

BILLION**PARTS NUMBER REQUEST
& APPROVAL SHEET**

Powering Communications

1. Part Number:

A0ZANIJX7DAB3B4000

☒ 申請單: ☒ 新增料件
☐ 新增經銷商
☐ 變更單

2. 製造商:
(Manufacturer)

榮昌科技股份有限公司

製造商料號:
(Manufacturer P/N)

RC131114001

3. 經銷商:
(Supplier)

榮昌科技股份有限公司

經銷商料號:
(Supplier P/N)4. 種類名稱:
(分群碼)

天線

5A. 品名描述(Part Description):

Patch Antenna(B3/4)榮昌

5B. 規格描述(Spec.Description):

7dBi 1710-2170MHz HSF

6. 變更原因說明(Change Reason):

(申請或變更料號請附上規格說明書) 如有任何變更, 須事前聯絡, 取得承認後, 始能變更

7. Series Approval ☐ 請勾選 (規格請參照 _____ 系列承認書)8. 樣品發行: ☒ BILLION ☒ EG-B ☐ None

9. 備註(Remark):

DCC 文管中心發行章	主管核准 Manager Signature		審查 Engineer Signature		承辦
	M.E.	E.E.	M.E.	E.E.	
	 Christina 103.1.23 林桂榮	N/A	 Katie 2014/1/20 jilly	N/A	 M7m1
	*無須審核者以"N/A"表示 *簽名時應註明日期				

申請日: 2014/01/20

Katie

Comm PM dept.

高晏吟

① (Request Date)

☛ 申請者 (Request)

申請單位 (Department) ☞

鍵入者 (Key-in) 品

由零件工程師填寫

料號申請/零件承認單: 第 1 頁

F-SOAK0102-00



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承 認 書

SPECIFICATION FOR APPROVAL

客 戶 名 稱 : 盛達

CUSTOMER

產 品 : LTE BAND 3/4 ANTENNA 7dBi

PRODUCT

客 戶 料 號 : A0ZANIJX7DAB3B4000

PART NO.

榮 昌 料 號 : DA-B3B4-07-01-BL

PART NO.

承認書編號 : RC131114001

SHEET NO.

DATE : 2013/12/10

CUSTOMER CONCLUSION : ☐ **APPROVED** (承 認)

(客 戶 判 定) ☐ **REJECTED** (不合格)

☐ **LIMITED** (允 收)

☐ **CONDITIONAL APPROVAL** (條 件 認 可)

INCLUDING THIS COVER TOTAL 193 PAGES

(含 此 封 面 頁 共 193 頁)

*** PLEASE SIGNED AND FAX THE RESULT TO US .**

(請 於 判 定 簽 名 後 將 結 果 傳 回)

AUTHORIZE DSIGNATURES



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GTT Part Number /Doc. Ver. :DA-B3B4-07-01-BL / Ver.A

