Unit GPS SMA

SKU:U190

Description

Unit-GPS SMA is a GNSS global positioning and navigation unit, integrating the high-performance ATGM336H navigation module from Microelectronics, based on the AT6668 chip design. It is equipped with an external active antenna, offering more precise and reliable satellite positioning services. Compared to previous models, the AT6668 supports multi-frequency and multi-mode GNSS signal reception, enabling compatibility with multiple satellite navigation systems (including GPS, BD2, BD3, GLONASS, GALILEO, and QZSS). It supports combined multi-system positioning or single-system independent positioning, offering enhanced interference resistance and higher positioning accuracy. This module is well-suited for high-accuracy positioning applications such as vehicle navigation, IoT location devices, and more, even in weak signal areas.

Product Features

- Supports multiple satellite navigation systems (GPS/QZSS/BD2/BD3/GAL/GLO)

- Multi-frequency and multi-system reception
- Multi-channel support
- External active antenna
- 2x LEGO-compatible holes
- Programmable platforms: Arduino, UIFlow, ESP-IDF, etc.

Includes

- 1x Unit-GPS SMA
- 1x HY2.0-4P cable (20CM)
- 1x External active antenna

Applications

- Vehicle positioning and navigation
- Wearable devices
- IoT location devices
- Drones
- Portable devices
- Public transportation announcement systems

Specifications

Specification	Details
SoC	AT6668
Specification	Details
n	GPS/QZSS/BD2/BD3/GAL/GLO

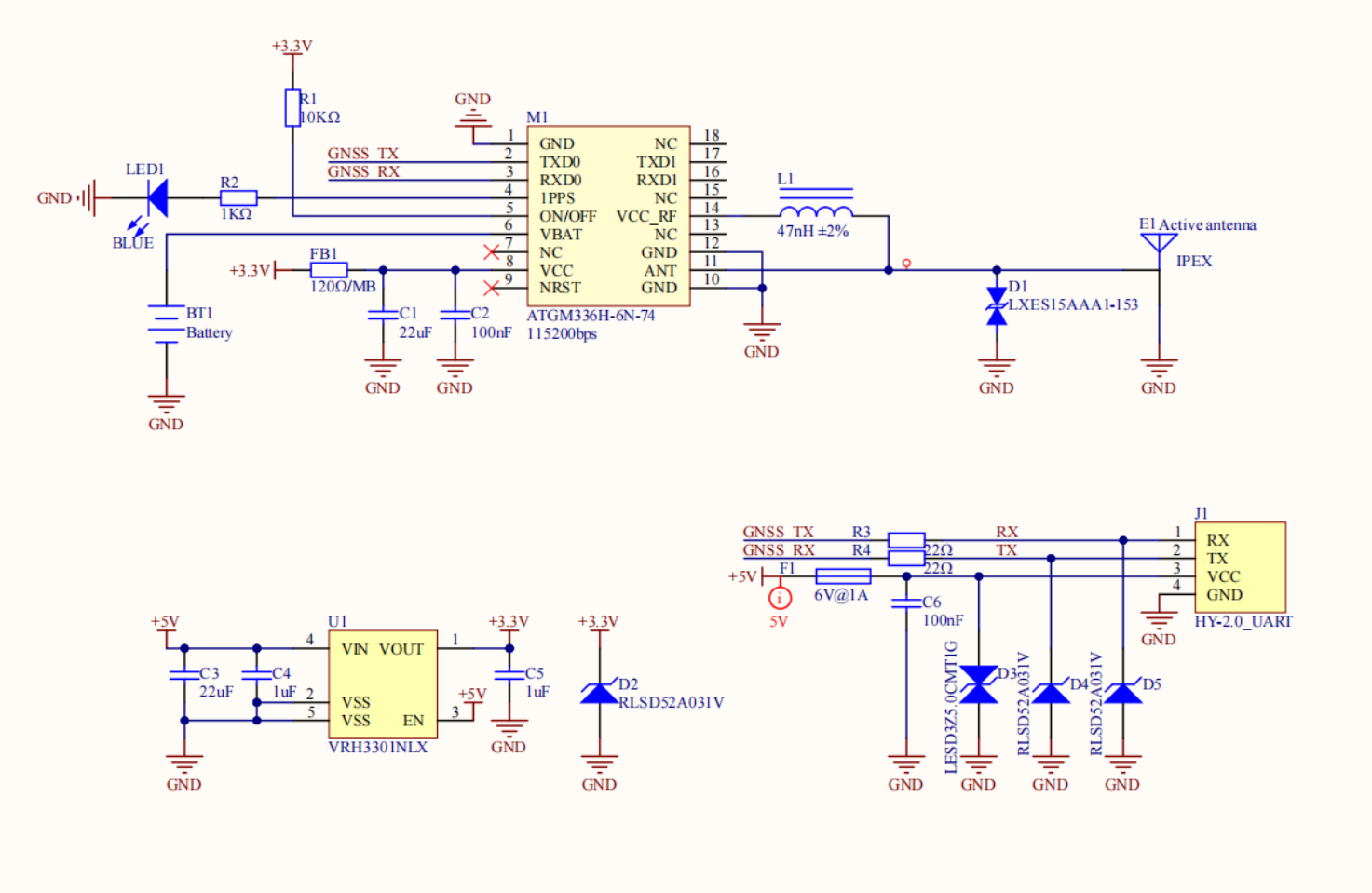
Supported Systems	Frequencies: BDS: B1I+B1C GPS/QZSS/SBAS: L1 GALILEO: E1 GLONASS: R1
Channels	50
Communication	UART (default: 115200bps@8N1)
Positioning Accuracy	<1.5m (CEP50)
Positioning Update	Maximum 10Hz
Protocol	NMEA0183 4.1
Sensitivity	Tracking: -162dBm, Acquisition: -160dBm, Cold start: -148dBm
Startup Time	Cold start: 23 seconds, Hot start: 1 second
Antenna	SMA active external antenna (inner thread, inner pin), Gain: 30DBI Frequency: 1555MHz~1580MHz Length: 1m Size: 38*36*13mm
Power Consumption	Standby: DC5V/31.64mA Working: DC5V/40.90mA

