

LS05 antenna report

2022/03/01



Summary

- Bluetooth x1, on board printed design.
- DECT x1, on board printed with metal part design.
- Antenna performance
 - VSWR
 - 2 :1 for all antennas
 - Isolation
 - > 15dB for all antennas
 - Efficiency
 - 61% AVG. for DECT antenna
 - 55% AVG. for Bluetooth antenna



Antenna Configuration

Model name: LS05

Address: 20 Park Avenue II, Hsinchu Science Park, Hsinchu

Test personal name: Yun Chi

Test equipment: MVG SG64 multi-probe chamber

Test software: NPAC Spherical Measurement V1.5.4

Test description: DUT place in SG64 chamber, and run the antenna passive measurement.

Test Photo Please refer as Annex file “LS05 Antenna Report for Test Update Setup Photo FCC”.

Test Date: 2023/2/6

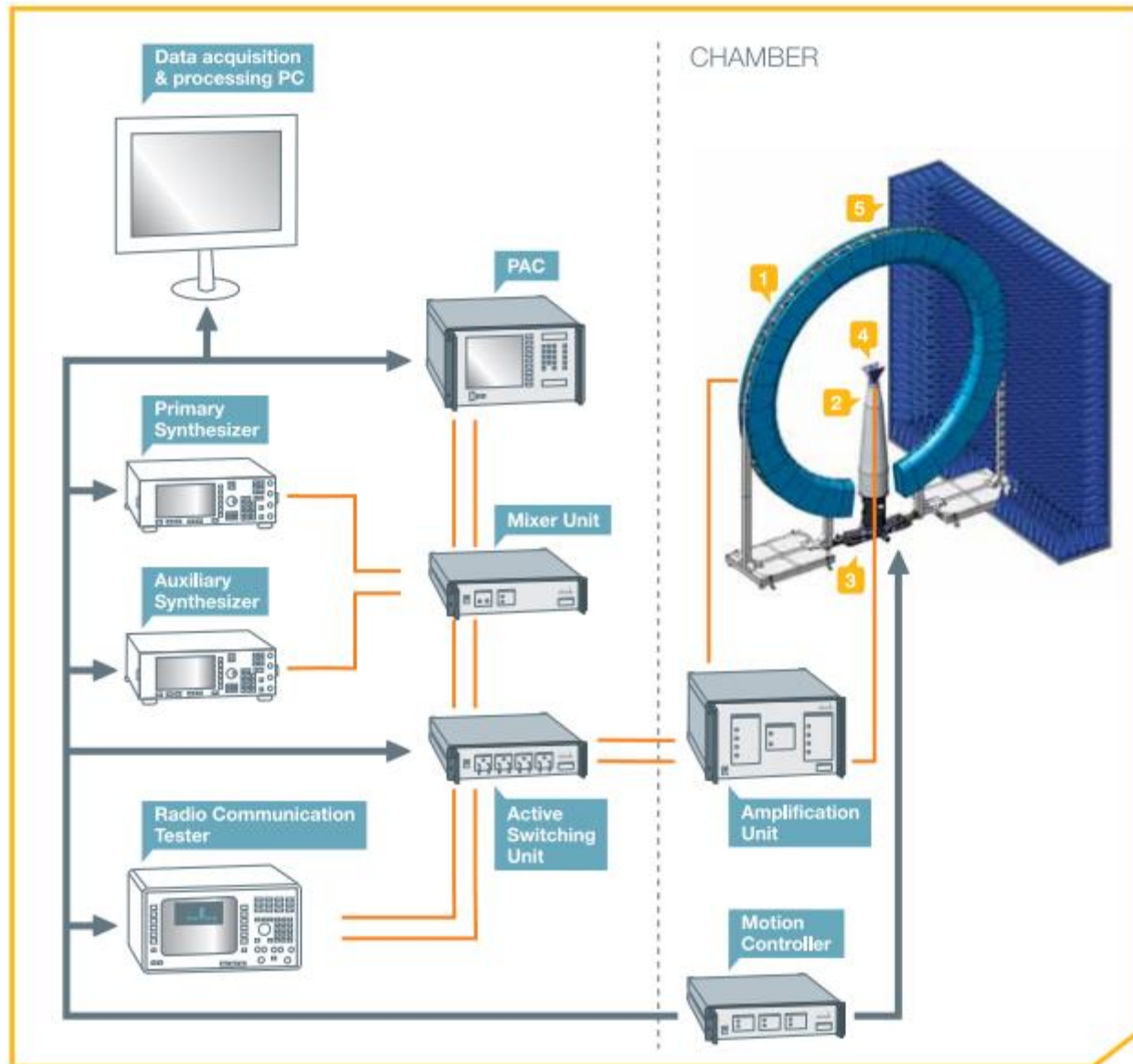


Test equipment list

MVG SG64 Measurement System

Item	Device	Type/Model	Serial#	Manufacturer	Cal.Date	Cal.Due Date
1	SG64 Chamber	Standard	SG64	MVG	2022/6/15	2023/6/1
2	Turn Table	Customization	-	Machinery Dept.	N/A	N/A
3	New Probe Array Controller	N/A	1102341-4535	MVG	N/A	N/A
4	Power Supply Unit	N/A	1103211-13204	MVG	N/A	N/A
5	Active Switching Unit	N/A	1102347-7214	MVG	N/A	N/A
6	TX Amplification Unit	N/A	1102527-5909	MVG	N/A	N/A
7	RX Amplification Unit	N/A	1102536-3823	MVG	N/A	N/A
8	Transfer Switching Unit	N/A	1102183-3351	MVG	N/A	N/A
9	Mixer Unit	N/A	1102545-7208	MVG	N/A	N/A
10	Power And Control Unit	N/A	1102706-7209	MVG	N/A	N/A
11	Cable 13.7m - 400MHz to 18GHz	SS402	00100A1F5A1XXS	Woken	2022/6/15	2023/6/1
12	Temperature & Humidity Meter	HTC-01	-	Metravi	N/A	N/A

Test Method



Efficiency

BT: Monopole

DECT: PIFA

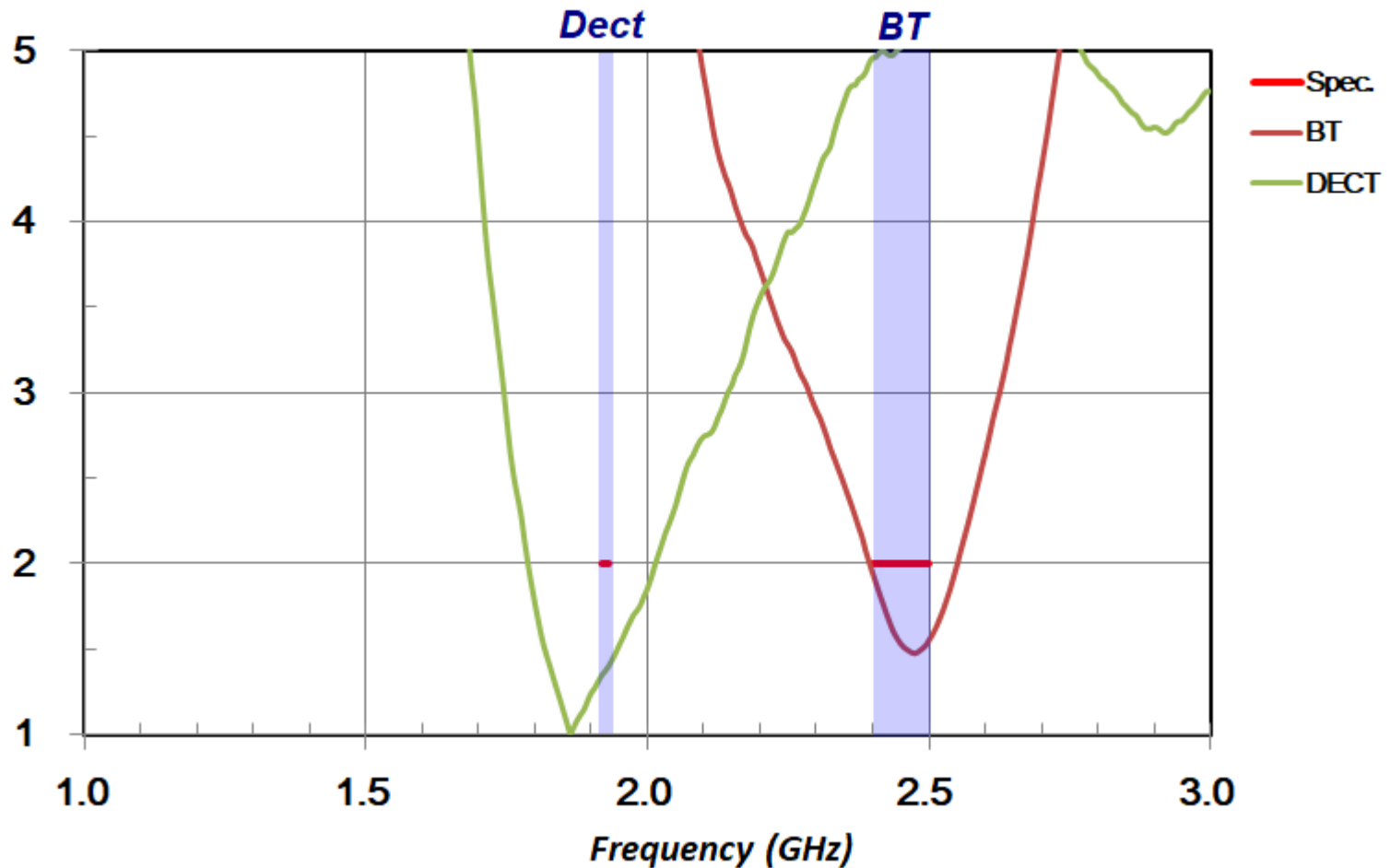
		2400	2450	2500	Avg.			1920	1925	1930	Avg.
BT - ORG	Eff.	56%	59%	51%	55%	DECT - ORG	Eff.	60%	64%	62%	62%
	Avg. Gain	-2.49	-2.28	-2.93			Avg. Gain	-2.20	-1.94	-2.11	
	Peak Gain	1.83	1.92	0.90			Peak Gain	2.44	2.46	2.48	

Unit, Avg. Gain [dBi], Peak Gain [dBi]

measured results **include** onboard trace loss & housing material loss



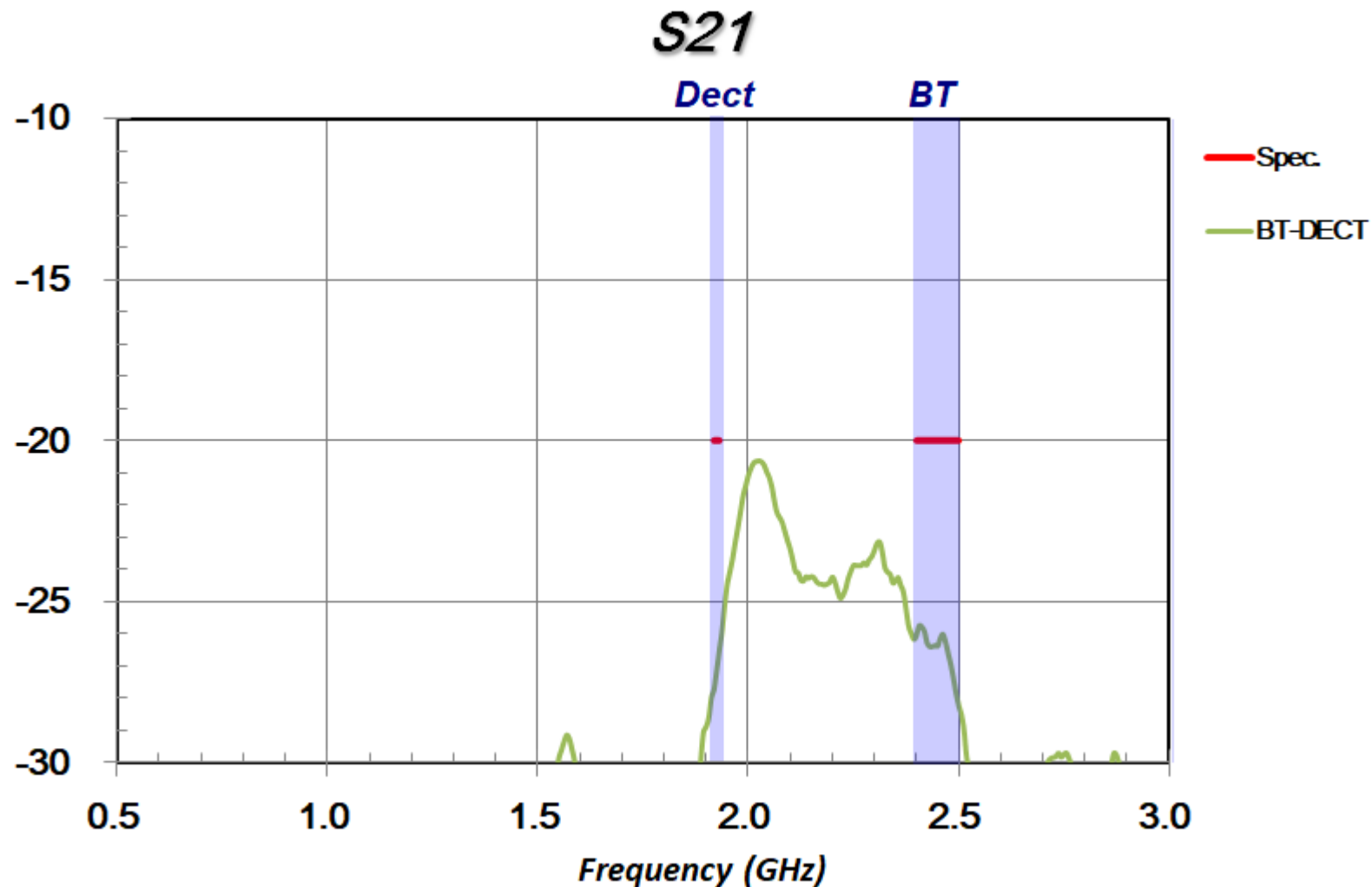
VSWR



Maximum VSWR is 2 : 1 for all antennas



