

# UIBA Antenna Report



**Quanta**  
Product Design Center

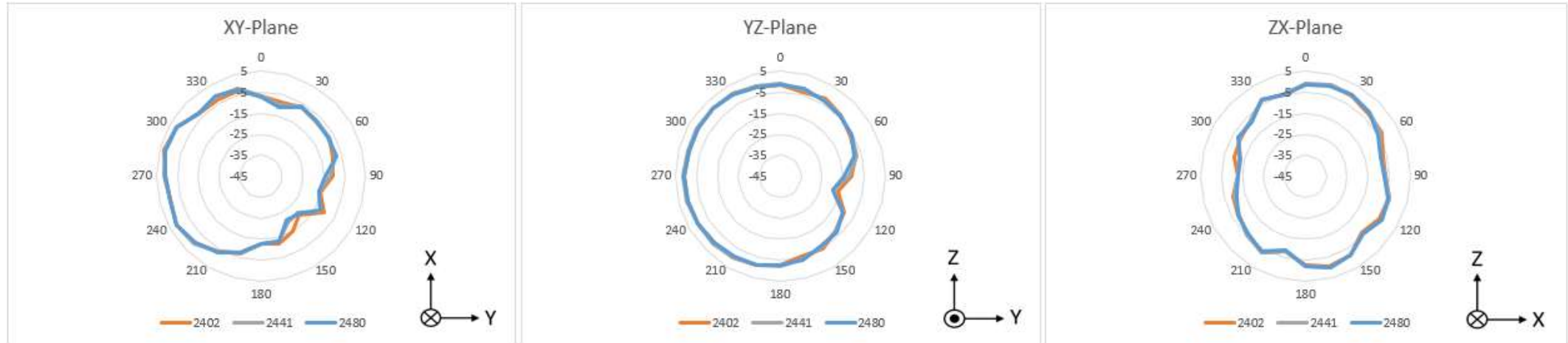
# Antenna Spec

| Antenna | Brand | Model       | Antenna<br>peak<br>Gain (dBi) | Frequency<br>range | Antenna Type | Connector<br>Type    |
|---------|-------|-------------|-------------------------------|--------------------|--------------|----------------------|
| WLAN0   | AWAN  | DQ610001501 | 2.71                          | 2402~2480MHz       | Dipole       | MHF<br>20351-112R-37 |
|         |       |             | 3.46                          | 5180~5859MHz       |              |                      |
| WLAN1   | AWAN  | DQ610001600 | 3.37                          | 2402~2480MHz       | Dipole       | MHF<br>20351-112R-37 |
|         |       |             | 3.10                          | 5180~5859MHz       |              |                      |
| BT      | AWAN  | DQ610001401 | 2.16                          | 2402~2480MHz       | PIFA         | MHF<br>20351-112R-37 |



# WLAN0 Antenna Radiation Pattern

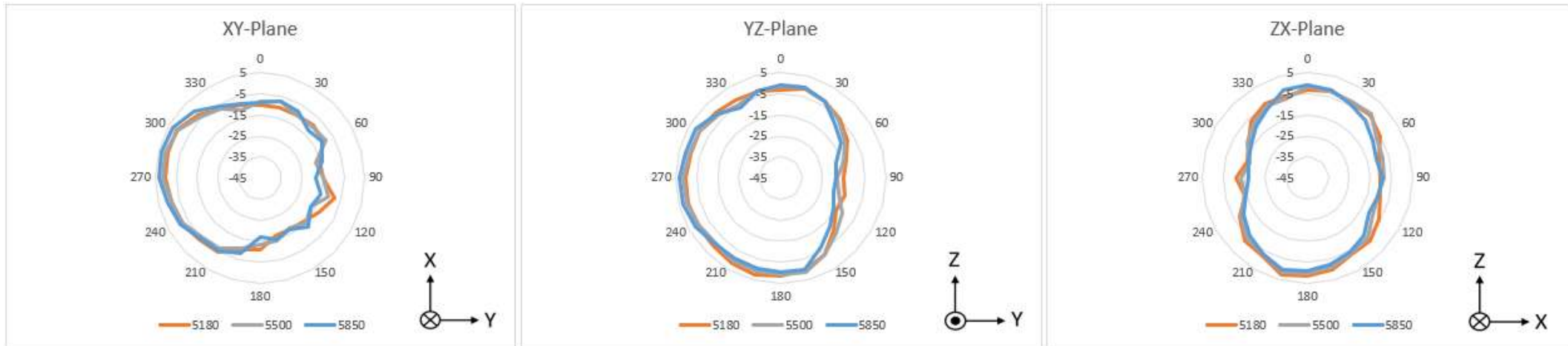
## 2400-2500 MHz radiation characteristic



| Center Frequency      | 2402 MHz | 2442 MHz | 2480 MHz |
|-----------------------|----------|----------|----------|
| Horizontal (dBi) peak | 0.11     | 0.12     | 0.27     |
| Vertical (dBi) peak   | 2.43     | 2.28     | 2.06     |
| Total (dBi) peak      | 2.71     | 2.46     | 2.16     |

# WLAN0 Antenna Radiation Pattern

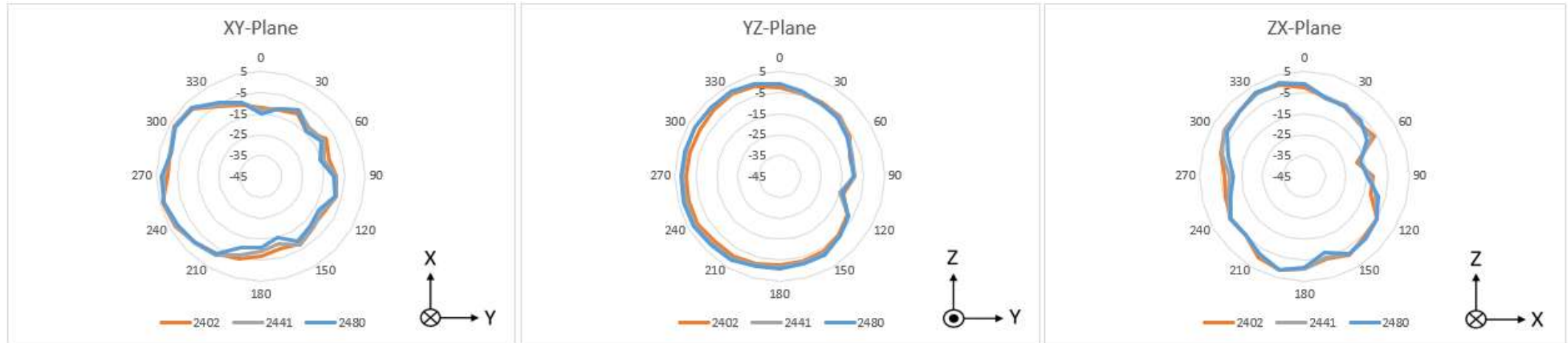
## 5150-5850 MHz radiation characteristic



| Center Frequency      | 5180 MHz | 5500 MHz | 5850 MHz |
|-----------------------|----------|----------|----------|
| Horizontal (dBi) peak | 2.64     | 1.11     | 0.21     |
| Vertical (dBi) peak   | 2.32     | 1.32     | 3.08     |
| Total (dBi) peak      | 2.65     | 1.98     | 3.46     |

# WLAN1 Antenna Radiation Pattern

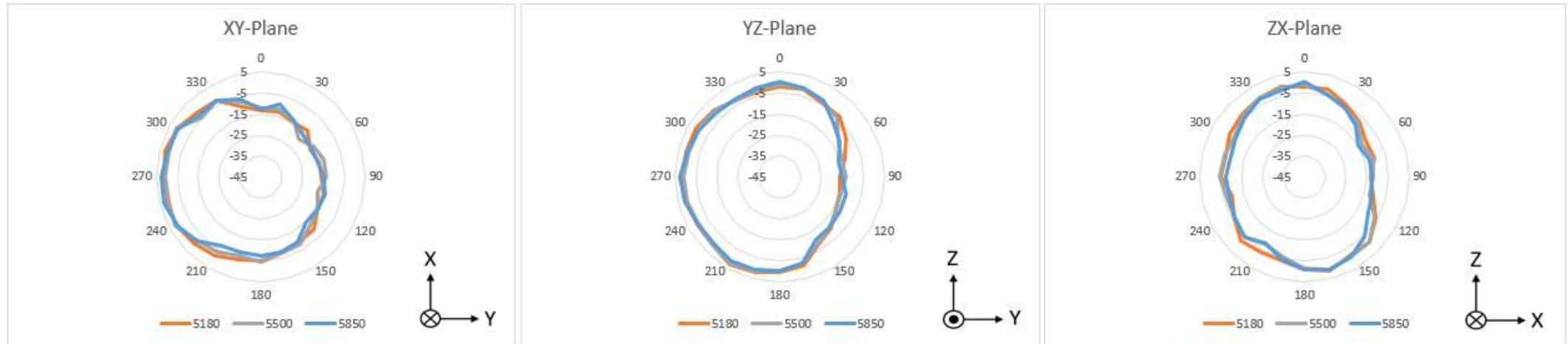
## 2400-2500 MHz radiation characteristic



