



規格承認書
Specification for Approval

客 戶： 永 洋
Customer:
品 名： DUAL BAND ANTENNA TO MHF
Part name
料 號： GY121HT467-007
Part No.
客戶料號： 11320Y11104A1
Customer Part No.
Rev(版本): 02

客戶承認印 CUSTOMER APPROVED BY		
APPROVAL	CHIEF	SUPERVISOR
Approval No.		
Model		
Part No.		

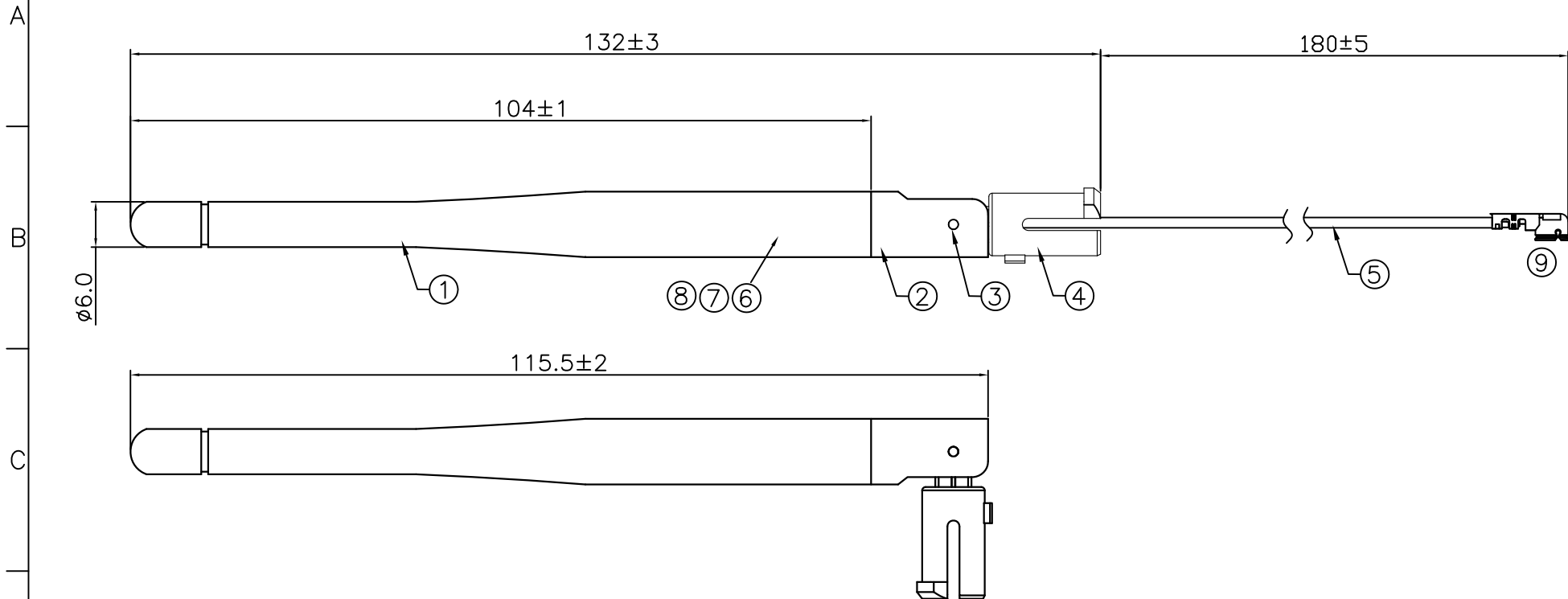
CHIEF	SALES	R&D	DESIGN
LEO	Teri	Jerry	Mark
Date:2011/10/13		Date:2011/10/13	
驊陞科技股份有限公司 WIESON TECHNOLOGIES CO., LTD.			

表格編號：324012 版本：第四版

REV	DATE	DESCRIPTION	NAME
01	11.09.02	NEW RELEASE	BILL

RoHS Compliant

FOR REFERENCE ONLY



NOTES:

- 2.4~2.4835GHz/5.15~5.85GHz VSWR:< 2.0
- GAIN:2dBi
- USE ENVIRONMENT PROTECT MATERIAL(ROHS Compliant).

