

Specification For Approval

GaoKe Ant Co., Ltd

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Manufacture: GaoKe Ant Co.,Ltd

Material Number GKA-GPS-004

Production Name GPS Active External Antenna

Production Number GKA-GPS-004

Approved By

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1、 Mechanical Specifications

| | | | |
|-----------|----------|-----------|-------------------|
| Size (mm) | 36*34*13 | Mounting | Magnetic |
| Weight(g) | <110 | Connector | SMA Male Straight |
| Color | Black | Cable | RG174 - 1m |

2、 Working Conditions

Temperature: -40°C~+85°C

Humidity: 95 % ~ 100 %

3、 Storage Conditions

Temperature: -40°C~+85°C

Humidity: 95 % ~ 100 %

4、 Antenna Characteristics

| NO | Item | Specifications | Post Environmental Tolerance |
|----|---|--------------------------|------------------------------|
| 1 | (MHz) Range of Receiving Frequency | 1575.42 ±3 | ±2.5 |
| 2 | Center Frequency(MHz) (with 30mmSquareGND plane) | 1575.42 | ±3.0 |
| 3 | Band Width(MHz) (Return Loss≤-10dB) | ≥10 | |
| 4 | V.S.W.R(in Center Frequency) | ≤1.5 | |
| 5 | Gain (Zenith)(dBi typ) (with 70mmSquare GND plane) | 4.5 | ±0.5 |
| 6 | Axial Ratio (with 70mm Square GND plan) | 3.0dB | ±0.2 |
| 7 | Polarization | Right-Handed Circular | ---- |
| 8 | Impedance(Ω) | 50 | ---- |
| 9 | (ppm/°C) Frequency Temperature Coefficient | 0±10 | ---- |

5、 Amplifier Characteristics

| NO | Item | Specifications |
|----|------------------------------|----------------|
| 1 | Range Of Receiving Frequency | 1575.42 ± 3MHz |
| 2 | LAN Gain | 28 ± 1 dBi |
| 3 | In Center Frequency | ≤ 2.0 |
| 4 | Noise Figure | < 2.0 |
| 5 | Supply Voltage | 3~5V |
| 6 | Current Consumption | 12 ± 1mA@3VDC |

6、 Environmental testing

| NO | Normal temperature performance | High temperature test performance deviation | Low temperature test performance deviation |
|----|------------------------------------|---|--|
| 1 | LNA Gain 28±1 dB | ±2 | ±2 |
| 2 | V.S.W.R(in Center Frequency) ≤ 2.0 | ±0.3 | ±0.3 |
| 3 | Noise Figure < 2.0 | ±0.3 | ±0.3 |

7、 Salt fog Test

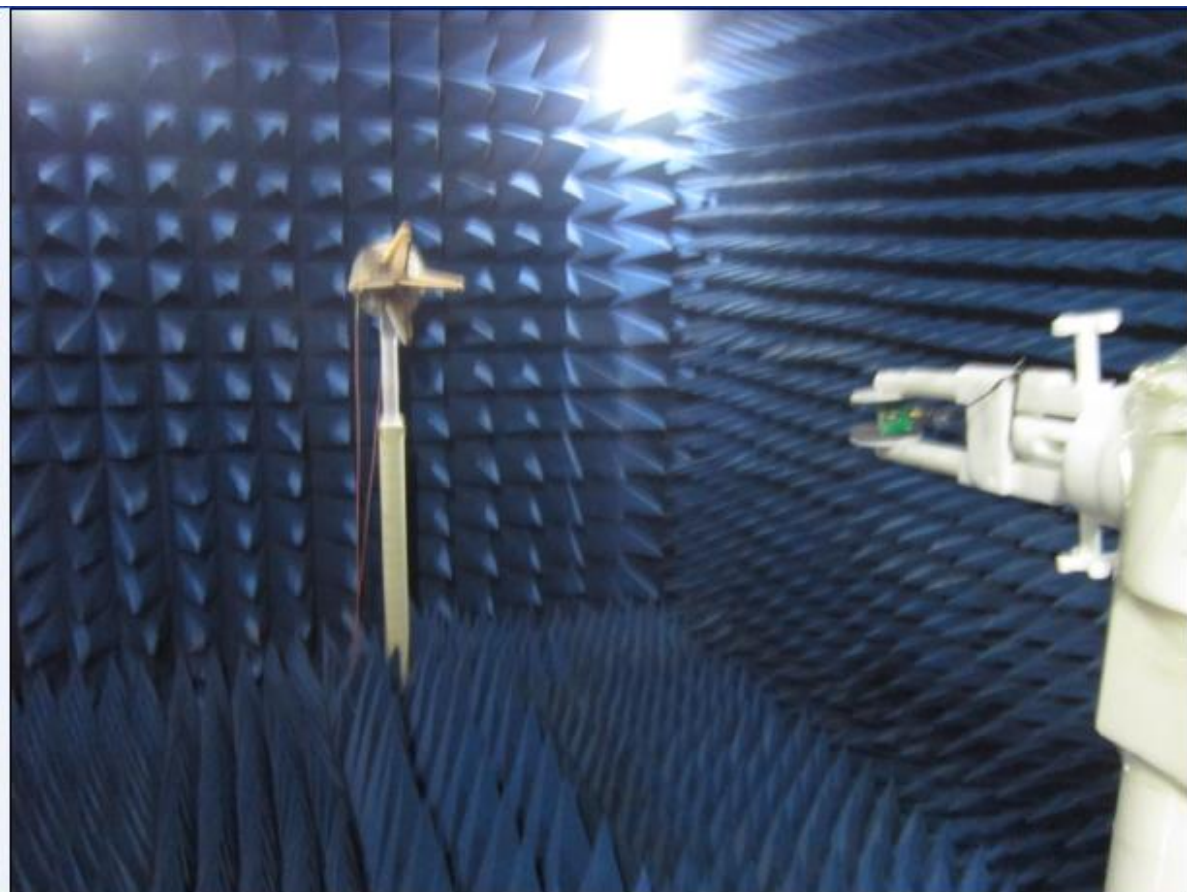
| Quantity | Pensile kind | Specification | Inspect | Conclusion |
|----------|---|--|---|--|
| 2 | 30 °suspension, trimming use 3 M posted cover | Free From dirt, atmospheric pressure 80 PA pressure; PH value solution for: 6.9; 35 °C salt solution when concentration (every litres of solution including 42 G sea salt solute); Density: 1.0366; Test eight hours after 32 °C flow with pure water flushing; Air drying blower. | Without oxidation and corrosion phenomena | The test results show that: the product oxidation and corrosion resistance of superior performance |

8. Antenna Test

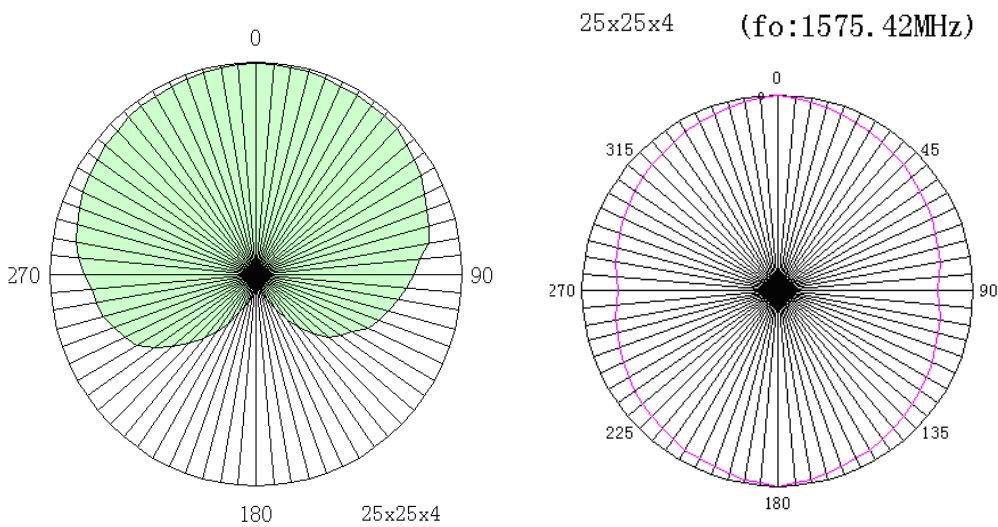
8.1 LNA Gain Test



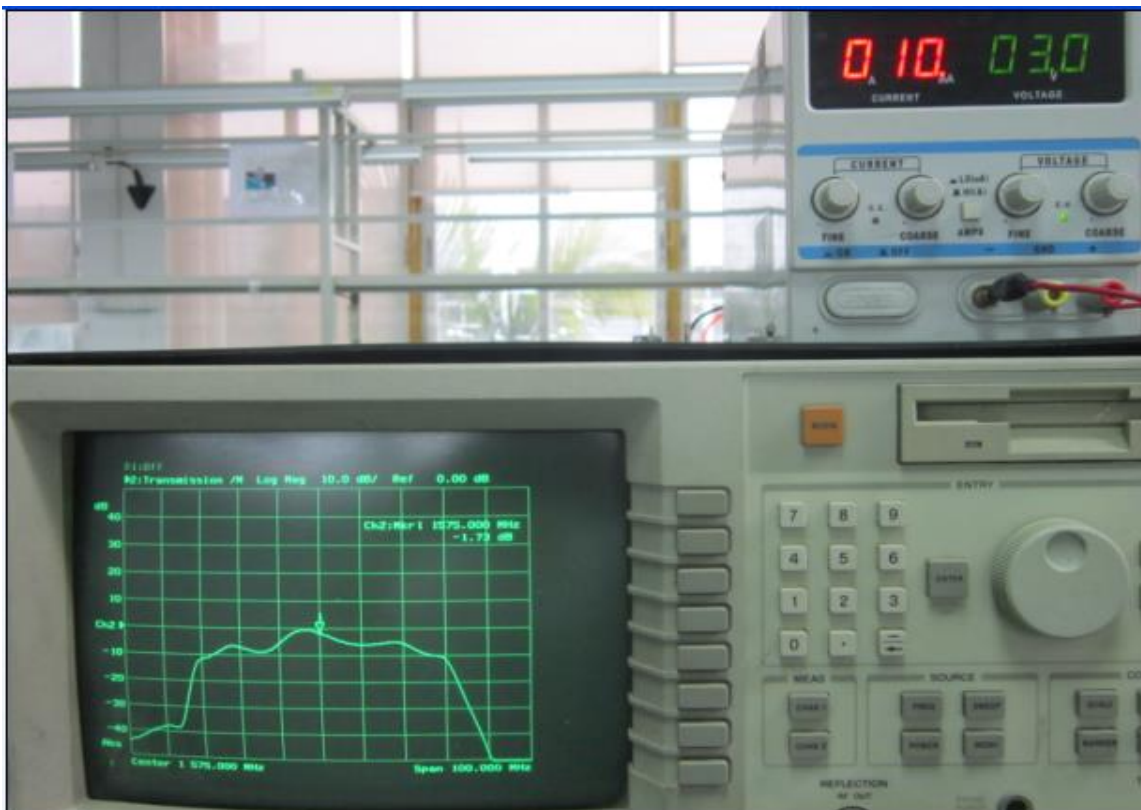
8.2 Antenna Radiation Test



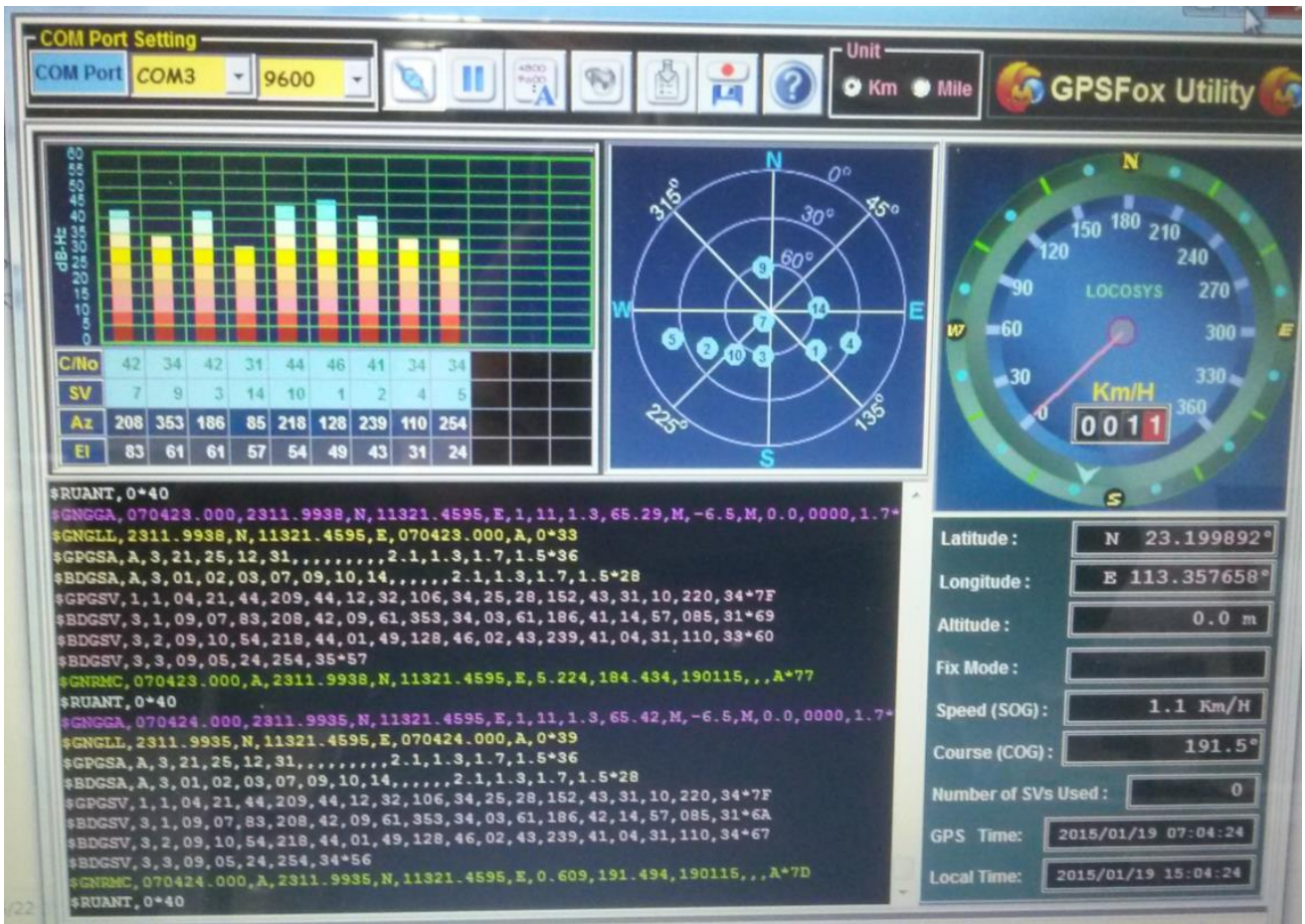
| Passive Test For GPS1 | | | | | | | | |
|-----------------------|----------|-----------|------------|------------|----------|----------|-------------|-------------|
| Freq (MHz) | Effi (%) | Effi (dB) | Gain (dBi) | Gain (dBd) | Max (dB) | Min (dB) | Attenut Hor | Attenut Ver |
| 1555 | 43.98 | -3.57 | 2.36 | 0.21 | 2.36 | -19.37 | 42.96 | 42.74 |
| 1560 | 69.9 | -1.55 | 3.65 | 1.5 | 3.65 | -14.3 | 42.93 | 42.69 |
| 1565 | 75.22 | -1.24 | 2.62 | 0.47 | 2.62 | -10.01 | 43.07 | 42.8 |
| 1570 | 80.49 | -1.28 | 3.21 | 0.04 | 2.19 | -10.49 | 43.2 | 42.91 |
| 1575 | 87.72 | -1.09 | 4.13 | 0.73 | 2.88 | -13.6 | 43.36 | 43.07 |
| 1580 | 78.71 | -2.1 | 3.53 | 0.46 | 2.61 | -16.98 | 43.52 | 43.23 |
| 1585 | 70.59 | -1.83 | 3.16 | 1.01 | 3.16 | -20.08 | 43.53 | 43.24 |
| 1590 | 50.39 | -3.53 | 1.5 | -0.65 | 1.5 | -24.82 | 43.55 | 43.24 |
| 1595 | 48.23 | -3.17 | 1.85 | -0.3 | 1.85 | -24.97 | 43.53 | 43.25 |



8.3 Antenna Performance Test



9. Antenna GPSCam



10. Antenna Picture and Drawing (MM):



