
IntelliTrac X1



User's Manual

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Status: Preliminary

General notes

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1 Features

- 16 channels GPS receiver with high sensitivity up to -152dBm
- Quad-band GSM/GPRS (850 / 900 / 1800 / 1900 MHz) solution
- Intelligent real time tracking mode
- High capacity Li-Polymer backup battery
- Advanced power management
- Journey logging for thousands position
- Remote configuration and firmware upgrade

2 System Requirements

The IntelliTrac X1 configuration software is based on Microsoft Windows systems.

Windows Systems : Win98/Me/2000/XP

3 Product Contents



IntelliTrac X1 device



Power I/O Cable



Serial Cable



GPS Receiver



GSM/GPRS Antenna



Holding Bridles



CD (User manual & Software)

4 Hardware Installation

4.1 Install SIM card

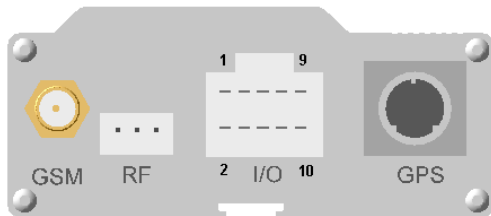
Press the yellow button to eject the SIM card holder and insert the SIM card. If you would like to disable the PIN code, please use general GSM cellular phone to disable the PIN code in advance.



4.2 Install Cables

- Install I/O cable

The I/O cable is a 10-wires cable which include power and positive/negative inputs and outputs.



The I/O cable pins assignment shown below :

Pin Number	Description
1	DC power source (8V ~ 30V)
2	Ground
3	Input1 (ACC Positive trigger input)
4	Output1
5	Input2 (Positive trigger)
6	Output2
7	Input3
8	Output3
9	Input4
10	Output4 (Internal 2A Relay)

- **Install GSM Antenna**

Connect the GSM antenna to the SMA connector with lable "GSM".

- **Install GPS Receiver**

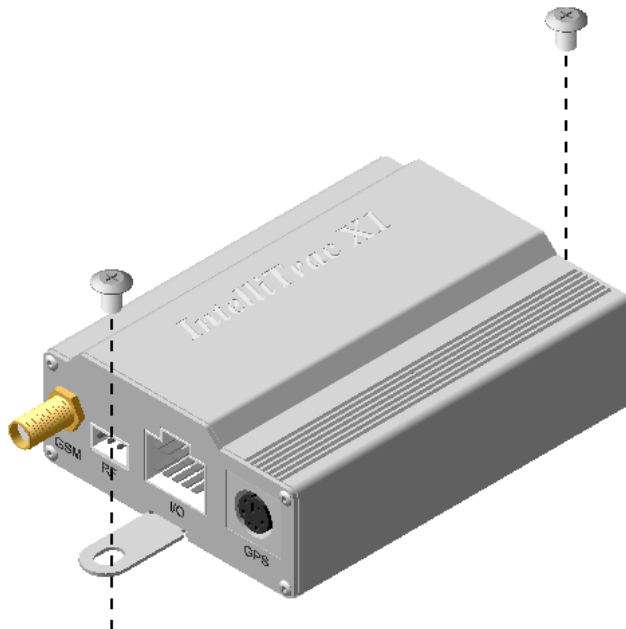
Connect the GPS receiver to the Mini DIN connector with label "GPS". Use a nylon cable tie to prevent unexpected come off.

- **Install RF Receiver (Optional)**

Connect the RF receiver ti the 3 pins connector with label "RF".

