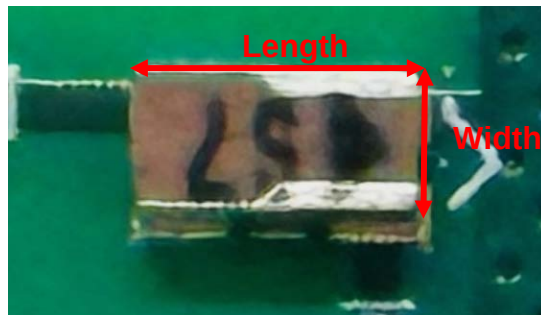


Antenna Information

Item		Contents
Antenna Type	BLE	Dielectric Chip Antenna
	WLAN2	Dielectric Chip Antenna
Antenna peak gain	BLE	1.99 dB i
	WLAN2	1.99 dB i
Manufacturer / Model name		Partron Co., Ltd / SDBTPTR3015
Address of Manufacturer		22, Samsung 1-ro, 2-gil, Hwaseong-si, Gyeonggi-do, Korea
Test Laboratory		Partron Co., Ltd
Antenna_BLE Length		0.30 cm
Antenna_BLE Width		0.15 cm
Antenna_WLAN2 Length		0.30 cm
Antenna_WLAN2 Width		0.15 cm

Antenna_BLE



Antenna_WLAN2



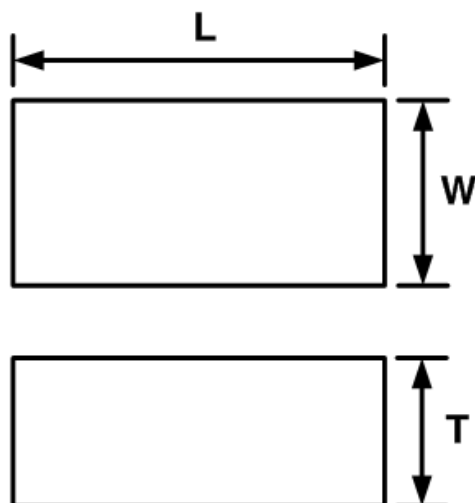
Original Design Chip Antenna Data Sheet

- P/N : SDBTPTR3015 -

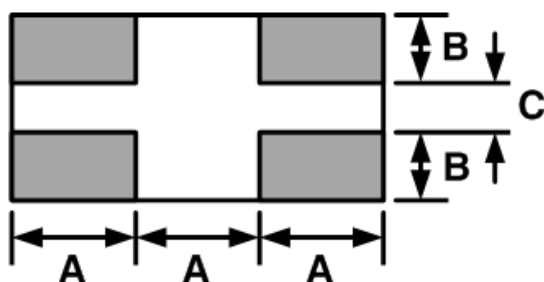
- Application Frequency	
	Band[MHz]
Bluetooth / WiFi / Zigbee	2400 ~ 2485
S-DMB	2630 ~ 2655
Wibro	2300 ~ 2390 band1 : 2300 ~ 2327 band2 : 2331.5 ~ 2358.5 band3 : 2363 ~ 2390

■ SDBTPTR3015 Dimension

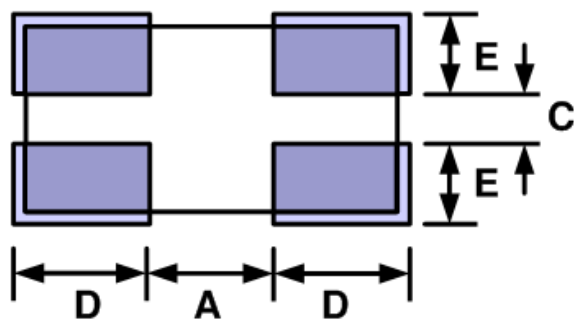
Chip Antenna Dimension



Chip Antenna
Soldering Pad Dimension



PCB
Soldering Land Dimension



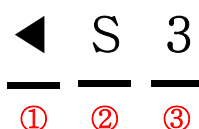
Parameter	L	W	T	A	B	C	D	E
Value[mm]	3.0 ± 0.1	1.5 ± 0.1	1.2 ± 0.1	1.0	0.55	0.4	1.1	0.65

Unless Specified tolerances are ± 0.05 mm

Dielectric Chip Antenna

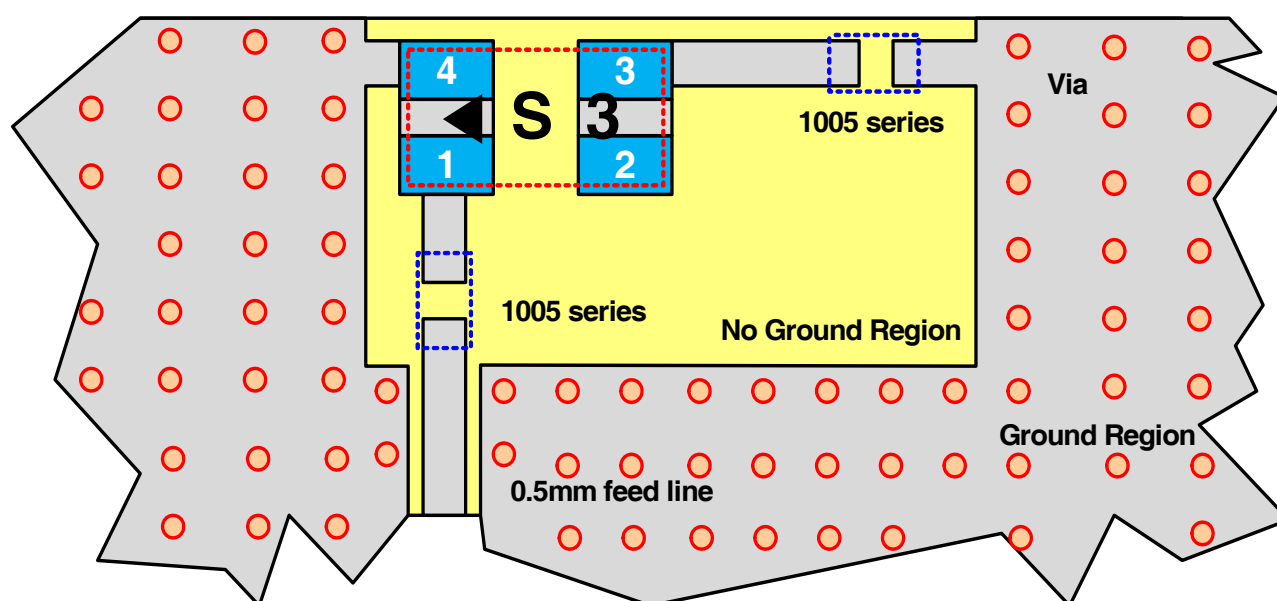


Antenna Marking System



ITEM	DESCRIPTION					
① Input Signal	Input Signal					
② Serial	SDBTPTR3015					
③ Month	1	2	3	4	5	6
	January	February	March	April	May	June
	7	8	9	A	B	C
	July	August	September	October	November	December