| Center Frequency      | 2402 MHz | 2442 MHz | 2480 MHz |
|-----------------------|----------|----------|----------|
| Horizontal (dBi) peak | 1.17     | 1.31     | 1.11     |
| Vertical (dBi) peak   | 3.3      | 3.12     | 2.68     |
| Total (dBi) peak      | 3.37     | 3.18     | 2.83     |

# WLAN1 Antenna Radiation Pattern

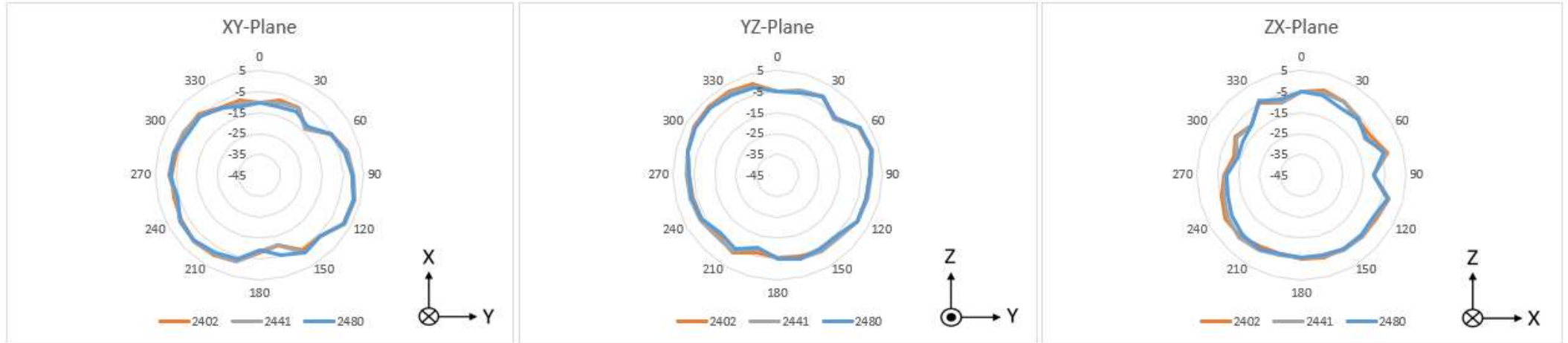
## 5150-5850 MHz radiation characteristic



| Center Frequency      | 5180 MHz | 5500 MHz | 5850 MHz |
|-----------------------|----------|----------|----------|
| Horizontal (dBi) peak | 0.76     | 0.12     | 0.74     |
| Vertical (dBi) peak   | 2.76     | 2.40     | 2.70     |
| Total (dBi) peak      | 3.10     | 2.86     | 2.79     |

# BT Antenna Radiation Pattern

## 2400-2500 MHz radiation characteristic



| Center Frequency      | 2402 MHz | 2442 MHz | 2480 MHz |
|-----------------------|----------|----------|----------|
| Horizontal (dBi) peak | 0.55     | 0.96     | 0.60     |
| Vertical (dBi) peak   | 1.35     | 1.29     | 0.56     |
| Total (dBi) peak      | 1.65     | 2.16     | 1.71     |

# Test Information

| Item             | Description                                                                |
|------------------|----------------------------------------------------------------------------|
| Model Name       | UIBA                                                                       |
| Test condition   | Passive Measurement                                                        |
| Test Engineer    | Richard Tang                                                               |
| Company          | Quanta Computer Inc.                                                       |
| Company Address  | NO.188, Wenhua 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C.) |
| Test Environment | ETS-Lindgren AMS-8923 Antenna Measurement System                           |
| Test Software    | ETS-Lindgren EMQuest Data Acquisition and Analysis Software                |
| Test Date        | Dec. 20 2023 ~ Jan. 02 2024                                                |





