KVH®

TRACNET™

Mobile Internet Receiver with MSN® TV Service

TracNet 100 User's Guide

TracNet 100

Mobile Internet Receiver

User's Guide

This manual provides detailed instructions on the proper operation, setup, and troubleshooting of the KVH TracNet 100 mobile Internet receiver for MSN® TV service. For basic setup information, you may also refer to the *Quick Setup Guide*. For complete details about using the MSN TV service, refer to the *MSN TV User Guide*.

TracNet 100 Serial Number

This serial number will be required for all troubleshooting or service calls made regarding this product.

Please direct questions, comments, or suggestions to:

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Send Us Your Comments About This Manual

If you have any comments regarding this manual, please e-mail them to manuals@kvh.com. Your feedback is greatly appreciated!

KVH Part # 54-0353 Rev. B1

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Disclaimer

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FCC Compliance Statement

Declaration of Conformity – Standards to which Conformity is declared: FCC Part 15

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution: The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the warranty and users' authority to operate the equipment.

Part 15 Compliance – This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a vehicle installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by removing and applying power to the equipment, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced electronics technician for help.

To meet FCC requirements, only components certified to comply with Class B limits may be attached to this device. Operation with noncertified peripherals is likely to result in interference to radio and TV reception. To meet FCC requirements, shielded cables are required to connect the device to another Class B certified device.

Caution: To comply with the FCC RF exposure compliance requirements, this device must not be co-located or operating in conjunction with any other antenna or transmitter.

The user may find the following booklet, prepared by the Federal Communications Commission, helpful: "How to Identify and Resolve Radio and TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, DC.

Table of Contents

1 — Introduction

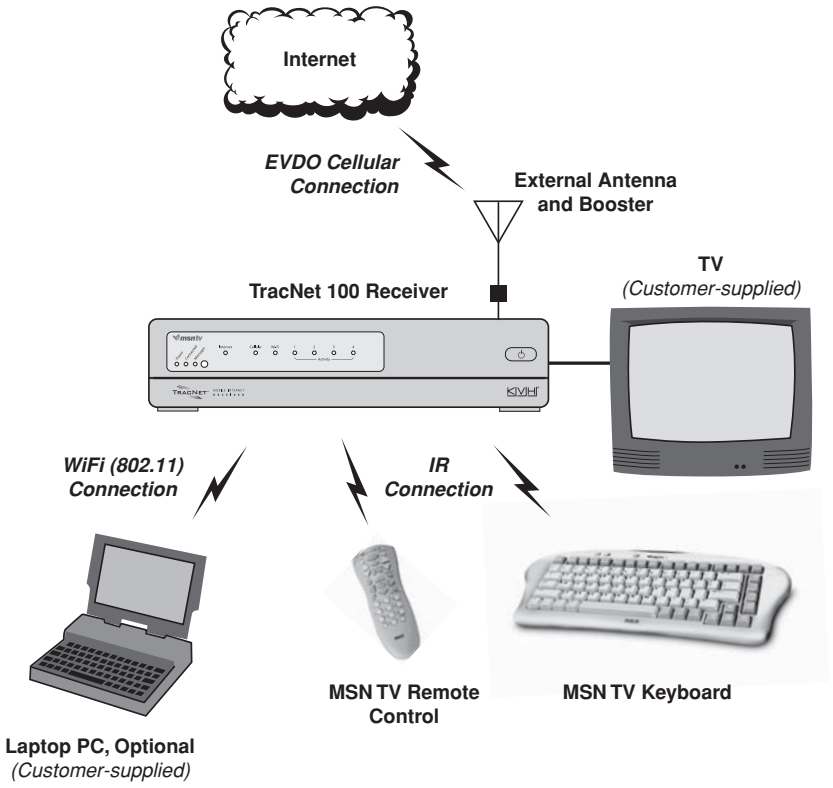
This section provides a basic overview of the TracNet 100 system and explains how to use this manual.

Contents

1.1 System Overview

The TracNet 100 mobile Internet receiver brings Microsoft's MSN TV service to your car, boat, or RV via broadband EVDO cellular data service. And with built-in WiFi, TracNet 100 turns your vehicle or vessel into a mobile hotspot, allowing you to connect your WiFi-enabled laptops or other devices to the Web.

Figure 1-1 *Basic TracNet 100 System Diagram*



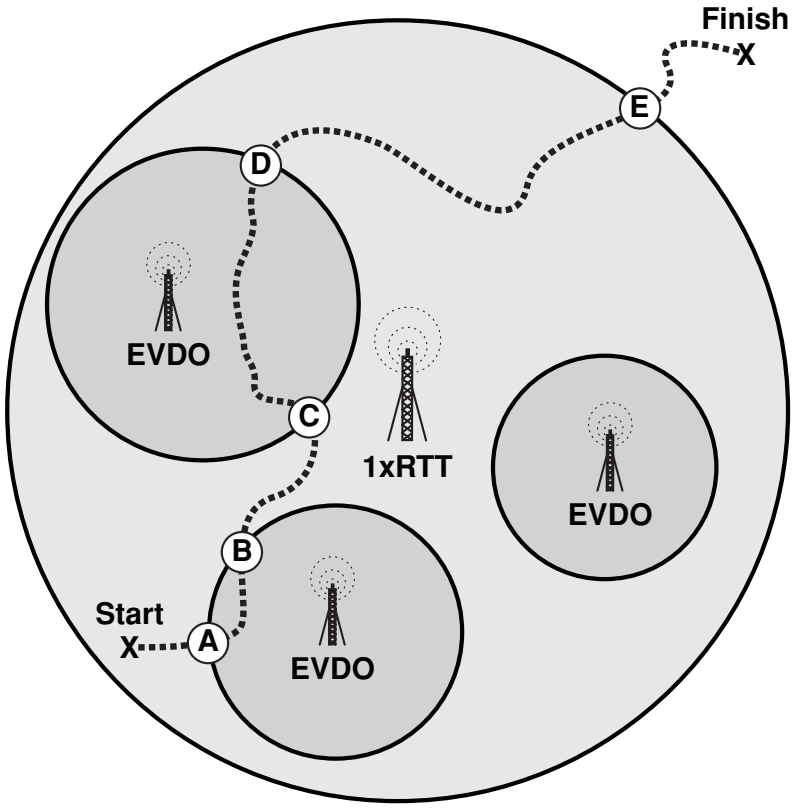
Verizon's EVDO service is rapidly expanding into new areas. To view latest coverage information, visit: ***www.kvh.com/tracnetcoverage****.*

What is EVDO Service?

EVDO stands for Evolution Data Optimized, a fast broadband cellular communications protocol. Whenever you're located within an EVDO service coverage area, you will enjoy speeds ranging from 400-700 Kbps, with the capability of reaching speeds of up to 2 Mbps – just like DSL*. If you travel outside the range of EVDO service, TracNet automatically shifts your connection to the standard 1xRTT service, allowing you to remain online without interruption, but at data rates within the range of 60-80 Kbps, with bursts up to 144 Kbps.

For example, if you were traveling along the path shown in the diagram below, you would start the trip using 1xRTT service, since you are not yet within range of the EVDO coverage area. However, once you reached point (A), TracNet 100 would automatically switch to the high-speed EVDO service. You would briefly revert back to 1xRTT service at point (B), then regain EVDO service at point (C). At point (D), you would again leave EVDO coverage and use 1xRTT service until point (E), where you would travel outside the cellular network's coverage area.

Figure 1-2 *A Conceptual Example of EVDO Coverage*



* Speed claim based on Verizon network tests with 5 MB FTP data files without compression. Actual throughput speed and coverage may vary.

System Components

The TracNet 100 system includes the following components:

Mobile Internet Receiver

The mobile Internet receiver is the "brain" of the TracNet 100 system. It combines a mobile EVDO router and MSN TV circuitry into one compact box, and provides several interface options to connect your TV or laptop computer. A Kyocera model KPC650 EVDO wireless card *(ordered separately)* provides the cellular link.

MSN TV Remote Control

The wireless IR remote control allows you to navigate with ease within the MSN TV environment. You can turn MSN TV on or off, select menu options, and visit your favorite web sites.

MSN TV Keyboard

The wireless IR keyboard allows you to perform all MSN TV functions. You can turn MSN TV on or off, visit web sites, adjust the size of text and web pages, and access all menus and settings.

External Antenna and Booster

The external antenna and booster optimizes your EVDO connection by providing a better line-of-sight path to the cellular tower and enhancing the EVDO signal strength. This improves system performance, especially when you are located along the fringe of an EVDO coverage area. Four antenna/booster kits are available, each suitable to a particular vehicle/vessel installation.

Car Antenna, Magnetic

Car/RV Antenna, Glass-mount

Marine Antenna

RV Roof Antenna

Booster
Included in each antenna kit

1.2 How to Use this Manual

This manual provides all of the information you need to install, set up, operate, and troubleshoot the TracNet 100 system.

Icons Used in this Manual

This manual uses the following icons to call attention to important information:

Icon	Description
	A helpful tip that either directs you to a related area within the manual or offers suggestions on getting the most from your system
	An alert to important information regarding procedures, product specifications, or product use
	Information about installation, maintenance, troubleshooting, or other mechanical issues
	An electrical safety warning to help identify electrical issues that can be a hazard to either this KVH product or a user

Typographical Conventions

This manual uses the following typographical conventions:

Text Example	Description
Connect to the receiver's "Video" jack.	Name of a hardware port, user interface section, or menu
Click the **OK** button.	Name of a button, link, icon, checkbox, tab, or text entry; implies user action
Skip to *Section 3.3, "Using the Setup Wizard," on page 22*.	Cross-reference to another section or another manual

Related Documentation

In addition to this User's Guide, the following documents are provided with the TracNet 100 system:

Document	Description
Quick Setup Guide	Basic installation and setup instructions
MSN TV User Guide	Complete instructions on using the MSN TV service
Product Registration Form	Details on registering the product
Warranty Statement	Warranty terms and conditions
Contents List	List of every part supplied in the kit
Activation Card	Details on ordering an EVDO card and activating your service

In addition, an "Advanced Router Setup" supplement to this User's Guide is available on the TracNet 100 product page at KVH's web site (**www.kvh.com/kvhinternet**). This supplement provides detailed instructions on configuring the TracNet 100 router using the router interface. However, the basic router configuration steps provided in Section 4.3 of this User's Guide should be sufficient for your installation, unless you have complex networking requirements.

1.3 Getting Help

If you experience an operating problem or require technical assistance, please contact your local authorized TracNet dealer/installer first. You can find an authorized technician near you by visiting our website at **www.kvh.com/wheretogetservice**.

If an authorized technician is not located nearby, please contact KVH Technical Support directly:

Phone: 866-399-8509
(Mon.-Fri. 9am-6pm; Sat. 9am-2pm ET)

E-mail: techs@kvh.com

Please have your product serial number handy when you call.

2 — Installation

This section explains how to install the external antenna and booster, wire the TracNet 100 Internet receiver, and mount the receiver inside the vehicle/vessel.

Contents

2.1 Installation Overview

Installation consists of wiring and mounting the TracNet 100 receiver and external antenna/booster. Figure 2-1 shows the rear panel wiring of the receiver. Table 2-1 identifies each connection. The chapters in this section provide step-by-step instructions.

Figure 2-1 *TracNet 100 Wiring Diagram*

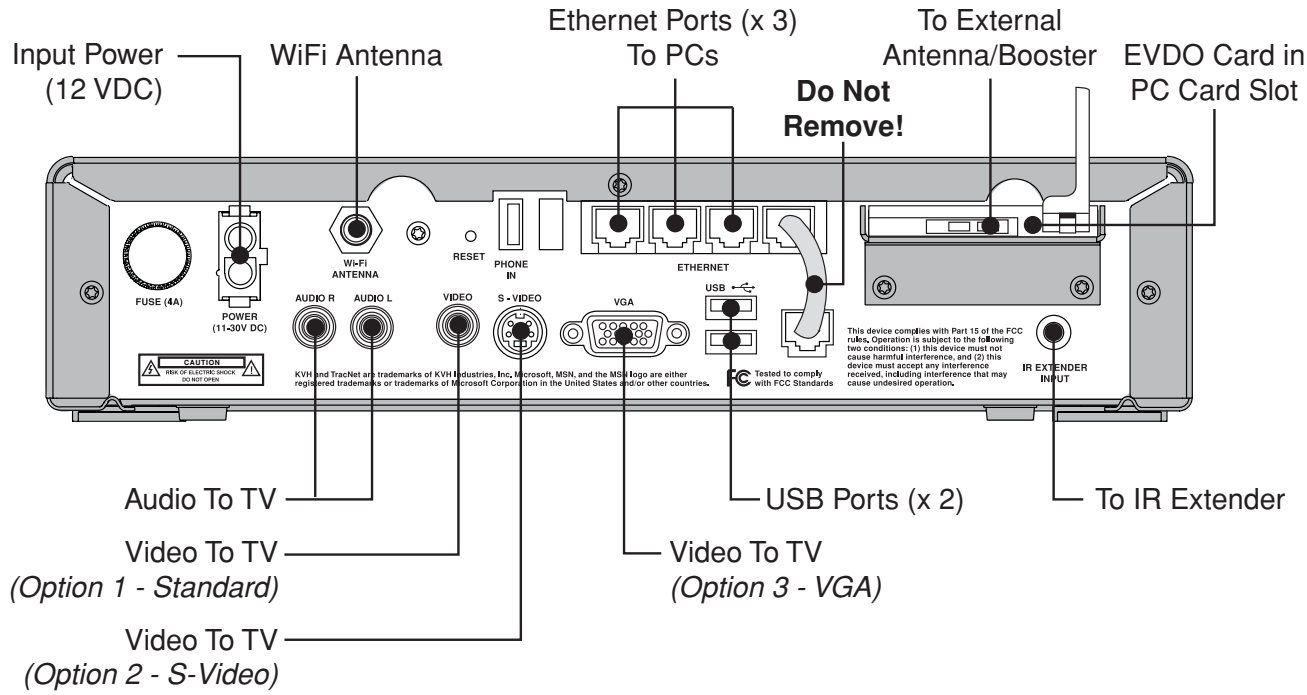


Table 2-1 *TracNet 100 Connections*

Connector	Description
Power	Connect to vehicle/vessel power (12 VDC)
WiFi Antenna	Connect to the supplied WiFi antenna for wireless PC connectivity
Ethernet	Connect to your computer(s) using a straight RJ45 Ethernet cable
PC Card Slot	Insert EVDO card (connect your external antenna/booster to the card)
Audio R and Audio L	Connect to your TV's audio component
Video	Connect to your TV if it has a standard composite video input
S-Video	Connect to your TV if it has an S-Video input
VGA	Connect to your TV if it has a VGA input
USB	Connect to your desired USB device, such as a printer or memory card reader *(See the MSN TV User Guide and onscreen Help for details and compatibility)*
IR Extender Input	Connect to the IR extender

*To order your free preactivated EVDO wireless card, call KVH at **866-399-8509**. Refer to the Activation Card attached to the keyboard for details.*

The TracNet 100 is optimized for use with the Kyocera model KPC650 EVDO card. Do not use another brand or model as it will compromise performance and potentially damage the receiver.

***If you didn't get your KPC650 EVDO card from KVH,** make sure you activate the card following the directions provided with the card (you will need a laptop computer with a card slot and Windows 2000, Me, or XP installed). The TracNet system will not work without an activated card.*

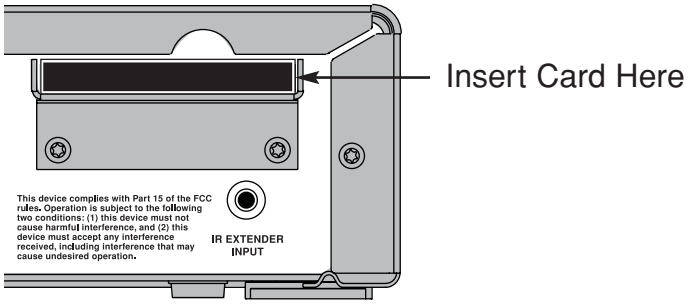
2.2 Installing the EVDO Card

The TracNet 100 Internet receiver **requires** the model KPC650 EVDO wireless card manufactured by Kyocera. This card provides the cellular link to the Verizon EVDO broadband network.

Figure 2-2 *Model KPC650 EVDO Card*

To install the EVDO card, first make sure power is not connected to the TracNet 100 Internet receiver. Then simply insert the card into the card slot (also called a PCMCIA slot) on the back of the receiver. A metal bracket is attached beneath the slot to help protect the card from damage. You do not need to install any software to make the card work; the card is preactivated by KVH.

Figure 2-3 *Installing the EVDO Card*



2.3 Installing an External Antenna and Booster

The external antenna and booster will amplify the EVDO signal to improve system performance, especially when you are located along the fringe of an EVDO coverage area. Four antenna/booster kits are available; follow the appropriate instructions for the kit you have purchased.

External Antenna Option	KVH Part Number	See Page:
Marine	01-0274-01	14
Car, magnetic mount	01-0274-02	15
Car/RV, glass mount	01-0274-03	16
RV, roof mount	01-0274-04	18

Marine Antenna

Car Antenna, Magnetic

Car/RV Antenna, Glass-mount

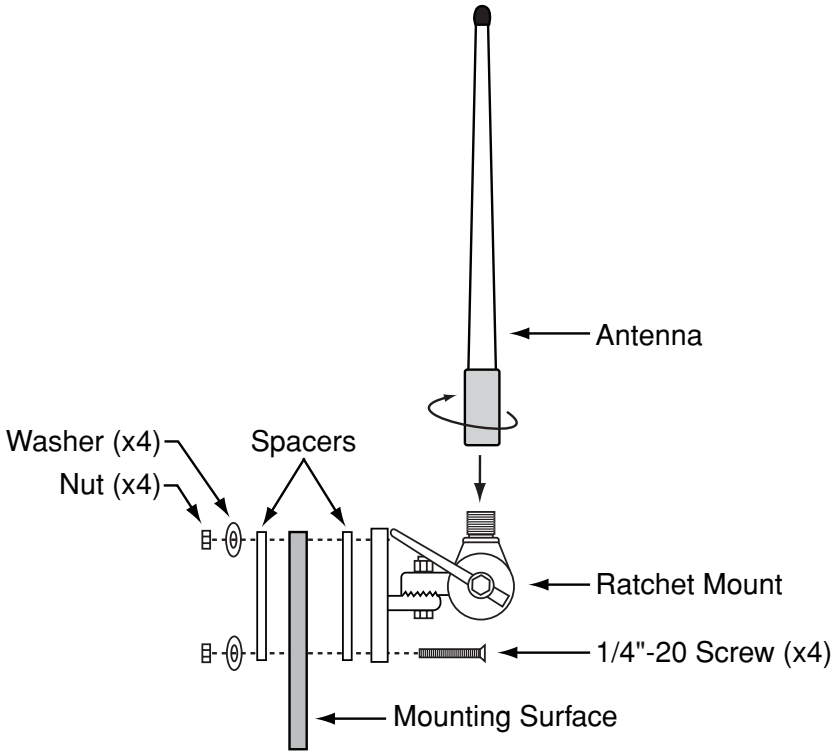
RV Roof Antenna

Installing the External Antenna - Marine

Follow the steps below to install a marine external antenna using the supplied ratchet mount kit.

1. Find a suitable antenna mounting location topside, away from objects that may block the signal. The more open space around the antenna, the better its performance. Also avoid mounting the antenna near the radar, other antennas, or metal objects.
2. Attach the ratchet mount to the mounting surface using the four supplied ¼"-20 screws, washers, and nuts, and two plastic spacers.

Figure 2-4 *Installing the Marine External Antenna*



3. Secure the antenna to the threaded base of the ratchet mount.
4. Drill a ¾" cable access hole near the antenna mount and route the antenna cable into the vessel. Later, you will connect this cable to the booster.
5. Seal the cable access hole with silicone sealant or equivalent.
6. Skip to *"Installing the Booster" on page 21*.

Installing the External Antenna - Car, Magnetic Mount

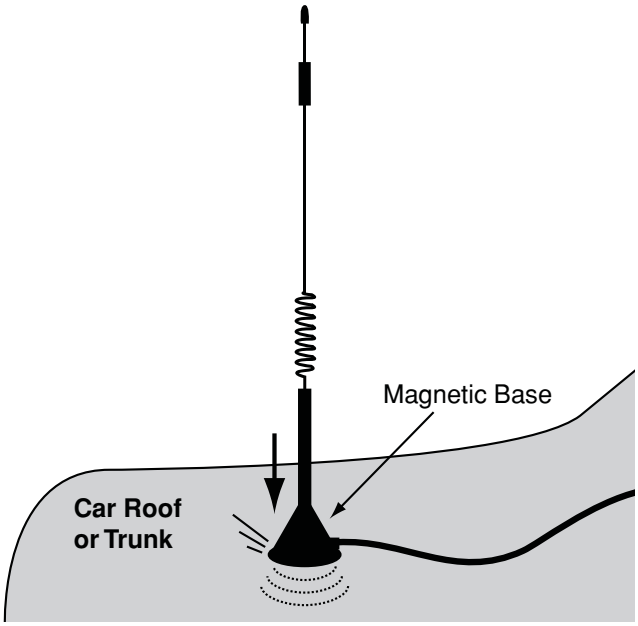
Before you begin, consider the following installation guidelines:

- For optimum performance, mount the antenna in the center of the vehicle's roof or trunk lid.
- Mount the antenna to a flat, metal surface. Do not mount the antenna to a vinyl top; vinyl will reduce the holding power of the antenna's magnetic base. The magnetic base also will not hold to an aluminum or nonmetallic surface.
- Be sure the mounting surface is clean and dry. Dirt or ice will prevent the antenna's magnetic base from seating properly.

Follow the steps below to install the antenna.

1. Using the guidelines above, find a suitable antenna mounting location.
2. Clean the bottom of the antenna's magnetic base and clean the mounting surface.
3. Hold the antenna directly over the mounting location and carefully lower it into place. **To avoid scratching the vehicle, do not slide the antenna once it contacts with the mounting surface.**
4. Route the antenna cable into the vehicle. Later, you will connect this cable to the booster.
5. Skip to *"Installing the Booster" on page 21*.

Figure 2-5 *Installing the Car, Magnetic External Antenna*

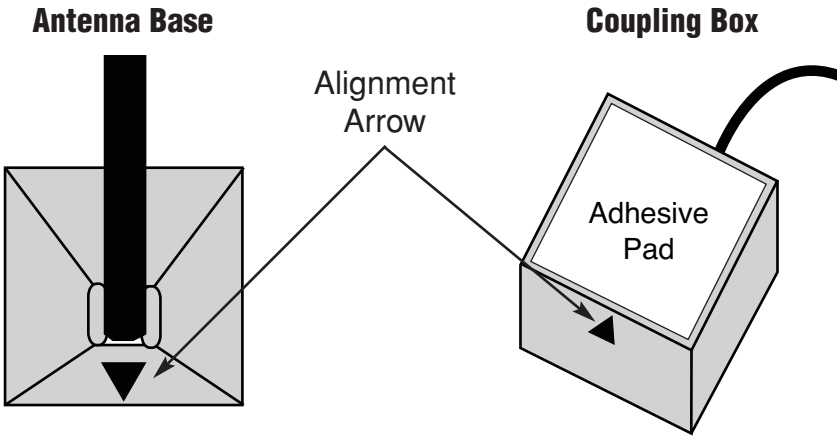


Installing the External Antenna - Car/RV, Glass Mount

Before you begin, consider the following installation guidelines:

- Mount the antenna along the top of the front or rear window. For optimum performance, do not mount the antenna to the rear window of a truck or SUV.
- Make sure the antenna will not interfere with windshield wiper operation.
- Mount the antenna away from defogger wires or aftermarket metallic window tinting. *Most factory tinting is nonmetallic that will not interfere with the antenna.*
- Ensure BOTH sides (inside and outside) of the window are clear of obstructions at the chosen mounting site.
- **The antenna base and the coupling box must be aligned properly or the antenna will not work.** The arrow on the antenna base and the arrow on the coupling box must point at each other when installed.

Figure 2-6 *Antenna/Coupling Box Alignment*



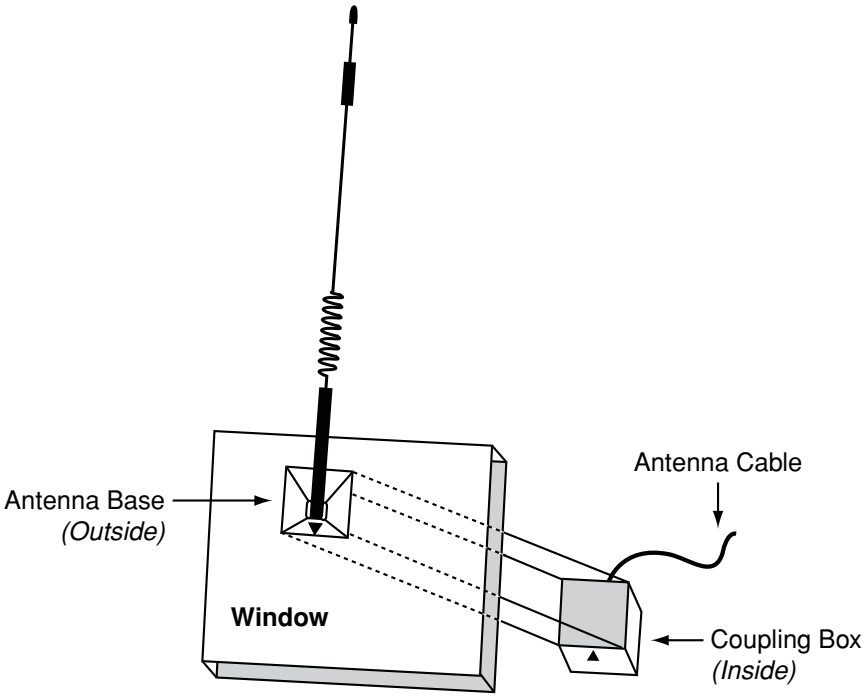
For the antenna to work, the arrows on the antenna base and coupling box must point at each other.

Follow the steps below to install the antenna.

1. Using the guidelines above, find a suitable antenna mounting location on the front or rear window.
2. Using a supplied alcohol pad, clean the outside window surface.

3. Remove the paper backing from the antenna base to expose the adhesive pad then firmly press the antenna base against the outside of the window in the desired mounting location.
4. Using a supplied alcohol pad, clean the inside window surface.
5. Remove the paper backing from the coupling box to expose the adhesive pad.
6. Align the arrow on the coupling box with the arrow on the antenna base. Then firmly press the coupling box against the inside of the window.

Figure 2-7 *Installing the Car/RV, Glass-mount External Antenna*



7. Later, you will connect the antenna cable from the coupling box to the booster. Skip to *"Installing the Booster" on page 21*.

The RV roof-mount antenna is 18" high. However, the antenna's spring-loaded base allows the antenna to bend and return to vertical if struck by an external object, such as a tree branch.

Installing the External Antenna - RV Roof Mount

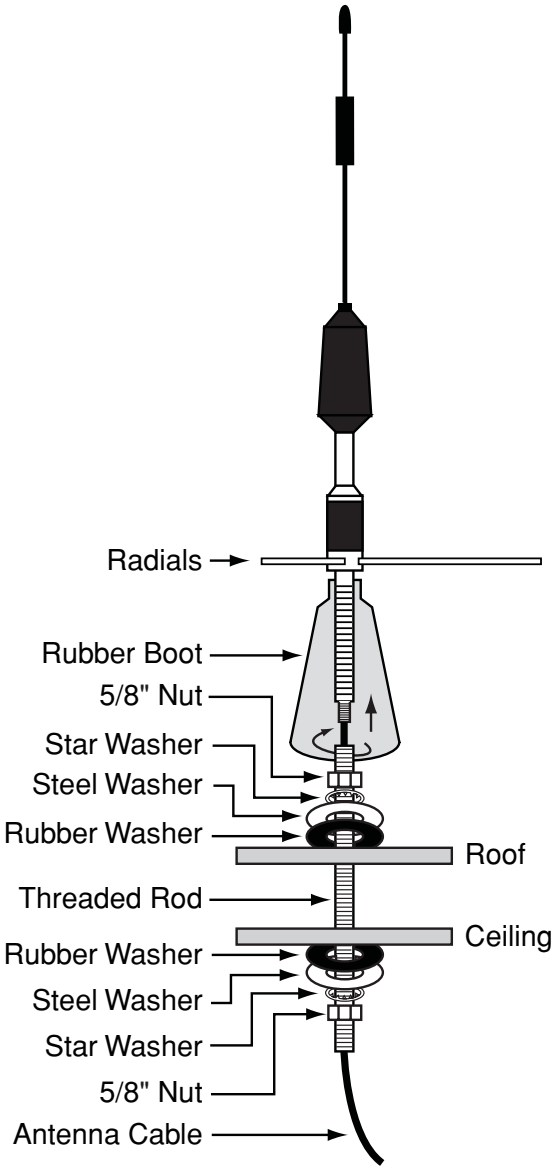
Before you begin, consider the following installation guidelines:

- Mount the antenna in a location on the roof away from objects that may block the signal. The more open space around the antenna, the better its performance. For best performance, mount the antenna in the highest possible location.
- KVH recommends you install the antenna so that the lower mounting hole will be hidden inside a cabinet near the front of the RV.
- The antenna must be mounted to a flat surface. It should not be mounted on an angle. *Use the plastic angled spacers included in the kit to compensate for a minor slope in the roof, if necessary. If used, the angled spacer must be positioned between the rubber washer and the steel washer.*
- The antenna includes a built-in ground plane. Therefore, it may be mounted to a grounded steel surface or to an ungrounded surface, such as fiberglass or wood.
- Mount the antenna at least 8" away from other antennas to avoid interference.
- Make sure you will not cut into any electrical wires or air vents when drilling the mounting hole in the roof.

Follow the steps below to install the antenna.

1. Using the guidelines above, find a suitable antenna mounting location on the roof.
2. Disconnect vehicle power.
3. Drill a ⅝" hole in the roof for mounting the antenna.
4. Unscrew the 7" threaded rod from the antenna and slide it off of the antenna cable. Remove the washers and nuts from the threaded rod. *Leave the rubber boot on the antenna.*

Figure 2-8 *Installing the RV, Roof-mount External Antenna*



5. Place a rubber washer, steel washer, star washer, and nut on the top end of the threaded rod (the top end has inside threads.) About ⅛" of the threaded rod should be visible above the nut.
6. Insert the threaded rod into the mounting hole in the roof from above. Make sure the end with the inside threads is on top.

Only one end of the threaded rod has inside threads. This is the top end that the antenna will screw into after you have installed the threaded rod on the roof.

7. If the threaded rod extends too far into the vehicle through the hole in the ceiling, you may cut it to a desired length. If you do not need to cut the threaded rod, skip to Step 8. If you need to cut the threaded rod, follow the steps below.

    a. Mark the location on the threaded rod where you want to cut it. **Be sure you will leave enough threads to secure the remaining three washers and the nut.**

    b. Remove the threaded rod from the vehicle.

    c. Place a nut onto the threaded rod at the point where you want to cut it.

    d. **Make sure you are not cutting into the top end with the inside threads.**

    e. Secure the nut in a vice and cut the threaded rod with a hacksaw.

    f. Remove the nut from the cut end of the threaded rod to remove burrs from the threads. Use a rat-tail file to remove burrs from the inside of the rod. This is important because a sharp edge might later cut the cable.

    g. Insert the threaded rod back into the mounting hole on the roof.

8. Place a rubber washer, steel washer, star washer, and nut onto the lower end of the threaded rod up against the ceiling. Tighten the nut until it is snug, but do not overtighten. *You might need to have a second person hold the nut on the other end of the threaded rod on the roof.*

9. On the roof, feed the antenna's cable through the center of the threaded rod and into the vehicle.

10. Screw the bottom of the antenna into the internal threads of the threaded rod.

11. Using silicone sealant or equivalent, seal around the edges of the outside rubber washer and nut. Then push the rubber boot down over the nut and washers.

