

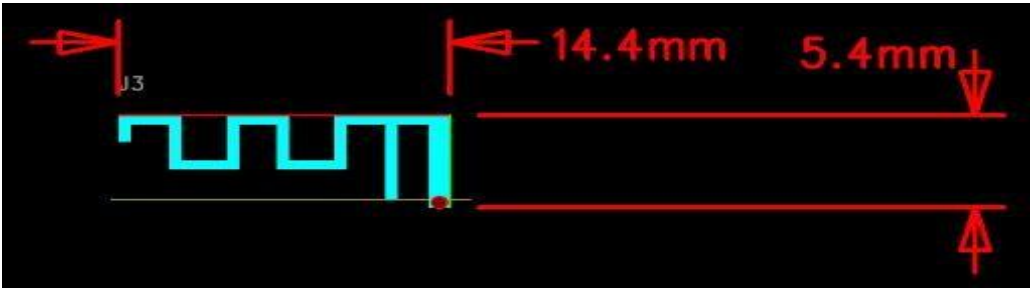
Product specification

Quick Reference Date

|                            |                                    |  |
|----------------------------|------------------------------------|--|
|                            | Antenna module on the system board |  |
| Antenna type               | PCB                                |  |
| Frequency                  | 2.45GHz*1                          |  |
| Ant. Port Input Pwr. (dBm) | 0 (Typ. BT class 2 output power)   |  |
| Tot. Rad. Pwr. (dBm)       | -2.3 (Input pwr – loss pwr)        |  |
| Peak EIRP(dBm)             | 1.3                                |  |
| Directivity (dBi)          | 1 (all direction antenna)          |  |
| Efficiency (dB)            | -2.3 (58.5%)                       |  |
| Gain (dBi)                 | 2.81(Peak Gain XY-plane)           |  |
| Maximum Power (dBm)        | 1.3 (XY-plane)                     |  |
| Minimum Power (dBm)        | -4(XY-plane)                       |  |
| Avg. Power (dBm)           | -0.5(XY-plane)                     |  |
| Max/Min Ratio (dB)         | 5.3(XY-plane)                      |  |
| Max/Avg Ratio (dB)         | 1.8(XY-plane)                      |  |
| Min/Avg Ratio (dB)         | -3.5(XY-plane)                     |  |
| Average Gain (dB)          | -0.5 (Avg Gain XY-plane)           |  |

All the technical data and information contained herein are subject to change without prior notice

Antenna Layout & module on the system board



Antenna Gain

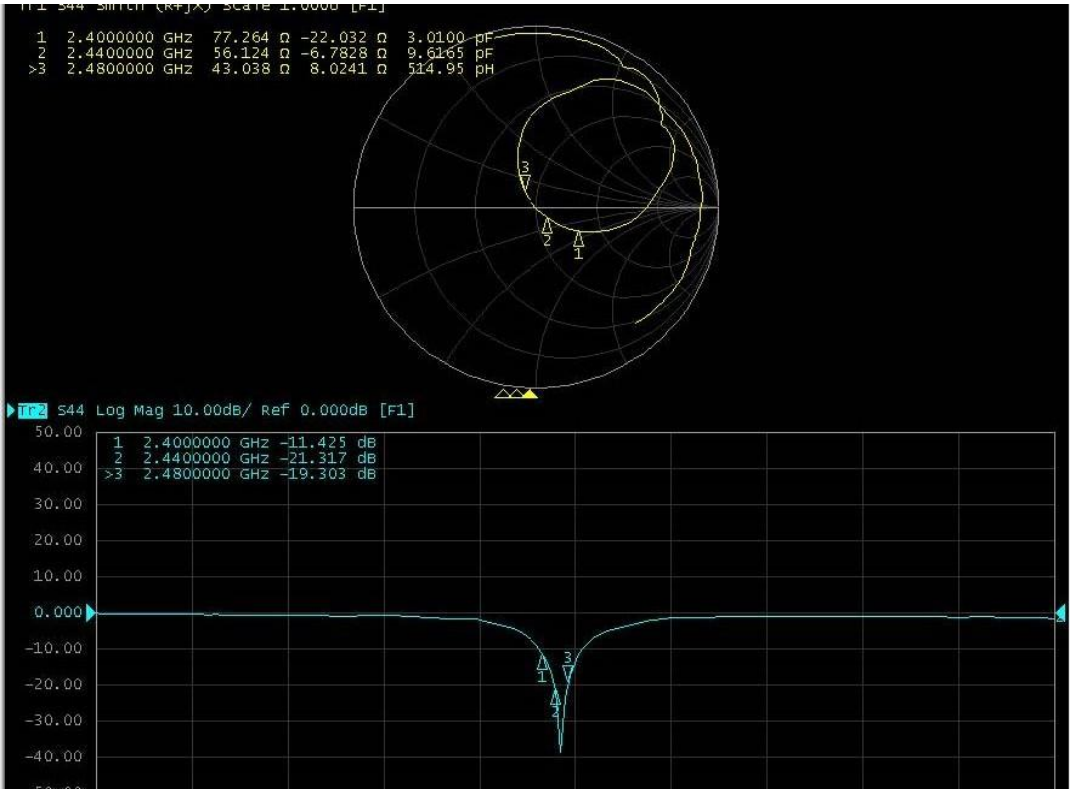
| Unit in dBi<br>@2.44GHz | XY-plane |      | XZ-plane |      | YZ-plane |      | Efficiency |
|-------------------------|----------|------|----------|------|----------|------|------------|
|                         | Peak     | Avg. | Peak     | Avg. | Peak     | Avg. |            |
| Module Board            | 1.3      | -0.5 | 1.7      | -3.8 | 1.1      | -3.0 | 58.5%      |