Customer Part Number : A0ZANIJX7DAB3B4000

Description: LTE BAND 3/4 ANTENNA 7dBi

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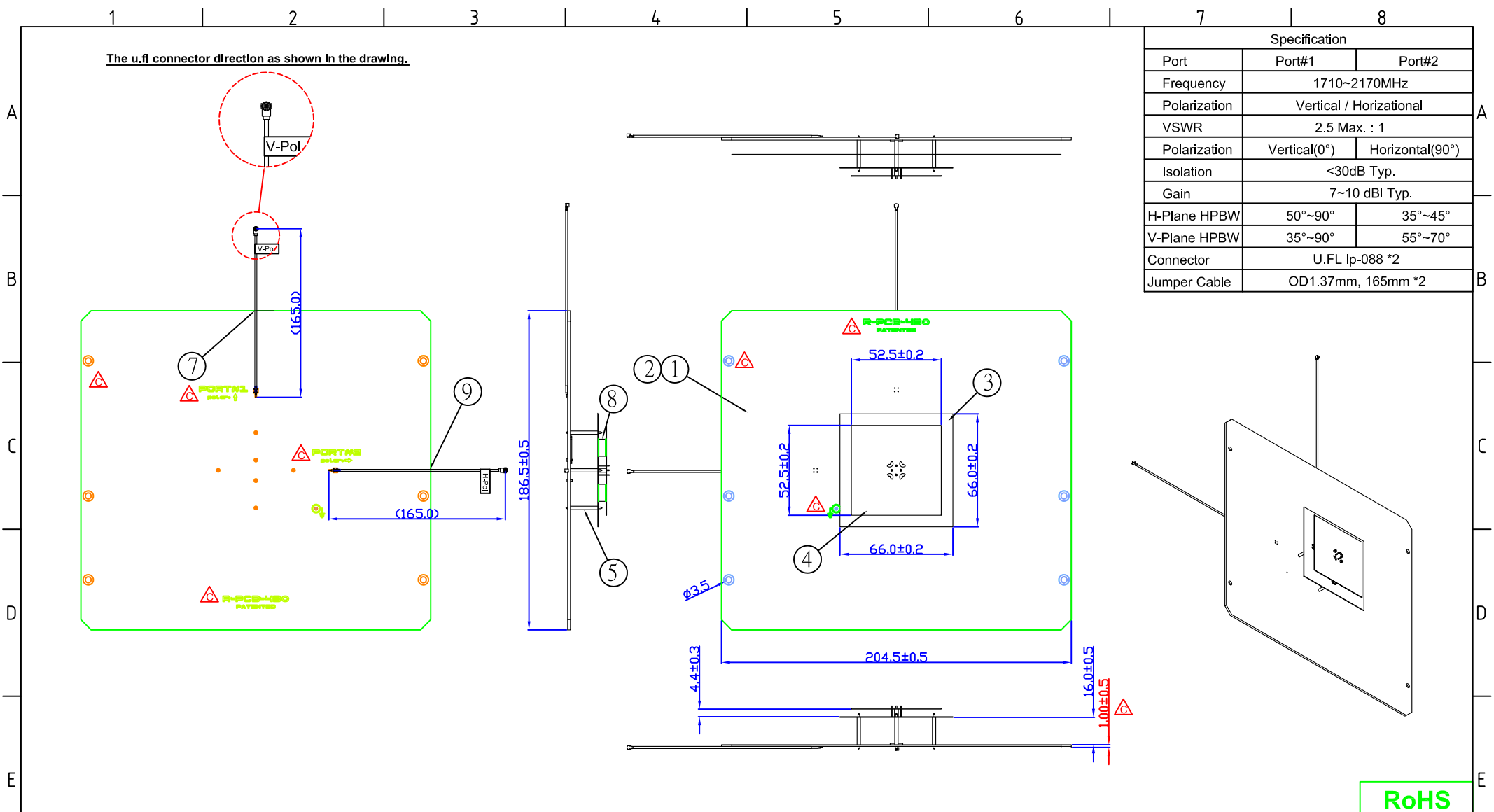
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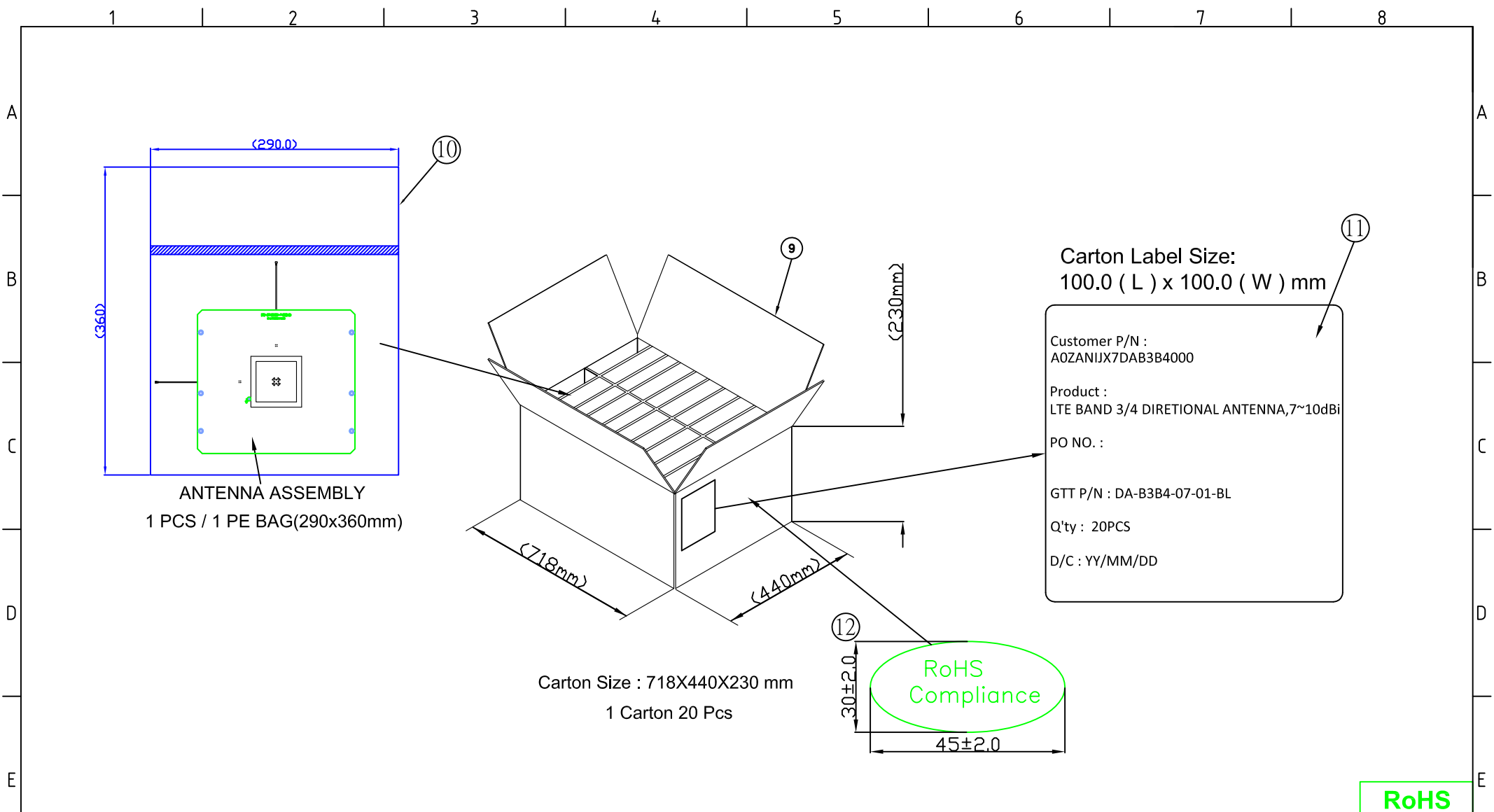
Part No.	A0ZANIJX7DAB3B4000	Item No.	DA-B3B4-07-01-BL	Customer Code:	G0752
Edited By:	Matt	Check By:	Mark	Approved By:	Minghu

Standard Specification

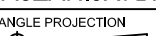
REVISIONS				
DATE	REV.	ZONE	DESCRIPTION	ECN NO.
2013/10/24	A		NEW RELEASE	
2013/11/13	B		REVISE TRANSMISSION BOARD PART NO.	1311009
2013/12/09	C		REVISE PCB ASSEMBLY DRAWING	1312004



8	4	EA	Sponge For LTE B3/B4 Patch Antenna	UNLESS OTHERWISE SPECIFIED TOLERANCE : X.X ±0.3 X.XX ±0.15 ANGLES : ±2° DO NOT SCALE DRAWING  榮昌科技股份有限公司 GRAND-TEK TECHNOLOGY CO., LTD. TITLE LTE BAND3/4 ANTENNA 7dBi G0752 DRAWN BY Matt CHECKED BY Mark APPROVED BY Minghu DWG NO. SIZE A UNIT mm PART NO. A0ZANIJX7DAB3B4000 REV. C SCALE THIRD ANGLE PROJECTION  PAGE 1 OF 2 ITEM NO. DA-B3B4-07-01-BL DATE 2013/12/09 <tr><td>7</td><td>1</td><td>EA</td><td>Vertical U.FL Jumper,L=165.0mm Color:Gray</td></tr> <tr><td>6</td><td>1</td><td>EA</td><td>Horizontal U.FL Jumper,L=165.0mm Color:White</td></tr> <tr><td>5</td><td>4</td><td>EA</td><td>Copper Cylinder</td></tr> <tr><td>4</td><td>1</td><td>EA</td><td>Antenna Reflection Plane,Size:52.5(L)x52.5(W)x0.4(T)mm</td></tr> <tr><td>3</td><td>1</td><td>EA</td><td>Antenna Reflection Plane,Size:66.0(L)x66.0(W)x0.4(T)mm</td></tr> <tr><td>2</td><td>1</td><td>EA</td><td>LTE B3/B4 Transmission Board PCB 2 OF 2 </td></tr> <tr><td>1</td><td>1</td><td>EA</td><td>LTE B3/B4 Diretional Antenna PCB</td></tr> <tr><td>ITEM</td><td>QTY</td><td>U/M</td><td>DESCRIPTION</td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> 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4	1	EA	Antenna Reflection Plane,Size:52.5(L)x52.5(W)x0.4(T)mm																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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RoHS

				UNLESS OTHERWISE SPECIFIED TOLERANCE : X.X ±0.3 X.XX ±0.15		ANGLES : ±2° DO NOT SCALE DRAWING		 榮昌科技股份有限公司 GRAND-TEK TECHNOLOGY CO., LTD.					
				DRAWN BY Matt		TITLE LTE BAND3/4 ANTENNA 7dBi				G0752			
				CHECKED BY Mark		SIZE A mm		UNIT mm		PART NO. A0ZANIJX7DAB3B4000		REV. C	
				APPROVED BY Minghu		SCALE				THIRD ANGLE PROJECTION		PAGE 2 OF 2	
				DWG NO.				ITEM NO. DA-B3B4-07-01-BL		DATE 2013/12/09			



Grand-Tek
Technology

GRAND-TEK TECHNOLOGY CO., LTD.

Part No.		Item No.	R-PCB-430	Customer Code:	
Edited By:	Matt	Check By:		Approved By:	