Antenna PAD Information



Dielectric Chip Antenna



PCB Drawing

Top View	Case #1 <Default>		
	Case #2		
	Case #3		
	Case #4		
Bottom View			<Equivalent Circuit>

Dielectric Chip Antenna



■ Change of Antenna Position



Dielectric Chip Antenna



■ Matching Value

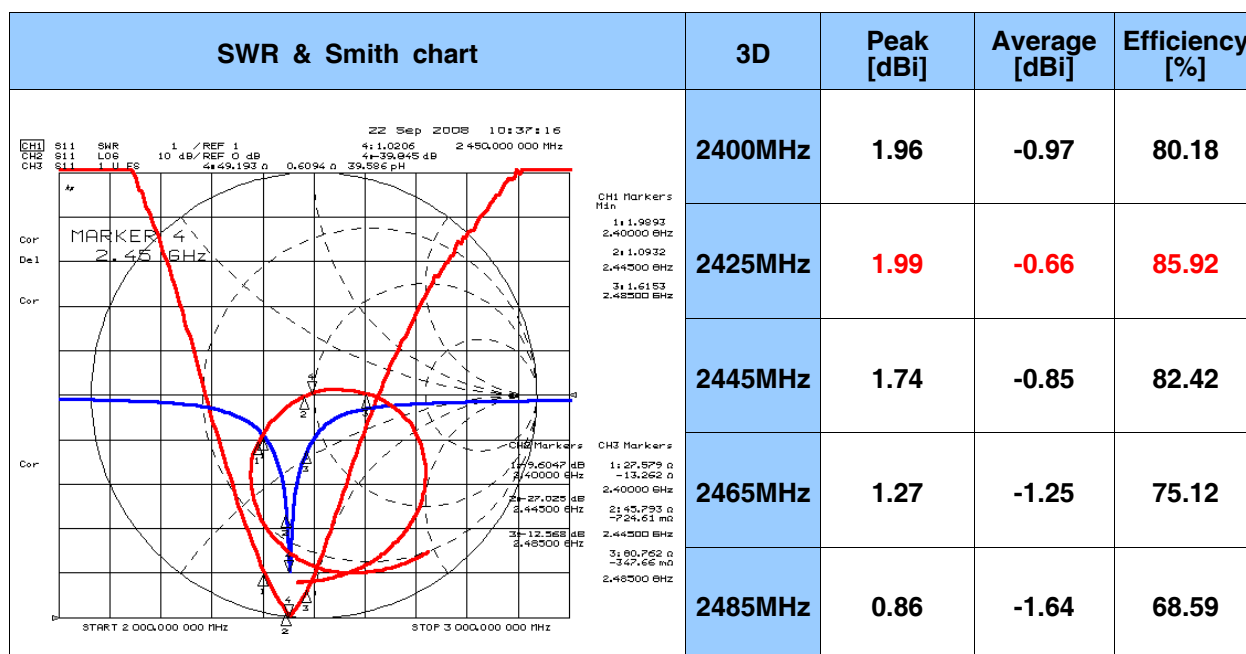
Band (MHz)	Matching Value (Default)
Bluetooth / WiFi / Zigbee (2400 ~ 2485)	
S-DMB (2630 ~ 2655)	
Wibro (2300 ~ 2390) band1:2300~2327 band2:2331.5~2358.5 band3:2363~2390	

