DV937KC Test Report

Test Item and Equipment System

Test Item	Test Parameters	Test Equipment
1、 **S parameters**	VSWR; Smith;	**Network analyzer: Agilent 5071B**
2、 Passive test	**Efficiency, gain test**	**Comprehensive analyzer: Network analyzer: Agilent 5071B** **Microwave anechoic chamber: GTS 2800**
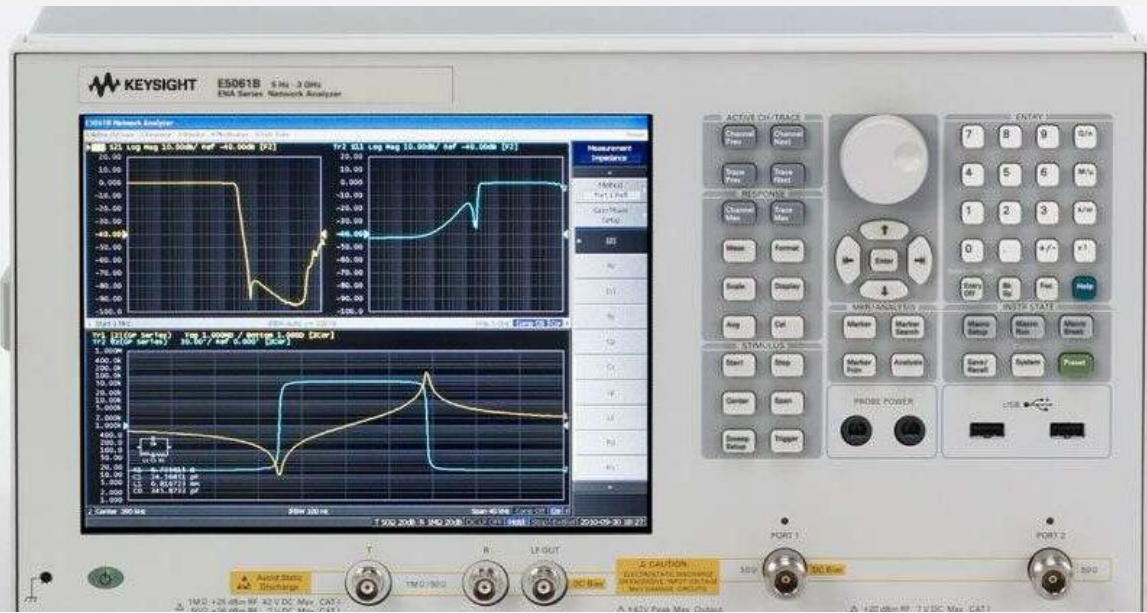
VSWR： **VSWR: As the abbreviation of voltage standing wave ratio, it refers to the ratio of back wave amplitude to incident wave amplitude. If the impedance is completely matching in ideal conditions, the value of VSWR is 1. In actual engineering, reflection does exist, and the value of VSWR is larger than 1. The larger the reflection is, the larger the VSWR will be. As for the technical parameter VSWR, it is better if the number is lower and approximate to 1.**

Return Loss： **Return Loss: RL refers to the ratio of the power reflected by RF input signals to the power of input signals. The unit is dB, and it is a negative number. In ideal conditions, the antenna is completely matching with the impedance of RF circuit and it has no reflection power completely, and the return loss at the moment is infinitely small. In actual engineering, the impedance cannot be matching completely, so reflection power does exist. The worst condition is that the input power is reflected completely, and the return loss at the moment is 0. As for the technical parameter return loss, the antenna performance is better if the value is lower.**

Effi： **Effi: Efficiency refers to the ratio of the power from antenna radiation (i.e. effectively converting electromagnetic wave power) and the power input to antenna. It is a number constantly lower than 100%.**

Gain： **Antenna gain refers to the ratio of power density of signals generated by actual antenna and ideal radiating elements in the same spatial spot in equivalent input power. It quantificationally describes the extent of centralized radiation by an antenna for input power. Generally, the unit is dBi.** 。

Smith图： **The impedance circle diagram refers to a trajectory chart of presenting normalization impedance on the reflection coefficient complex plane by using the one-to-one correspondence between normalization impedance and reflection coefficients.**

TRP： **Total radiated power refers to the integral value of surface integral (average value of spherical surface) of the mobile station for equivalent isotropically radiated power (EIRP) in 3D space. It reflects the transmission characteristics of the mobile station in all directions.**

TIS： **TIS: Total isotropic sensitivity refers to the integral value of surface integral (average value of spherical surface) of the mobile station for effective isotropic sensitivity (EIS) in 3D space. It reflects the reception characteristics of the mobile station in all directions.**

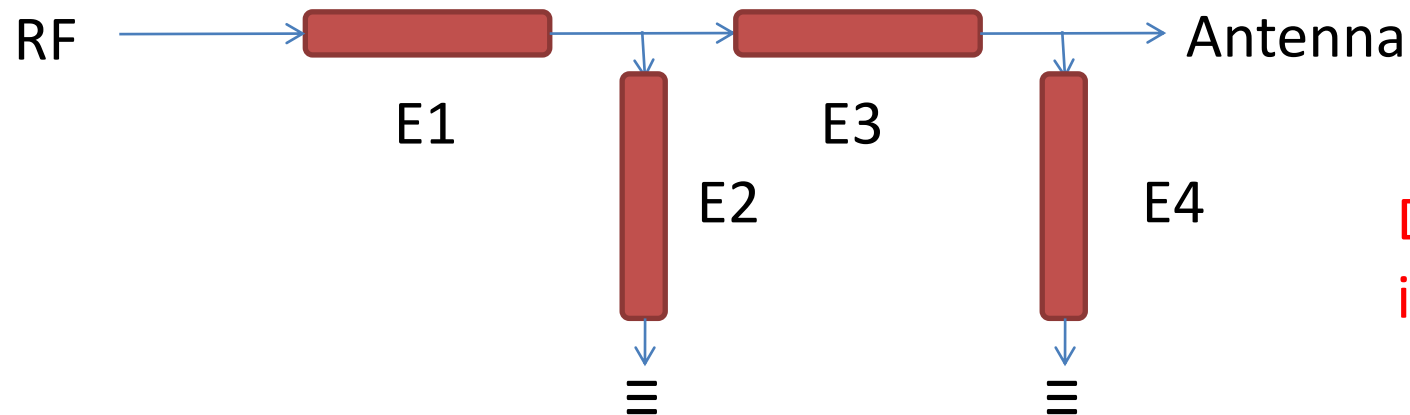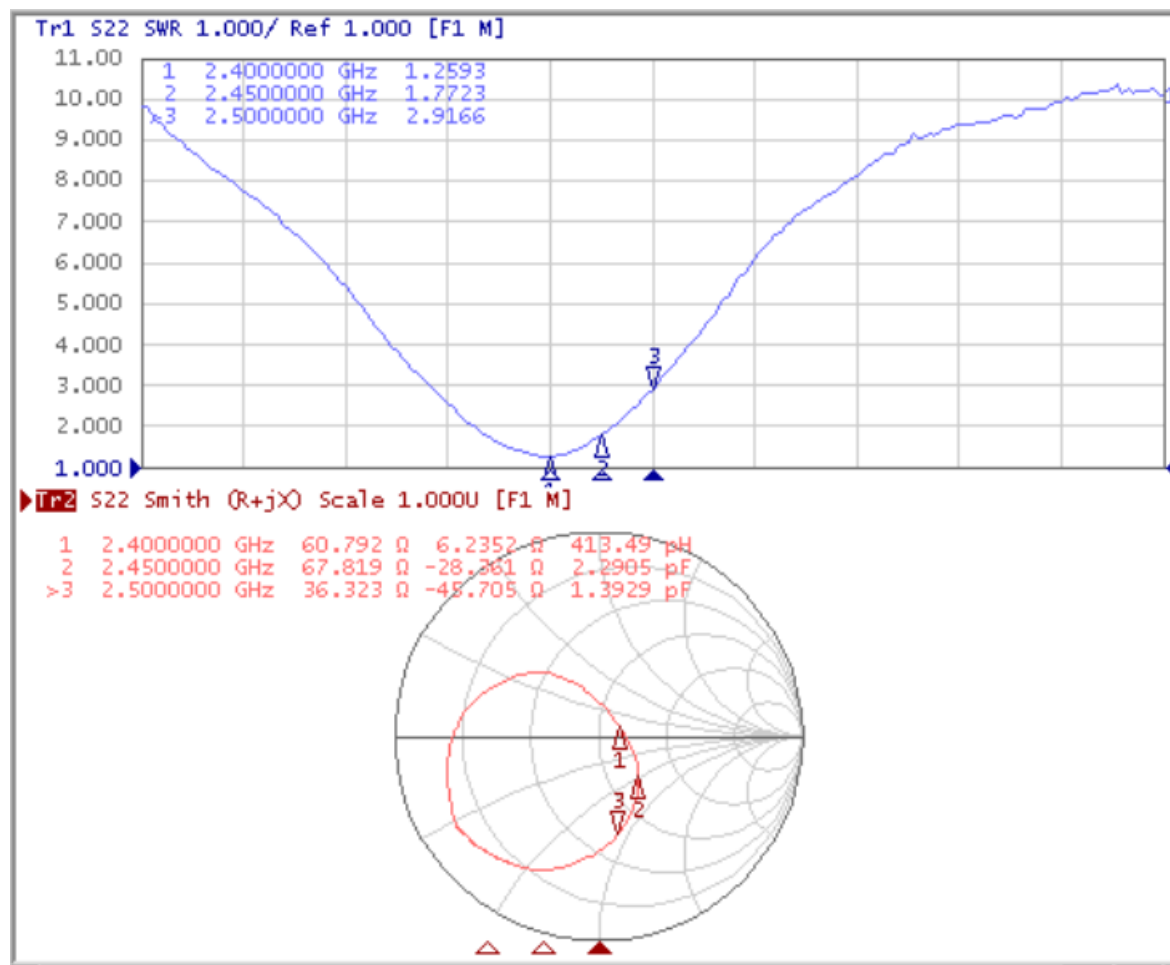**Schematic diagram of whole machine**

