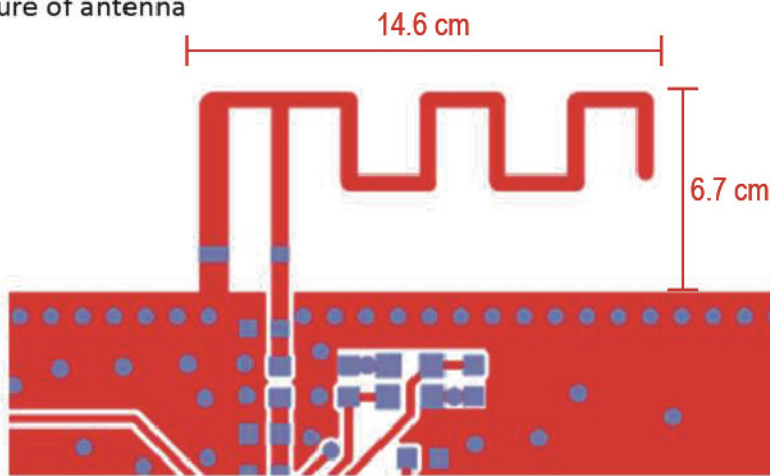


1. Antenna Description:

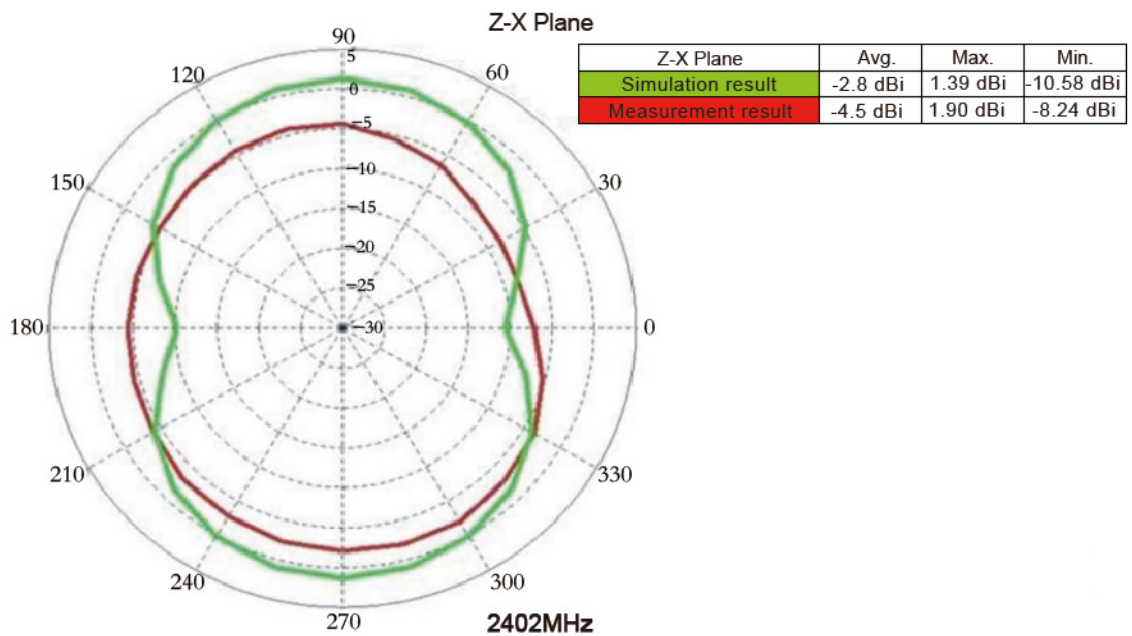
| | | |
|------------------------|---|----------|
| Antenna type | PCB Antenna | |
| Make name / Model name | TVX59 | |
| Antenna peak gain | 2.0 dBi | |
| Frequency range | 2.402MHz~2.480MHz | |
| Connect type | Direct Connect | |
| Supplier | SHENZHEN SURE THING INDUSTRY AND COMMERCE DEVELOPMENT CO.,LTD. | |
| | Building 6,1st Phase of Fu'an Industrial City, 99th Dayang Road,Fuhai Town,Bao'an District, Shenzhen,China. | |
| Total Gain | 2. 402G | 1.9 dBi |
| | 2. 441G | 2.0 dBi |
| | 2. 480G | 1.82 dBi |