Dielectric Chip Antenna

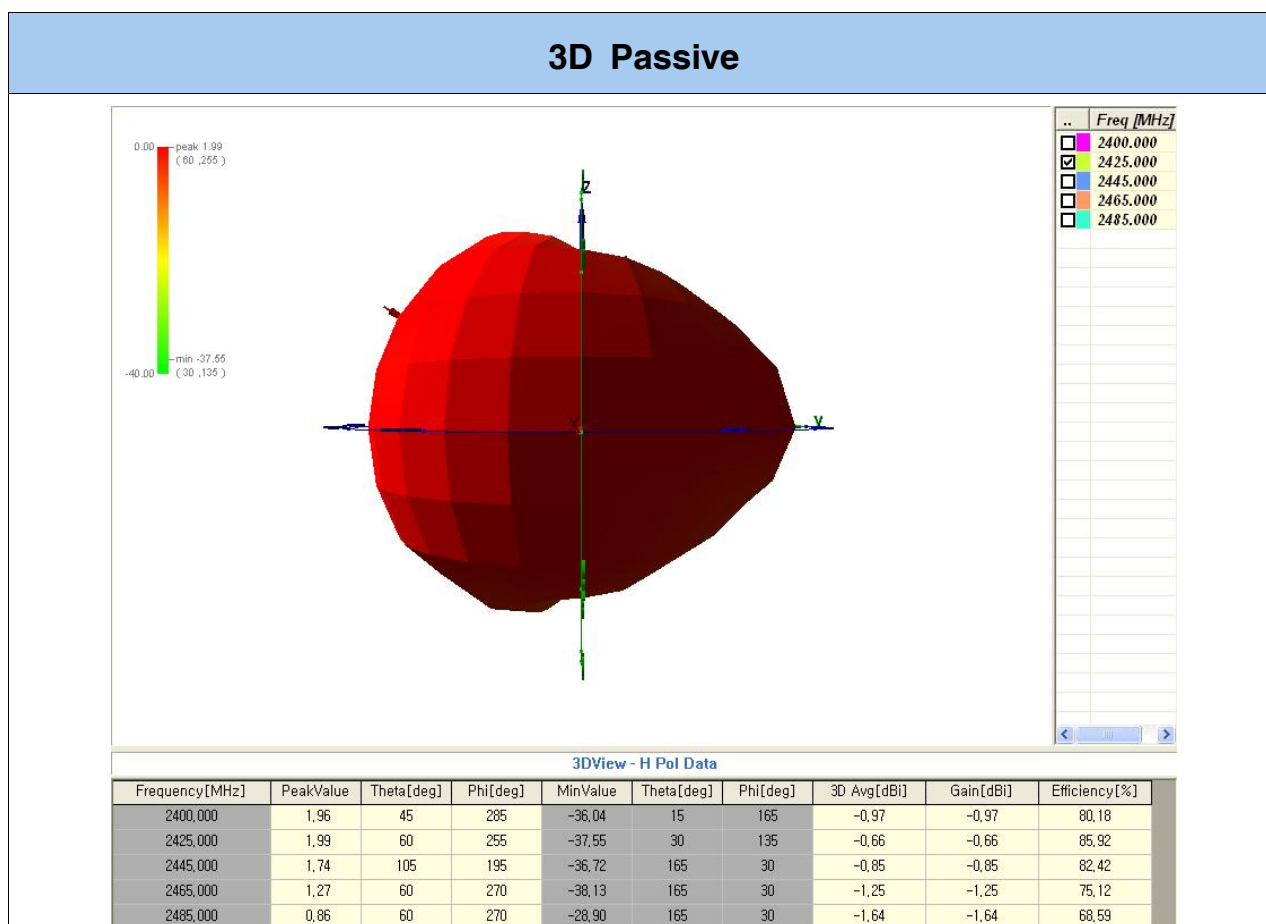


- 3D Passive Gain For Bluetooth / WiFi / Zigbee

Test Result for Ver 0.0



Radiation Pattern Ver 0.0

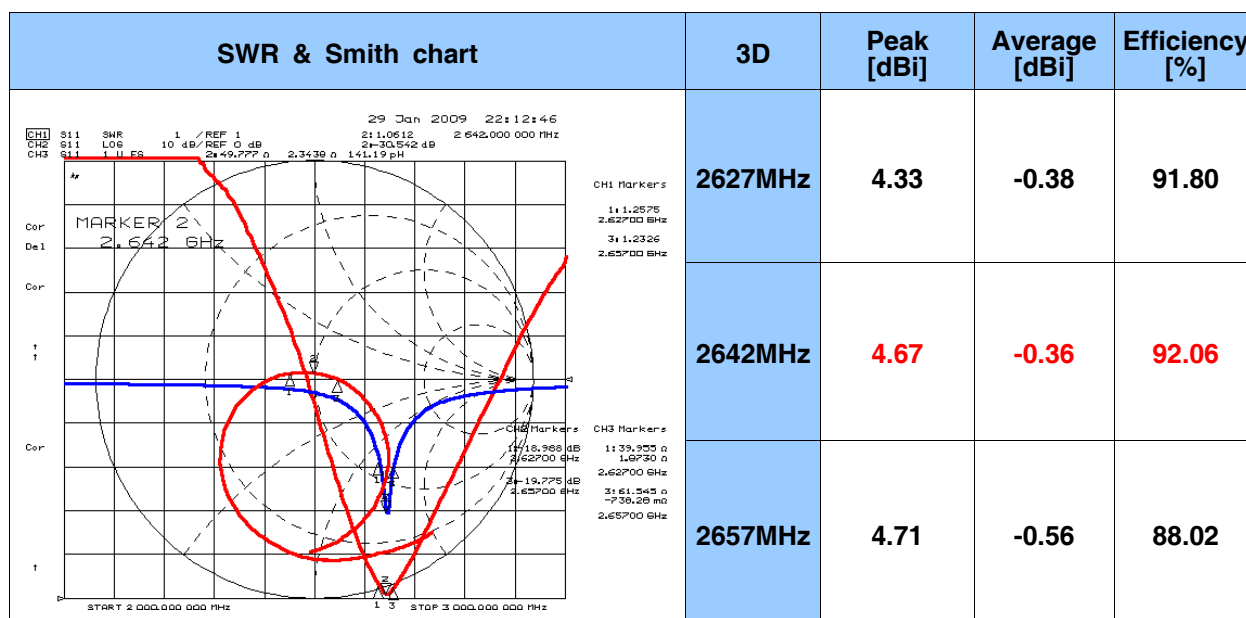


Dielectric Chip Antenna

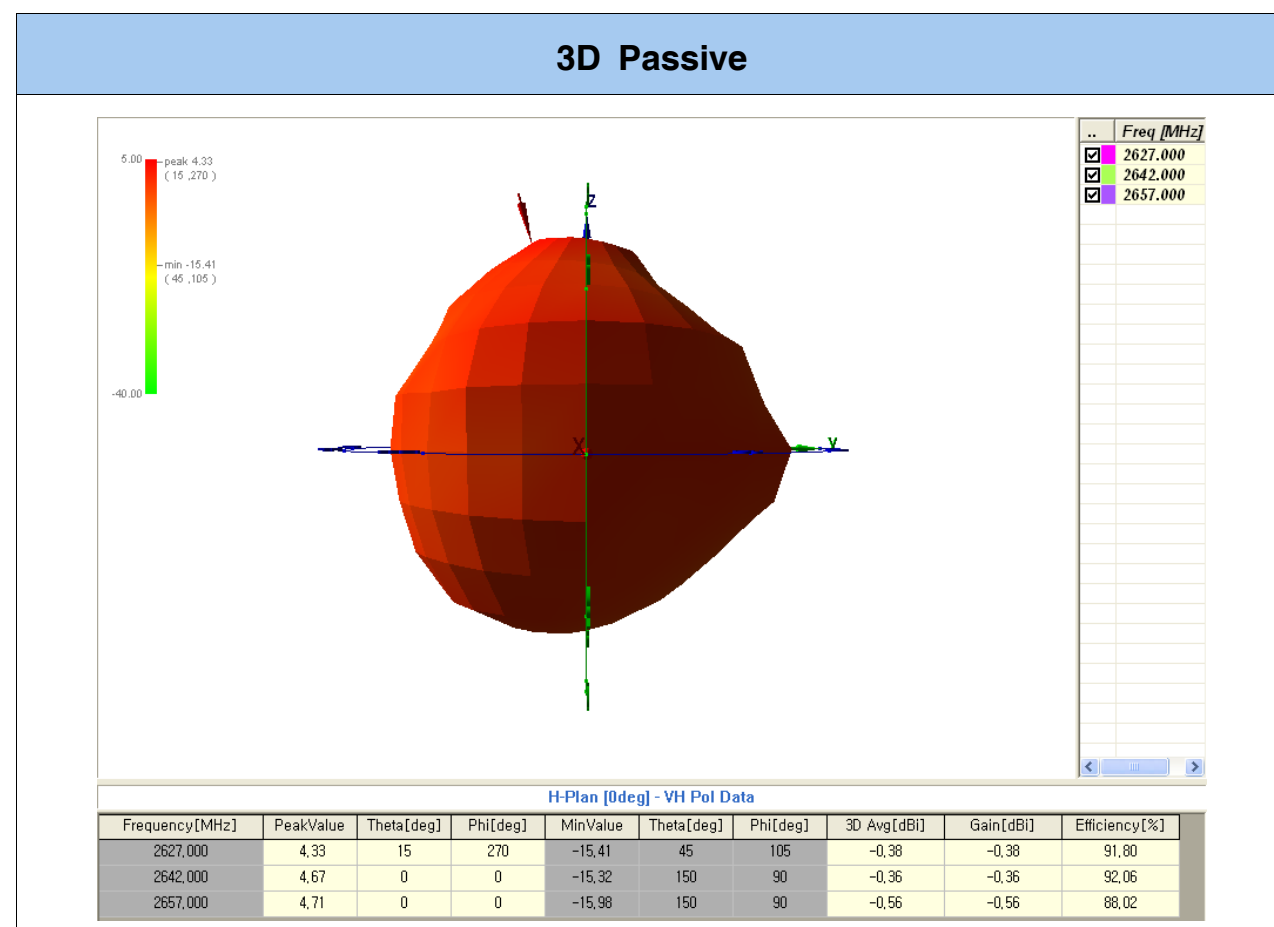


