

豪 岑 電 子 金 屬 股 份 有 限 公 司

HOW TSEN INTL. ELECTRONICS METAL CO., LTD.

P.T HOWSANINDO INDUSTRY(INDONESIA)

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INDONESIA : JL PANGKALAN 1-B BANTAR GEBANG, BEKASI 17310 INDONESIA

TEL : 62-21-8250470 hunting FAX :62-21-8250473

SPECIFICATION FOR APPROVAL

PARTS NAME : **ANTENNA**

TYPE NO : **S-001-1**

CUSTOMER P/N :

DATE : **Dec.04,2008**

CUSTOMER APPROVAL & COMMENT

FULL NAME	POSITION	SIGNATURE	COMPANY STAMP	COMMENT
		DATE :		
RECOGNIZED		ENGINEERING		QC CHECK

HOW TSEN INTL. ELECTRONICS METAL CO., LTD.

ANTENNA SPECIFICATIONS FOR APPROVAL

1 GENERAL DESCRIPTION

- 1.1 Type No. : S-001-1
1.2 Customer P/N :

2 DESCRIPTION & APPLICATION

This antenna assembly is designed for use in portable.
Communications equipment over a temperature range.
Of -20°C to +70°C in an indoor / outdoor environment.

3 ELECTRICAL CHARACTERISTICS

- 3.1 Frequency Range : 2.4~2.5 GHz
3.2 V.S.W.R : ≤ 2.0
3.3 Connector : SMA Male
3.4 Impedance : 50Ω

4 ENVIRONMENTAL CHARACTERISTICS

- 4.1 Operating temperature range -20°C to +70°C
4.2 Humidity range : 10 % RH to 80 % RH

5 QUALIFICATION TESTING

- 5.1 Qualification testing, all product shall be able to withstand the following testing.
5.2 Physical dimensions identified within this specification.
5.3 Pull Test : Tube has the capability of load 3 kgf in a vertical position within 30 seconds.
5.4 Torque Test : 3 kgf-cm no damage happened.

6 INSPECTION STANDARD

- 6.1 Dimension to use the special inspection level of S-4 , AQL 1.0 .
6.2 Appearance to use MIL-STD-105DII AQL1.0 .
6.3 Mechanical Capability : Per lot Sampling, n=5 , Ac 0 , Re 1 .
6.4 Environmental test : Per lot Sampling, n=3 , Ac 0, Re 1 .

7 PACKING STYLE

If customer has no specific request by the customer, all according to our standard

8 OTHERS

Any changes in this specification should be agreed by both parties.

Antenna

For 2.4~2.5 GHz

Type No : S-001-1

Electrical Specification

Frequency range	2.4~2.5 GHz
V.S.W.R	≤ 2.0
Connector	SMA Male
Impedance	50 Ω

Environmental & Mechanical Characters

Temperature	-20°C to +70°C
Weight	7.5 g
Dimensions	10.6 x 88.0 mm



HOW TSEN intl. Electronics Metal Co., Ltd.

HOW SANE industries Co., Ltd

<http://www.howtsen.com>

E-mail:howtsen@ms9.hinet.net

HOW TSEN INTL. ELECTRONICS METAL CO.,LTD.

TEST REPORT

1.MODEL: S-001-1

2.QUANTITY: 5 Pcs

3.DATE OF TESTING: Dec.04,2008

4.TESTING ITEM: PULL TEST

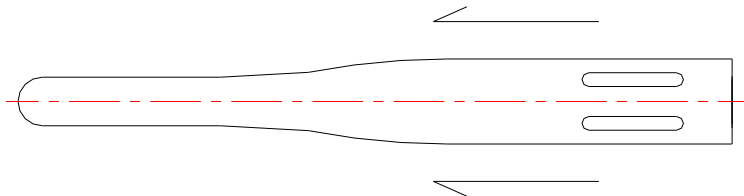
5.TESTING EQUIPMENT: B-016 (PUSH-PULL SCALE FB30K)

6.TESTING CONDITIONS: Antenna must withstand a 3 kgf tensile

Load applied to tube for 30 seconds.

