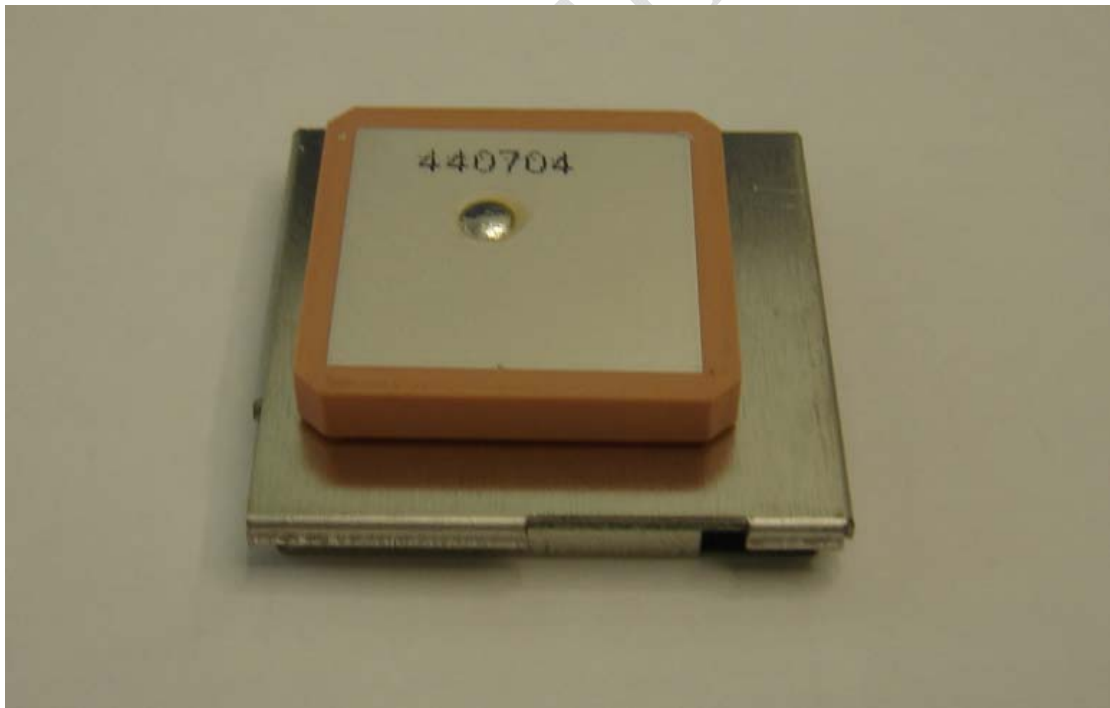


■ GT-720FW V5.0
■ SPECIFICATION



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MADE IN TAIWAN

Version change history

| Version | Date | Revised Reason |
|----------------|-------------|-----------------------|
| V1.0 | 2008/09/08 | Official release |
| | | |
| | | |

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1. Introduction

1.1 General introductions

The **GT-720FW** is a compact all-in-one GPS module solution intended for a broad range of Original Equipment Manufacturer (OEM) products, where fast and easy system integration and minimal development risk is required.

The **GT-720FW** is optimized for applications requiring ultra performance, low cost, and maximum flexibility; it is suitable for a wide range of OEM configurations including handhelds, sensors, asset tracking, PDA-centric personal navigation system, and vehicle navigation products.

