DATE	2023.01.06.
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Product Name	Type	Rev.	Hutec	IR
CG890 Main1(Ant1)	PCB+CABLE		Franklin Technology	IR

APPROVAL SHEET

Customer Name : Franklin Technology

Company Name : Hutec

Product Name : CG890 Main1(Ant1)

Description ITEM : Main Ant 1

Customer P/N :

	구 분	작성자	검토자	합 의	승 인 자
Franklin Technology	소속/성명				
	서 명				
Hutec	구 분	작성자	검토자	합 의	승 인 자
	소속/성명	기구/유정석	회로/방구현	품질/권순흥	김영상 수석
	서 명	유정석		권순흥	

PRODUCT PHOTO	TOP	
	BOTTOM	
Weight(g)	5.4g	

▶ Contents ◀

1. Revision History of Product Specification

1.1 History List of Approval Sheet

History List of Approval Sheet

No.	Rev.		Rev. Data (Submission Data)	Revision Detail & Revised Contents	Amount	Request Dept.	Process Stage
	Franklin Technology	Hutec					
1	IR	IR	2023.01.06.	Prior_Approval publication	-	-	-

2. RF Specification

2.1 Test Condition

2.1.1 Test Environment (Condition/Method)

① **Voltage Standing Wave Ratio(VSWR)**

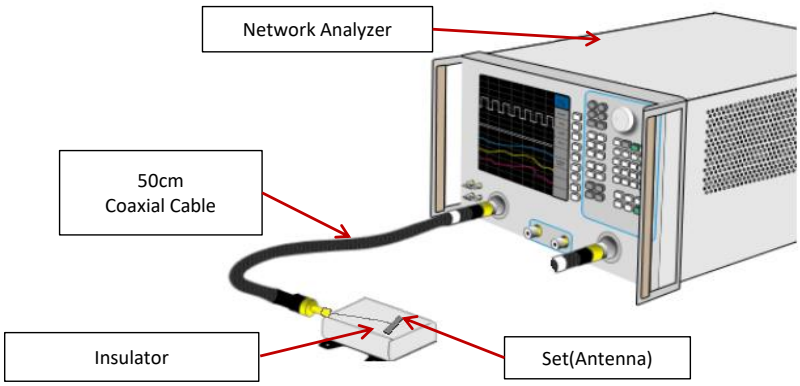
Step 1. Set the frequency range after connect 50cm cable to Network analyzer.

Step 2. Connect Calibration Kit to Network analyzer and calibrate.

Step 3. Fix the cable and keep separation distance over 30cm for reducing effect by Network analyzer.

Step 4. Fix insulator over 5cm on the bottom of measuring antenna.

Step 5. Measure VSWR with setting marker of desired frequency.

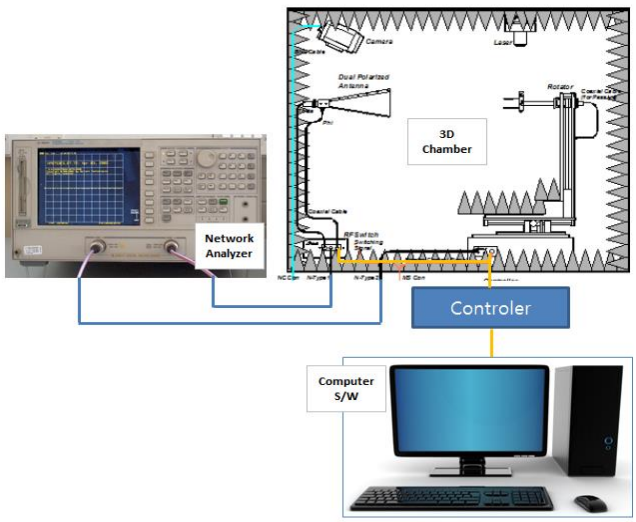


② **Radiation Pattern & Gain**

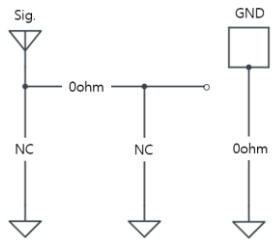
Step 1. Calibrate the Chamber system using Horn antenna, and set up the software to control the Chamber system at the same time.

Step 2. Keep the measuring antenna to holder.

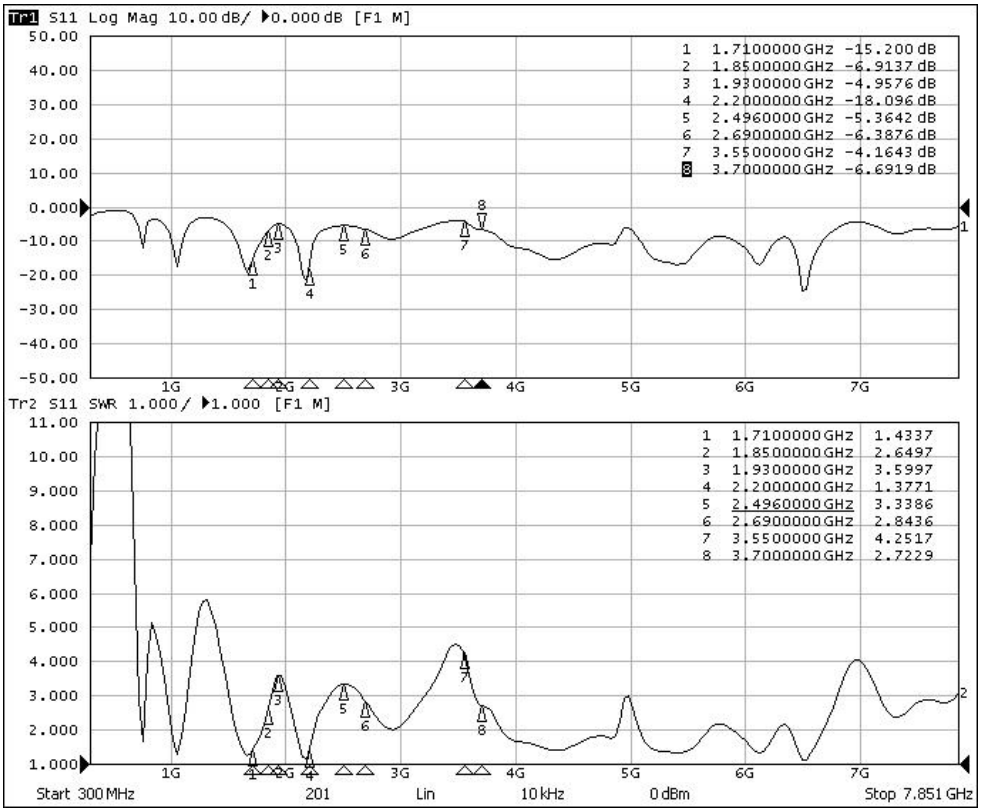
Step 3. Measure Gain & efficiency.



2.2 Electrical Specification

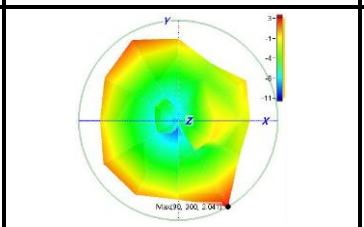
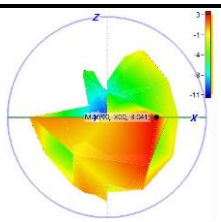
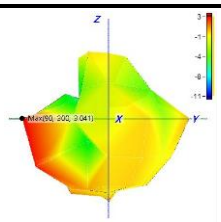
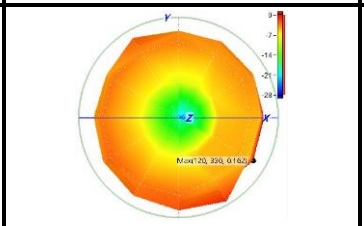
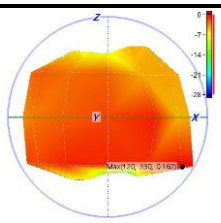
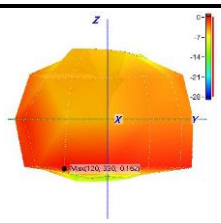
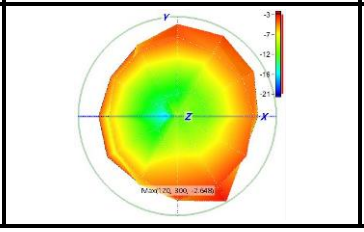
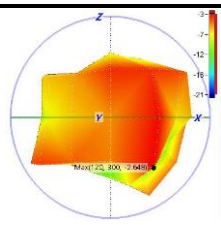
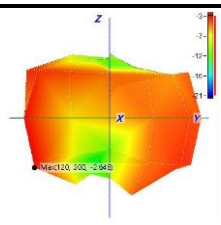
Main1(Ant1) Antenna				
Frequency	B66(B2,B4,n66)	B41(B7)	B48(n48)	
	1710MHz ~ 2200MHz	2496MHz ~ 2690MHz	3550MHz ~ 3700MHz	
VSWR	≤ 4.5	≤ 3.4	≤ 5.2	
Peak Gain[dBi]	+3.8	+0.6	-0.7	
Avg Gain[dBi]	-2.6	-3.3	-5.7	
Matching Value				
Directivity	Omni-directional			
Polarization	Linear			
Feed Impedance	50 Ohms			
Power Handing	2Watt			

2.2.1 V.S.W.R


Tr1 S11 Log Mag 10.00 dB/ 0.000 dB [F1 M]
1 1.7100000 GHz -15.200 dB
2 1.8500000 GHz -6.9137 dB
3 1.9300000 GHz -4.9576 dB
4 2.2000000 GHz -18.096 dB
5 2.4960000 GHz -5.3642 dB
6 2.6900000 GHz -6.3876 dB
7 3.5500000 GHz -4.1643 dB
8 3.7000000 GHz -6.6919 dB
Tr2 S11 SWR 1.000/ 1.000 [F1 M]
1 1.7100000 GHz 1.4337
2 1.8500000 GHz 2.6497
3 1.9300000 GHz 3.5997
4 2.2000000 GHz 1.3771
5 2.4960000 GHz 3.3386
6 2.6900000 GHz 2.8436
7 3.5500000 GHz 4.2517
8 3.7000000 GHz 2.7229
Start 300 MHz
201
Lin
10 kHz
0 dBm
Stop 7.851 GHz

2.2.2 3D Gain & Radiation Pattern

Frequency	Peak Value		Minimum Value		Avg. Gain	Efficiency
[MHz]	Value[dBi]	Degree	Value[dBi]	Degree	[dBi]	[%]
1710	3.041	90 / 300	-11.271	60 / 240	-1.182	76.174
1780	3.35	90 / 300	-12.303	60 / 150	-0.255	76.058
1850	3.792	120 / 150	-17.753	60 / 150	-1.305	74.052
1883	3.095	120 / 300	-24.792	60 / 60	-2.278	59.178
1915	3.771	120 / 300	-15.427	60 / 330	-2.371	57.934
1930	3.566	120 / 300	-17.385	60 / 60	-2.609	54.839
1995	2.342	120 / 210	-21.96	180 / 240	-2.495	56.297
2110	2.055	60 / 300	-17.656	0 / 150	-1.144	76.848
2200	2.611	120 / 300	-16.841	0 / 180	-1.632	68.672
2496	0.162	120 / 330	-28.18	180 / 30	-3.348	46.26
2574	0.575	120 / 330	-21.343	180 / 210	-2.469	56.632
2690	-0.766	120 / 90	-24.605	180 / 240	-3.069	49.331
3550	-2.648	120 / 300	-20.581	180 / 0	-5.771	26.481
3650	-0.901	60 / 90	-13.203	180 / 0	-3.752	42.154
3700	-0.766	60 / 120	-13.747	180 / 210	-3.551	44.147

		Radiation Pattern		
		XY	XZ	YZ
Main1(Ant1)	1710 ~ 2200 MHz			
	2496 ~ 2690 MHz			
	3550 ~ 3700 MHz			

3. Mechanical Specification

3.1 Part List

PART LIST

SIGN	DRAWN	CHECK	APPROVE
	유정석		

PRODUCT NAME	CG890 Main1(ANT1)		
PRODUCT SPECIFICATION	LTE&NR	ESTABLISH . DATE	2023.01.06.
CUSTOMER	Franklin Technology	REVISION DATE	2023.01.06. V10

NO	LEVEL									PART NO.	PART NAME	Material & Description	Q'TY	VENDOR	REMARK
	1	2	3	4	5	6	7	8	9						
0	0									HPC-PCB0024N-IR	PCB	CG890 0&2	1	FMC	Main Ant0,1,2,3
1	0									HIA-CAB0042B-IR	CABLE	MHF4/ Ø0.81	1	FMC	BLACK
2	0														
3	0														
4															
5															
6															-
7															-
8															-
9															-
10															-
11															-
12															-
13															-
14															-
15															-

[REVISION HISTORY]

REV	DATE	DESCRIPTION	REMARKS	REV	DATA	DESCRIPTION	REMARKS

[REMARKS]

3.2 Ass'y Drawing