No part of the antenna may be pulled out of

The assembly or from the housing.



7.TESTING RESULT:

SAMPLE	1	2	3	4	5
OK or NG	OK	OK	OK	OK	OK

APPROVED:

TESTER:

HOW TSEN INTL. ELECTRONICS METAL CO.,LTD.

TEST REPORT

1.MODEL: S-001-1

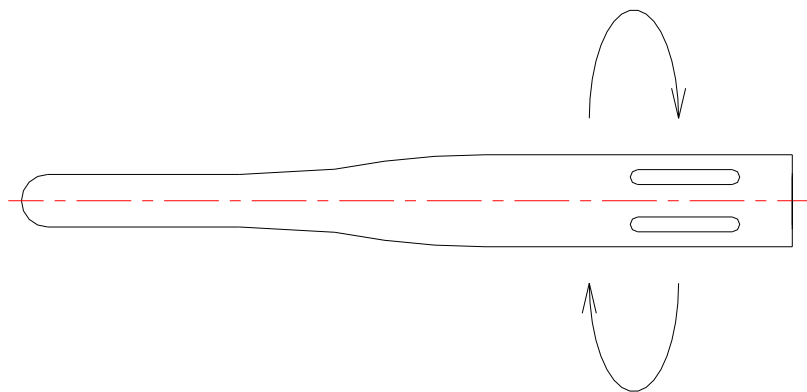
2.QUANTITY: 5 Pcs

3.DATE OF TESTING: Dec.04,2008

4.TESTING ITEM: TORQUE TEST

5.TESTING EQUIPMENT: B-001 (MECHANICAL TORQUE METER 2-TM30)

6.TESTING CONDITIONS: 3 kgf-cm no damage happened.



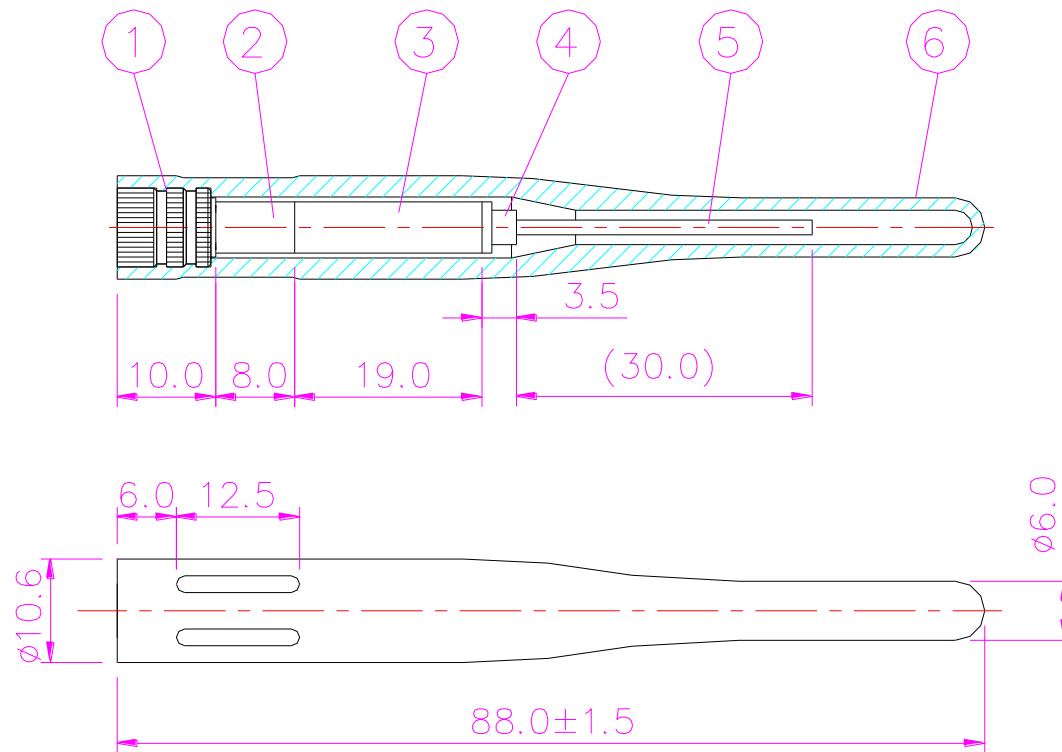
7.TESTING RESULT:

SAMPLE	1	2	3	4	5
OK or NG	OK	OK	OK	OK	OK

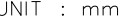
APPROVED:

TESTER:





6	TUBE	Pu	1	Black	
5	CABLE	RG-316	1		
4	CONNECTOR	BSBM	1		
3	BRASS TUBE	BST	1		
2	INSULATOR	POM	1	White	
1	SMA Male	BSBM	1	Au	

TOLERANCES					NO	PARTS NAME	MATERIAL		QTY	FINISH	NOTE
~ 6 ±0.20					SCALE 1:1	DESIGNED	CHECKED	APPROVED	MODEL NAME ANTENNA		
7 ~ 30 ±0.30					UNIT : mm	ALEX					
31 ~ 80 ±0.40						DATE Feb.11,2009			MODEL NO. S-001-1		
81 ~ 250 ±0.50						 HOW TSEN ELECTRONICS METAL CO., LTD.					
251 ~ 500 ±0.60	SYMBOL	REVISION DESCRIPTION	ISSUED BY	DATE	THIRD ANGLE						

S-001-1 2D pattern

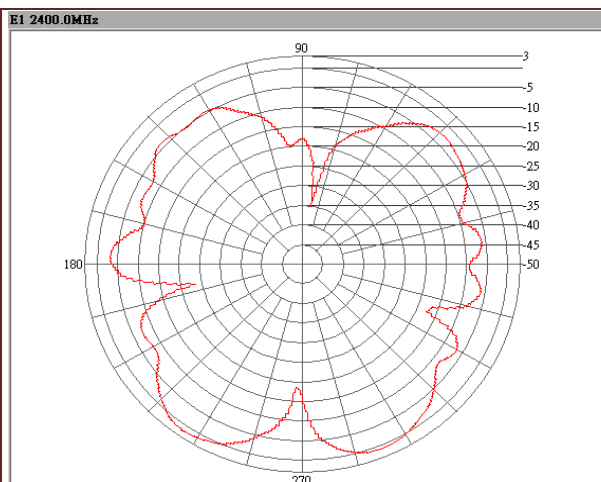
2008 12 04

Date/Time	2008.12.15
Measurement space	9mX4mX3.6m
Product No.	S-001-1
Temp. / Humidity	20°C / 55%
Network analyzer	Agilent 50MHz-20GHz 8720ET