⑨	G7169-004101-H	MHF PLUG FOR 1.13mm CABLE , GOLD PLATED , BLACK PLASTIC	1
⑧	GHS-BD050I	HEAT SHRINKABLE TUBE,,BLACK	1
⑦	COPPER	COPPER TUBE 1	1
⑥	COPPER	COPPER TUBE 2	1
⑤	GMINI-1637B01D113G	MINI COAXIAL CABLE OD:1.13mm,32AWG*1C+BRAID+FEP,BLACK JACKET,	1
④	GMV111-C031402A	BASE-2,PC:WHITE(DS-525)	1
③	G0102-7801033	FIXED PIN,POM:WHITE	2
②	GMV111-B020204A	BASE-1,PC;WHITE(DS-418)	1
①	GMV111-B010204A	COVER,TPE;WHITE(DS-417)	1
NO.	ITEM	DESCRIPTION	QTY



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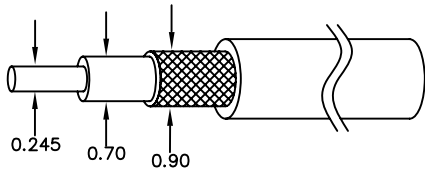
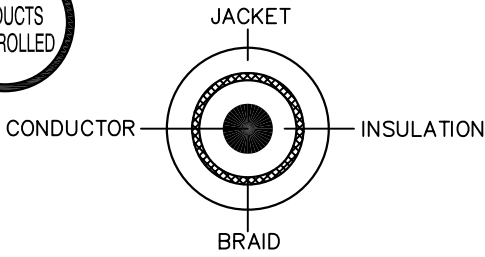
PART NO.:
GY121HT467-007

TITLE:

DUAL BAND ANTENNA TO MHF

DRAWN BY	BILL (WSC)	DRAWING NO.	GY121HT467-007
CHECKED BY		DRAWING SIZE	NONE A4
APPROVED BY		UNIT	mm
SORTING NO.	WSC	PAGE	1 OF 1

A		B		C	
ISSUE	QT'Y	ECN NO.	REVISED DESCRIPTION	DATE	APPROVED
0					



CONSTRUCTION

UL 10005 COAXIAL CABLE R7

1.CONDUCTOR: 32#(7/0.08)x1C,COPPER WIRE.

STRANDED CONDUCTOR: 0.245 NOM.

2.INSULATION: FEP,Ø0.70±0.02mm,COLOR: SELF-COLOR.

3.SHIELD: BRAID(16/4/0.05),COPPER WIRE,
COVERAGE 88% MIN.

4.JACKET: FEP,BLACK GLOSS SURFACE,GB COLOR: 000,
Ø1.13+0.08/-0.05mm,WITHOUT MARKING.

ELECTRICAL CHARACTERISTICS

1.RATING TEMPERATURE: -40°C~+80°C.

2.ELECTRICAL PROPERTIES:

- 2-1.INSULATION RESISTANCE: DC/250V 1000Mohm m MIN..
- 2-2.VOLTAGE RATING: 30V.
- 2-3.WITHSTAND VOLTAGE: AC/500V RMS FOR ONE MINUTE.
- 2-4.CONDUCTOR RESISTANCE: LESS THAN 520ohm KM(at 20°C)
- 2-5.CAPACITANCE: 97pF/M(NOMINAL)
- 2-6.IMPEDANCE: 50ohm@TDR(NOMINAL)
- 2-7.

NOM. ATTENUATION(dB/M)		NOM. ATTENUATION(dB/M)	
0.1GHz	0.64	5.2GHz	5.0
0.4GHz	1.3	5.8GHz	5.3
0.8GHz	1.9	6.0GHz	5.4
1.0GHz	2.1	7.0GHz	5.9
1.5GHz	2.6	8.0GHz	6.7
1.9GHz	2.9	9.0GHz	7.0
2.4GHz	3.3	10.0GHz	7.5
3.0GHz	3.7		

3.VSWR: 1~10GHz<1.60(NOM).

