

TB643DW7S Antenna report V2

2025/3/21

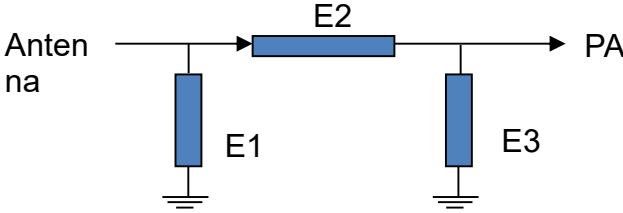
Objectives :  
Conclusions :

Antenna testing

| Antenna | Band         | Material                | performance requirement |
|---------|--------------|-------------------------|-------------------------|
| BT      | 2400-2480MHz | FPC+150MM coaxial cable |                         |
| 5G-1    | 5150-5850MHz | FPC+160MM coaxial cable |                         |

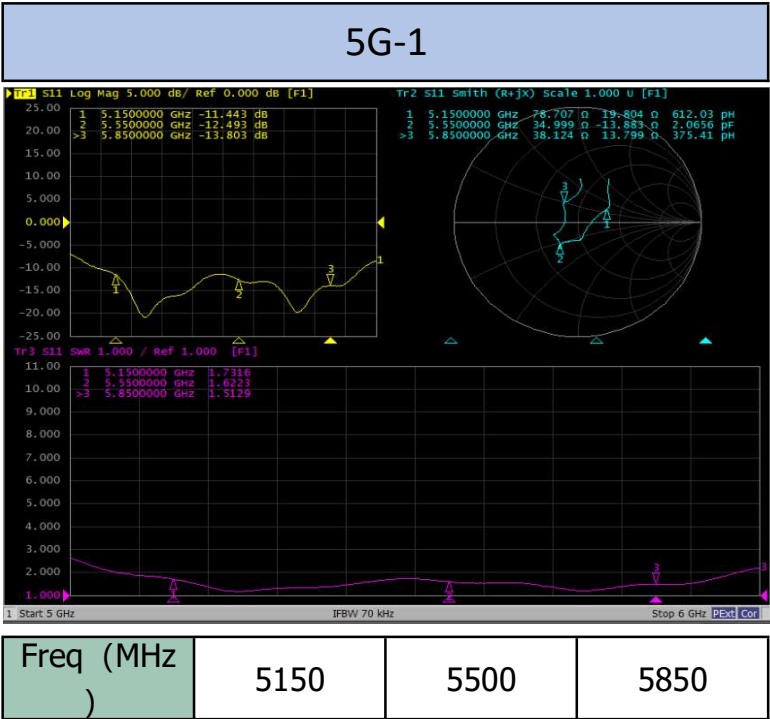
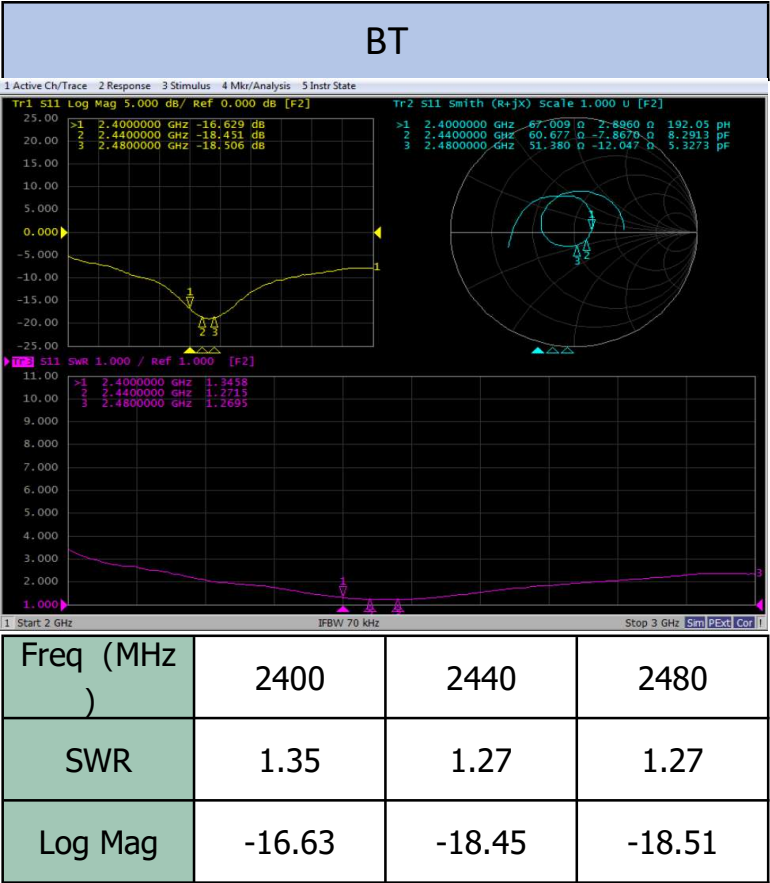
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Antenna matching circuit



| Element  |  |
|----------|--|
| E1(0402) |  |
| E2(0402) |  |
| E3(0402) |  |

Passive S11 parameter test for antenna



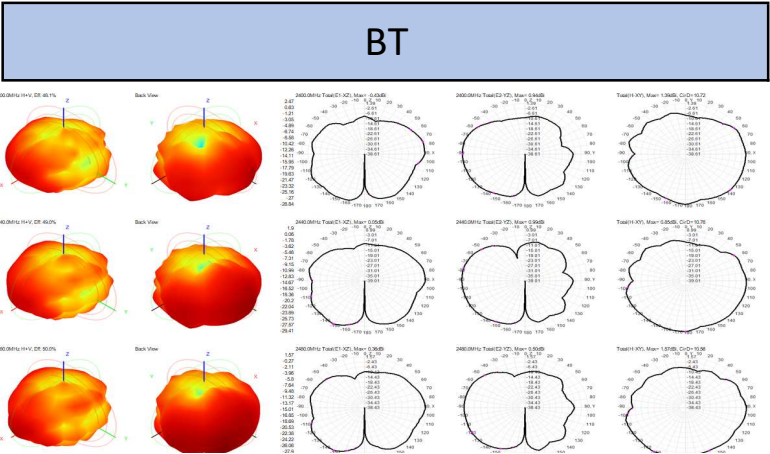
|         |        |        |        |
|---------|--------|--------|--------|
| SWR     | 1.73   | 1.62   | 1.51   |
| Log Mag | -11.44 | -12.49 | -13.80 |

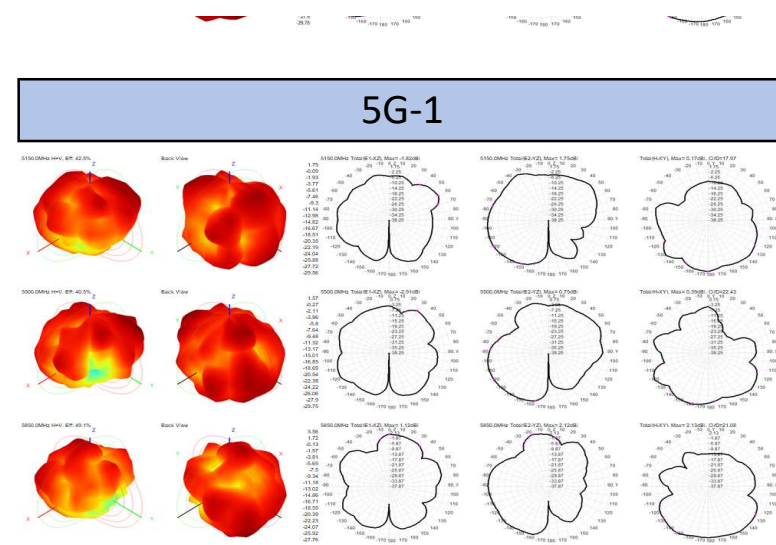
Passive efficiency and gain testing of antennas

| BT              |            |                |
|-----------------|------------|----------------|
| Frequency (MHz) | Gain (dBi) | Efficiency (%) |
| 2400            | 2.47       | 48.11          |
| 2410            | 2.33       | 49.11          |
| 2420            | 1.90       | 48.39          |
| 2430            | 1.91       | 49.99          |
| 2440            | 1.90       | 49.03          |
| 2450            | 1.90       | 49.03          |
| 2460            | 1.86       | 49.68          |
| 2470            | 1.58       | 49.57          |
| 2480            | 1.57       | 49.95          |
| 2490            | 1.97       | 50.27          |
| 2500            | 2.39       | 50.83          |

| 5G-1            |            |                |
|-----------------|------------|----------------|
| Frequency (MHz) | Gain (dBi) | Efficiency (%) |
| 5150            | 1.75       | 42.49          |
| 5200            | 1.64       | 44.73          |
| 5250            | 2.27       | 42.34          |
| 5300            | 3.53       | 47.43          |
| 5350            | 2.73       | 46.05          |
| 5400            | 2.13       | 40.69          |
| 5450            | 1.96       | 40.18          |
| 5500            | 1.57       | 40.48          |
| 5550            | 2.04       | 38.26          |
| 5600            | 3.16       | 40.98          |
| 5650            | 2.78       | 44.19          |
| 5700            | 2.38       | 46.20          |
| 5750            | 2.83       | 46.49          |
| 5800            | 3.46       | 47.38          |
| 5850            | 3.56       | 49.12          |

Passive radiation pattern of antenna





## Antenna position and matching image

