



AT2603 Antenna Specification

Rev.5
2026/06/25
SMK Corporation

AT2603 Antenna Test

• EUT

Item	List
Description	BLE RC
Frequency	2402 – 2480 [MHz]
Model No.	AT2603
Antenna Type	PCB antenna

• Test Place

Item	List
Company Name	SMK Corporation
Address	5-5 Togoshi 6-chome, Shinagawa-ku, Tokyo JAPAN

AT2603 Antenna Test Procedure(1/2)

• Test Procedure

1. The reference dipole antenna shall be mounted on the turntable platform and connected to the signal generator (SG).
2. A power level of 0 dBm shall be applied from the SG.
3. The received power at the specified frequency shall be measured using a spectrum analyzer (SA) and recorded as Pr.
4. Steps 1 through 3 shall be performed for both vertical and horizontal polarizations.
5. The Equipment Under Test (EUT) shall be mounted on the turntable platform and connected to the SG.
6. A power level of 0 dBm shall be applied from the SG.
7. While rotating the turntable, the received power shall be measured at the specified angular positions and frequencies using the SA, and recorded as Pm.
8. Steps 5 through 7 shall be carried out for three orthogonal planes (XY, XZ, and YZ) under both vertical and horizontal polarizations (a total of six configurations).
9. The absolute gain at each measurement point shall be calculated using the following equation, and the results shall be plotted:

$$G = P_m - P_r + 2.14 \text{ [dBi]}$$

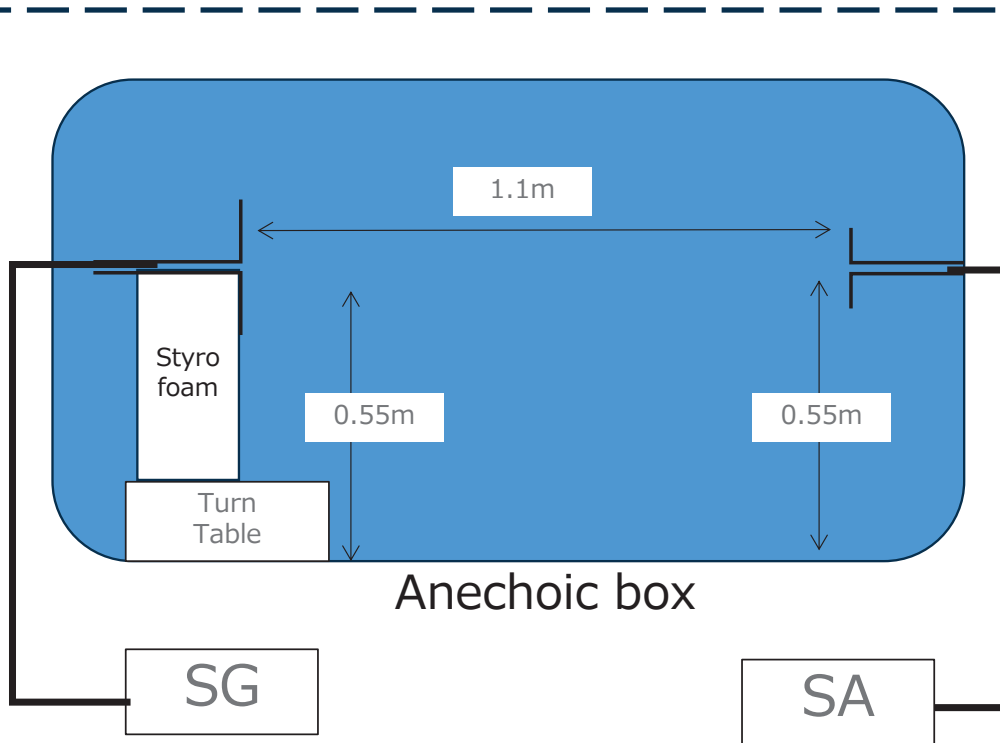
• Test Instruments List

Item	Model	Manufacturer	Serial Number	Last Calibration Date
Spectrum Analyzer	N9020A	Agilent Technologies	US46470532	2025 Oct. 08
Signal Generator	E4438C	Agilent Technologies	MY45093187	2025 Oct. 08
Software for measurement	Turn Table_Control	SMK Corporation	Ver. 0.012	-