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Schematic diagram of antenna placement

| E1	E2	E3	E4
NA	NA	NA	NA

RF → ▭ → ⬇ → ▭ → ⬇ → Antenna

E1   E2   E3   E4

Description: The original matching is not modified for the testing。

Tr1 S22 SWR 1.000/ Ref 1.000 [F1 M]

1	2.4000000 GHz	1.2593
2	2.4500000 GHz	1.7723
>3	2.5000000 GHz	2.9166

Tr2 S22 Smith (R+jX) Scale 1.000U [F1 M]

1	2.4000000 GHz	60.792 Ω	6.2352 Ω	413.49 pH
2	2.4500000 GHz	67.819 Ω	-28.361 Ω	2.2905 pF
>3	2.5000000 GHz	36.323 Ω	-45.705 Ω	1.3929 pF

Freq(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
2400	-2.08	-7.58	17.46
2410	-2.23	-7.74	16.83
2420	-2.39	-7.83	16.46
2430	-2.62	-8.02	15.79
2440	-2.97	-8.25	14.97
2450	-3.39	-8.56	13.92
2460	-3.82	-8.86	12.99
2470	-4.07	-9.05	12.44
2480	-4.40	-9.24	11.92
2490	-4.67	-9.48	11.26
2500	-5.17	-9.85	10.36

Gain(dBi)

Efficiency(%)

Field Pattern Diagram

2400MHz

2450MHz

2500MHz
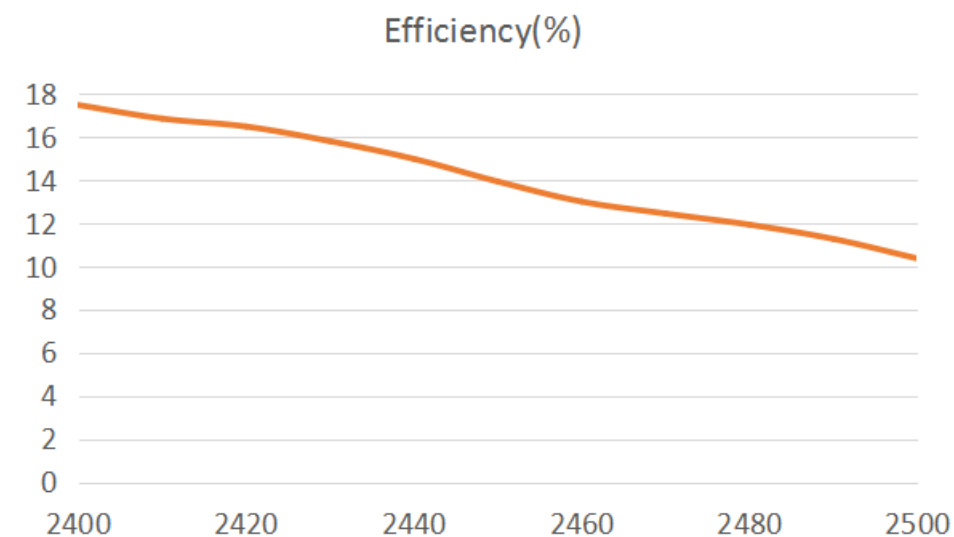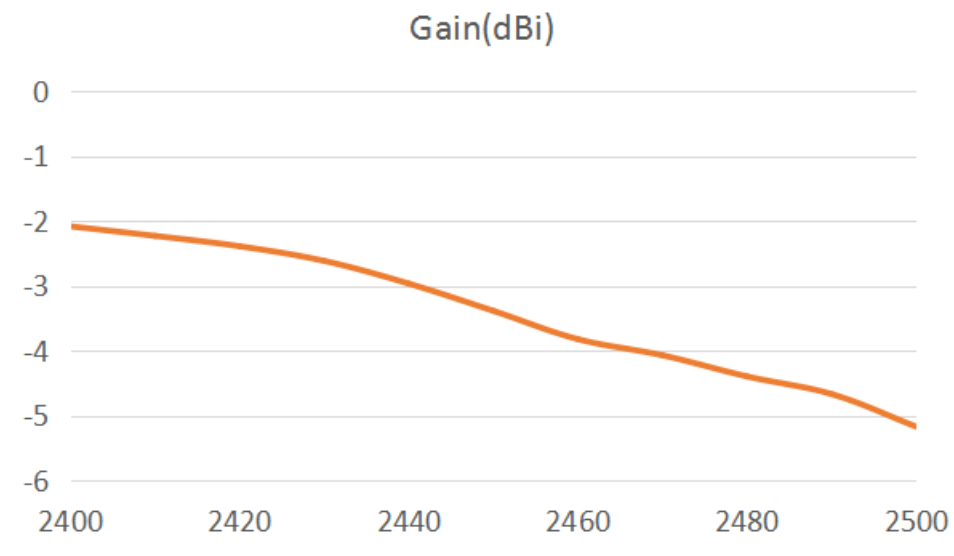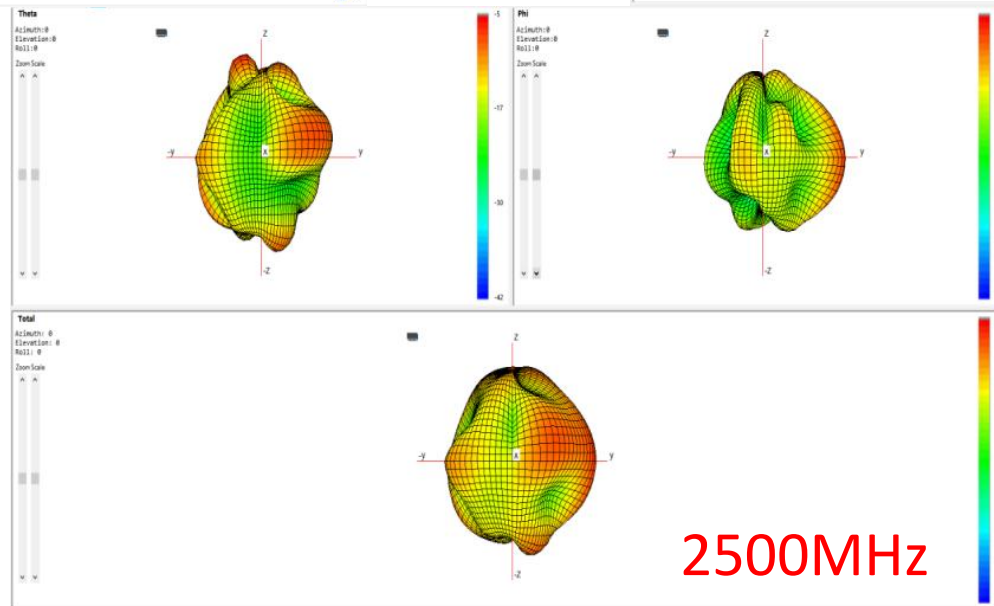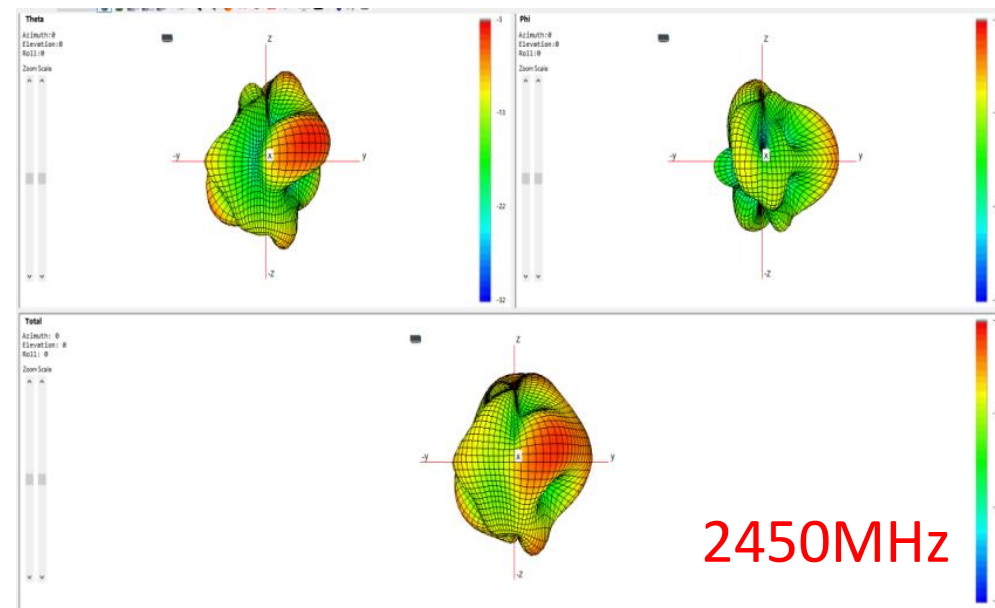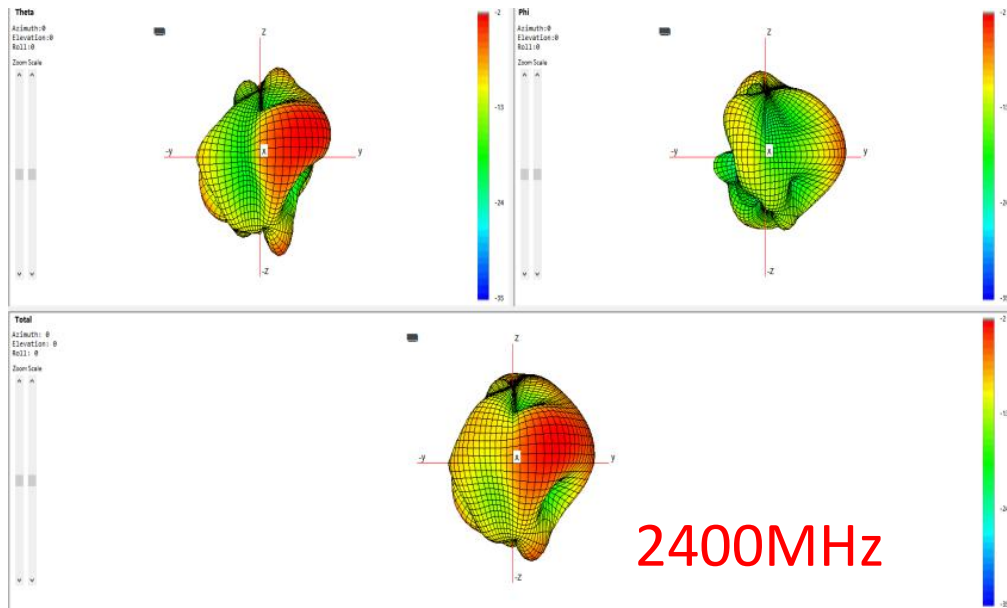
Summary: :
     1. The above contents are the passive test report for DV937KC;

      2. The prototype status and parameters are not modified for the testing.

The above contents are for your evaluation and consideration. Please feel free to contact us if you have any questions. Thanks!
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