, 836.86MHz

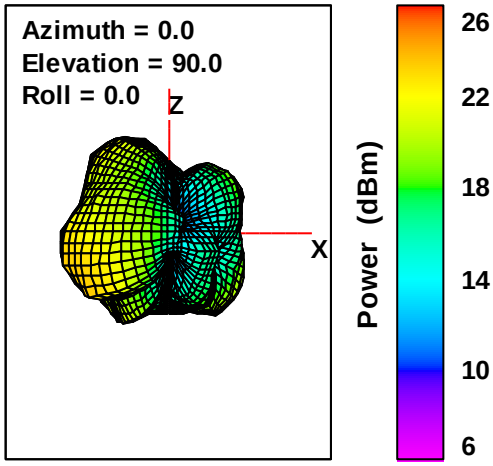
Total EIRP, Top View



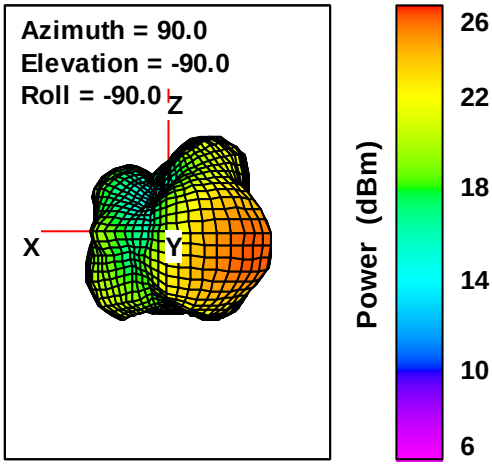
Total EIRP, Bottom View



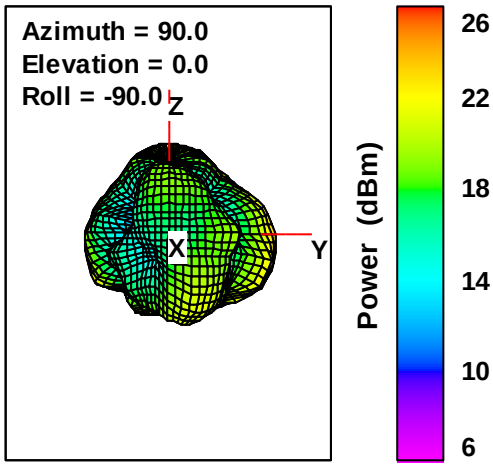
Total EIRP, Right Side View



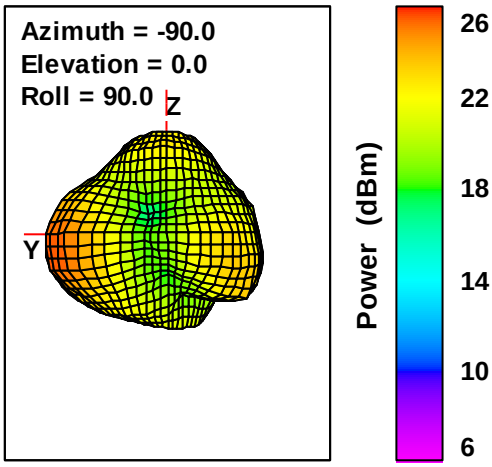
Total EIRP, Left Side View



Total EIRP, Front Face View

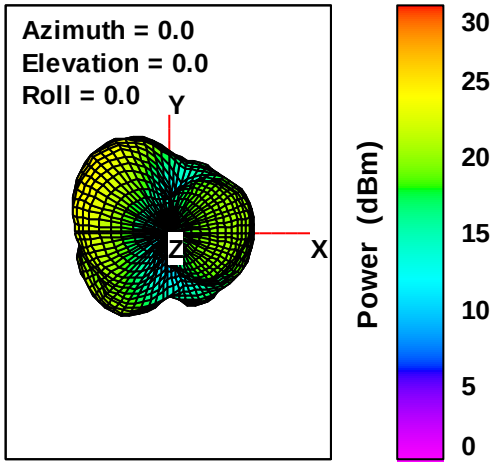


Total EIRP, Back Face View

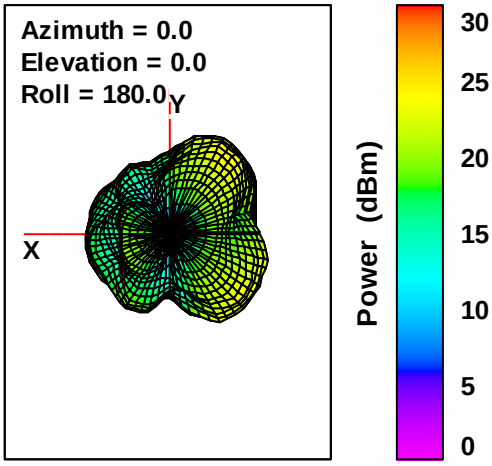


Plot 4. LTE Cat-M1 Band 12 FS Total EIRP, 707.68 MHz

