RD54L - Antenna Approval sheet

- PCB Overview & Matching Value

- VSWR & Smith Chart / 3D Gain data

- 2D Radiation Pattern & Gain

- 3D Radiation pattern

By designed	By checked	By approved
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Rev 1.0

December. 23 , 2024

Revision History

Version	Date	Editor	Notes
R1.0	December. 24, 2024	Ji.kwon	• Release

Re**mote** Solution

Measurement Process

SWR / Return Loss
Use Network Analyzer when measuring SWR/Return loss and selecting standard SPL.

E5071B Agilent Network Analyzer

Additional Features:

300 kHz to 8.5 GHz

125 dB dynamic range at test port (typical)

9.6 us/point sweep speed

0.001 dB RMS trace noise

Integrated 2-, 3- and 4-ports with balanced measurements

Fixture embedding/de-embedding and port characteristic impedance

conversion

Frequency-offset mode for frequency translated devices.

Built-in Visual Basic for Applications (VBA)

Measurement Wizard Assistant (MWA) software

Re**mote** Solution

Measurement Process

Gain
Antenna gain is measured in the Anechoic Chamber

o Size: 5.5(L) m × 5.5(W) m × 5.0(H) m
o Frequency range: 700 MHz to 8.0 GHz (Far Field)

|	
Network Analyzer : R&C ZVA24 (10MHz ~ 24GHz)	GSM, CDMA, WCDMA : Agilent 5515C
4G, LTE Cat.M, NB-Iot : Anritsu MT8821C	
5G (Sub6G, mmWave) : Anritsu MT8000A	WLAN (802.11 a,b,g,n,ac) : Anritsu MT8862A

Remote Solution rs
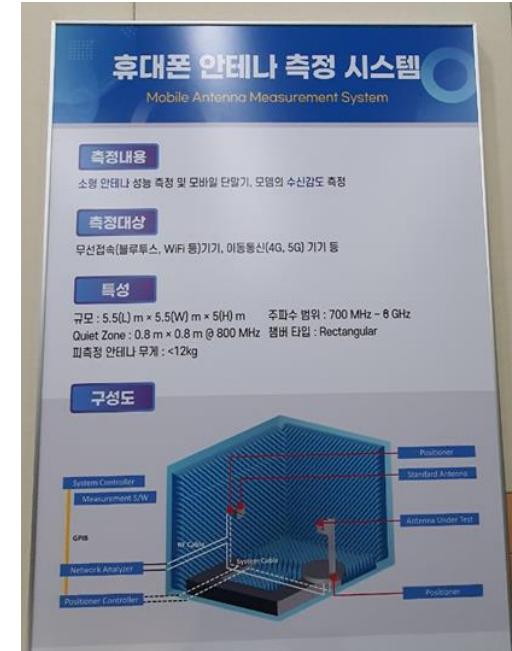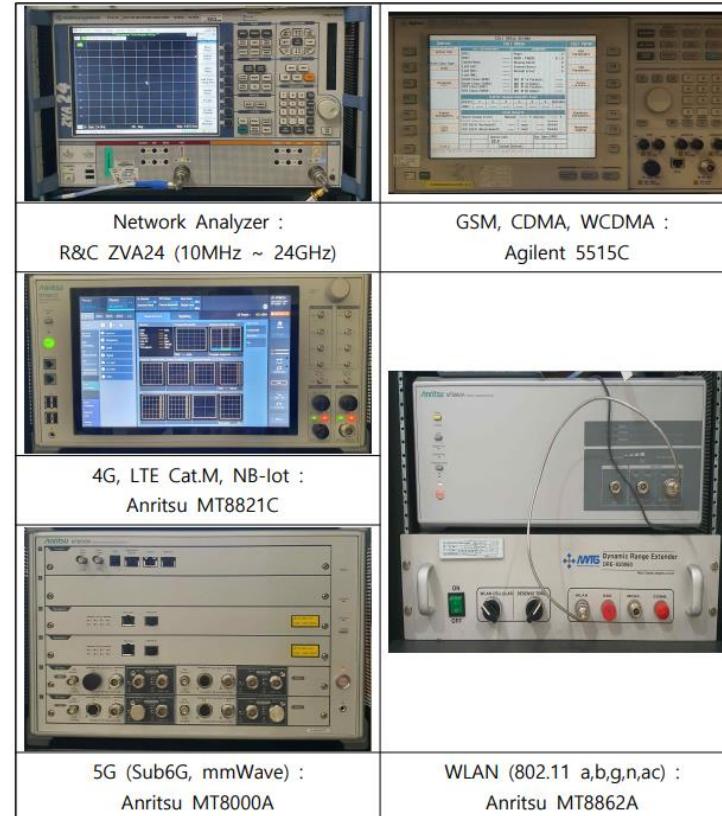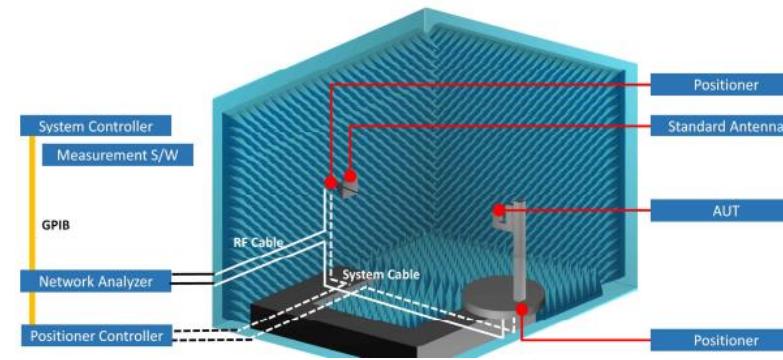
Electrical Characteristics