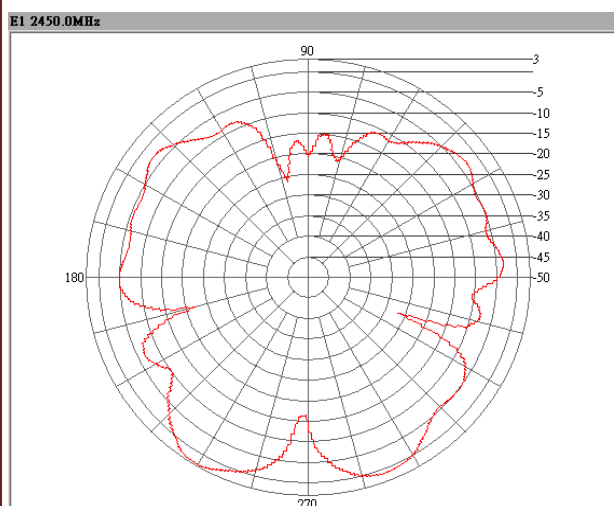


E Plane

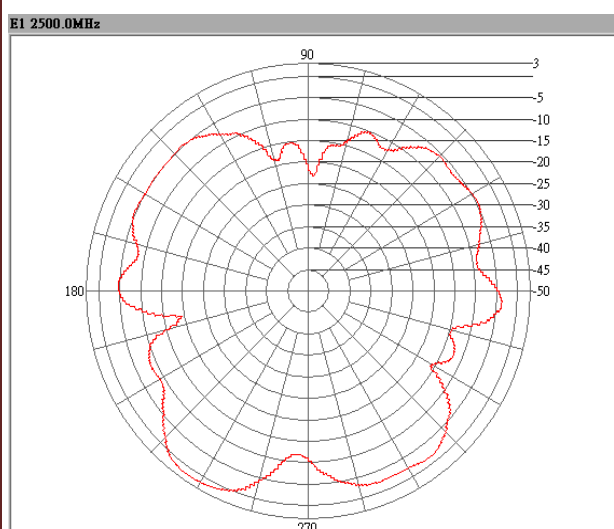
2400MHz	E1
Max Gain (dBi)	1.4
Max Gain@ Angle (degree)	236
Min Gain (dBi)	-35.18
Min Gain@ Angle (degree)	82
Average Gain (dBi)	-4.75
-3dB Angle L (degree)	250.1
-3db Angle R (degree)	224.5
HPB (degree)	25.6
FBR (dB)	4.62



2450MHz	E1
Max Gain (dBi)	2.62
Max Gain@ Angle (degree)	238
Min Gain (dBi)	-26.99
Min Gain@ Angle (degree)	338
Average Gain (dBi)	-4.52
-3dB Angle L (degree)	251.97
-3db Angle R (degree)	229.6
HPB (degree)	22.37
FBR (dB)	10.28

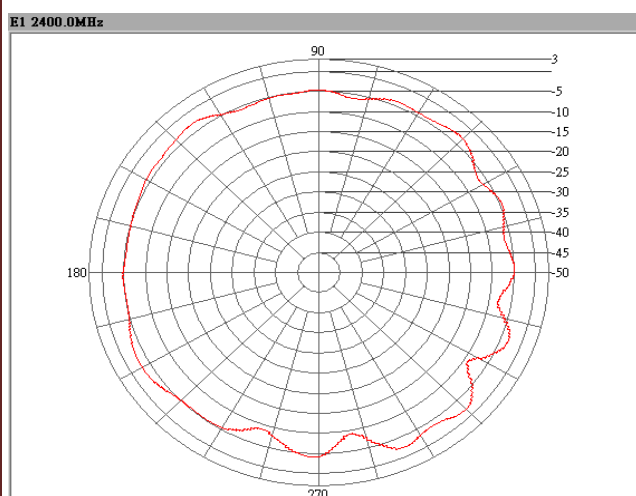


2500MHz	E1
Max Gain (dBi)	1.59
Max Gain@ Angle (degree)	236
Min Gain (dBi)	-23.25
Min Gain@ Angle (degree)	87
Average Gain (dBi)	-5.37
-3dB Angle L (degree)	251.53
-3db Angle R (degree)	225.6
HPB (degree)	25.93
FBR (dB)	7.8

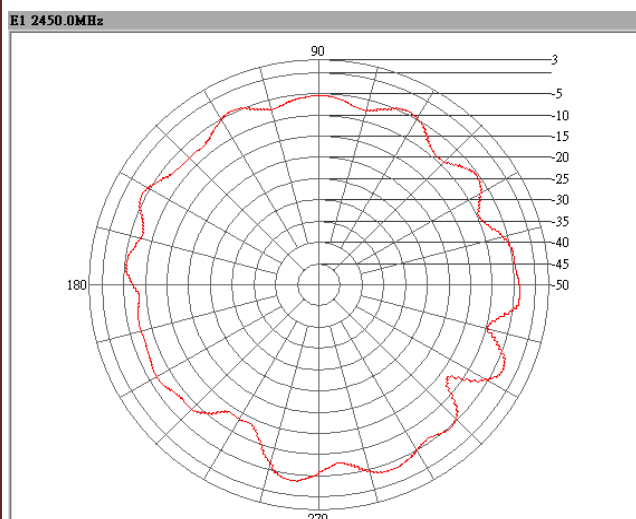


H Plane

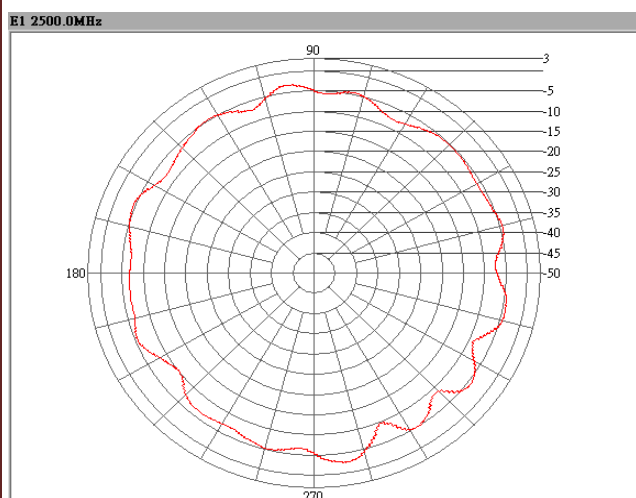
2400MHz	H
Max Gain (dBi)	-1.94
Max Gain@ Angle (degree)	315
Min Gain (dBi)	-9.3
Min Gain@ Angle (degree)	327
Average Gain (dBi)	-4.7
-3dB Angle L (degree)	321.7
-3db Angle R (degree)	288.38
HPB (degree)	33.32
FBR (dB)	1