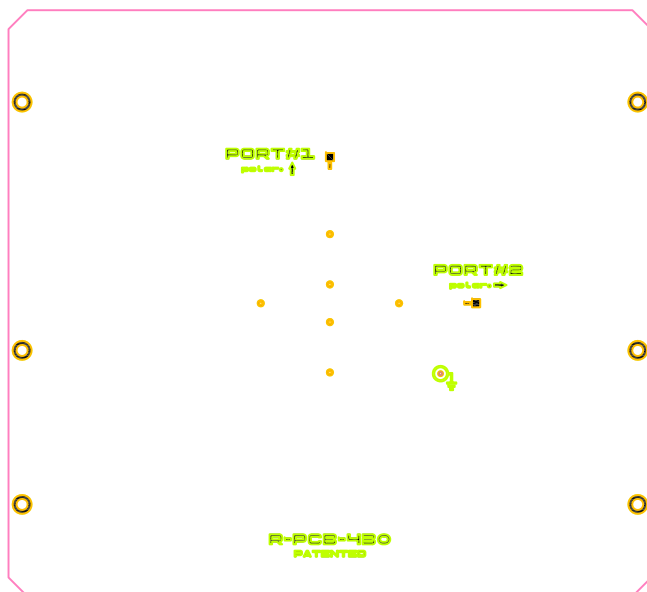
Standard Specification

REVISIONS				
DATE	REV.	ZONE	DESCRIPTION	ECN NO.
2013/12/09	A		NEW RELEASE	

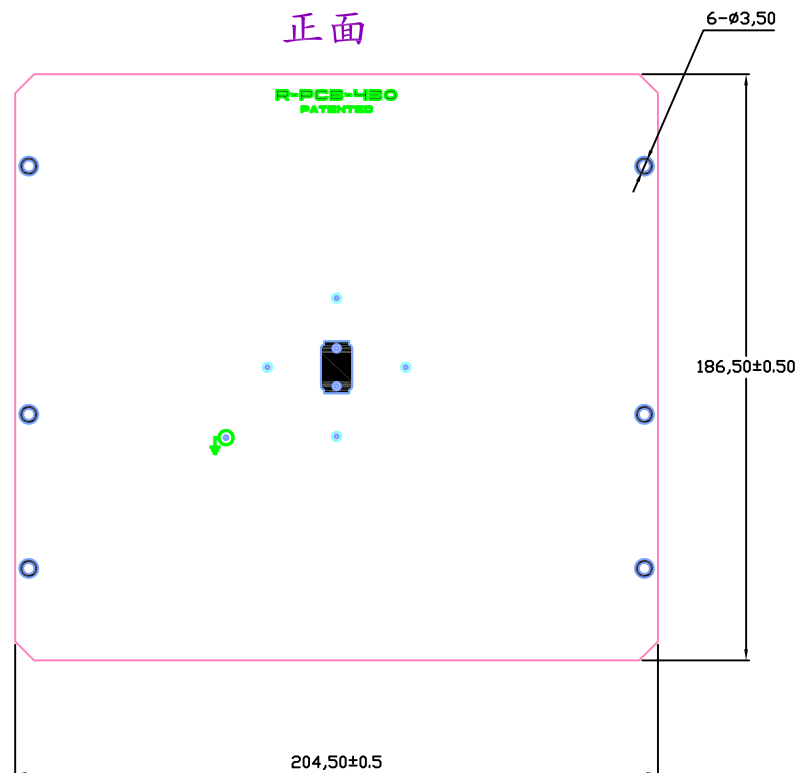
說明事項

- 1.板厚 $1.00\pm0.05\text{mm}$ FR-4
- 2.線路公差 ±0.02
- 3.使用環保材料,須符合RoHS
- 4.焊點噴錫,黑色防焊漆
- 5.文字使用白色油墨
- 6.雙面單層板

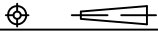
反面



正面



RoHS

UNLESS OTHERWISE SPECIFIED TOLERANCE : X.X ±0.3 X.XX ±0.15		ANGLES : ±2° DO NOT SCALE DRAWING		 榮昌科技股份有限公司 GRAND-TEK TECHNOLOGY CO., LTD.	
DRAWN BY Matt		TITLE LTE B3/B4 Diretional Antenna PCB			
CHECKED BY		SIZE A	UNIT mm	PART NO.	REV. A
APPROVED BY		SCALE 1 : 1	THIRD ANGLE PROJECTION 		PAGE 1 OF 1
DWG NO.		ITEM NO. R-PCB-430			DATE 2013/12/09



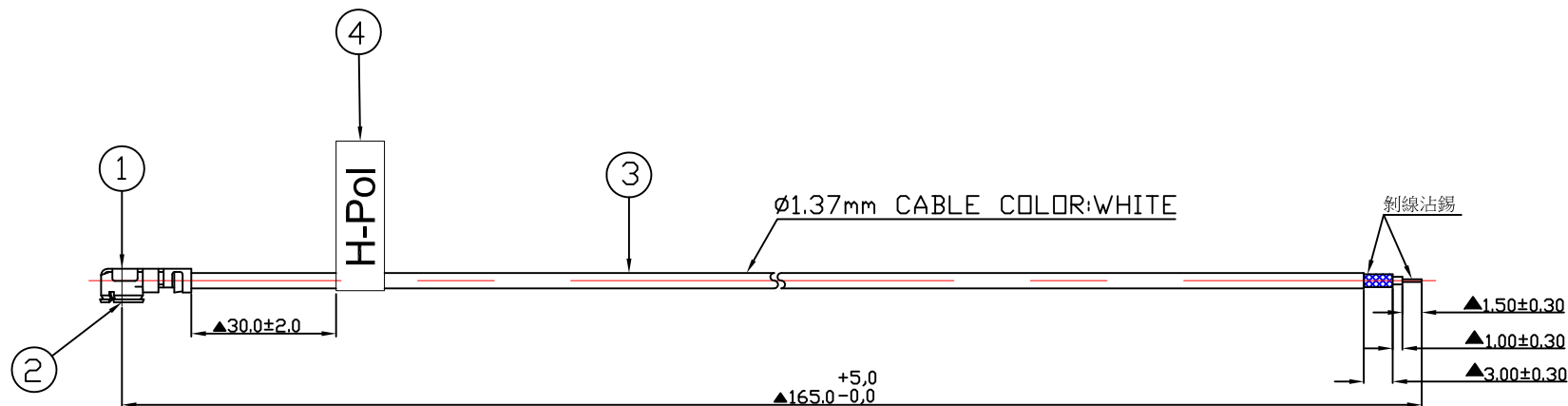
GRAND-TEK TECHNOLOGY CO., LTD.

