



Falcon

Beam Communications

User guide

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Introduction

The Falcon is an application tool designed specifically for Beam Unit and is compatible with the following models:

- **IsatDock LITE**
- **IsatDock DRIVE**
- **IsatDock PRO**
- **IsatDock MARINE**
- **Terra 800**
- **Oceana 800**
- **Terra 400**
- **Oceana 400**

Features

The Falcon supports the following features:

- View the status of the unit
- Configure tracking settings
- Configure POTS settings
- Store/Edit/Retrieve docking station settings
- Resetting docking station to the factory defaults.
- Modifying supervise PIN of the unit
- Enable/Disable SIM PIN
- Beam Terminal Firmware Upgrade
- Inmarsat Transceiver Firmware Upgrade

As not all features are available across the range of docking stations, the Docking Station Management Software will enable or disable the feature set as follows:

Feature	IsatDock LITE	IsatDock DRIVE	IsatDock PRO	IsatDock MARINE	Terra 800	Oceana 800	Terra 400	Oceana 400
View the status of the unit	✓	✓	✓	✓	✓	✓	✓	✓
Configure tracking settings		✓		✓		✓		
Configure POTS settings			✓	✓	✓	✓	✓	✓
Send/Receive SMS	✓	✓	✓	✓	✓	✓	✓	✓
Resetting factory defaults	✓	✓	✓	✓	✓	✓	✓	✓
Store/Edit/Retrieve settings	✓	✓	✓	✓	✓	✓	✓	✓
Modifying Supervise PIN	✓	✓	✓	✓	✓	✓	✓	✓
Enable/Disable SIM PIN					✓	✓	✓	✓
Beam Terminal Firmware Upgrade	✓	✓	✓	✓	✓	✓	✓	✓
Inmarsat Transceiver Firmware Upgrade					✓	✓	✓	✓

Requirements

The Falcon requires the following:

- A computer with Microsoft Windows XP/VISTA/7 operating system
- Microsoft.NET 3.5 Framework
Microsoft.NET 3.5 Framework can be downloaded from the Microsoft website at:
 - <http://www.microsoft.com/downloads>
- 1x USB cable
- An available USB port on the computer

Installing

- Run (double click) setup.exe
- Follow the steps during the setup wizard
- Once installed the program can be run by clicking on the Start button -> Programs -> Beam Communications -> Falcon

Missing components

If the computer does not have the Microsoft .NET 3.5 Framework, an option will be presented to install this component provided that an active internet connection is available. This download is approximately 35MB and may take over an hour to download on internet connections utilizing a 56k Modem.

Microsoft.NET 3.5 Framework can be downloaded from the Microsoft website at <http://www.microsoft.com/downloads>.



If you are using Windows Vista or 7, the application will request administrator privileges.

Installing Beam Universal USB Drivers

USB drivers are installed as part of the Falcon installation. However, if you have already installed drivers previously, you are not required to install them again.

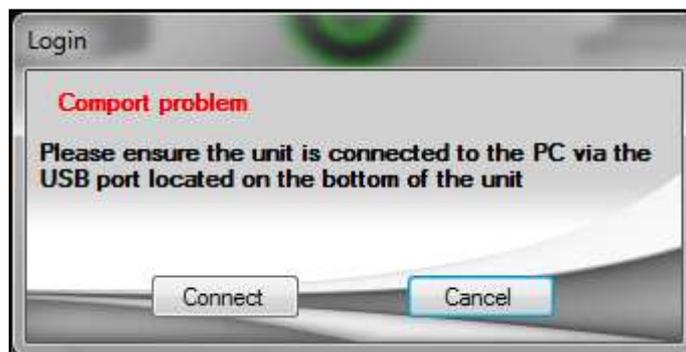
Connecting

To connect the unit with the Falcon, you will need to do the following:

- Connect power to the device.
- Connect PC to application port of the unit via USB cable.
- Open Falcon and click the connect button to initiate a connection with the unit.



If the unit is not connected Falcon will display comport error.



Ensure the unit is physically connected to the computer via the USB cable and that the cable is connected to the docking station and click the connect button again.

Falcon may also ask to provide the supervisor PIN number.



Once connected, configuration options will be available.



You will need to keep the unit attached to use Falcon. If Falcon does not find the unit connected, the configuration will become unavailable and any settings that have not been applied will be lost.

Disconnecting

When you hit the disconnect button, Falcon will terminate a connection with the unit. Any unsaved settings will be lost. The unit status will also be cleared.

If the unit is disconnected from the USB without pressing the disconnect button, Falcon will clear all status information and unsaved settings will be lost.

Main Window



Information will not be displayed until a connection is made with the unit

Unit Status Information

Unit Status			
Model	IsatDock Marine	Input Volts	11.902 V
Terminal Firmware	1.1.5204	PCB	02
IsatPhone Pro Firmware	4.0.0	Serial Number	MMN00001
		Internal Temperature	25C
		IsatPhone Pro IMEI	353032040056869
		Satellite Signal	040%
		GPS Satellite Visible	09

Once the management system has synchronized with the docking station, the following status information will be fetched and displayed:

- Model
- Terminal Firmware
- IsatPhone Pro/ Inmarsat Transceiver Firmware
- Input voltage
- PCB
- Serial number
- Internal Temperature
- IsatPhone Pro/ Inmarsat Transceiver IMEI
- Satellite signal
- GPS satellite visible
- Tracking Status (enabled or disabled)

Connect

Tracking Status



Tracking Tracking deactivated



Tracking Tracking activated

If Tracking is Active, the unit will send messages and alarms to the defined destination.

To **activate** tracking, you need to configure the unit using the tracking wizard. At the end of the wizard an option will be given to activate tracking.



NOTE: You will need to configure tracking via the tracking wizard in order to activate tracking.

Press **Turn OFF** to deactivate tracking and alarms.



If tracking is not activated, neither positional nor instance/alert message will function.

Tracking

Overview

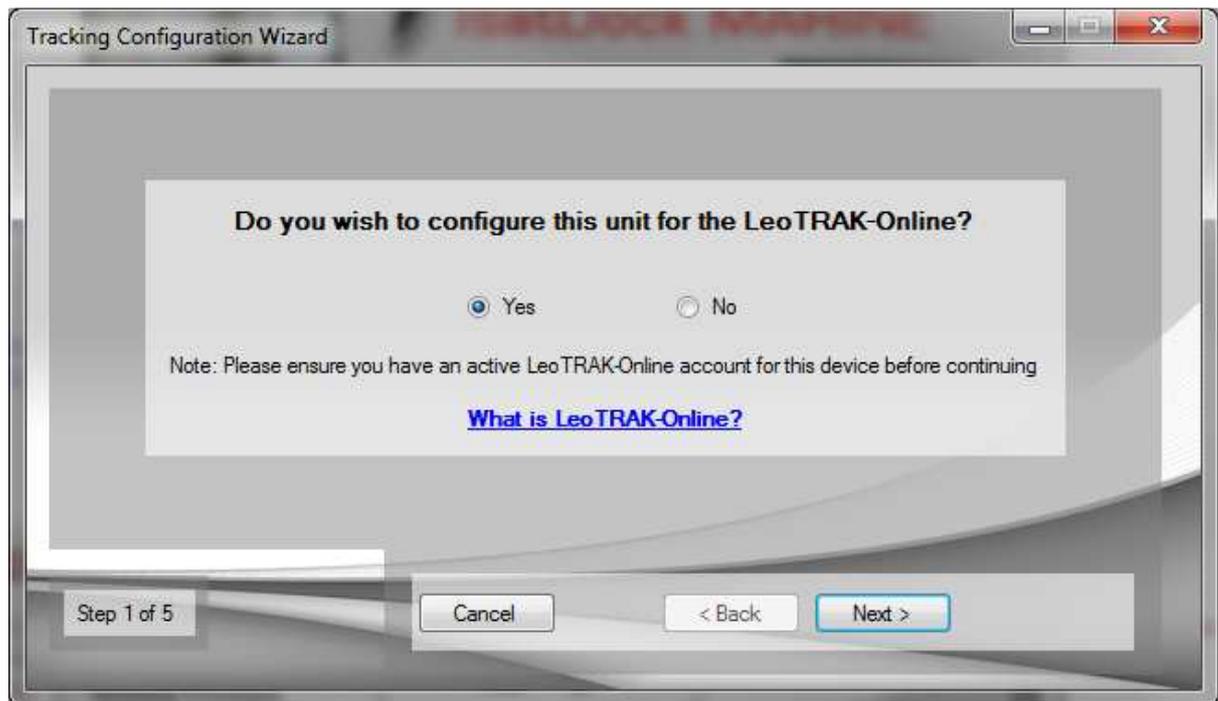
Tracking allows the docking station to send a range of messages at periodic time intervals or on user activity. The tracking wizard allows for the configuration of these message and time intervals.

Tracking options are available on IsatDock DRIVE , IsatDock MARINE and Oceana 800.

The wizard is comprised of five main components.

1. LeoTRAK-Online
2. Position messages and time intervals
3. Advance tracking options
4. Message destination
5. Upload settings
6. Synchronization with LeoTRAK-Online or Message Summary.

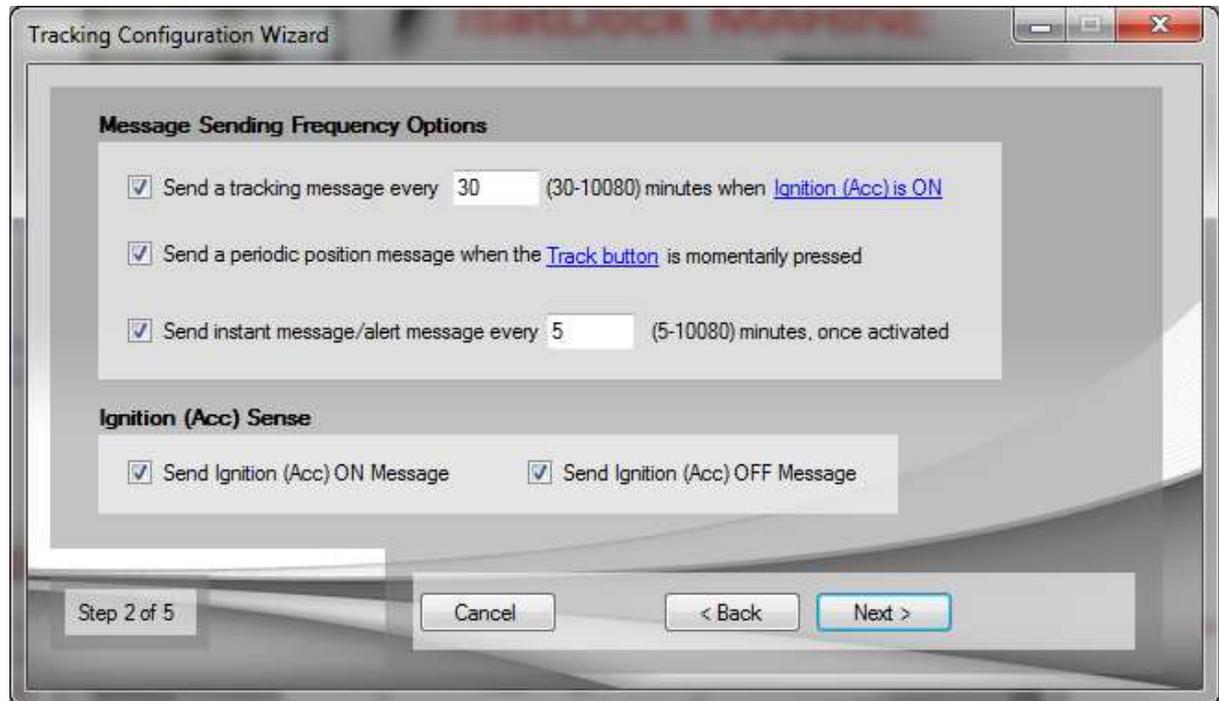
LeoTRAK-Online



LeoTRAK-Online is a web based tracking, monitoring and fleet management system that provides global access to monitor vessels, vehicles, personnel and other assets worldwide. The secure web portal allows access to view street level maps and satellite imagery to easily pin-point asset locations and areas of incidence.

If using LeoTRAK-Online, SMS destinations will be preset as LeoTRAK-Online requires. Otherwise, such details will be requested to be provided.

Position messages and time intervals



1. **Send a periodic position message every X minutes when Ignition/Accessories is ON.**
This will allow unit to send a message after every X [default 30] minutes when Ignition/Accessories is ON and unit is not in Emergency mode.
2. **Send a message when the *Track button* is momentarily pressed**
This will allow a unit to send a message once when **Track Button** on the dock is momentarily pressed.
3. **Send instant message/alert message every X minutes, once alarm is activated.**
This will allow unit to send a message every X [default 5] minutes when activated.

Unit will send an acknowledgement message when instant/alert mode is turned OFF. This is required to acknowledge the instant/alert message from the alarm manager in LeoTRAK-Online.

Instant/alert mode can be cancelled by pressing the track button for more than 7 seconds.

When the track button is pressed for more than 7 seconds, a beep will be heard and the Instant/alert mode will be cancelled. Also an Instant/alert OFF message will be sent. If you are using LeoTRAK-Online this will clear any associated emergency alarms in the alarm manager.

Remote Polling

When the unit is remotely polled this option allows the unit to send a reply message. If you are using LeoTRAK-Online, you can poll one or more units by clicking on polling, See LeoTRAK-Online for more information on how to poll units using LeoTRAK-Online.

If you are not using LeoTRAK-Online you will need to send a remote command to the unit to poll for its current location.

NOTE: When tracking is turned ON, remote polling will be turned ON.

Ignition (Acc) Sense

1. **Send a message when Ignition/Accessories is turned ON.**
This will allow the unit to send a message to indicate that Ignition/Accessories has been turned ON.
2. **Send a message when Ignition/Accessories is turned OFF.**
This will allow the unit to send a message to indicate that Ignition/Accessories has been turned OFF.

Advance tracking options



Beep when any message is sent

The unit will emit two short beeps when the SMS is sent.

Enable audio/visual notification.

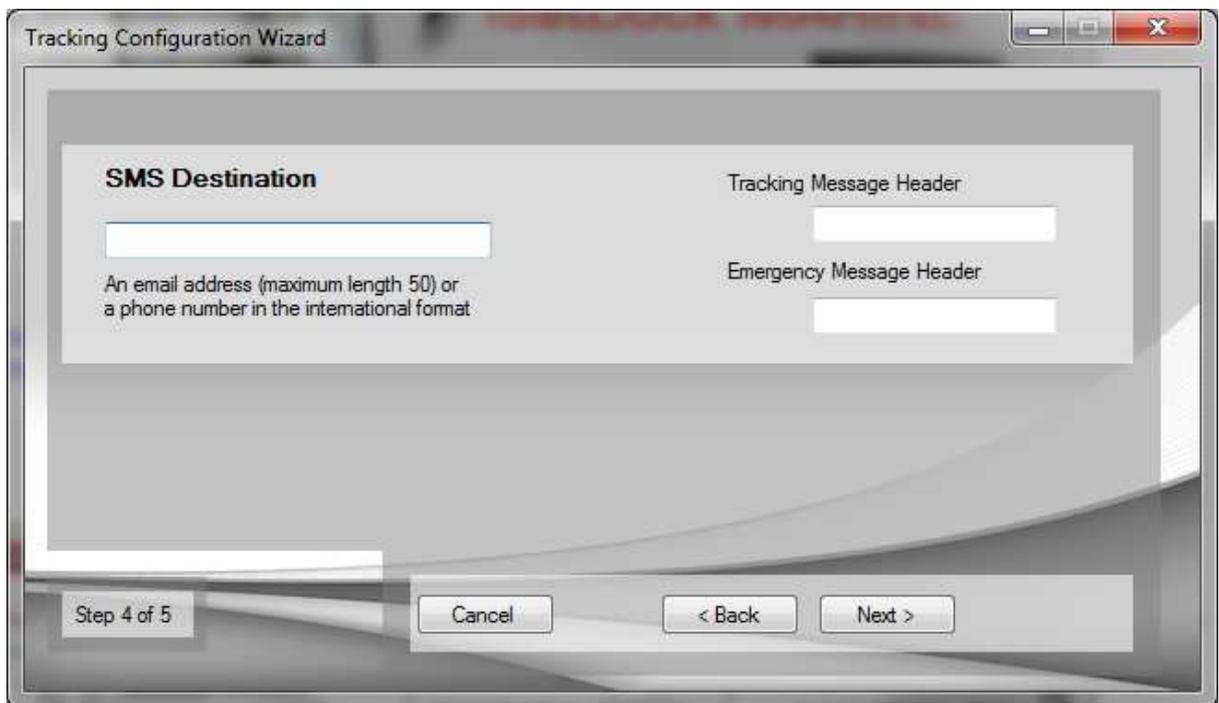
Enables the track button LED on the unit (see the user manual for further information on its colors and flash status). It will also beep when pressing the track button if this is turned on.

Message Accuracy:

This sets the unit to only send a message if a GPS fix has been acquired and a minimum x satellites are visible. Please note that instant message/alert messages, remote polling and button press messages will be sent regardless of GPS fix.

It is recommended to use this feature to ensure that the unit is sending messages only when it has a good GPS fix. While this will improve the accuracy of the message, it may in some cases cause messages to not be sent when the GPS signal is poor.

Message Destinations



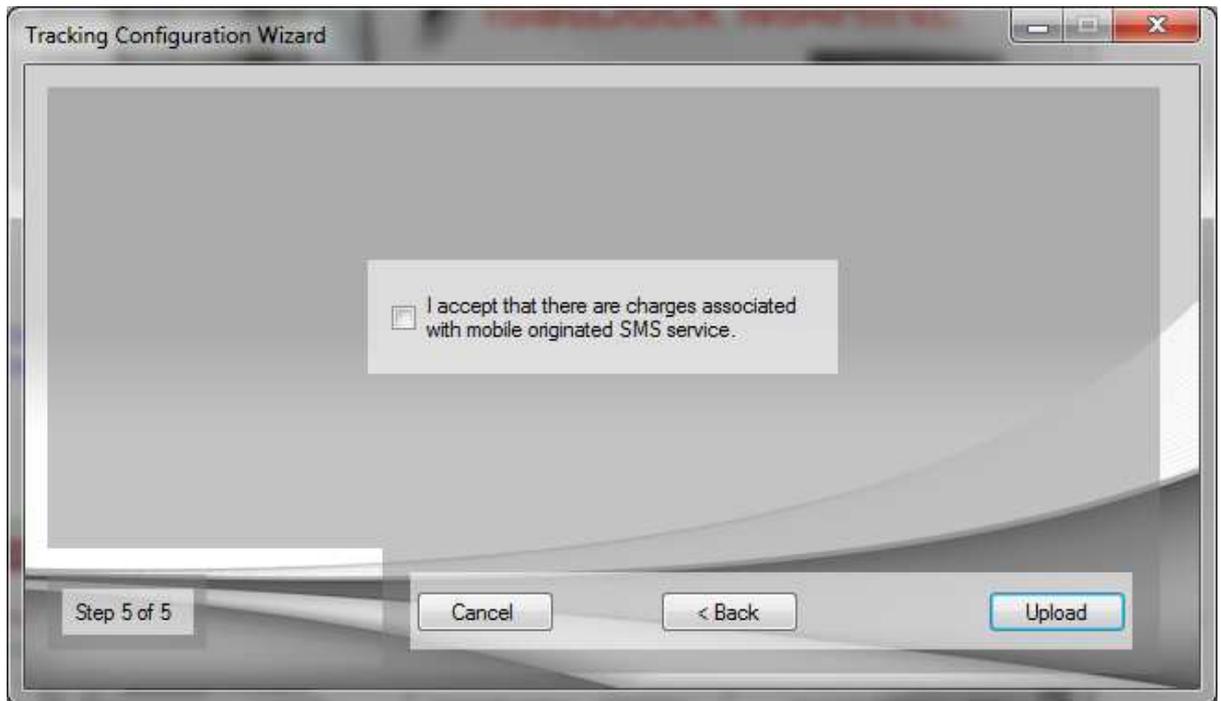
This option will only be given when you have selected not to use LeoTRAK-Online. Please provide the SMS destination address on this step. You may also provide the header to your messages.

Message format

Field	Default Prefix	Example
Heading (when provided)		Tracking
Alarm Information (Includes three fields)	TU SQ AL	TU1184816146 SQ23 AL23
IMEI	II	II300015000000000
Lat and Long(+HHH.HHHHH)	LT LG	LT-37.92043 LG145.14886
Speed (meters per hour)	VL	VL12000
Altitude (meters above sea level)	HT	HT23
Direction (degrees)	DR	DR234
GPS fix time	FU	FU1184816148

If you are using LeoTRAK-Online SMS destination and format will be defined as required by LeoTRAK-Online. Using your LeoTRAK-Online account you may forward the messages to multiple Email/SMS destination. Please see LeoTRAK-Online manual for further information.

Upload settings

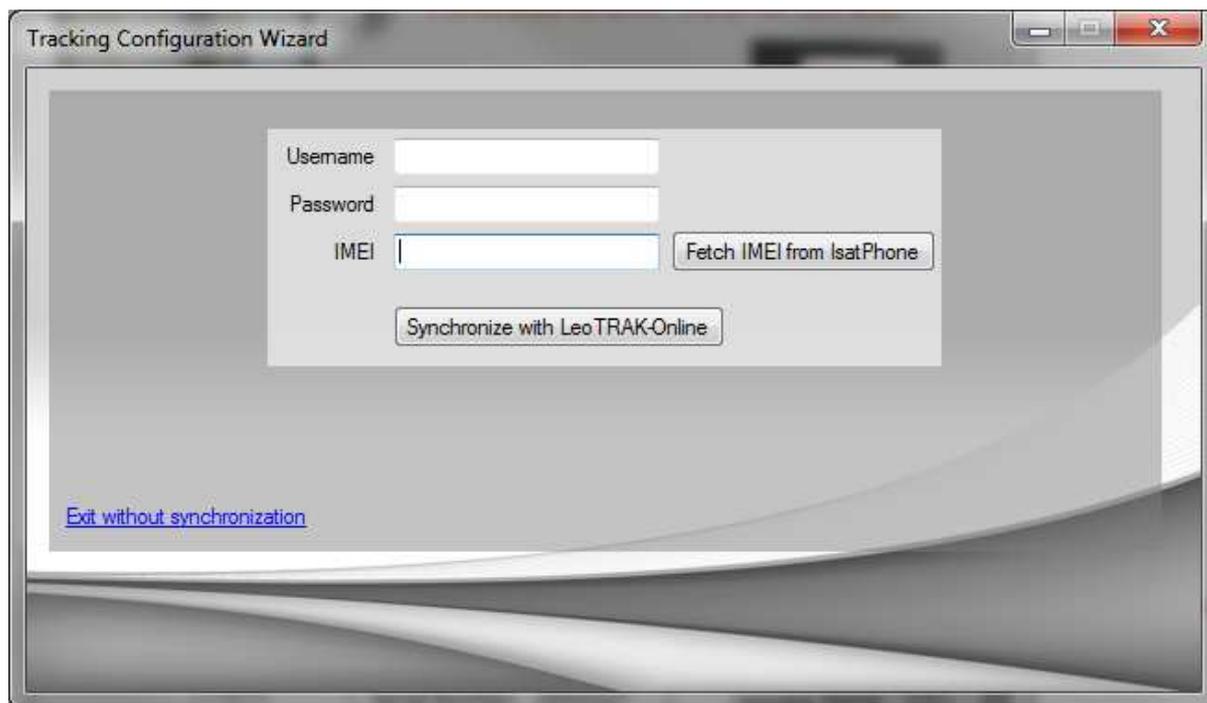


Once you understand and accept that there are charges associated with the SMS service click on Upload to upload the settings to the unit. At the end of uploading you will be asked if you would like to turn ON Tracking. Click Yes to turn ON tracking.

Synchronization with LeoTRAK-Online or Message Summary

Synchronize with LeoTRAK-Online

If you are using LeoTRAK-Online as your tracking application, an option to collaborate the alarms with LeoTRAK-Online will appear.



You will need to provide your LeoTRAK-Online username and password and the IMEI of Inmarsat IsatPhone.

You will require an active internet connection to upload messages/alarms to LeoTRAK-Online.

Synchronize with LeoTRAK-Online

This will initiate a secure connection to LeoTRAK-Online. After successful log in, the server will see the unit from the given IMEI number. If the server cannot find the unit with the given IMEI, a link will be available to add a unit into LeoTRAK-Online.

If the unit is found, the server will perform one of the following actions

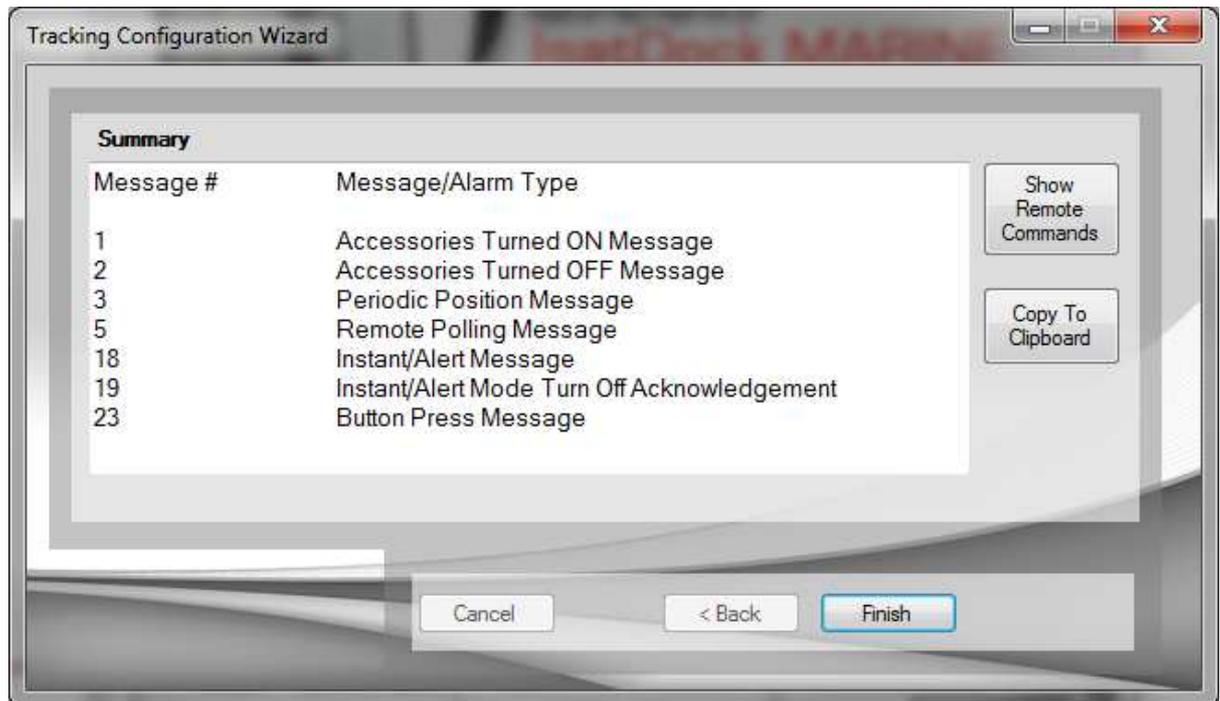
Reason	Action
If the alarm is present and enabled in LeoTRAK-Online	Leave the alarm as it is
If the alarm is present and enabled in LeoTRAK-Online but disabled	Enable the alarm
If the alarm is not present in LeoTRAK-Online	Add new alarm.
Alarms that are present in LeoTRAK-Online but not in the uploaded alarms into the unit	Disable the alarm



Option to Collaborate with LeoTRAK-Online will only appear if you have selected to use LeoTRAK-Online in step 1.

Message Summary

If you are not using LeoTRAK-Online, you will be presented with a message summary.



Copy to Clipboard

This allows you to copy the currently defined message/alarm summary, displayed in the summary box to the Windows Clipboard. You can then paste this information into a word processor for further manipulation and review.

Message Type and Name

Following is a table of all message types and respective message names generated by the event wizard.

The Summary page in wizard will only display message types which are selected in the wizard from the available options.

Message Type	Message Name
Type 1	Ignition ON
Type 2	Ignition OFF
Type 3	Periodic position message
Type 5	Remote polling
Type 18	Instant/alert message
Type 19	Instant/Alert Mode Turn Off Acknowledgement
Type 23	Button press message

POTS

Overview

The POTS/RJ11 circuitry enables the use of standard telephone equipment to be used with the docking station. The Falcon allows the viewing and changing of the POTS/RJ11 settings.

POTS/RJ11 option will only be available to IsatDock PRO, IsatDock MARINE, Oceana 800, Terra 800, Oceana 400 and Terra 400.

The POTS settings are divided into four sections:

1. Tones settings
2. Call Processing
3. Timeouts settings
4. Gains and Impedance

Tones

The unit allows the use of standard telephone equipment; tone setting allows modifying how different tones like ringer, dial tone, unavailable or busy tone will be heard on the standard telephone equipment

Ringer

Ringer allows modifying how the ring will sound during the incoming call on the standard telephone equipment.

There are two ON and OFF times (in milliseconds) to allow for a European style ring tone. For US style cadence, set 2nd ON and OFF the same as 1st ON and OFF.

Parameters:

- 1st ON
Input type: Numeric, 200-4000 ms
Default: 1500 ms
- 2nd ON
Input type: Numeric, 200-4000 ms
Default: 1500 ms
- 1st OFF
Input type: Numeric, 200-4000 ms
Default: 800 ms

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- 2nd OFF
Input type: Numeric, 200-4000 ms
Default: 2000 ms

All parameters are in milliseconds and change the sound of the ring sound.

Dial tone

Dial tone allows modifying how the dial tone will sound when lifting the headset of the standard telephone equipment.

Using these parameters, the dial tone can be set to sound like a "Prrrrrr" or a "Beeeeeep". For a Beep set the OFF time to 0 and ON to 200ms.

A stuttered dial tone can be optionally generated if there is a Voicemail or SMS waiting so the users detect this immediately when they pick up the phone. This parameter specifies the interrupt rate to generate the stutter in milliseconds.

Unavailable

Dial tone allows configuring how the network unavailable tone will sound on the standard telephone equipment.

Busy

Dial tone allows configuring how the network busy tone will sound on the standard telephone equipment.

Call Processing

Call processing is the ability for the docking station to automatically prefix a user dialed number with the correct area or country code. This is intended to allow for a simpler dialing process for users who have not been trained to place a call from a satellite phone.

Falcon allows a user to enable or disable this feature. By default this feature will be disabled.

When this feature is disabled there will be no alteration to dialed numbers by the docking stations.



WARNING: Phone number processing only applies to RJ11/POTS handsets. It does not apply when dialing directly from the IsatPhone.

When enabled the users will have the following customizable parameters:

Minimum Digits

Input type: Numeric, 3-10

Default: 8

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The minimum number of digits a user must enter for the docking station to accept the dialed number as a valid phone number and apply call processing. Call processing will not be applied to any user entered number that has less than the minimum digits entered here.

Country Code

Input type: Up to 4 numeric digits

Default: 61

This is the country code that the docking station will automatically prefix users dialed numbers with. For example if a user was operating the docking station within Australia, a user would enter in "61" which is Australia's country code.

Area Code

Input type: Up to 4 numeric digits

Default: 3

The local area code of the users location. It will be recommended via written text for users not to enter in the STD digit component of their local area code. For example, the state of Victoria (In Australia) has an area code of '03", in this instance a user would enter in '3'.

Leading Digit for Information numbers

Input type: Numeric, 0-9

Default: 1

This allows setting the first digit of local information service numbers (eg. Time, Weather). If the 1st digit of the phone number is the defined local information service numbers, the docking station ignores the 'Minimum Digits' and "Area codes" setting to dial information service number.

Leading Digit for Long Distance (STD)

Input type: Numeric, 0-9

Default: 0

If the 1st digit of the phone number is this number, it is assumed to be a national call rather than a local call. The phone number will therefore include the area code to be dialed.

Dialing Emergency number

Local shortcut for emergency services	Inmarsat Translation of Emergency Number
Input type: 000-999 Commonly set to '000', '911' or '100' Default: 911	This number is sent to the network when the emergency number is dialed. It must be a full format Inmarsat number (include 00 or +). Default: 112

Dialing Voicemail number

Shortcut to retrieve voicemail messages	Inmarsat Translation of voicemail number
Input type: 000-999 Default: 123	This number is sent to the network when the voicemail shortcut above is dialed. It must be a full format Inmarsat number (include 00 or +). Default: 570

QUICK DIAL

Input type: Full format number (include 00 or +).

Up to 10 configurable quick dial numbers can be stored. Quick dial numbers can be dialed by pressing the allocated quick dial position number followed by "*". Quick Dial functionality will not be available when Auto Dial is enabled.

ENABLE AUTO DIAL

The Auto Dialing capability when enabled, will establish a call with the number defined in position 0 (zero) of the quick dial section once the handset is lifted.



NOTE: Call Processing does not apply to any of the numbers in the Quick Dial positions. You must enter phone numbers here, exactly as they would be dialed from the handset, including international and local prefixes.

Timeouts

DTMF 1st Digit

Input type: Numeric, 1000- 25000 ms

Default: 15000 ms

DTMF 1st Digit determines how long to generate a dial tone in milliseconds before the 1st digit of the phone number is pressed on the phone. If this time expires, it is likely the phone has been left off the hook accidentally and a special rising tone at maximum volume is made to alert the user to hang up (put on hook).

Autodial

Input type: Numeric, 1000- 25000 ms

Default: 3000 ms

When Autodial is enabled from call processing, autodial timeout determines how long to wait before dialing the predefined autodial number.

Entry Time

Input type: Numeric, 1000- 25000 ms

Default: 5000 ms

DTMF Digit determines how long to wait for another phone digit before we assume the number has been fully entered. This is a tradeoff between being too quick for a slow dialer or extending the time taken to place a call.

Gains and Impedance

Gains

This allows configuring independent setting of the gain for Dial tone, signaling tone (Unavailable, SIM Locked/Puk), downlink and uplink voice.

The gains can be set during a call as the effect is immediate. The major reason to modify a gain setting would be to reduce the downlink voice gain to reduce the echo faded back to the far end user.

Impedance

Impedance settings relate to the load the standard telephone equipment (RJ11) presents to the docking station. As the standard telephone equipment line interface is a 2-wire standard, it relies on careful balancing between the impedance expected and experienced by the Docking station to stop signals in each direction being improperly reflected. In normal telephone installations, this is not that critical because a reflection at the far end is just experienced by the near end user as an increase in side tone (or how much you hear your own voice). In a satellite application, however, the echo reflected back to the far end user is delayed twice by the satellite and landline delays. By the time the user ringing the satellite phone gets to hear his voice back again, it has been delayed up to a second.

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Power

Sleep Time

Time in minutes after the unit should go to low power mode, once the Ignition/Accessories goes OFF.

Backup and Restore

Backup device to file

This will read all settings from the device and store them to a file.

The process will create a .fconfig file. This file can be use to upload settings to multiple units or to restore settings on the same unit.

Restore device from file

This will read settings from a .fconfig file and restore to the connected device.

The process will ask to select a .fconfig file. The settings from selected file will be uploaded. At the end of upload you will be asked if you would like to turn on the tracking.

Load settings to application from file

This will read all the settings from the .fconfig file load in to application. This allows you to view and edit the settings without uploading to the unit.

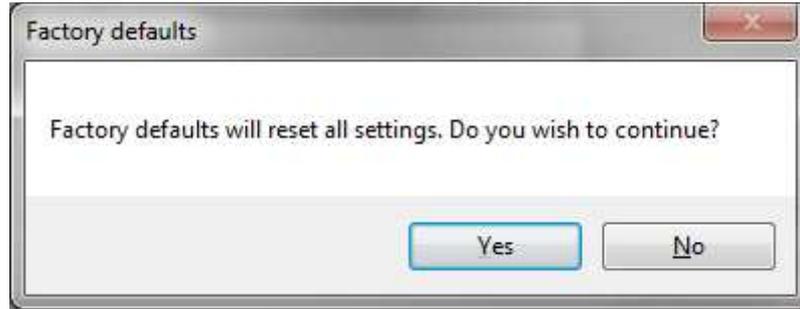
Advance Options

The screenshot displays the Falcon IsatDock MARINE software interface. At the top, the title bar reads "F Falcon". The main area features the Falcon logo and "IsatDock MARINE" text. Below this is a central power button icon with the text "Click to connect / disconnect". To the left is an image of the IsatPhone Pro device, and to the right is an image of a laptop. Below the central area are five icons: Tracking (pushpin), POTS/RJ11 (phone), SMS (envelope), Power (lightning bolt), and Backup/Restore (download arrow). The "Unit Status" section contains a table with the following data:

Unit Status	
Model	IsatDock Marine
Terminal Firmware	1.1.5204
IsatPhone Pro Firmware	4.0.0
Input Volts	11.902 V
PCB	02
Serial Number	MMN00001
Internal Temperature	25C
IsatPhone Pro IMEI	353032040056869
Satellite Signal	040%
GPS Satellite Visible	09

At the bottom, there are links for "Hide Advanced Options" and "About", and buttons for "Factory Defaults", "Security Settings", "Log History", and "Upgrade Firmware". The BEAM logo is visible in the bottom right corner.

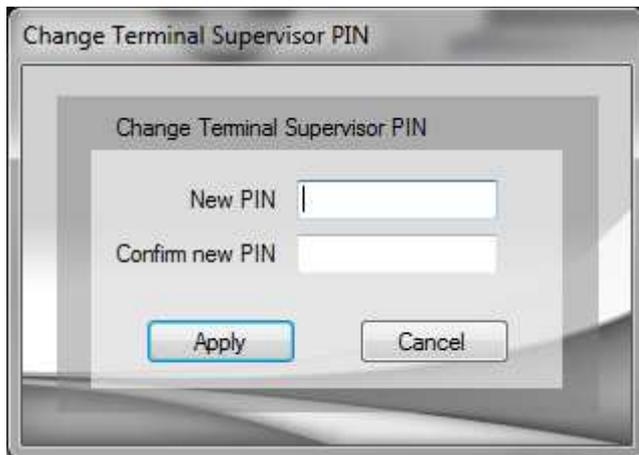
Factory Defaults



Factory default resets the device back to original settings, including the supervisor PIN (pass code). It will clear existing tracking, pots and the power settings.

Security Settings

Change Supervisor PIN



Changing your supervisor PIN may prevent correct communication and tracking functionality with LeoTRAK-Online.

Input type: Alphanumeric, 4-6 characters long

Default: 3170

This allows the supervisor pin (pass code) to be changed.

Log History

Index #	Date	Time	Event Type	Call Handler State	SMS Handler State	Message	Tracking Active	Loop connected	Ignition ON	GPS FIX	Network Registered
0	1/06/2011	2:05 AM	Status	Phone Starting	SMS Idle	Startup	False	False	True	True	False
1	1/06/2011	2:06 AM	SMS sent	Phone Idle	Waiting for response	Msg:Button Press	True	False	True	True	True
2	1/06/2011	2:08 AM	Voice call: Dialed	Dialling	SMS Idle	0061385884519	True	False	True	True	True
3	1/06/2011	2:08 AM	Voice call: Answered	Voice Call	SMS Idle		True	False	True	True	True
4	1/06/2011	2:09 AM	Voice call: UT Terminated	Phone Idle	SMS Idle		True	False	True	True	True
5	1/06/2011	2:10 AM	SMS sent	Phone Idle	Waiting for response	Msg:Emergency activate	True	False	True	True	True
6	1/06/2011	2:15 AM	SMS sent	Phone Idle	Waiting for response	Msg:Emergency	True	False	True	True	True
7	1/06/2011	2:20 AM	SMS sent	Phone Idle	Waiting for response	Msg:Emergency	True	False	True	True	True
8	1/06/2011	2:25 AM	SMS sent	Phone Idle	Waiting for response	Msg:Emergency	True	False	True	True	True
9	1/06/2011	2:30 AM	SMS sent	Phone Idle	Waiting for response	Msg:Emergency	True	False	True	True	True
10	1/06/2011	2:35 AM	SMS sent	Phone Idle	Waiting for response	Msg:Emergency	True	False	True	True	True
11	1/06/2011	2:40 AM	SMS sent	Phone Idle	Waiting for response	Msg:Emergency	True	False	True	True	True
12	1/06/2011	2:45 AM	SMS sent	Phone Idle	Waiting for response	Msg:Emergency	True	False	True	True	True
13	1/06/2011	2:47 AM	Voice call: Dialed	Dialling	SMS Idle	0061385884519	True	False	True	True	True
14	1/06/2011	2:47 AM	Voice call: Answered	Voice Call	SMS Idle		True	False	True	True	True

Total Log Entries: 18

Retrieve more log entries

Retrieve all log entries [Retrive] [Advance Logging] [Clear] [Export] [Close]

This provides a listing of all entries stored in the unit’s log. The log can store alarm events, errors and other information regarding the activities of the unit.

The Falcon will automatically try and download the log history when “Log History” is clicked from the Tools Menu.

Refresh: Retrieves the log from the attached unit.

Clear: Clears the log from the attached unit.

Export: Exports the log in comma separated file system.

Upgrade Firmware

Beam Terminal Firmware Upgrade



This provides the ability to upgrade the unit with new firmware. Firmware for the unit has a ".HEX" extension.

When upgrading the firmware of the unit it is vital that power is not removed to the unit, and the cable is not disconnected from the device at any stage until the process is complete.

Inmarsat Transceiver Firmware Upgrade

Inmarsat Transceiver firmware upgrade option will only be available to Oceana 800, Terra 800, Oceana 400 and Terra 400.

This provides the ability to upgrade the Inmarsat Transceiver firmware with new firmware. Firmware for the Inmarsat Transceiver has a ".fpk" extension.

When upgrading the firmware it is vital that power is not removed to the unit, and the cable is not disconnected from the device unless prompted to do so.



Troubleshooting

1. Cannot communicate with the unit.
 - a. Ensure the unit is physically connected to the computer via the USB cable and that the cable is connected to the docking station.
 - b. Ensure that no other application or utility is connected to the Application comport
 - c. Ensure that power is switched ON to the unit
 - d. Remove the USB cable and then reconnect it to the unit.