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# Antenna Test Result of Tooling

**ACCTON**

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# Antenna Description

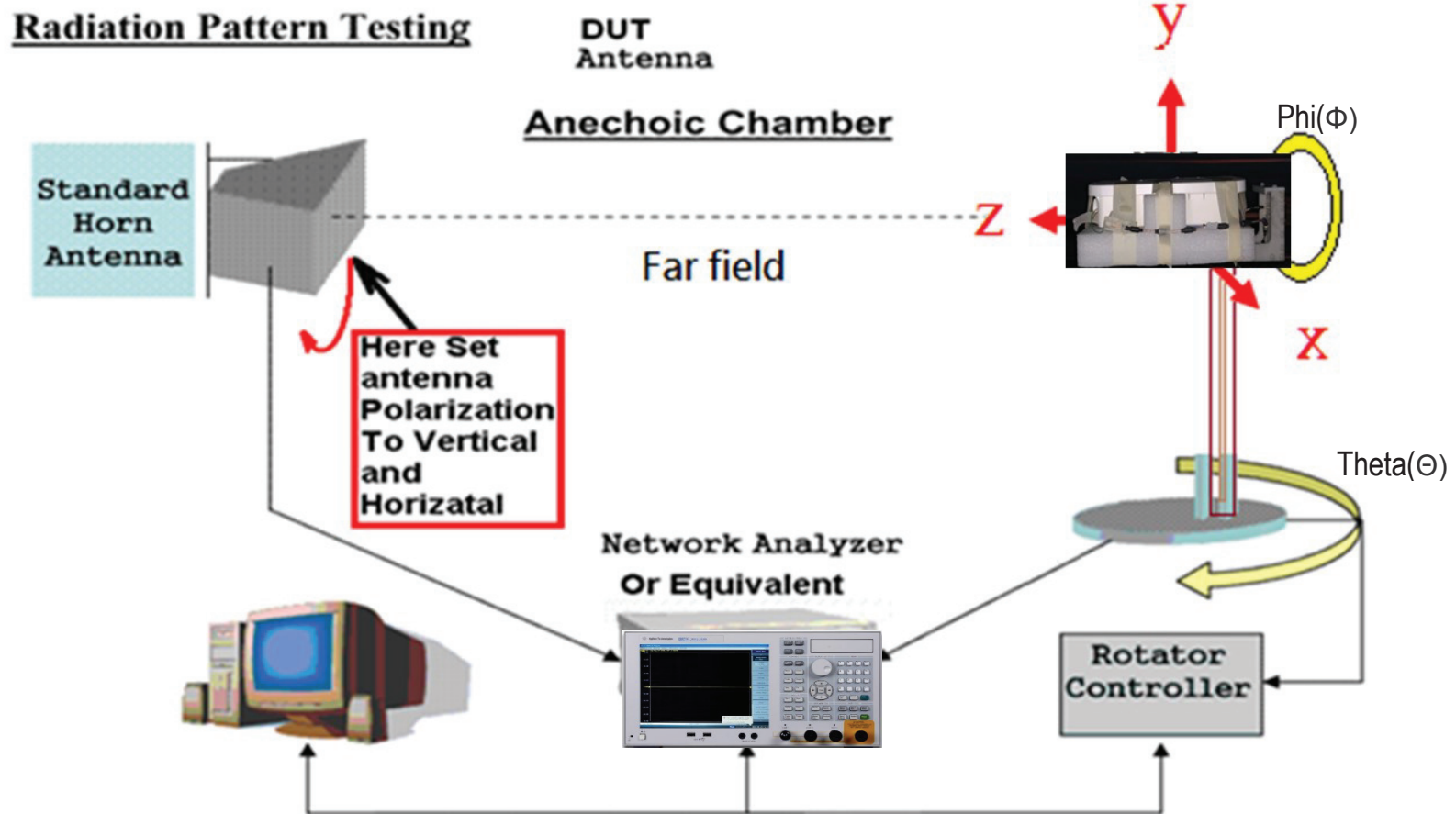
| Company name                  | Address                                                                 |
|-------------------------------|-------------------------------------------------------------------------|
| ACCTON Technology Corporation | No.1, Creation Road3, Hsinchu Science Park, Hsinchu 30077,Taiwan, R.O.C |

| Location | Antenna model   | Antenna application  | Material | Antenna Type | Peak Gain |
|----------|-----------------|----------------------|----------|--------------|-----------|
| 1        | KG458-160Y17U7X | BLE ANT              | FR-4     | PCB          | 5.91 dBi  |
| 2        | KG458-150L17U7X | 2.4G Single Band ANT | FR-4     | PCB          | 5.67dBi   |
| 3        | KG458-250F17U7X | 2.4G Single Band ANT | FR-4     | PCB          | 5.99 dBi  |
|          |                 |                      |          |              |           |
|          |                 |                      |          |              |           |
|          |                 |                      |          |              |           |
|          |                 |                      |          |              |           |

