

The image shows a modern building with a glass facade. On the left side, there is a grey concrete pillar with the 'WNC' logo in blue, three-dimensional letters. The building's glass reflects the sky and surrounding greenery. In the foreground, there are out-of-focus green leaves and a small white wind turbine on a pole.

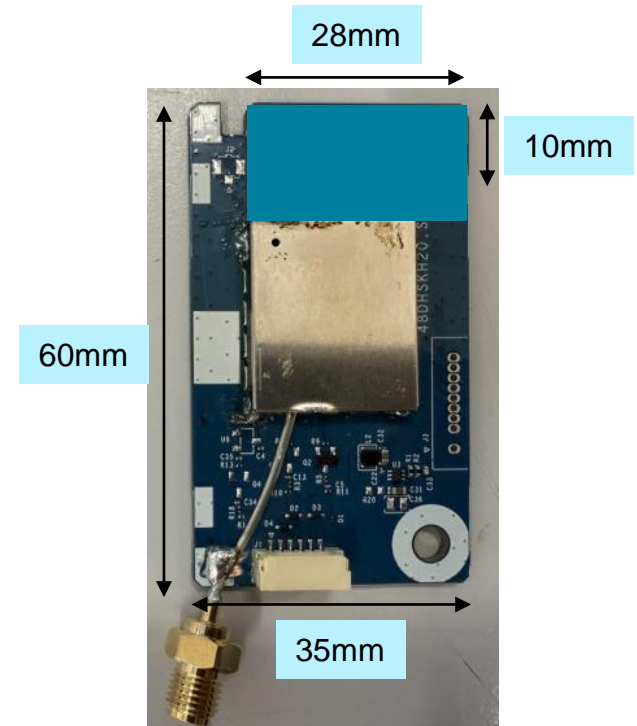
DHSK-HT20

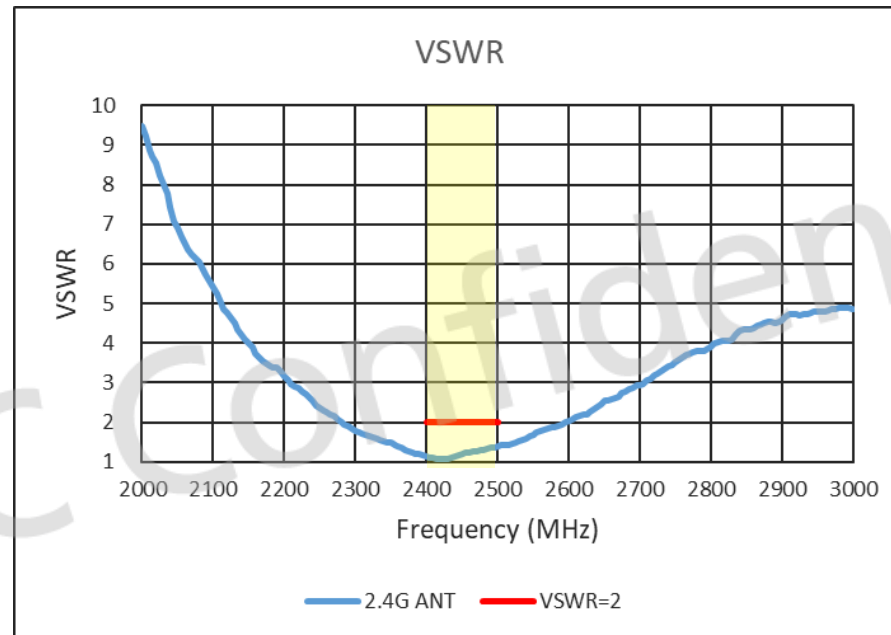
Antenna Test Report

Date: Apr. 14. 2025

Antenna Performance Comparison

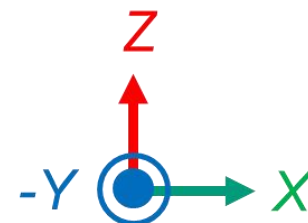
ES2	2400 MHz	2450 MHz	2500 MHz
Efficiency	70.9 %	72.8 %	71.8 %
Average again (dBi)	-1.49	-1.38	-1.44
Peak gain (dBi)	1.57	1.70	1.54
VSWR	< 1.5	< 1.5	< 1.5





