GPS Tracker

F3A

HW USER MANUAL

Thanks you very much for purchasing the Navizot F3A and we do appreciate it.

Please see this document for HW user manual and Installation guide.

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NAVIZOT

Zero One Technology Co., Ltd

If any question, please contact with sales@navizot.com

1. Product Introduction

NAVIZOT F3A GPS tracker is specially designed for use in the most demanding applications for vehicle control, fleet management and tracking. Identification and monitoring national and international logistics.

2. Product Specification

2.1 F3A General Features

(1) Dimension: 116 x 88 x 25 mm, Housing: Polycarbonate-ABS

(2) Power Sources: 5V to 48V, Transients up to 60V

(3) 3D-Axis, +/- 2/4/8/16g Digital Accelerometer

(4) Data and Voice Communication

(5) TCP/IP/UDP Protocol Support

(6) 8MB Internal Flash Memory

(7) Physical Interface:

(1) RS232 *2

(2) 1 Wire *1

(3) CAN Bus *1

(4) I/O Interface:

<1> Digital In*4/Digital Out*1

<2> ADC In*2

<3> PWM In*2

<4>SIM Card Slot*1

2.2 GSM Features

(1) Dual/Quad Band: 900/1800 or 850/900/1800/1900

(2) 3GPP Release 99, Compliant to GSM2/2+

(3) GPRS Multi-Slot Class 8/10

(4) Output Power

- ✓ Class 4(2W) for GSM850/900
- ✓ Class 1(1W) for GSM1800/1900

2.3 GPS Features

(1) Frequency: L1, 1575.42 MHz

(2) High Sensitivity:

- ✓ TTFF @ <35s(Cold)/<30s(Warm)/1s(Hot)
- ✓ Tracking sensitivity better than -161 dBm

(3) Support SBAS (WAAS, EGNOS and MSAS)

(4) Datum: WGS-84

(5) NMEA Format: GGA/GSA/RMC/GSV

(6) Accuracy:

- ✓ Position 10 m, 2D RMS

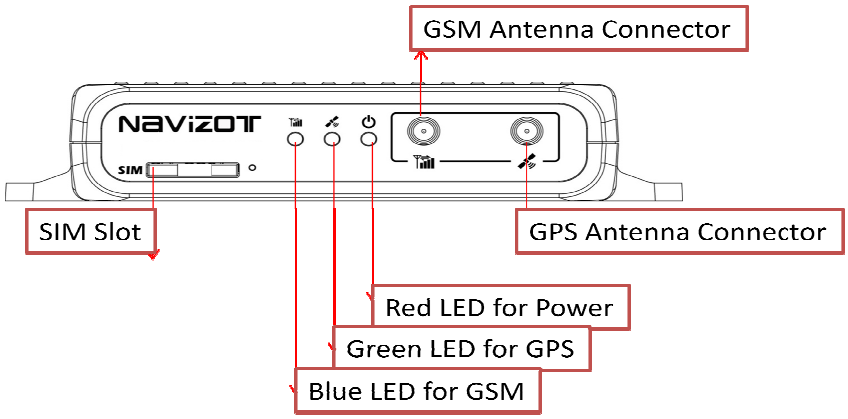
  5 m, 2D RMS, WAAS corrected

  2.5 m (50%), DGPS corrected

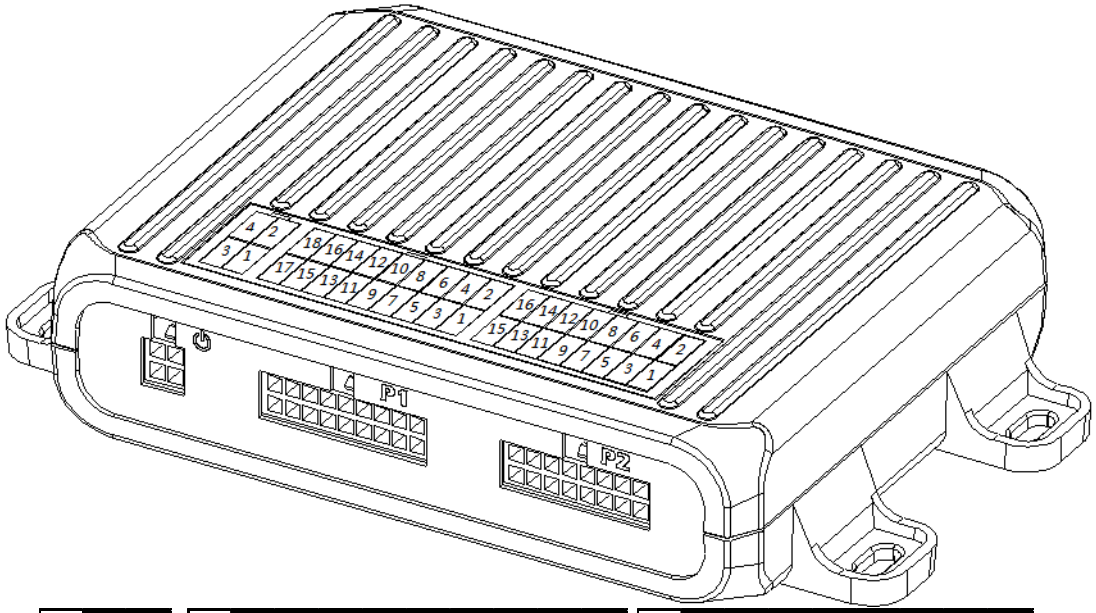
- ✓ Velocity: 0.1 m/sec
- ✓ Time: 1 sec synchronized to GPS time