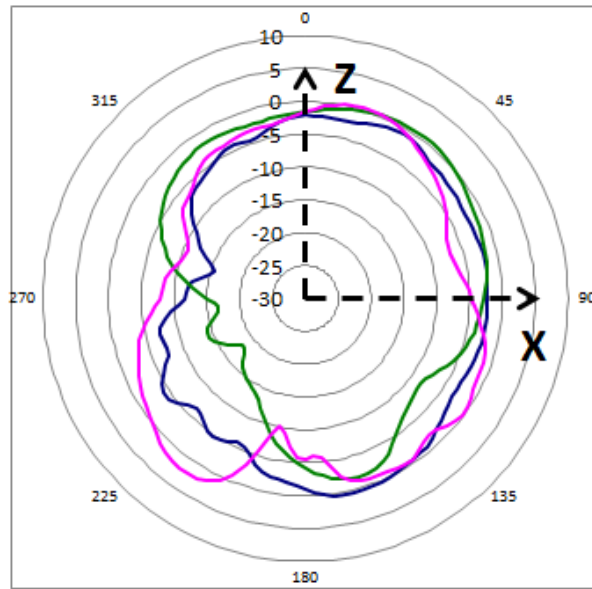
Isolation



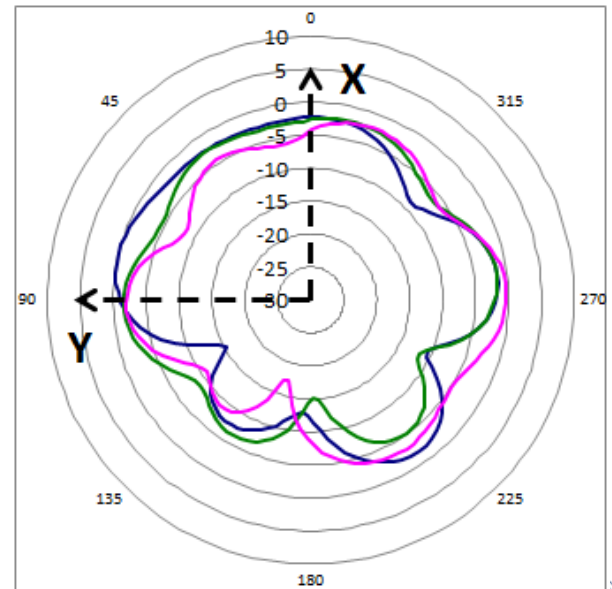
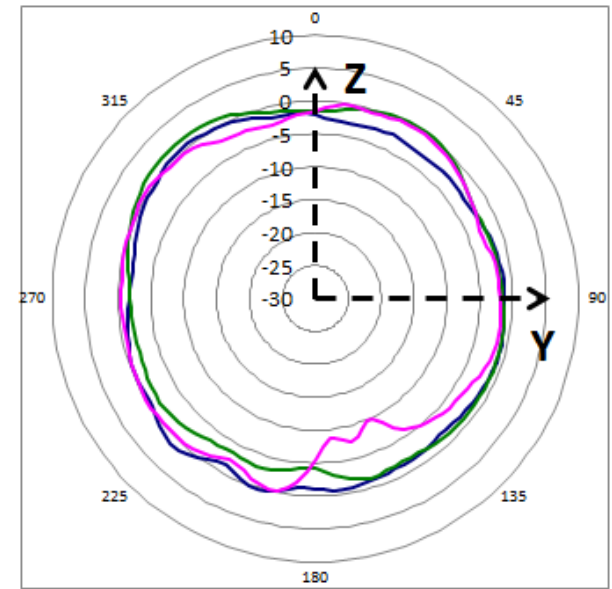
Isolation more than 20dB among all antennas