1.2 Key Features

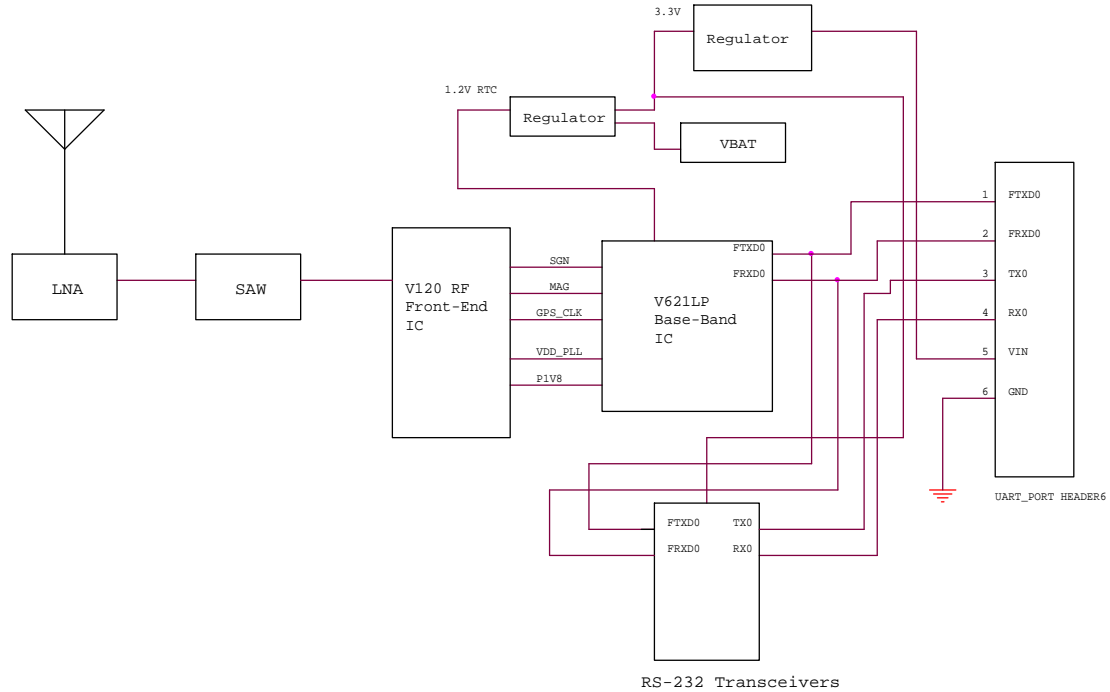
- small form factor: 33.9*33.9*9.2 mm
- RoHS/WEEE compliant
- High sensitivity -158dBm
- Searching up to 65 Channel of satellites
- Fast Position Fix
- Low power consumption
- Selectable User Profiles with ability to change and save configuration to Flash
- The chip implements programmable Flash memory on-chip.

1.3 Applications

- Automotive and Marine Navigation
- Automotive Navigator Tracking
- Emergency Locator
- Geographic Surveying
- Personal Positioning
- Sporting and Recreation

2 Technical Description

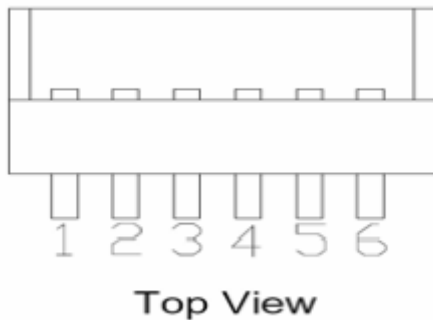
2.1 Block Diagram



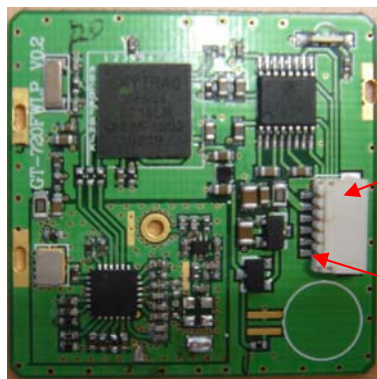
2.2 Pin Definition

| Pin | Pin Name | Type | Function description |
|-----|--------------|------|---------------------------|
| 1 | <i>FTXD0</i> | O | Serial Data Output UART |
| 2 | <i>FRXD0</i> | I | Serial Data input UART |
| 3 | <i>TXD0</i> | O | Serial Data Output RS-232 |
| 4 | <i>RXD0</i> | I | Serial Data input RS-232 |
| 5 | <i>VIN</i> | I | 3.7~5 supply input |
| 6 | <i>GND</i> | O | GND |

