# GPS Car Computer

**Set Button**

Pressing this will switch to an option screen associated with the currently displayed screen.  Using the Up/Down buttons you can change the value of the option.

Pressing Set again will save the option and return to the original display screen.

**External Antenna Connector**
(On the back panel)

**Up Button**

Will switch to the previous display.

When setting an option this will increase the value.

**USB 2.0 Interface**

For navigation software on a laptop or loading new firmware.
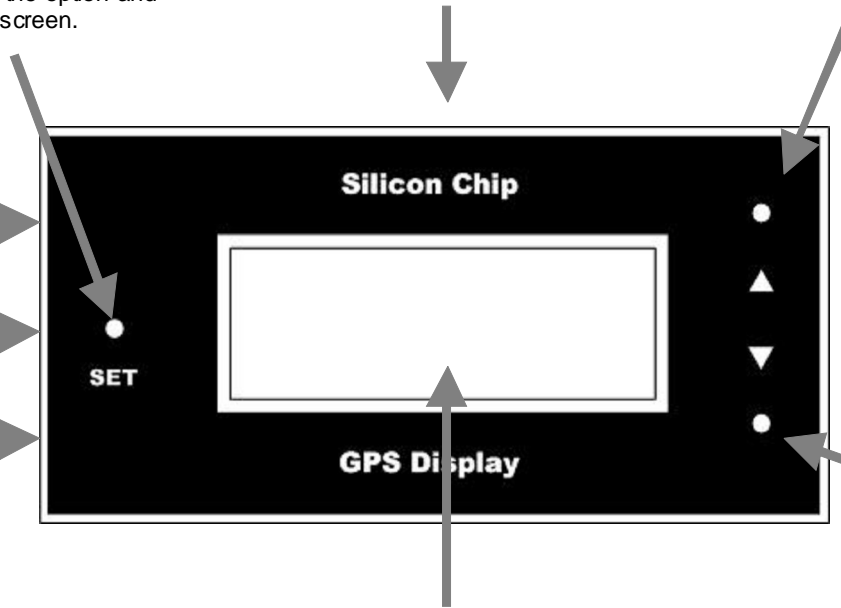
**Light Detector**

For day/night control

**Power and Signals**

Connector for power and external signals.

**Silicon Chip**

**SET**

**GPS Display**

**Down Button**

Will switch to the next display.

When setting an option this will decrease the value.

**Graphic LCD**
120 x 32 pixels.

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### Automatic Scan

Simultaneously pressing both the Up and Down buttons will set auto scan.  In the auto scan mode the unit will step to the next screen every 3 seconds.  Pressing either Up or Down will terminate this mode.

The data displayed can be configured as described below.

### Show/Hide Display Screens

Holding down the Up button while applying power will enter a special mode to configure what screens will be displayed or hidden.  Repeatedly pressing Set will select:

- Show (ie, the screen will always be displayed).

- Hidden when Auto Scan is operating, otherwise shown.

- Hidden Always.  This is useful if, for example, the *Fuel Economy Meter* is not being used – it can then be hidden to reduce the visual clutter.

Press Up or Down to move to the next screen to be configured.  Remove power to exit this mode.

### USB 2.0 Interface

The GPS Car Computer creates a virtual serial port over USB and you can use this to connect to your laptop to show the GPS output, plot your location on moving maps and other functions using free and paid software.

You must load the Silicon Chip Serial Device Driver on to your PC.

### Firmware Updates

By holding down the Set button when plugging into a USB port the device will accept firmware updates delivered via USB (ie, programming hardware is not required).

### Low Signal

In a low signal situation or when first turned on the GPS Car Computer will display a message and a count of the number of satellites found at that time.  Pressing the Set button will show the *Current Signal Levels* screen described on the next page.

### Full Reset

Pressing the Down button for a couple of seconds while applying power will reset the GPS module and all configurable parameters to the factory/design defaults.

### Automatic Brightness Control

The brightness of the LCD backlight can be configured separately for day and night.  Control of day/night can be from the vehicle headlights or from a light dependent resistor.

When switching from day and night the brightness is slowly changed over a minute to avoid distracting the driver.

### Power and Signal Connector
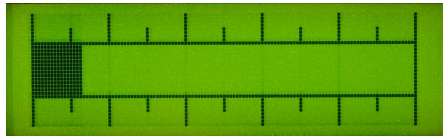
Pin 3 is ground

Pin 4 is +12V power input

**FRONT VIEW**

Pin 5 is the fuel injector input.  Connect to the negative wire of a fuel injector (this is pulled to ground when the injector solenoid is activated).

Pin 1 is vehicle driving lights input.  It will control the day/night brightness of the backlight.  This input is optional and is disabled if a light dependent resistor is used.

Pins 2 and 6 are spare input/output lines for future enhancement.  In this version they are left unconnected.

### Digital Clock

Shows the current time in 12 hour (AM/PM) format. The seconds are shown in the bottom right. The time is derived from the GPS signal and is accurate to within 100mS (ie, any error is undetectable to a human observer).

Pressing the Set button will allow adjustment of the time in steps of half an hour (ie, this sets the time zone – the exact time is always derived from the GPS satellites).

### Digital Speedometer with Over Speed Alarm

The digital speedometer will display your speed up to 250Kmh. The current setting of the over speed alarm is shown in the bottom right. An audible alarm (two beeps) will sound when this speed is exceeded and the speedo display will switch to reverse video. Built in hysteresis prevents it from continuously beeping if you stay near this speed.

The Set button will change the threshold or completely turn it off when set to zero.

### Fuel Economy Meter

The length of the black bar indicates the level of fuel consumption per kilometre travelled (equivalent to litres per 100 Km). The longer the bar the higher the fuel consumption so you would normally adjust your driving to keep the bar as short as possible.

The graph is not calibrated but the sensitivity (ie, full scale) can be adjusted by pressing the Set button. This allows you to adjust it to suit different vehicles.

### Distance and Time to a Destination

This display will count down the distance and time to a destination. The time is based on your average speed over the last ten minutes, so if you get onto a slow road the time to your destination will increase accordingly. This display is reasonably accurate; the error is about one kilometre in 100.

Press the Set button to setup the initial distance to the destination.

### Heading, Compass and Altitude

The number on the left is the current heading (direction of the vehicle) in degrees. The needle can show either the heading or point to the north – this is configured by pressing the Set button. The numeric reading will always show the heading.

Your current altitude in metres is shown on the right of the screen.

### Latitude and Longitude

Your current latitude and longitude. This is shown as degrees, minutes and fraction of a minute and updates continuously as you drive.

This is accurate to within a few metres depending on the number of satellites that can be found in the sky. This information (and much more) can be sent to your laptop via USB for use by navigation and mapping software.

### Current Signal Levels

Shows how many satellites should be in the sky and the number that is currently being used by the GPS module. The bar graph shows the signal level of every satellite that can be detected. The module will not use a satellite if its signal level is below a threshold.

By pressing the Set button you can adjust the backlight brightness for day and night conditions. Day/Night is determined by a light sensor or your car's headlights.

**All data is updated once a second.**
**The Up and Down buttons will switch between screens.**
**The currently showing screen and all settings are saved in non volatile memory and recalled on power up.**