Introduction to GPS and Its Applications

GIS LAB

MBDA/MBMA

What is GPS or Global Positioning System

- In the past people have to take extreme measures to keep track that they are on the right direction.

Marking the routes with piles of Stones or erected monumental stones

Marking the tress in the forest

Navigating by stars

But this kind of markings were helpful in good weather conditions only.

Simple hand held device/gadget known as GPS can give you a location and direction anywhere, anytime and in all weather conditions.

Description

- The Global Positioning System (GPS) is a Constellation of Earth-Orbiting Satellites Maintained by the United States Government for the Purpose of Defining Geographic Positions On and Above the Surface of the Earth.
- The only system today able to show you your exact position in any weather condition, anywhere.

Four Basic Functions

- Position and coordinates (Location)
- The distance and direction between any two waypoints, or a position and a waypoint
- Travel progress and Tracking reports (Navigating)
- Accurate Position, Distance, Area & time measurement

The GPS Device

- Display Screen and Buttons
- Battery Life
- Satellite Information
- Accuracy Information
- Unit Format Setting (Degree Decimal or Degree Minute Decimal or Degree Minute Second) / (feet/meter/Km/Miles)
- Mark Waypoint
- Track
- Download and Save Data

Key names and functions

①	Zoom keys
②	Back key
③	Thumb Stick™
④	Menu key
⑤	Power and backlight key

⑥	Mini-USB port (under weather cap)
⑦	Battery cover
⑧	Battery cover locking ring
⑨	Mounting spine

3: Use the **Thumb Stick** to move to and highlight items (pushing the stick away from you, toward you, left or right), then press it in towards the body of the etrex to “SELECT” the highlighted item

The device operates on two AA batteries.

Installing AA Batteries

You can use alkaline, NiMH, or lithium batteries. Use NiMH or lithium batteries for best results.

1. Turn the D-ring counter-clockwise, and pull up to remove the cover.
2. Insert the batteries, observing polarity.

3. Replace the battery cover, and turn the D-ring clockwise.
4. Hold ⏻ (5)
5. Select **Setup** > **System** > **Battery Type**.
6. Select **Alkaline**, **Lithium**, or **Rechargeable NiMH**.

Important information to remember:

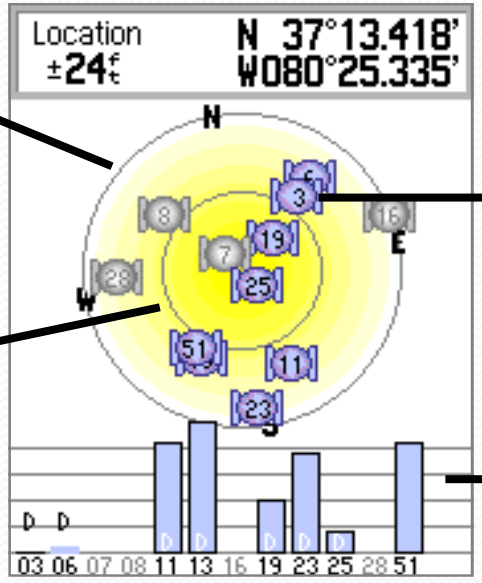
- **Keep in mind that the GPS requires a clear skyview (clouds don't matter) to work well. Stay**

  clear of tall buildings, trees or similar that might block your (and therefore the GPS's) view of the sky.

- For a GPS to locate itself, it is required to 'see' to at least four (4) satellites. You can view how many satellites the GPS is 'seeing' by selecting the **SATELLITE** menu icon (the last icon on the main functions menu screen). This will bring up a screen displaying the location of satellites 'seen' by the GPS at that time (below shows that the GPS can 'see' 12 satellites at that particular time).

The outer circle represents the horizon.