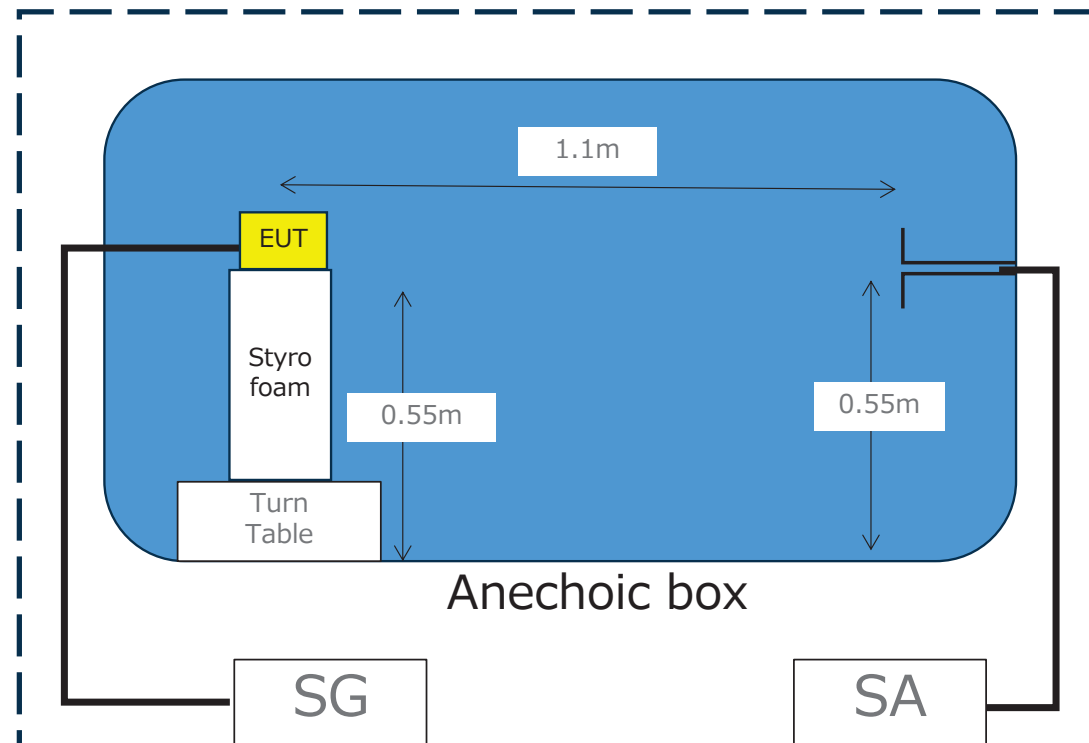
AT2603 Antenna Test Procedure(2/2)

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• Test Setup Figure



Reference Measurement (Pr)



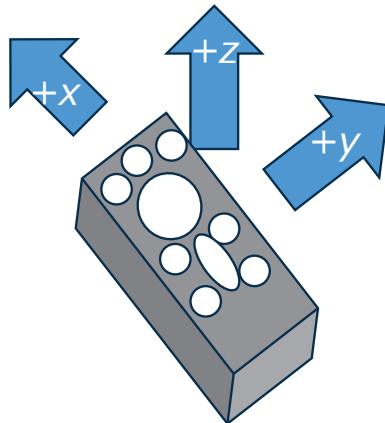
EUT Measurement (Pm)

AT2603 Antenna Test Result (Summary)

Date	Temperature/ Humidity	Operator
May. 18, 2026	25.0°C/47%RH	Kazunobu Ohno

• Peak Gain [dBi]

Frequency [MHz]	2402	2440	2480
Peak Gain	0.81	0.48	0.14



• Average Gain [dBi]

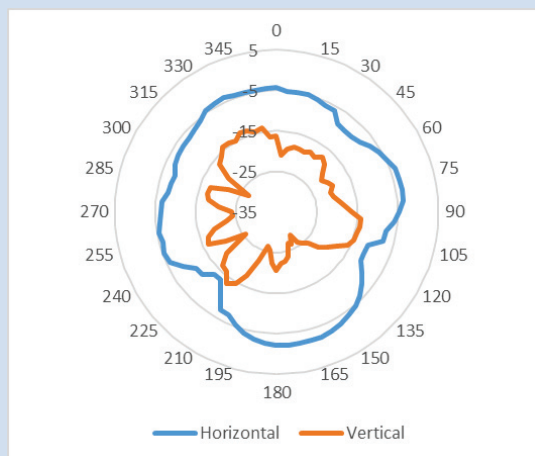
Frequency [MHz]		2402	2440	2480
X-Y Plane	Horizontal	-6.15	-7.06	-6.51
	Vertical	-19.3	-18.7	-17.5
Z-Y Plane	Horizontal	-8.68	-8.63	-10.0
	Vertical	-8.49	-6.43	-7.27
Z-X Plane	Horizontal	-21.8	-19.6	-16.4
	Vertical	-1.00	-0.98	-1.85

AT2603 Radiaton Pattern(X-Y Plane)

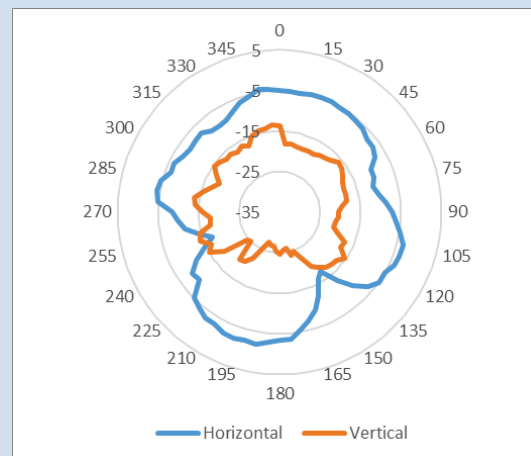
Keypad

0°
(+x)270°
(-y)90°
(+y)180°
(-x)

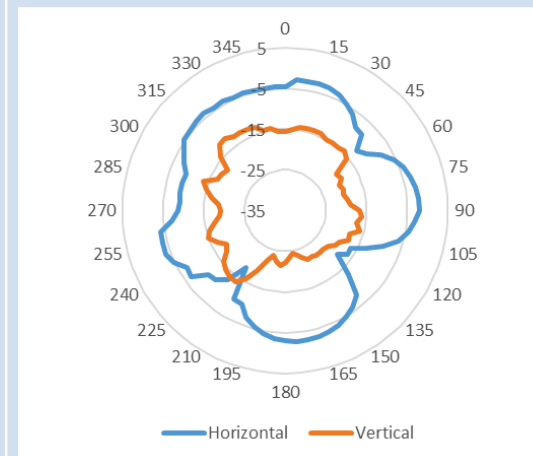
2402MHz



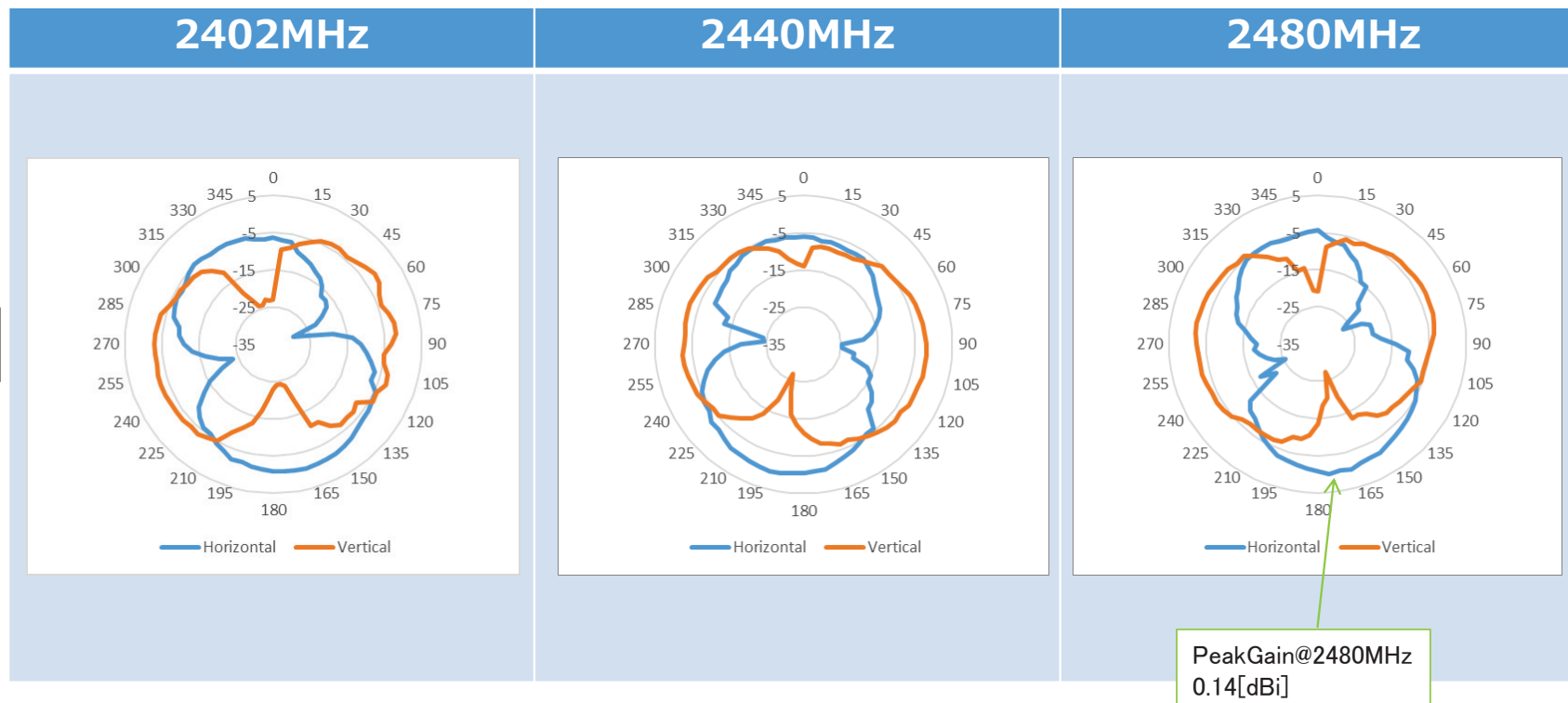
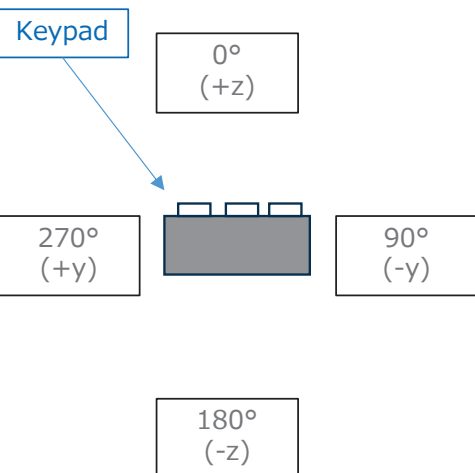
2440MHz