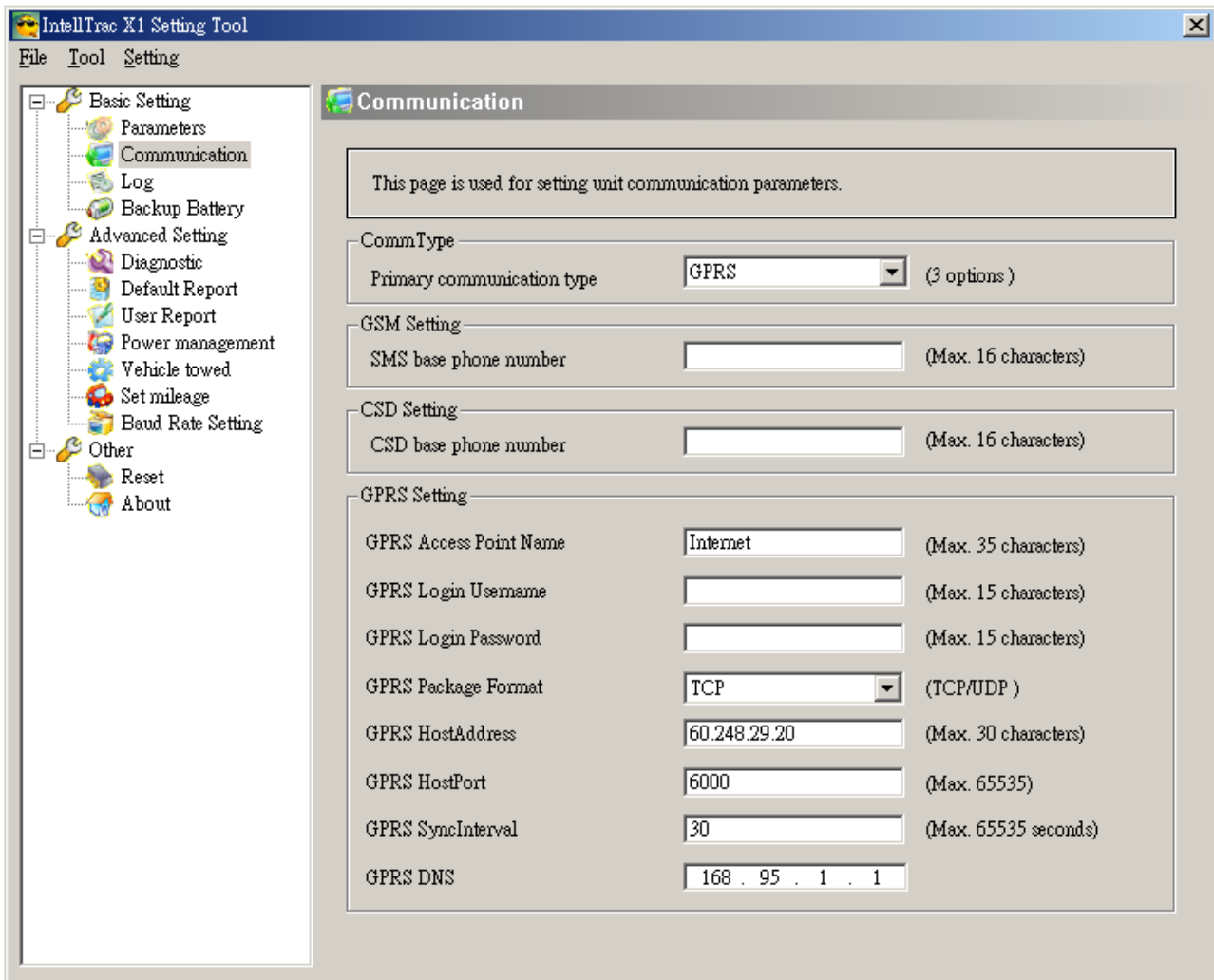
4.3 Mounting the unit

For mounting the unit, bind to the body the holding bridles according the the schema below :

