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**SPORTSTAR**

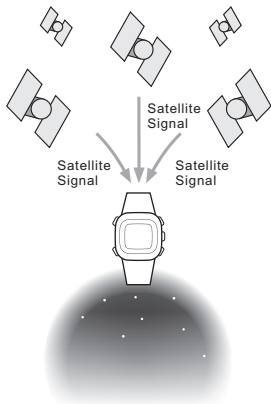
# ***GLOBAL NAVIGATOR II***

***Instruction Manual***

SPORTSTAR is not for diagnostic or therapeutic use.  
Always consult a physician before beginning an exercise program.

## A. Introduction

## A-01



Nav Master FT-1 combines personal training and navigation functions into one compact wrist computer. It is among the world's smallest of its kind and yet fully water resistance. It can withstand immersion in 30 meters of water. The GPS navigation function locates and tracks your position wherever you go. Nav Master FT-1 is powered by a highly sensitive chip that tracks your position even at weak signal condition. It can be adopted for various kinds of outdoor activities such as Jogging, Running, Biking, Hiking, Skiing, Sailing, Hunting, etc.

The HRM listens to your physical condition and gives you warning instantly when you do exercise. This package comes with a dedicated USB cable. This USB clip cable is used for fast battery charging and data transfer between your Nav Master FT-1 and PC in a snap. Data transfer is done by a PC software, GPS Master. It assists you with workout analysis, route planning and training summary reporting. It is a helpful partner that accompanies you to explore your physical limits and beyond.

## A. Introduction: Warnings and Cautions

## A-02

### WARNING !

- Be sure that you fully understand the functions and limitations of this product before using it.
- The performance of this product, like most Global Positioning System equipment, depends on the satellites operated by the government of the United States. The satellite system may be subject to change which could affect the accuracy and performance of this product and all GPS equipment.
- This product is an assistant device for navigation. It is NOT a substitute for getting the navigating information from charts, maps, observations and experienced navigators. DO NOT use this product for navigation that requires precise navigation or is used for vital matters.
- This Watch is a supplementary device for measuring heart rate; it is NOT a substitute for medical devices. You should periodically compare the heart rate readings acquired by this watch with the readings from a doctor.
- Consult a doctor or trainer before setting your Upper and Lower heart rate limits.
- This product, like most electronic or magnetic devices, may interfere with the pacemaker. Therefore, it is safe for patients with pacemakers to check with their doctors before using this product.
- In case of doubt about the directions and positions of the way of navigation, consult the park administration office before starting the navigation.
- DO NOT expose your watch to extreme conditions.
- DO NOT use this Watch for commercial or professional purposes.
- DO NOT charge or connect the unit with the USB clip when it is wet. Wipe dry and air dry before using.
- Although this watch is water resistant, it is not designed for swimming and diving. The GPS does not work under water.

### CAUTION

- This product can only locate positions in an outdoor environment or open area. The more open the area is, the more accurate and faster information it can collect to locate the position.
- The first position can be located within 1 minute at cold start, and 10 seconds or at hot start.
- To use workout and navigation functions with GPS, turn on the GPS receiver and get the position updated in advance. Otherwise, the GPS related features are not working according to the current situation as the receiver collects satellite data constantly as long as the GPS of the watch is on.
- The Altitude is taken at the Mean Sea Level in meter/feet.
- DO NOT take heart rate measurement when diving or under water.
- DO NOT use hand cream on the skin that is in contact with the sensor; it will insulate the transmission of the signals from the skin to the sensor.

**FCC  
Compliance  
Statement**

**(For US)**

• This device 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 undesirable operation.

• **WARNING:** Changes or modifications to this watch not expressly approved by the party responsible for compliance could void the user's right to operate the equipment.

• **NOTE:** This equipment 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 radiates radio frequency energy. If it is not installed and used in accordance with the instructions, it 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 recommended to reduce the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation space between the watch and the receiver.
- Consult the dealer or an experienced radio/TV technician for help.

**CARE**

**MAINTENANCE**

- The watch is carefully designed and produced. In order to utilize the features, it is advisable to use the watch in conformity with the notes below:
- Avoid exposing the watch to extreme conditions for an unreasonable time and avoid rough use or severe impact on the watch.
- Clean the watch occasionally with a soft and moist cloth.
- Brush the clip contacts at the bottom of the watch regularly. Dirt building up on the surface of the contact points may affect normal charging and data transfer.
- DO NOT expose the watch to strong chemicals such as gasoline and alcohol as they will damage the watch.
- Store the watch in a dry place when it is not in use.
- Under a high electrostatic discharge environment, the operation of the PC connection may not be maintained. It is advisable for the user to reconnect the watch to the PC again until normal operation resumes.

## **A. Introduction**

- Water resistance is up to 30 meters
- Heavy duty mineral glass lens
- Compact size: 46 x 61 x 16 mm and Weight 60g only.
- Dual-processor design optimizes the battery life. The Battery with a fully single charge keeps the watch running for a year without using GPS function.

### **• Workout functions**

- 5 fully customized profiles for fast workout setup. The profiles can be configured by the watch or through GPS Master.
- 3 configurable Views (screens) for each profile
- 3 programmable fields for each view
- A single workout log can have a maximum of 44,470 waypoints. If the number of workout log files increases, the total number of waypoints is slightly reduced. The memory of this watch can keep 114 workout logs.
- Smart Lap

## **A-05**

### **• Heart Rate Monitor**

- By Finger Touch
- 4 target heart rate zones
- Above/In/Below Zone timer
- Audio above/In/Below zone alert

### **• Navigation functions**

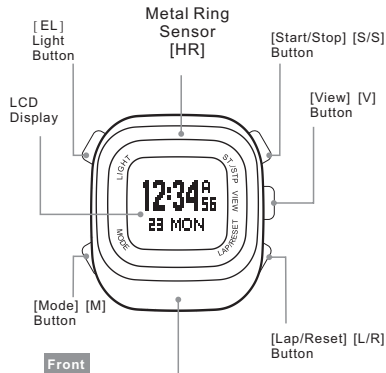
- Total 10 paths (routes) with a maximum of 99 waypoints for each path
- 3 Navigation Modes: Waypoint, Forward and Backward
- Heading pointer
- Current speed, distance to waypoint and destination, estimated time of arrival (ETA)
- Manual and automatic waypoint marking (Smart Lap)