2. Picture of antenna

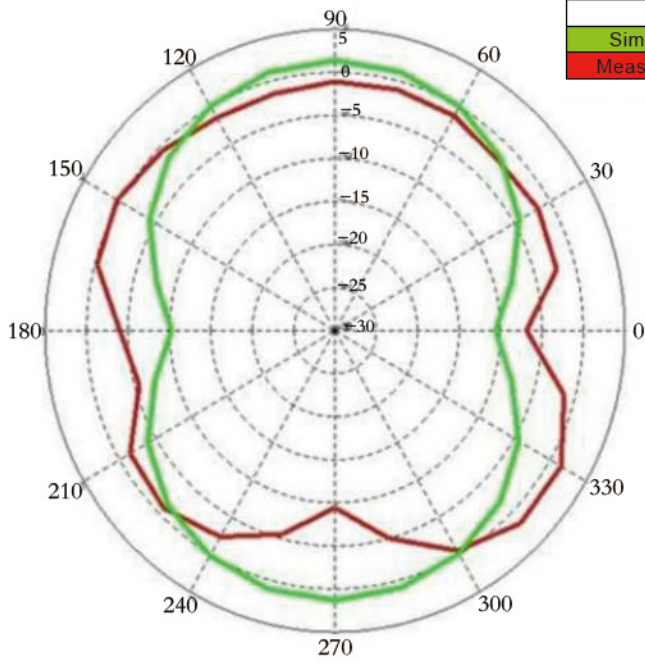


3. Antenna Radiation Pattern

Radiation pattern @2.402GHz



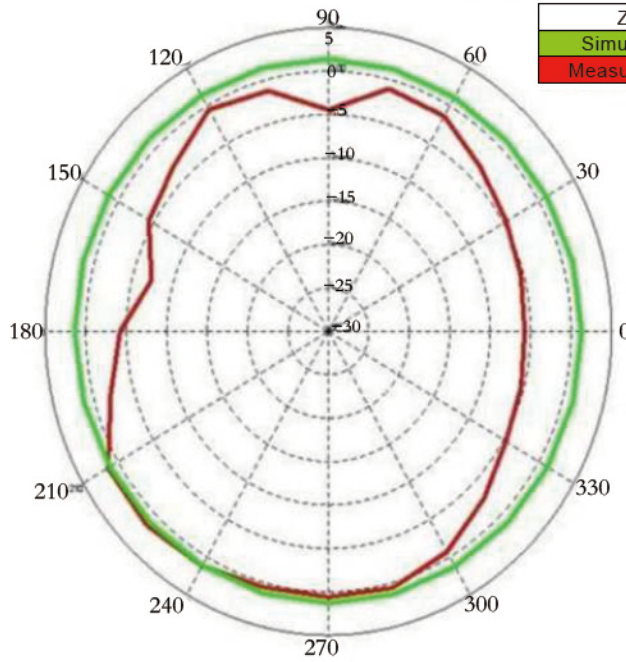
Z-Y Plane



| Z-Y Plane | Avg. | Max. | Min. |
|--------------------|----------|----------|------------|
| Simulation result | -2.8 dBi | 1.45 dBi | -10.58 dBi |
| Measurement result | -2.1 dBi | 1.7 dBi | -9.42 dBi |

2402MHz

X-Y Plane

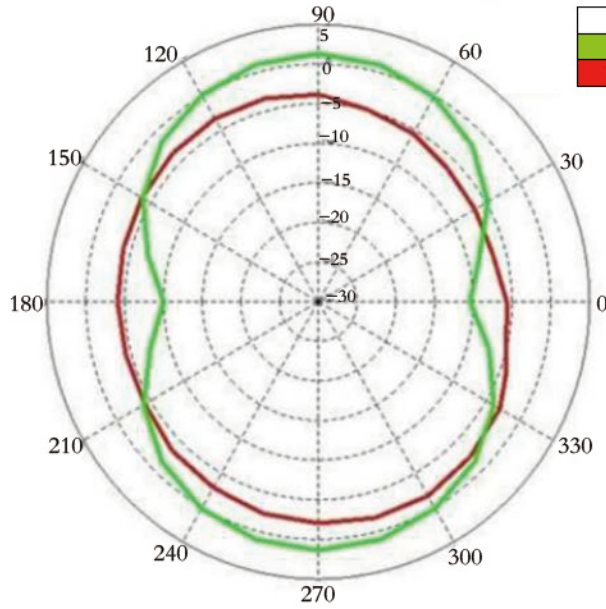


| Z-Y Plane | Avg. | Max. | Min. |
|--------------------|----------|---------|-----------|
| Simulation result | 1.3 dBi | 1.5 dBi | -1.15 dBi |
| Measurement result | -2.3 dBi | 1.7 dBi | -7.34 dBi |