4.CABLE STORAGE TIME IS 2 MONTH MAXIMUMI AT TEMPERATURE 10~40°C AND HUMIDITY 50% MAXIMUM.

5.DECENTRATION: BETWEEN INSULATION AND CENTER CONDUCTOR IS: 7% MAXIMUMI.

6.HEAT SHRINK: 6-1, TEMPERATURE: 255±5°C. 6-2, TIME: 2 SECONDS.

6-3, CRITERION: SHRINK OR EXPANSION OF INSULATION AND JACKET IS 0.3MM MAX.

7.ALL MATERIAL MUST MEET SONY SS-00259.

8.VENDOR: GOLDEN BRIDGE ELECTECH.

COLOR LIST

COLOR	GB ERP P/N:	GB COLOR NO.:
BLACK	RF113BR7	000
WHITE	RF113WR7	118
GRAY	RF113GR7	116
BLUE	RF1131R7	555
RED	RF113RR7	230
WHITE/GRAY	RF1132R7	GRAY STRIPED: PANTONE COLOR COOL GRAY 7U~10U
BLACK/GRAY	RF1133R7	GRAY STRIPED: PANTONE COLOR WARM GRAY 2U~5U

SAFETY CERTIFICATION

UL LISTING: E156437 AWM 10005

PROPRIETARY DESIGN

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DRAWER	RUTH	GOLDEN BRIDGE ELECTECH INC.	DRAWING NO.	AS04-09110010
ENGINEER	ANYA		REVISION	
CHECKED	HUNTER		UNIT	mm
APPROVED	ZENITH		SCALE	NONE
GENERAL TOLERANCE: >0.5~3= ±0.1 >30~120= ±0.3 >3~6= ±0.1 >120~315= ±0.5 >6~30= ±0.2 ANGLE=±1°		TITLE: MINI COAXIAL	PAGE NO.	1 OF 1
		DESC: 32AWGx1C 24P	DATE	2009.11.01
		SPEC: FEP, BLACK GLOSS SURFACE, Ø1.13mm, L=...	FILES: R:\SP\PART09\AS04-091100102.DWG	



I. Summary :

This report to account for the measurement setup and result of the Antenna.

The measurement setup includes s-parameter, pattern, and gain measurement.

The measured data for Antenna are presented and analysis.

II. S-Parameter Measurement :

A. Reflection coefficient :

(a) Instrument : Network Analyzer.

(b) Setup :

- (1) Calibrate the Network Analyzer by one port calibration using O.S.L. calibration kits.
- (2) Connect the antenna under test to the Network Analyzer.
- (3) Measure the S_{11} (reflection coefficient) shown in Fig. 1.
- (4) Generally, the S_{11} is less than -10dB to ensure the 90% power into antenna and only less than 10% power back to system.