### **• Electronic Compass**

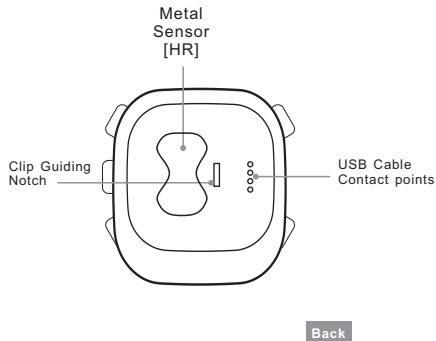
- North Pole pointer
- 1 degree resolution with 16 cardinals

## B. Unit Overview: Name of the Parts (Watch)

**B-01**



GPS antenna location – always direct antenna towards sky for best GPS reception



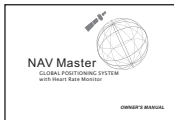


## ***B. Unit Overview:***

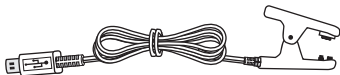
***B-02***



CD ROM



Manual



USB Cable

### **CD ROM**

- PC application software GPS Master
- The detail instruction on how to use the watch

### **Manual**

- Instruction on how to use the watch

### **USB cable**

- To charge the battery of the watch
- To connect to and communicate with the PC

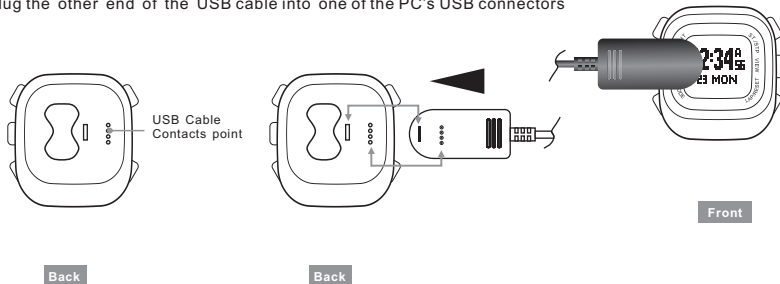
## C. Charge the Battery

### C-01

The watch has a built-in rechargeable lithium polymer battery. Charge it for at least 3 hours when it is going to be used for the first time. When the battery is empty, the charging cycle will be completed in less than 2 hours. When the battery is not empty, the charging time will be shorter. A 15-minute quick charge may keep GPS running for approximately 1.5 hours. The performance of the battery with a single charge depends upon its usage. If the GPS is not activated, it can run for approximately one year. If the GPS is turned ON, the battery is expected to run for approximately 14 hours. This rechargeable battery is good for at least 500 charging cycles. Battery gauge function is provided. The approximate remaining time left, when working with GPS, is calculated by pushing the [V] button once in the TIME mode. This can only serve as a rough estimation. The actual life may vary with change of the operating conditions. If the battery level is nearly empty, GPS function will be disabled automatically. At this stage, the watch can still run for another 2 weeks with normal time keeping functions.

To charge the battery:

- 1) Align the clip guide and pins with the notch and contacts at the bottom of the watch
- 2) Make sure the clip is secured
- 3) Plug the other end of the USB cable into one of the PC's USB connectors



### **Waypoint**

Waypoints are a set of coordinates that identify points in a physical space. For the purpose of terrestrial navigation, these coordinates usually include longitude and latitude, and sometimes altitude. The Waypoint name is limited to 10 characters long. It can be named or renamed in the GPS Master. Renaming can be done easily by just kicking and dragging on the waypoint names.

### **Path**

Path is a collection of waypoints. It can be treated independently as scattered waypoints; or linked in sequential order (either forward or backward). Linked waypoints form a PATH (or route). Nav Master has 10 Paths. Each path has a maximum of 99 waypoints. Paths can be created by Lap-To-Waypoint function (Smart Lap). Or they can be created by GE (Google Earth) or GMaps (Google Maps) then they are transferred to the watch through the GPS Master. The Path name can be 32 characters long.

### **Workout log**

After workout or navigation has started, Nav Master collects all data into the Workout log. The sampling interval is controlled by the values in the TrackLog setting. Workout logs contain: starting time and date, workout summary, lap details, speed, distance, HR and track data.

### **Pace**

PACE is commonly used by runners to estimate the time required to go to a destination. It is defined as the elapsed time needed per Km / Mile. It is another interpretation of speed but in reverse unit. The unit of PACE is specified in Menu-->Settings-->System-->Units-->Dst/Spd.

E.g. when the unit is Km and PACE is 6, it means that you are running at 6 minutes per Kilometer. It is equivalent to 60/6 => 10 Km/H. When the value of PACE is smaller, it means that you are running faster.

### **Compass bearing**

Compass bearing is equivalent to azimuth bearing. An azimuth bearing uses all 360° of a compass to indicate direction. The compass is labeled clockwise with 0° as North, 90° as East, 180° as South, and 270° as West, so a bearing of 42° would be northeast and a bearing of 200° would be southwest, and so on.

## ***D. Getting Start: Glossary***

***D-02***

### **Lap-By-Distance (LBD)**

Create a lap after the preset lap distance has reached

### **Lap-To-Waypoint (L2WP)**

Create a waypoint at the end of a selected path whenever a lap is marked.

### **AGPS ( *Optional function* )**

AGPS stands for Assisted GPS, is a method which shortens the time for "fixing"GPS satellites signal. Also, it aids the watch to perform a faster GPS positioning calculation under a weak signal environment.

The watch AGPS function is always on.

AGPS does have expiry. The expiry can be checked by **Menu > GPS > AGPS**.

AGPS data will be sent to watch when connecting to GPS Master. The updating process will take around 30 seconds once the watch is un-plugged. During this period, GPS function is not available. Once finished, the expire date will be updated.

### **Cold Start**

When GPS has been suspended for a long time, Satellite data collected earlier are not valid anymore. It takes about 30 seconds to collect sufficient satellite data to locate your position. This is known as cold start.

### **Hot Start**

When GPS has been terminated for only a short period of time before re-starting, satellite data is still valid. It takes only a few seconds to locate your position. This is known as Hot start.

### **GPS Master**

GPS Master is a PC application software written to work with the Nav Master watch. Workout log and paths can be downloaded / uploaded easily via the USB cable. GPS Master provides a much better means for workout analysis, path creation and manipulation.