2402MHz

Radiation pattern @2.441GHz

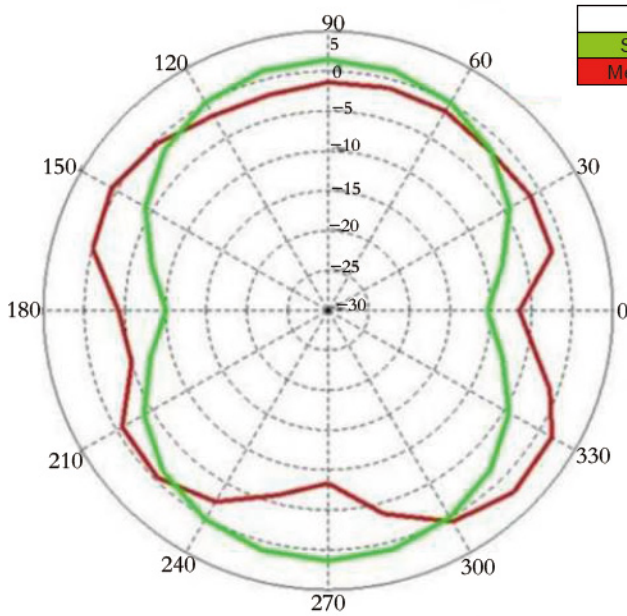
Z-X Plane



| Z-X Plane | Avg. | Max. | Min. |
|--------------------|----------|----------|-----------|
| Simulation result | -2.7 dBi | 1.44 dBi | -10.39dBi |
| Measurement result | -3.9 dBi | 1.65 dBi | -6.68 dBi |

244 1MHz

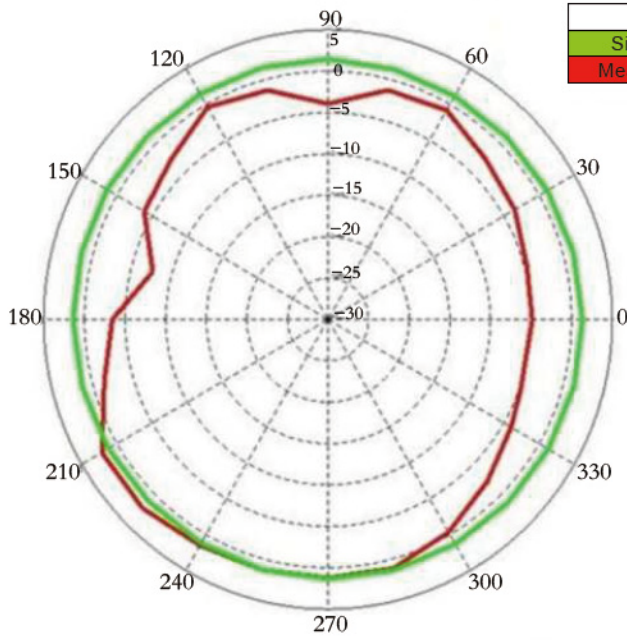
Z-Y Plane



| Z-Y Plane | Avg. | Max. | Min. |
|--------------------|----------|---------|------------|
| Simulation result | -1.7 dBi | 1.5 dBi | -10.39 dBi |
| Measurement result | -1.8 dBi | 2.0 dBi | -8.31 dBi |

244 1MHz

X-Y Plane

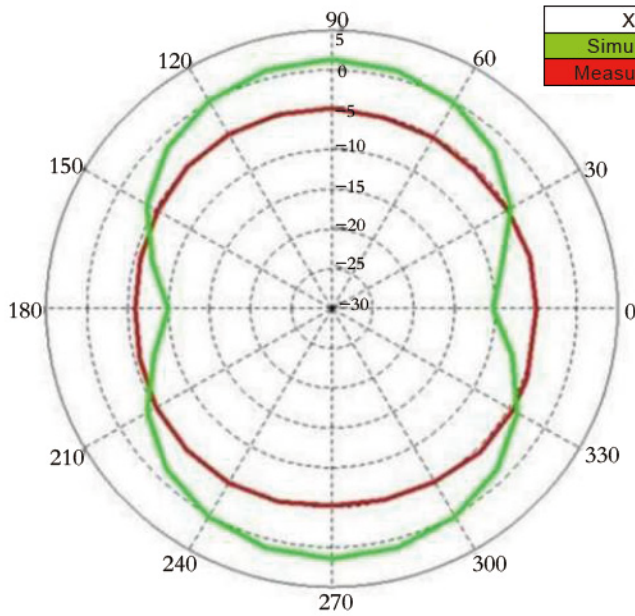


| X-Y Plane | Avg. | Max. | Min. |
|--------------------|----------|----------|-----------|
| Simulation result | 1.4 dBi | 1.55 dBi | -1.17 dBi |
| Measurement result | -1.8 dBi | 2.0 dBi | -7.64 dBi |

2441MHz

Radiation pattern @2.480GHz

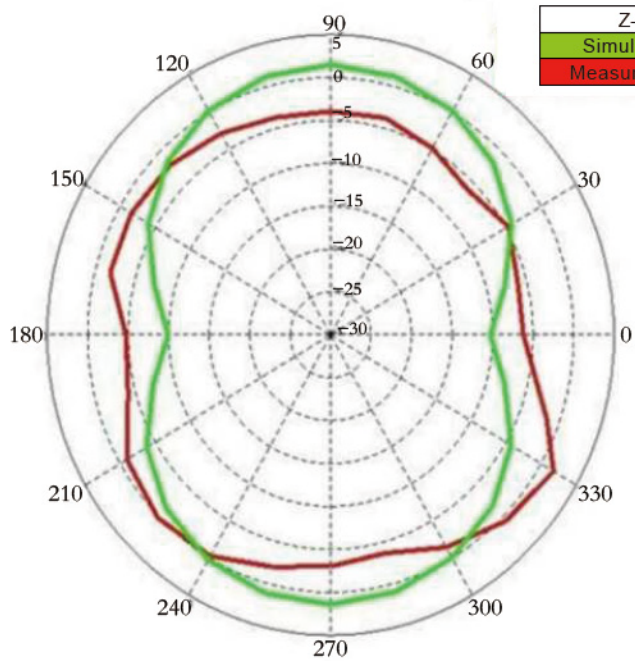
Z-X Plane



| X-Y Plane | Avg. | Max. | Min. |
|--------------------|----------|-----------|------------|
| Simulation result | -2.7 dBi | 1.5 dBi | -10.25 dBi |
| Measurement result | -5.0 dBi | -4.35 dBi | -5.88 dBi |

2480MHz

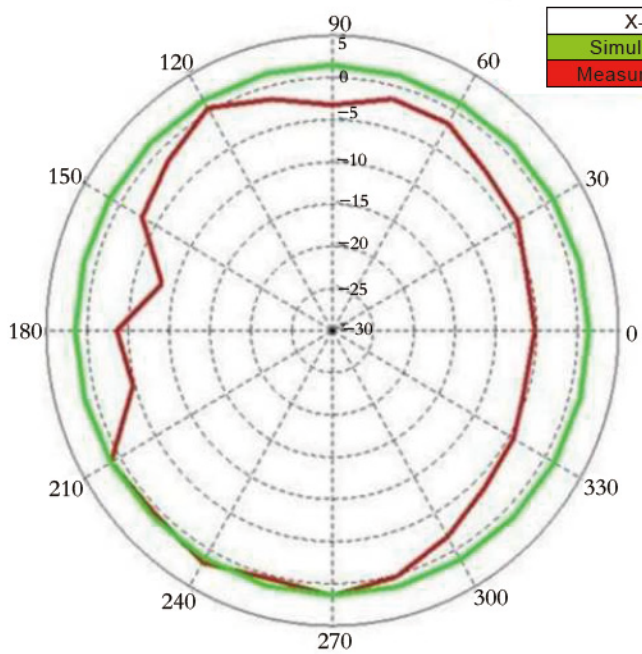
Z-Y Plane



| Z-Y Plane | Avg. | Max. | Min. |
|--------------------|----------|----------|------------|
| Simulation result | -2.7 dBi | 1.55 dBi | -10.25 dBi |
| Measurement result | -2.8 dBi | 1.82 dBi | -6.16 dBi |

2480MHz

X-Y Plane



| X-Y Plane | Avg. | Max. | Min. |
|--------------------|----------|----------|-----------|
| Simulation result | 1.4 dBi | 1.61 dBi | 1.22 dBi |
| Measurement result | -2.3 dBi | 1.82 dBi | -8.38 dBi |

2480MHz