

Engineering Change Notice											
ECR No: SW00000170			ECN No: 00007608			Risk Level: Low Urgent ☒					
Model Name: all WiMAX Outdoor Models					Part Number#: 180-100-0105R 180-100-0152R 180-100-0172R						
Reason(s): 天線底板上的8個固定孔擴大為3.8mm		Description: 天線底板上的8個固定孔擴大為3.8mm（更方便與下蓋結合），所有ACON所出的WiMAX Outdoor Antenna 都要更換承認書&承認樣品				Approve Cut-in date Cute-in W/O after Date Cute-in S/O after Date				2008 / 3 / 10	
Status		Before Change:				After Change:					
		Part Number		Part Location/Description		Q'ty		Part Number		Part Location/Description	
Control Code:											
Original Code:					New Code:						
Remark					Chief Operation Officer						
180-100-0105R、180-100-0152R、180-100-0172R 已承認完畢，請文管中心更新承認書及承認樣品。					Signature 廖錫安 Date 2008/4/14 Remark						
ECR Attachment Files											
No		Title			File						
1		Approval sheet for GEMTEK 180-100-0105R			Approval sheet for GEMTEK 180-100-0105R.pdf						
2		Approval sheet for GEMTEK 180-100-0152R			Approval sheet for GEMTEK 180-100-0152R.pdf						
3		Approval sheet for GEMTEK 180-100-0172R			Approval sheet for GEMTEK 180-100-0172R.pdf						
ECN Attachment Files											
No		Title		Engineer			Manager				
1				Engineer: 黃凡維 Agent of Engineer:			Manager: 邱瑞玫 Agent of Manager:				
2				Engineer: Agent of Engineer:			Manager: Agent of Manager:				
3				Engineer: Agent of Engineer:			Manager: Agent of Manager:				
4				Engineer: Agent of Engineer:			Manager: Agent of Manager:				
5				Engineer: Agent of Engineer:			Manager: Agent of Manager:				

☒ 送至 正文-ECR-CCBAapproval
QR0407.03B

狀況	說明	姓名	日期時間	意見
申請	申請者	正文-WiMAX Team 黃凡維(工程師)	2008/4/9 07:56:45	
處理	正文-ECN-ET[Manager]	正文-BOM/PN組 李翠綺(資深管理師)	2008/4/9 08:44:07	送件.
處理	正文-ECN-ET	正文-料件管理組 徐毓鴻(管理師)	2008/4/10 11:19:39	送件. 請提供更新後的承認樣品予文管中心更換，謝謝~
處理	正文-ECN-工程師1	正文-Moto/SEQNSOMA/Axxceler 黃凡維(工程師)	2008/4/14 15:15:25	送件. 天線工程師_吳旭昇 已經將承認品交給SC_邱雅鈴
處理	上一級主管	正文-WiMAX Team 邱瑞玫(主任)	2008/4/14 15:18:26	送件.
處理	正文-ECR-CCBAapproval	正文-研發一處 廖錫安(協理)	2008/4/14 15:27:57	送件.

SPECIFICATION FOR APPROVAL

CUSTOMER : GEMTEK Technology,co.,Ltd

CUSTOMER P/N : 180-100-0152R

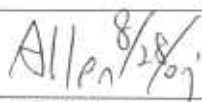
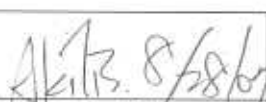
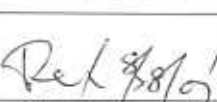
DESCRIPTION: 5.4-4.9G,17.5dBi,Array Antenna With Metal Ground

A-CON P/N : AWM2M-500001

Customer Approval

R&D Manager

ACON Approved

				
R&D Manager /	Mechanical Manager /	Q&R Manager /	Project Engineer /	Product Manager /
Allen.Hsiao	Akilis.Chen	Rex.Ou	Jason.Hsu	Frank.Chen

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Appendix

- Appendix A** — — SGS Report of SPCC With Ni SGS
- Appendix B** — — SGS Report of MCX
- Appendix C** — — SGS Report of Plastic Screw
- Appendix D** — — SGS Report of Heat Shrinkable Tube
- Appendix E** — — SGS Report of RF405A Cable
- Appendix F** — — SGS Report of Metal Screw

1. Description

It's a broadband antenna array (5.4GHz~5.9GHz) applied to WiMAX (IEEE 802.16 standard) outdoor base station.