- 3D Passive Gain For S-DMB

Test Result for Ver 0.0



Radiation Pattern Ver 0.0

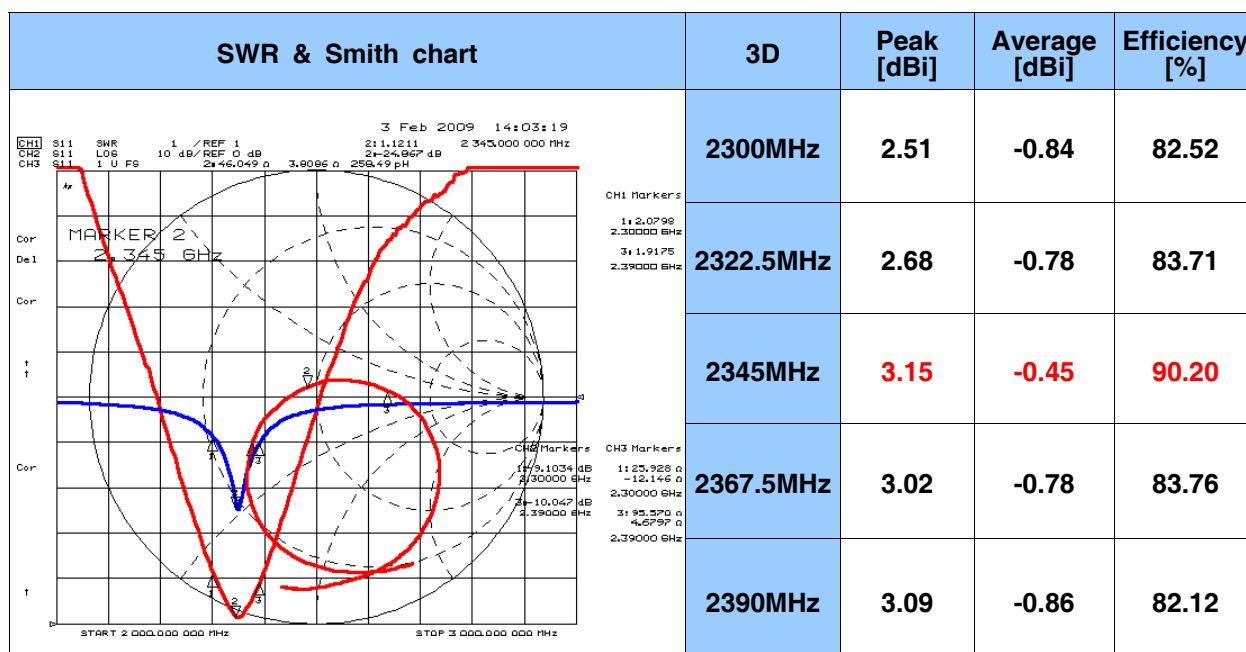


Dielectric Chip Antenna

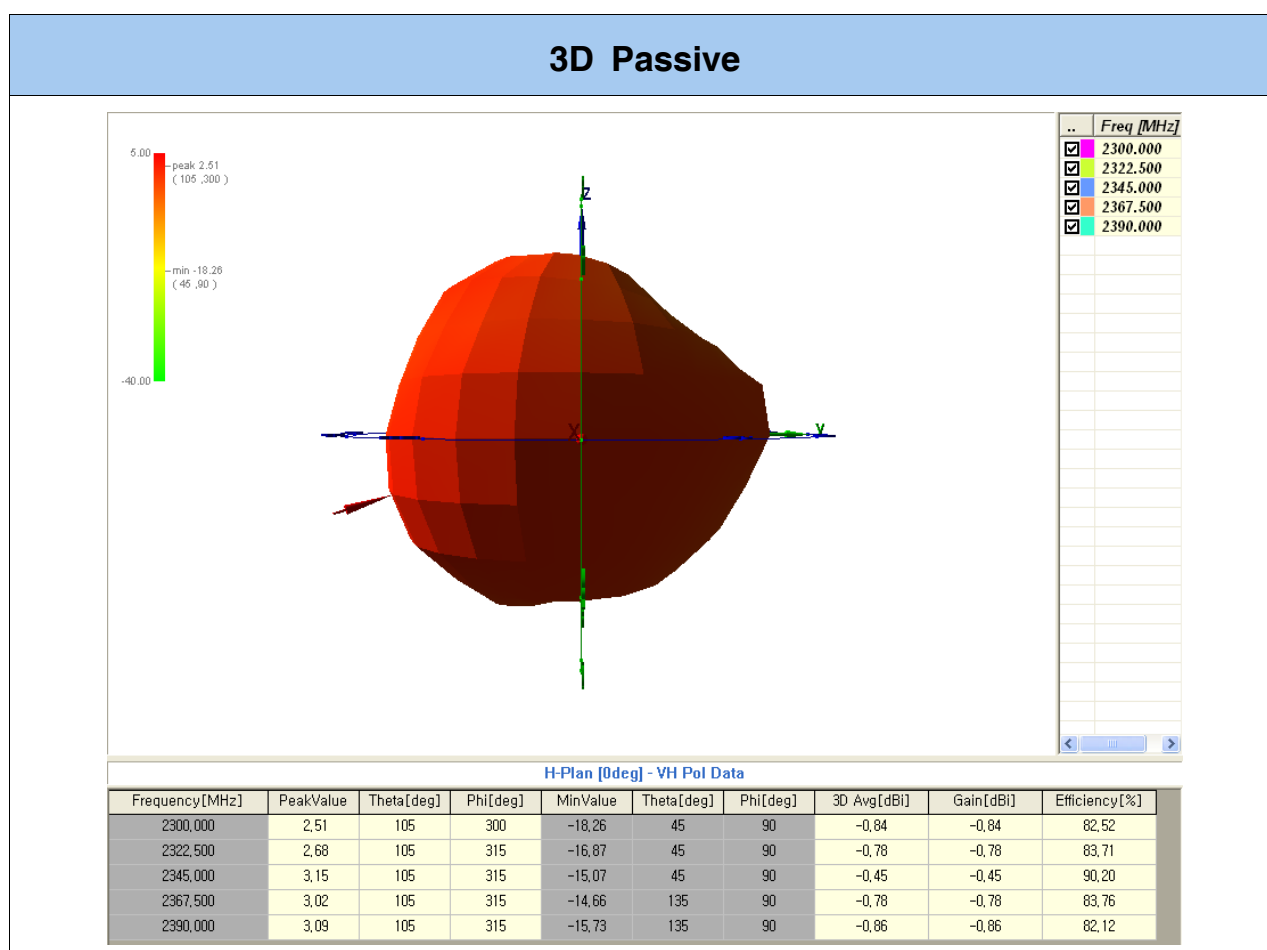


- 3D Passive Gain For Wibro

■ Test Result for Ver 0.0