3. Panel, I/O Connectors and Pin-Definition

3.1 The Front Panel Introduction



3.2 The Back Panel Introduction

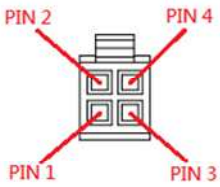


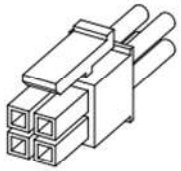
Label	GND	VBATT
Pin Number	4	2
	3	1

Label	DO	DI 4	DI 3	DI 2	DI 1	LS +	Mic +	ADC IN2	ADC IN1
Pin Number	18	16	14	12	10	8	6	4	2
	17	15	13	11	9	7	5	3	1
Label	GND O	GND 4	GND 3	GND 2	GND 1	LS -	Mic -	GND A2	GND A1

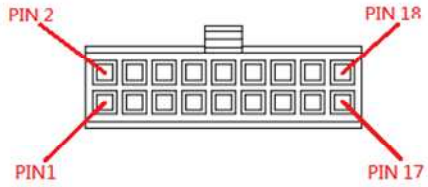
Label	DI PWM 2	DI PWM 1	GND	CAN H	UART5V	TX1	UART5V	TX0
Pin Number	16	14	12	10	8	6	4	2
	15	13	11	9	7	5	3	1
Label	GND	GND	1 WIRE	CAN L	GND 1	RX1	GND 0	RX0

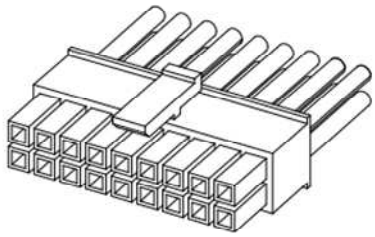
3.3 I/O Detail Pin-Definition



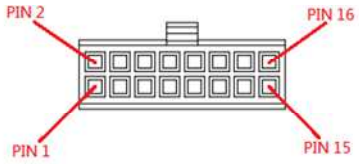


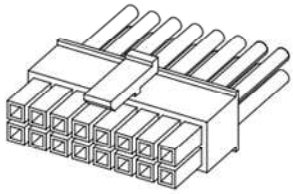
Pin Number	Signal Name	Label	Function	Electrical Characteristics	Length	Color
1	CAR_ACC	(1) ACC	The accessory position in the ignition wiring.	12V/500mA 24V/500mA	1M	Red
2	CAR_VBATT	(2) VBATT	The power input of car's battery	12V/2A 24V/2A	1M	Red
3	GCAR_GND	(3) GND	Ground		1M	Gray
4	GCAR_GND	(4) GND	Ground		1M	Gray