Part No.		Item No.	R-721G0000165C	Customer Code:	
Edited By:	Matt	Check By:		Approved by:	

Standard Specification

REVISIONS				
DATE	REV.	ZONE	DESCRIPTION	ECN NO.
2013/10/17	A		NEW RELEASE	

半成品



ELECTRICAL PERFORMANCE:

- 1.IMPEDANCE:50 OHMS
- 2.FREQUENCY RANGE:DC~6GHz
- 3.WORKING VOLTAGE:60Vrms MAXIMUM
- 4.DIELECTRIC WITHSTANDING VOLTAGE:200Vrms.
- 5.INSULATOR RESISTANCE:500M OHMS min.

RoHS

4	1	EA	LABEL,SIZE:31x10mm 白底黑字銅板紙,內容:H-Pol(雙面列印)
3	1	EA	Ø1.37mm CABLE TIN PLATED COLOR:WHITE
2	1	EA	U.FL-LP-088 鍍金CONTACT For 1.37mm Cable焊接式
1	1	EA	U.FL-LP-088 Halogen Free鍍銀Shell(無鹵)白膠芯 For 1.37mm Cable
TITLE	Q'TY	U/M	DESCRIPTION

UNLESS OTHERWISE SPECIFIED TOLERANCE : X.X ±0.3 X.XX ±0.15 DO NOT SCALE DRAWING		榮昌科技股份有限公司 GRAND-TEK TECHNOLOGY CO., LTD.			
DRAWN BY	Matt	TITLE Horizontal U.FL Jumper,L=165.0mm Color:White			G0752
CHECKED BY		SIZE A	UNIT mm	PART NO.	REV. A
APPROVED BY		SCALE	1 : 2	THIRD ANGLE PROJECTION 	PAGE 1 OF 1
DWG NO.		ITEM NO. R-721G0000165C			DATE 2013/10/17



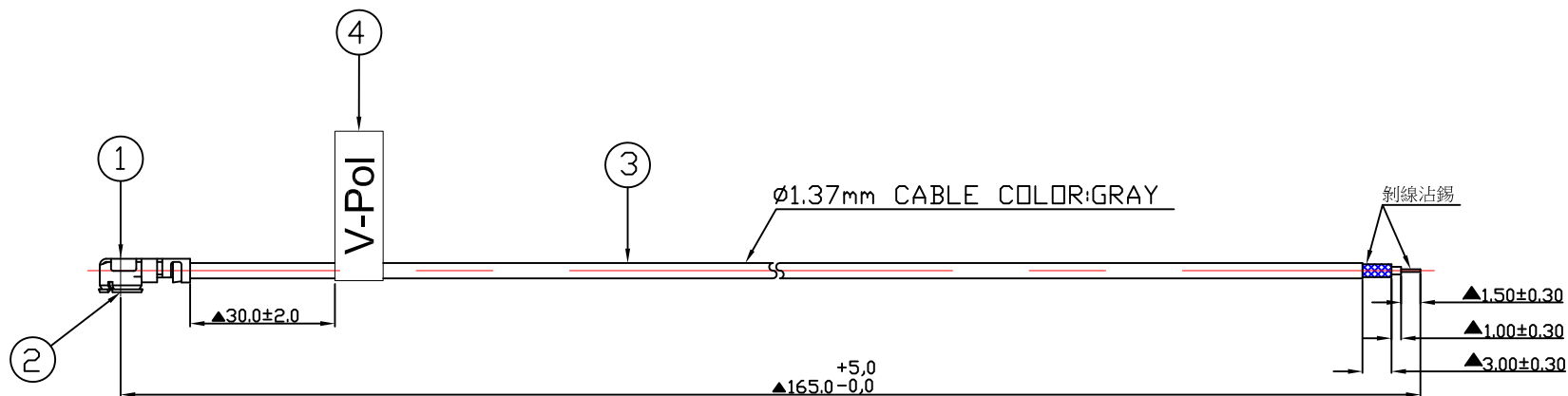
GRAND-TEK TECHNOLOGY CO., LTD.

Part No.		Item No.	R-721G0000165CA	Customer Code:	
Edited By:	Matt	Check By:		Approved by:	

Standard Specification

REVISIONS				
DATE	REV.	ZONE	DESCRIPTION	ECN NO.
2013/10/17	A		NEW RELEASE	

半成品



ELECTRICAL PERFORMANCE:

- 1.IMPEDANCE:50 OHMS
- 2.FREQUENCY RANGE:DC~6GHz
- 3.WORKING VOLTAGE:60Vrms MAXIMUM
- 4.DIELECTRIC WITHSTANDING VOLTAGE:200Vrms.
- 5.INSULATOR RESISTANCE:500M OHMS min.