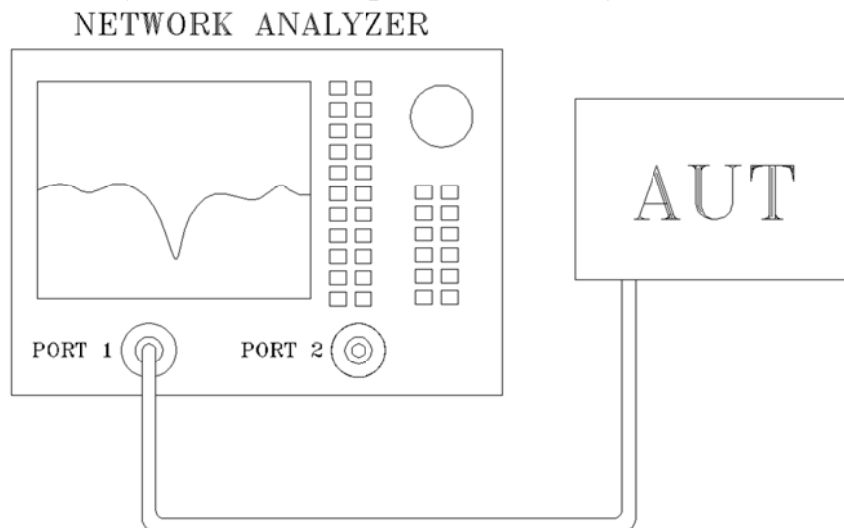


Fig.1 Antenna measured in Network Analyzer



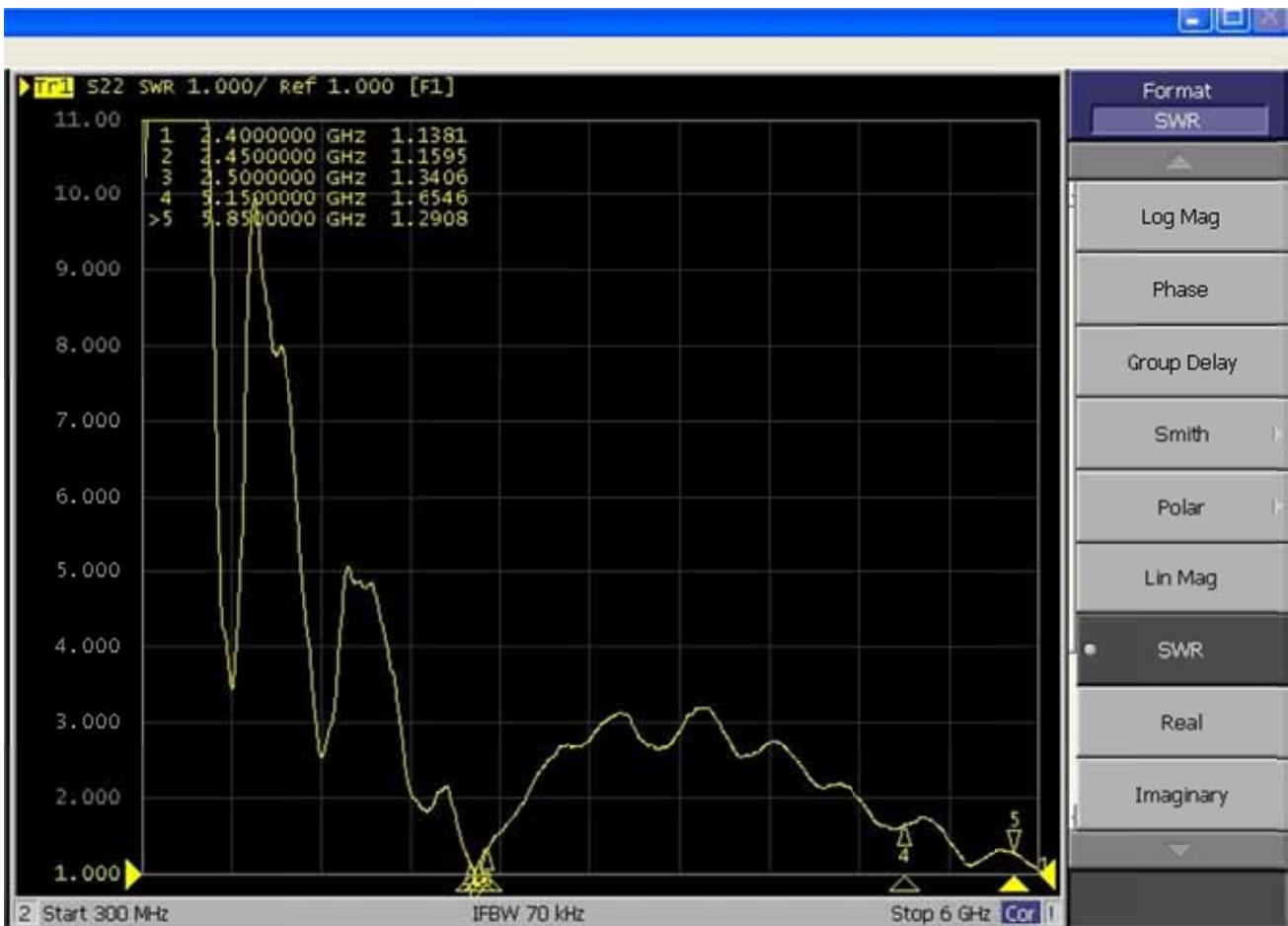
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III. S-Parameter Test Result :