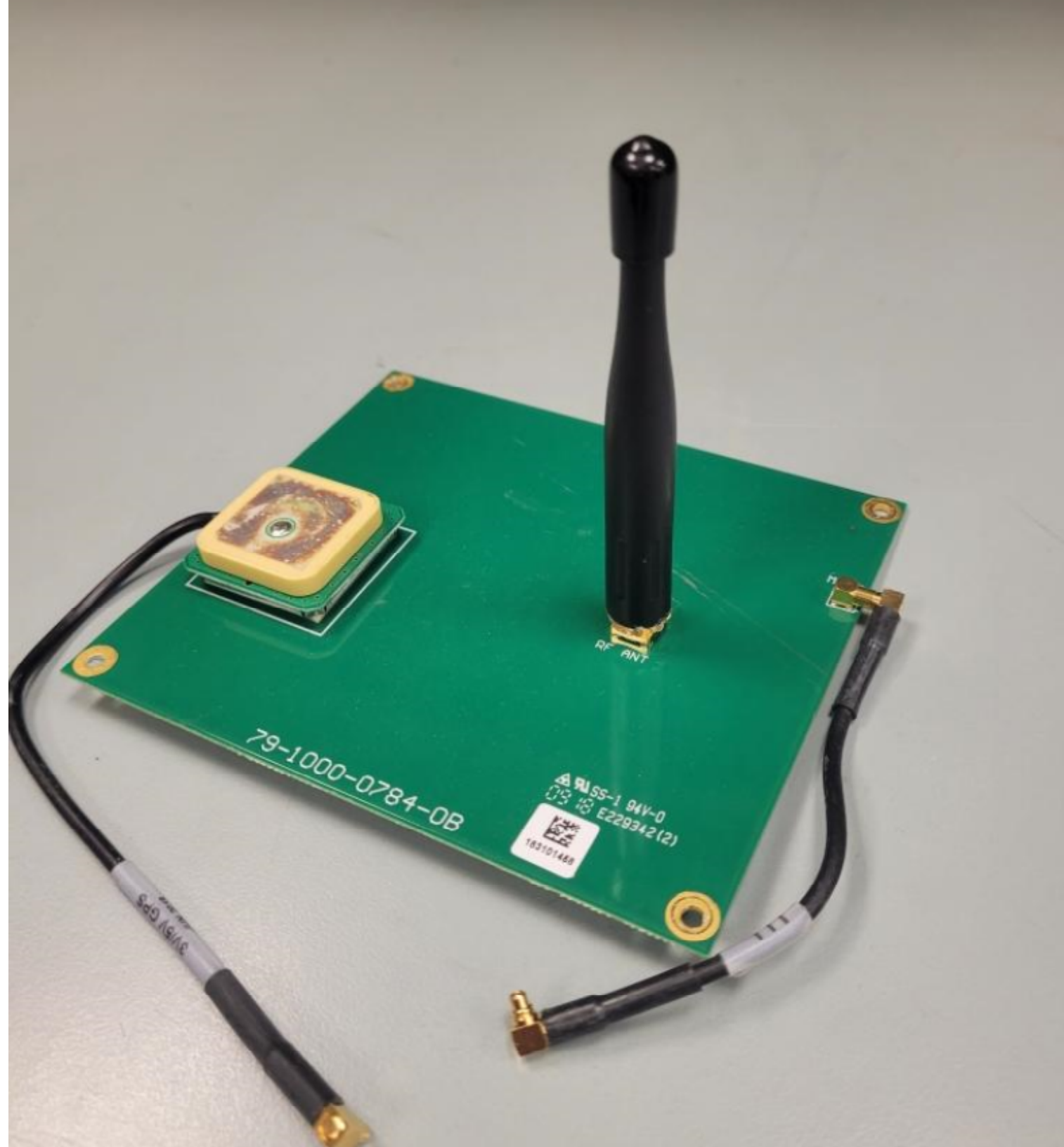


2450MHz	H
Max Gain (dBi)	-3.01
Max Gain@ Angle (degree)	335
Min Gain (dBi)	-13.7
Min Gain@ Angle (degree)	245
Average Gain (dBi)	-6.28
-3dB Angle L (degree)	340.63
-3db Angle R (degree)	329.27
HPB (degree)	11.36
FBR (dB)	0.99



2500MHz	H
Max Gain (dBi)	-2.7
Max Gain@ Angle (degree)	279
Min Gain (dBi)	-10.24
Min Gain@ Angle (degree)	217
Average Gain (dBi)	-5.87
-3dB Angle L (degree)	286.97
-3db Angle R (degree)	269.52
HPB (degree)	17.44
FBR (dB)	0.5





Mark Schwartz

From: brianchen.howtsen@gmail.com on behalf of Brian Chen <yc.chen@howtsen.com>
Sent: Friday, March 02, 2012 9:58 PM
To: Mark Schwartz
Cc: jukie@howtsen.com
Subject: Re: S-011 Antenna Data sheet
Attachments: TB135450-01.jpg; S-011.pdf; S-001-1.pdf; S-222.pdf; tb135450-01_b-532.pdf

Hi, Mr. Schwartz

Sorry reply late, I just find your mail from spam. I'm really sorry about it.

As attached were the S-011 datasheet and S-001-1, S-222, the different of them were outwards and Max gains, S-011 under 0 dBi, S-001-1 has 2 dBi, and S-222 has 3dBi Max gains, also S-011 has new plastic jacket as

For you reference as followings

S-011 datasheet, max. gain > 0 dBi also has new plastic jacket TB135450-01

S-001 datasheet, max. gains > 2 dBi.

S-222 datasheet, max. gains > 3 dBi.

if have any questions or concerns please let me know, I will do my best for you, HOWTSEN has 30 years experience of Antennas manufacture. please feel free to contact us, thank you.

Best Regards

Brian Y.C. Chen

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Mark Schwartz <Mark.Schwartz@gtt.com> 於 2012 年 3 月 2 日上午 12:36 寫道 :

Could you please send me the technical data sheet for the S-011 2.4Ghz wireless LAN antenna

Thanks

Mark

Mark Schwartz

Hardware Engineering Manager

Global Traffic Technologies, LLC

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