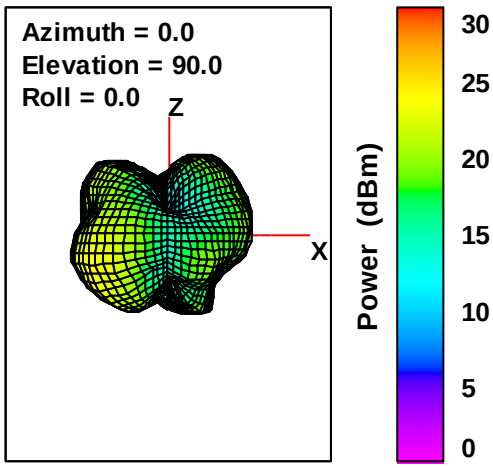
Total EIRP, Top View



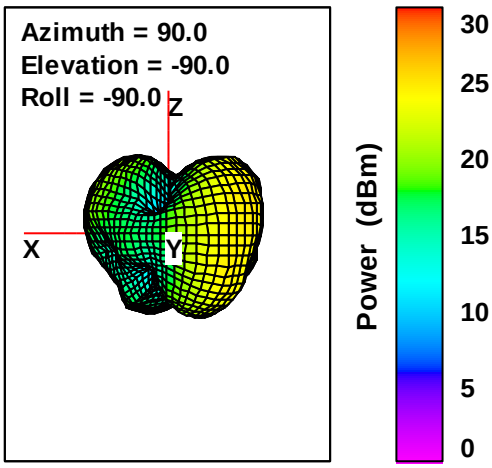
Total EIRP, Bottom View



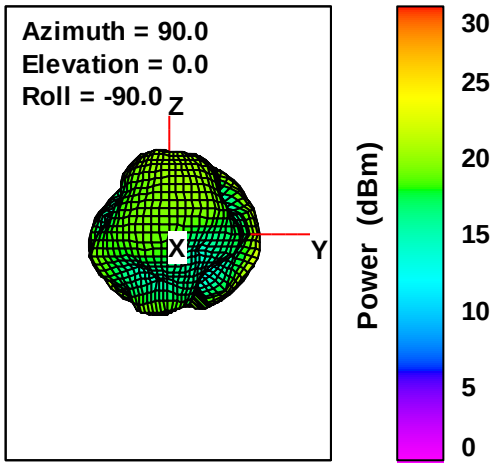
Total EIRP, Right Side View



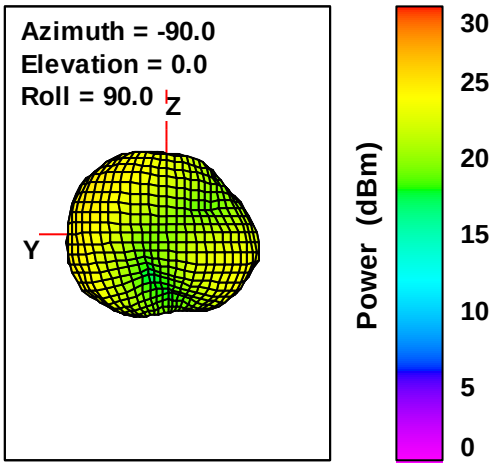
Total EIRP, Left Side View



Total EIRP, Front Face View



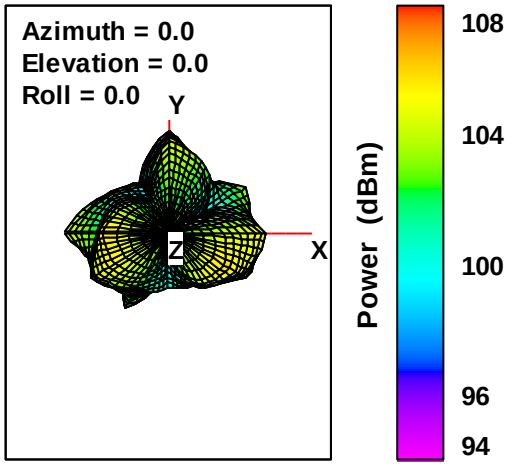
Total EIRP, Back Face View



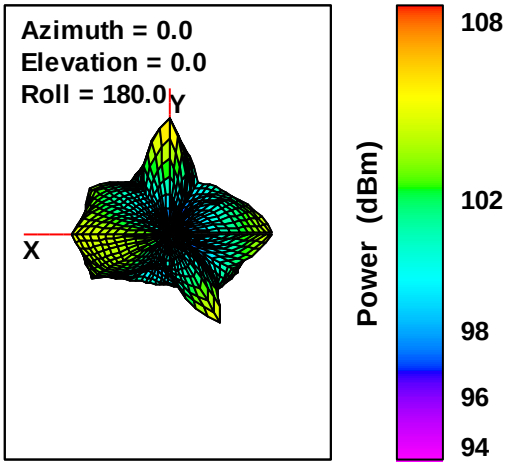
Plot 5. LTE Cat-M1 Band 13 FS Total EIRP, 782.36 MHz

Annex B.2 3D Pattern Plots of TIS test

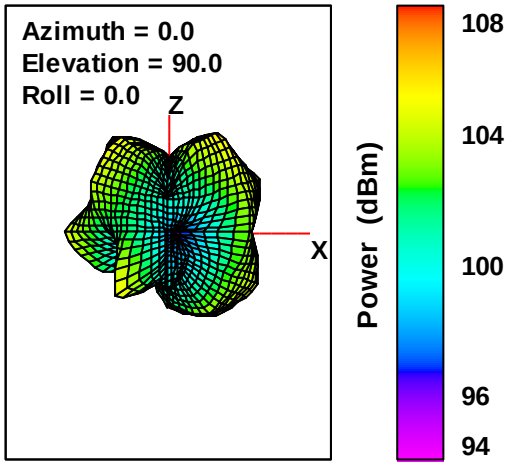
Total EIS, Top View



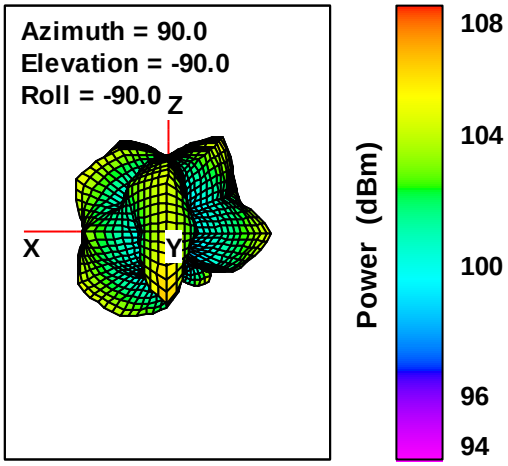
Total EIS, Bottom View



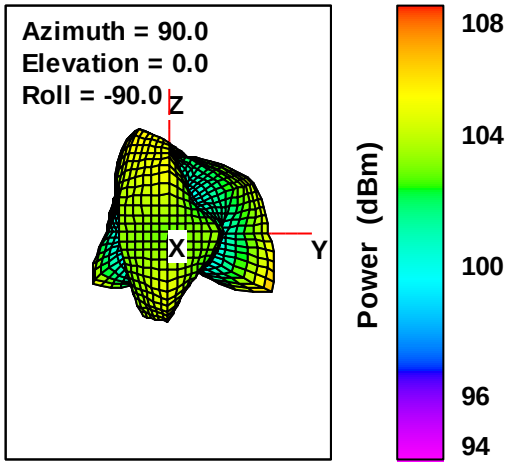
Total EIS, Right Side View



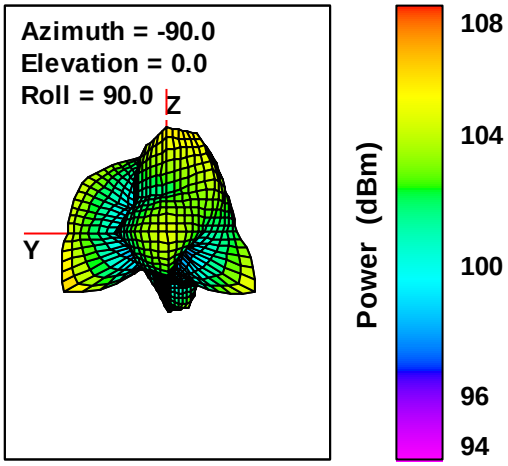
Total EIS, Left Side View



Total EIS, Front Face View

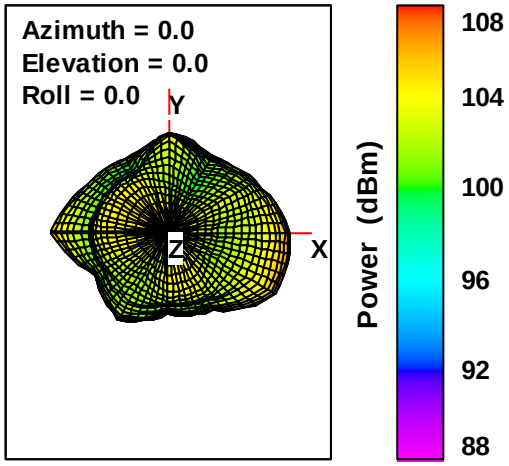


Total EIS, Back Face View

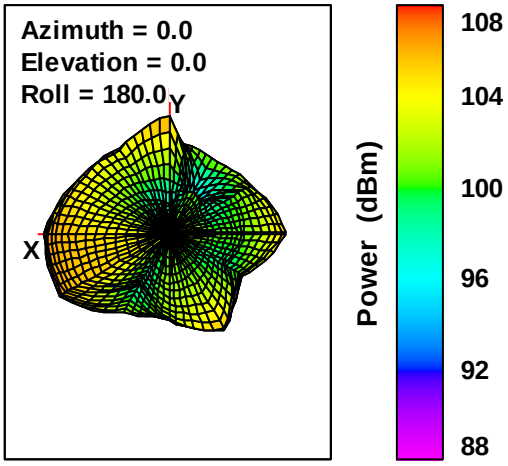


Plot 6. LTE Cat-M1 Band 2 FS Total EIS, 1961.44 MHz

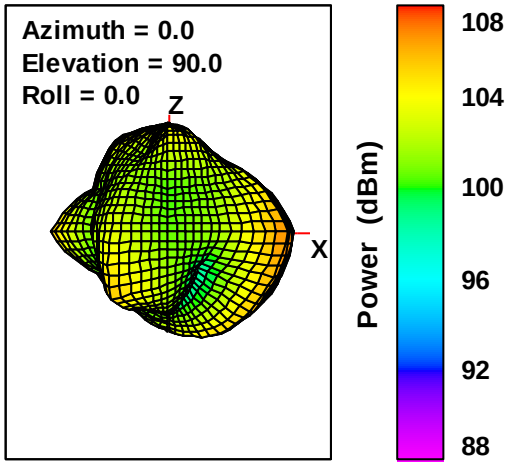
Total EIS, Top View



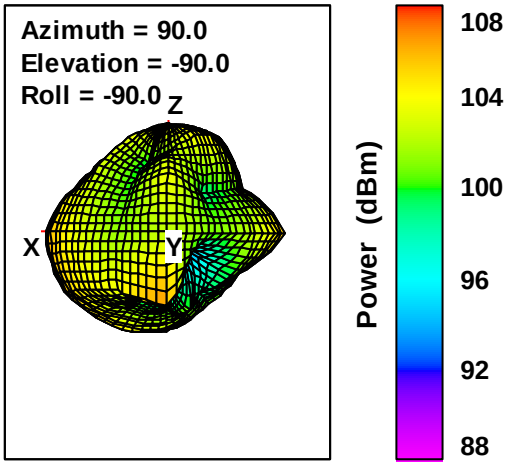
Total EIS, Bottom View



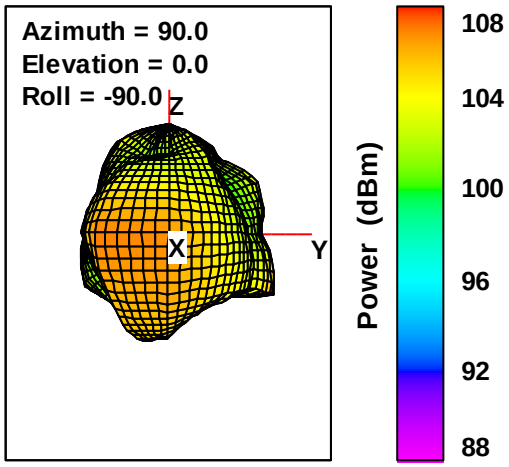
Total EIS, Right Side View



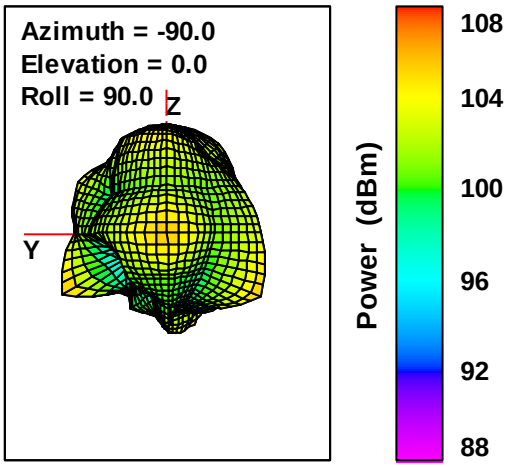
Total EIS, Left Side View



Total EIS, Front Face View

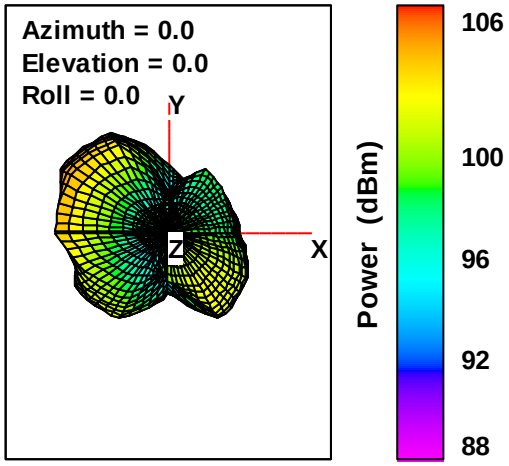


Total EIS, Back Face View

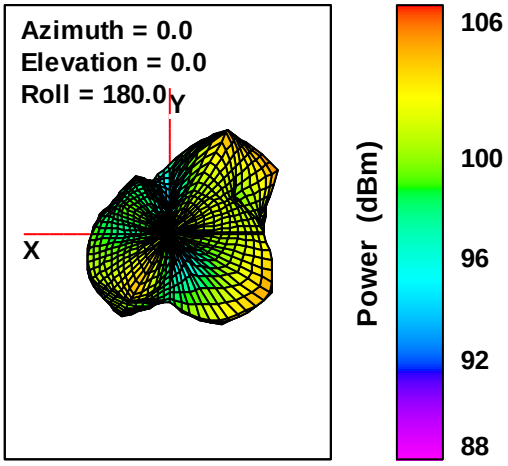


Plot 7. LTE Cat-M1 Band 4 FS Total EIS, 2133.94 MHz

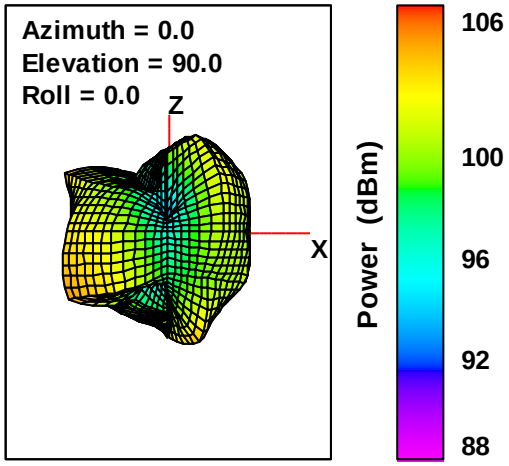
Total EIS, Top View



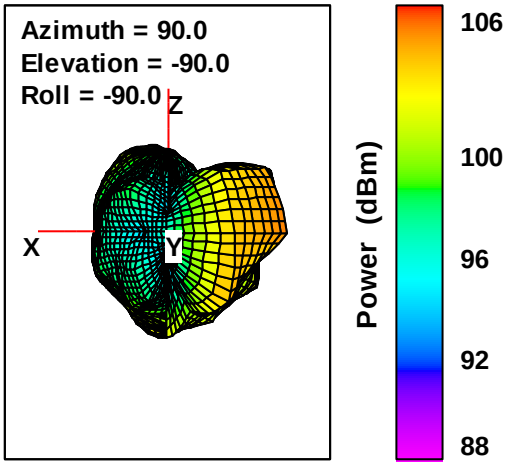
Total EIS, Bottom View



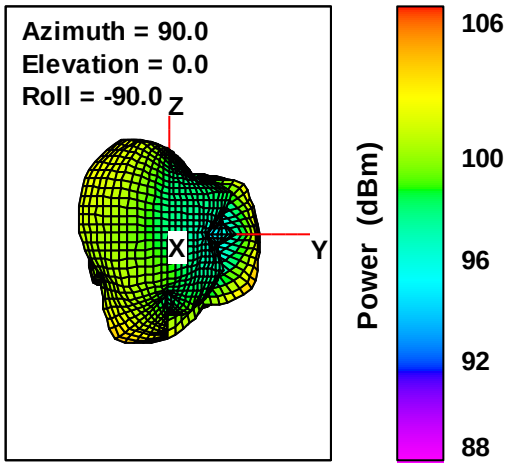
Total EIS, Right Side View



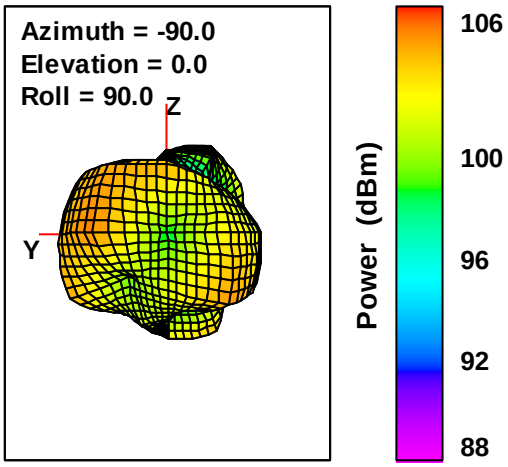
Total EIS, Left Side View



Total EIS, Front Face View

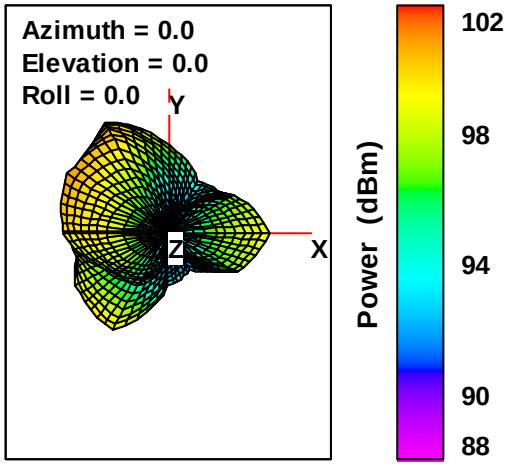


Total EIS, Back Face View

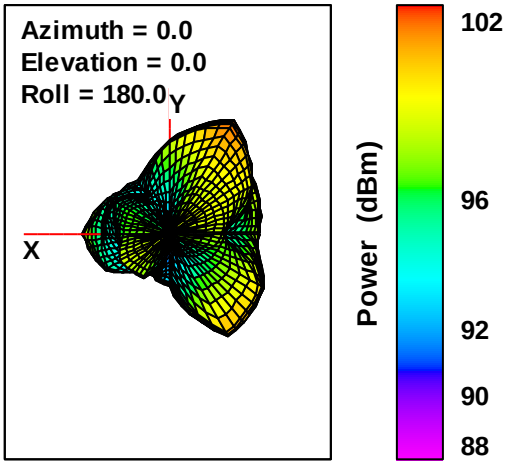


Plot 8. LTE Cat-M1 Band 5 FS Total EIS, 882.94 MHz

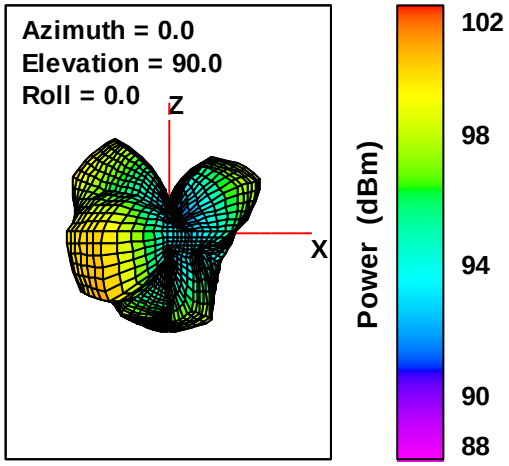
Total EIS, Top View



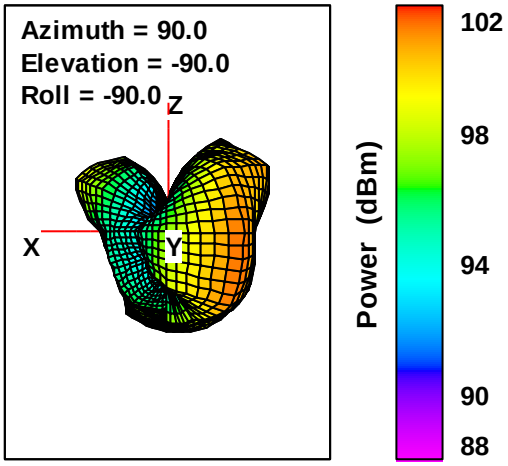
Total EIS, Bottom View



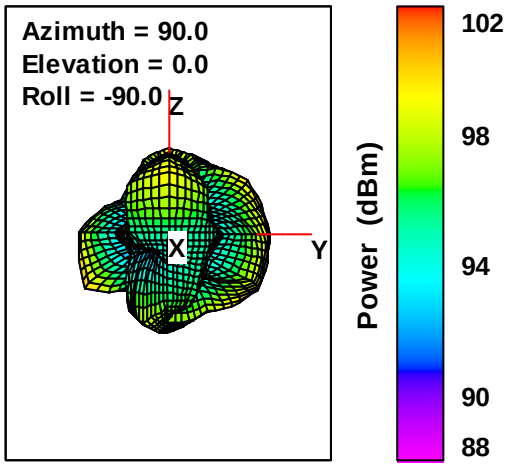
Total EIS, Right Side View



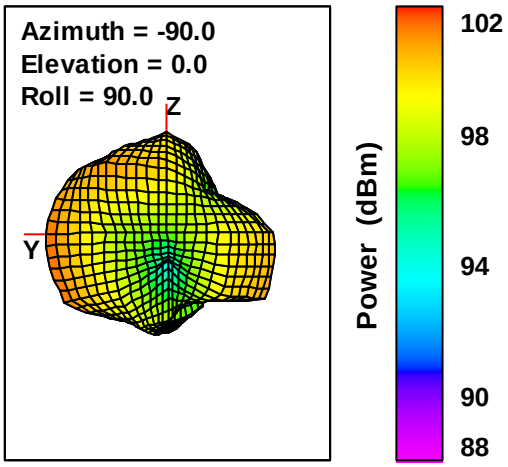
Total EIS, Left Side View



Total EIS, Front Face View

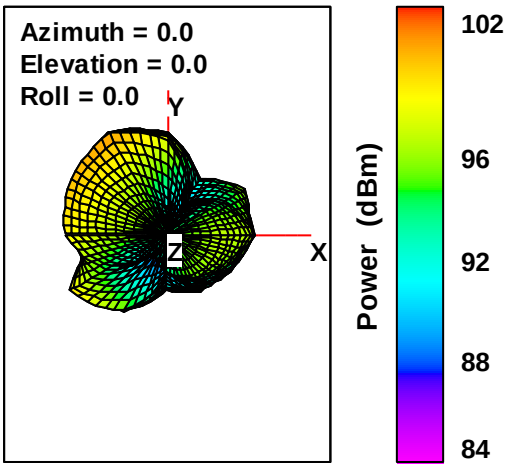


Total EIS, Back Face View

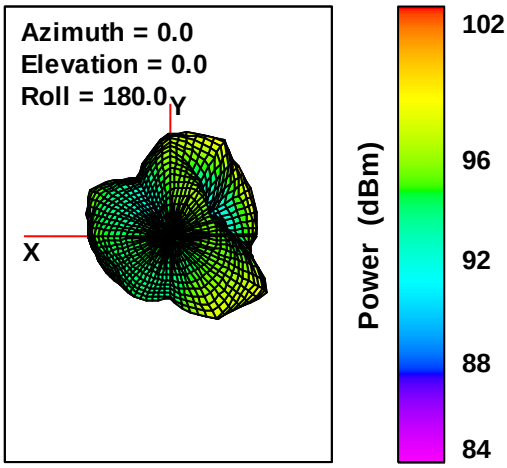


Plot 9. LTE Cat-M1 Band 12 FS Total EIS,739.03 MHz

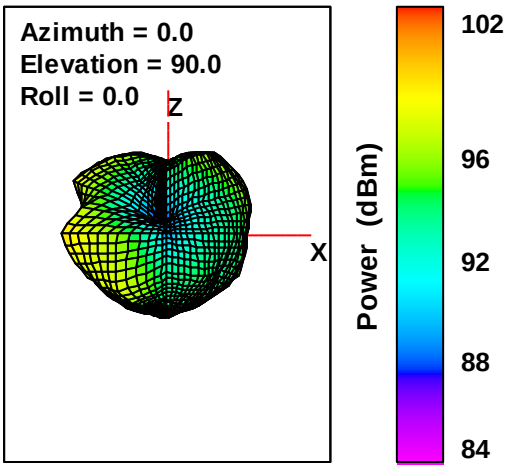
Total EIS, Top View



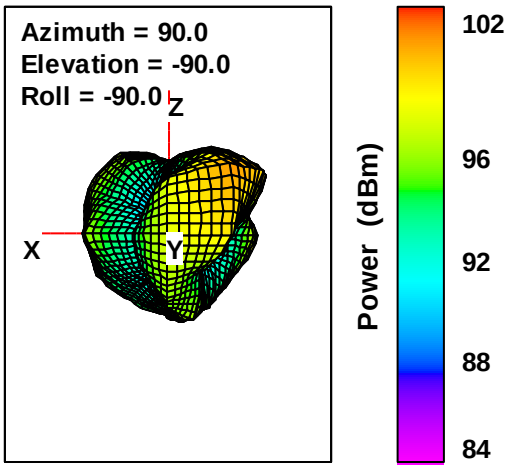
Total EIS, Bottom View



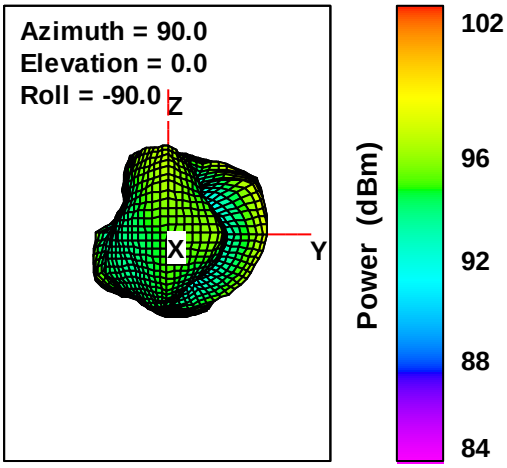
Total EIS, Right Side View



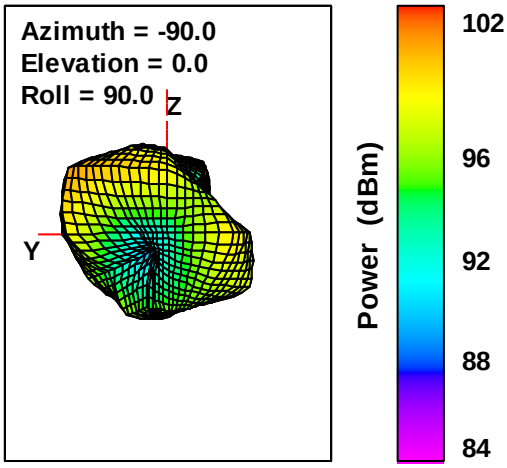
Total EIS, Left Side View



Total EIS, Front Face View



Total EIS, Back Face View



Plot 10. LTE Cat-M1 Band 13 FS Total EIS, 752.44 MHz

ANNEX C: Lab Photographs

Pic C- 1 SAICT (Futian District) Wireless Test Laboratory

ANNEX D: Accreditation Certificate

Accredited Laboratory

A2LA has accredited

SHENZHEN ACADEMY OF INFORMATION AND COMMUNICATIONS TECHNOLOGY

Shenzhen, People's Republic of China

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

Presented this 30th day of October 2019.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 4353.01
Valid to November 30, 2021

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

*****END OF REPORT*****