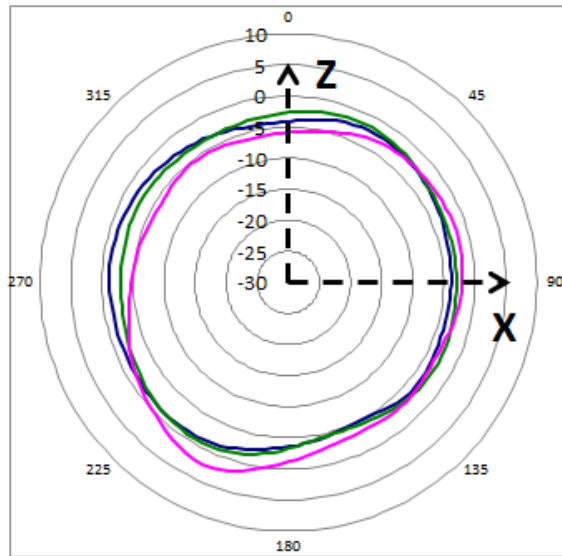
Antenna pattern – Bluetooth



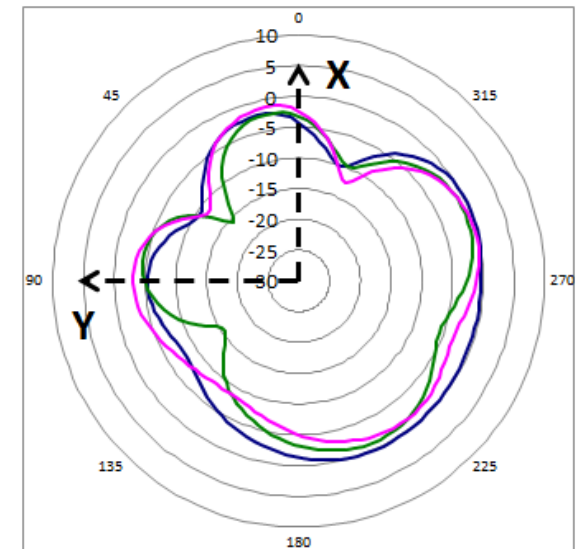
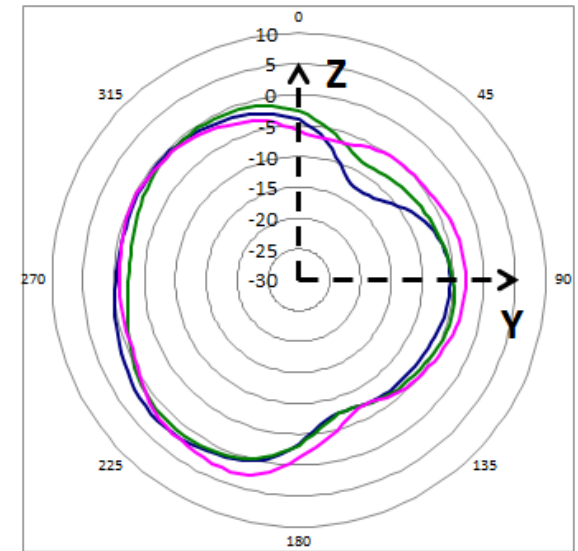
— BT_Without stand
— BT_With stand A
— BT_With stand B



Antenna pattern – DECT



— DECT_Without stand
— DECT_With stand A
— DECT_With stand B



WNC

Wistron NeWeb Corp.