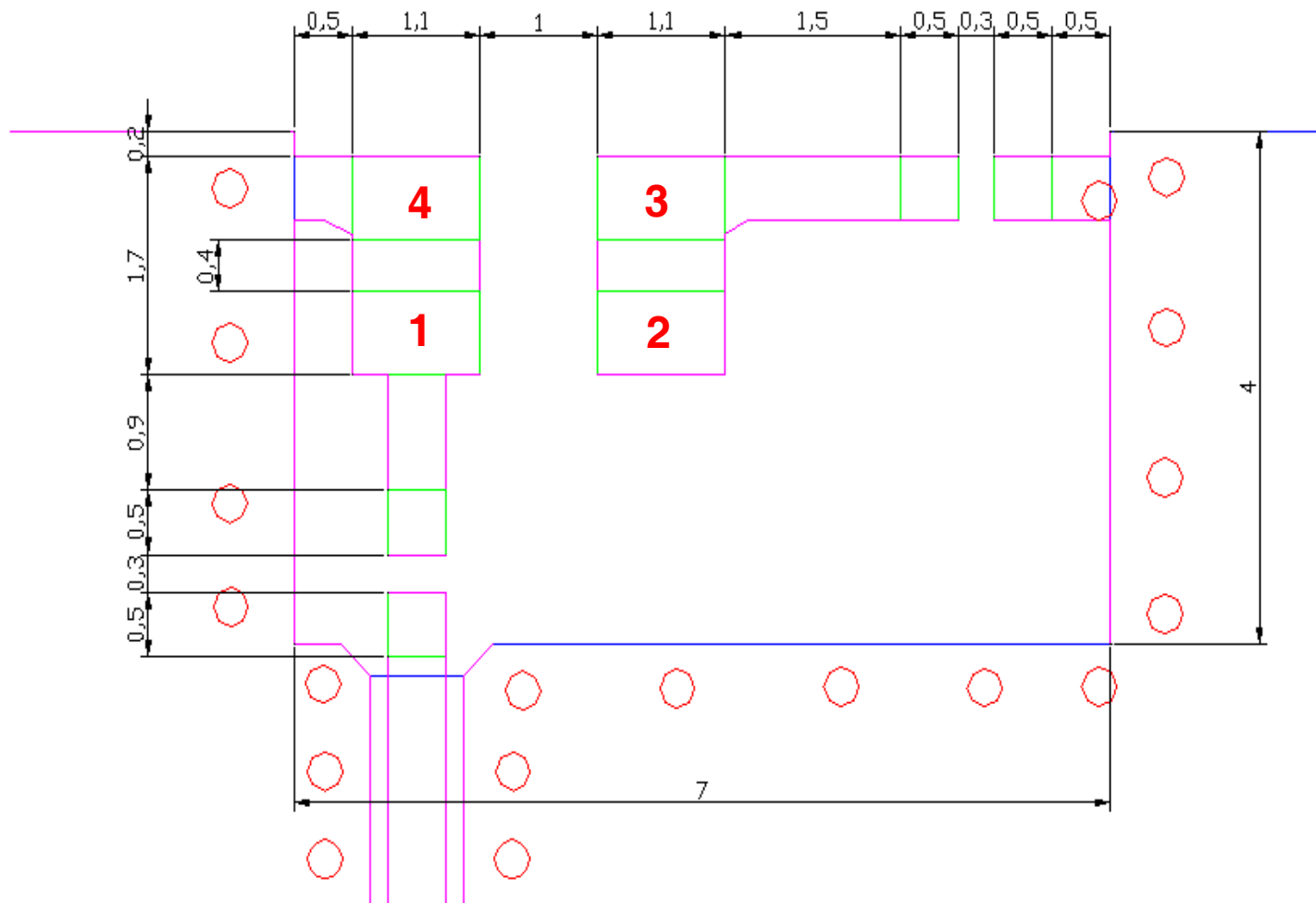
■ Radiation Pattern Ver 0.0



Dielectric Chip Antenna



■ AutoCAD Drawing of Reference PCB Design for SDBTPTR3015 Product



Document NO.	HSCB-2301-AN001P
Maker Code	HSCB-MAIN-ST2301
DATE	2023.05.26
Page	1 / 13