RoHS

4	1	EA	LABEL,SIZE:31x10mm 白底黑字銅板紙,內容:V-Pol(雙面列印)
3	1	EA	Ø1.37mm CABLE TIN PLATED COLOR:GRAY
2	1	EA	U.FL-LP-088 鍍金CONTACT For 1.37mm Cable焊接式
1	1	EA	U.FL-LP-088 Halogen Free鍍銀Shell(無鹵)白膠芯 For 1.37mm Cable
TITLE	Q'TY	U/M	DESCRIPTION

UNLESS OTHERWISE SPECIFIED TOLERANCE : X.X ±0.3 X.XX ±0.15 DO NOT SCALE DRAWING		榮昌科技股份有限公司 GRAND-TEK TECHNOLOGY CO., LTD.			
DRAWN BY	Matt	TITLE Vertical U.FL Jumper,L=165.0mm Color:Gray			G0752
CHECKED BY		SIZE A	UNIT mm	PART NO.	REV. A
APPROVED BY		SCALE	1 : 1	THIRD ANGLE PROJECTION THIRD ANGLE PROJECTION	PAGE 1 OF 1
DWG NO.		ITEM NO. R-721G0000165CA			DATE 2013/10/17

0°/90° Dual-Polarized Directional Antenna For LTE B3B4 With GLB Enclosure Test Report (1710~2170MHz)

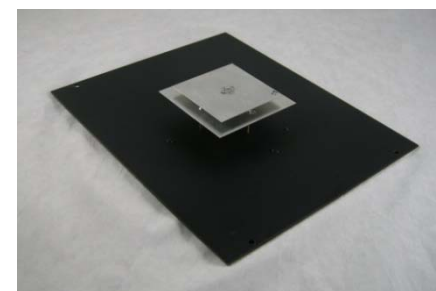
Contents

Specification	Page.2
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VSWR & Isolation Test	Page.4
Summary	Page.5
Radiation Patterns of Port#1	Page.6
Radiation Patterns of Port#2	Page.7

By GTT RF Design Center
07/Oct/2013

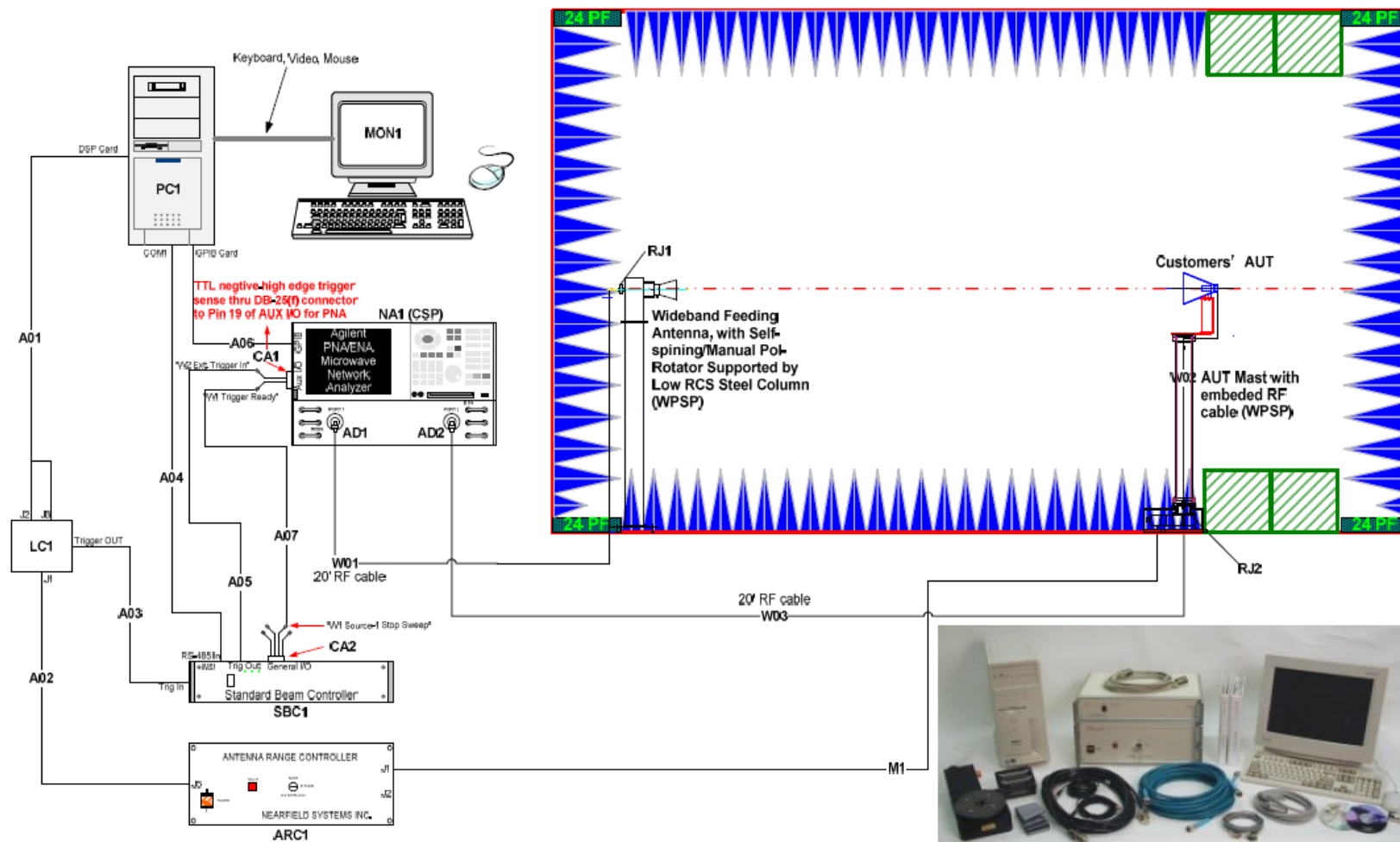
Specification

Port	Port#1	Port#2
Frequency	1710 ~ 2170MHz	
Polarization	Vertical	Horizontal
VSWR	< 2.0: 1 max.	
Isolation	> 30 dB	
Gain*	7~10dBi	
H-plane HPBW	50° ~ 90°	35° ~ 45°
V-plane HPBW	35° ~ 90°	55° ~ 70°
Connector	U.F.Lx2	
Jumper cable	Φ1.37, 150 mm x2 (white / gray)	