I: Input O: Output



Bottom inside view



6 PIN UART_PORT HEADER

Pin1

2.3 Specification

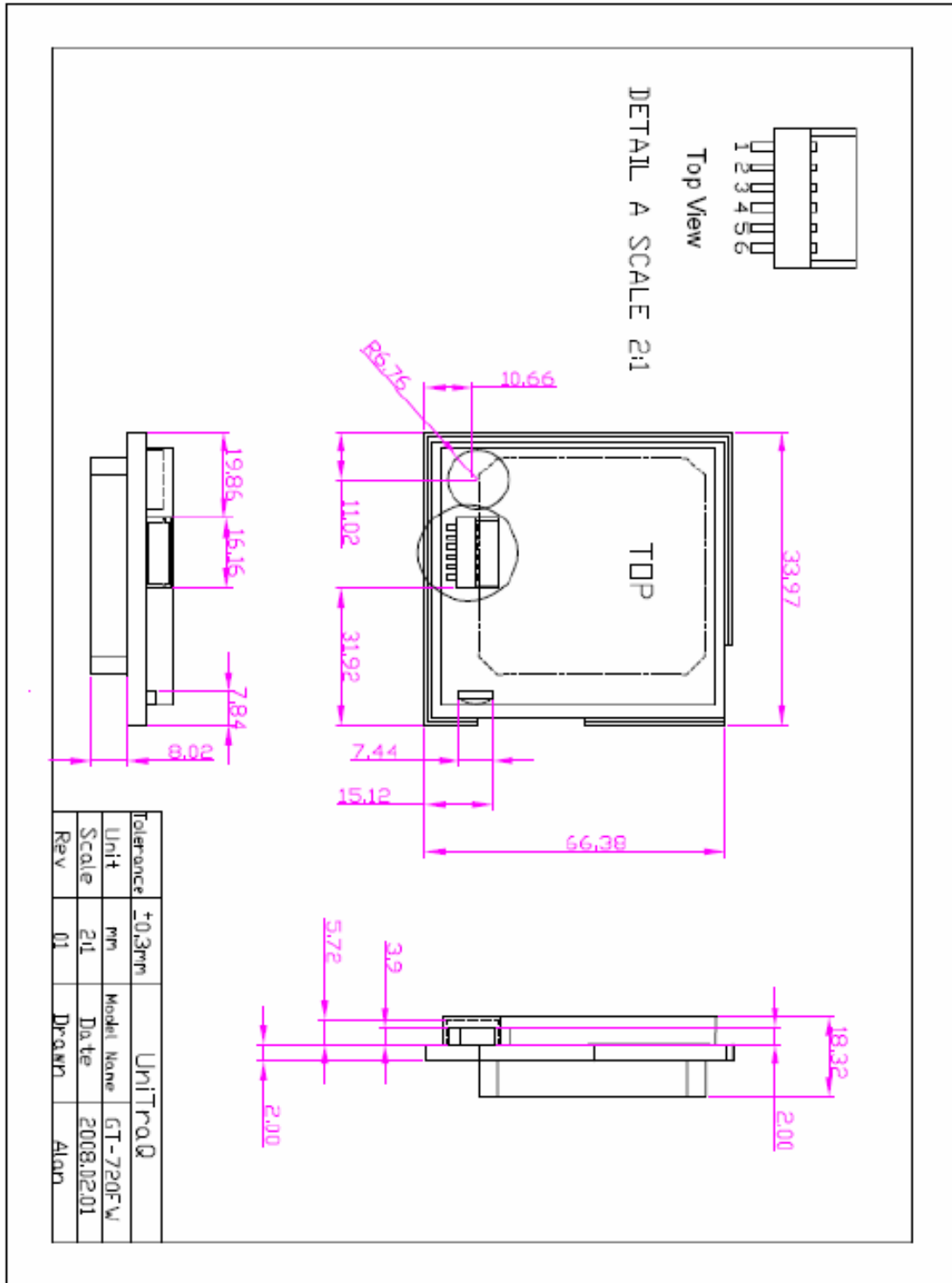
| | |
|--------------------------|---|
| General | |
| GPS technology | Skytraq GPS chipset |
| Frequency | L1,1575.42MHz |
| C/A Code | 1.023MHZ chip rate |
| Channels | 44 channels all in view searching |
| Sensitivity | Better than -158dBm |
| Receiver Accuracy | |
| Position | 5m CEP |
| Velocity | Without aid:0.1M/sec |
| Datum | |
| Datum | WGS84(Default) |
| Time to First Fix | |
| Hot start | 1 sec average |
| Warm start | 35 sec average |
| Cold start | 45 average |
| Reacquisition | < 1sec |
| Protocol | |
| GPS Output Data | NMEA0183(v3.1)- GGA, GLL, GSA, GSV, RMC, VTG Support Baud rate 4800/9600/.../115200 bps (default 4800), Data bit:8, Stop bit:1, No parity |
| Update Rata | 1Hz(default) |
| Protocol Support | NMEA-0183 V3.01 |
| 1PPS | Enable(1Hz pulse 10% duty cycle) |

| | |
|---------------------|--|
| Limitations | |
| Acceleration Limit | < 4G |
| Altitude Limit | < 18000 meters |
| Velocity Limit | < 500 M/sec |
| Power | |
| Operation Current | Acquisition: 66 mA@3.3V |
| Operation Current | Tracking: < 42mA@3.3V |
| DC Input Range | VCC 3.7~5.0V VBAT 3.0~5.0V |
| Temperature | |
| Operating | -40°C to 85°C |
| Storage | -40°C to 125°C |
| Humidity | ≤ 95% , non condensing |
| Physical | |
| Dimension | 33.9*33.9*9.2 mm (include GND PLANE) |
| Weight | 30g |
| Antenna | |
| Impedance | 50Ω |
| Protection | Build-in short circuit and Over current protection |
| Patch dimension | 25*25*4 mm |
| Connector | |
| UART_PORT HEADER | 6Pin |