1.1 Component Part Number

Assembly	AWM2M-500001
WiMAX Hyperion Ant.	H-AWM2M-05NQ001
WiMAX Hyperion Gnd	H-AWM2M-07NQ001
Plastic screw	I- AWMUM-36V0300
Plastic nut	I- AWMUM-37Q0300
Nickel screw	H- AWMUM-WN0400
MCX R/A Plug+RF405A Cable	CM5002-0130000

1.2 Assembly Photo



2. Electrical Performance

Electrical performance was tested on a typical.

2.1 VSWR

2.1.1 Step

Test equipment : VSWR measurements (S11) were performed using an Agilent 8720ES S-Parameter Network Analyzer and the test fixture.

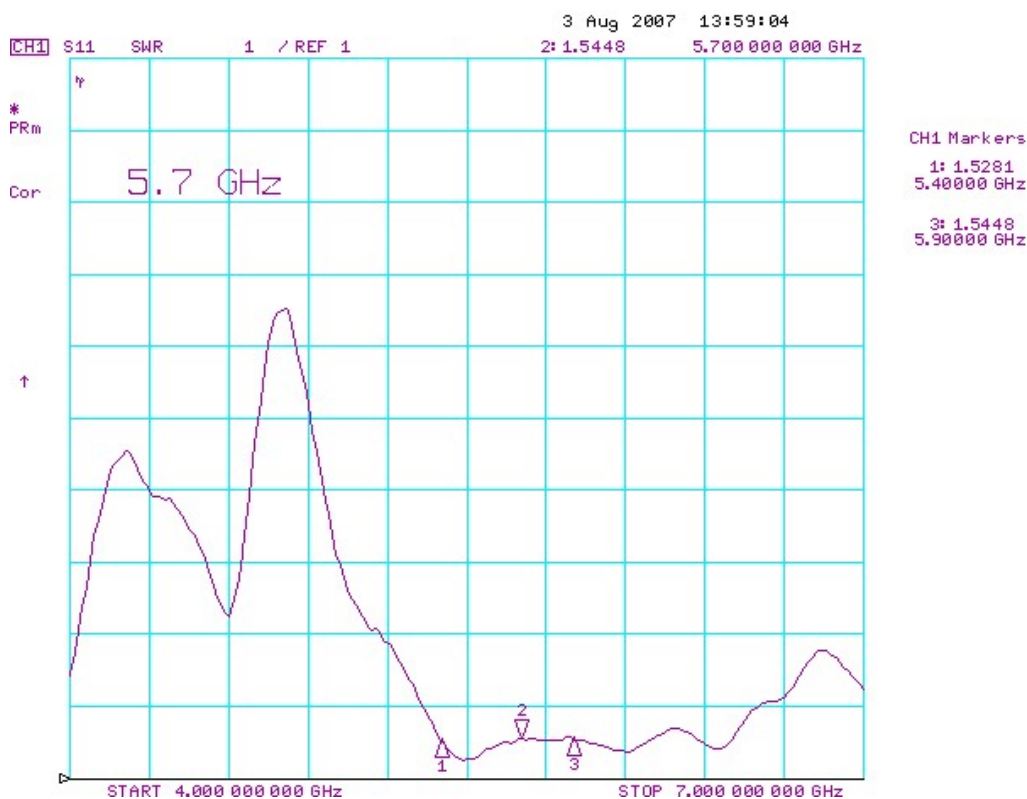
Step 1: Set the golden sample on the test fixture and measure the VSWR of the antenna. From the obtained results, fix the four points at the frequencies that VSWR is at 2.

Step 2: Take off the golden sample, and put the test antenna on the fixture. Measure the VSWR of the test antenna. It is pass when all of the VSWR are below 2 at the frequencies that are at the previously described three fixed points.

Step 3: Due to the antenna performances affected by the environment, the previously described three fixed points must be reset via golden sample before each antenna test.

2.1.2 Result

VSWR



2.2 Gain

2.2.1 Setup

The gain of the antenna was measured in the Anechoic Chamber located in Acon Hsin-Tien office. The chamber provides an environment a 40cm diameter spherical quiet zone with a frequency less than -40dB reflectivity and range from 400MHz through 6GHz. The results are calibrated by using both dipoles and standard gain horns. In order to reduce feed line radiation, a decoupling sleeve technique is used. Such tests were performed in free space.

2.2.2 Result

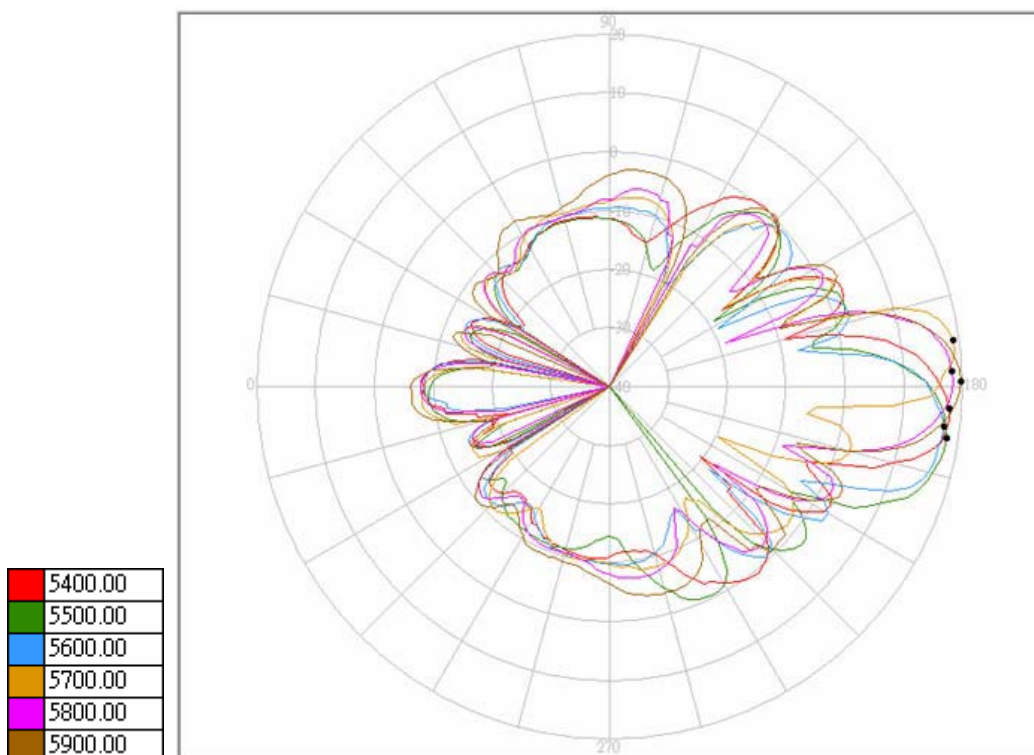
Table.1 Polarization gain (without housing)

Frequency(MHz)	Max gain(dBi)		Avg.gain(dBi)	
	Vertical	Horizontal	Vertical	Horizontal
5400	18.49	-6.84	5.25	-15.28
5500	18.44	-7.90	5.82	-16.70
5600	19.53	-6.97	6.61	-15.34
5700	19.47	-7.19	6.59	-15.47
5800	19.07	-7.93	6.13	-16.66
5900	20.18	-6.66	7.20	-14.12

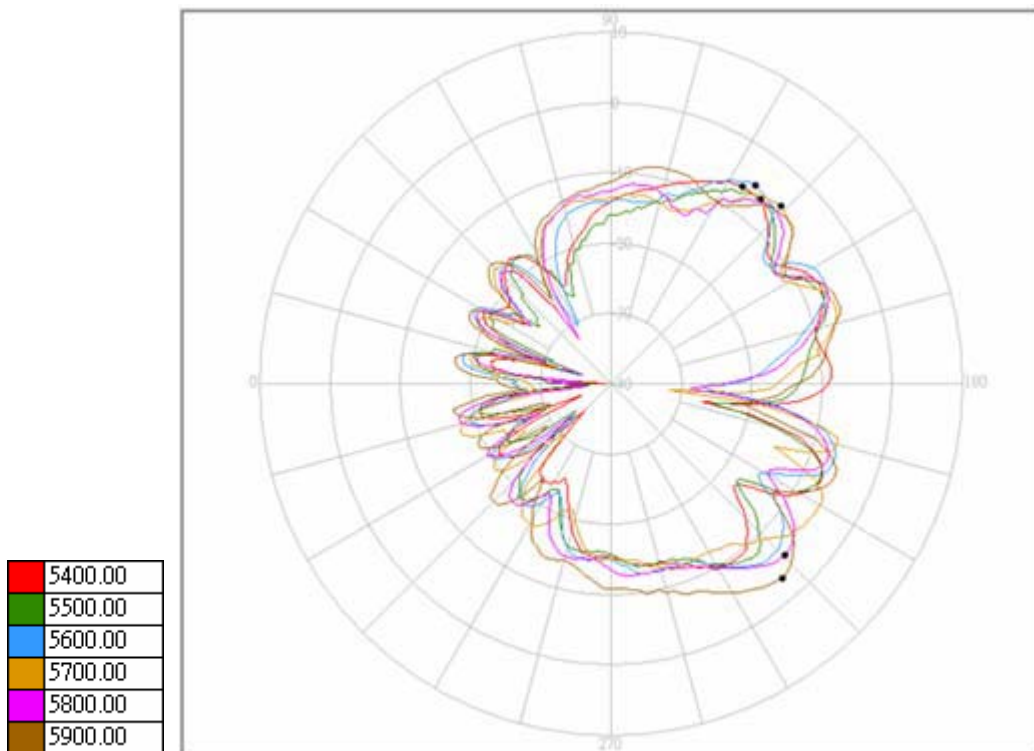
Table.2 Polarization gain (with housing)