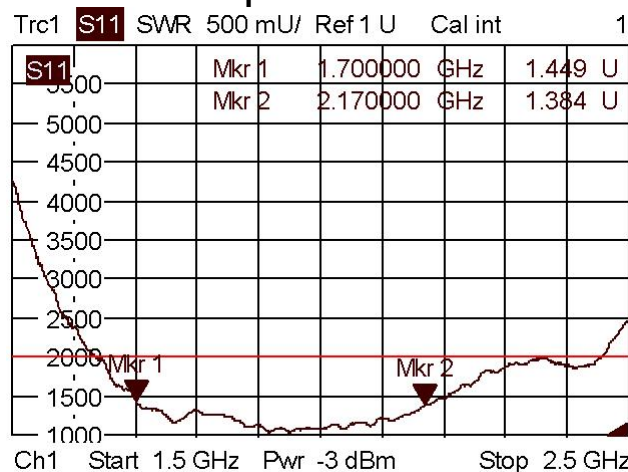
•Antenna is assembled in GLB enclosure with 30 mm standoff.

Pattern Test Setup

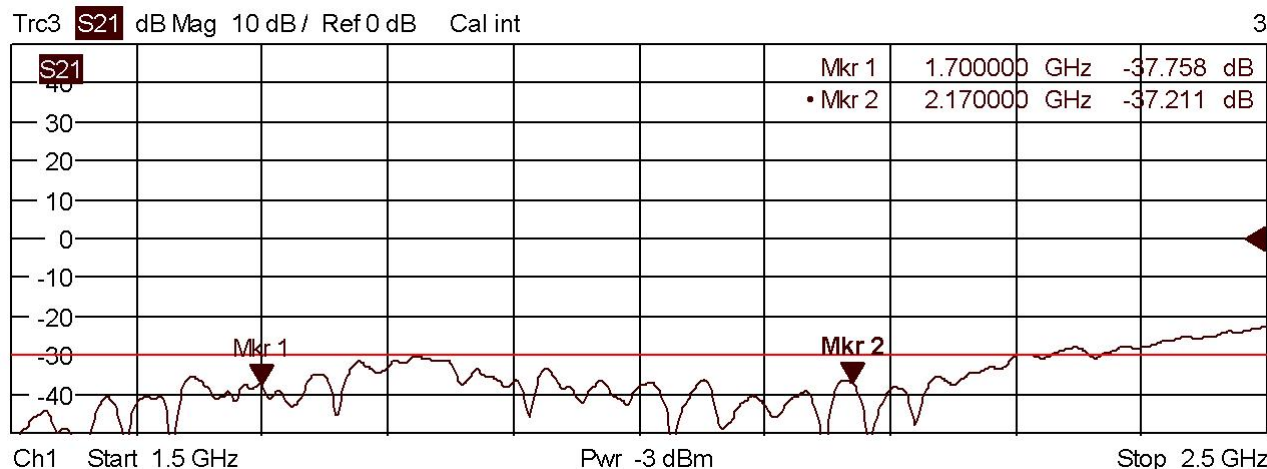
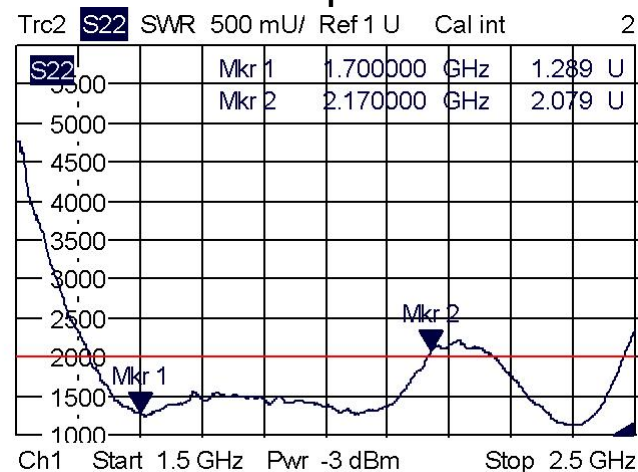


VSWR & Isolation Test

Port#1: V-polar. Port



Port#2: H-polar. Port



Radiation Pattern Test

– Summary –

Port#1: V-polar. Port

Frequency (MHz)	Peak Gain (dBi)		HPBW (degree)	
	H-plane	V-plane	H-plane	V-plane
1710	9.2	9.2	68	47
1800	7.3	7.0	89	91
1900	9.0	9.0	71	48
2000	10.0	9.8	62	40
2100	10.6	10.3	52	37
2170	10.3	10.4	50	36

