



GV50VC User Manual

CDMA2000-1X/GPS Tracker

TRACGV50VCUM001

Version: 1.01

GV50VC

International Telematics Solutions Innovator

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WARNING: The device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) The device may not cause harmful interference, and
- (2) The device must accept any interference received, including interference that may cause undesired operation.

Change or modification not expressly approved by the party responsible for compliance could avoid the user's authority to operate the equipment.

FCC RF Exposure Statement:

For the product, under normal use condition is at least 20cm away from the body of the user, the user must keeping at least 20cm distance to the product.

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0. Revision history

Revision	Date	Author	Description of change
1.00	2016-03-18	Docter Xu	Initial Version

1. Introduction

The GV50VC is a powerful GPS locator designed for vehicle or asset tracking. It has superior receiver sensitivity, fast TTFF (Time to First Fix) and supports Dual-Band CDMA2000-1x frequencies 800/1900, its location can be monitored in real time or be periodically tracked by a backend server or other specified terminals. The GV50VC has multiple input/output interfaces that can be used for monitoring or controlling external devices. Based on the integrated @Track protocol, the GV50VC can communicate with a backend server through the CDMA2000-1x network to transfer reports of Emergency, geo-fence boundary crossings, low backup battery or scheduled GPS position as well as many other useful functions. Users can also use GV50VC to monitor the status of a vehicle and control the vehicle by its external relay output. System Integrators can easily setup their tracking systems based on the full-featured @Track protocol.

1.1. Reference

Table 1: GV50VC Protocol Reference

SN	Document name	Remark
[1]	GV50VC @Track Air Interface Protocol	The air protocol interface between GV50VC and backend server.

1.2. Terms and Abbreviations

Table 2: Terms and Abbreviations

Abbreviation	Description
AGND	Analog Ground
AIN	Analog Input
DIN	Digital Input
DOUT	Digital Output
GND	Ground
MIC	Microphone
RXD	Receive Data
TXD	Transmit Data
SPKN	Speaker Negative
SPKP	Speaker Positive

2. Product Overview

2.1. Appearance



Figure 1: GV50VC Appearance

2.2. Interface Definition

The GV50VC has a 7 PIN interface connector. It contains the connections for power, I/O. The sequence and definition of the 7PIN connector are shown in following figure:

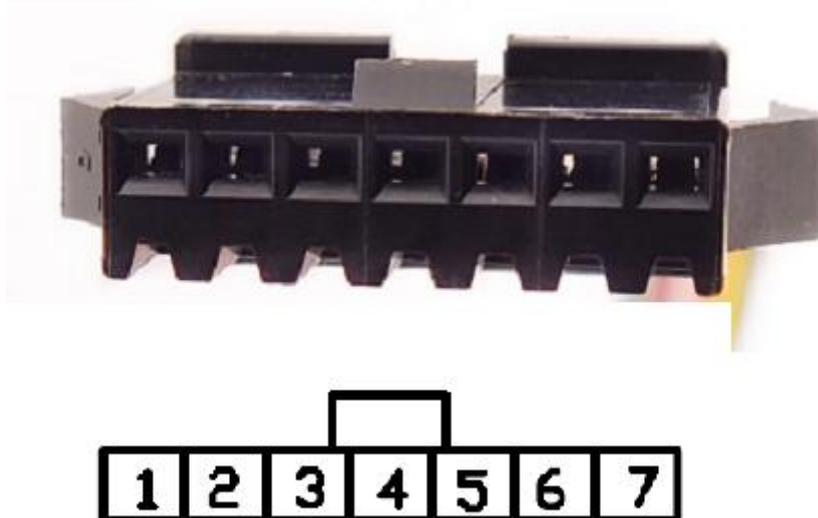


Figure 2: The 7 PIN connector on the GV50VC

Table 3: Description of 7PIN Connections

Index	Description	Comment
1	RXD	UART RXD ; TTL
2	TXD	UART TXD ; TTL
3	VIN	External DC power input,8-16V
4	IGN	Ignition input, positive trigger
5	OUT1/IN1	Digital Output/ Input
6	OUT2	Open drain,150mA max
7	GND	GND

2.3. LED Description

GV50VC has two status LED which contain CELL LED and GPS LED.

CELL (note1)	Device is searching CELL network	Fastflashing
	Devicehas registered to CELL network.	Slow flashing
GPS (note 2)	GPS chip is powered off	OFF
	GPS sends no data or data format error	Slow flashing
	GPS chip is searching GPS info.	Fast flashing
	GPS chip has gotten GPS info.	ON

Table 4: LED Description

Note:

- 1 – CELL LED cannot be configured.
- 2 - GPS LED can be configured to turn off after a period of time using the configuration tool
- 3 - Fast flashing is about 60ms ON/ 780ms OFF
- 4 - Slow flashing is about 60ms ON/ 1940ms OFF
- 5 –When LED ON is 0, each time the device powers on, both LED's will work for 30 minutes and then are turned off deadly

2.4. Power Connection

VIN(PIN3)/GND(PIN7) are the power input pins. The input voltage range for this device is from 8V to 16V. The device is designed to be installed in vehicles that operate on 12Vvehicle without the need for external transformers.

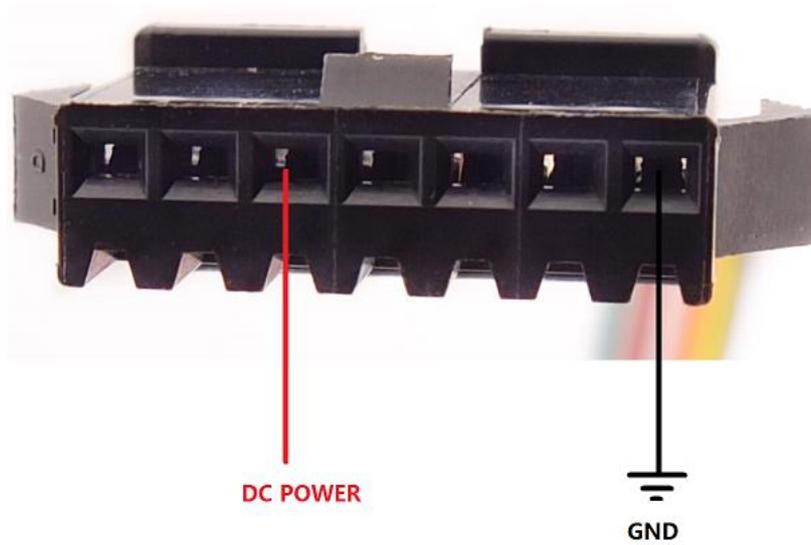


Figure 3: Typical Power Connection

2.5. Ignition Detection

IGN (Pin4) is used for ignition detection. It is strongly recommended to connect this pin to ignition key “RUN” position as shown up.

An alternative to connecting to the ignition switch is to find a non-permanent power source that is only available when the vehicle is running. For example the power source for the FM radio. IGN signal can be configured to start transmitting information to backend server when ignition is on, and enter power saving mode when ignition is off.

Table 5: Electrical Characteristics of Ignition Detection

Logical State	Electrical State
Active	5.0V to 32V
Inactive	0V to 3V or Open

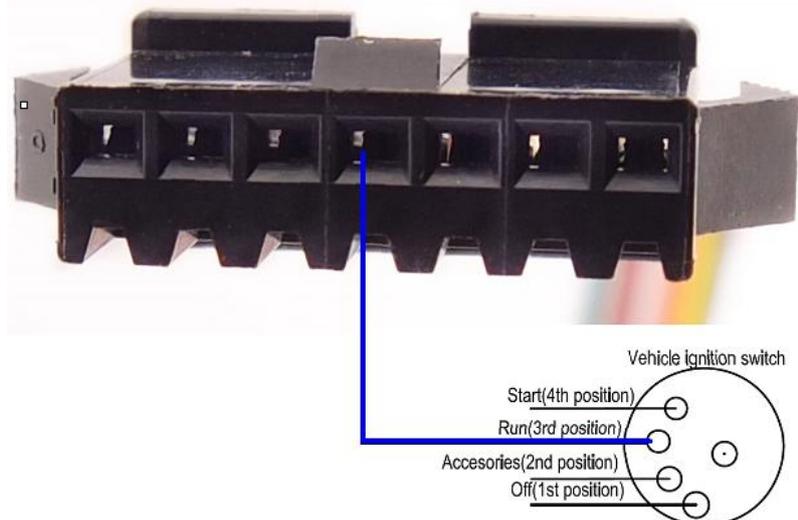


Figure 4: Typical Ignition Detection

2.6. Digital Output/ Input connection

OUT1/IN1(PIN5) is a digital Output/Input connection on GV50VC.Ti is of open drain type and the maximum drain current is 150mA as a digital Output and a negative trigger as digital Input Electrical Characteristics of the digital input.

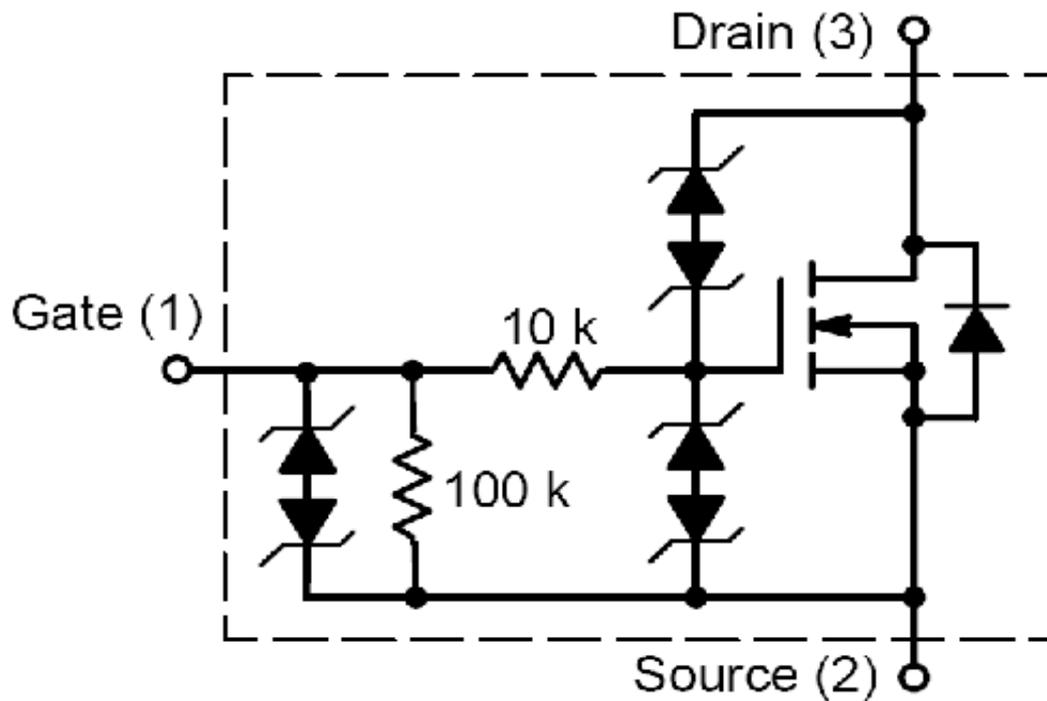


Figure 5: As Digital Output Internal Drive Circuit

Table 6: Electrical Characteristics AS Digital Outputs

Logical State	Electrical Characteristics
Enable	<1.5V @150mA
Disable	Open drain

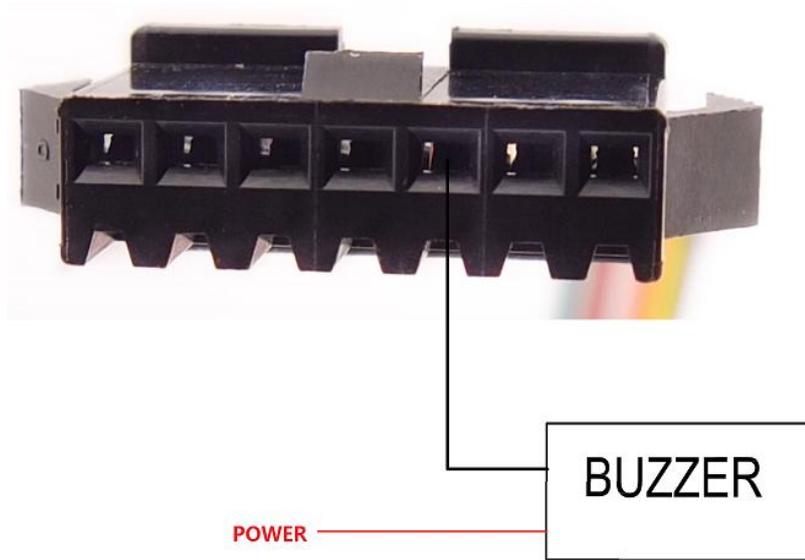


Figure 6: Typical Connection with buzzer AS Digital Output

Table 7: Electrical Characteristics AS Digital Inputs

Logical State	Electrical Characteristics
Active	0V to 0.8V
Inactive	Open

The following diagram shows the recommended connection of a digital input.

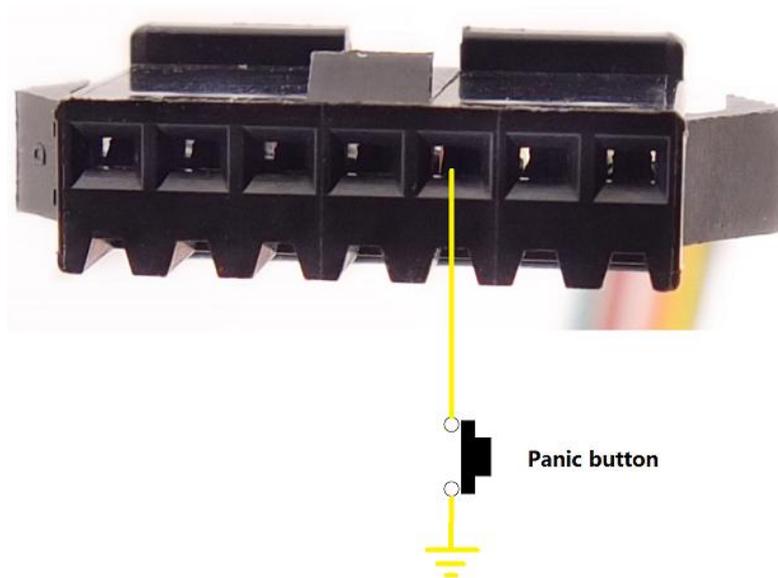


Figure 7: Typical Connection AS Digital Input

2.7. Digital Output

There is a digital output (PIN6) on GV50VC. It is of open drain type and the maximum drain current is 150mA.

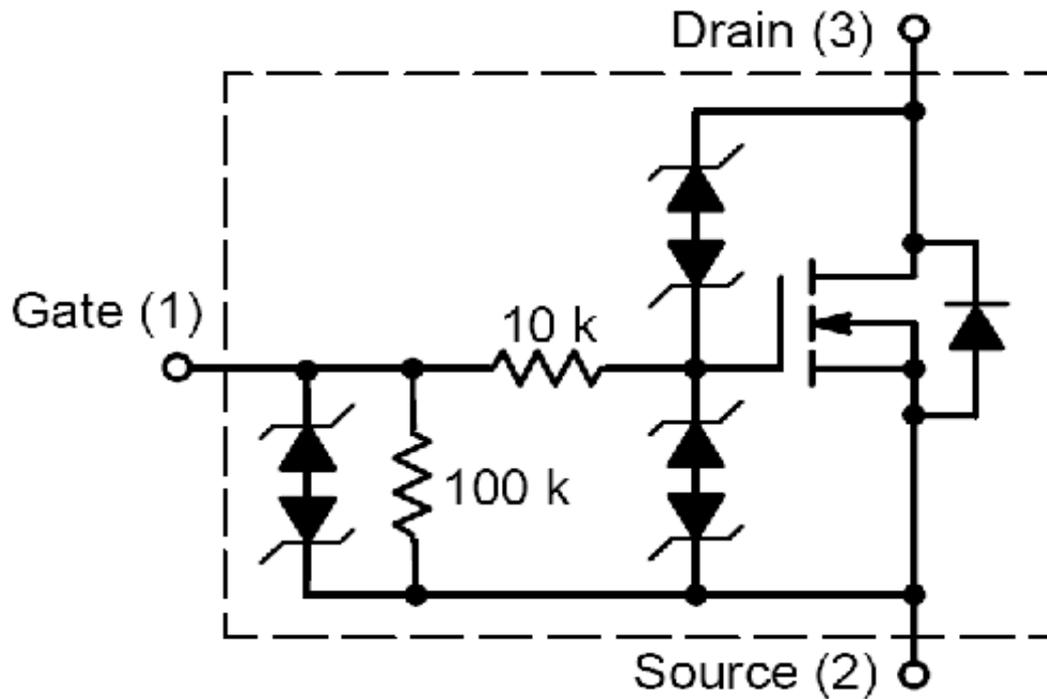


Figure 8: Digital Output Internal Drive Circuit

Table 8: Electrical Characteristics AS Digital Outputs

Logical State	Electrical Characteristics
Enable	<1.5V @150mA
Disable	Open drain

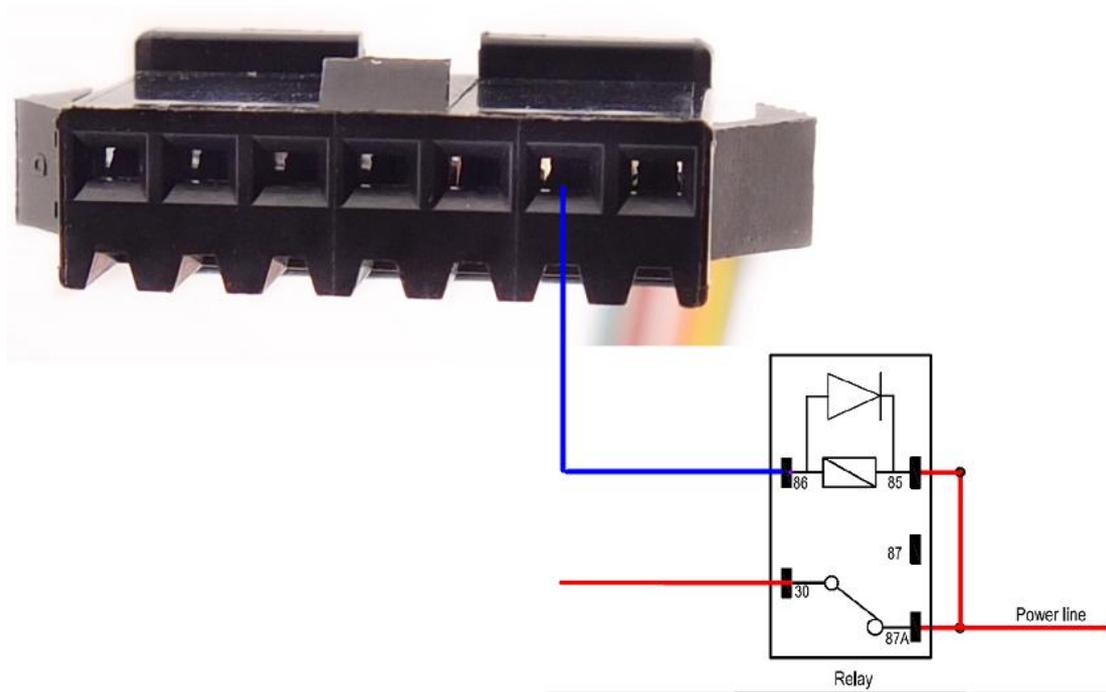


Figure 9: Typical Connection with Relay

3. GettingStarted

3.1. Part List

Table 9: Part List

Name	Picture
GV50VC Locator	<p>73mm*50mm*13.2mm</p> 

3.2. GV50VC External Cable Interface

Table 10: GV50VC User Cable Colour definition

Definition	Colour	PIN No	Cable
RXD	Green	1	
TXD	Gray	2	
VIN	Red	3	
IGN	White	4	
OUT1/IN1	Orange	5	
OUT2	Yellow	6	
GND	Black	7	

3.3. Turn on/Turn off

Turn On: Connect device to external battery, and it will turn on automatically, PWR LED will light on.

Turn Off: Disconnect device from external battery, and it will turn off.

4. Troubleshooting and Safety Info

4.1. Troubleshooting

Trouble	Possible reason	Solution
After GV50VC is turned on, the CELL LED always flashes quickly.	GV50VC doesn't register to the ISP	Please register the GV50VC again and make sure the device get the correct MDN.
	The signal is too weak; GV50VC can't register to the network.	Please move GV50VC into places with good CDMA coverage.
Messages can't be reported to the backend server by CDMA.	The IP address or port of the backend server is wrong.	Make sure the IP address for the backend server is an identified address on the Internet.
Unable to power off GV50VC.	Unable to power off GV50VC if charger is connected.	Disconnect charger, and try again.
GV50VC can't get successful GPS fixing.	The GPS signal is weak.	Please move GV50VC to a place with open sky.
		It is better to let the top surface face the sky. (The same surface with indication LED)

4.2. Safety Info

- Please do not disassemble the device by yourself.
- Please do not put the device on overheating or too humid place, and avoid exposure to direct sunlight. Too high temperature will damage the device or even cause battery explosion.
- Please do not use GV50VC on the airplane or near medical equipment.

RF Exposure Statement:

For the product, under normal use condition is at least 20cm away from the body of the user, the user must keep at least 20cm distance to the product.