### **%EMHR**

%EMHR = percentage of Heart Rate (HR) with respect to the Estimated Maximum Heart Rate.

Estimated maximum HR is calculated as  $220 - \text{your age}$

### **Target HR Zone (Target Zone)**

The region of HR is what you would like to set your highest and lowest HR limits to be during exercise.

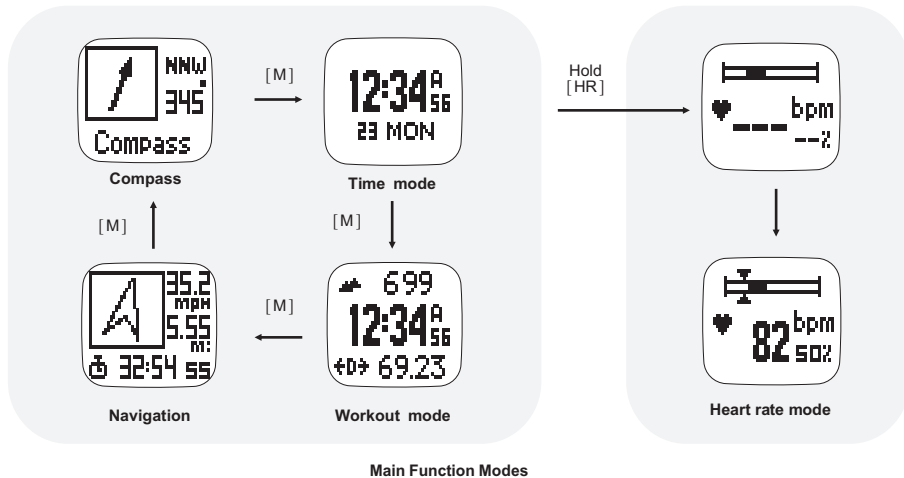
## ***D. Getting Start: Buttons Functions Summary***

***D-03***

<b>Buttons Names</b>	<b>Major Functions</b>
Light	Press to turn ON the EL back light for about 3 seconds Hold to enter Night Mode (Hold to off Night Mode) Press to unlock finger touch sensor temporary (if locked).
Mode	Press to select among different functional displays Hold to enter the main menu Hold to fast exit from function modes when you are several levels down the menu Press to exit setting or return one level up the menu
ST./STP	Press to move forward Press to increase watch data Press to Start/Stop the workout / Chronograph Hold to lock or unlock the finger touch heart rate sensor in the Home Time mode
VIEW	Press to enter sub-modes or workout views Press to make selection/confirmation Hold to turn on/off GPS in the Workout / Navigation Mode
LAP/RESET	Press to move backward Press to decrease watch data Press to take laps in the Workout Mode Hold to save Waypoints in the Navigation Mode Hold to clear the workout data

## D. Getting Start: Main Function Modes

D-04



The Workout mode records and displays your current performance. You can keep records of and review your performance while you are running or navigating in the wilderness. The workout mode shows speed, distance traveled, workout time from the start, heart rate and other useful data regarding your current workout. It keeps records of speed, heart rate and altitude for you to view on a PC graphically.

The Workout mode can work with the Navigation mode simultaneously. Start, stop, lap, GPS shortcut operations are common to both modes. Performing these actions in either of these modes has the same effect.

**About the Workout Mode**

The watch offers 5 activity profiles (defaults are Running, Cycling, Hiking, Sailing and User). Name editing of these profiles can only be done in the PC application software. Text editing is quite a painful task if it is done by a watch which only has 4 buttons. Each profile has 3 views (or screens). Each view has 3 data fields. Data fields can be selected freely from a list of fields. This allows you to view selected fields on your own interest. Profile configuration can also be done through the PC software quickly. You can store as many profiles as you want in the PC. Its massive storage capacity is virtually no limit to the number of possible profile combinations that you can think of.



Workout mode

### How to start the Workout Mode

- Press [M] in the Time mode to enter the Workout mode
- Press [S/S] to Start/Stop the Workout. GPS is turned ON automatically at start when they have not been turned on manually.

### Mark Laps

- Press [L/R] to take Laps. The maximum number of laps for a single workout session is 99.

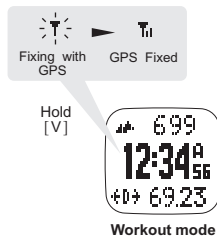
### Reset Workout / Navigation

- When workout has been stopped, hold [L/R] until you see the RESET popup message to reset workout/navigation. This clears the current session of workout data and prepares you to start another new workout. Workout data are recorded and stored automatically in the memory at reset. If you don't want to keep it, you have to erase it manually. Here is the key sequence: **Hold [M] > Menu > Workout > Delete > Del Last.**
- Summary of workout history can be viewed from: **Hold [M] > Menu > Workout > History.**

### How to change the Workout view

- Press [V] to select among the 3 preset displays. These 3 displays will be shown in sequence when the ViewScan function has been turned on. Each display stays for about 3 seconds. To set/reset the ViewScan: **Hold [M] > Menu > Workout > ViewScan > On/Off**
- **Note:** See next chapter to select the Workout profiles, customize the data display and review the workout history.








### How to turn **ON** the GPS manually:

If GPS receiver has been stopped for a long time, say more than 2 hours, it is recommended to start the GPS manually, especially when you want to have track logging done at the beginning of workout. It is because the GPS cold start time is long. Usually it takes approximate 30 seconds. During the cold start period, track information is not available. You should have the GPS position updated in advance. To do this, you can do either of the followings:

- Hold [M] > Menu> GPS> GPS ON or OFF** (turn GPS ON); or Simply hold [V] for 2 seconds at Workout / Navigation modes to toggle GPS either **ON or OFF**.
- Hold [M] > Menu> GPS> Timeout**

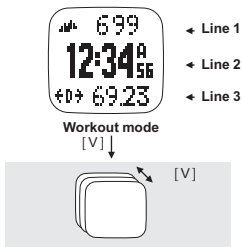
Either 5 or 30 minutes can be chosen. When GPS is lost and 30 minutes timeout is selected, the watch will try to re-locate its position via satellites in 30 minutes.

### GPS status indicator

-  - When GPS is collecting satellite information, an “ANTENNA” icon is flashing at the top left for most of the workout views.
-  - If the GPS has a 2D location located, a “GPS fixed” message will pop-up and it will last for a few seconds. An Icon at the top left is as shown here.
-  - If more than one satellite are captured, the GPS has a 3D location located. An Icon will be like this.
- If the GPS loses contact with satellites and cannot fix its position, a pop-up “GPS Lost” message will appear. It stays on the LCD until a button is pressed.

## E. Workout Mode - Workout Profile

E-04



### How to select Workout Profile

- Hold [M] under any mode to enter **Menu > Workout > Profiles > Select**; press [V] to confirm.
- Press [S/S] or [L/R] to select the desirable profile and then Press [V] to confirm.

### How to customize the Workout view data

- Hold [M] under any mode to enter **Menu > Workout > Profiles > Customize > Select the desirable profile > Select Views 1 to 3**; Line 1-3 show the corresponding data according to the table below. Press [S/S] or [L/R] to select the desirable data to be shown on the watch.

### How to reset to default setting

- Hold [M] under any mode to enter **Menu > Workout > Profiles > Reset**; press [V] to confirm.

Line 1 and 3				Line 2	
- Altitude	Alt 999	- Lap distance	Lap 99.99	- Distance	Dist 999.9
- Calories	Cal 999	- Lap number	Lap 23	- Current heart rate	HR 145.75%
- Distance	Dist 99.99	- Lap Time	Lap 23'45"55	- Lap distance	Lap 999.9
- Heading	Dir 359°	- Average Pace	AV 9:59	- Latitude & Longitude	23°45'57.88"N 103°45'57.88"E
- Average Heart Rate	AV 124.55%	- Maximum Pace	↑ 9:59	- Average Pace	AV 34.55
- Max Heart Rate	↑ 124.55%	- Current Pace	↓ 9:59	- Average Speed	AV 34.5
- Min Heart Rate	↓ 124.55%	- Average Speed	AV 9.9	- Current Speed	↓ 34.5
- Current Heart Rate	↓ 124.55%	- Maximum Speed	↑ 9.9	- Time of Day	↓ 3:45.55
- Above target zone time	↑ 9:99.55	- Current Speed	↓ 9.9	- Workout Time	3:59:59.55
- Below target zone time	↓ 9:99.55	- Time of Day	AM 12:59:45		
- Within target zone time	± 9:99.55	- Workout Time	3:55:55.55		

### **How to review Workout History from the watch**

- Hold [M] under any mode to enter **Menu > Workout > History**; press [V] to confirm.
- The summary of the latest record will be shown.

### **View Workout Summary:**

- Workout data summary has 3 pages. At the Top right corner of first page is the record number. Change the record number by pressing [S/S] or [L/R] button. The 2nd and 3rd lines are date and time of the record. The last line is the total number of laps for this workout. This page stays for 5 seconds. Then it is replaced by the next one. Pages 1, 2, and 3 are shown once at a time for 5 seconds sequentially. The 2nd page shows workout time, distance, and average pace. The 3rd page shows calorie consumption, average heart rate and average speed. After several cycles of displays, it will go back to the Time mode automatically. If you want to take a look at the details of individual laps, press [V] to go to the Lap Summary display. When you finish, press [M] to go back to the previous menu or hold [M] to go back to the Time mode directly.

### **View Lap Summary:**

- Lap summary consists of 2 pages. Record number is at the top left while current lap number is at the top right corner. Change the lap number by pressing [S/S] or [L/R] button. Like the data summary, these pages are shown alternatively. Page 1 shows lap time, lap distance, and lap average pace. Page 2 shows the split time (elapsed time from starting to this lap), average heart rate for this lap and the lap speed.
- Press [V] to switch between Workout Summary and Lap Summary displays. When you finish, press [M] to go back to the Workout menu or hold [M] to go back to the Time mode directly.

### **How to Delete the last or All records**

- Hold [M] under any mode to enter **Menu > Workout > Delete last / Delete all**.
- Press [V] to confirm

**Note:** The total number of Records depends on the size of the Memory.

Smart Lap is a concept of marking laps or waypoints automatically. You can make use of Smart Lap to achieve the following functions:

### **Lap-By-Distance (LBD): Hold [M] to enter the Menu>Workout>SmartLap>ByDist**

When this function is turned ON, you can specify a fixed distance such that a new lap is marked automatically whenever the lap distance is reached with the preset target. You just focus on your workout. It is no need for you to push the lap button anymore. You are free to mark any new laps manually in between the Lap-By-Distance period.

\* When the Alert function is switched ON, a single beep will sound once when a new lap is marked.

### **Lap-To-Waypoint (L2WP) : Hold [M] to enter the Menu>Workout>SmartLap>"Lap->WP"**

This is a very useful feature to create a PATH by the watch alone. One of the 10 PATHs has to be dedicated for this purpose. This path is specified in the Lap->WP setting screen. If this function is turned ON, the selected path is cleared at the beginning of Workout/Navigation. After that, whenever a new lap is created, disregarding whether it is added by Lap-By-Distance or by pushing lap button manually, the current location is added as the latest waypoint of the dedicated path. The number of waypoints allowed is the same as that defined in the regular paths.

## **E. Workout Mode** - Application example - Backward tracking

**E- 07**

A typical application for this is backward tracking. If you are going to explore the wilderness without planning and want to return on the same path, you may:

- Set LBD to, say 200 meters, and turn it ON: **Hold [M] to enter Menu>Workout>SmartLap>ByDist>[ON, 200]**.

Remember that the maximum number of waypoints for a path is limited to 99. Set minimum LBD distance accordingly and yet it will not exceed the limit. Waypoints beyond the path limit are ignored.

- Set L2WP path to Path9, and turn it ON: **Hold [M] to enter Menu>Workout>SmartLap>"Lap->WP">[ON, Path9]**

- Start Workout/Navigation trip: Navigation [S/S]

- If you want to stop and return, then press [S/S] to stop and hold [L/R] to reset and then you are ready to return on the same path.

- Turn OFF L2WP: **Hold [M] to enter Menu>Workout>SmartLap>"Lap->WP">[OFF]**

- Select Path9 as the current path for navigation. **Hold [M] to enter Menu>Navigation>SelPath>Path9**

- Set navigation mode to backward. **Hold [M] to enter Menu>Navigation>NavMode>Backward**

- On the Navigation-Goto screen, select the last waypoint of Path9 as the current waypoint

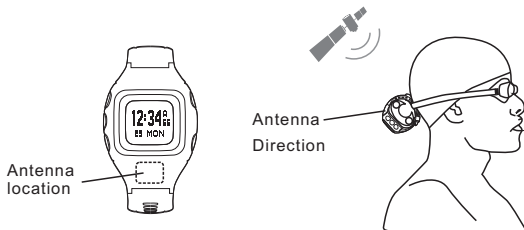
- Start Navigation, follow the Heading Pointer. The watch will guide you from the last waypoint to the starting point precisely.

## E. Workout Mode - Application example - Triathlon Race

E- 08

Tips for using the watch at Triathlon Race:

1) **Start (before start to swim):** Secures the watch firmly around goggles straps, with watch antenna direction pointing to the sky. Lock the finger touch heart rate measurement function ( See H-03 for detail)



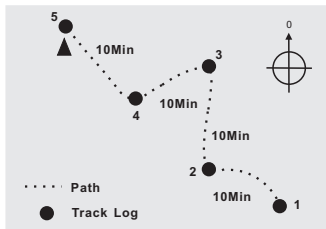
2) **At T1 (swim to bike):** take off the watch from the goggles and wear it around wrist, or mount it on top of bike mount

3) **At T2 (bike to run):** after putting on the watch around wrist, exit (not stop) Workout Mode and re-enter it by pressing key **[M]: Workout Mode -> Navigation -> Compass -> Time -> Workout Mode**

The reason for doing this is that our watch has Biking and Running Modes. They have different methods for speed / distance calculations. Re-entry Workout Mode can reset the Mode to Running.

## E. Workout Mode - TrackLog interval

E-09



Example: TrackLog has been set at 10Min

Nav Master records your track continuously. The sampling interval is specified by the value in the TrackLog setting. The Default is 4 seconds. It can be set from 1 second to 10 minutes.

### How to set the TrackLog time

- Under any mode, Hold [M]
- Menu > Workout > Tracklog
- Press [S/S] or [L/R] to set the time

### Note:

- 1% of the memory can store approximately 480 points. Percentage of memory used for a workout period can be estimated as Expected Workout Time per TrackLog Interval divided by 48000 times 100%.
- % of memory used = (Expected workout Time/TrackLog interval)/48000 x 100%

The Navigation mode has 2 screens: Navigation and Goto screens. Navigation screen gives you all the information you need when you are navigating to a waypoint. Goto screen allows you to pick a waypoint from the current path.

### **Introduction**

Nav Master is able to keep 10 paths simultaneously. But you can work on a single path at a time. This is known as the current path. To select the current path: **Menu > Navigation > SelfPath**. Each path has a maximum of 99 waypoints. Waypoints, in a path, may or may not have relationship with one another. When they have no relationship, this path is just a collection of scattered waypoints. Waypoints can be linked sequentially to form a route. You can navigate up or down a route until the first or last waypoint has been reached. Select your navigation mode before navigation

### **Navigation modes**

There are 3 navigation modes: Waypoint, Forward, and Backward modes. You can pick your desired mode with this key sequence – **Menu > Navigation > Nav Mode**.

#### **Waypoint mode**

The active waypoint is the destination. Select this mode if you want to go to the individual waypoints in the current path. Then, pick the active waypoint on the Goto screen. This active waypoint is actually the destination.

#### **Forward mode**

The last waypoint is the destination. Select this mode if you want to navigate from the first waypoint to the last one in the current path. Pick the nearest waypoint as the active waypoint on the Goto screen before you start. When the active waypoint is reached, it will navigate to the next waypoint along the path. This repeats until the destination (last waypoint) is reached.



### **Backward mode**

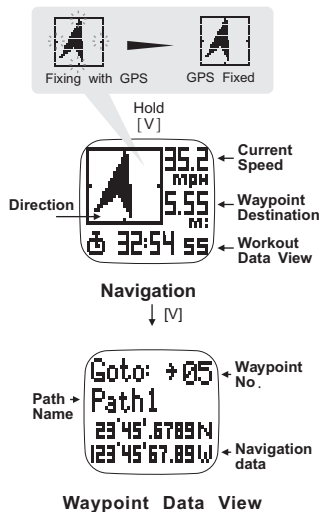
The first waypoint is the destination. Select this mode when you want to navigate along the path in reverse order. For example: from the last waypoint to the first one along the current path. Pick the nearest waypoint on the Goto screen before you start. If the active waypoint is reached, it will navigate you to the previous waypoint along the path. This repeats until the destination (first waypoint) is reached.

### **Set Waypoint radius**

You are regarded as arrival at the active waypoint when you fall into the region of the waypoint within the radius set in the WP Radius setting. It can be adjusted in **Menu > Navigation > WP Radius**. The Default is 30 meters (100 ft). The range is 10m~200m.

## F. Navigation Function - How to navigate

F- 03



How to setup the path and navigation mode as described before. Turn ON GPS by Holding [V]. Or if you want to have workout logged, just press [S/S] to start workout. Then wait for GPS to be fixed. At the same time, you can pick the active waypoint by pressing [V] to switch to the Goto screen.

### Set Active Waypoint

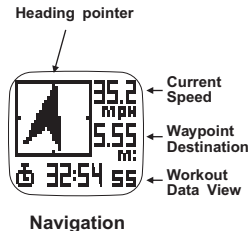
On the Goto screen, browse the waypoints up or down on the current path with [S/S] and [L/R] buttons. The sequence number of the waypoint is shown at the top right. The Path name is in the 2nd line. Other details of the waypoint are shown consecutively in lines 3 and 4 across 3 pages.

- Page 1 shows the time, date, and name of a waypoint. The name of the waypoint is limited to 10 characters long. Editing of the waypoint name can only be done in the GPS Master. A Default name "WayptXX" is assigned to a waypoint automatically by the watch when it is marked manually or created by Smart Lap. Where XX is a sequence number going from 01 to 99.
- Page 2 shows the distance between the current position and the heading to this waypoint when GPS has been fixed.
- Page 3 shows the latitude and longitude of this waypoint

Press [V] once again to go back to Navigation after the active waypoint has been selected.