Antenna VSWR

(a) 2.4GHz Antenna

Sample	Frequency	2400 MHz	2450 MHz	24835 MHz	5150 MHz	5850 MHz
1		1.1381	1.1595	1.3406	1.6546	1.2908





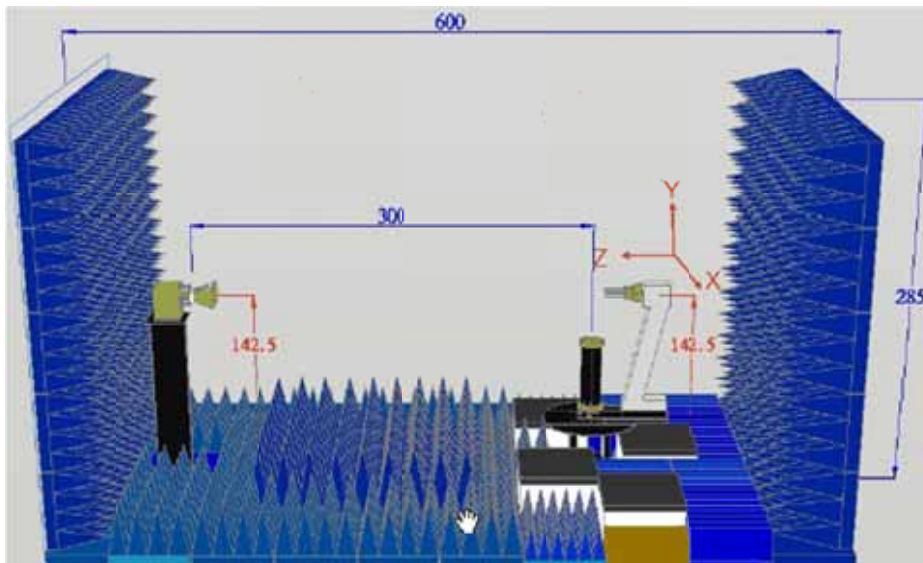
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IV. The Test Information Anechoic Chamber

A. Scope

This statement of work defines the requirements of a far-field antenna measurement range, which includes

- (1) One 325 cm (W) x 285 cm (H) x 640 cm (L) Antenna Measurement Anechoic Chamber, detailed requirements refer section 2.0 .
- (2) One Far-field Antenna Measurement System with spinning linear CP measurement capabilities, detailed requirement refer section 3.0 .
- (3) One broad-band transmitted antenna, detailed requirements refer section 8.0 .
- (4) Three NRL-4433 standard gain antennas, detailed requirements refer section 9.0 .



B. Antenna Measurement Anechoic Chamber

Fully anechoic chamber with dimension 325 cm in width, 285 cm in height and 640 cm in length.
The quiet zone of this Chamber shall be greater than



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70 cm @ 0.9 GHz, 50 cm @1.8 GHz, 44 cm @2.4 GHz, 28 cm @5.8 GHz, 16 cm @18 GHz.

Contractor should be aware of this anechoic chamber is going to be used for performing far-field antenna measurement.

C. Electrical specifications

Frequency Range: 800 MHz to 18 GHz,

Quiet zone size: >70 cm @ 0.9 GHz, >50 cm @1.8 GHz, >44 cm @2.4 GHz, >28 cm @5.8 GHz, >16 cm @18 GHz.

Quiet zone ripple: < +/- 0.5 dB @1.5~2.4 GHz, < +/- 0.25 dB @2.4~18GHz

Field Probing Frequency	Peak-to-Peak Amplitude Ripple (within specified Quiet Zone Area)	Quiet Zone Size (cm)	Compliant
0.9 GHz	< 0.8 dB	70	Yes
1.575 GHz	< 0.6 dB	55	Yes
1.8 GHz	< 0.5 dB	50	Yes
2.45 GHz	< 0.4 dB	44	Yes
4.8 GHz	< 0.3 dB	31	Yes
5.8 GHz	< 0.3 dB	28	Yes



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D. Absorbers

We shall design and install proper absorbers on the inner walls of the chamber to guarantee the electrical specifications. However, the absorbers height shall be no less than 24" which enables the space in the chamber to be around 203 cm (W) x 163 cm (H) x 533 cm (L). All the absorber used shall meet NRL-8093 fire retardant regulations

E. Far-field Antenna Measurement System

We shall supply all the hardware and software which are capable of characterizing antenna radiation patterns from 30 KHz to 6 GHz or 18GHz using the existed Agilent 5230A PNA-L or Agilent 8753ES Vector Network Analyzer. The system shall be able to automatically measure and plot single axis amplitude and phase antenna patterns in either Cartesian or polar formats.

F. Far-field measurement software

The software consists of the control or data acquisition software and the data plotting software.

(1) The data acquisition software shall at least be capable of the following functions:

- *measuring single frequency per cut - single axis (azimuth); system can automatically switch frequency at the end of a scan.
- *measuring data in Uni-direction or bi-direction
- *measuring data at least with azimuth 360 degrees. (+/- 180 degrees or 0-360 degrees)
- *real time plot in Cartesian or polar format
- *screen shows real time angle position



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- *system automatically calculates S/N ratio level based on measured signal fluctuation
- *function to set positioner zero position
- *operator can set data taking velocity and data sampling interval
- *entry to allow positioner offset to any angle

(2) The data plotting software shall at least be capable of the following functions:

- *Editing plot data
- *plotting data in Cartesian, Polar or delimited ASCII output with header information
- *plotting data in linear or dB scales
- *normalizing data to peak (dB), standard gain reference (dBi), or no normalization
- *overlaying data, (drag and drop capability is preferable)
- *outputting data to any Windows supported printers

G. Broadband Transmitted antenna

We shall provide a linear-polarized broadband antenna with the specifications better than those listed hereafter in this article,

Frequency: 1-18 GHz, Gain: >12 dBi @ 10 GHz, VSWR:<2,0:1, Front to Back Ration > 20 dB

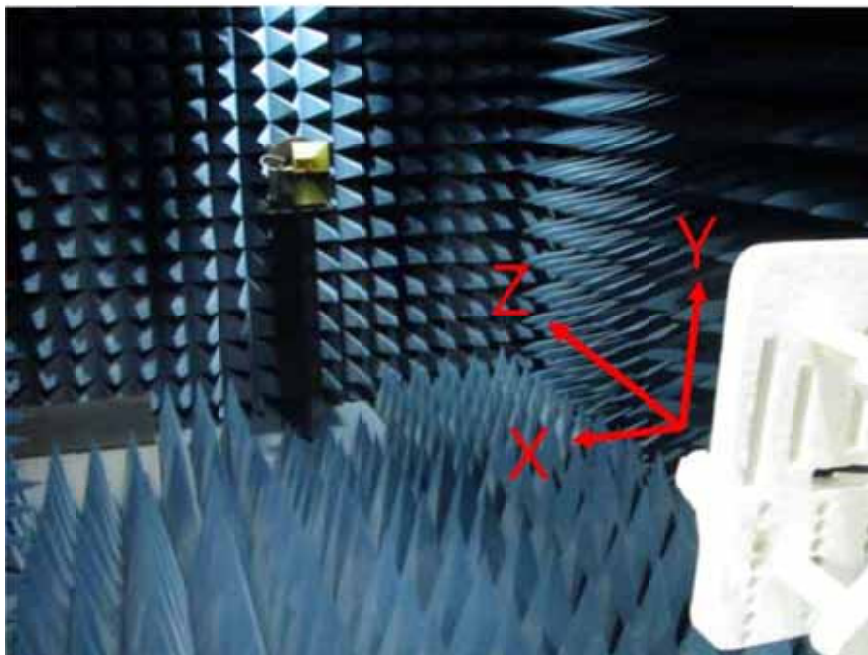
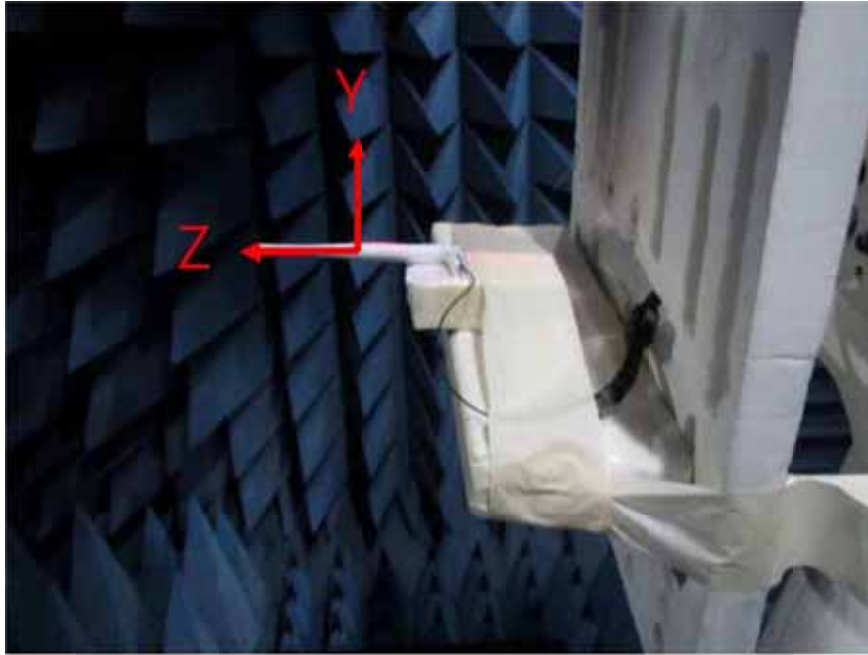
H. NRL4433 Standard Gain Horns