# Experimental Setup & Coordinate System

Chamber name: ETS AMS-8500 Rectangular CTIA-Compliant Test Lab

| Describe         | Manufacturer | Model Number | Serial Number | Cal.Date  | Cal. Due Date |
|------------------|--------------|--------------|---------------|-----------|---------------|
| Network Analyzer | Agilent      | E5071B       | MY42402996    | Dec.-2022 | Dec.-2024     |



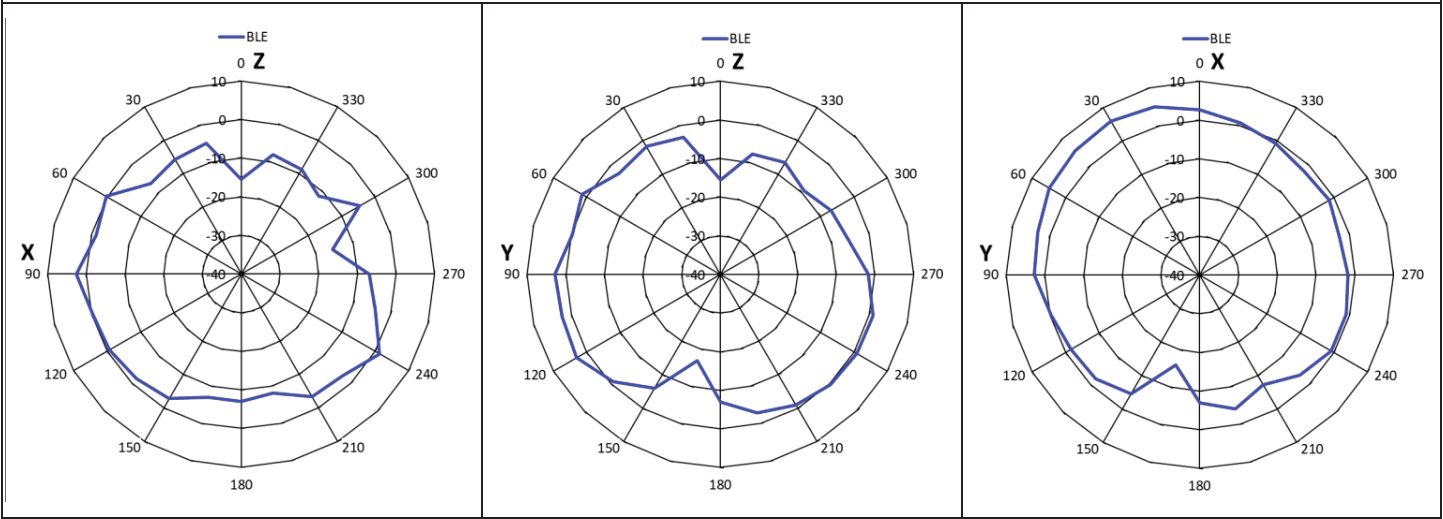
# Efficiency & Gain

| BLE ANT [1]               |                                 |                                 |                                  |
|---------------------------|---------------------------------|---------------------------------|----------------------------------|
| Frequency                 | 2400 MHz                        | 2447 MHz z                      | 24835 MHz                        |
| Peak Gain                 | 5.13 dBi                        | 5.91 dBi                        | 5.17 dBi                         |
| Peak gain at polarization | ( $\Phi$ )40.05°( $\theta$ )90° | ( $\Phi$ )32.05°( $\theta$ )90° | ( $\Phi$ )77.95°( $\theta$ )120° |
| 2.4G Single Band ANT [2]  |                                 |                                 |                                  |
| Frequency                 | 2400 MHz                        | 2447 MHz z                      | 24835 MHz                        |
| Peak Gain                 | 5.45 dBi                        | 5.31 dBi                        | 5.67 dBi                         |
| Peak gain at polarization | ( $\Phi$ )105°( $\theta$ )105°  | ( $\Phi$ )105°( $\theta$ )105°  | ( $\Phi$ )105°( $\theta$ )105°   |
| 2.4G Single Band ANT [3]  |                                 |                                 |                                  |
| Frequency                 | 2400 MHz                        | 2447 MHz z                      | 24835 MHz                        |
| Peak Gain                 | 5.79 dBi                        | 5.72 dBi                        | 5.99 dBi                         |
| Peak gain at polarization | ( $\Phi$ )152°( $\theta$ )105°  | ( $\Phi$ )145°( $\theta$ )105°  | ( $\Phi$ )113°( $\theta$ )105°   |

※ $\Phi$ (Phi) ;  $\Theta$ (Theta)

※Peak Gain (G) and directivity (D) are linked by the formula  $G = k \times D$ , where the antenna effective factor  $k$  ( $0 \leq k \leq 1$ ) corresponds to the overall losses of the antenna. Accordingly antenna gain can be calculated by the following formula, where represents antenna losses comprising of all ohm and dielectric losses between the input connector and the outer surface of the radome and the loss due to the impedance mismatch.

2.447MHz



Test date: 2023/06/14

2.447MHz