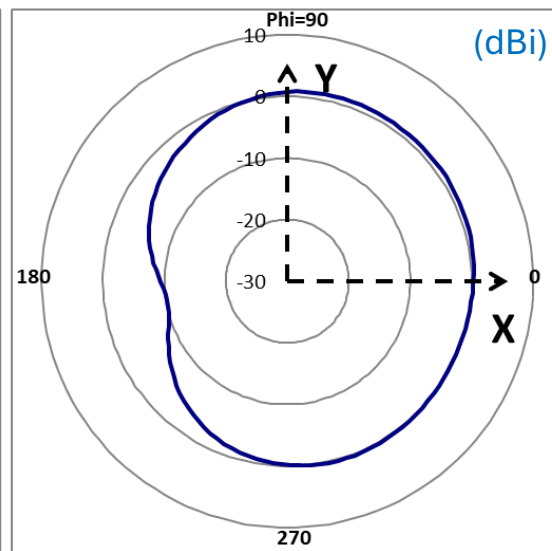
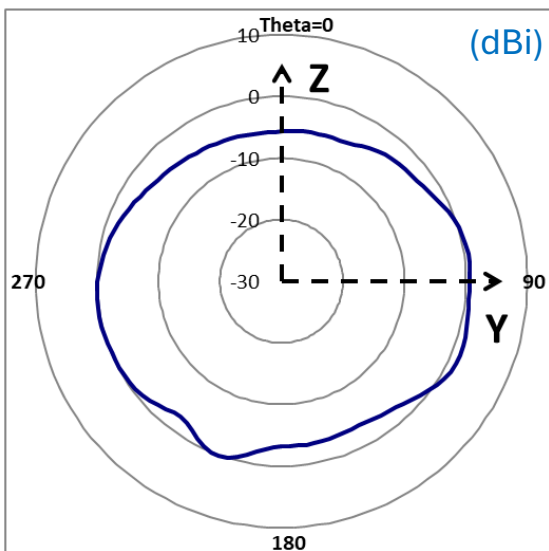
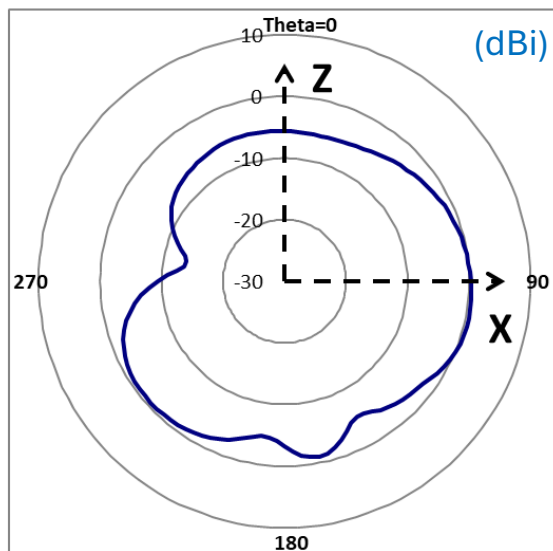
VSWR are almost the same (< 1.5)