## F. Navigation Function

## F- 04



### Follow the heading pointer

Once GPS has been fixed, the heading pointer starts to work. Make sure that the electronic compass has been calibrated properly (See compass calibration details in the System Setting chapter) and the watch is maintained at horizontal position. Tilting away from the horizontal position will affect the accuracy of the heading pointer. When everything is properly set, the pointer always points to the active waypoint.

Your current speed and distance to the active waypoint are shown at the top right of Navigation screen. Time of Day, Workout Time, Distance to Destination, Estimated Time to Destination, and Current HR are scrolling out once at a time at the bottom line. When there is no HR datum, it will not be shown at all and this part will be skipped.

When you are approaching to the WP region of the active waypoint within the preset radius, 3 beep tones will be heard. The beep tones will be suppressed when the Key Tone setting is turned OFF. If you are navigating with Forward / Backward mode, it directs you to the next waypoint automatically. This process repeats until you arrive at the final destination.

## ***F. Navigation Function***

***F- 05***



**Navigation**

### **How to create Waypoints or a path in the PC**

Note: You should have GPS Master installed in the PC first. See the GPS Master installation and user's manual for details.

- Run GPS Master
- Activate the Path Manager ( Path-->Path Manager)
- Click NEW on the Current Path
- Locate the desired position in the embedded Google Maps (GMAP) and left click the mouse button. A new waypoint is just created. It is assigned to a default name. If you want to change this name, double click the waypoint place mark. A dialogue box will appear. You can input a meaningful name there. The name of waypoints is limited to 10 characters long.
- Add as many points as you want. Waypoints are linked sequentially.
- Click Save Path as you finish adding waypoints. They will be saved into the Current Path table.
- Clip the watch and plug in the USB cable. Then Click the "PC->Watch" button in GPS Master. Path(s) in the Current Path table will be transferred to the watch in seconds.

### **How to Save waypoint while navigating**

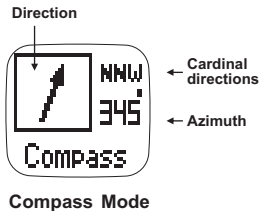
- Once GPS has been fixed, hold [L/R] to save the waypoint
- The waypoint will be saved to the current path

### **How to Start/Stop Workout session and Take Laps while navigating**

- Press [S/S] to Start Workout. Push [S/S] again to Stop Workout
- Press [L/R] to take Lap

## G. Compass Mode Function

G-01

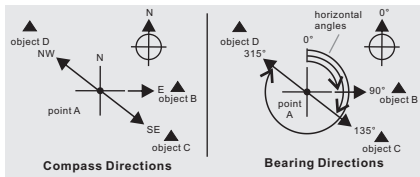


### The Direction of an Object

The direction of an object from a point can be expressed in terms of either cardinal direction or azimuth. This watch includes both cardinal direction and azimuth.

### The 16 cardinal directions

Cardinal directions are the most commonly used forms of directions. They include North, South, East and West. This electronic compass has Primary (NE, NW, SE, SW) and Secondary (NNE, ENE, ESE, SSE, SSW, WSW, WNW, NNW) InterCardinal directions as well. Cardinal direction is shown at the top right corner.



### The Azimuth

Azimuth is defined as the horizontal angle between the North and the object measured clockwise. (The North is 0 degree). Azimuth is shown in the middle right.

### How to calibrate the compass

- Hold [M] under any mode to enter the main menu: **Menu > Settings > System > Compass > Calibrate** While calibrating, turn the watch 360 degree horizontally. You will see the trace of dots forming the outline of a rectangular box when the watch is rotating. Calibration is done when the outline is filled completely.

**Note:** Press any key to exit the calibration without any changes

### • How to set the magnetic declination of the compass

- Hold [M] under any mode to enter the main menu: **Menu > Settings > System > Compass > Declinate**

- Press [S/S] or [L/R] to change the value
- Press [V] to confirm

**Note:** Consult the websites below for determining the declination at your location.

*[Http://www.magnetic-declination.com/](http://www.magnetic-declination.com/)*

*<http://www.ngdc.noaa.gov/geomagmodels/Declination.jsp>*

*<http://geomag.nrcan.gc.ca/apps/mdcal-eng.php>*

## ***H. Heart Rate Measuring - Precautions and Tips***

***H-01***

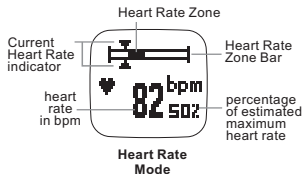
- When doing exercise or sports, your heart naturally beats faster in pumping blood to the body according to your level of energy increase. This watch can calculate that increase in terms of the number of beats per minute (bpm) to determine a safe target heart rate for an individual.

### **PRECAUTIONS/TIPS**

1. A heart rate sensor is equipped on the back of the watch. The back sensor has to make firm contact with the user's skin during Finger-Touch measurement.
2. DO NOT take any heart rate measurement when diving or under water.
3. Clean the back cover of the watch occasionally by applying a few drops of water and wipe it dry with a paper towel. This can help remove any residual grease.
4. DO NOT use hand cream; it will insulate the signal between the skin and the sensors.
5. Clean fingers with soap and water for better signal transmission.
6. DO NOT use the fingertips where the skin is dry or thick.
7. For those with extremely dry skin, moistening the skin with tap water or applying some conductive gel may help.
8. Hold the watch firmly when taking Finger-Touch measurement in motion.
9. During the measurement, avoid any awkward motion. Awkward motion creates undesirable muscle noise; hence an incorrect heart rate reading may result.

## H. Heart Rate Measuring - About EMHR and %EMHR

H-02



### Estimated Maximum Heart Rate (EMHR):

- EMHR = 220 - the user's age.
- Example: What is Tom's EMHR at his age of 27?
- $EMHR = 220 - 27 = 193$ .

**NOTE:** This Watch can calculate the EMHR for the user with the age up to 99.

### Percentage of Estimated Maximum Heart Rate (%EMHR):

- $\%EMHR = \frac{\text{Acquired heart rate}}{EMHR} \times 100\%$
- Example: What is Tom's %EMHR if he has acquired a heart rate of 78.
- $\%EMHR = 78 \div 193 \times 100\% = 40\%$

- When doing exercise or sports, your heart naturally beats faster in pumping blood to the body according to your level of energy increase.
- The Heart Rate Mode shows the current heart rate in terms of:
  - Heart Rate (e.g 82) : The number of heart beats per minute (bpm), and
  - Percentage of Estimated Maximum Heart Rate (e.g 50%): The percentage of the acquired heart rate with respect to one's estimated maximum heart rate.

### Percentage of Estimated Maximum Heart Rate

- It is a useful figure for analysing the cardio-fitness of a person.
- It can be used to define a heart rate zone for a cardio-fitness training.
- Consult your doctor or trainer for more information on the implications of Percentage of Estimated Maximum Heart Rate (%EMHR).

**NOTE:** The user **MUST** input his/her age and gender into the Watch before hand, otherwise these figures are factory default figures and the %EMHR is not correct.

User are also able to set their maximum heart rate manually ( See H-04 for detail )



## H. Heart Rate Measuring - Finger-Touch Measurement

H- 03

### Measuring Heart Rate by Finger-Touch

□ Following the steps below, you can measure your heart rate instantly by touching the sensor on the watch without using a chest strap:

- (1) Be sure the sensor on the back of the watch sits firmly on your skin.
- (2) Place your index finger and your thumb on the metal bezel.
- (3) Keep holding for about 5 seconds. When the heart rate is detected, the result will be exhibited on the screen and an alert sounds ("Bi" if in HR zone. "Bi-Bi" if out of HR zone).

### About Heart Icon:

- Regular flashing indicates presence of 'Good' heart rate pulses. If irregular flashing is observed, try to avoid any awkward motion. Otherwise, there are chances of measuring wrong heart rates.
- If heart does not flash, try moisten wrist and fingers.

### How to Lock/Unlock the Heart Rate Measurement function:

□ There are two ways to lock/unlock the heart rate measurement function :

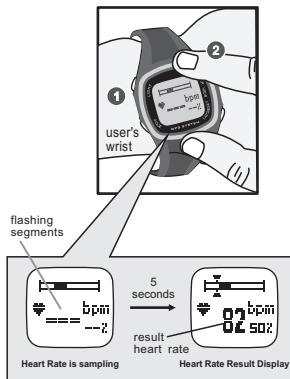
- 1) By holding [S/S] at Home Time Mode.
- 2) Menu > HRM > Autosens > Unlock / Lock

When locked, an icon '🔒' will be shown at upper right of Home Time Mode, and middle left of Workout Mode.

Also, the watch will automatically enter lock status if the heart rate measurement lasted for more than 1 minute.

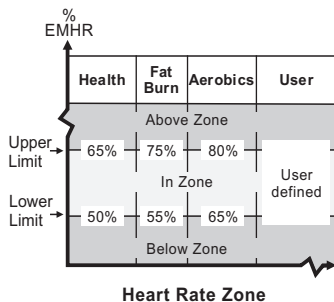
### Temporary Unlock at Lock Status:

- Press [EL] once at Home Time Mode can unlock temporary for 5 seconds.



## H. Heart Rate(HR) Zone

## H- 04



### How to Use Target Heart Rate Zone

Setting target HR zone is very important for your personal training plan. If you are not working in the target zone, alert beeps will sound. You can adjust your pace of exercise to maintain your HR in the target zone limits. There are 4 target zone levels: Health, Fat Burn, Aerobics and User. The limits of these zones are shown on the left table. If they do not fit your training scheme, you are free to set your own target zone limits in any of these settings.

### How to select Heart Rate Zone

- Hold [M] under any mode to enter **Menu > HRM > HR Zone > Select**
- Select among Health / Fat burn / Aerobics / User
- Press [V] to confirm > "Done" will be shown

### How to set the HR Zone Limits

- Hold [M] under any mode to enter **Menu > HRM > HR Zone > Customize**
- Select among Health / Fat burn / Aerobics / User
- Set the value by pressing [S/S] or [L/R]
- Press [V] to confirm

### How to set Maximum Heart Rate Manually

- Hold [M] under any mode to enter **Menu > HRM > Max HR**
- Set the range between 100 - 220 bpm
- Press [M] to confirm and exit

### How to reset all Heart Rate Zones

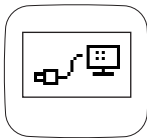
- Hold [M] under any mode to enter **Setting Menu > HRM > HR Zone > ResetALL**; press [V] to confirm.

## ***I. PC Connection Function***

## ***I- 01***



**Personal Computer**



**the Watch connected  
with the PC**

Install the bundled PC software into your PC in order to connect your watch for data transfer and making use of some special features.

- System requirements for the PC are as follows:
  - Pentium II 300MHz or higher
  - 64MB Main memory or higher
  - 20MB hard disk space or more
  - 256 color monitor or higher
  - Window XP/VISTA/7 operating system
  - CD-ROM drive
  - USB port

Follow the instructions in the GPS master setup wizard to install the program. After installation, restart your PC.

Clip the USB cable to the watch and plug the cable into the PC's USB connector. Once connected, "Connected icon " will be shown on the watch's screen.

## I. PC Connection Function

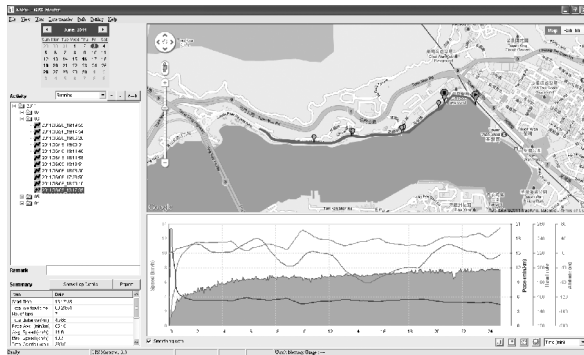
I- 02

**How to setup a new user**

- Enter User name in the New user dialogue box
- Press 'Add'

**How to synchronize data between the watch and the PC**

- On PC screen > Data transfer > Receive the Watch Data
- Workout data will be shown on the screen



PC Screen



### How to set Time Of Day

- Nav Master FT-1 is able to synchronize its clock with the satellite's atomic clock automatically. This is done whenever the GPS fixes its position. Auto time zone is another cool feature. It tries to set your current time zone according to the longitude. In other words, when there is a satellite and the GPS is turned on occasionally. The time is synchronized with the satellite's clock. You don't need to bother to adjust the watch. The time is always accurate. When there is no satellite coverage, manual time setting is also available.

- Hold [M] under any mode to enter **Menu > Settings > Time Date**

- Select Home Time/ Dual Time or Format

### Time of Day Setting

GPS Update - **Menu > Settings > TimeDate > HomeTime > GPS Upd**; select on/off.

When this option has been turned ON, the Nav Master FT-1 will synchronize the time with the satellite atomic clock whenever a GPS is fixed.

### **Time Zone**

**Menu > Settings > TimeDate > HomeTime > TimeZone**

Set time zone according to your current location. It can be adjusted from +12:00 to -12:00 hours from GMT at 0.5 hour step. Alternatively, it can be set automatically by GPS. When this option is activated, GPS sets your time zone according to the longitude. It should work most of the time, but there are exceptions because of Daylight-Saving Time (DST) or other reasons. When the time zone set by GPS does not reflect your local time correctly, adjust the time manually.

### **Manual time setting**

**Menu > Settings > TimeDate > HomeTime > Manual**

Set time and date in the following sequence:

**Second > Minute > Hour > Year > Month > Day**

Press [S/S] or [L/R] to change the value

### **Dual Time Setting**

**Menu > Settings > TimeDate > DualTime**

Press [S/S] or [L/R] to change the value at 30 min increment.

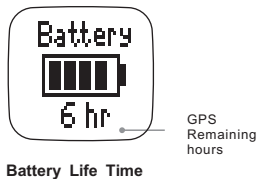
### **Format**

**Menu > Settings > TimeDate > Format**

Press [S/S] or [L/R] to choose 12 / 24 Hour Format

## ***K. Battery life - remaining power***

***K - 01***

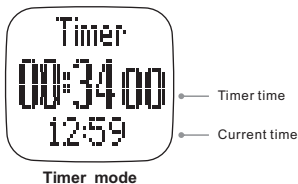


### **Check Battery life - remaining power**

- Press [V] in the **Home time mode** > **Battery**
- Battery life remaining hours for GPS will be shown

## L. Timer Function

L -01



### How to use the Timer

- Press [V] in the **Home time mode > Battery > Timer**
- Press [S/S] to start or stop.
- Press [L/R] to reset to the preset time.
- Beep sound will be heard in the last 10 seconds.
- Long beep will be heard once reaching 0:00:00; press any key to stop the beep.

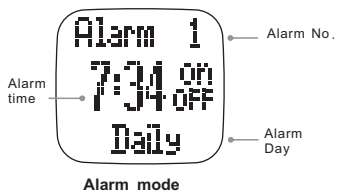
### How to set the Timer

- Hold [M] under any mode to enter **Menu > Settings > Timer**
- Press [S/S] or [L/R] to change the value:  
Press [V] to change Hour > Minute > Second



## M. Alarm Function

**M -01**



### How to use the Alarm

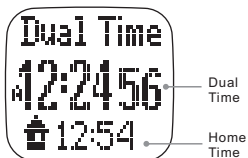
- Press [V] in the **Home time mode > Battery > Timer > Alarm**
- Press [S/S] to select 1 - 5Alarms
- Press [L/R] to turn the alarm On/ Off

### How to set the Alarm

- Hold [M] under any mode to enter **Menu > Settings > Alarms**
- **Alarm no. > Hour > minutes > On/Off > Daily/Sun-Sat/Mon-Fri**
- Press [S/S] or [L/R] to change the value

## N. Dual Time Mode

N-01



Dual Time mode

### How to use Dual Time

- Press [V] in the **Home time mode** > **Battery** > **Timer** > **Alarm** > **Dual Time**

### How to set Dual Time

- Hold [M] under any mode to enter **Menu** > **Settings** > **Time Date** > **Dual Time**

- Press [V] to select Dual Time
- Press [S/S] or [L/R] to change the value at 30 min increment.

## O. User settings

## O-01

- To get the accurate workout data, the user's data setup is important.
- Hold [M] under any mode to enter **Menu**  
> **Settings** > **User**
- **Gender** or **BirthDate** or **Weight**

### Gender

- Press [S/S] or [L/R] to select Male or female
- Press [M] to confirm

### Date of Birth

- Press [S/S] or [L/R] to change the value
- Press [V] to confirm and set the following data
- **Year** > **Month** > **Day**
- Press [M] to confirm

### Weight

- Press [S/S] or [L/R] to change the value. Hold the button to change the value faster
- Press [M] to confirm
- Note: To change the Unit, see the subsequent chapter

## ***P. System settings***

***P- 01***

For system setting

- Hold [M] under any mode to enter **Menu > Settings > System**
- **Sound** or **Contrast** or **Units** or **Compass** or **Language** or **System Reset**

### **Sound**

- Select **Key Tone / Chime**
- Turn **On/ Off**
- Press [M] to confirm

### **Contrast**

- Select from level **3 Lighter to 16 Darker**
- Press [M] to confirm

### **Units**

- Distance / Speed > **Metric or Statute or Nautical**
- Position > **0°00'00.00N or 0.000000N**
- Weight > **Kg or lb**

### **Compass**

- Refer to the chapter - Compass function mode settings

### **Language**

- Select languages
- Press [V] to confirm

### **System Reset**

- Select **No/Yes**
- Press [V] to confirm
- NOTE: This will reset the watch to the factory default settings.

All data will be cleared.

## Q. Memory Usage

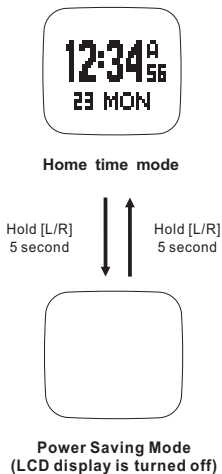
Q -04



Memory Usage  
Display

### How to check the Memory Usage

- Hold [M] under any mode to enter **Menu**  
> **Memory**



**Power Saving Mode**

- This Watch has a Power Saving Function which can turn off the LCD display so that the battery can last longer.
- In the Power Saving Mode, the watch function is still working normally. (i.e. The timekeeping function is still running in the Power Saving Mode.)

**How to activate/exit the Power Saving Mode**

- To activate the Power Saving Mode, hold the [L/R] button in the Home Time Mode for about 5 seconds and the LCD display will be turned off.
- Hold [L/R] button in the Power Saving Mode to resume the LCD display.



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