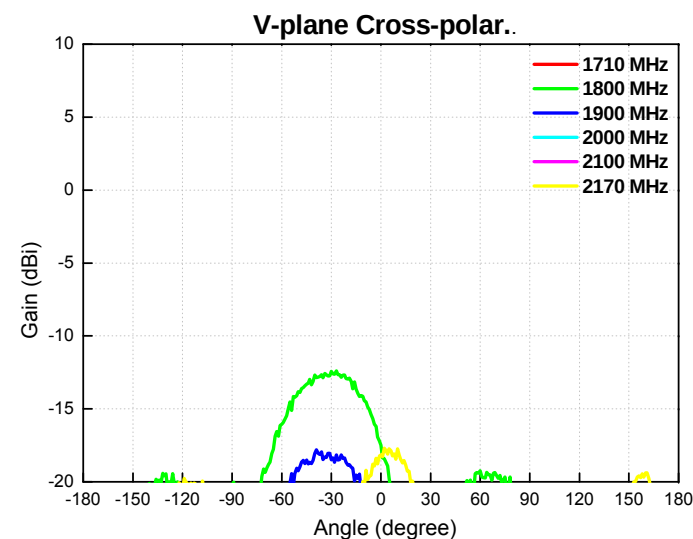
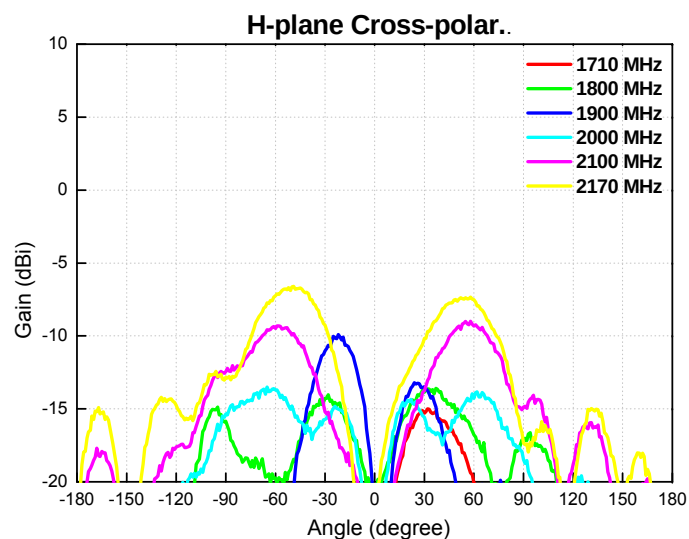
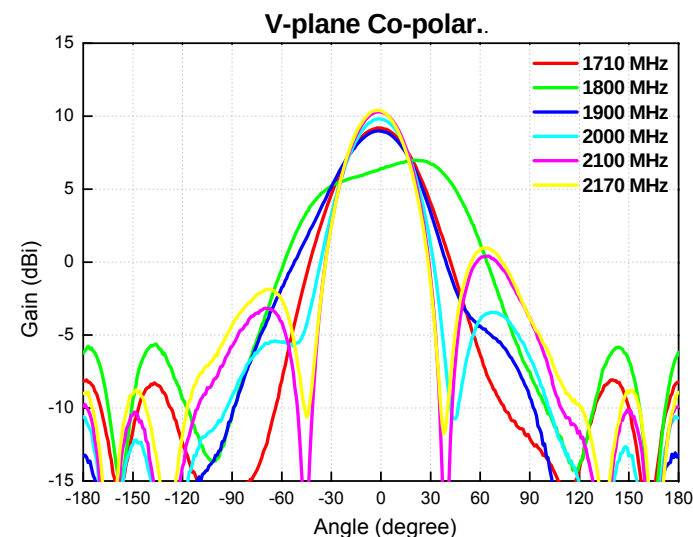
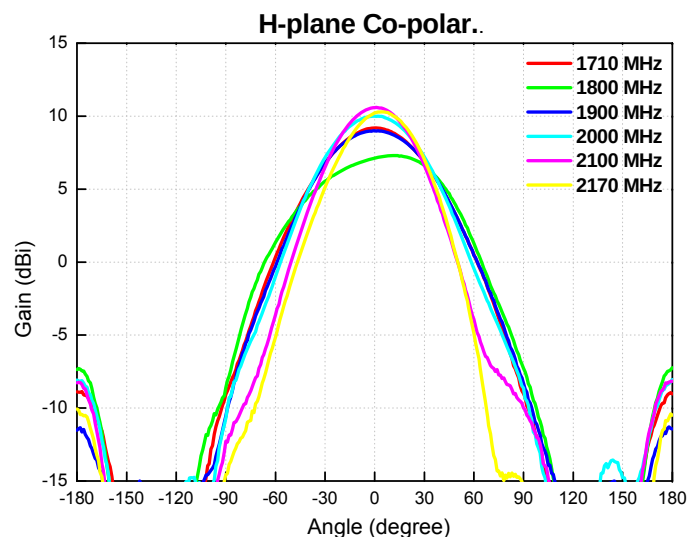
Port#2: H-polar. Port

Frequency (MHz)	Peak Gain (dBi)		HPBW (degree)	
	H-plane	V-plane	H-plane	V-plane
1710	9.4	9.2	47	72
1800	9.7	9.8	43	70
1900	10.0	10	38	67
2000	10.0	10.2	36	61
2100	10.0	9.9	35	55
2170	8.9	8.5	36	63

- Gain drop result form enclosure effect and insufficient ground size of antenna
- It could be fine tune in V02

Radiation Pattern Test

– Radiation Patterns of Port#1 –



Radiation Pattern Test

– Radiation Patterns of Port#2 –