Radiation Pattern

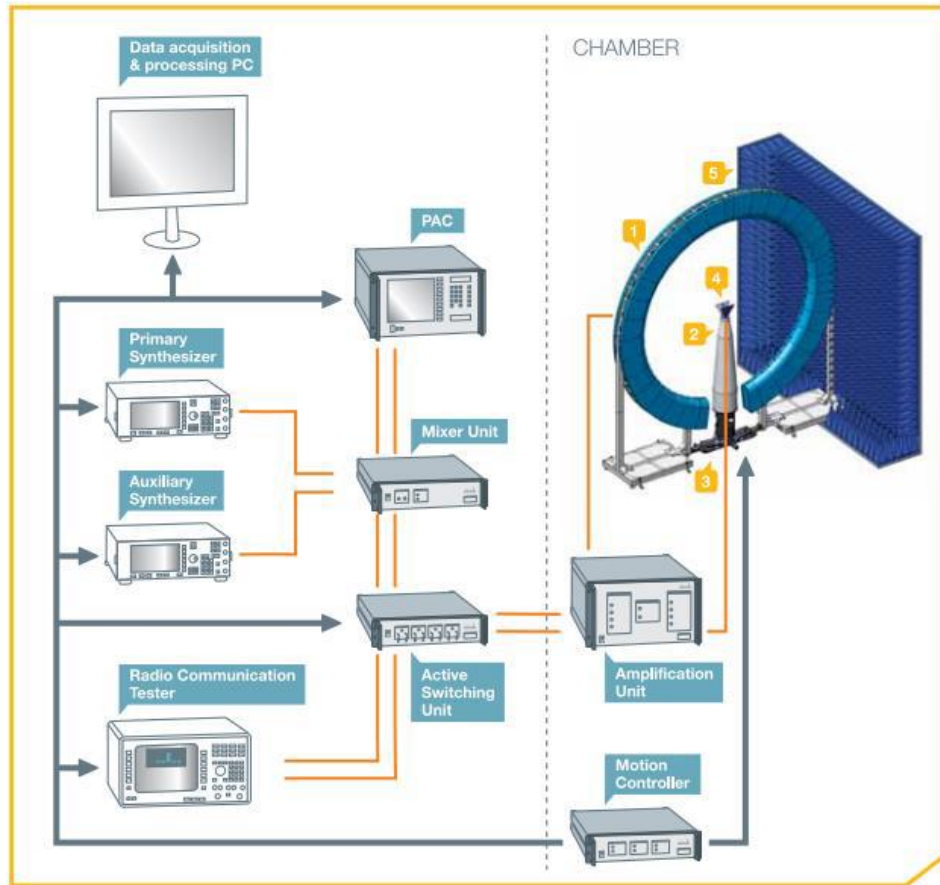


2GHz Radiation Pattern

— 2.4G ANT



Measurement Setup & Test Method



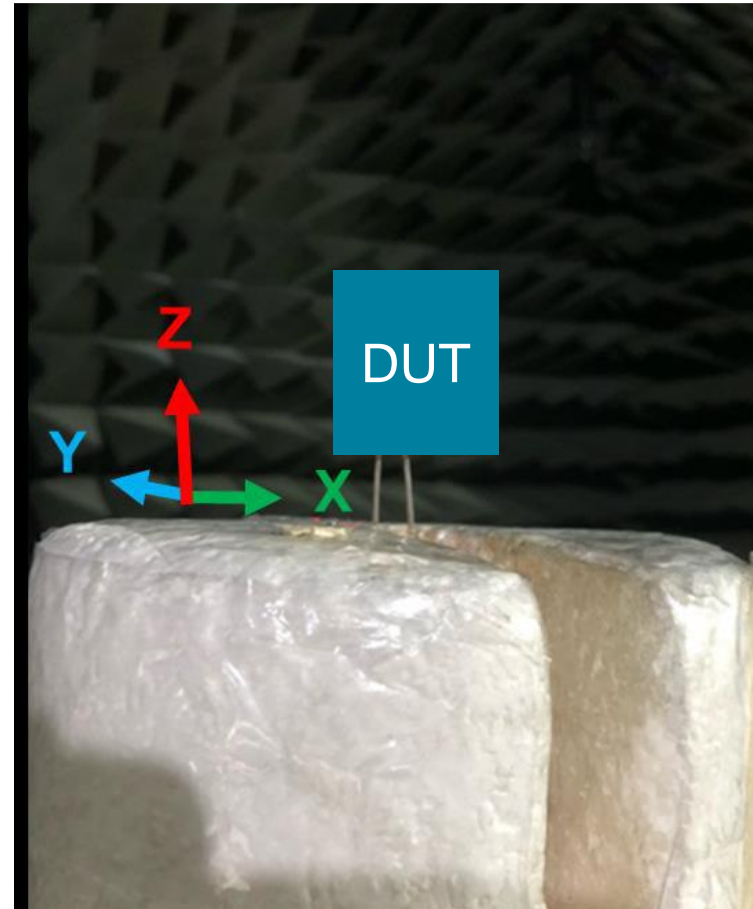
SG 64 uses analog RF signal generators to emit EM waves from the probe array to the antenna under test (AUT) or vice versa.