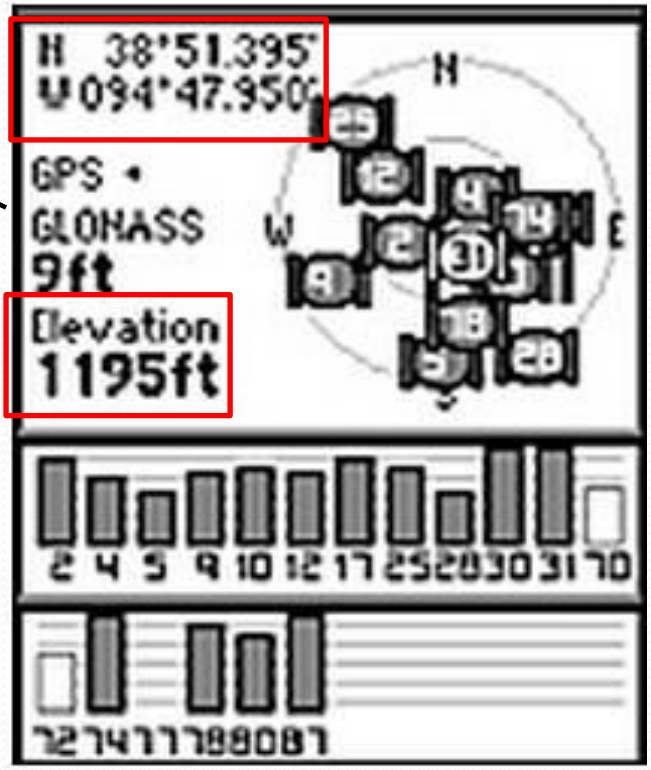
The inner circle is a location 45 degrees from the horizon.



The number of each overhead satellite is shown.

The strength of each satellite signal is shown.

Accuracy



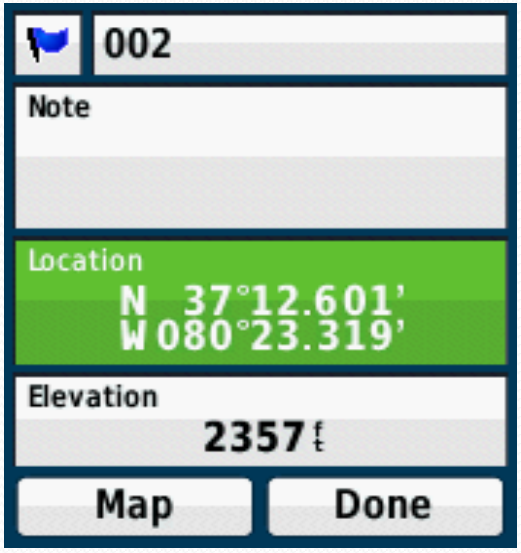
Setting of Position Format

The functions of the GPS

1. Using the map function

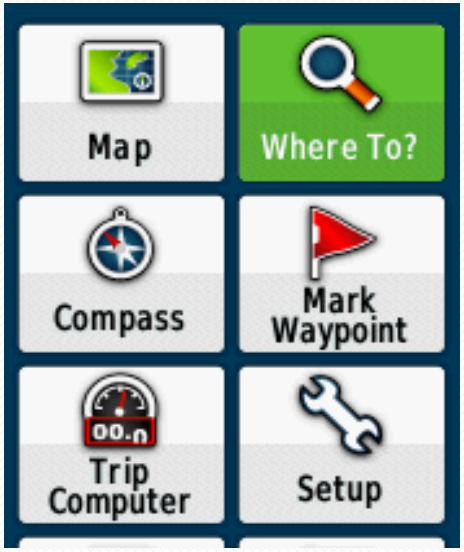
2. Using the waypoint functions

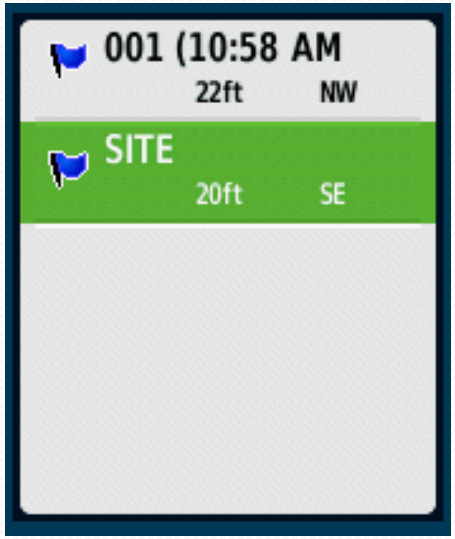
2.1 Marking a waypoint

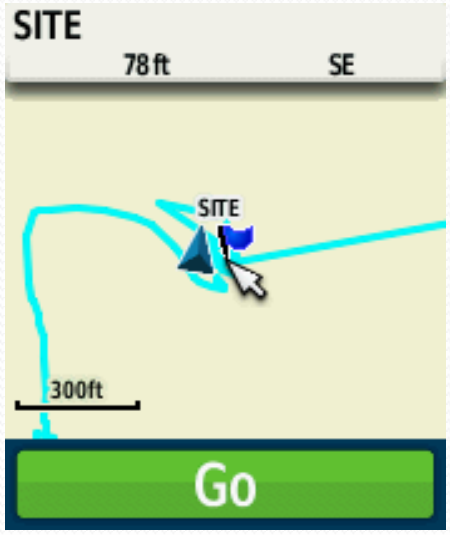


Long Press to Mark Waypoint

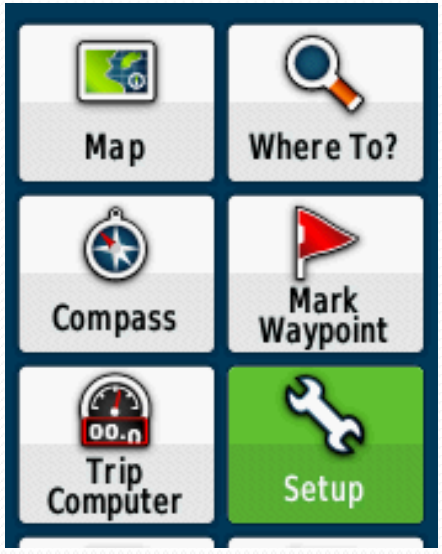
2.2 Going to a Waypoint

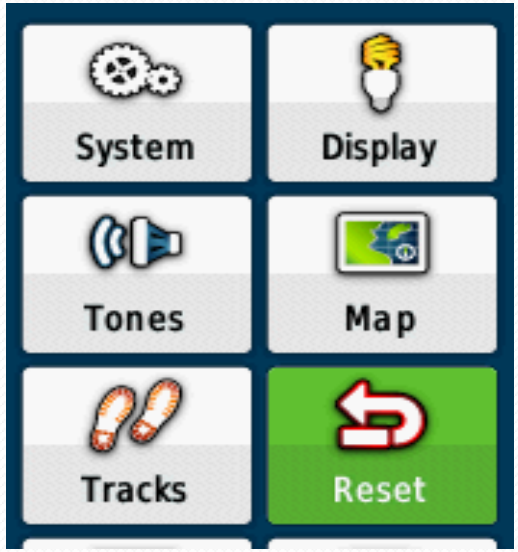


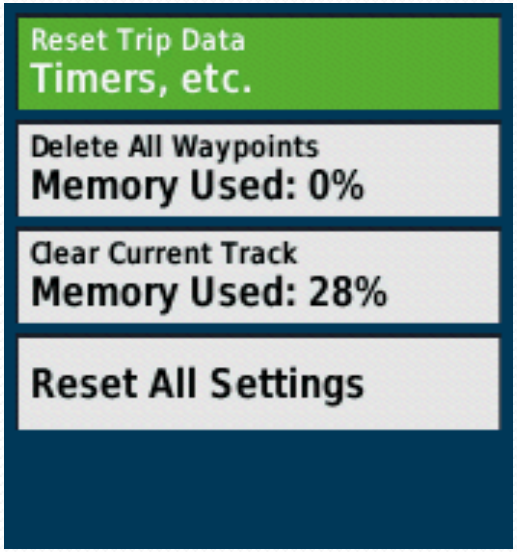


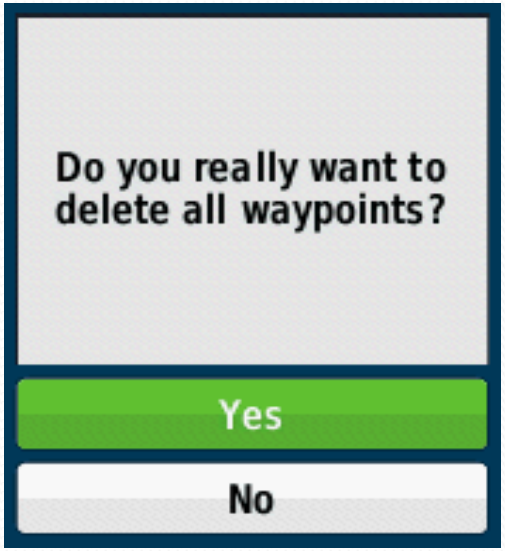


2.3 Deleting a Waypoint

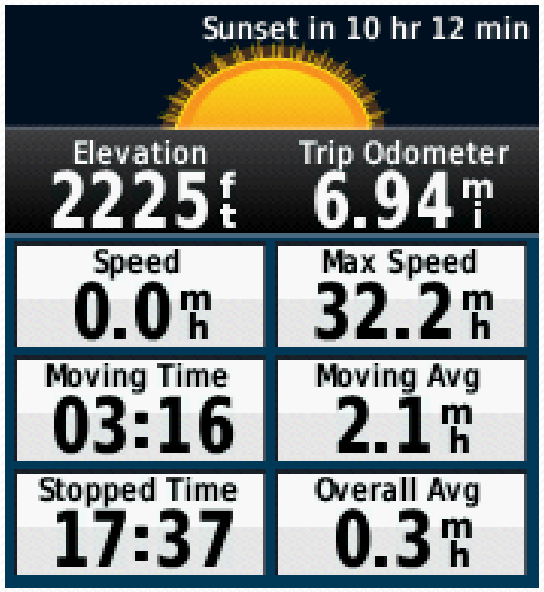




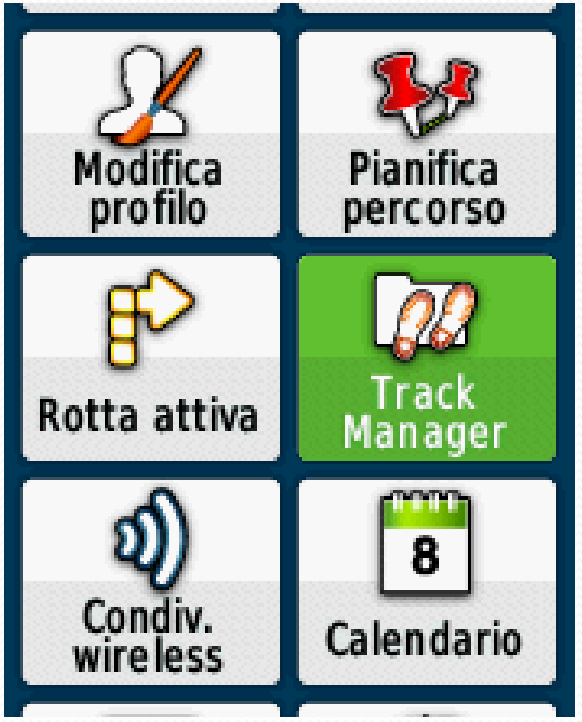




3. Viewing the ‘behind the scenes’ data



4. Viewing and saving your track



4.1 Tracking

4.2 Save Track

Transferring data between a computer and the GPS

Devices

USB Cable

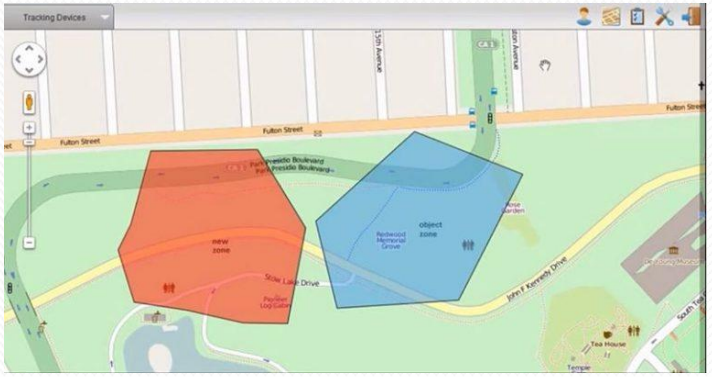
Device Software

Systems

Application of GPS

- **Locating**
  - Find School
  - Find Hospital
  - Find Shop
  - Find Home
  - Etc
- **Navigating**
  - From My Location to Market
  - From My Location to Nearest Hospital
  - From Shillong to Tura
  - Etc

- **Mapping**
  - Boundary Mapping
  - Agricultural Land Mapping
  - Plot Mapping
  - Forest Area
  - Etc



Thank
you