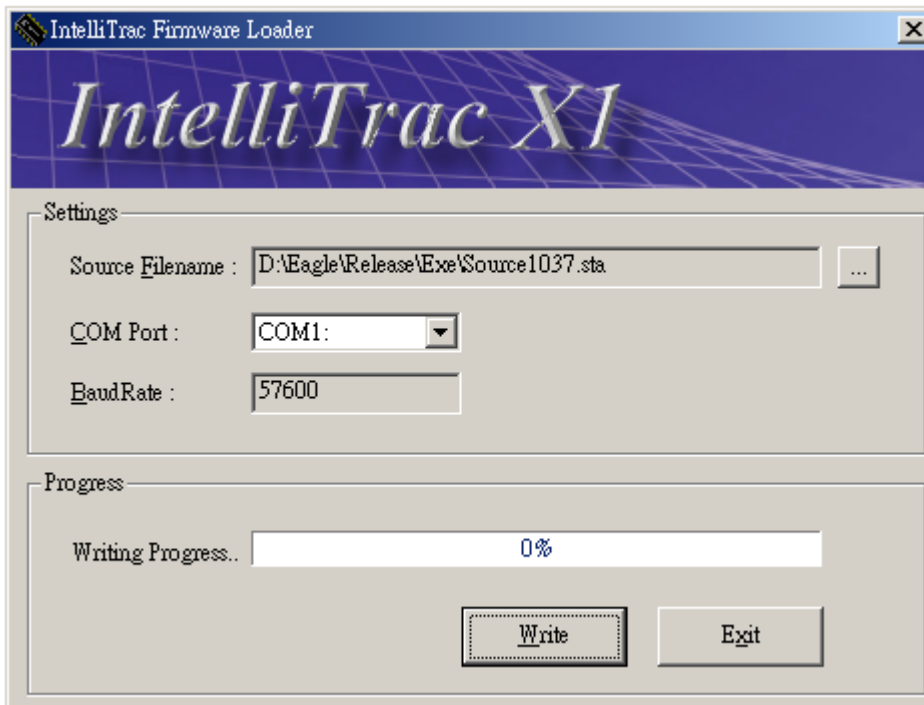


5 Software Installation

5.1 Configuration Software



5.2 Firmware Download Software



6 Specifications

Dimension	90mm x 70mm x 30mm
Weight	250g
Input Ports	4 Inputs (2 positive, 2 negative)
Output Ports	4 Outputs (4 negative trigger)
GPS Datum	WGS-84
GPS Frequency	L1, 1575.42MHz
GPS Channel	16
GPS Tracking sensitivity	-152dBm typ.
GPS Cold Start	40secs
GPS Warm Start	25secs
GPS Hot Start	3secs
GPS Update Rate	1Hz
GPS Accuracy	3m CEP (50%), 7m (90%)
GPS Baud Rate	19200bps
GSM/GPRS Frequency	Quad-Band 850/900/1800/1900MHz
GPRS	Multi-slot class 10
SMS	PDU mode
Data mode	CS Data
Voice mode	HR/FR/EFR

7 Electrical, reliability and radio characteristics

7.1 Absolute maximum ratings

Absolute maximum rating for power supply and voltage on digital input pins of the IntelliTrac X1 are list in following table :

Parameter	Min	Max	Unit
Supply Voltage	8	30	V
Positive trigger Input Voltage	5	30	V
Positive trigger Input current	35		uA
Negative trigger Input Voltage	0	0.7	V
Output current		400	mA
Relay output current		2	A
Power current consumption (Standby mode)	40	45	mA @ 12VDC
Power current consumption (GPS Off mode)	24	26	mA @ 12VDC
Power current consumption (Deep sleep mode)	15	15	mA @ 12VDC

7.2 Operating temperatures

The operating temperature is listed in following table:

Parameter	Min	Typ	Max	Unit
Ambient temperature	-20	25	55	°C
Restricted temperature*	-20 ~ -40		55 ~ 85	°C
Storage Temperature	-40		85	°C

*The IntelliTrac X1 device can work, but the deviation from the specification may occur.

7.3 GSM/GPRS Output Power

Parameter	Min	Max	Unit
GSM850	33	5	dBm
E-GSM900	33	5	dBm
DCS1800	30	0	dBm
PCS1900	30	0	dBm

7.4 GSM/GPRS Receive sensitivity

Parameter	Min	Max	Unit
GSM850	<-106		dBm
E-GSM900	<-106		dBm
DCS1800	<-104		dBm
PCS1900	<-104		dBm

7.5 GSM/GPRS receive/transmit frequency

Parameter	Receive	Transmit
GSM850	869 ~ 894 MHz	824 ~ 849 MHz
E-GSM900	925 ~ 960 MHz	880 ~ 915 MHz
DCS1800	1805 ~ 1880 MHz	1710 ~ 1785 MHz
PCS1900	1930 ~ 1990 MHz	1850 ~ 1910 MHz

8 LED Indicators

PWR LED Status	Function
Off	Power off
20 ms On / 2 secs Off	The device is running in power saving mode.
500ms On / 500ms Off	Reset procedure is in progress
20ms ON / 20ms Off	Upgrade firmware is in progress
On	Power on

GPS LED Status	Function
Off	The GPS is off or running in power saving mode.
1 sec On / 1 sec Off	No GPS satellites signal received
On	GPS Ready

GSM LED Status	Function
Off	The device is off or running in deep sleep mode.
600 ms On / 600ms Off	No SIM card inserted or no PIN entered, or network search in progress, or network login in progress.
90 ms On / 3 secs Off	Logged to network.
90 ms blinking 2 times /3secs Off	GPRS Network connected

9 About Systems & Technology Corporation

IntelliTrac X Series AVL device is produced by Systems & Technology Corporation. The company is a key developer and supplier of advanced systems in the Automatic Vehicle Location (AVL), Digital Map and Car Navigation Systems.

If you need information on other maps solutions or products, please contact us at the phone and fax numbers listed below, or visit our web sites.

Contact Information for System & Technology Corp.



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FCC Regulations:

●This mobile phone 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 mobile phone 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.