It uses the NPAC as an RF receiver for antenna measurements. The NPAC also drives the electronic scanning of the probe array.

The NPAC includes the fastest and most accurate sources and receivers on the market.

Test Procedure & SW

- Place the device at the center of the chamber.
- Connect the antenna cable to RF cable of the chamber
- Run Satimotest SW (NPAC Spherical Measurement, v1.5.4 (GIT E6965664)) which is Satimo's proprietary SW.
- Get 3D data in 2.8125 degree step from phi $0^{\circ} \sim 360^{\circ}$ and theta $90^{\circ} \sim +90^{\circ}$, including efficiency, peak gain, 2D & 3D radiation pattern.
- This is passive measurement, which means the device is off and not in any operating mode.



Calibration and Measurement Equipment List

Device	Type/Model	S/N	Manufacturer	Characteristics	Calibrated Date	Calibrated until
SG64 antenna test chamber	Standard	SG64	MVG	400MHz ~ 6GHz	2025/03/30	2026/03/30
Turn table	Customization	-	Machinery Dept.	-	2025/03/30	2026/03/30
New probe array controller	N/A	1102341-4535	MVG	400MHz ~ 6GHz	2025/03/30	2026/03/30
Power supply unit	N/A	1103211-13204	MVG	-	2025/03/30	2026/03/30
Active switching unit	N/A	1102347-7214	MVG	400MHz ~ 6GHz	2025/03/30	2026/03/30
Tx amplification unit	N/A	1102527-5909	MVG	400MHz ~ 6GHz	2025/03/30	2026/03/30
Rx amplification unit	N/A	1102536-3823	MVG	400MHz ~ 6GHz	2025/03/30	2026/03/30
Transfer switching unit	N/A	1102183-3351	MVG	400MHz ~ 6GHz	2025/03/30	2026/03/30
Mixer unit	N/A	1102545-7208	MVG	400MHz ~ 6GHz	2025/03/30	2026/03/30
Power and control unit	N/A	1102706-7209	MVG	-	2025/03/30	2026/03/30
Antenna probe	DP 400-6000	-	MVG	400MHz ~ 6GHz	2025/03/30	2026/03/30
Cable 13.7m – 400MHz to 18GHz	SS402	00100A1F5A1XXS	Woken	-	2025/03/30	2026/03/30
Temperature & Humidity meter	HTC-01	-	Metravi	-	2025/03/30	2026/03/30

Note:

1. There're 63 set antenna probes in WNC's SG64 test chamber.
2. This antenna test chamber is located at WNC (address: 20 Park Ave. II, Hsinchu Science Park, Hsinchu 300, Taiwan)

Manufacturer

Manufacturer: Wistron NeWeb Corporation (WNC)
Address: 20 Park Ave. II, Hsinchu Science Park, Hsinchu 300, Taiwan.
TEL: +886 3 666 7799

製造商: 啟碁科技股份有限公司
地址: 300新竹科學園區園區二路20號
電話: +886 3 666 7799

The image features a large, modern glass-fronted building in the background. In the foreground, there are green leaves on the left and a small white star-shaped object on the right. A large, semi-transparent watermark reading "WNC Confidential" is diagonally across the center of the image. The WNC logo is prominently displayed at the top center.

WNC

Wistron NeWeb Corp.