SENNHEISER
MSPORT1 Antenna Report

Testing Date: 2023.06.27
Report Date : 2023.06.30

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EUT info and Test Equipment

Passive	
Antenna Type	PIFA
Antenna Model	Left Earbud, MSPORT1 L: MSPORT1 L LDS Right Earbud, MSPORT1 R: MSPORT1 R LDS
Antenna Gain	Free Space Left Earbud= -0.07dBi Right Earbud= -1.02dBi
Test Equipment	E5071C ENA Vector Network Analyzer – Keysight / Calibration Date: 2022/05/30
Test chamber	ETS-lindgren_AMS-8500 Antenna Measurement System/Calibration Date: 2022/04/15
Testers	Oscar Chu
Test Software	ETS-Lindgren EMQuest

Antenna Efficiency

Free Space_Left Earbud

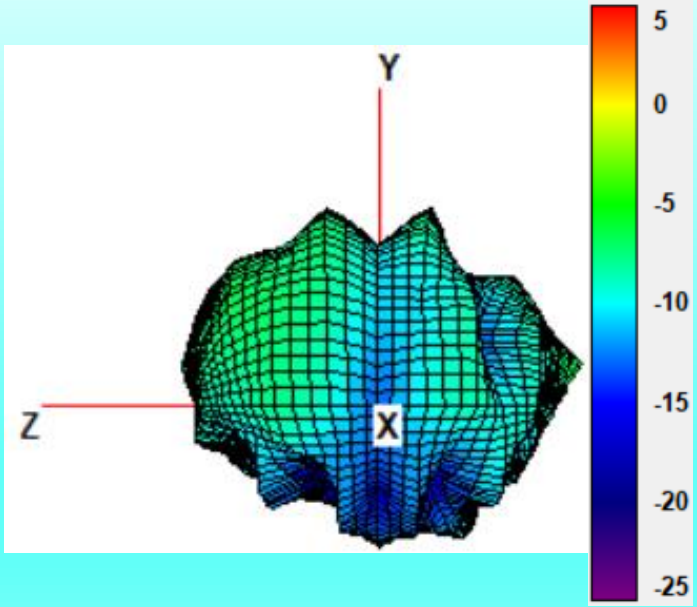
Merry BHC-212-DVT-2-FSL_2000~3000MHz									
Frequency (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480
Efficiency (dB)	-8.44	-8.25	-8.07	-7.82	-7.55	-7.34	-7.11	-6.95	-6.80
Efficiency (%)	14.33	14.95	15.61	16.52	17.56	18.47	19.46	20.18	20.91
Gain (dBi)	-2.96	-2.63	-2.19	-1.83	-1.38	-0.99	-0.61	-0.31	-0.07

Free Space_Right Earbud

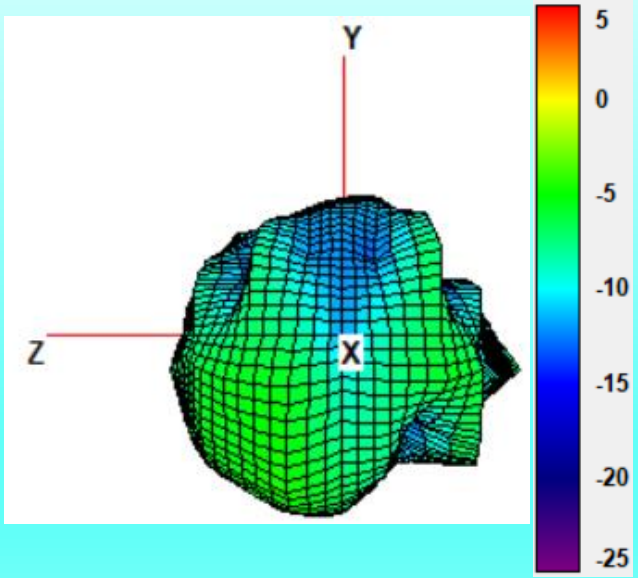
Merry BHC-212-DVT-2-FSR_2000~3000MHz									
Frequency (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480
Efficiency (dB)	-8.40	-8.25	-8.10	-8.03	-7.86	-7.75	-7.62	-7.62	-7.57
Efficiency (%)	14.47	14.97	15.47	15.75	16.38	16.80	17.28	17.31	17.51
Gain (dBi)	-2.43	-2.09	-1.86	-1.63	-1.38	-1.25	-1.12	-1.05	-1.02

Radiation Pattern

Left Earbud



Right Earbud



Measurements description

Conducted Measurements

Conducted measurements was done using Network Analyzer – Keysight, the Return Loss of the Antenna was obtained to ensure the efficiency over the operation frequency.

Antenna Radiation Patten Measurements

Radiation Pattern

Measurements was done in the ETS-lindgren anechoic chamber through radiation, the earbud was set to continuous radiation and the AMS-8500 receive the RF power in 360degree angel with rotation of EUT.

Antenna Gain Calculation

The antenna gain was calculated as the difference between the measured Peak EIRP(dBm) and Ant. port input pwr(dBm) in previous page.