We shall provide one WR-430, WR-187 one DRH0118 standard gain horns which meets the specifications of NRL-4433 report. The operating frequency of WR-430 standard gain horn is from 1.7 to 2.6 GHz, and WR-187 from 3.95 to 5.85 GHz, and DRH-0118 from 0.8 to 18GHz. We shall also provide NRL-4433 theoretical gain curves and tables for the standard gain horns.



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V. Chamber Test Photo





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VI. Chamber Test Result

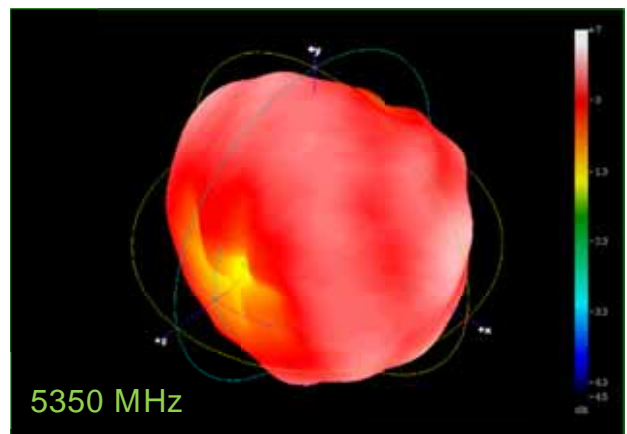
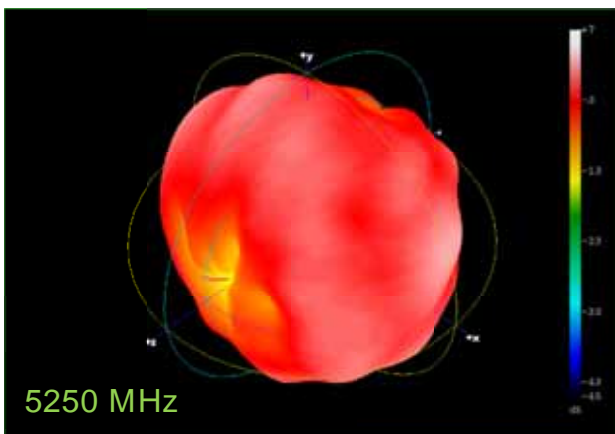