Model	Type	Rev.	HAE SEUNG	IR
ST4915	INTENNA		SUNTECH	IR

APPROVAL SHEET

Customer : SUNTECH

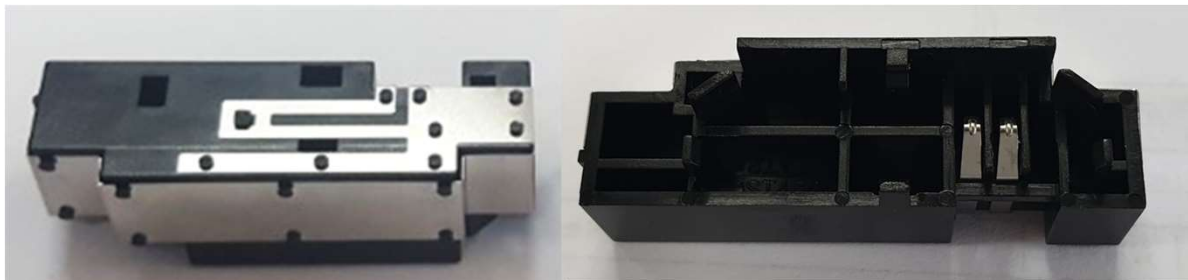
Company : HAE SEUNG CreBiz

Item : MAIN INTENNA

Model : ST4915

Customer P/N :

Maker Code : HSCB-MAIN-ST2301



Investigation	Verification	Approval
		

Document NO.	HSCB-2301-AN001P
Maker Code	HSCB-MAIN-ST2301
DATE	2023.05.26
Page	2 / 13

Model	Type	Rev.	HAE SEUNG	IR
ST4915	INTENNA		SUNTECH	IR

► Contents ◀

1. Revision History of Product Specification -----	03/13
1.1 History List of Approval Sheet -----	03/13
2. Circuit Specification -----	05/13
2.1 Test Setting -----	05/13
2.1.1 Test Environment (Condition/Method) -----	05/13
2.2 Electrical Specification -----	07/13
2.2.1 Electrical Spec. of SET (With VSWR) -----	08/13
2.2.2 Passive Gain & 3D Pattern -----	09/13
3. Mechanical Specification -----	10/13
3.1 Material Certification-----	10/13
3.2 Mechanical Specification -----	11/13
3.2.1 Part List -----	11/13
3.2.2 Assy Drawing -----	12/13
4. RoHS Report (Separate attachment)-----	13/13
4.1 CARRIER & PATTERN -----	13/13

Document NO.	HSCB-2301-AN001P
Maker Code	HSCB-MAIN-ST2301
DATE	2023.05.26
Page	4 / 13

Model	Type	Rev.	HAE SEUNG	IR
ST4915	INTENNA		SUNTECH	IR

2. Circuit Specification

2.1 Test Setting

2.1.1 Test Environment (Condition HP 8753ES)

① VSWR

Step 1. Connect ANT port with cable included adaptor to port1 of Network analyzer.

Step 2. Point out markers on network analyzer display at target frequencies.

Step 3. Inspect VSWR



Document NO.	HSCB-2301-AN001P
Maker Code	HSCB-MAIN-ST2301
DATE	2023.05.26
Page	5 / 13

Model	Type	Rev.	HAE SEUNG	IR
ST4915	INTENNA		SUNTECH	IR

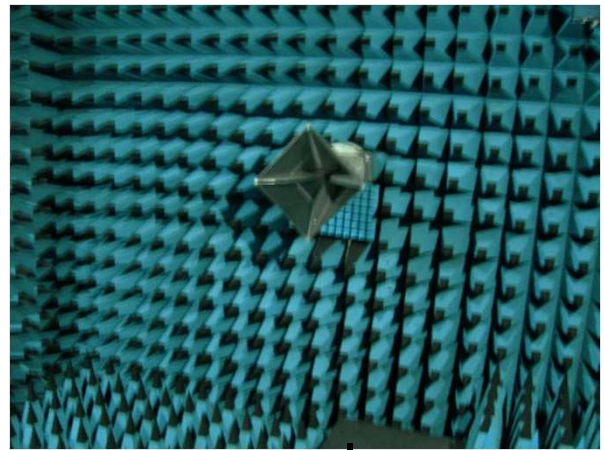
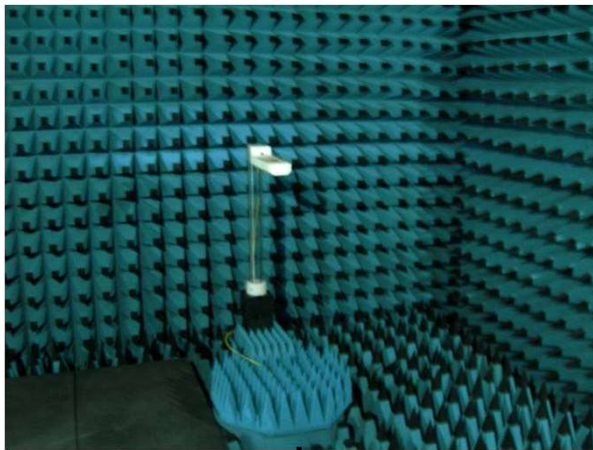
② Radiation Pattern and Gain

Step 1. Calibrate chamber system for gain measurement using horn antenna.

At the same time set up software program for chamber system control.

Step 2. Change over from a horn antenna to measuring antenna on target positioner

Step 3. Start a software program for chamber system control & measuring.