Frequency(MHz)	Max gain(dBi)		Avg.gain(dBi)	
	Vertical	Horizontal	Vertical	Horizontal
5400	18.19	-6.34	4.85	-12.54
5500	18.24	-6.23	5.41	-13.03
5600	18.77	-5.13	4.94	-12.08
5700	18.97	-5.03	4.69	-11.89
5800	18.40	-5.26	5.30	-12.04
5900	19.84	-6.16	6.47	-10.24

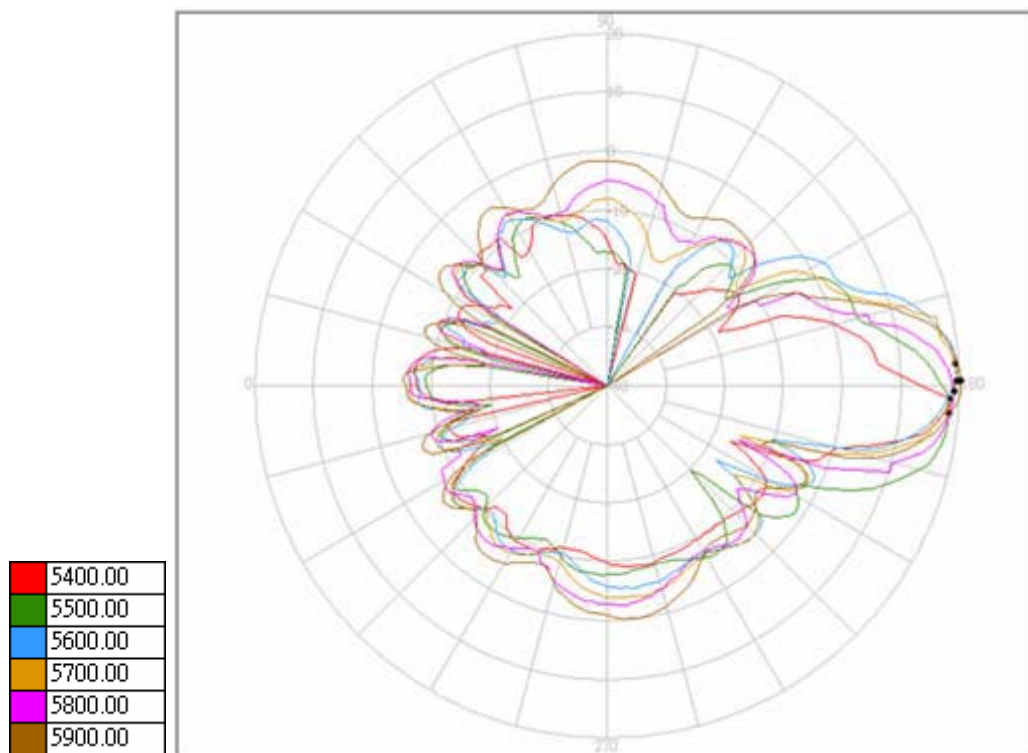
H-Plane Vertical polarization gain @5400 ~5900 MHz.



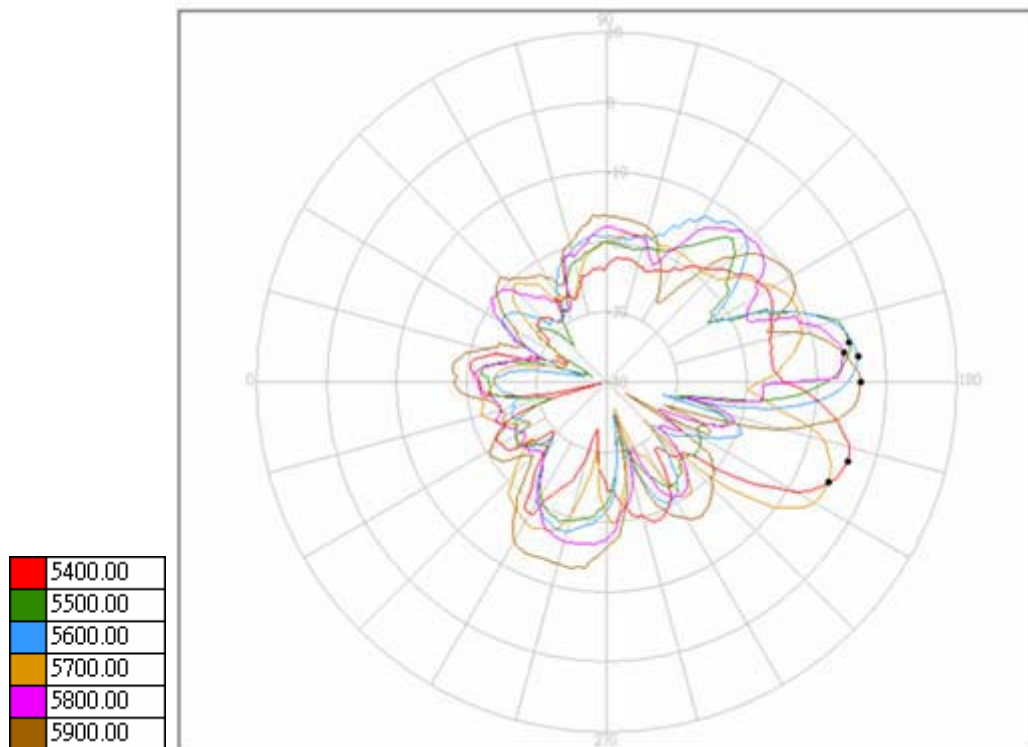
H-Plane Horizontal polarization gain @5400 ~5900 MHz.



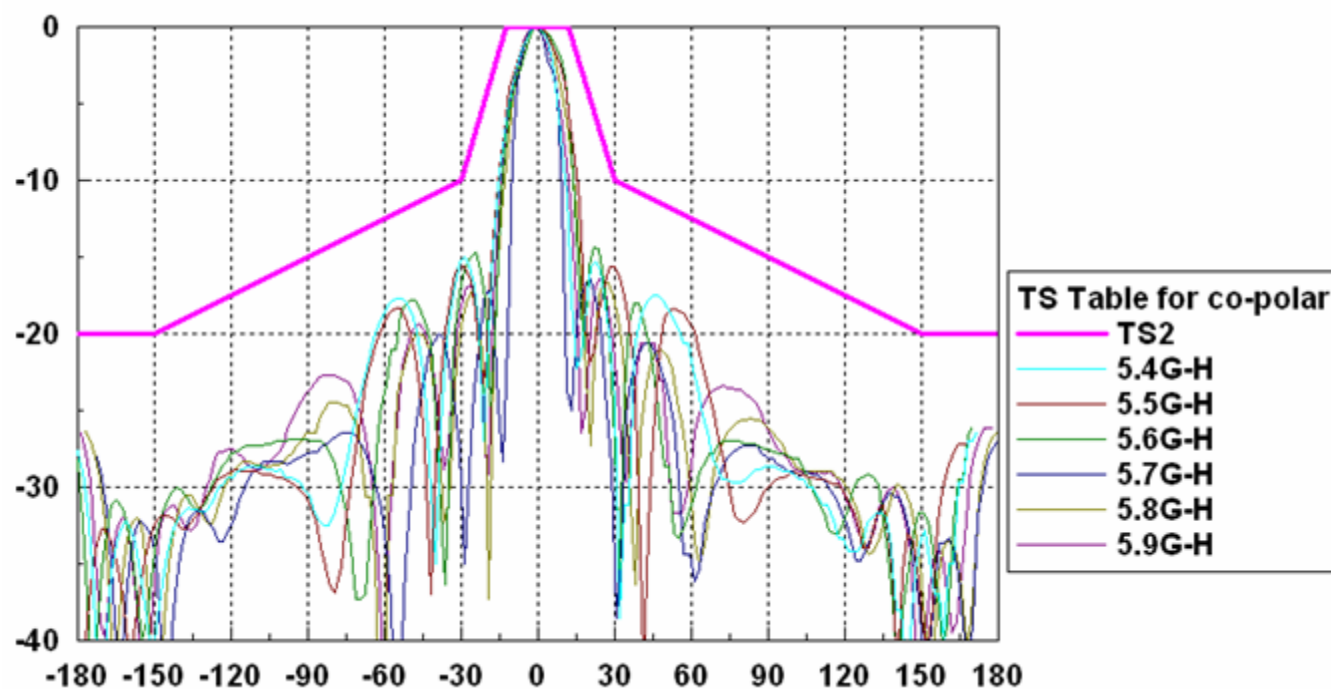
E-Plane Vertical polarization gain @5400 ~5900 MHz.



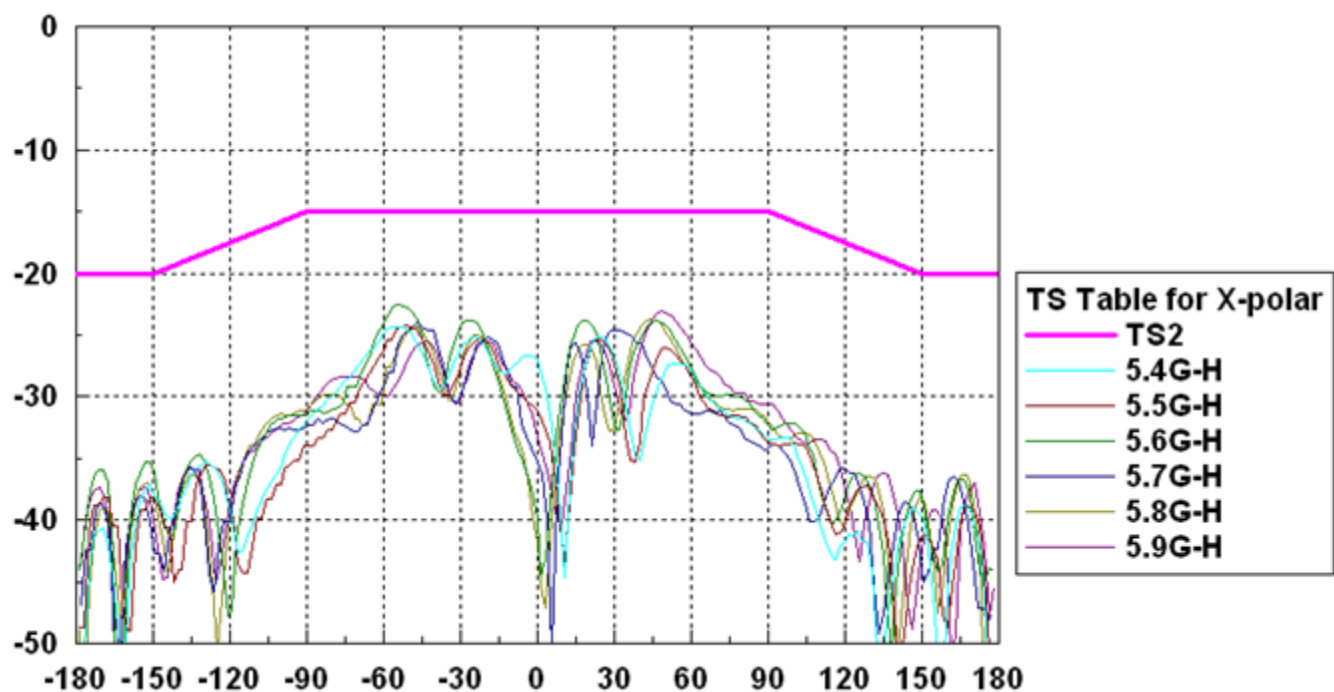
E-Plane Horizontal polarization gain @5400 ~5900 MHz.



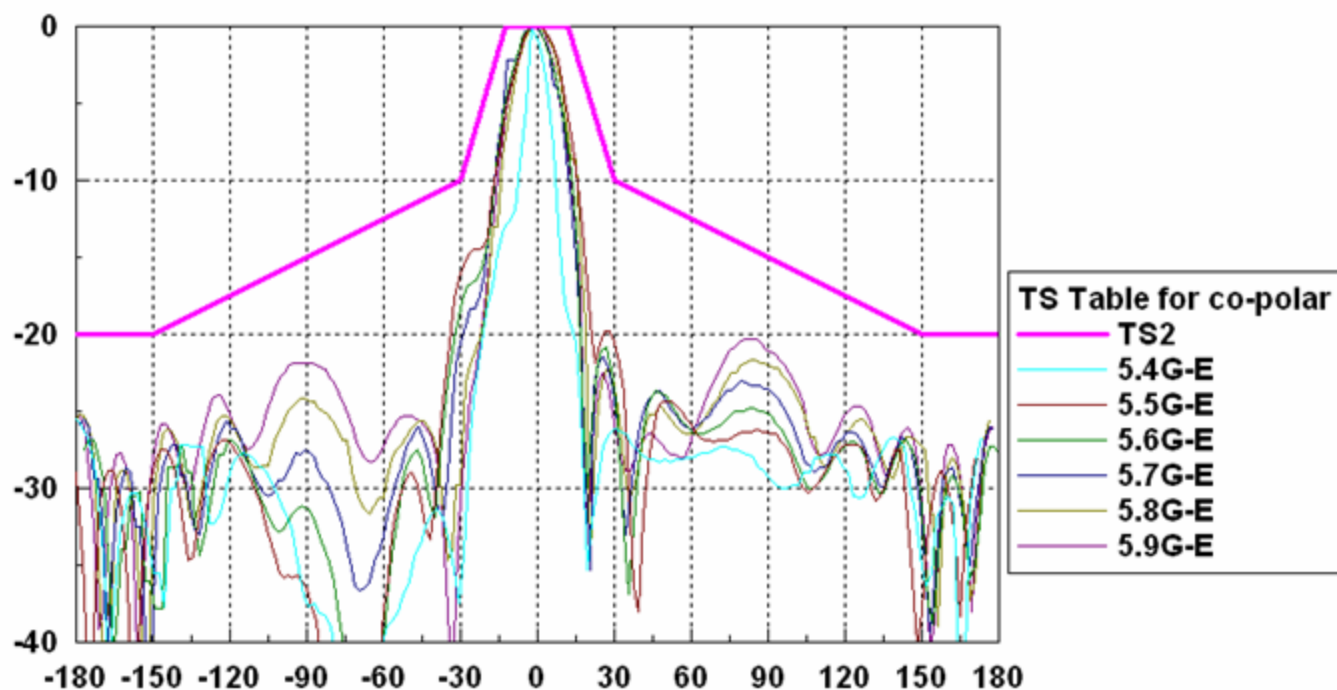
H-Plane Vertical TS Table



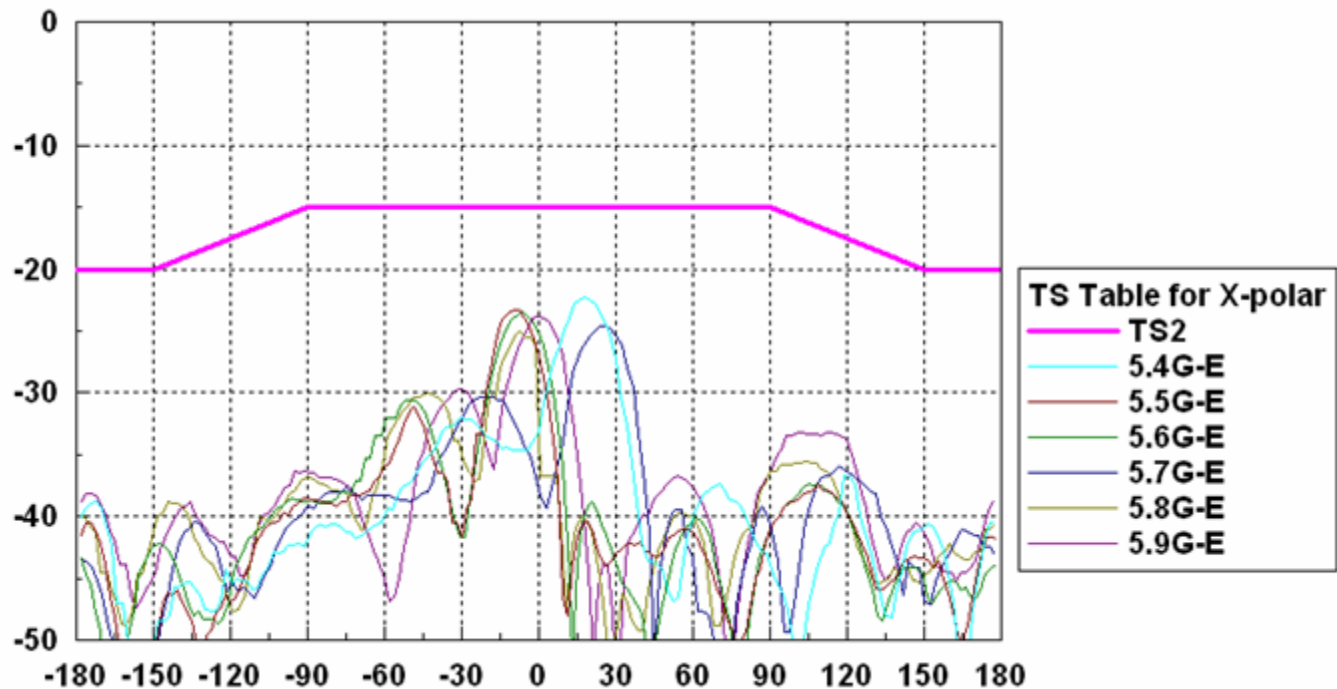
H-Plane Horizontal TS Table



E-Plane Vertical TS Table

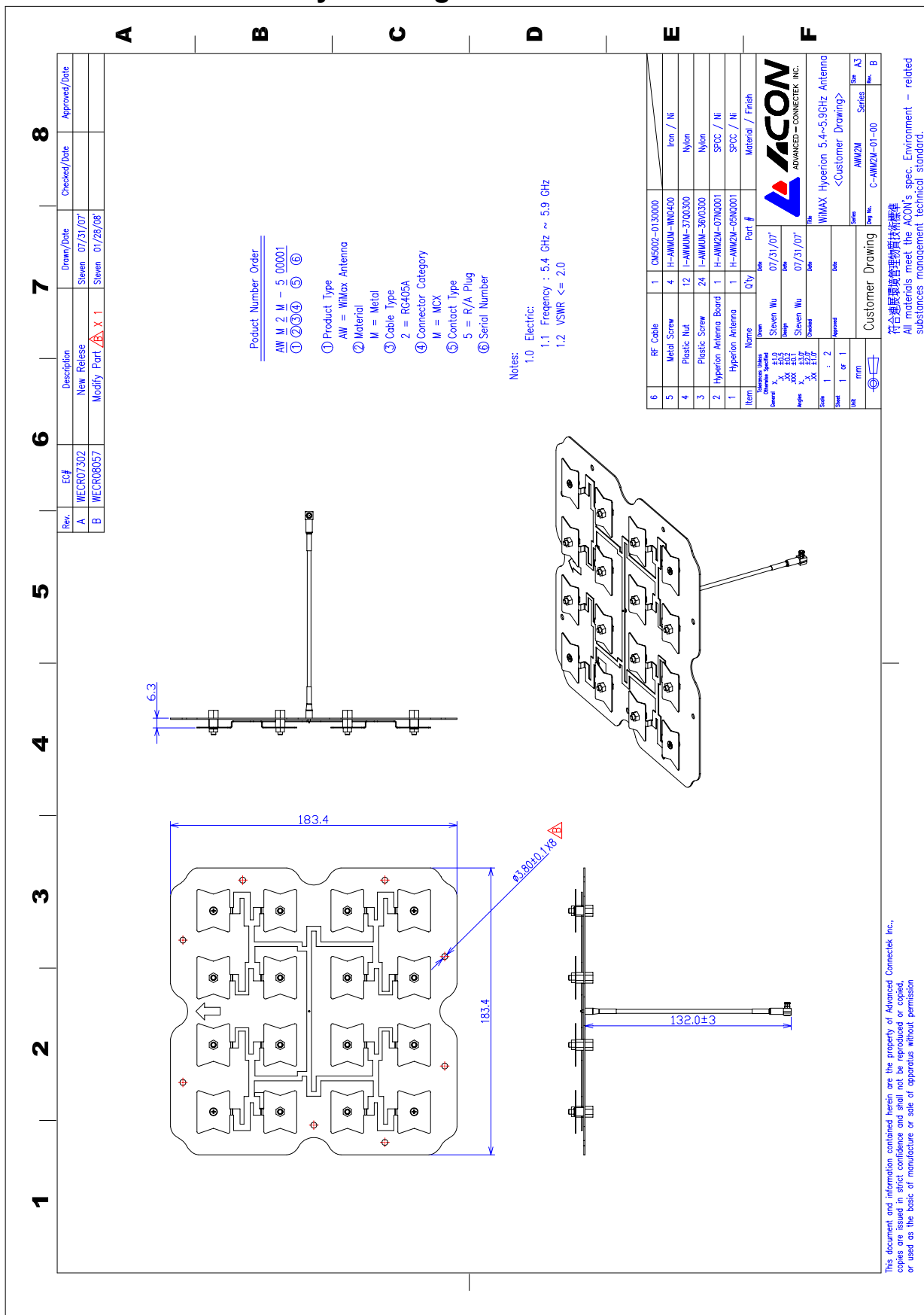


E-Plane Horizontal TS Table



3. Mechanical Specification

3.1 Customer Assembly Drawing



Revision History

Revision	Date	Change Notification	Notes
Rev.0	2007/08/27		WSFA07088