



User Guide FotoMapr/FotoSpot Rev 1.0

**Models: FM-B101/FM-B102
FM-C101/FM-C102
FS-B101/FS-B102
FS-C101/FS-C102**



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1. Name of Parts

1.1 FotoMapr Front and Right View



Fig-1.1 FotoMapr front and right view

1.2 FotoMapr Front and Left View



Fig-1.2 FotoMapr Front and Left View

1.3 FotoSpot Front View



Note: Make sure the micro SD card is always plugged in for guaranteed operation.



2. Navigation of Screens:

- To turn on the FotoSpot/FotoMapr, long press the 'OK' button for about 4 seconds and then release it when unit is turned off.
- To enter the main menu, press 'OK' button twice when in the 'Home page' (Please refer Fig-3.2).
- To navigate to different menu items, press the 'up' button or the 'down' button.
- To view the sub menu of a displayed menu item, press the 'OK' button once.
- To highlight any sub menu item, press the 'up' button or the 'down' button.
- To select the highlighted sub menu item, press the 'OK' button once.
- To go back to the main menu from any sub menu click on 'OK' button twice.
- To turn off the FotoSpot/FotoMapr, press the 'OK' button for about 4 seconds and then release it when unit is turned on.

3. Menu Options

The different menu items in FotoMapr are, Home, GPS, Compass, Memos, Settings and Date/Time. The screens for these menu and sub menu options are shown below.

3.1 Home Menu Item: The ‘Home menu item’ is shown in Fig-3.1. As the name suggests, the Home menu item will lead you to the ‘Home page’. The ‘Home page’ is shown in Fig-3.2. As soon as FotoSpot/FotoMapr is powered on, the ‘Home page’ as shown in Fig-3.2 is displayed. If the user has navigated to some other menu item, then the user needs to get back to the ‘Home menu item’ through the ‘up button’ or ‘down button’ to reach the Home page. Once he reaches the home menu item he needs to press the ‘OK’ button once to get back to the home page.

From Home page to reach the Home menu item the ‘OK’ button should be clicked twice.



Fig-3.1 Home Menu Item

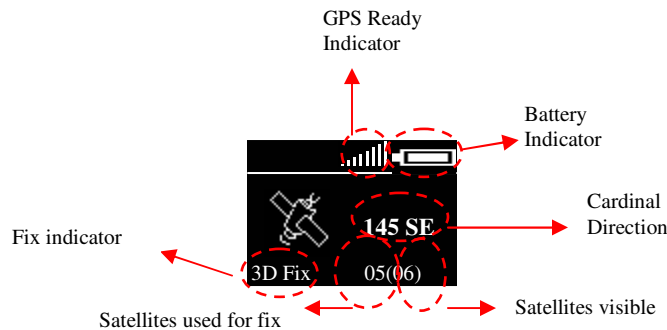


Fig-3.2 Home Page

3.2 GPS Menu Item: GPS Menu item is shown in Fig-3.3. When we select this menu item and press ‘OK’ button the Latitude and Longitude information is displayed as shown in Fig-3.4. In the case of FotoMapr, the latitude and longitude values of the selected Coordinate system are shown.



Fig-3.3 GPS Menu Item



Fig-3.4 GPS Page

3.3 Settings Menu Item: The ‘Settings menu item’ is shown in Fig-3.5. The ‘Settings menu item’ is used to change the settings of FotoMapr/FotoSpot.

To navigate to the ‘Settings menu item’ press the ‘up’ button or ‘down’ button from any where in the main menu. To view the sub menu items of ‘Settings menu item’ press the ‘OK’ button when on the ‘Settings menu item’. The screen shown in Fig-3.6 is displayed.



Fig-3.5 Settings Menu Item

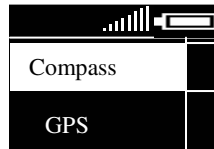


Fig-3.6 Settings Sub-Menu

Inside the ‘Settings’ sub-menu’, the user can navigate to any sub-menu item by using the ‘up’ button or the ‘down’ button. The ‘OK’ button can be pressed to enter the sub-menu item page. The sub menu options under Settings menu item are Prev, Compass, GPS. When at ‘Prev’ sub menu option if the user presses the ‘OK’ button control gets back to the main ‘Settings’ page as shown in Fig-3.5.

3.3.1 Compass Page: The compass page has three options. Prev, Calibrate, Tru/Mag in case of FotoMapr and only Prev and Calibrate in case of FotoSpot as shown in Fig-3.7.

If ‘Prev’ is selected, by using the ‘up’ button or ‘down’ button, and the ‘OK’ button is pressed, it will go to the previous page, i.e. ‘Settings’ sub-menu’(Fig-3.6).

If ‘Calibrate’ is selected and the ‘OK’ button is pressed, the screen shown in Fig-3.8 comes up where ‘Press (OK) To Start Calib’ is displayed. When ‘OK’ button is pressed, the screen shown in Fig 3.9 is displayed. Now compass calibration should be done as

suggested in section 5.1 ‘Compass Calibration Procedure’. Once the calibration is done press the ‘OK’ button to stop the calibration. The screen shown in Fig-3.10 will be displayed for 4 seconds after that. Now the unit should be restarted by keeping the ‘OK’ button pressed for sometime which will switch off the unit. Press the ‘OK’ button again for few seconds to start the unit. Now the unit will show calibrated values.



Fig-3.7 Compass page

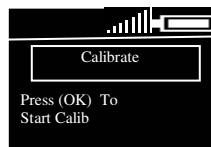


Fig-3.8 Calibration Page

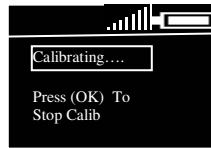


Fig-3.9 Calibration in progress



Fig-3.10 Calibration Stopped

3.3.1.1 True North/MagNorth: In FotoMapr when ‘True/Mag’ is selected in Compass page (Fig-3.7), screen in Fig 3.11 is shown where options Prev, ‘True’ and ‘Magnetic’ are shown. After navigating to ‘True’ the user can select it by pressing the ‘OK’ button. Now when we get back to the home page we see that True north has been returned and is displayed as ‘True’ on the screen. Similarly when ‘Magnetic’ is selected it will return ‘Magnetic north’ which is visible on the home page as ‘MAG’ as shown in Fig-3.12 .

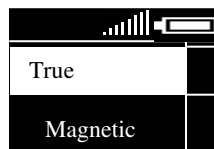


Fig-3.11



Fig-3.12

3.3.2 GPS Page : In FotoMapr when we navigate to ‘GPS’ in Settings sub-menu (Fig-3.6) and press ‘OK’ we see a screen with two options ‘CoordSys’ and ‘Log Interval’ as shown in Fig-3.13 . In case of FotoSpot, only ‘Log Interval’ is seen.

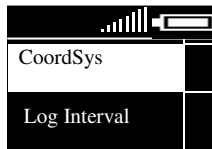


Fig-3.13

3.3.2.1 CoordSys: When the user selects ‘CoordSys’ the options Prev, G’detic (DMS), G’detic (Dec), MGRS, UTM are displayed as shown in Fig-3.14.

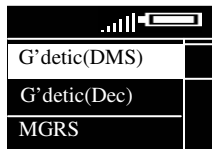


Fig-3.14

These options set the Coordinate System in the selected format. Suppose G’detic(DMS) is selected by pressing the ‘OK’ button the coordinates are set in the degree, minute, second format as in

N34 10 23.25

118 50 2.20

These coordinate values can be seen by going to the GPS menu item as described in section 3.2. When we select the GPS menu item by pressing ‘OK’ button the coordinate values will be shown as in Fig-3.4.

G’detic (DMS) means Geodetic in Degrees, Minutes and Seconds

G’detic (Dec) means Geodetic decimal format.

MGRS means Military Grid Reference System.

UTM means Universal Transverse Mercator.

3.3.2.2 Log Interval: In settings sub-menu screen (Fig-3.6) when ‘GPS’ is selected by pressing the ‘OK’ button, the screen shown in Fig-3.13 is displayed. Now when ‘Log interval’ is selected and the ‘OK’ button is pressed, screen shown in Fig-3.15 is displayed. The available options are Prev, OFF, 1 Sec, 2 Sec, 5 Sec, 10 Sec, 15 Sec and 30 Sec.



Fig-3.15

When ‘OFF’ is selected the GPS data is not logged. This is the factory setting. To log the GPS data the unit must acquire a fix. By selecting one of the time intervals like ‘10 Sec’ the GPS data is logged approximately every 10 seconds after receiving the fix. The GPS data is logged into a file which is stored in the SD card, in the directory ‘EKA’. The file extension is .GPX.

A new .GPX file is created in one of the two scenarios.

- 1) Every time the unit is restarted and it acquires a fix.
- 2) When powered on and ever time the Log Interval is set to OFF and switched back to one of the time intervals.

An example of a .GPX file is 08071101.gpx. The first two digits represent the month, the third and fourth digits represent the day of the month, fifth and sixth the year and the last two digits the file of the day. So if you restart the unit ten times a day and there was fix every one of those times, then ten files will be created. The latest file would be 08071110.gpx.

3.4 Compass Menu Item: Compass menu item is as shown in Fig-3.16. Once at this screen if ‘OK’ button is pressed the screen shown is that of Fig-3.17. The vertical bar corresponds to the ‘pitch’ value and horizontal bar corresponds to the ‘roll’ value.

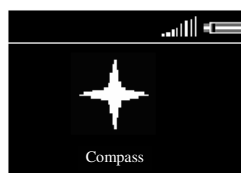


Fig-3.16 Compass Menu Item



Fig-3.17 Compass Page

3.5 Memos Menu Item: The Memo menu item screen is as shown in Fig-3.18. This is present only in FotoMapr. When at this screen pressing 'OK' button will take us to the screen where the various memo fields created by the user are displayed (Fig-3.19).



Fig-3.18 Memos Menu Item

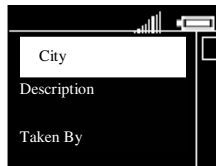


Fig-3.19 Memo Fields

We can reach different memo fields by using the 'up' and 'down' buttons and once we reach (highlight) the memo field of our choice, by pressing the 'right' button we can see the different values for that specific Memo field which are displayed in the 'Memo values Screen' as shown in Fig-3.20. Here also values can be traversed by using the 'up' and 'down' button and selection is done by pressing the 'OK' button. To go back to the screen where the various memo fields are listed (Fig-3.19) 'left' button has to be pressed.

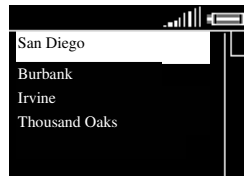


Fig-3.20 Memo Values Screen

Now to go back to the main Memo screen (Fig-3.18) you need to press the 'OK' button when on any of the options. Once the various memo fields and their values are chosen

images can be taken. Later through offline memo tagging the memo fields/values chosen by the user are associated with the image. Provision for five memo fields has been provided in FotoMapr and the Memo fields and their values can be created as per the user's choice.

For detailed information of offline memo tagging refer to the section 4.2 *Offline Memo tagging*.

3.6 Date/Time Menu Item: The Date/Time screen is as shown in Fig-3.21. This is used to set the date and time on the unit. Once the user reaches the Date/Time screen and presses the 'OK' button he will be lead to the screen where options like 'Prev', 'Set Date' and 'Set Time' are displayed. User can traverse through these options using the 'up' and 'down' buttons. Once the user selects the 'Set Date' option by pressing the 'OK' button the screen shown in Fig-3.22 will be displayed where month, date and year are shown.



Fig-3.21 Date/Time Screen

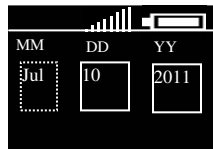


Fig-3.22 Date screen.

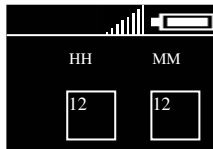


Fig-3.33 Time screen

In the 'Date' screen the month block is highlighted by default. If the month has to be changed then press the 'OK' button when the month block is highlighted and then press the 'up' or 'down' button to change the month. Once you reach the month of your choice then press 'OK' button which will set the month to that value. If day has to be changed then press the 'right' button which will highlight the 'day' block. Now press 'OK' button

and then press the 'up' button or the 'down' button to increment or decrement the date and once date of your choice is reached press 'OK' button to set the date value. To move across the month, date and year the traversal mode has to be enabled which can be done by using the 'right' button which will display the traversal button as shown in Fig-3.34.



Fig-3.34

Once this traversal button is displayed pressing the 'up' or 'down' button will enable the traversal and when this traversal button is shown pressing the 'OK' button will get the control back to the screen where the options 'Prev', 'Set Date', 'Set Time' are displayed. Traversal within the time screen is similar to Date screen traversal.

4. Getting Started

The following steps would help the first time user to get started with the FotoSpot/FotoMapr.

4.1 FotoSpot/FotoMapr B100

1. Check if the FotoSpot/FotoMapr has a microSD card in the card slot. Please refer to Fig-1.1 to locate microSD card slot.
2. Mount the FotoSpot/FotoMapr on the hotshoe of the camera, as shown in Fig-4.1, to get accurate compass reading.



Fig-4.1 Mounting of FotoSpot/FotoMapr B100 on hotshoe of camera

3. Calibrate the FotoSpot/FotoMapr, mounted on the hotshoe of the camera. Please refer section 5.1 for detail calibration instructions.
4. Take the FotoSpot/FotoMapr and the camera outside into an open area.
5. Turn on the FotoSpot/FotoMapr and wait till the Home Page (shown in Fig-3.2) is displayed. Then wait for about 2 minutes to get a fix.
6. Once the FotoSpot/FotoMapr gets a fix, it beeps and the “No Fix” indication turns to either a “2D Fix” or a “3D Fix” depending on the type of fix.
7. To transfer the GPS data and compass data to the camera, the B100 has to be paired to the camera via a Bluetooth dongle.
8. To pair the Bluetooth make sure that the camera is turned off and the Bluetooth dongle is not connected to the remote terminal of the camera (please refer the camera documentation for the location of the remote terminal).
9. Make sure the FotoSpot/FotoMapr B100 is powered on and the “Home Page” (shown in Fig-3.2) is displayed. Also make sure that the FotoSpot/FotoMapr is mounted on the hotshoe of the camera.

10. Insert the Bluetooth dongle (that comes with the FotoSpot/FotoMapr B100) into the remote terminal of the camera. Make sure the connector on the dongle goes all the way into the connector on the camera.
11. Then turn on the camera. The Bluetooth dongle pairs with the FotoSpot/FotoMapr B100 in less than 60 seconds.
12. If the pairing is successful, a Bluetooth icon is displayed beside the “GPS Ready Indicator” on the top right side of the screen. This is indicated by the red circle as shown in Fig 4.2.

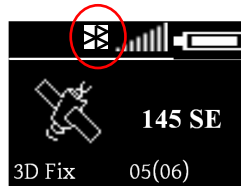


Fig 4.2 Bluetooth icon indication

13. The Nikon camera shows the “GPS” icon on its screen. (Please refer camera documentation for further details).
14. Once the pairing is successful, the GPS and Compass information is transmitted continuously to the camera.
15. If the camera has the geotagging capability, it will embed the most recent GPS and Compass information whenever a picture is taken.
16. For cameras which don't have geotagging capability, the GPS data is logged by the FotoSpot/FotoMapr into the .GPX file that can be used later on to geotag the pictures. This is called offline geotagging. Please refer to the section 5.2 for more details.
17. For FotoMapr units, offline memotagging is available. Please refer to the section 5.3 for more details.

4.2 FotoSpot/FotoMapr C100

1. Check if the FotoSpot/FotoMapr has a microSD card in the card slot. Please refer to Fig-1.1 to locate microSD card slot.
2. Mount the FotoSpot/FotoMapr on the hotshoe of the camera, as shown in Fig-4.3, to get accurate compass reading.



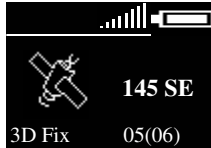
Fig-4.3 Mounting of FotoSpot/FotoMapr C100 FotoMapr on hotshoe of camera

3. Calibrate the FotoSpot/FotoMapr, mounted on the hotshoe of the camera. Please refer section 5.1 for detail calibration instructions.
4. Take the FotoSpot/FotoMapr and the camera outside into an open area.
5. Turn on the FotoSpot/FotoMapr and wait till the Home Page (shown in Fig-3.2) is displayed. Then wait for about 2 minutes to get a fix.
6. Once the FotoSpot/FotoMapr gets a fix, it beeps and the “No Fix” indication turns to either a “2D Fix” or a “3D Fix” depending on the type of fix.
7. Connect one end of the cable to the USB port (please refer Fig 1.2 for location of USB port) of the FotoSpot/FotoMapr C100 and the other end to the remote terminal of the camera (please refer the camera documentation for the location of the remote terminal).
8. Once the cable is connected, the GPS and Compass information is transmitted continuously to the camera.
9. If the camera has the geotagging capability, it will embed the most recent GPS and Compass information whenever a picture is taken.
10. For cameras which don't have geotagging capability, the GPS data is logged by the FotoSpot/FotoMapr into the .GPX file that can be used later on to geotag the pictures. This is called offline geotagging. Please refer to the section 5.2 for more details.
11. For FotoMapr units, offline memotagging is available. Please refer to the section 5.3 for more details.

5. Detailed Description

5.1 Compass Calibration Procedure

1. Turn on the unit and wait till the following screen is displayed.



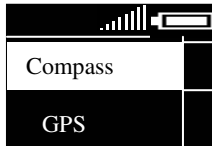
2. Press the 'OK' button twice. The 'Home' page will be displayed on the screen as shown below.



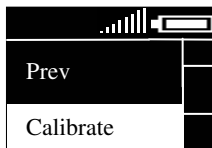
2. Navigate to the 'Settings' page by using 'up' or 'down' buttons.



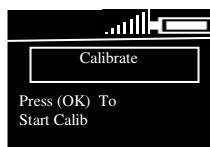
3. Press the 'OK' button to enter the 'Settings' page.
4. Navigate to 'Compass' option by using 'up' or 'down' buttons.



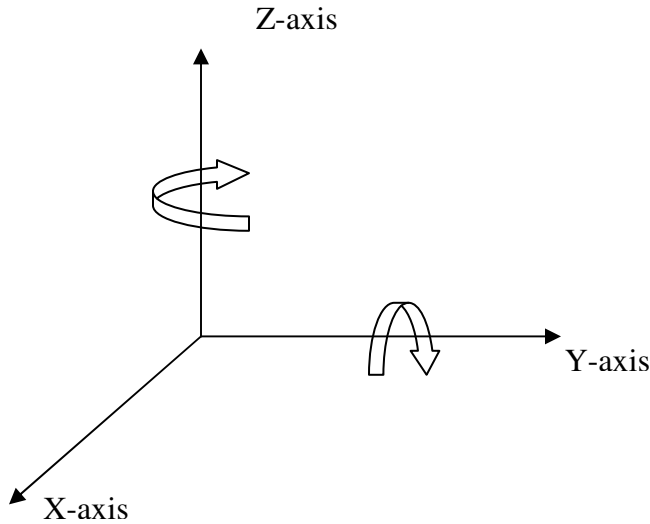
5. Press the 'OK' button to enter the 'Compass' page.
6. Navigate to 'Calibrate' option by using 'up' or 'down' buttons.



7. Press the 'OK' button to enter the below 'Calibration' page and again press 'OK' button to start Compass Calibration.



- Once the calibration routine starts hold the FotoMapr/FotoSpot, mounted on the camera, in both hands with the display pointing the user. Then start rotating 360 degrees along 'Z' axis followed by 360 degrees along the 'Y' axis as shown below.



Press the 'OK' button to stop Compass Calibration, the following screen will be displayed for about 4 seconds after that.



- Restart* the unit to complete the calibration process.

* To restart , turn off the unit by pressing and holding the 'OK' button for 5 seconds. Then turn on the unit by pressing and holding the 'OK' button for about 5 seconds.

Note: To calibrate the compass accurately, mount the unit on the hotshoe of the camera and turn on the camera.



5.2 Offline Geotagging

If a camera doesn't have the geotagging capability, it can still be used for geotagging images using the FotoSpot/FotoMapr B100 and FotoSpot/FotoMapr C100. To accomplish this, the user would need a FotoSpot/FotoMapr unit, a camera and the MySnapMap software. The following steps need to be followed.

1. The date and time on the FotoSpot/FotoMapr unit and the camera should be synched. This can be achieved by manually setting the time on the camera to be the same as that of the FotoSpot/FotoMapr. To set time on the FotoSpot/FotoMapr please refer section 3.6.
2. Then the logging has to be enabled on the FotoSpot/FotoMapr unit. Please refer to section 3.3.2.2 for further details on logging.
3. Once the FotoSpot/FotoMapr acquires a fix, pictures can be taken using the camera.
4. Then by using the MySnapMap software, these pictures can be geotagged(Refer to the section 'Plotting on the Map' in MySnapMap userguide).

5.3 Offline Memotagging

Memos are created by users to store information/comments associated with images. Thus offline memotagging means creating memos and embedding them in images using the software on the PC. The way this is achieved is as follows.

The user will have to go to the Memos section on the FotoMapr and select a memo field and a corresponding value for this memo field .There are 5 such memo fields which can be used for this purpose. Once the memo field and its value are set he/she can start taking photographs.

We have a data file called the EDT file where entries are made corresponding to the memo field selections made by the user. An entry is created in this file every time the user goes to the memos section and selects a memo field and its corresponding value.

Format of the edt file

Timestamp1, Filename, Num_Memo_Fields>Memo_Field_Name_1-
Memo_Field_Value,



Memo_Field_Name_2-Memo_Field_Value,
 Memo_Field_Name_3-Memo_Field_Value,

 Memo_Field_Name_n-Memo_Field_Value\r\n

Timestamp2,Filename,Num_Memo_Fields>Memo_Field_Name_1-Memo_Field_Value,
 Memo_Field_Name_2-Memo_Field_Value,
 Memo_Field_Name_3-Memo_Field_Value,

 Memo_Field_Name_n-Memo_Field_Value\r\n

.
 .
 .

TimestampN,Filename,Num_Memo_Fields, Memo_Field_Name_1- Memo_Field_Value,
 Memo_Field_Name_2-Memo_Field_Value,
 Memo_Field_Name_3- Memo_Field_Value,

 Memo_Field_Name_n-Memo_Field_Value\r\n

Explanation of the content

Timestamp: Denotes the date and time when the memo field and its value were selected.

Filename: The filename is the image name and is optional because it is present only in the wi-fi version of FotoMapr and in Bluetooth and Cable version the word (null) is stored.

Num_Memo_Fields>: Number of memo field entries for that particular timestamp.

Memo_Field_Name_1: The first memo field chosen by the user.

Memo_Field_Value: The corresponding memo field value chosen by the user.

Delimiters used

‘:’ is used to delimit the time fields.

‘>’ is used to delimit the ‘number of memo fields’.

‘-’ is used to delimit the memo field and memo value.



‘,’ is used to delimit a pair of memo field and memo value and other fields.

Example scenario

Suppose there are 5 memo fields with the following values

Memo_Field_Name_1: Place

Memo_Field_Value : Los angeles

Memo_Field_Value :Thousand oaks

Memo_Field_Value : burbank

Memo_Field_Value : Washington DC

Memo_Field_Name_2: Museum

Memo_Field_Value : Ronald reagan

Memo_Field_Value : smithsonian

Memo_Field_Value : natural history

Memo_Field_Value : john f kennedy

Memo_Field_Name_3: Taken by

Memo_Field_Value : Harry

Memo_Field_Value : Daniel

Memo_Field_Value : Lucy

Memo_Field_Value : Sam

Memo_Field_Name_1: Description

Memo_Field_Value : Sacred place

Memo_Field_Value : Came here on my birthday

Memo_Field_Value : This place is beautiful

Memo_Field_Value : Made of marble

Memo_Field_Name_1: Age of the monument in years

Memo_Field_Value : 10

Memo_Field_Value : 100



Memo_Field_Value : 40

Memo_Field_Value : 750

Now suppose the user selects the memo field 'Place' and value as Angeles on 07/08/2011 at 10:00:00 and takes images then the entries created in the edt file is as below:

07:08:2011 10:00:00 , (null) , 5>Place-Los Angeles, Museum-Ronald Reagan,
Taken by-Harry, Description-Sacred Place, Age of monument in years -10

Note: Default value (first available value) is written for Memofields whose value was not selected by the user.

Now at 10:05:10 suppose he/she selects the memo field 'Taken By' and value as 'Daniel' there will again be an entry in the .edt file as below.

07:08:2011 10:00:00,(null),5>Place-Los Angeles,Museum-Ronald Reagan, Taken
by -Harry, Description-Sacred Place, Age of monument in years10

07:08:2011 10:05:10 ,(null),5>Place-Los Angeles,Museum-Ronald Reagan,Taken
by -Daniel,Description-Sacred Place, Age of monument in years-10

Note: Memofield values are retained until they are changed by the user in the unit.

Once user decides to memotag the images this .edt file should be imported to the PC and copied into the folder where images which need to be memotagged are stored. Later on Offline memotagging can be achieved by matching the timestamp of the image with that of the .edt entries.

Sample listing of an EDT file

2011:07:08 00:34:46,(null),4>city-Thousand oaks,date-12/06/1991,description-must visit
again,age of the monument-200 years,museums-John F kennedy museum

2011:07:08 00:41:44,(null),4>city-Thousand oaks,date-11/10/1981,description-must visit
again,age of the monument-200 years,museums-John F kennedy museum

2011:07:08 00:50:49,(null),4>city-Thousand oaks,date-11/10/1981,description-must visit
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2011:07:08 00:50:57,(null),4>city-Thousand oaks,date-11/10/1981,description-nice place,age of the monument-200 years,museums-John F kennedy museum

2011:07:08 01:04:17,(null),4>city-Thousand oaks,date-11/10/1981,description-nice place,age of the monument-200 years,museums-John F kennedy museum

2011:07:08 01:04:24,(null),4>city-Thousand oaks,date-11/10/1981,description-nice place,age of the monument-200 years,museums-John F kennedy museum