This specification covers the dielectric pattern antenna RD54L INUS RCU used in RF4CE

ITEM		SPECIFICATION				
Frequency Range		2402 ~ 2480 MHz				
VSWR		3:1 Max				
Polarization		Linear				
Frequency [MHz]		2402	2410	2450	2470	2480
Gain [dBi]	Peak	3.26	3.32	3.17	3.06	3.02
	Average	-3.84	-3.77	-3.67	-3.61	-3.58
Efficiency [%]		41.28	41.95	42.93	43.53	43.84

Re**mote** Solution

PCB Overview & Matching Value
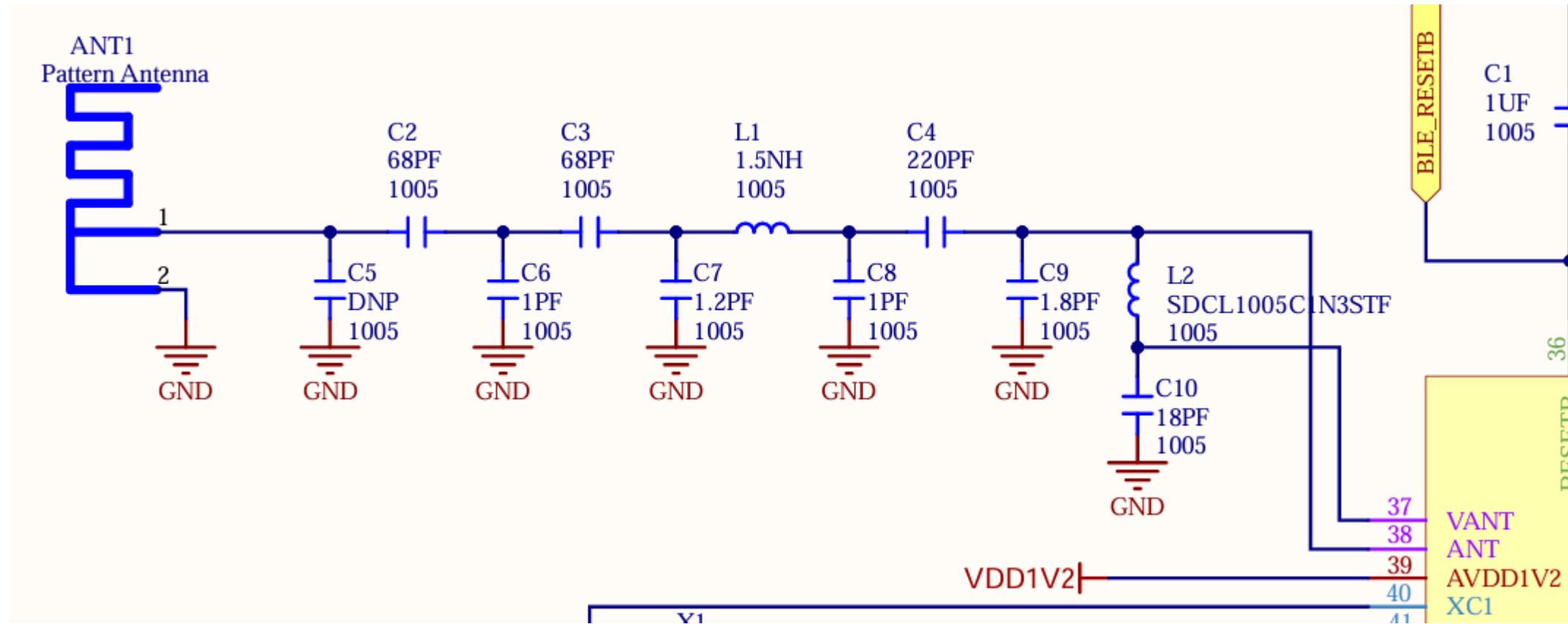
VSWR & Smith Chart / 3D Gain data
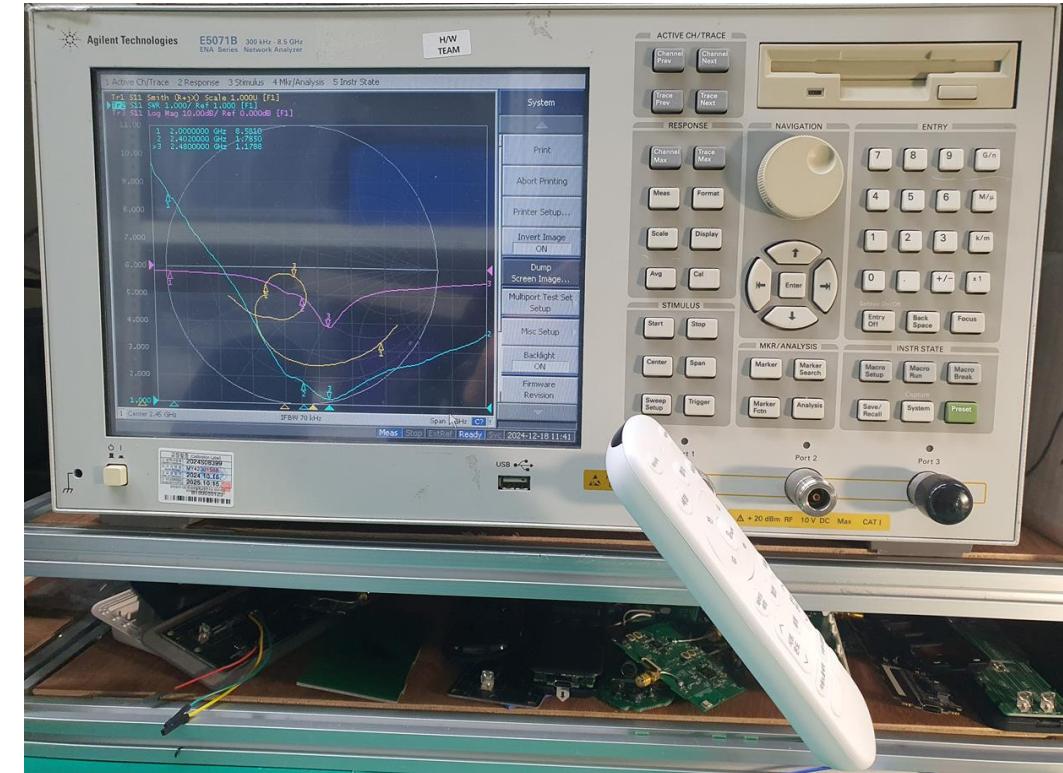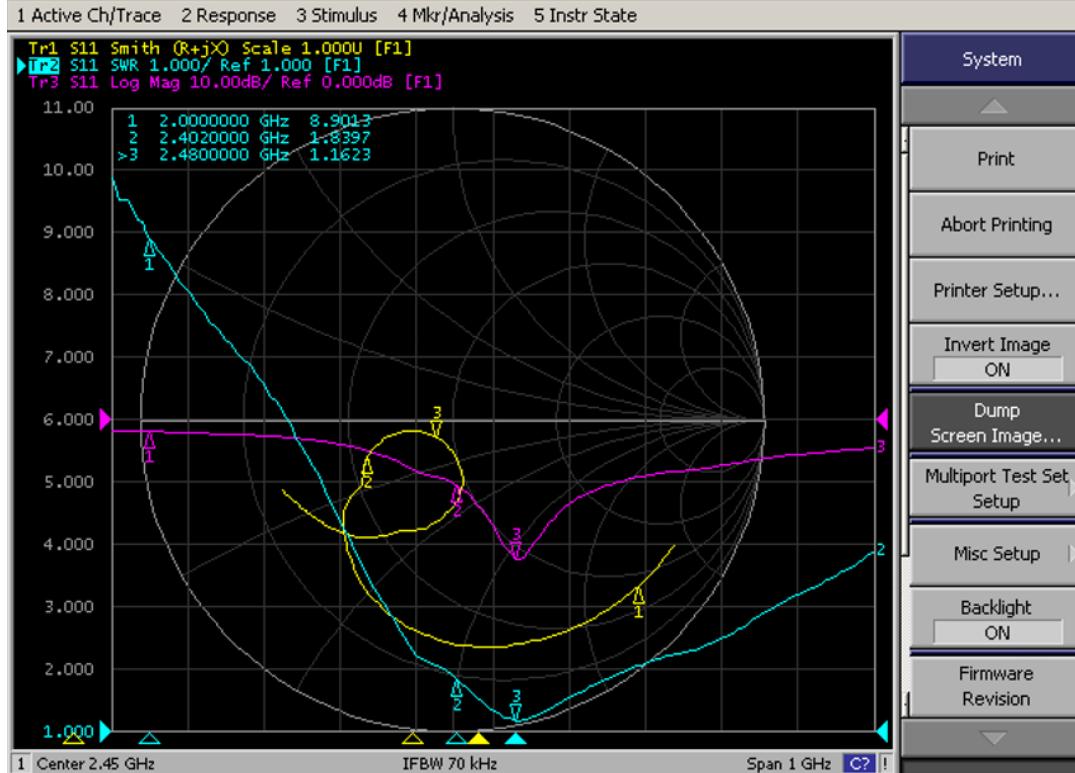
2D Radiation Pattern & Gain (ANT1)

3D Result Summary :

No	Freq.[MHz]	Theta-Po Eff.[%]	Avg.[dBi]	Peak[dBi]	Theta	Phi[de	Phi-Pol(\ Eff.[%]	Avg.[dBi]	Peak[dBi]	Theta	Phi[de	PwrSum Eff.[%]	Avg.[dBi]	Peak[dBi]	Theta	Phi[de
1	2400.000	29.73	-5.27	3.06	-150.00	165.00	11.89	-9.25	-1.89	-130.00	90.00	41.62	-3.81	3.27	-150.00	165.00
2	2402.000	29.48	-5.30	3.04	-150.00	165.00	11.80	-9.28	-1.87	-130.00	90.00	41.28	-3.84	3.26	-150.00	165.00
3	2410.000	29.98	-5.23	3.09	-150.00	165.00	11.97	-9.22	-1.70	-130.00	90.00	41.95	-3.77	3.32	-150.00	165.00
4	2420.000	29.64	-5.28	2.93	-150.00	165.00	11.56	-9.37	-1.80	-130.00	90.00	41.21	-3.85	3.16	-150.00	165.00
5	2430.000	29.61	-5.29	2.80	-150.00	165.00	11.21	-9.51	-1.82	-130.00	90.00	40.82	-3.89	3.05	-150.00	165.00
6	2440.000	29.99	-5.23	2.80	-150.00	165.00	11.68	-9.33	-1.59	-130.00	90.00	41.67	-3.80	3.11	-150.00	150.00
7	2442.000	30.78	-5.12	2.89	-150.00	165.00	12.07	-9.18	-1.46	-130.00	90.00	42.85	-3.68	3.22	-150.00	150.00
8	2450.000	30.71	-5.13	2.82	-150.00	165.00	12.22	-9.13	-1.36	-130.00	90.00	42.93	-3.67	3.17	-150.00	150.00
9	2460.000	31.46	-5.02	2.82	-150.00	165.00	12.02	-9.20	-1.32	-130.00	90.00	43.48	-3.62	3.18	-150.00	150.00
10	2470.000	31.81	-4.97	2.68	-150.00	165.00	11.72	-9.31	-1.54	-130.00	90.00	43.53	-3.61	3.06	-150.00	150.00
11	2480.000	31.81	-4.97	2.60	-150.00	165.00	12.02	-9.20	-1.54	-130.00	90.00	43.84	-3.58	3.02	-150.00	150.00

RemoteSolution

3D Radiation pattern

Thank you