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Model	Type	Rev.	Startellabs	IR
ST9730 BT&GPS	Carrier+FPCB		ST SUNLAB	IR

APPROVAL SHEET

Customer : ST SUNLAB

Company : Startellabs

Item : Main Antenna

Model : ST9730 BT&GPS

Customer P/N :

Maker Code : STCFBG06



Department	Design	Check	Approval
ST SUNLAB			
STARTELLABS			

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1.1 History List of Approval Sheet

[illegible]

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2. Circuit Specification

2.1 Test Setting

2.1.1 Test Environment

– Network Analyzer : E5071C (Date of Calibration : 2024.03.25)

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



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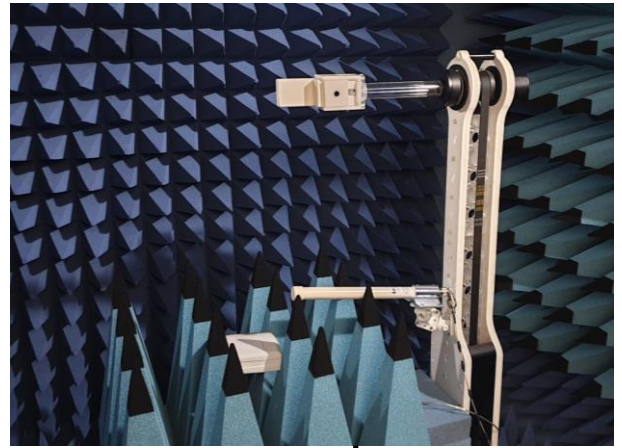
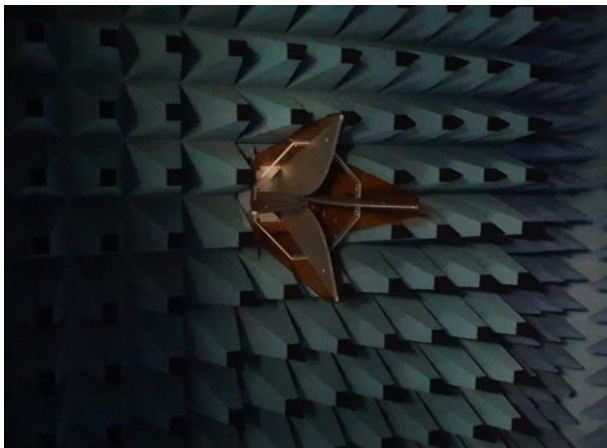
② Radiation Pattern and Gain

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

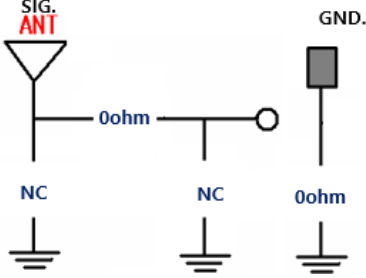
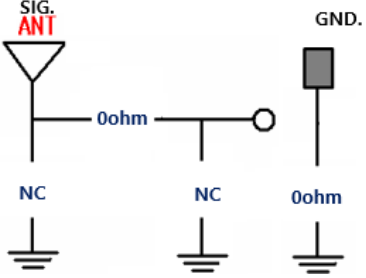
Step 3. Start a software program for chamber system control & measuring.



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2.2 Electrical Specification

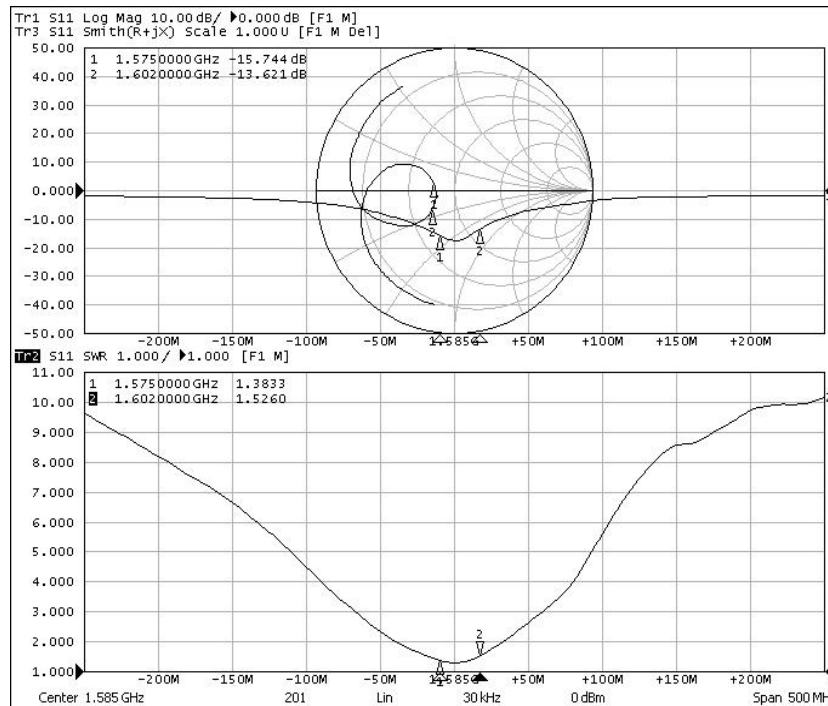
BT & GPS Antenna			
Frequency[MHz]	GPS	WiFi 2.4G(BT)	WiFi 5G
	1575~1602	2400~2500	5150~5805
VSWR	≤ 2.5	≤ 2.6	≤ 3.1
Peak Gain[dBi]	+1.6	-0.1	+1.6
Avg Gain[dBi]	-5.8	-6.1	-5.9
Directivity	Omni-directional		
Polarization	Linear		
Feed Impedance	50 Ohms		
Power Handing	2Watt		
Matching Value	GPS  WiFi 2.4G(BT) & 5G 		

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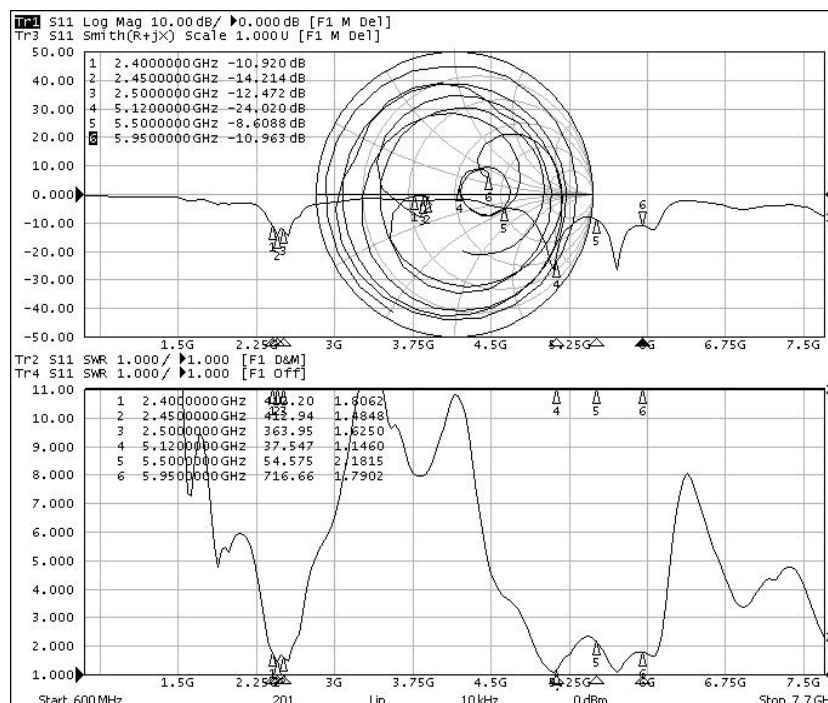
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2.2.1 Electrical Spec. of Set (With VSWR)

GPS



WiFi 2.4G(BT) & 5G



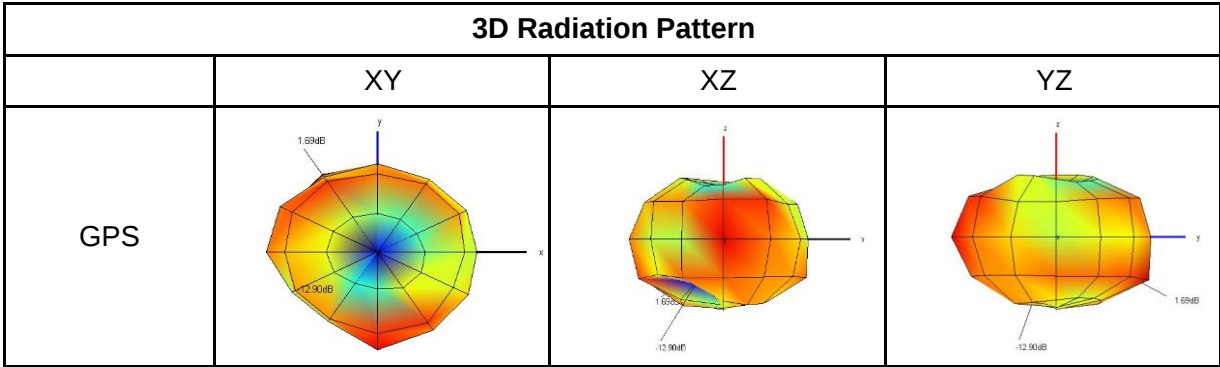
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2.2.2 Passive Gain & 3D Pattern

GPS

Frequency[MHz]	Peak Gain[dBi]	Efficiency[dBi]	Efficiency[%]
1559	1.61	-3.17	46.1
1565	1.59	-3.20	46.5
1575	1.69	-3.16	45.1
1585	1.55	-3.37	43.4
1595	1.12	-3.82	42.1
1602	0.66	-4.32	45.6
1605	0.48	-4.55	45.4
1608	0.24	-4.82	44.7

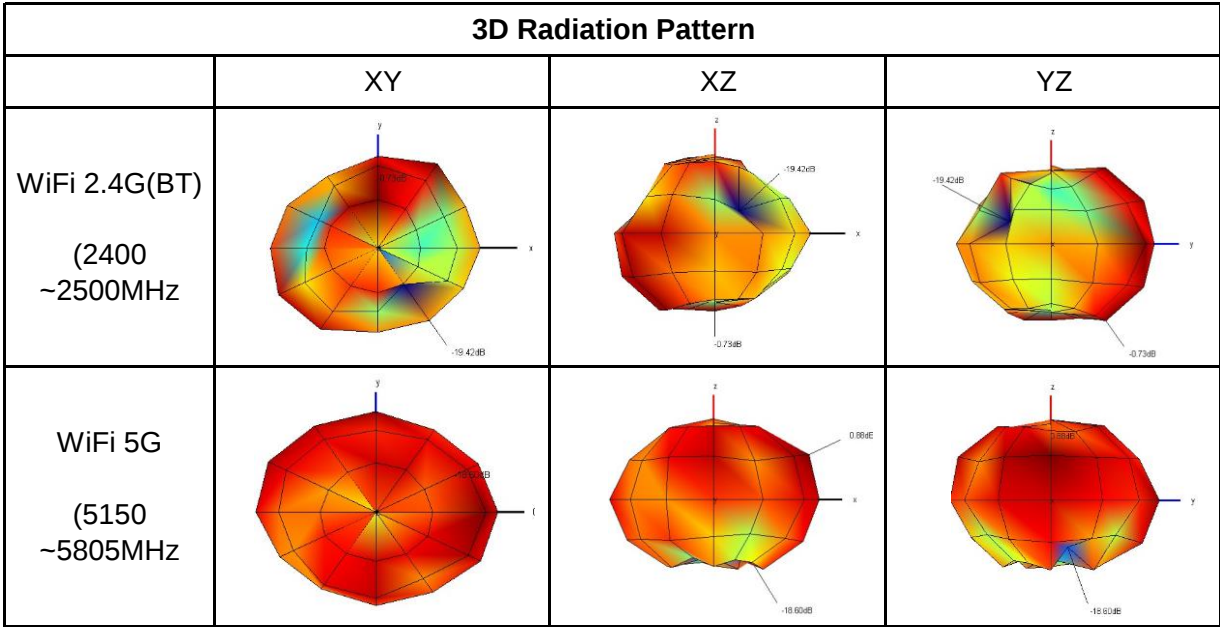


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WiFi 2.4G(BT) & 5G

Frequency[MHz]	Peak Gain[dBi]	Efficiency[dBi]	Efficiency[%]
2400	-0.84	-4.99	31.7
2412	-0.10	-4.20	38.0
2450	-1.16	-4.57	34.9
2484	-1.19	-5.15	30.6
2500	-0.49	-4.56	35.0
5000	0.27	-4.97	31.9
5160	-0.56	-4.02	39.6
5340	-0.14	-3.95	40.3
5500	0.10	-3.95	40.3
5765	-1.19	-4.69	34.0
5885	1.66	-2.68	54.0
5935	1.06	-3.20	47.9
5950	0.35	-3.94	40.4



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3. Mechanical Specification

3.1 Material Certificate

Product Name		ST9730 BT&GPS		
Ant Type		Carrier+FPCB		
No	Part Name	Raw Material	FINISH/COLOR	REMARKS
1	Carrier	ABS	WHITE	-
2	Radiator	FPCB	COVERLAY/BLACK	-

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Technical drawing of a mechanical part, likely a bracket or support structure, showing multiple views (front, top, side, and isometric) and dimensions. The drawing includes a title block with part number S19730-BT&GPS, material ABS, and a note indicating a general tolerance of ± 0.2 . The drawing is labeled "DRAWN/CHECKED/ APPROVED" and "ST9730".

Dimensions:

- Overall width: 27.8
- Overall height: 16.18
- Top flange width: 0.6
- Top flange height: 0.1
- Bottom flange width: 0.6
- Bottom flange height: 0.2
- Central cutout width: 0.2
- Central cutout height: 0.2

Notes:

- GENERAL TOLERANCE : ± 0.2
- If there is any question, discuss with Mechanical Designer.

Title Block:

2	S19730-IPC-BIM&PS	FPCB_BT&GPS	FPCB	1	N/A	N/A
1	S19730-OR-BIM&PS	CARRIER_BT&GPS	ABS	1	BLACK	N/A
NO	PART NO	PART NAME	MATERIAL	QTY	FINISH/COLOR	REMARKS
TOLERANCES TABLE						
DIM	Tolerance	PART NO. S19730-BT&GPS				
0.5~6	± 0.05	영구품				
6~30	± 0.1	QA/CONFIG				
30~100	± 0.15	DRAWN/CHECKED/ APPROVED				
100~200	± 0.2	영구품				
200~1000	± 0.3	ST9730				
UNIT mm						
REV.	V10	SCALE 1:1				
SHEET	1 of 3	ANGLE				

STAR-TEL