3. Mechanical Dimension

3.1 Mechanical Dimension

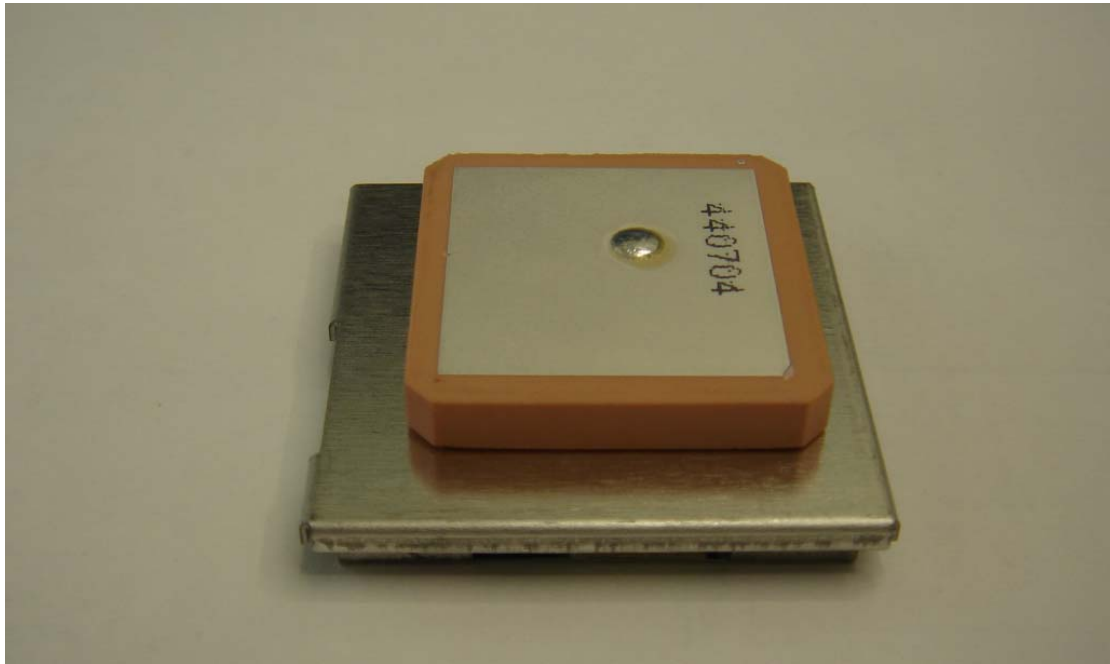
Ex :Patch 25*25*2mm



3.2 Product photo

Ex : Patch 15*15*2mm

Top side :



Bottom side



4 User Interface

GT-720F provides digital UART and RS-23S port for communication of GPS position data using NMEA protocol .It is capable of 4800 to 115200 baud rate.

4.1 Protocol

GT-720F is default to support standard NMEA-0183 protocol.

4.2 NMEA Protocol

GT-720F is capable of supporting following NMEA formats:

| NMEA RECORD | Description |
|--------------------|---|
| GGA | GPS fix data |
| GLL | Geographic |
| GSA | GNSS DOP and active satellite |
| GSV | GNSS Satellites in view |
| RMC | Recommended minimum specific GNSS data |
| VTG | Course Over Ground and Ground Speed |
| ZDA | Time&Data |

5. Customer design recommendation

5.1 Recommend H/W specification

- Interface connector: UART_PORT HEADER connector
- GND PLANE depends on different Antenna patch size, UniTraQ can provide the customization design.

5.1.1 Antenna and LNA

- Receiving frequency $1.57542\text{GHz} \pm 1.032\text{MHz}$
- Polarization RHCP (right hand circular polarized)
- Output impedance= 50Ω
- Noise figure $\leq 2.0\text{dB}$
- External LNA: $17\text{dB} \leq \text{LNA Gain} \leq 20\text{dB}$
-