Document NO.	HSCB-2301-AN001P
Maker Code	HSCB-MAIN-ST2301
DATE	2023.05.26
Page	6 / 13

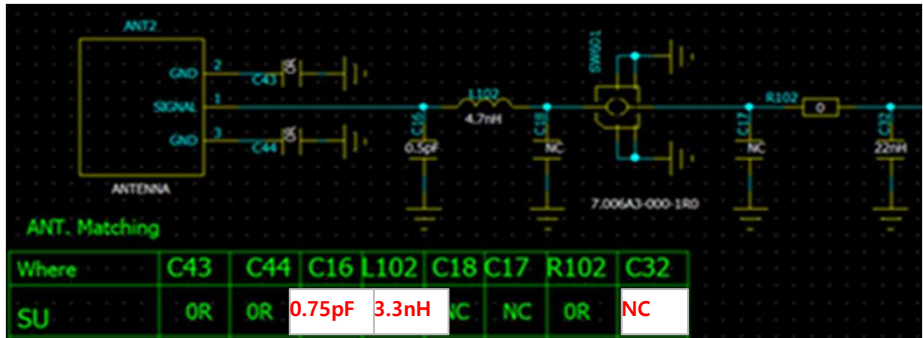
Model	Type	Rev.	HAE SEUNG	IR
ST4915	INTENNA		SUNTECH	IR

2.2 Electrical Specification

Frequency Band	LTE B5,B12			
	700MHz	745MHz	824MHz	894MHz
VSWR	≤ 6.0	≤ 2.7	≤ 3.5	≤ 9.0
Average Gain	≥ -7.0dBi	≥ -5.5dBi	≥ -4.3dBi	≥ -7.0dBi

Frequency Band	LTE B2,B4			
	1710MHz	1850MHz	1990MHz	2170MHz
VSWR	≤ 3.0	≤ 3.5	≤ 2.5	≤ 2.5
Average Gain	≥ 5.0dBi	≥ -4.5dBi	≥ -3.0dBi	≥ -3.5dBi

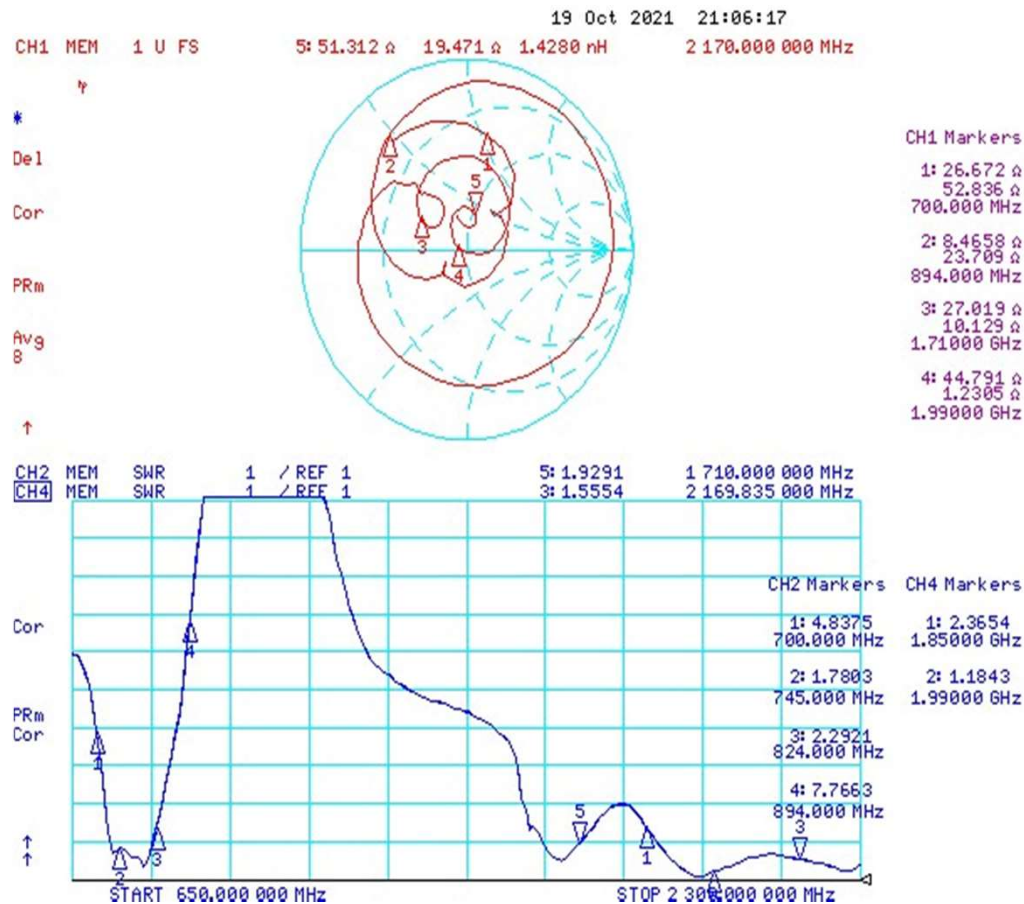
Directivity	Omni-directional			
Polarization	Linear			

Matching Value									
	Where	C43	C44	C16	L102	C18	C17	R102	C32
	SU	0R	0R	0.75pF	3.3nH	NC	NC	0R	NC

Document NO.	HSCB-2301-AN001P
Maker Code	HSCB-MAIN-ST2301
DATE	2023.05.26
Page	7 / 13

Model	Type	Rev.	HAE SEUNG	IR
ST4915	INTENNA		SUNTECH	IR

2.2.1 Electrical Spec. of Set (With VSWR)



Document NO.	HSCB-2301-AN001P
Maker Code	HSCB-MAIN-ST2301
DATE	2023.05.26
Page	8 / 13