Gain

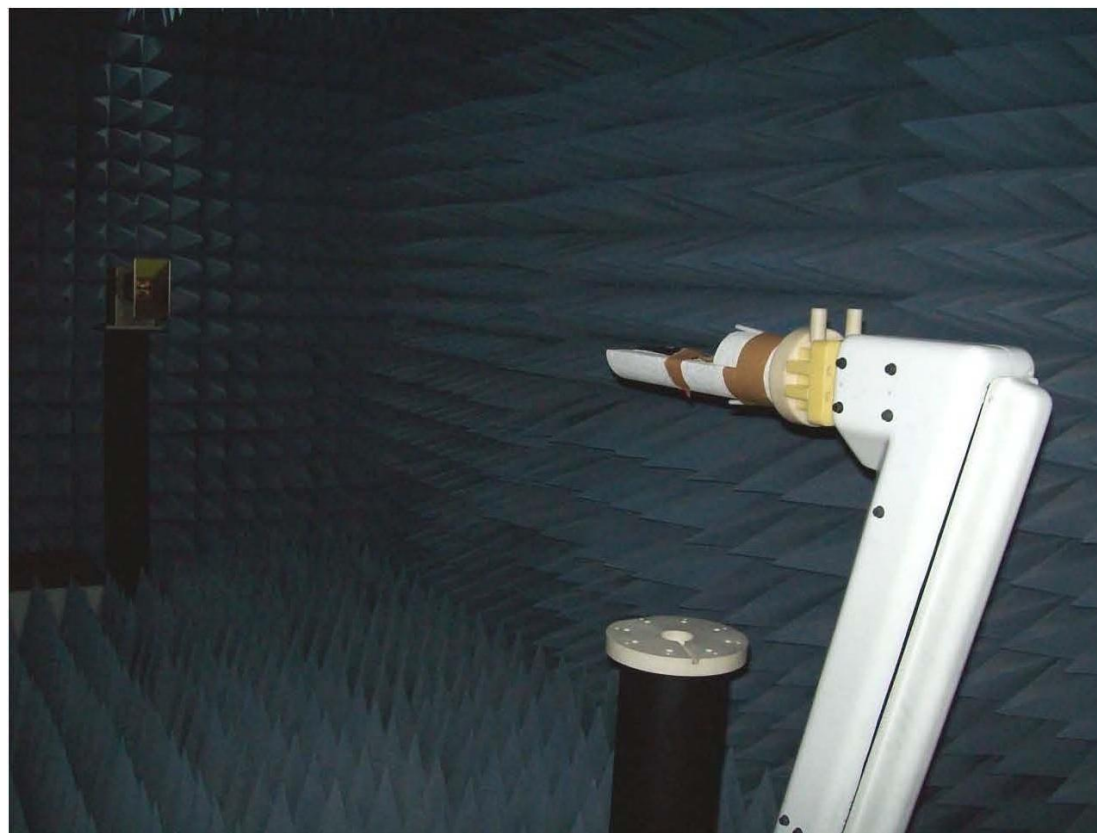
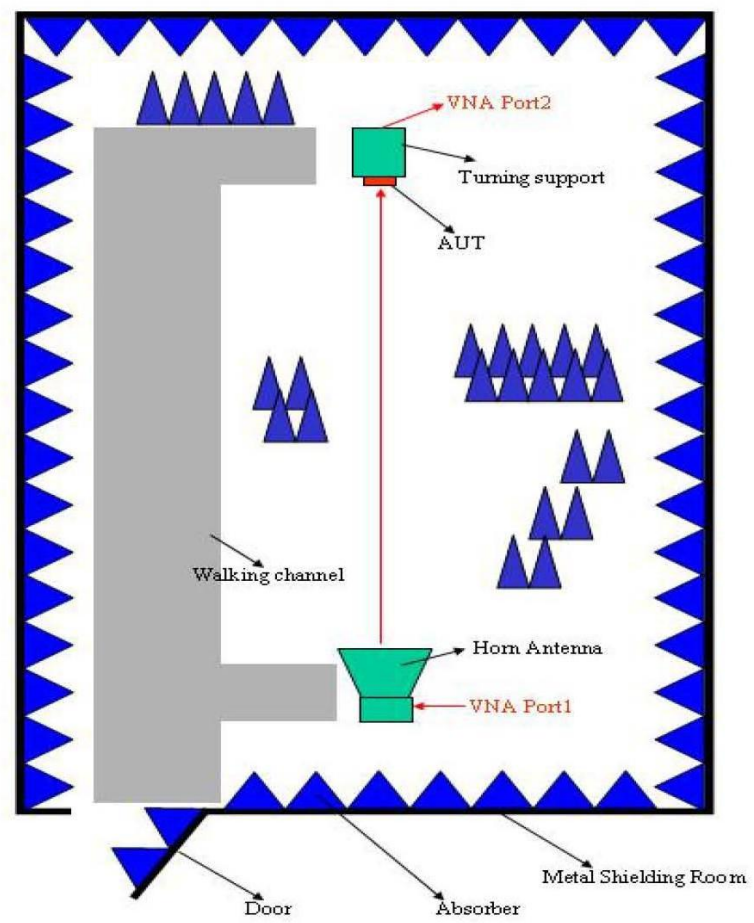
| Frequency | Gain (dBi) |
|-----------|------------|
| 2400MHz   | 2.81       |
| 2410MHz   | 2.74       |
| 2420MHz   | 2.70       |
| 2430MHz   | 2.73       |
| 2440MHz   | 1.01       |
| 2450MHz   | 1.26       |
| 2460MHz   | 1.50       |
| 2470MHz   | 1.49       |
| 2480MHz   | 1.42       |
| 2490MHz   | 0.36       |
| 2500MHz   | 0.33       |

Return Loss/VSWR/Input Impedance

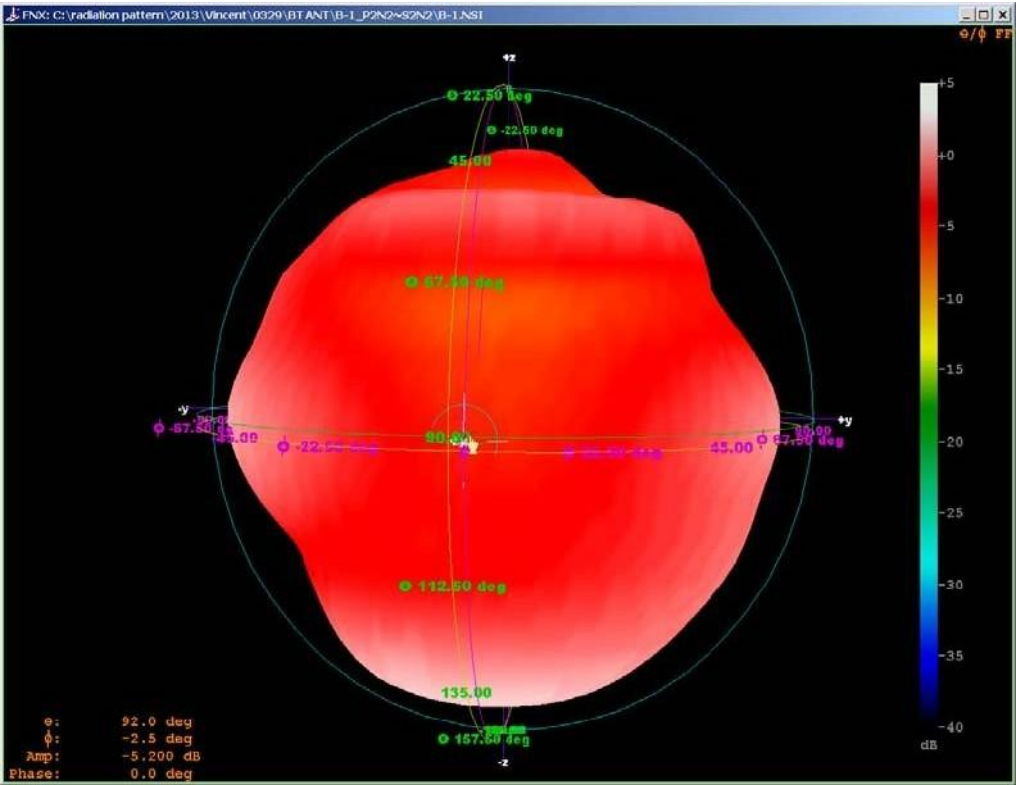
| Frequency | Return Loss (dB) | VSWR | Input Impedance( Ω ) |
|-----------|------------------|------|----------------------|
| 2400MHz   | -7.23            | 2.53 | 25.37                |
| 2400MHz   | -6.47            | 2.80 | 17.99                |
| 2450MHz   | -6.22            | 2.90 | 17.18                |
| 2480MHz   | -5.18            | 3.44 | 15.55                |
| 2500MHz   | -4.56            | 3.89 | 15.48                |



Return Loss

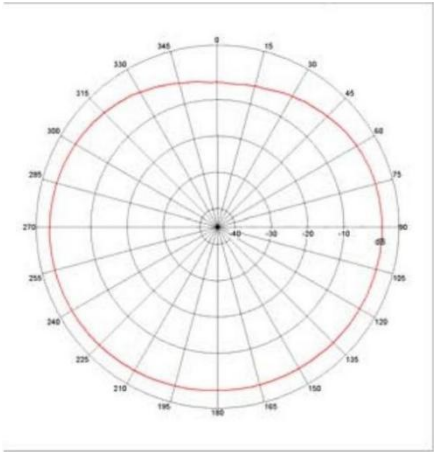


The Environment of Antenna Radiation Pattern



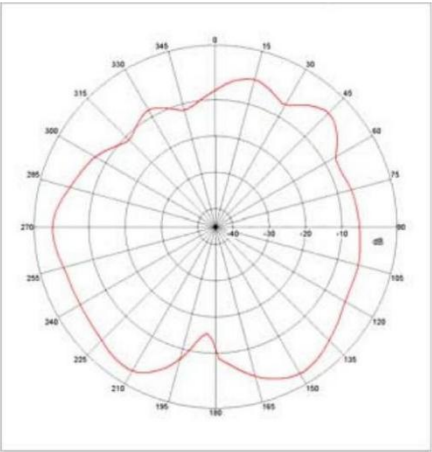
3D radiation pattern diagram

Far-field power Distribution(H+V)on Y-X Plane  
Plot peak Gain(H+V)=135dbi;plot AvgGain(H+V)=-0dbi@2.44000GHz



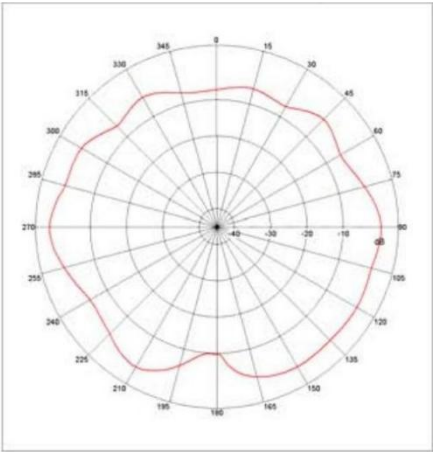
XY-plane

Far-field power Distribution(H+V)on X-Z Plane  
Plot peak Gain(H+V)=1.68dbi;plot AvgGain(H+V)=-3.83dbi@2.44000GHz



XZ-plane

Far-field power Distribution(H+V)on Y-Z Plane  
Plot peak Gain(H+V)=1.11dbi;plot AvgGain(H+V)=-2.99dbi@2.44000GHz



YZ-plane