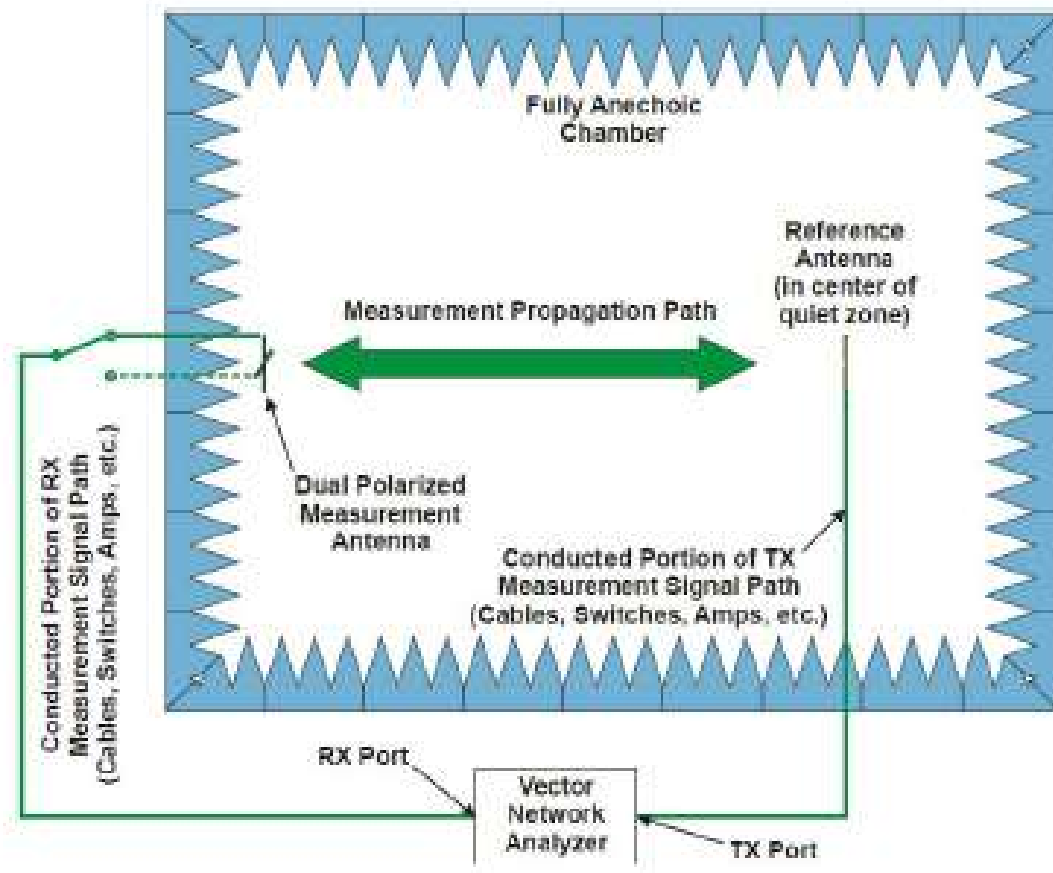
# Test setup and Produce

1. Fix the DUT on the dielectric support structure and connect the feeding cable to the antenna used for test.
2. Set measurement parameters such as frequency range and sample angle.
3. Perform test and then get far-field data. (radiation pattern, gain, efficiency)
4. Repeat test procedure for other antenna.



# Test equipment & Calibration

Network analyzer and reference antennas are used for calibration. Path loss and cable loss for different frequency bands can be checked and calculated.



# Test equipment & Calibration

| Equipment Description   | Manufacture  | Model No. | Calibrated Date | Calibrated Until |
|-------------------------|--------------|-----------|-----------------|------------------|
| Network Analyzer        | Agilent      | E5080B    | 2023/11/05      | 2024/11/05       |
| Base Station Simulators | Anritsu      | 8820C     | 2023/10/30      | 2024/10/30       |
| Base Station Simulators | Agilent      | 8960      | 2023/10/30      | 2024/10/30       |
| Spectrum analyzer       | Agilent      | N9020B    | 2023/10/30      | 2024/10/30       |
| Switch                  | Agilent      | 3499      | N/A             | N/A              |
| MAPS Controller         | ETS-Lindgren | EMCO 2090 | N/A             | N/A              |
| Receive Antenna         | ETS-Lindgren | EMCO 3164 | N/A             | N/A              |
| Anechoic Chamber        | ETS-Lindgren | AMS-8500  | N/A             | N/A              |