Model	Type	Rev.	HAE SEUNG	IR
ST4915	INTENNA		SUNTECH	IR

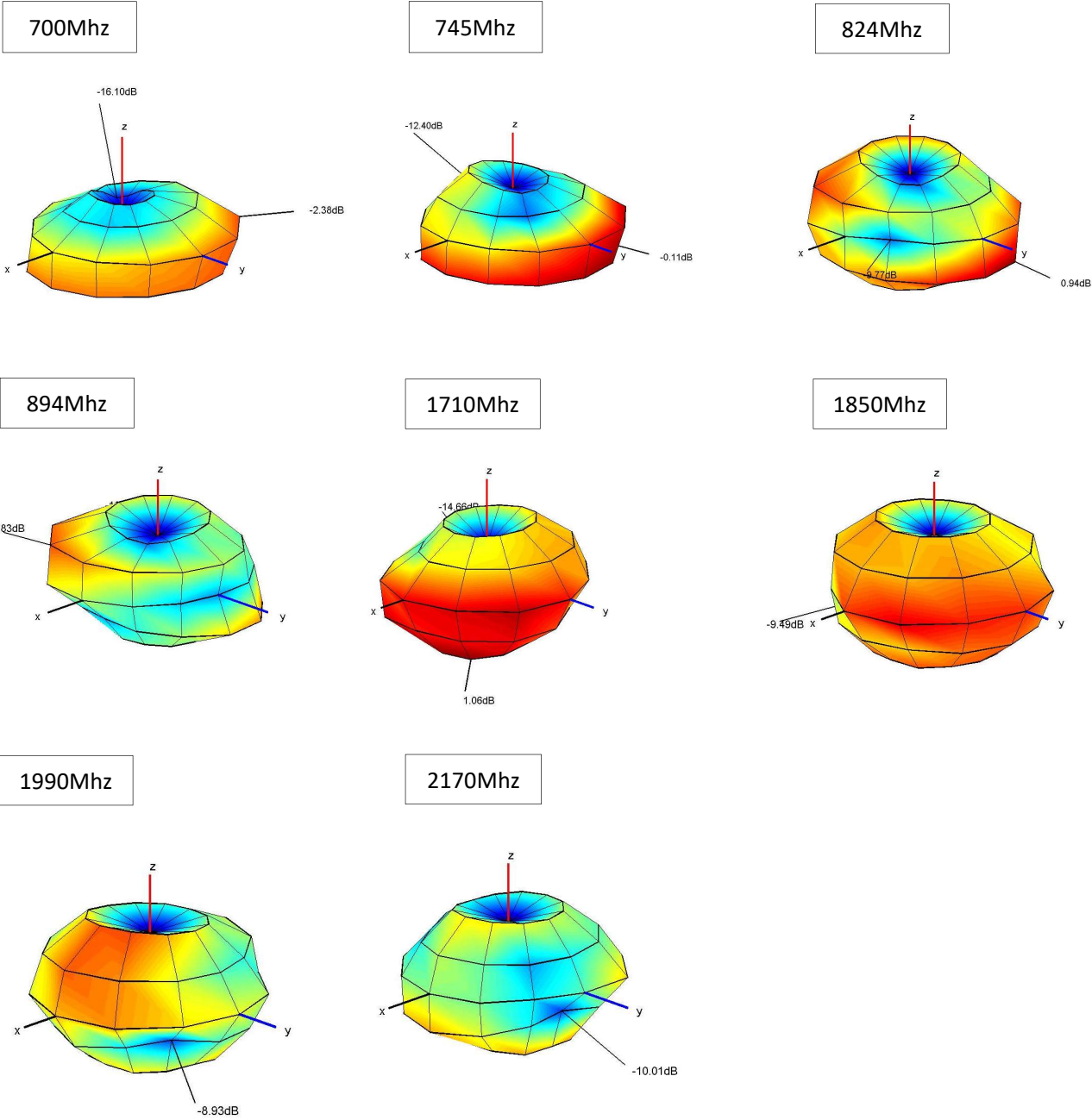
2.2.2 Passive Gain & 3D Pattern

구분	1	2	3	4	5	6	7	8	9	10	11	12
Frequency [MHz]	700	745	1710	1730	1750	1850	1880	1930	1960	2130	2150	2170
Efficiency [dB]	-6.45	-5.84	-3.86	-3.58	-3.87	-3.54	-4.01	-4.53	-4.98	-6.98	-7.2	-7.13
Efficiency [%]	20.9	25.3	52.3	54.5	53.4	54.7	47.4	45.3	38.9	21.3	18.6	19.3
H-Plane	-5.34	-4.84	-3.53	-3.25	-3.41	-3.35	-3.98	-4.12	-4.56	-5.05	-5.75	-5.69
E1-Plane, AVG [dB]	-10.53	-10.05	-8.98	-8.45	-8.75	-7.59	-9.35	-9.47	-9.89	-10.2	-11.48	-11.25
E2-Plane, AVG [dB]	-8.96	-8.48	-7.41	-6.88	-7.18	-6.02	-7.78	-7.9	-8.32	-8.63	-9.91	-9.68
Peak Gain [dBi]	-4.72	-4.15	0.83	1.02	0.96	1.15	0.75	0.4	-1.3	-1.94	-3.01	-3.45
Directivity [dB]	1.75	1.97	3.95	4.12	4.03	4.27	3.86	3.47	2.95	2.73	2.34	2.48
Minimum Gain [dBi]	-31.23	-30.73	-19.48	-18.73	-18.94	-18.12	-19.86	-22.82	-26.78	-27.47	-29.95	-30.01
Average Efficiency	-5.16		37.60%									

Document NO.	HSCB-2301-AN001P
Maker Code	HSCB-MAIN-ST2301
DATE	2023.05.26
Page	9 / 13

Model	Type	Rev.	HAE SEUNG	IR
ST4915	INTENNA		SUNTECH	IR

2.2.2 Passive Gain & 3D Pattern



Document NO.	HSCB-2301-AN001P
Maker Code	HSCB-MAIN-ST2301
DATE	2023.05.26
Page	10 / 13

Model	Type	Rev.	HAE SEUNG	IR
ST4915	INTENNA		SUNTECH	IR

3. Mechanical Specification

3.1 Material Certification

Model (Color)		ST4300 (Black)						
Ant Type		Main Intenna						
No	Part Name	Raw Material (Plating Spec.)	Raw Material color	Raw Material Company	Manufacture Company	Post Processing	Post Processing Company	Cavity
1	Carrier	Polycarbonate (SC1004A-KPA1)	Black	LG chemical	Sunin Tech	—	—	1x4
2	Pattern	Stainless Steel SUS304 (0.15 T)	—	Posco	Hoyeon ENG	—	—	Progressive

Model	Type	Rev.	HAE SEUNG	IR
ST4915	INTENNA		SUNTECH	IR

3.2.1 Part List

[illegible]

Document NO.	HSCB-2301-AN001P
Maker Code	HSCB-MAIN-ST2301
DATE	2023.05.26
Page	13 / 13

Model	Type	Rev.	HAE SEUNG	IR
ST4915	INTENNA		SUNTECH	IR

4. RoHS Report (Separate attachment)

4.1 CARRIER & PATTERN