



ShenZhen Eastong Electronic technology Co., LTD

APPROVAL SHEET FOR

2.4G
(2.4G band internal antenna)

| | | | |
|-----------------------------|--|-------------------|-------------------|
| Issued by | | Checked by | |
| Confirmed by | | Date | 2024-11-08 |
| Customer Confirm | | | |

| | | | |
|--|-----------|------------------------|--------------------|
| Project: 2.4G | | Author: XU xiaorong | File Name: |
| Date: 2024-11-08 | | | 2.4G-APP-RA |
| Rev: | Language: | Check: | |
| A | ENG | | |
| CONFIDENTIAL | | | |
| ShenZhen Eastong Electronic technology Co., LTD 411, No. 9, Yangmei Huancheng Middle Road, Bantian, Longgang District, Shenzhen | | | |

Revision History

| Date | Revision | Description of Changes |
|------------|----------|--|
| 2024-11-08 | R:A | Antenna performance approved by customer |
| | | |

1 SUMMARY

2 GENERAL DESCRIPTION

2.1 Definitions

3 ELECTRICAL PERFORMANCE

3.1 Set-up

- 3.1.1 VSWR and return loss
- 3.1.2 Efficiency, Gain and TRP/TIS

3.2 Measurement Data

- 3.2.1 VSWR
- 3.2.2 Active result

4 MECHANICAL DRAWING

| | | | |
|------------------|-----------|---|----------------------------------|
| Project: 2.4G | | Author: XU xiaorong | File Name: 2.4G-APP-RA |
| Date: 2024-11-08 | | | |
| Rev: | Language: | Check: | |
| A | ENG | CONFIDENTIAL ShenZhen Eastong Electronic technology Co., LTD 411, No. 9, Yangmei Huancheng Middle Road, Bantian, Longgang District, Shenzhen | |

1 Summary

This report summarizes the electrical results of the proposed antenna to support the 2.4G program. We test the antenna with the latest version handset .

2 General Description

2.1 Definitions

VSWR: Voltage Standing Wave Rate

3 Electrical Performance

3.1 Set-up

3.1.1 VSWR and return loss

VSWR measurements (S_{11}) were performed using an Agilent E5070B Network Analyzer and the previously described test fixture. Coaxial chokes were used to mitigate surface currents on the outside of the cabling. The testing was performed in free space.

3.1.2 Efficiency, Gain and TRP/TIS

The gain of the antenna was measured in Dong Xin's 3D anechoic chamber in Shenzhen. The chamber is capable of doing tests from 380MHz to 6GHz. Coaxial chokes on the feed cable were used to mitigate surface currents. The measurement results are calibrated using dipole standards. For TRP and TIS the chamber uses a Agilent 8960 to establish the connection with the mobile device. During TRP tests the 8960 reads the power received through the chamber probes whilst during TIS tests the 8960 transmits through the probe. All data is afterwards corrected by a calibration table

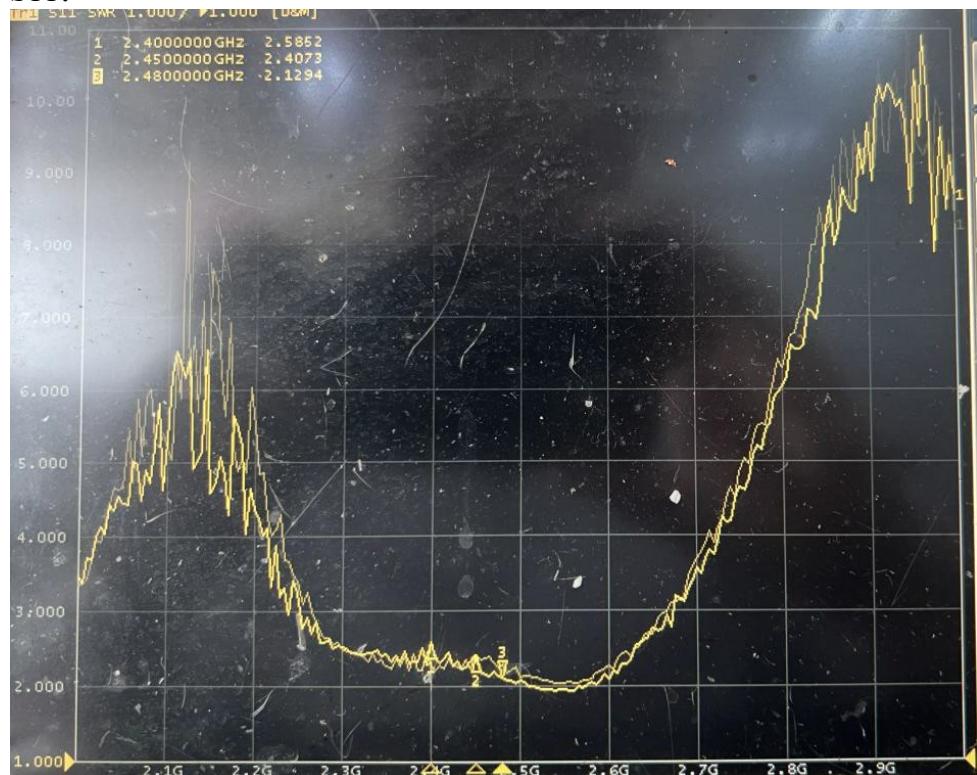
| | | | |
|--|-----------|------------------------|----------------------------------|
| Project: 2.4G | | Author: XU xiaorong | File Name: 2.4G-APP-RA |
| Date: 2024-11-08 | | | |
| Rev: | Language: | Check: | |
| A | ENG | | |
| CONFIDENTIAL | | | |
| ShenZhen Eastong Electronic technology Co., LTD 411, No. 9, Yangmei Huancheng Middle Road, Bantian, Longgang District, Shenzhen | | | |

3.2 Measurement Data

Specification: Single strand, wire diameter 0.6mm, total length 28mm, black, exposed welding head 1mm

Frequency: 2402~2480MHz

S11:

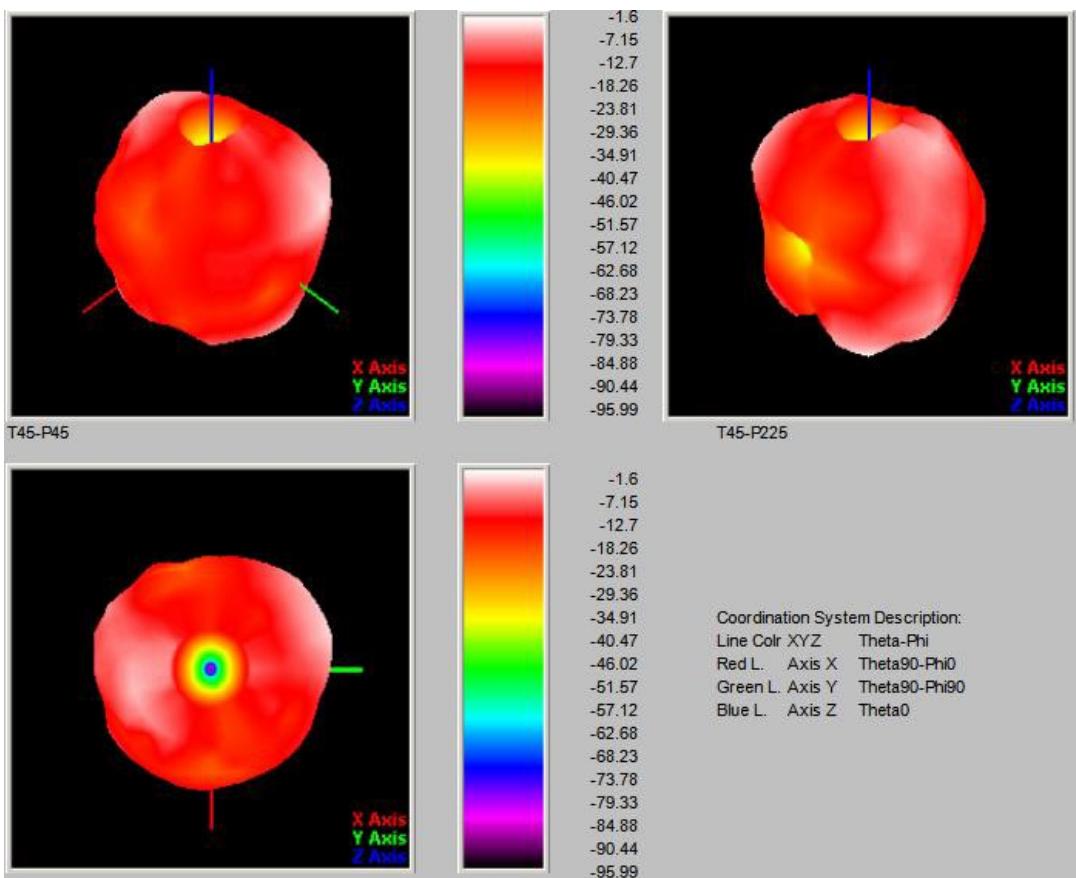


GAIN:

| Test Point ID | Freq. (MHz) | Gain (dBi) |
|---------------|-------------|------------|
| 1 | 2400.0 | -2.91 |
| 2 | 2410.0 | -2.43 |
| 3 | 2420.0 | -2.27 |
| 4 | 2430.0 | -2.12 |
| 5 | 2440.0 | -1.72 |
| 6 | 2450.0 | -1.60 |
| 7 | 2460.0 | -1.27 |
| 8 | 2470.0 | -2.46 |
| 9 | 2480.0 | -1.09 |
| 10 | 2490.0 | -1.84 |
| 11 | 2500.0 | -1.67 |

| | | | |
|---|-----------|------------------------|----------------------------------|
| Project: 2.4G | | Author: XU xiaorong | File Name: 2.4G-APP-RA |
| Date: 2024-11-08 | | | |
| Rev: | Language: | Check: | |
| A | ENG | | |
| CONFIDENTIAL | | | |
| ShenZhen Eastong Electronic technology Co., LTD | | | |
| 411, No. 9, Yangmei Huancheng Middle Road, Bantian, Longgang District, Shenzhen | | | |

2450MHz



| | |
|------------------|-----------|
| Project: 2.4G | |
| Date: 2024-11-08 | |
| Rev: | Language: |
| A | ENG |

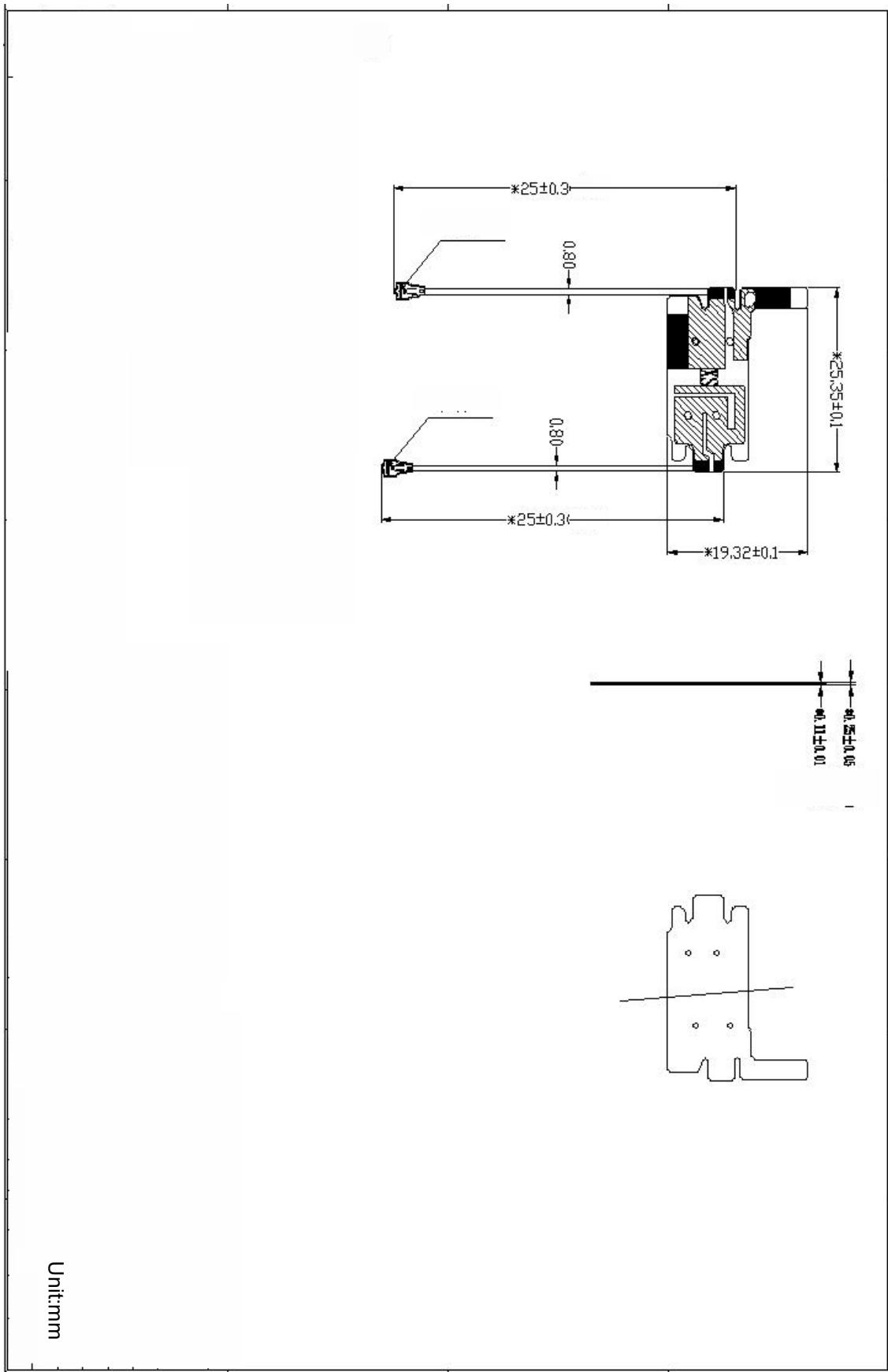
Author: XU
xiaorong

File Name:

2.4G-APP-RA

CONFIDENTIAL

ShenZhen Eastong Electronic technology Co., LTD
411, No. 9, Yangmei Huancheng Middle Road, Bantian, Longgang District, Shenzhen



| | | | |
|--|-----------|------------------------|----------------------------------|
| Project: 2.4G | | Author: XU xiaorong | File Name: 2.4G-APP-RA |
| Date: 2024-11-08 | | | |
| Rev: | Language: | Check: | |
| A | ENG | | |
| CONFIDENTIAL | | | |
| ShenZhen Eastong Electronic technology Co., LTD 411, No. 9, Yangmei Huancheng Middle Road, Bantian, Longgang District, Shenzhen | | | |