

TripNav[™] TN-200 User's Guide v1.3

USB GPS Receiver



© 2003-2004 Rayming Corporation. All rights reserved. The Rayming logo and TripNav are trademarks of Rayming Corporation. All other trademarks or registered trademarks are acknowledged as the exclusive property of their respective owners.

All rights reserved. No part of this manual may be reproduced, transmitted, copied, or stored in any storage medium, for any purpose, without prior written consent from Rayming Corporation. Rayming Corporation hereby grants the right to download ONE copy of this manual onto a hard drive for personal use. This manual is copyrighted and contains proprietary information that is subject to change without notice. For more information visit http://www.rayming.com.



Table of Contents

FACKAGE CONTENTS
SYSTEM REQUIREMENTS
WELCOME
SAFETY AND LEGAL NOTICES
1. GETTING STARTED WITH TRIPNAV4
2. INSTALLING THE USB DRIVER INTO YOUR LAPTOP4
2.1. Installing the FT8U232 USB Driver under Windows 985
2.2. Installing FT8U232 USB Driver under Windows 2000 11
2.3. Installing FT8U232 USB Driver under Windows XP 16
3. USING TRIPNAV21
4. UN-INSTALL THE USB DRIVER
4.1. Uninstalling FT8U232 USB Driver from Windows 98
4.1. Uninstalling FT8U232 USB Driver from Windows 98
 4.1. Uninstalling FT8U232 USB Driver from Windows 98
 4.1. Uninstalling FT8U232 USB Driver from Windows 98
 4.1. Uninstalling FT8U232 USB Driver from Windows 98
 4.1. Uninstalling FT8U232 USB Driver from Windows 98
4.1. Uninstalling FT8U232 USB Driver from Windows 98



PACKAGE CONTENTS

TripNav TN-200 GPS Receiver w/USB cable Driver CD-ROM with Quick Start User's Guide & User's Manual*

SYSTEM REQUIREMENTS

The TripNav GPS requires a Windows or Macintosh laptop computer, with a CD-ROM*, USB port, and NMEA compatible navigation software. The 3rd party mapping/navigation software may have its own system requirements, please check with software vendor for details.

*CD-ROM is required for USB driver installation and access to the User's Guide. If no CD-ROM drive is available, files can be downloaded from the Internet at http://www.rayming.com/downloads.htm

WELCOME

Thank you for purchasing TripNav! TripNav is a USB compatible GPS receiver for your laptop PC! TripNav allows real-time street navigation by using your laptop PC for graphical plotting and positioning of your route. Simply load the GPS driver, plug the GPS receiver into your PC's USB port and install your own personal street mapping software to begin to view your position in real-time in relation to the surrounding streets in your travel area.

You'll find that almost any NMEA compliant street mapping software is compatible with the TripNav USB GPS receiver. Visit our web-site for recommended mapping programs that you can use. http://www.rayming.com/products/mapchart.htm

SAFETY AND LEGAL NOTICES

Please read this section carefully before using TripNav

Rayming Corporation will not accept any responsibility whatsoever for accidents resulting from failure to observe common sense precautions. Your personal judgement, traffic regulations, and common sense must always take precedence over any directions produced by TripNav or the mapping software

WARNING: Make sure that the GPS receiver is secure and does not interfere with driving visibility and safety.

It is your responsibility as the vehicle operator to securely place the GPS unit and antenna so that they will not interfere with driving and prevent operations of any safety device (such as the Airbag) in your vehicle. Do not mount the devices in a place where the driver or passengers may receive injury during vehicle operation or collision. For your safety, take care to route all cables away from shifters, pedals, accessory controls and mechanisms.



WARNING: Drive safely and use common sense.

It is your responsibility as the vehicle operator to drive safely, observe all traffic rules and above all use your own personal judgment while driving. If you feel that a route suggested by the navigation software instructs you to perform an unsafe or illegal maneuver, places you in an unsafe situation, or routes you into an area which you consider unsafe, do not follow the instructions.

WARNING: Keep your eyes on the road.

It is your responsibility as the vehicle operator to keep your eyes on the road and be an alert driver at all times, especially when the vehicle is moving. The vehicle's operator should not be distracted by the navigation equipment or software. Should there be a distraction with the ability to drive responsibly, please turn off the device. Should you want to look at the display for a prolonged time, park the car safely, while following all traffic regulations before looking at the display.

WARNING: To reduce the risk of fire or shock hazard, do not expose this product to rain or moisture. Do not remove covers or open housings, there are no user serviceable parts inside. Refer servicing to qualified personnel only.

1. GETTING STARTED WITH TRIPNAV

These are only a few simple steps that you need to follow before using your TripNav receiver:

- Install the USB driver and onto your laptop PC from the included CD-ROM or download the files from our web-site <u>http://www.rayming.com/downloads.htm</u>.
- Install your own personal street mapping software and configure the software's COM port setting to accept the GPS.
- Plug-in the GPS receiver into your laptop.

2. INSTALLING THE USB DRIVER INTO YOUR LAPTOP

Click on the TN200.EXE file to have the driver files and User's Guide automatically unzipped and copied from the CD-ROM to a local directory on your PC (C:\TRIPNAV2).

I addition to the driver and user manual, a GPS test program called NMEAgent will be copied to C:\TRIPNAV2\GPS_TEST, so that you can verify GPS signals if you don't already have your map or navigation software loaded.

TripNav uses the FTDI FT232BM serial-to-USB controller and assumes that you are installing the drivers on to a clean system for the first time, i. e. one on which FTDI drivers has not yet been installed previously. If this is not the case then refer to Section 4 for guidance on uninstalling FTDI drivers before proceeding with installation.

Plug in your TN-2000 GPS receiver. This should bring up a "Building Driver Information Database" window followed by the "Add New Hardware Wizard."

Continue reading the appropriate section of this User Guide which pertains to your particular operating system.



2.1. Installing the FT8U232 USB Driver under Windows 98

Screen 1

Add New Hardware Wizar	d
	This wizard searches for new drivers for:
	USB <-> Serial
	A device driver is a software program that makes a hardware device work.
8.3	
	CBack Next> Cancel

Click Next.

Screen 2

Add New Hardware Wiza	ard
	 What do you want Windows to do? Search for the best driver for your device. [Recommended]. Display a list of all the drivers in a specific location, so you can select the driver you want.
	< <u>B</u> ack Next > Cancel

Click Next.



	Windows will search for new drivers in its driver database on your hard drive, and in any of the following selected locations. Click Next to start the search.
	Eloppy disk drives
	CD-ROM drive
	Microsoft Windows Update
- 🐨 🍣 -	
	Specify a location:
\sim	C:\Tripnav2
	Browse

Select specify a location. Click "Browse" and select or type a path to: "C:\TRIPNAV2", then click Next. The installation process will automatically select and load the correct USB driver that matches with your O/S version.

Screen 4

Add New Hardware Wizar	d
	Windows driver file search for the device:
	USB High Speed Serial Converter
	Windows is now ready to install the best driver for this device. Click Back to select a different driver, or click Next to continue.
*	Location of driver:
	C:\TRIPNAV2\FTDIBUS.INF
	1
	<back next=""> Cancel</back>

Click Next.



Add New Hardware Wiza	ard
	USB High Speed Serial Converter
	Windows has finished installing the software that your new hardware device requires.
	< <u>B</u> ack Finish Cancel

Click Finish.

To confirm that the installation has completed successfully, look under Device Manager of the System Properties screen. The device should have installed as a USB Serial Port (COMx) attached to USB High Speed Serial Converter.

System Properties	×
General Device Manager Hardware Profiles Performance	
O View devices by type 💿 View devices by connection	
ECP Printer Port (LPT1)	
I will bus	
PCI standard host CPU bridge	
PCI standard PCI-to-PCI bridge	
B → B S3 VIRGE-DX/GX PCI (375/385)	
H Controller	
H → → → VIA Tech 3038 PCI to USB Universal Host Controller	
P ♣ USB Root Hub	
📄 🖨 USB High Speed Serial Converter	
USB Serial Port (COM5)	
🕀 🛄 VIA Tech VT82C686 PCI to ISA bridge	
VIA Tech VT82C686 Power Management Controller	
Programmable Interrupt controller Re /2 Compatible Mayne Part	
Properties Befresh Bemove Print	
OK Cancel	



To change the virtual COM port properties, select the USB Serial Port and then click Properties. This allows you to change serial port properties such as baud rate, data bits etc. Of particular use is the ability to change the COM port that is assigned to your device.

Screen 7

USB Serial Port (COM5) Properties	? ×
General Port Settings Driver	1000
USB Serial Port (COM5)	
Device type: Ports (COM & LPT) Manufacturer: FTDI	
Hardware version: Not available	
This device is working properly.	
Device usage Disable in this hardware profile Exists in all hardware profiles	
OK Car	ncel

Click Port Settings.



USB Serial Port (COM5) Properties	? ×
General Port Settings Driver	
	_
Bits per second: 9600	
Parity: None	
	10.65
Stop bits: 1	and and a second
	1
Elow control: Xon / Xoff	1 6
Advanced <u>B</u> estore Defaults	
	encel

Set COM port to :

Baud rate:	4800
Data bit:	8
Parity:	None
Stop bit:	1
Flow contro	l: None

Click Advanced.

Screen 9

Advanced Port Settings	×
Use EIFO buffers (requires 16550 compatible UART) Select lower settings to correct connection problems. Select higher settings for faster performance.	OK Cancel
Beceive Buffer: Low (1) High (14)	
COM Port Number: COM5 COM2 COM2 COM4 COM5 COM6 COM6	

PAGE 9 OF 33



Then click the drop down arrow on COM Port Number and scroll to the desired COM port. Click OK. Please ensure that you do not select a COM port that is in use. Note: This is particularly important when running programs like HyperTerminal, which only works with COM1 through to COM4.

When you return to the Device Manager Screen you will have to see that the USB Serial Port installation has been changed to COM3.

Screen 10



This is the end of installation instruction.



2.2. Installing FT8U232 USB Driver under Windows 2000

Screen 1

Found New Hardware Wizard	
	Welcome to the Found New Hardware Wizard This wizard helps you install a device driver for a hardware device.
	< <u>Back</u> Cancel

After plug-in the device, the Found New Hardware Wizard should appear. Click Next.

Screen 2

nd New H	ardware Wizard	
Install Ha A dev an op	ardware Device Drivers ice driver is a software progr erating system.	ram that enables a hardware device to work with
This v	vizard will complete the instal	Ilation for this device:
2	FT8U232AM EVALUATI	ION KIT
A dev needs install	ice driver is a software progr driver files for your new dev ation click Next. do you want the wizard to d	am that makes a hardware device work. Windows vice. To locate driver files and complete the
G	Search for a suitable driver	for my device (recommended)
c	<u>Di</u> splay a list of the known o driver	drivers for this device so that I can choose a specific
		(Pask Mouth Caread

Select "Display a list ..." and then click Next.



und New Hardware Wizard	
Locate Driver Files Where do you want Windows to search	for driver files?
Search for driver files for the following ha	ardware device:
FT8U232AM EVALUATION KI	т
The wizard searches for suitable drivers i any of the following optional search locat	in its driver database on your computer and in tions that you specify.
To start the search, click Next. If you are insert the floppy disk or CD before clickin	e searching on a floppy disk or CD-ROM drive, ng Next.
Optional search locations:	
Floppy <u>disk</u> drives	
CD-ROM drives	
Specify a location	
Microsoft Windows Update	
	Z Back Neut X Cannal

Select **"Specify a location"** and then click Next. Enter or select a path to: "C:\TRIPNAV2" and click Next. The installation process will automatically select and load the correct USB driver that matches with your O/S version.

Screen 4

und New Hai	rdware Wizard	
Driver File: The wiz	s Search Results ard has finished searching for driver files for your hardware device.	
The wize	ard found a driver for the following device:	
P	FT8U232AM EVALUATION KIT	
Window	s found a driver for this device. To install the driver Windows found, click Next.	
-	a:\ftdibus.inf	
	< Back Next> Can	cel

Click Next.



Found New Hardware Wizard	
	Completing the Found New Hardware Wizard USB High Speed Serial Converter Windows has finished installing the software for this device.
	To close this wizard, click Finish.
	K Back Finish Cancel

Click Finish.

This completes the first part of installation during which the USB to serial converter is installed. The second part involves the installation of a serial port. This should follow automatically once the converter installation is complete.

Screen 6

ound New H	lardware Wizard
install H a A dev an op	ardware Device Drivers rice driver is a software program that enables a hardware device to work with verating system.
This v	vizard will complete the installation for this device:
2	USB Senal Port
A dev needs install What	ice driver is a software program that makes a hardware device work. Windows s driver files for your new device. To locate driver files and complete the ation click Next. do you want the wizard to do?
G	Search for a suitable driver for my device (recommended)
C	\underline{D} isplay a list of the known drivers for this device so that I can choose a specific driver
	< <u>B</u> ack <u>N</u> ext > Cancel

Click Next.



Once the installation of the serial port has completed confirm that the installation has been successful by looking under Device Manager of the System Properties screen. The device should have installed as a USB Serial Port (COMx) attached to USB High Speed Serial Converter.

The screen below is shown after selecting Control Panel -> System Properties -> Hardware -> Device Manager, then Select View -> Devices by connection.

Screen 7



To change the virtual COM port properties select the USB Serial Port and then click Properties. This allows you to change serial port properties such as COM port number, baud rate, data bits etc. Of particular use is the ability to change the COM port that is assigned to your device.



JSB Serial	Port (COM10) P	Properties	<u>?</u> ×
General	Port Settings D	river	
Į	USB Serial Port	(COM10)	
	Device type:	Ports (COM & LPT)	
	Manufacturer:	FTDI	
	Location:	on USB High Speed Serial Converter	
This If you start	device is working (are having proble the troubleshooter.	properly.	
<u>D</u> evice	usage: s device (enable)		- -
1030 01	is device (chable)		
		OK Car	ncel

Select Port Settings followed by Advanced and then change the COM port by selecting the menu via the down arrow, see screen 9.

Set COM port to :

Baud rate:4800Data bit:8Parity:NoneStop bit:1Flow control: None

Select lower setti	ngs to correct or	onnection probler	ms.				010
Select higher set	tings for faster p	erformance.					Cance
<u>R</u> eceive Buffer: Low	(1)	ī	i.	—Ţ	High (14)	(14)	<u>D</u> efault
<u>T</u> ransmit Buffer: Low	(1)		•	—Ţ	High (16)	(16)	



Click the drop down arrow on COM Port Number and scroll to the desired COM port. Click OK. Please ensure that you do not select a COM port that is in use. Note this is particularly useful for programs, such as HyperTerminal, which only work with COM1 through to COM4.

Screen 10



2.3. Installing FT8U232 USB Driver under Windows XP





After plug-in the device, the Found New Hardware Wizard should appear. Select "Install from a list or specific location (Advanced)", then click Next.

Screen 2

Please cho	oose your search ar	nd installation optic	ons.	
📀 Seard	ch for the best driver in	these locations.		
Use t	he check boxes below and removable media	to limit or expand the The best driver found	default search, w I will be installed	which includes local
Pointo [Search removable me	edia (floppu, CD-ROM)	
	Include this location in	n the search:	.)	
	C:\TRIPNAV2\		~	Browse
O Don't	t search. I will choose th	he driver to install		
Choo the di	ise this option to select river you choose will be	the device driver from the best match for yo	a list. Windows ur hardware.	does not guarantee th

Enter the location of the USB Driver in the edit box [C:\TRIPNAV2], then click Next.

Found New Hardware Wiz	ard
	Completing the Found New Hardware Wizard The wizard has finished installing the software for: USB High Speed Serial Converter
	Click Finish to close the wizard.



After the installation of the driver, click Finish.

This completes the first part of installation during which the USB to serial converter is installed. The second part involves the installation of a serial port. This should follow automatically once the converter installation is complete.

Screen 4

Found New Hardware Wiz	ard
	Welcome to the Found New Hardware Wizard
	This wizard helps you install software for:
A States	USB Serial Port
	If your hardware came with an installation CD or floppy disk, insert it now.
Hand Hand	What do you want the wizard to do?
	O Install the software automatically (Recommended)
	 Install from a list or specific location (Advanced)
	Click Next to continue.
	K Back Next > Cancel

Select "Install from a list or specific location (Advanced)", then click Next.

ound New Hardware Wizard		
Please choo	se your search and installation options.	
📀 Search	n for the best driver in these locations.	
Use th paths a	e check boxes below to limit or expand the default search, which includes local and removable media. The best driver found will be installed.	
	Search removable media (floppy, CD-ROM)	
	nclude this location in the search:	
[C:\TRIPNAV2\ V Browse	
O Don't s Choose the driv	earch. I will choose the driver to install. e this option to select the device driver from a list. Windows does not guarantee that ver you choose will be the best match for your hardware.	
	< Back Next > Cancel	

PAGE 18 OF 33



Enter the location of the USB Driver in the edit box [C:\TRIPNAV2], then click Next.

Screen 6

Found New Hardware Wiz	ard
	Completing the Found New Hardware Wizard The wizard has finished installing the software for: USB Serial Port
	Click Finish to close the wizard.
	K Back Finish Cancel

After the installation of the driver, click Finish.

Screen 7



Once the installation of the serial port has completed confirm that the installation has been successful by looking under Device Manager of the System Properties screen. The device should have installed as a USB Serial Port (COMx) attached to USB High Speed Serial Converter.



The screen below is shown after selecting Control Panel -> System -> Hardware -> Device Manager, then Select View -> Devices by connection.

Screen 8

Driver		
Bits per second:	4800	~
Data bits:	8	~
Parity:	None	~
Stop bits:	1	~
Flow control:	Xon / Xoff	~
	ranced F	Restore Default:

Select Port Settings followed by Advanced and then change the COM port by selecting the menu via the down arrow, see screen 9.

Set	COM	port to	:
			-

Baud rate:4800Data bit:8Parity:NoneStop bit:1Flow control: None

Use FIFO buffers (req	uires 16550	compatible UAR	т)				ОК
Select lower settings t	o correct co	nnection problem	18.				Cance
Select higher settings	for faster pe	rformance.					Defaul
Receive Buffer: Low (1)		2	к.	ģ	High (14)	(14)	
Transmit Buffer: Low (1)		14	¥1.	- Ţ	High (16)	(16)	



Click the drop down arrow on COM Port Number and scroll to the desired COM port. Click OK. Please ensure that you do not select a COM port that is in use. Note this is particularly useful for programs, such as HyperTerminal, which only work with COM1 through to COM4.

VERIFY COM PORT ASSIGNMENT

To verify the COM port assigned to your GPS, you must open the "Control Panel," click on "System," select "Device Manager" and look for the heading "Port (COM & LPT) and maximize it by clicking on the "+" sign. You should see "USB to Serial Port" assigned to a COM port, (generally COM3, but this may vary from PC to PC).

NOTE: Also from within your street mapping software, you may need to manually configure the selection of the COM port, which was assigned to the GPS receiver in order to properly communicate between the GPS receiver and mapping program. (Most software requires that you manually configure the COM port setting for any GPS device.

IMPORTANT:

- 1. You must change the default baud rate setting of your mapping software to 4800 if this is not the default setting otherwise GPS data cannot be received.
- 2. Set COM port to :

Baud rate:4800Data bit:8Parity:NoneStop bit:1Flow control:None

INITIALIZING YOUR GPS RECEIVER

Before using your TripNav GPS for navigation (especially for the first time), the receiver must obtain a local GPS fix (coordinates) of the current position. To do this, take your laptop PC (with your USB driver and the mapping software loaded and configured) to an open area that has a clear view to the sky (such as a park or empty field). Start your street map software and wait for initialization of the GPS to complete. This may take a few minutes depending on various factors such as the distance of the current coordinates from the last time the GPS receiver was activated, GPS signal strength and surrounding terrain (tall trees and buildings can block the satellite signals). Once the RAW GPS data is displayed onto the screen, or a fix has indicated that initialization is complete (this will depend on the actual software being used). In some cases initialization can take up to several minutes depending on the conditions mentioned above before complete GPS data will be displayed on the screen.

Coordinates scrolling with zero's means that the COM port connection is correct, but the satellite data is not being received yet (possibly still initializing or in a bad area for satellite reception).

3. USING TRIPNAV

Once the TripNav's driver and your personal mapping software have been installed and configured properly, you can begin to use TripNav navigation system by plugging the TripNav into your laptop's USB port and launching your mapping software.

Always select an area in the vehicle where the GPS unit will be secure and not obstruct normal driving, visibility and safety, but still maintaining a "view to the sky" in order to receive satellite data.



4. UN-INSTALL THE USB DRIVER

4.1. Uninstalling FT8U232 USB Driver from Windows 98

To uninstall the USB driver, unplug the device and Select Add/ Remove Software under the Control Panel. Select FTDI USB to Serial Converter then Add/ Remove.

Add/Remo	ve Progra	ms Properties	:		? ×
Install/Uni	nstall Win	dows Setup 🛛 S	itartup Disk	.]	
P	To install (drive, click	a new program f k Install.	rom a flopp	y disk o	w CD-ROM
_				Ī	nstall
3	<u>The follow</u> Windows, componer Add/Rem	ring software ca To remove a pr hts, select it from ove.	n be autom rogram or to n the list and	natically p modify d click	removed by its installed
Adobe A Fri Di U Microso Visio Te WinZip	Acrobat 38 to Serial ft Office 97, chnical	Converter Drive Professional Ec	ition		
				Add/	' <u>R</u> emove
		OK	Cano	el	Apply



TN-200

Screen 2

🏀 FTDI Uninstaller Version 1.7 📃 🗖	×
DELETING Enum/FTDIBUS/VID_0403+PID_6001+FT9LLTAQA DELETING Enum/USB/VID_0403&PID_6001	
DELETING System/CurrentControlSet/Services/Class/USE/0009 DELETING System/CurrentControlSet/Services/Class/Ports/0005 DELETING System/CurrentControlSet/Control/ASD/Prob/CF2524C0-234E-11CF-97EA-0 DELETING System/CurrentControlSet/Control/ASD/Prob/24827200219611CF.97EA-0	
DELETING 3ystem/CurrentControlSet/Control/ASD/Prob/(S524C0-236E-11CF-37EA-0) DELETING System/CurrentControlSet/Control/ASD/Prob/(S5254C0-236E-11CF-37EA-0) DELETING System/CurrentControlSet/Control/ASD/Prob/(984E7760-3196-11CF-37EA-0) DELETING System/CurrentControlSet/Control/ASD/Prob/(984E7760-3196-11CF-37EA-0)	
DELETING System Contention and Control Device Dasses (NdSSSS) des 29 in Debicit DELETING Software/Microsoft/Windows/Current/Version/Uninstall/ETDICOMM DELETING FILE C:/WINDOW/SVINF/ETDIBUS.INF DELETING FILE C:/WINDOW/SVINF/ETDIBUS.PME FILE NOT FOLIND	
DELETING FILE C:\WINDOWS\INF\FTDIPORT.INF DELETING FILE C:\WINDOWS\INF\FTDIPORT.INF DELETING FILE C:\WINDOWS\INF\FTSFBMULIVF	
DELETING FILE C:\WINDOWS\INF\FTSERMOU.PNF FILE NOT FOUND	
OK. Finish	
Uninstall Completed	11.

Click OK to and the drivers will be removed.

Uninstalling FT8U232 USB Driver from Windows 2000

Under Windows 2000 there is a two-stage process requiring the running of Add/ Remove Software as well as Add/ Remove Hardware.

Run Add/ Remove Programs from the Control Panel

🙀 Add/Remov	ve Programs		<u> </u>
_ <mark>r</mark> ₽	Currently installed programs:	<u>S</u> ort by: Name	Ŧ
Change or	Adobe Acrobat Reader 3.01	Size	7.72MB 📥
Remove Programs	FTDI USB Serial Converter Drivers		
-24	computer, click Change/Remove.	<u>C</u> hange/Re	emove
Add New Programs	🗐 WinZip	Size	1.65MB
Add/Remove Windows Components			P
			Close



Select FTDI USB Serial Converter Drivers and then Change/ Remove. This will bring up the FTDI Uninstaller screen which asks if it's OK to delete the drivers.

Click OK to remove the drivers.

Screen 2

FTDI WIN2K Uninstaller Version 1.2	
DELETING Software\Microsoft\Windows\CurrentVersion\Uninstall\FTDICOMM DELETING FILE C:\WINNT\SYSTEM32\DRIVERS\FTDIBUS.SYS DELETING FILE C:\WINNT\SYSTEM32\DRIVERS\FTSER2K.SYS DELETING FILE C:\WINNT\INF\oem0.prf DELETING FILE C:\WINNT\INF\oem1.inf DELETING FILE C:\WINNT\INF\oem1.prf	
■ OK Finish	¥ ¥
Uninstall Completed	

Click Finish to complete the driver uninstall.

The next stage involves removing the installed hardware. Run Add/ Remove Hardware from the Control Panel

Add/Remove Hardware Wiza	rd
	Welcome to the Add/Remove Hardware Wizard This wizard helps you add, remove, unplug, and troubleshoot your hardware.
	To continue, click Next
	<back next=""> Cancel</back>



Choose a Hardware 1	Task 🔤
Which hardware tas	k do you want to perform?
Select the hardware	task you want to perform, and then click Next.
C Add/Troublesho Choose this optic problems getting	ot a device on if you are adding a new device to your computer or are having ra device working.
 Uninstall/Unplug Choose this optic device. 	a device on to uninstall a device or to prepare the computer to unplug a

Check Uninstall/ Unplug a device, then click Next.

Screen 5

Choose a Hemoval Lask. You can remove a device permanently	y or temporarily.		L'AL
Select the removal task you want to p	erform, and then click	Next.	
 Uninstall a device Choose this option to permanen 	illy uninstall a device a	nd.its.driver.	
 Unplug/Eject a device Choose this option to temporaril 	y unplug or eject a dev	vice.	

Check uninstall a device, then click Next.



Select the device you want to uninstall		
Devices		
NT Apm/Legacy Interface Node		=
vgaSave 🗍		
Winbond Fast Infrared Controller(DMA	4)	
Silicon Integrated Systems		
VIISE Serial Part (COM11)		
R HID Keyboard Device		
Show hidden devices		

Check Show hidden devices, highlight USB Serial Port (COM11) and then click Next.

Screen 7

Uninstall a Device Confirm that you want to uninstall th	nis device,		
USB Serial Port (COM11 Are you sure that you want to unins) tall this device?		
Yes, I want to uninstall this devi	ice		
S No. I do not want to uninstall th	is device		
		201	

Check Yes, I want to uninstall the device and then click Next.



Add/Remove Hardware Wiza	rd
	Completing the Add/Remove Hardware Wizard You have successfully completed the Add/Remove Hardware wizard.
	Windows successfully uninstalled the selected device. To close this wizard, click Finish.
	K Back Finish Cancel

This removes the serial port and we now need to remove the USB to serial converter to complete the driver removal.

Repeat the steps shown in screens 3 to 5, check Show hidden devices and then scroll down the screen until you find the USB High Speed Serial Converter. Highlight this and complete removal as before.

Select the device you want to	o uninstall.	
Devices		<u> </u>
😪 USB Device		
🖾 USB Human Interface D	levice	
🖾 USB Human Interface D	evice	
USB High Speed Serial	Converter	
😪 Generic USB Hub		
Generic USB Hub		
😋 Generic USB Hub		



Uninstalling FT8U232 USB Driver from Windows XP

To uninstall the USB driver, unplug the device and Select Add/ Remove Software under the Control Panel. Select FTDI USB to Serial Converter then Change/ Remove.

Screen 1

Add or Re	move Programs			_ 0
5	Currently installed programs:	Sort by:	Name	~
Change or Remove	AAA Map'n'Go 6.0		Size	55.85MB
Programs	B DV-36P SmartMedia Writer			
Add <u>N</u> ew Programs	引号 FTDI USB Serial Converter Drivers To change this program or remove it from your computer, click Change/Remove.		Chang	e/Remove
G	🛃 Intel(R) PRO Ethernet Adapter and Software			
dd/Remove	😼 Lernout & Hauspie TruVoice American English TTS Engine			
Windows	Microsoft Office 2000 Disc 2		Size	208.00MB
	A Microsoft Office 2000 Premium		Size	195.00MB
	Recision Mapping Streets and Traveler v5.0		Size	21.96MB
	🛱 SnagIt 6		Size	12.12MB
	🗱 Street Atlas USA 7.0		Size	140.00MB
	😼 VIA Display Driver Setup		Size	0.16MB
	🔣 Windows XP Uninstall		Size	167.00MB
			ſ	Cl <u>o</u> se

Click Change/Remove.

Screen 2

If your USB device	e is connected, please u	nplug it now
Press Continue to	uninstall the drivers, or (Cancel to quit.

Disconnect the USB device, then click Continue.



Uninst	alling VID_040	3&PID_6001		
Deletir	g registry enti	ries		
Deletir	g files			
Uninst	all complete, p	press Finish to e	xit.	

After the uninstall process is complete, click Finish.

5. FAQ's

Will the TripNav work with other Street Mapping software?

TripNav USB GPS provides standard NMEA data for mapping software to use and convert to coordinates and should work well with any NMEA compliant software on the market today.

How accurate is the GPS?

GPS accuracy can range from 15 to 50 meters. Most of the time the GPS is accurate to less than 50 meters.

What is ideal GPS environment?

The GPS requires an open, clear view of the sky. Buildings, covered parking areas, tunnels and dense foliage can cause the GPS receiver to be unable to get a location fix.

If you are parked in a covered parking lot or near a tall building, it is recommended that you drive away until you have a clear view of the sky before using the TripNav. You may need to give the GPS a few minutes to find or get a fix its location.

How do I know if the GPS is ON?

The TripNav must be plugged into your laptop's USB port to get power. If your PC is on and the COM port was configured properly, the GPS receiver is on and receiving the streaming GPS data. This can be verified by opening your mapping software program. In addition, the TN-200 has a built-in LED indicator that works as follows:

LED OFF: GPS receiver is off (no power) LED FLASHING: No fix, searching for GPS signals. LED ON (solid): Position fix established and GPS signals are being received.



Why does the GPS not work near buildings and other tall objects?

The GPS uses satellites in the space to find out where it is. Therefore it needs a clear view of the sky. Tall buildings and other objects that block the receiver's view to the sky make it infeasible to determine your location.

Sometimes the satellites are not overhead but near the horizon. In these cases the GPS must have a clear view of the horizon.

Why do I get an error message saying "Unable to open GPS Communication with port (COMx)? Please check your port configuration."

If you have followed the above installation steps but the GPS device still does not work, try unplugging the GPS device from the USB port, close the mapping software and wait for at least 10 seconds, before re-connecting the GPS device.

Also verify if the COM port was entered in the mapping software correctly (see: Getting Started – Verify COM Port Assignment). Another possibility is that you may be in an area where there are no GPS signals available. The GPS receiver must have a view to the sky and will not work indoors, or in areas of dense foliage. Move to an open area and place the TripNav receiver in a location that will have a full exposure to the sky. Each time you initialize the GPS receiver, the device requires a boot-up period which can typically rage from to 8 seconds to 1 minute, but in areas where the GPS signal is weak, this period may be slightly extended. Please allow an adequate amount of time for the GPS receiver's boot-up process to complete before contacting Technical Support.

Regarding erratic mouse cursor.

If your mouse doesn't work properly after installation of the GPS driver, this situation is caused by a problem in Windows (typically WIN2000 & XP) and is not related to the GPS device. Microsoft has acknowledged and stated that the serial device (since the USB GPS is actually converted into a serial COM port), it may be detected as a serial mouse by the operating system (O/S). To best resolve this issue, unplug the GPS receiver from the USB port during boot-up and re-insert after boot-up has completed. Microsoft has released updates to the O/S which correct these types of problems as well as other bugs in the O/S. For more information and possible solutions, see: http://support.microsoft.com/default.aspx?scid=kb;en-us;q283063

It is recommended that your O/S has the latest updates installed. Please check with Microsoft on a regular basis, or register for their automatic Service Pack (SP) notifications to be sent to you.

Windows 2000: SP-3 is available at Microsoft Support: <u>http://www.microsoft.com/windows2000/downloads/servicepacks/sp3/default.asp</u>

Windows XP: SP-1 is available at Microsoft Support: <u>http://www.microsoft.com/WindowsXP/pro/downloads/servicepacks/sp1/default.asp</u>

Additional FAQ'a may be found on our web-site at: http://www.rayming.com/faq_details/faq_tn200.htm

DRIVER UPDATES can be found at FTDI's web-site: WINDOWS: <u>http://www.ftdichip.com/FTWinDriver.htm</u> APPLE/MAC: <u>http://www.ftdichip.com/FTMacDriver.htm</u>



It's important that you document the following before e-mail or calling for assistance:

- Which step, or function, were you attempting when the problem occurred?
- What was the error message displayed?
- What operating system are you using?
- What is the USB GPS receiver driver version that you have?
- Which mapping software are you using and what is its version?

6. CONTACT INFORMATION

Rayming Corporation 1305 John Reed Court City of Industry, CA 91745 T: 800.278.5179 T: 626.961.6613 F: 626.961.8493 http://www.rayming.com sales@rayming.com

Technical Support T: 626.961.6273 support@rayming.com

7. LIMITED WARRANTY

Rayming Corporation warrants this product hardware against manufacturing defects in material and workmanship under normal use for one (1) year from the date of purchase from an authorized dealer. Except as provided herein, Rayming Corporation makes no express warranties', including but not limited to any warranties of merchantability or fitness for particular use, or non-infringement. You acknowledge that your use of the product or service is at your sole risk and you agree that the information provided are without warranty of any kind by Rayming Corporation.

Under no circumstances, including negligence, will Rayming Corporation or any of its affiliates, directors, officers or employees, or any third party be liable for any direct, indirect, incidental, special or consequential damages that results from your use, or your inability to use, or the performance of the product(s) with respect to any liability, loss, or arising out of any breach of this warranty, including, but not limited to any damages resulting from inconvenience, loss of time, data, property, revenue, or profit or any indirect, special incidental or consequential damages. You acknowledge that this limitation applies to all content information or other services available from Rayming Corporation, and whether or not Rayming Corporation has notice of the possibility of such damages, and whether or not to circumstances giving rise to such damages may have been within the control of Rayming Corporation.

Some states do not allow the exclusion of certain warranties, so some of the above exclusions may not apply to you. In those states, liability is limited to the fullest extent allowed by law By using the product(s), you agree to indemnify Rayming Corporation and its parents, subsidiaries, affiliates, officers and employees and hold them harmless from any and all claims and expenses, including reasonable attorney's fees, asserted third party due to, or arising out of your use of the service and the site.

In the event of a product defect during the first 30-days of the warranty period, return product and the sales receipt as proof of purchase date to place of original purchase. Defect discovered after 30-days from date of purchase, you must contact Rayming Corporation's Technical support for a Return Merchandise Authorization (RMA) number for return to manufacturer.



corporation

Rayming Corporation will, at its option, unless otherwise provided by law:

- a.) Correct the defect by product repair without charge for parts and labor;
- b.) Replace the product with one of the same or similar design; or
- c.) Refund the purchase price. All replaced parts and products, and products on which a refund is made, become the property of Rayming Corporation. New or reconditioned parts may be used in the performance of warranty service. Repaired or replaced parts and products are warranted for the remainder of the original warranty period. You will be charged for repair or replacement of the product made after the expiration of the warranty period.

This warranty does not cover:

- Damage or failure caused by or attributable to acts of God, abuse, accident, misuse, improper or abnormal usage, failure to follow the instructions, improper installation or maintenance, alteration, lighting or other incidence of excess voltage or current;
- b.) Any repairs other than those provided by Rayming Corporation;
- c.) Consumables such as fuses or batteries;
- d.) Cosmetic damage;
- e.) Transportation, shipping or insurance costs;
- f.) Costs of product removal, installation, set-up service adjustment or reinstallation.

This warranty gives you specific legal rights, and you may also have other rights, which may vary from state to state.

Additional products bundled in this package not manufactured by Rayming Corporation will hold separate warranties as expressed by the individual manufacturer of that product(s). Product specifications, functions and features are subject to change without notice.



8. TECHNICAL SPECIFICATIONS FOR TN-200 GPS RECEIVER

Electrical Characteristics (Receiver)	
Frequency	L1, 1575.42 MHZ
C/A Code	1.023 MHz chip rate
Channels	12
Sensitivity	-170 dBW
Accuracy	
Position Horizontal	15m 2-D RMS (SA off)
Velocity	0.1m/sec 95% (SA off),
lime	1 micro-second synchronized to GPS time
WAAS	10 meters 2-D RMS
Datum	
Datum Acquisition Rote	WGS-84
Hot stort	8 cool average (with enhameric and elmance valid)
Morm start	o sec., average (with almanac but not onhomoric)
Cold start	45 sec., average (with almanac but not epitemens)
Reacquisition	0.1 sec. average (interruption recovery time)
Protocol	0.1 sec. average (interruption recovery time)
GPS Protocol	Default: NMEA 0183 (Secondary: SiRE binary)
GPS Output Data	SiRE binary >> position velocity altitude status and control
	NMEA 0183 MEA0183 V2.2 protocol, and supports
	command: GGA, GSA, GSV, RMC, VTG, GLL v2.2 (VTG
	and GLL are optional)
GPS transfer rate	Software command setting (Default : 4800,n,8,1 for NMEA)
Dynamic Condition	
Acceleration Limit	Less than 4g
Altitude Limit	18,000 meters (60,000 feet) max.
Velocity Limit	515 meters/sec. (1,000 knots) max.
Jerk Limit	20 m/sec**3
Temperature	
Operating	-30°~ 80°C
Storage	-40°~ 85°C
Humidity	Up to 95% non-condensing
Power	
Vollage	
Current Bhygiaal Characteristics	90mA typical
Dimonsion	$232" \times 165" \times 0.82" (50mm \times 47mm \times 10mm)$
LISB Cable Length	2.32 × 1.03 × 0.02 (331111 × 4711111 × 1211111) 65"
Low Noise Amp	
Amplifier Gain w/out cable	27 dB Typical
Filtering	-25dB (+100 MHz)
Output VSWP	
Voltago	
Current	15mA max @ 5VDC

Due to continuous product improvements, all specifications are subject to change without notice.