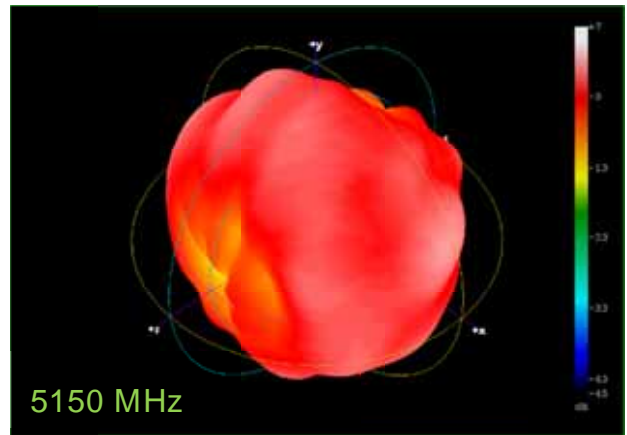
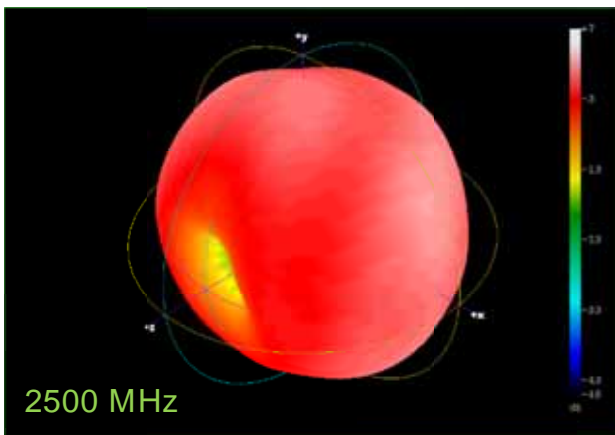
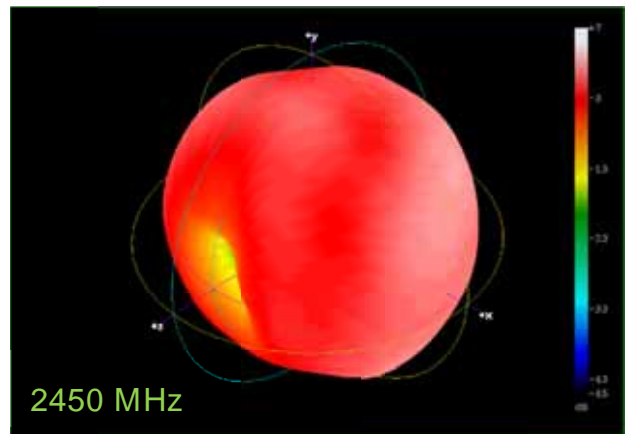
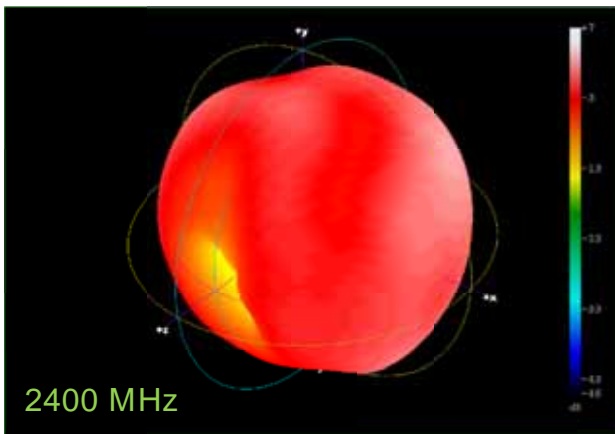
WiFi Antenna

Frequency (GHz)	Gain (dBi)	Avg. Gain (dBi)	Efficiency (%)
2.400	1.92	-1.85	65
2.450	1.86	-1.43	72
2.500	1.73	-1.38	73
5.150	1.74	-2.7	54
5.250	1.87	-2.25	60
5.350	2.74	-1.82	66
5.470	3.57	-1.45	72
5.600	3.18	-1.86	65
5.725	2.79	-1.84	65
5.785	3.06	-1.27	75
5.850	2.5	-1.8	66



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VII. 3D Radiation Pattern:





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VII. 3D Radiation Pattern:

