# Antenna Part Specification

| | |
|---|---|
| Customer name： | Tianheng |
| Project name： | OLA |
| Materialcategory： | BLE Antenna |
| Version： | V2.0 |
| Date： | 2024.01.29 |

# Contents

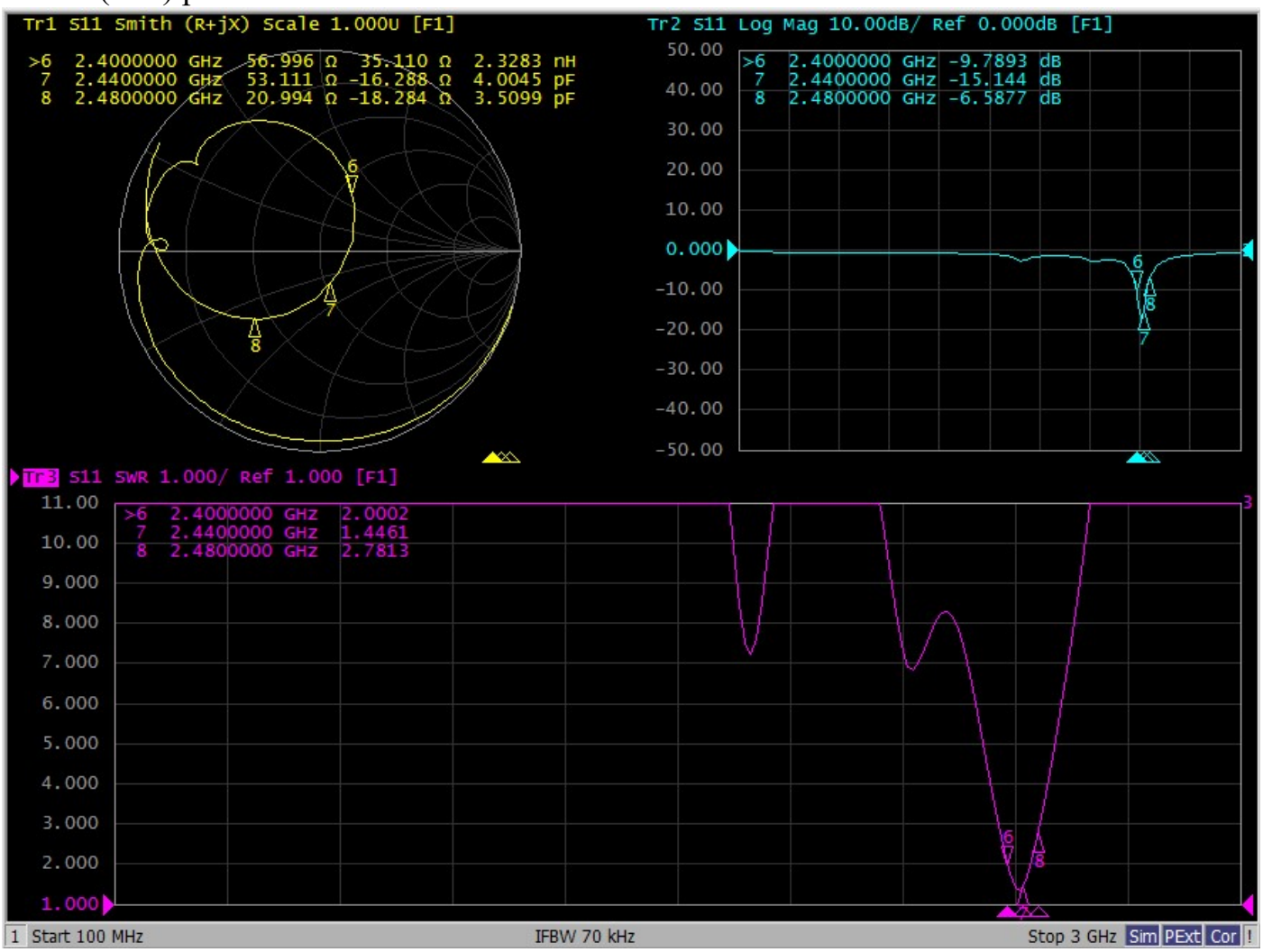
I：The report of passive data ..... 3
II：Matching circuit ..... 6
III：Structure file ..... 7

| Change record | | | |
|---|---|---|---|
| Compile / change date | Reason for change | Changed content | Version |
| 2023.12.13 | First edition | First edition | V1.0 |
| 2024.01.29 | Mass production data | Mass production data | V2.0 |
| | | | |
| | | | |

I：The report of passive data

Angilent E5071C

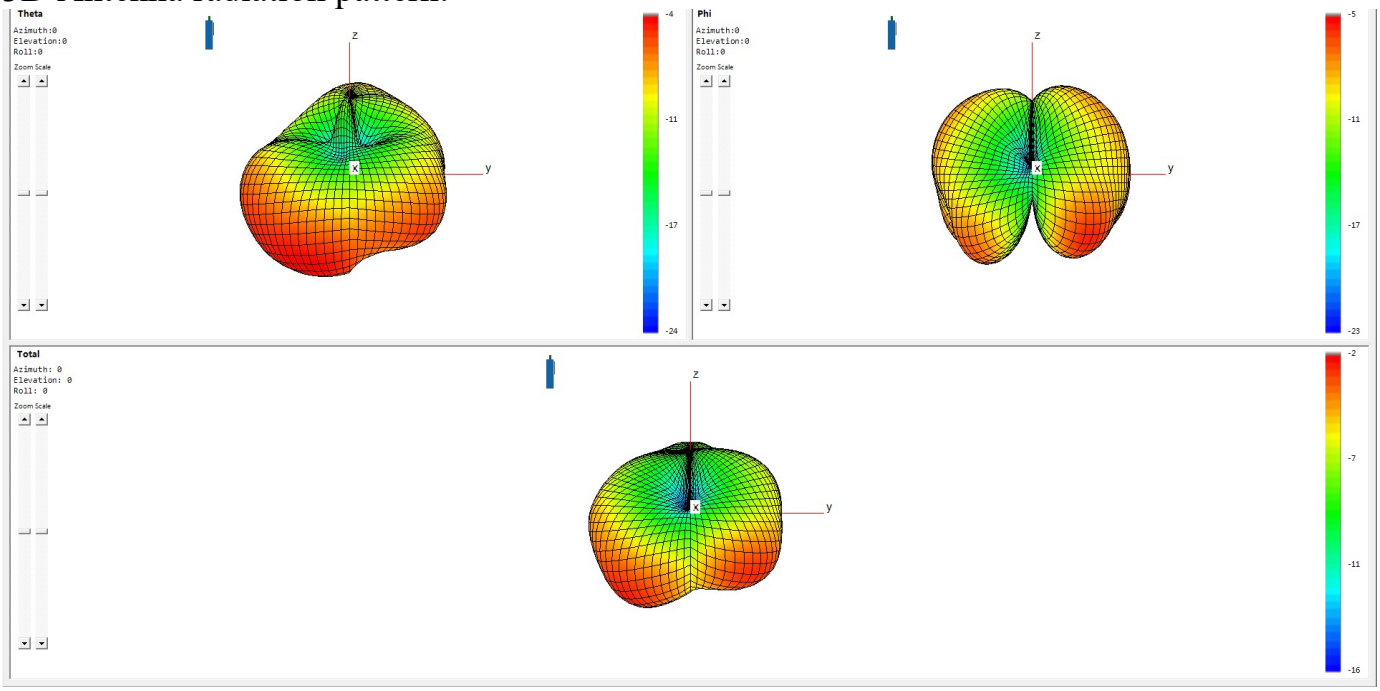
VSWR(S11) parameter：



Efficiency：

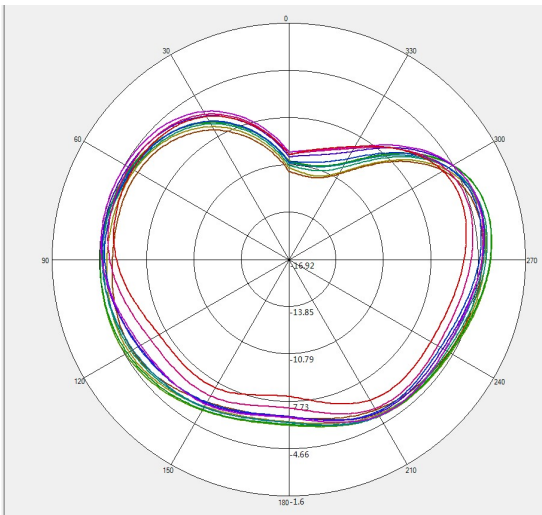
| Frequency（MHz） | Gain (dBi) | Efficiency (dB ) | Efficiency |
|---|---|---|---|
| 2400 | -2.61 | -6.58 | 21.95 |
| 2410 | -2.16 | -6.19 | 24.02 |
| 2420 | -1.86 | -5.89 | 25.76 |
| 2430 | -1.85 | -5.89 | 25.78 |
| 2440 | -2.01 | -6.02 | 24.98 |
| 2450 | -2.06 | -5.99 | 25.17 |
| 2460 | -2.31 | -6.25 | 23.69 |
| 2470 | -2.18 | -6.22 | 23.90 |
| 2480 | -2.33 | -6.28 | 23.56 |
| Average value | -2.15 | -6.15 | 24.31 |

3D Antenna radiation pattern:



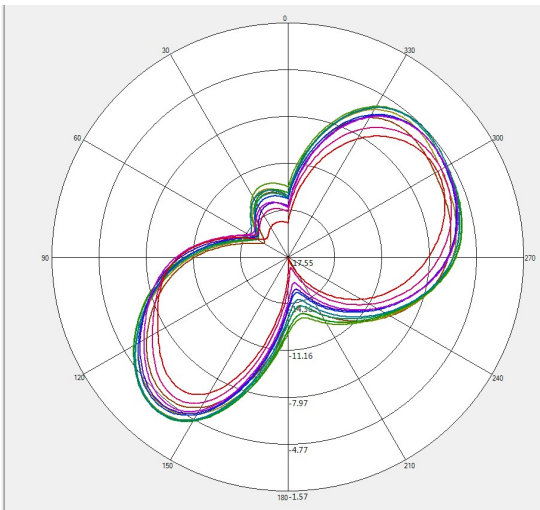
2D Antenna radiation pattern:

Theta=90°



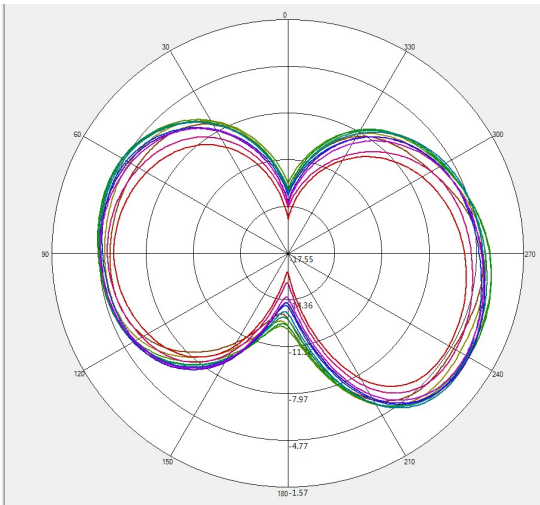

| Visible | Theta | Frequen | Front-to Ratio | Beam Width | Beam Width+ | Beam Width- |
|---|---|---|---|---|---|---|
| ☐ | 0 | 2400 | 1.103... | 42 | 0 | 42 |
| ☐ | 30 | 2410 | 0.937... | 42 | 0 | 42 |
| ☐ | 60 | 2420 | 0.862... | 44 | 0 | 44 |
| ☑ | 90 | 2430 | 0.798... | 44 | 0 | 44 |
| ☐ | 120 | 2440 | 0.713... | 44 | 0 | 44 |
| ☐ | 150 | 2450 | 0.485... | 45 | 0 | 45 |
| ☐ | 180 | 2460 | 0.386... | 48 | 0 | 48 |
| ☐ | | 2470 | 0.418... | 50 | 0 | 50 |
| ☐ | | 2480 | 0.357... | 52 | 0 | 52 |
| ☐ | | 2490 | 0.847... | 47 | 47 | 0 |
| ☐ | | 2500 | 1.109... | 48 | 48 | 0 |

Phi=0°




| Visible | Phi | Frequen | Front-to Ratio | Beam Width | Beam Width+ | Beam Width- |
|---|---|---|---|---|---|---|
| ☑ | 0 | 2400 | 0.845... | 59 | 46 | 13 |
| ☐ | 30 | 2410 | 0.759... | 58 | 45 | 13 |
| ☐ | 60 | 2420 | 0.930... | 58 | 45 | 13 |
| ☐ | 90 | 2430 | 1.104... | 56 | 44 | 12 |
| ☐ | 120 | 2440 | 1.055... | 55 | 43 | 12 |
| ☐ | 150 | 2450 | 1.032... | 56 | 44 | 12 |
| ☐ | 180 | 2460 | 1.151... | 58 | 46 | 12 |
| ☐ | | 2470 | 0.769... | 83 | 43 | 40 |
| ☐ | | 2480 | 1.113... | 83 | 44 | 39 |
| ☐ | | 2490 | 1.406... | 79 | 42 | 37 |
| ☐ | | 2500 | 1.528... | 72 | 38 | 34 |

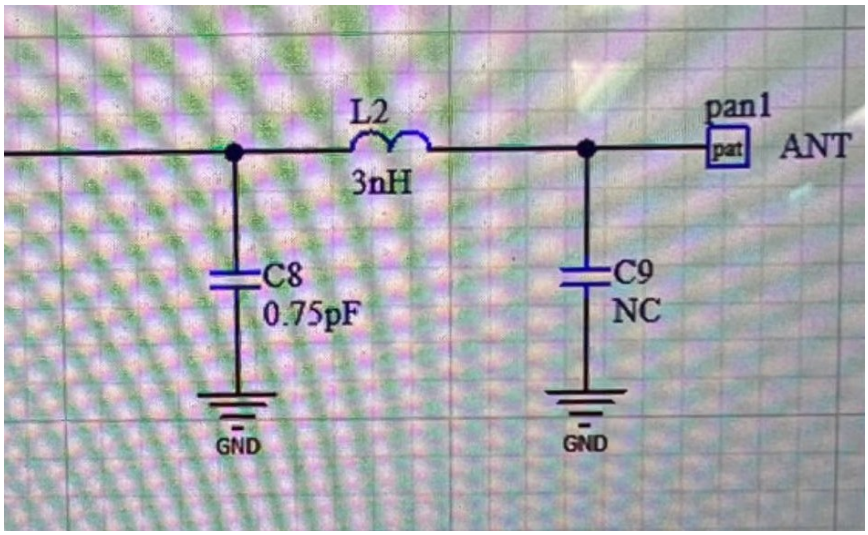
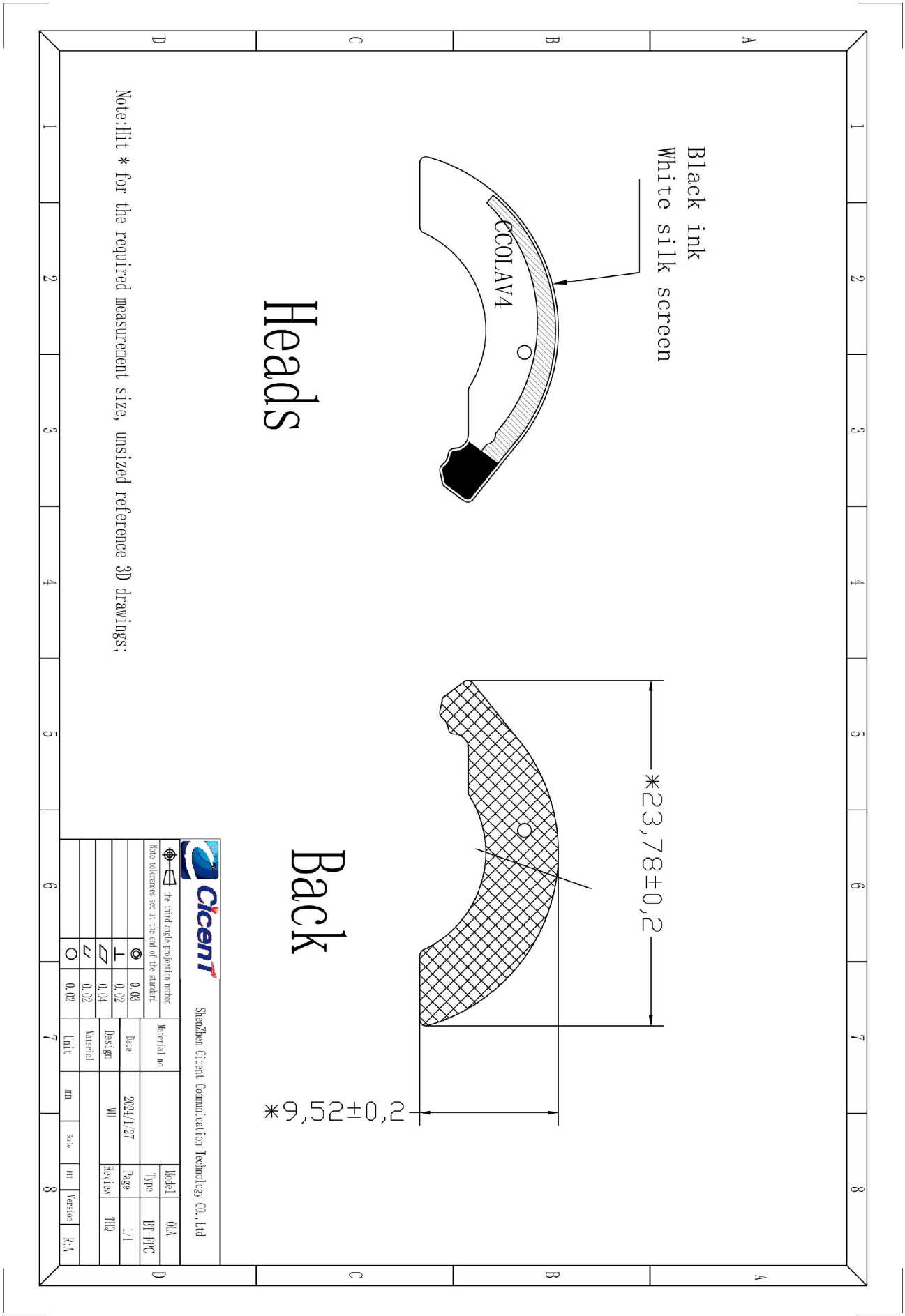
Phi=90°




| Visible | Phi | Frequen | Front-to Ratio | Beam Width | Beam Width+ | Beam Width- |
|---|---|---|---|---|---|---|
| ☐ | 0 | 2400 | 1.103... | 117 | 67 | 50 |
| ☐ | 30 | 2410 | 1.036... | 118 | 37 | 81 |
| ☐ | 60 | 2420 | 1.026... | 112 | 35 | 77 |
| ☑ | 90 | 2430 | 1.144... | 110 | 34 | 76 |
| ☐ | 120 | 2440 | 1.200... | 112 | 34 | 78 |
| ☐ | 150 | 2450 | 1.178... | 111 | 34 | 77 |
| ☐ | 180 | 2460 | 1.316... | 107 | 33 | 74 |
| ☐ | | 2470 | 1.609... | 103 | 31 | 72 |
| ☐ | | 2480 | 1.568... | 103 | 31 | 72 |
| ☐ | | 2490 | 1.434... | 104 | 32 | 72 |
| ☐ | | 2500 | 1.502... | 103 | 32 | 71 |

II：Matching circuit

| Element | Value |
|---|---|
| C8(0201) | N/A |
| L2(0201) | 0Ω |
| C9(0201) | 2.4pF |



III：Structure file