Unit GPS SMA

SKU:U190

Description

Unit GPS SMA is a GNSS global positioning and navigation unit that integrates the high-performance ATGM336H navigation module from CASIC, using the AT6668 chipset, paired with an active external antenna to provide more accurate and reliable satellite positioning services. Compared to previous products, the AT6668 supports multi-frequency and multi-mode GNSS signal reception, capable of receiving signals from multiple satellite navigation systems (including GPS, BD2, BD3, GLONASS, GALILEO, and QZSS), supporting multi-system joint positioning and single-system independent positioning, with stronger anti-interference capabilities and higher positioning accuracy. In areas with weak signals, it can quickly obtain higher precision location information. This module is widely suitable for high-precision positioning applications such as vehicle positioning and navigation, IoT positioning devices, etc.

Features

- Supports multiple satellite navigation systems (GPS/QZSS/BD2/BD3/GAL/GLO)
- Multi-frequency and multi-system reception
- Multi-channel
- External active antenna
- 2 x LEGO-compatible holes
- Programming platforms: Arduino, UIFlow, ESP-IDF, etc.

Includes

- 1 x Unit GPS SMA
- 1 x HY2.0-4P Grove cable (20cm)
- 1 x Active external antenna

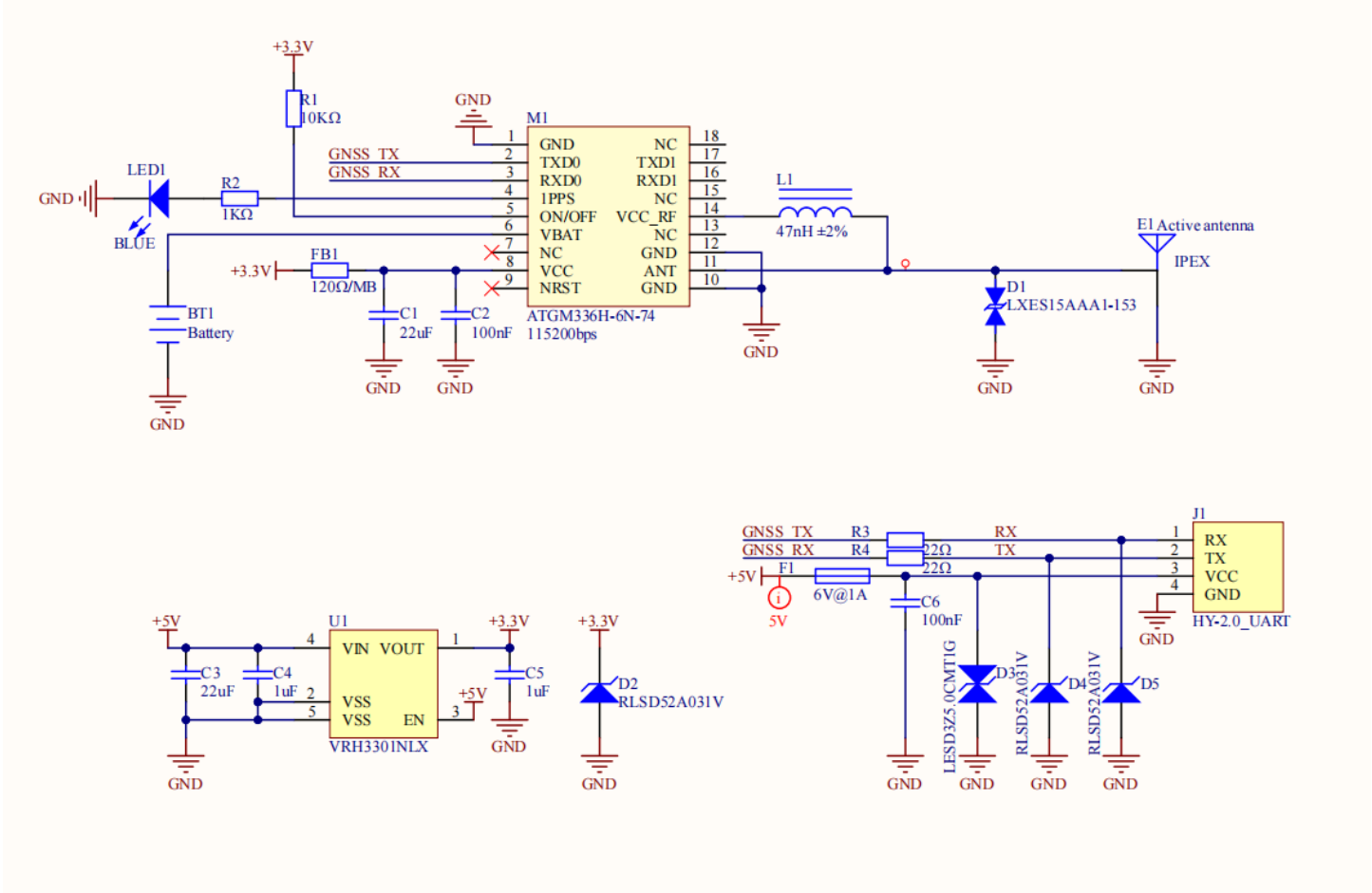
Applications

- Vehicle positioning and navigation
- Wearable devices
- IoT positioning devices
- Drones
- Portable devices
- Bus stop announcements

Specifications

Specification	Parameter
SoC	AT6668
Supported Satellite Systems	GPS/QZSS/BD2/BD3/GAL/GLO Frequencies: BDS：B1I+B1C GPS/QZSS/SBAS：L1 GALILEO：E1 GLONASS：R1
Channels	50 channels
Communication	UART communication, default 115200bps@8N1
Positioning Accuracy	<1.5m (CEP50)
Positioning Update Rate	Up to 10Hz
Protocol	NMEA0183 4.1
Sensitivity	Tracking: -162dBm, Acquisition: -160dBm, Cold Start: -148dBm
Start Time	Cold Start: 23 seconds, Hot Start: 1 second
Antenna	SMA active external antenna (internal screw, internal pin), Gain: 30DBI, Frequency: 1555MHz~1580MHz, Length: 1m, Size: 38 x 36 x 13mm
Power Consumption	Standby: DC 5V/31.64mA Operating: DC 5V/40.90mA
Product Size	71.4 x 24.0 x 8.0mm
Product Weight	47.3g
Package Size	170.0 x 120.0 x 9.0mm
Gross Weight	53.6g

