

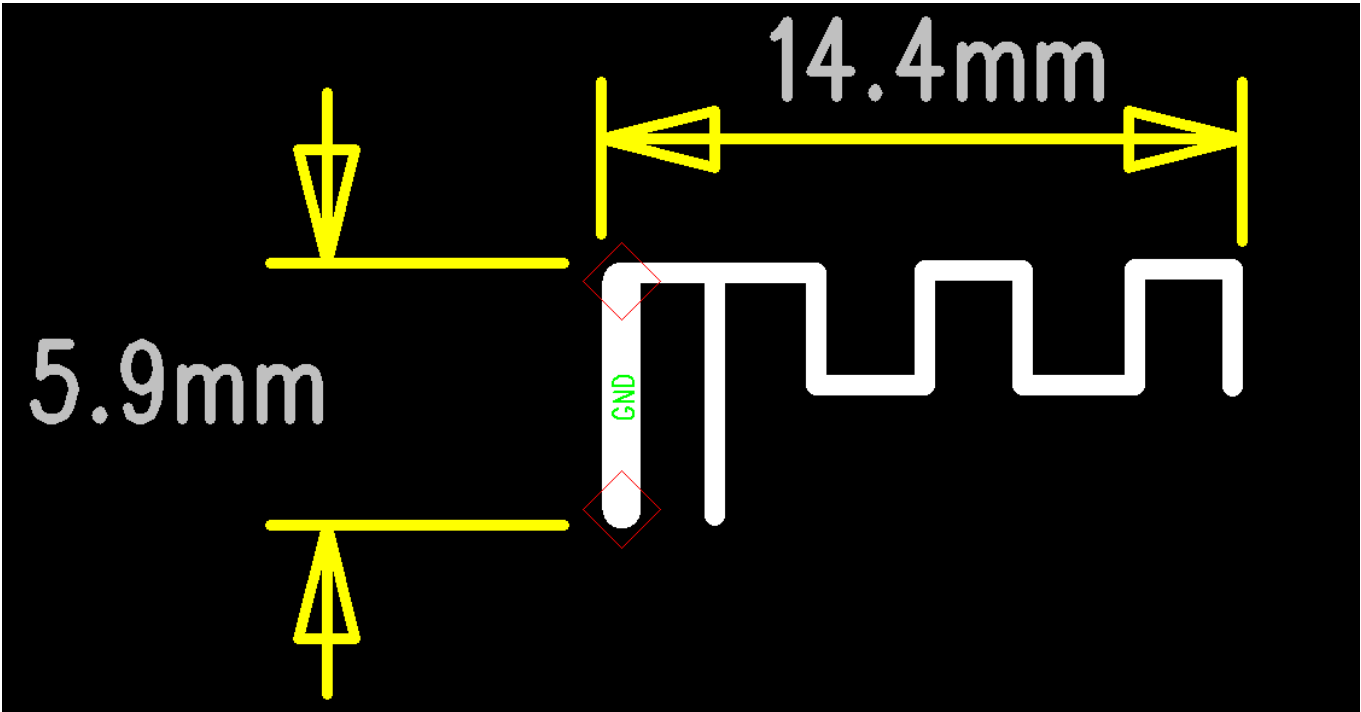
**Product specification**

**Quick Reference Date**

|                            |                                    |  |
|----------------------------|------------------------------------|--|
|                            | Antenna module on the system board |  |
| Antenna type               | PCB                                |  |
| Frequency                  | 2.4GHz~2.48GHZ <sub>1</sub>        |  |
| 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)                 | 1.7 (Peak Gain XZ-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)           |  |

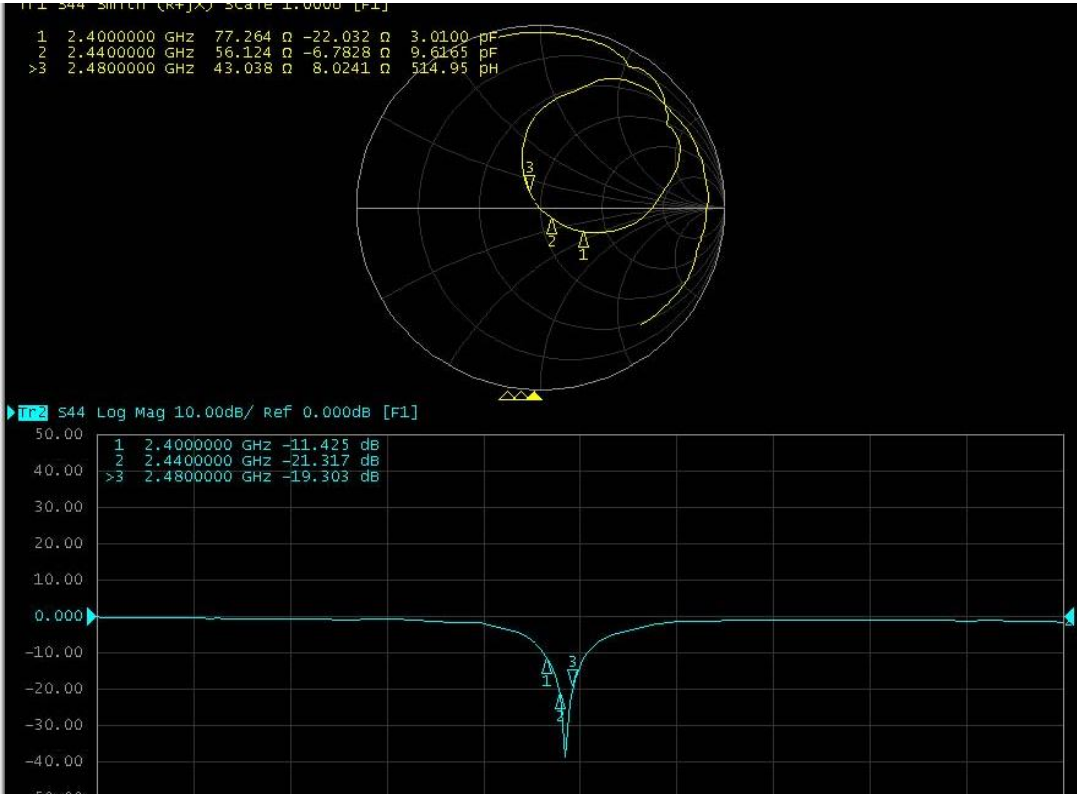
All the technical data and information contained herein are subject to change without prior notice

**Antenna Layout & module on the system board**

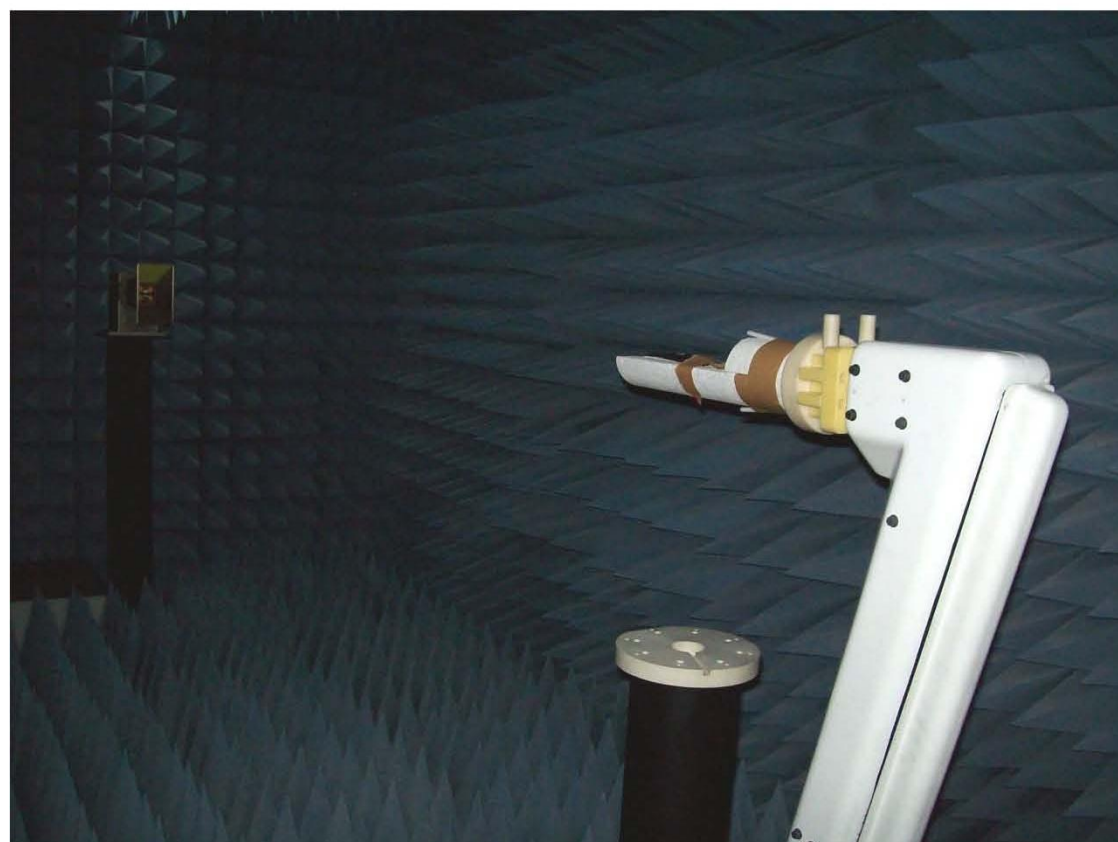
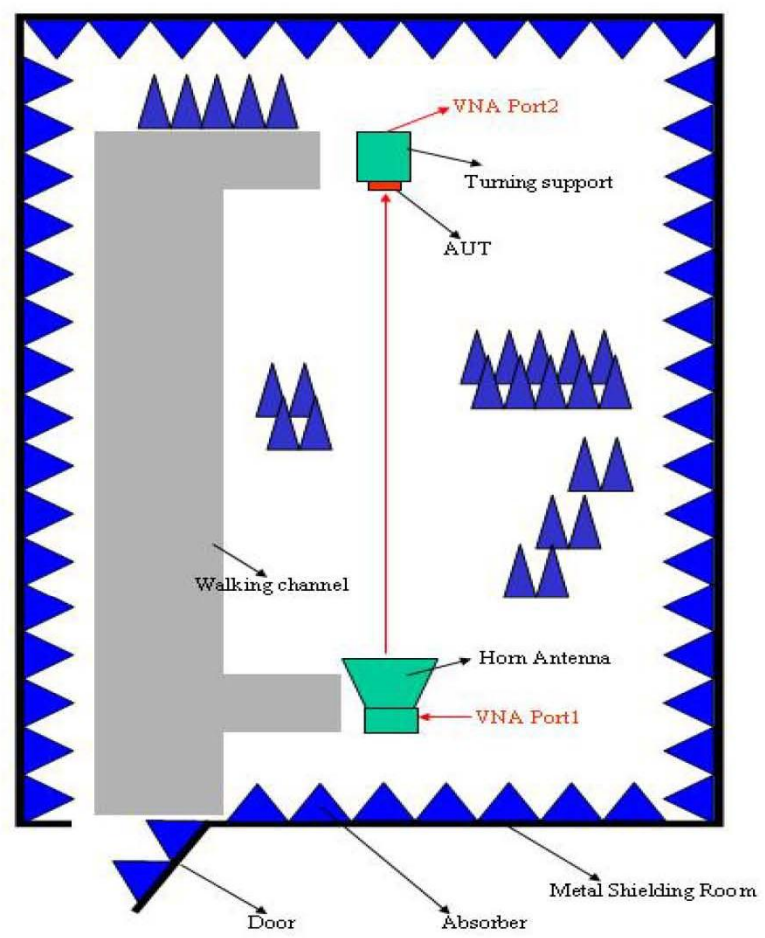


Antenna Gain

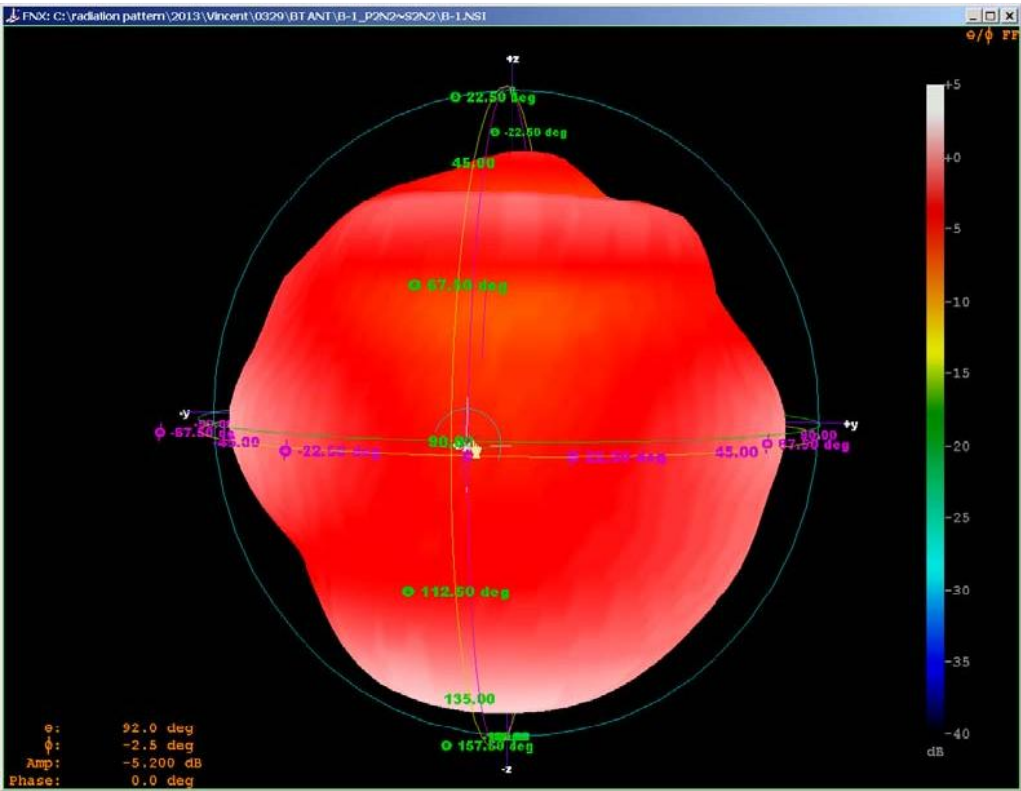
| Unit in dBi<br>@2.44GHz | XY-plane |      | XZ-plane |      | YZ-plane |      | Efficiency |
|-------------------------|----------|------|----------|------|----------|------|------------|
|                         | Peak     | Avg. | Peak     | Avg. | Peak     | Avg. |            |
| Module Board 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



Return Loss

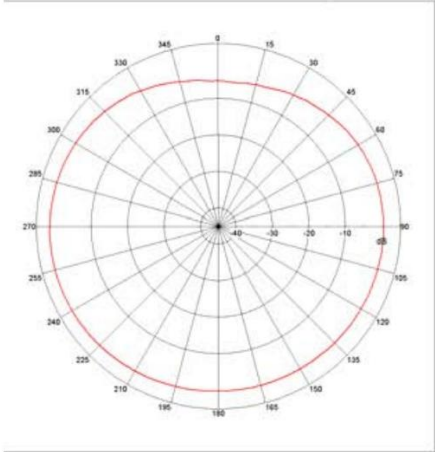


The Environment of Antenna Radiation Pattern



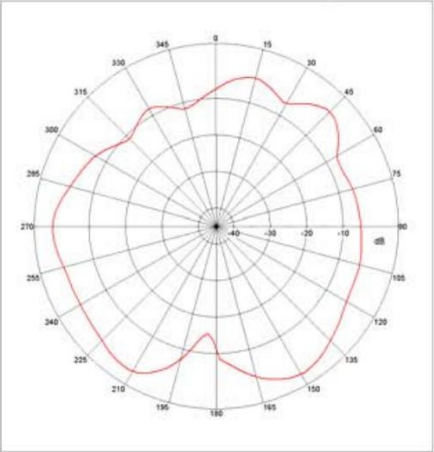
3D radiation pattern diagram

Far-field power Distribution(H+V)on Y-X Plane  
Plot peak Gain(H+V)=1.35dbi;plot AvgGain(H+V)=-0.5dBi@2.44000GHz



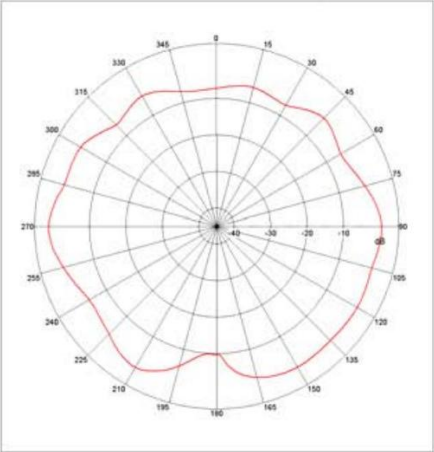
XY-plane

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