Product Dimensions	71.4*24*8mm
Packaging Dimensions	136*92*13mm
Product Weight	11.2g
Packaging Weight	59.6g

Related Links

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

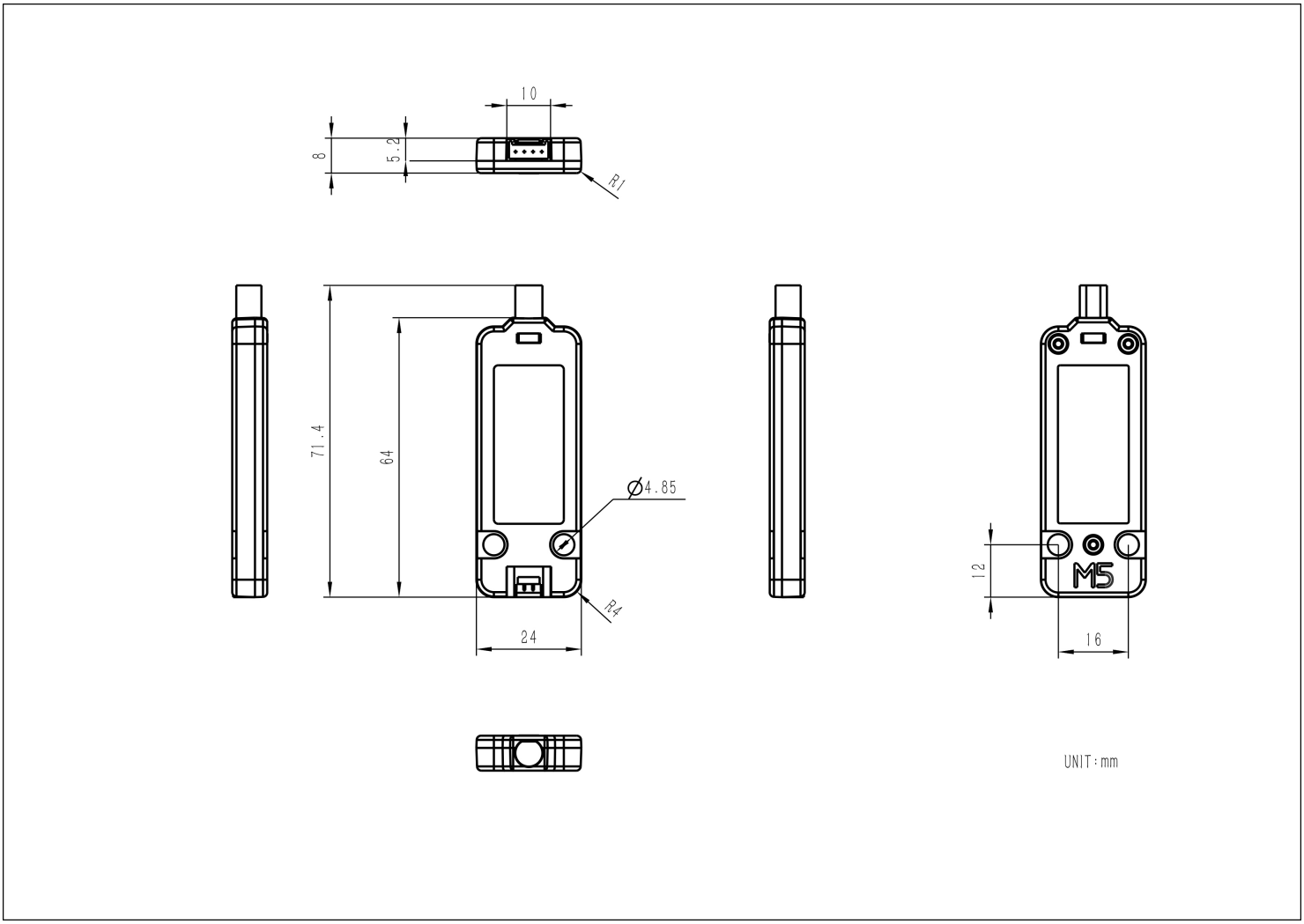
Schematic



PinMap

GPS Unit SMA	RXD	TXD	VCC	GND
M5Core (PORT C)	GPIO16	GPIO17	5V	GND
M5Core2 (PORT C)	GPIO13	GPIO14	5V	GND
M5CoreS3 (PORT C)	GPIO18	GPIO17	5V	GND

Module Size



Examples

Arduino

- Unit-GPS SMA Arduino Library

Video

- Unit-GPS SMA Product Introduction

Unit_GPS_SMA_Video.mp4

Unit-GPS SMA | Unit-GPS v1.1 | Unit-GPS

Product Comparison			
	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 (CEP50)	50 (CEP50)	32 (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	23 seconds (cold), 1 second (hot)	23 seconds (cold), 1 second (hot)	35 seconds (cold), 1 second (hot)
Antenna	External active antenna	Onboard ceramic antenna	Onboard ceramic antenna
Signal Strength (under same conditions)	Beidou satellites: 18	Beidou satellites: 8	Beidou satellites: 5