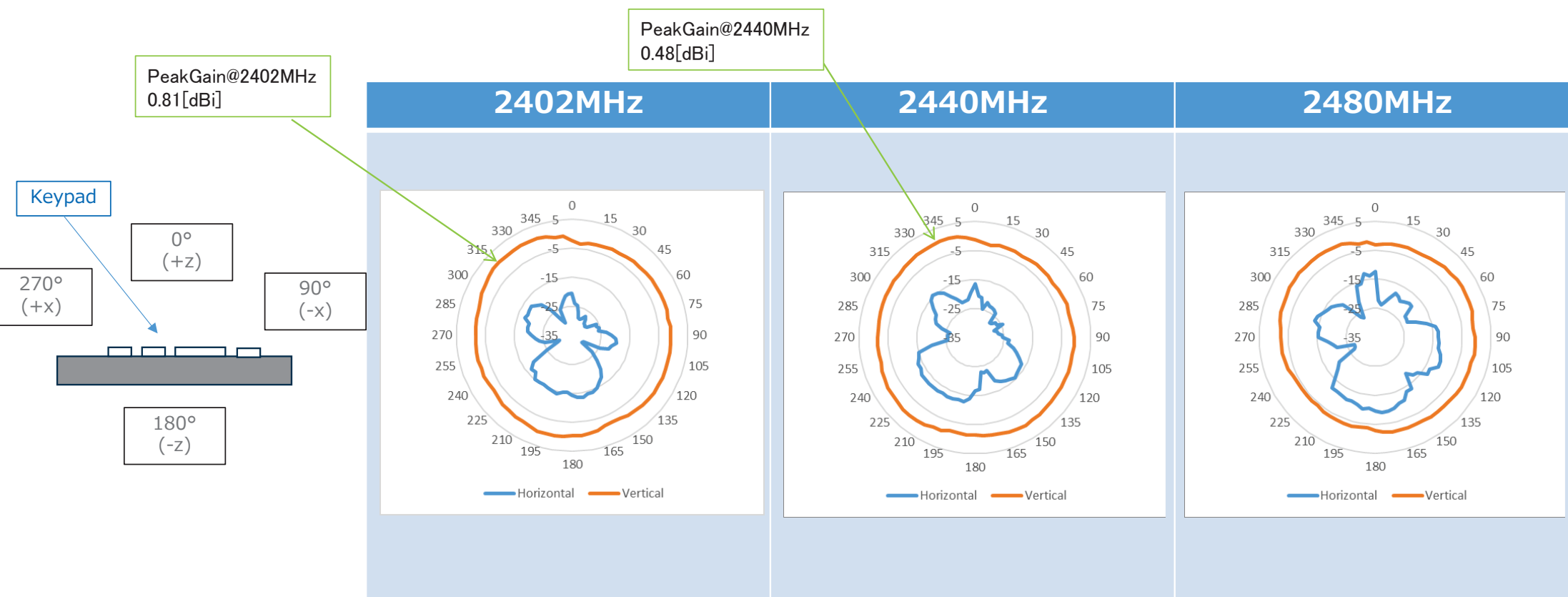
2480MHz



AT2603 Radiaton Pattern(Z-Y Plane)



AT2603 Radiaton Pattern(Z-X Plane)



END