Pin Number	Signal Name	Label	Function	Electrical Characteristics	Length	Color
1	GCAR_GNDAI1	(1) GND A1	Analog ADC ground		1M	Gray
2	EXT_VSENSOR1_AIN+	(2) ADC IN1	Voltage-Sensor (Analog ADC Inputs)	0 ~ 12Vdc	1M	Yellow
3	GCAR_GNDAI2	(3) GND A2	Analog ADC ground		1M	Gray
4	EXT_TSENSOR1_AIN+	(4) ADC IN2	Temperature -Sensor (Analog ADC Inputs)	0 ~ 12Vdc	1M	Yellow
5	MODEM_MICN	(5) MIC -	Microphone input signal (Mic -)		1M	Green
6	MODEM_MICP	(6) MIC +	Microphone input signal (Mic +)		1M	Green
7	MODEM_EPN	(7) LS -	Audio output signal (EPN)		1M	Green
8	MODEM_EPP	(8) LS +	Audio output signal (EPP)		1M	Green
9	GCAR_GNDDI1	(9) GND 1	Ground		1M	Gray
10	EXT_DIN_DRV1	(10) DI 1	Digital Input 1	VIN(H)>9V~28V,VIN(L)<0.7V	1M	Black
11	GCAR_GNDDI2	(11) GND 2	Ground		1M	Gray
12	EXT_DIN_DRV2	(12) DI 2	Digital Input 2	VIN(H)>3.5~2.9V,VIN(L)<0.7V	1M	Black
13	GCAR_GNDDI3	(13) GND 3	Ground		1M	Gray
14	EXT_DIN_DRV3	(14) DI 3	Digital Input 3	VIN(H)>3.5~2.9V,VIN(L)<0.7V	1M	Black
15	GND_EMERG	(15) GND 4	Ground		1M	Gray
16	EXT_EMERG_nDET	(16) DI 4	Emergency detect-Sensor (Digital Input 4)	VIN(H)>3.5~2.9V,VIN(L)<0.7V	1M	Yellow
17	GCAR_GNDDO1	(17) GND O	Ground		1M	Gray
18	EXT_DOUT_DRV1	(18) DO	Digital Output 1		1M	Black





Pin Number	Signal Name	Label	Function	Electrical Characteristics	Length	Color
1	EXTIO_RXD0	(1) RX0	RS-232 Rx receive data (Input)	Rx in: ±15V Rx out: -0.3V to (Vcc + 0.3V)	1M	Blue
2	EXTIO_TXD0	(2) TX0	RS-232 Tx transmit data (Output)	Tx in: -0.3V to +6.0V Tx out: ±15V	1M	Blue
3	GCAR_GNDUART_0	(3) GND 0	RS-232 Ground		1M	Gray
1 & 2 & 3	Rx & Tx & GND		RS-232 PORT 1			
4	VREG_AP_UART_5V_A	(4) UART5V	5V output power switch 1	Minimum:0.3A Typical:0.5A Maximum:0.65A	1M	Orange
5	EXTIO_RXD1	(5) RX1	RS-232 Rx receive data (Input)	Rx in: ±15V Rx out: -0.3V to (Vcc + 0.3V)	1M	Blue
6	EXTIO_TXD1	(6) TX1	RS-232 Tx transmit data (Output)	Tx in: -0.3V to +6.0V Tx out: ±15V	1M	Blue
7	GCAR_GNDUART_1	(7) GND 1	RS-232 Ground		1M	Gray
5 & 6 & 7	Rx & Tx & GND		RS-232 PORT 2			
8	VREG_AP_UART_5V_B	(8) UART5V	5V output power switch 1	Minimum:0.3A Typical:0.5A Maximum:0.65A	1M	Orange
9	EXT_CAN_L	(9) CAN L	LOW-level CAN bus line	0 < VCC < 5.25 V	1M	Brown
10	EXT_CAN_H	(10) CAN H	HIGH-level CAN bus line	0 < VCC < 5.25 V	1M	Brown
11	EXT_ONE_WIRE	(11) ONE WIRE	Input/Output Driver for 1-Wire Line	Minimum Vinput high:1.9V Maximum Vinput low:0.9V Maxmum Voutput low:0.4V	1M	Black
12	GCAR_GNDCAN	(12) GND	Ground Reference		1M	Gray
13	GCAR_GNDSPEED	(13) GND	Ground Reference		1M	Gray
14	EXT_SPEED_DET	(14) DI PWM1	Speed detection	Iminimum:1.9mA Imaximum:11.4mA	1M	Black
15	GCAR_GNDRPM	(15) GND	Ground Reference		1M	Gray
16	EXT_RPM_DET	(16) DI PWM 2	RPM detection	Iminimum:1.9mA Imaximum:11.4mA	1M	Black

4. Accessory

4.1 Standard Accessory:

(1) L Type GSM Antenna

(2) 5M GPS Antenna

(3) 4*Pin I/O Cable *1, 18Pin* I/O Cable*1, 16*Pin I/O Cable*1

4.2 Optional Accessory and Function:

(1) Backup Battery

(2) SD Card Holder

(3) RFID Reader

(4) BT Dongle

(5) Serial – Camera

FCC Regulations:

●This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

●This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiated radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user‘s authority to operate the equipment.

‣ RF Exposure Information

This device meets the government’s requirements for exposure to radio waves.
This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.

●This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation.