

Minn Kota Terrova iPilot/iPilot Link BT System Upgrade Kit

Installation Instructions

Always wear safety glasses and gloves. Disconnect all power to the trolling motor before beginning any work or maintenance. Lakeside Marine and Service is not responsible for any damage due to improper rigging or installation. If you do not have the skills, experience and tools to perform the following maintenance and repairs, we recommend you either drop off your trolling motor or ship your trolling motor to Lakeside Marine and Service to complete the installation. Or contact our Technical Service Department by email at support@lakesidemarineandservice.com or, by calling/texting 815 246 2535.

iPilot/iPilot Link Head and Control Head Replacement

1. Remove current iPilot/iPilot Link head from current control head base by removing the 4 screws on the underside of the control head base. (save screws for new control box head and iPilot/iPilot Link Head)
2. Disconnect all wiring quick connects in the control head base.
3. Remove insert plug and coil cord from control head base.
4. Remove nut and bolt that holds the lower control head base to the shaft (save screw and nut).
5. Remove lower control head base
6. Install new lower control head base on shaft and secure with screw and nut.
7. Install coil cord and new insert plug into lower control head base.
8. Reconnect all wiring. If black and red wires were not twisted when reconnecting make sure there are at least three twists on each side of the quick connect (see pic below). This cuts down on electrical interference.
9. Shrink wrap any wires that were shrink wrapped before.
10. Plug in new iPilot/iPilot Link head into the coil cord quick connect and install new iPilot/iPilot Link head on the new control head base. Secure with screws from step 1.

Control Board and Center Housing Replacement

1. Deploy trolling motor
2. Remove side plates on base of trolling motor (2 screws on each side of the trolling motor).
3. Remove existing center housing where the battery indicator level is.
4. Unhook all wires on the control board and all quick connects.
5. Remove steering motor wires from old center housing by popping out the strain relief connector.
6. Remove two screws that hold control board to trolling motor base.
7. Remove strain relief that holds the battery wires and foot pedal quick connect in place.
8. Remove control board from base.
9. Install new control board in base, secure with two screws.
10. Test steering motor following the steps on the next page (DO NOT SKIP THIS STEP) If steering motor fails the test stop and replace/repair and retest before moving forward.
11. Install steering motor wires using the new strain relief to the new center housing.
12. Using the wiring diagram included connect all the wires to the new control board exactly how it is on the wiring diagram.
13. Install new center housing over control board and reinstall existing side plates.

Testing

1. Hook up to power, turn on trolling motor. Deploy Trolling Motor.
2. On iPilot/iPilot Link Remote go into settings and click the pair button and press and hold the pair button on the top of the iPilot/iPilot Link Head at the same time to pair the remote to the head.
3. Test out the remote to ensure it is working as it should. (both ipilot and ipilot link quick reference guides are listed below. You only need the one that matches the remote provided).
4. Install and pair heading sensor per instructions included.

IMPORTANT

IMPORTANT- READ CAREFULLY AND COMPLETELY UNDERSTAND BEFORE INSTALLING NEW CONTROL BOARD. IF YOUR OLD CONTROL BOARD STEERING CIRCUIT WAS NOT WORKING YOU MUST DO THE FOLLOWING PROCEDURE BEFORE HOOKING UP THE NEW CONTROL BOARD. FAILURE TO DO SO WILL RESULT IN PERMANENT DAMAGE TO THE NEW CONTROL BOARD AS WELL.

TERROVA TROLLING MOTORS

Terrova/ST motors use drive housings that are specific to the voltage of the motor. For drive example, a Terrova 55/ST 55 uses a 12-volt drive housing, a Terrova 80/ST 80 uses a 24-volt drive housing and a Terrova 101 & 112 use a 36-volt drive housing.

To properly test the drive housing apply the voltage appropriate for the model directly to the drive housing leads while observing the drive housing amp draw. The amp draw under bench test, no load, conditions should be less than 2 amps and constant for a 12-volt drive housing, and less than 1.5 amps and constant for 24 volt and 36 volt drive housings. NOTE: Reverse the polarity at the drive housing leads to check amp draw in both clockwise and counterclockwise rotation.) If the drive housing amp draw exceeds the values listed (2 amps for 12-volt drive housings or 1.5 amps for 24-or 36-volt drive housings) or the reading is not constant, suspect that the drive housing has taken out the steering circuit on the main control board. (NOTE: When this has occurred the drive housing must be repaired or replaced prior to replacing the main board. If the higher than normal amp draw of the drive housing is not corrected the steering circuit on the new/replacement main control board will also fail.)

ULTREX TROLLING MOTORS

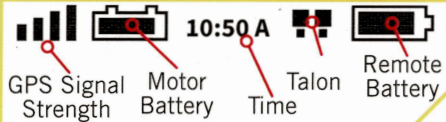
To properly test the ULTREX drive housing apply the 12 Volts directly to the steering motor and observe the amp draw; testing at 12 volts on a bench the amp draw should be steady and roughly 1 amp, if the amp draw is high or fluctuating replace the steering housing before installing new control board. NOTE: Reverse the polarity at the drive housing leads to check amp draw in both clockwise and counterclockwise rotation.

ULTERRA TROLLING MOTORS

To properly test the Ulterra drive housing apply the 12 Volts directly to the small 2-pin plug that has the orange and yellow steering housing wires attached. (Direct testing with 12-volts is fine for this test even though the housing is either 24-volt or 36-volt when operating in the motor.) While testing with 12-volts the steering housing should draw a consistent value less than 1.5 amps. If the value fluctuates significantly during testing and the control board does not have steering output, replace the steering housing before installing the new control board. NOTE: Reverse the polarity at the drive housing leads to check amp draw in both clockwise and counterclockwise rotation.

IF YOU HAVE ANY QUESTIONS OR CONCERNS CONTACT US BEFORE INSTALLING THE CONTROL BOARD (815) 246 2535.

HEADER



GPS Signal Strength

Shows the level of GPS signal strength. If no bars appear, the system has not yet acquired a GPS fix.

Motor Battery

Displays motor battery level when prop is disengaged.

Time

Displays the current time.

Remote Battery

Displays the battery level of the remote.

Talon

Displays the connection with one or two Talons and indicates if the Talon(s) are deployed.

ICONOGRAPHY

Spot-Lock

Displays when Spot-Lock is engaged.

Spot-Lock Jog

Displays when Spot-Lock is engaged and the motor is communicating with a Heading Sensor.

Legacy AutoPilot

Displays when AutoPilot is engaged and the AutoPilot Mode is set to Legacy.

Advanced AutoPilot

Displays when AutoPilot is engaged and the AutoPilot Mode is set to Advanced.



Record

Displays when an iTrack is being recorded.



iTrack

Displays when an iTrack is being navigated.



Prop Lockout

Displays when the Prop is locked during certain functions.



Trim

Displays when Trim is being adjusted.



Brightness

Displays when screen brightness is being adjusted.



Talon Selection

Displays the active Talon as either left, right or both.



Prop

Displays when the Prop is enabled. Rotates when the Prop is on. Blinks when a mode of navigation is used that requires the prop to be enabled.



Prop Speed

Displays the current Prop Speed. Can be adjusted in 1/2 speed increments between 0 and 10.



Ground Speed

Displays the current speed over ground.



Cruise Control

Displays the Target Speed when Cruise Control is engaged.



Lock

Displays when the Remote is locked.



Scroll Up & Down

Displays when the softkey labels at the bottom of the display screen have more options available.

◆ Only available with Ultrera.
■ Only available with Ultrax.

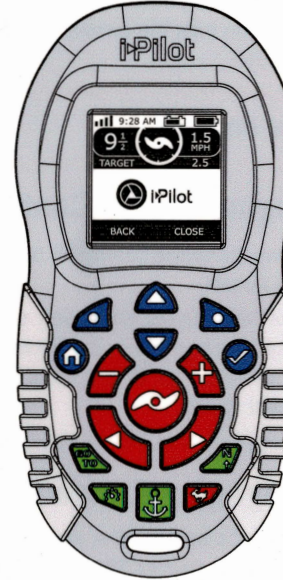


i-PILOT®

QUICK REFERENCE GUIDE

Compatible with all Bluetooth® enabled i-Pilot systems

i-PILOT REMOTE



MENU CONTROL BUTTONS



Home

Pressing this button will always bring you to the Home Screen.



Ok

Press to accept menu selections. Press to power remote on. Press and hold for 3 seconds to power remote off.



Left Softkey & Right Softkey

Buttons change function based on the mode of operation and which screen is presently displayed. Softkey labels at the bottom of the display screen indicate current function.



Menu Up & Menu Down

Used to navigate softkey labels and menus.

MANUAL CONTROL BUTTONS



Speed Down & Speed Up

Press to increase or decrease motor speed.



Prop On/Off

Pressing this button will turn the Prop on and off.



Steer Left & Steer Right

Press to steer the motor to the left or to the right.



High Speed Bypass

Bypasses the current motor speed to speed 10. Quickly double press to engage. Single press to disengage.



NAVIGATION BUTTONS



GO TO

Opens the list of Spot-Locks and iTracks that are within navigable range.



Cruise Control

Press to enable Cruise Control.



Spot-Lock

Press to enable Spot-Lock.



AutoPilot

Press to enable AutoPilot.

SPOT-LOCK

Engaging Spot-Lock

1. Press the Spot-Lock button on the remote.
2. The information for the temporary Spot-Lock location will show up on the display screen. Use the Menu Up and Menu Down buttons to find the Save softkey label at the bottom of the display screen. To save the Spot-Lock, press the Left Softkey to open the Save menu.
3. The Save menu brings up a list of Spot-Locks. Use the Menu Up and Menu Down buttons to select one of the Spot-Lock memory locations. Press the Left Softkey to Save the Spot-Lock into the selected memory location.

Disengaging Spot-Lock

1. When Spot-Lock is engaged, press the Spot-Lock button to disengage Spot-Lock, or use the Menu Up and Menu Down buttons to find the Cancel softkey label at the bottom of the display screen. Use the Right Softkey to select Cancel.

Re-Engage a Saved Spot-Lock

1. Manually navigate the boat to within a quarter mile of a saved Spot-Lock location. Due to safety reasons, i-Pilot will not re-engage a saved Spot-Lock location greater than a quarter mile away.
2. Press the GOTO button on the remote.
3. The Spot-Lock menu will appear on the display screen. Use the Menu Up and Menu Down buttons to scroll to a saved Spot-Lock location in the menu.
4. Press the Ok button to select a saved Spot-Lock location.

Spot-Lock Jog

(Heading Sensor required.)

1. To engage Spot-Lock Jog, first engage Spot-Lock. Use the Speed Down (jog backward), Speed Up (jog forward), Steer Left (jog left), and Steer Right (jog right) buttons to jog the Spot-Lock location 5 feet in the selected direction from the current Spot-Lock location.

CRUISE CONTROL

Engaging Cruise Control

1. Press the Cruise Control button on the remote.
2. The Target Speed will appear on the display screen. Press the Speed Down or Speed Up buttons to adjust the Target Speed.

Disengaging Cruise Control

1. When Cruise Control is engaged, press the Cruise Control button on the remote to disengage Cruise Control.

HIGH SPEED BYPASS

Engaging High Speed Bypass

1. Double press the High Speed Bypass button.
2. The Prop Speed will automatically go to speed 10.

Disengaging High Speed Bypass

1. When High Speed Bypass is engaged, press the High Speed Bypass button on the remote to disengage High Speed Bypass, or press the Speed Down button.

AUTOPILOT

Engaging AutoPilot or Advanced AutoPilot

1. Press the AutoPilot button on the remote.
2. The AutoPilot or Advanced AutoPilot icon will display on the screen.
3. To adjust the desired heading, manually steer the motor to the new heading. i-Pilot will automatically lock onto the new heading.

Disengaging AutoPilot or Advanced AutoPilot

1. When either AutoPilot mode is engaged, press the AutoPilot button on the remote to disengage AutoPilot.

iTRACK

Recording an iTrack

1. Use the Menu Up or Menu Down buttons to find the Record softkey label at the bottom of the display screen.
2. Press the Left Softkey to select the Record menu.
3. The Record menu brings up a listing of iTracks. Use the Menu Up and Menu Down buttons to scroll to one of the iTrack memory locations.
4. Press the Ok button to select an iTrack memory location. Once a location is selected, the current location of the boat becomes the To Start location of the iTrack being recorded.
5. Navigate the boat along the desired path or course. AutoPilot and/or Cruise Control can be used while recording an iTrack.
6. To stop recording an iTrack, use the Menu Up or Menu Down buttons to find

the Stop softkey label at the bottom of the display screen.

7. Use the Left Softkey to select Stop.
8. The recording will end automatically if the two-mile distance limit is reached for the iTrack or if the Spot-Lock or GO TO button is pressed.

Navigating an iTrack

1. Manually navigate the boat to within a quarter mile of the saved iTrack. Due to safety reasons, i-Pilot will not re-engage a saved iTrack greater than a quarter mile away.
2. Press the GO TO button on the remote. The remote default is to first bring up saved Spot-Locks. Press the Right Softkey to bring up saved iTracks.
3. Use the Menu Up or Menu Down buttons to select an iTrack to navigate.
4. Using the Left Softkey or Right Softkey select the softkey label to either go To Start or To End. The boat will navigate to the closest point on the iTrack and then navigate To Start or To End depending on the selection made until it reaches that point.

Reverse an iTrack

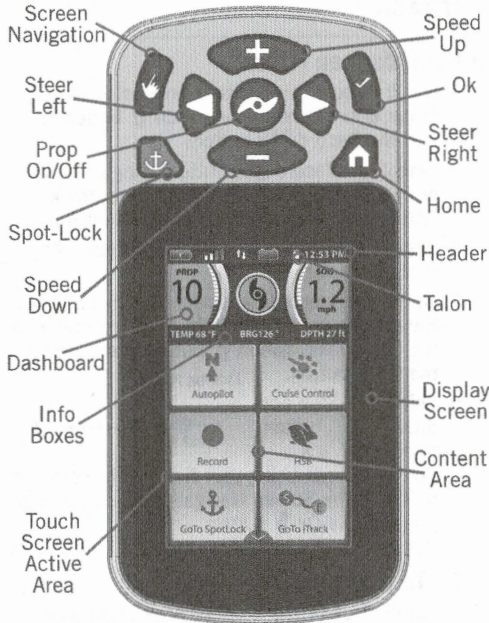
1. The direction that the iTrack is being navigated can be reversed while the GO TO action is taking place. Use the Menu Up or Menu Down buttons to find the Reverse softkey label at the bottom of the display screen. Use the Left Softkey to select Reverse.



Scan to view the complete i-Pilot Owner's Manual online.

Compatible with all Bluetooth® enabled i-Pilot® Link™ Systems

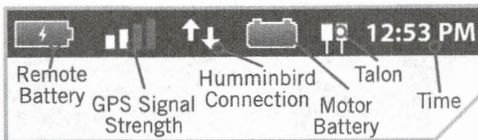
i-PILOT® LINK™ REMOTE



CONTROL BUTTONS >

- Home**
Press to bring up the Home Screen Buttons.
- Screen Navigation**
Press to navigate the menu without touching the screen. Press and hold to lock and unlock the remote.
- Ok**
Press to accept menu selections. Press to power remote on. Press and hold for 3 seconds to power remote off.
- Speed Up & Speed Down**
Press to increase or decrease motor speed.
- Steer Left & Steer Right**
Press to steer the motor to the left or to the right.
- Prop On/Off**
Press to turn the Prop on and off.
- Spot-Lock**
Press to enable and disable Spot-Lock.

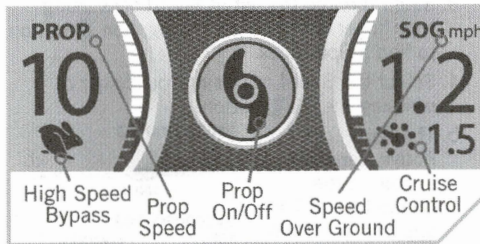
HEADER >



- Motor Battery**
Displays motor battery level when prop is disengaged.
- 12:53 PM Time**
Displays the current time.
- Remote Battery**
Displays the battery level of the remote.

- GPS Signal Strength**
Displays the level of GPS signal strength. If no bars appear, or if the bars are flashing, the system has not yet acquired a GPS fix.
- Humminbird Connection**
Displays white arrows to show when the i-Pilot Link controller is communicating with the Humminbird. Grey arrows indicate that there is no communication.
- Talon**
Displays the connection with one or two Talons and indicates if the Talon(s) are deployed. One Icon will display in the event that one Talon is paired, and two will display if two Talons are paired. The icons will turn grey to indicate that the Talon(s) is not connected.

i-PILOT LINK DASHBOARD >



- SOG Speed Over Ground**
Displays the current speed over ground.
- High Speed Bypass**
Displays when High Speed Bypass is engaged.
- Prop On/Off**
Displays when the Prop is enabled. Rotates when the Prop is on and the Prop Speed is greater than zero. Blinks when a mode of navigation is used that requires the prop to be enabled.
- Cruise Control**
Displays when Cruise Control is engaged along with the Target Speed.
- PROP Prop Speed**
Displays the current Prop Speed. Can be adjusted in 1/2 speed increments between 0 and 10.

INFO BOXES >

TEMP 72 °F	BRG 359°	DPTH 1 ft
Temperature	Bearing	
TEMP 65 °F	HDG 255°	DPTH 5 ft
Heading	Depth	

- BRG Bearing**
Bearing is the direction from the boat's current location to the target destination during navigation.
- HDG Heading**
Heading is the direction that the motor is pointing.

- TEMP Temperature**
The current water temperature based on communication with the Humminbird.
- DPTH Depth**
The current water depth based on communication with the Humminbird.

i-PILOT LINK HOME SCREEN BUTTONS >

- Legacy AutoPilot**
The AutoPilot button is used to engage and disengage Legacy AutoPilot.
- Advanced AutoPilot**
The AutoPilot button is used to engage and disengage Advanced AutoPilot.
- Record**
The Record button is used to start and stop recording an iTrack.
- HSB**
Select the HSB (High Speed Bypass) button to engage High Speed Bypass. High Speed Bypass automatically sets the Prop Speed to 10. Double press to engage. Single press to disengage.
- Lock Keys**
Select the Lock button to lock the buttons and touch screen. Pressing and holding the Screen Navigation button also locks and unlocks the remote.
- Cruise Control**
Press the Cruise Control button to enable or disable Cruise Control. Once Cruise Control is enabled, pressing the Speed Up or Speed Down buttons will change the Target Speed rather than the Prop Speed.
- Mark Waypoint**
Press to mark a Waypoint.
- Settings**
Press the Settings button to open the Settings menu and adjust settings within the i-Pilot Link system.
- Options**
Press the Options button to open the Options menu and adjust options within the i-Pilot Link system.
- Go To Spot-Lock**
The Go To Spot-Lock button is used to open a menu used to navigate to a Spot-Lock location. The i-Pilot Link system will only bring up Spot-Locks within a quarter mile range.
- Go To iTrack**
The Go To iTrack button is used to open a menu used to navigate to an iTrack. The i-Pilot Link system will only bring up iTracks within a quarter mile range.
- Go To Waypoint**
The Go To Waypoint button is used to open a menu used to navigate to a Waypoint location. The i-Pilot Link system will only bring up Waypoints within a quarter mile range.
- Ulterra**
The Ulterra button is used to access functions specific to controlling the Ulterra.

CRUISE CONTROL

Engaging Cruise Control

1. Scroll through the Content Area using your finger or the Screen Navigation button to find the Cruise Control button.
2. Select the Cruise Control button using your finger or by pressing the Ok button.
3. The Cruise Control target speed will appear in the Dashboard. The Target Speed can be increased and decreased using the Speed Up and Speed Down buttons.

Disengaging Cruise Control

1. When Cruise Control is engaged, scroll through the Content Area using your finger or the Screen Navigation button to find the Cruise Control button.
2. Select the Cruise Control button using your finger or by pressing the Ok button.
3. The Cruise Control Target Speed will disappear from the Dashboard.

AUTOPILOT

Engaging AutoPilot

1. Scroll through the Content Area using your finger or the Screen Navigation button to find the AutoPilot button.
2. Select the AutoPilot button using your finger or by pressing the Ok button.
3. The AutoPilot Active Band will appear in the Content Area. Either Legacy AutoPilot or Advanced AutoPilot will be engaged depending on the AutoPilot Mode selected.



Legacy AutoPilot



Advanced AutoPilot

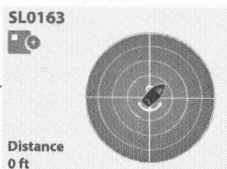
Disengaging AutoPilot

1. When AutoPilot is engaged, scroll through the Content Area using your finger or the Screen Navigation button to find the AutoPilot button.
2. Select the AutoPilot button using your finger or by pressing the Ok button.
3. The AutoPilot Active Band will disappear from the Content Area.

SPOT-LOCK

Engaging Spot-Lock

1. Press the Spot-Lock button.
2. The Spot-Lock Active Band will appear in the Content Area.
3. To save the Spot-Lock, select the Spot-Lock Active Band using your finger or by pressing the Ok button.
4. Scroll through the Spot-Lock Control Screen using your finger or by pressing the Screen Navigation button to find the Save button.
5. Select the Save button using your finger or by pressing the Ok button to save the Spot-Lock. The Save icon will disappear from the Active Band.



Spot-Lock Jog

(Heading Sensor required.)

1. To engage Spot-Lock Jog, first engage Spot-Lock. Use the Speed Down (jog

backward), Speed Up (jog forward), Steer Left (jog left), and Steer Right (jog right) buttons to jog the Spot-Lock location 5 feet in the selected direction from the current Spot-Lock location.

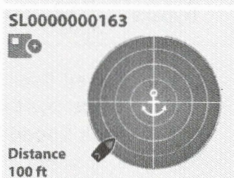
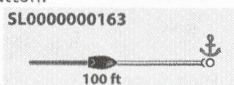
2. To Jog the Spot-Lock location with the Screen Navigation button, select the Spot-Lock Active Band to open the Spot-Lock Control Screen. Select the Back, Forward, Left, or Right buttons using your finger or by scrolling to one with the Screen Navigation button and pressing the Ok button.

Disengaging Spot-Lock

1. With Spot-Lock engaged, press the Spot-Lock button on the remote to disengage Spot-Lock.
2. The Spot-Lock Active Band will disappear from the Content Area.

Go To a Saved Spot-Lock

1. Scroll through the Content Area using your finger or the Screen Navigation button to find the Go To Spot-Lock button.
2. Select the Go To Spot-Lock button using your finger or by pressing the Ok button. A list of Spot-Locks that are within a quarter mile will appear.
3. Scroll through the list of Spot-Locks using your finger or the Screen Navigation button to find a Spot-Lock.
4. Select the Spot-Lock using your finger or pressing the Ok button.
5. The Spot-Lock Active Band will appear in the Content Area. The appearance of the Active Band will vary depending on the distance between the current location and the selected Spot-Lock.



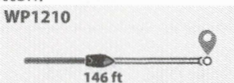
WAYPOINTS

Mark a Waypoint

1. Scroll through the Content Area using your finger or the Screen Navigation button to find the Mark Waypoint button.
2. Select the Mark Waypoint button using your finger or by pressing the Ok button.

Go To a Saved Waypoint

1. Scroll through the Content Area using your finger or the Screen Navigation button to find the Go To Waypoint button.
2. Select the Go To Waypoint button using your finger or by pressing the Ok button. A list of Waypoints that are within a quarter mile will appear.
3. Scroll through the list of Waypoints using your finger or the Screen Navigation button to find a Waypoint to navigate to.
4. Select the Waypoint using your finger or by pressing the Ok button.
5. The Waypoint Active Band will appear in the Content Area.



Disengage Go To Waypoint

1. When Go To Waypoint is engaged, scroll through the Content Area using either your finger or the Screen Navigation button to find the Waypoint Active Band.

2. Select the Waypoint Active Band using your finger or by pressing the Ok button.
3. Select the Cancel button from the Waypoint Control Screen using your finger or by scrolling to it with the Screen Navigation button and pressing the Ok button to select it.

ITRACK

Recording an iTrack

1. Scroll through the Content Area using your finger or the Screen Navigation button to find the Record button.
2. Select the Record button using your finger or by pressing the Ok button. The iTrack Active Band will appear in the Content Area.
3. Engage the Prop and manually navigate the desired course.
4. To Save the recording, select the iTrack Active Band using your finger or by scrolling to it with the Screen Navigation button and pressing the Ok button.
5. Select the Stop and Save button from the iTrack Control Screen using your finger or by scrolling to it with the Screen Navigation button and pressing the Ok button.

IT0000200163



Go To a Saved iTrack

1. Scroll through the Content Area using your finger or the Screen Navigation button to find the Go To iTrack button.
2. Select the Go To iTrack button using your finger or by pressing the Ok button. A list of iTracks that are within a quarter mile will appear.
3. Scroll through the list of iTracks using your finger or the Screen Navigation button to find an iTrack.
4. Select the iTrack using your finger or by pressing the Ok button.
5. Decide to navigate To Start or To End and select the appropriate button using your finger or by scrolling to it with the Screen Navigation button and pressing the Ok button.
6. The iTrack Active Band will appear in the Content Area.

IT0000000006



Disengage Go To iTrack

1. When Go To iTrack is engaged, scroll through the Content Area using your finger or the Screen Navigation button to find the iTrack Active Band.
2. Select the iTrack Active Band using your finger or by pressing the Ok button.
3. Select the Cancel button from the iTrack Control Screen using your finger or by scrolling to it with the Screen Navigation button and pressing the Ok button to select it.

NOTICE: For i-Pilot Link features that can be activated from the Humminbird, please refer to your Humminbird manual.



Scan to view the complete i-Pilot Link Owner's Manual online.