Schematics

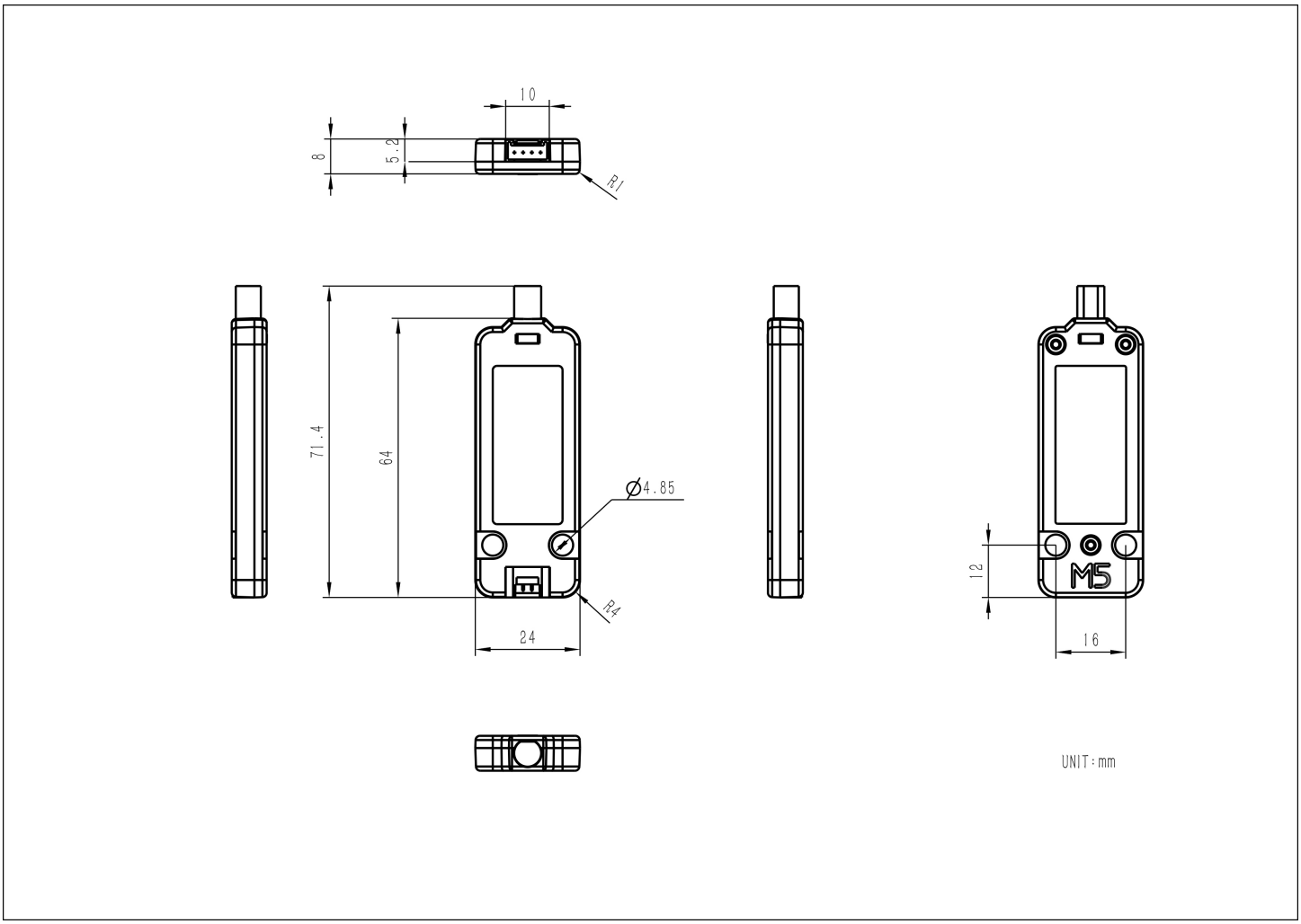


PinMap

Unit GPS SMA

HY2.0-4P	Black	Red	Yellow	White
PORT.C	GND	5V	UART_RX	UART_TX

Model Size



Datasheets

- ATGM336H-6N
- MAX2659
- CASIC Multi-mode Satellite Navigation Receiver Protocol Specification

Softwares

Arduino

- Unit GPS v1.1 Arduino Library

Video

- Unit GPS SMA Product Introduction

Unit_GPS_SMA_Video.mp4

Product Comparison

Product Compare			
	Unit-GPS SMA	**Unit-GPS v1.1**	**Unit-GPS**
SoC	AT6668	AT6668	AT6558
Supported Satellites	BD2/BD3/GPS/GLONASS/GALILEO/QZSS	BD2/BD3/GPS/GLONASS/GALILEO/QZSS	BDS/GPS
Positioning Accuracy	1.5m	1.5m	2.5m
Channels	50 channels (CEP50)	50 channels (CEP50)	32 channels (CEP50)
Sensitivity	Tracking: -162dBm, Acquisition: -160dBm, Cold Start: -148dBm	Tracking: -162dBm, Acquisition: -160dBm, Cold Start: -148dBm	Tracking: -162dBm, Acquisition: -148dBm, Cold Start: -146dBm
Cold Start	Cold Start: 23 seconds, Hot Start: 1 second	Cold Start: 23 seconds, Hot Start: 1 second	Cold Start: 35 seconds, Hot Start: 1 second
Antenna	External active antenna	Onboard ceramic antenna	Onboard ceramic antenna
Signal Strength (Number of Satellites under same conditions)	BeiDou Satellites: 18	BeiDou Satellites: 8	BeiDou Satellites: 5