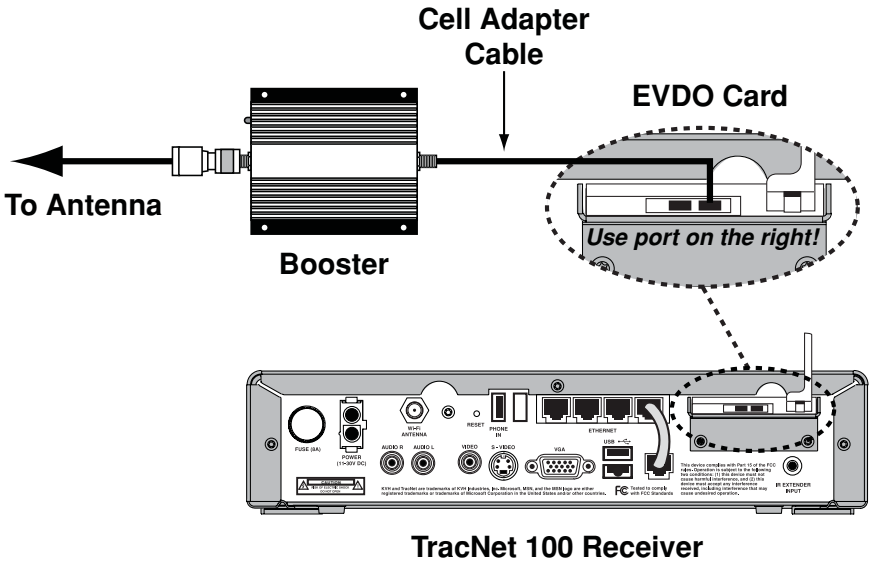
12. Screw the six radials into the antenna at the locations shown in Figure 2-8. Use a small amount of the supplied liquid threadlocker on the threads of the radials to ensure they will not vibrate loose.

Installing the Booster

The booster provided in each booster/antenna kit is identical. Follow the steps below to install the booster.

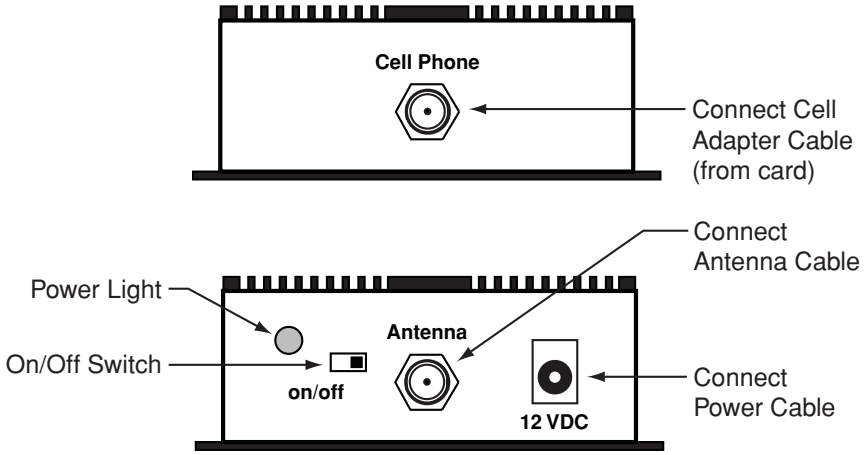
1. Find a dry, well-ventilated location to mount the booster. The booster must be installed away from direct sunlight or excessive heat. Do not install the booster in an air-tight enclosure.
2. Pull back the rubber cover on the back of the EVDO card to access its external antenna ports. Plug the supplied cell adapter cable into the port closest to the card's antenna (on the right). Do not use the port on the left.

Figure 2-9 *Booster Wiring Diagram*



3. Connect the other end of the cell adapter cable to the booster's "Cell Phone" jack.

Figure 2-10 *Booster Connections*

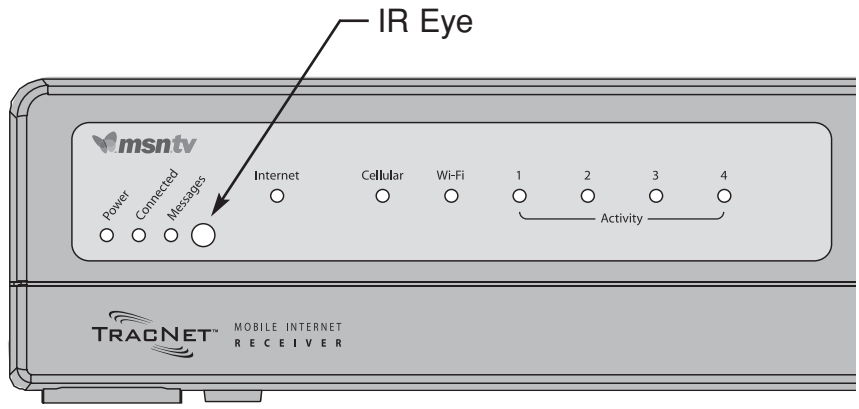


4. Connect the antenna cable (from the external antenna) to the booster's "Antenna" jack.
5. The supplied power "Y" cable has two branches with connectors attached. Connect the smaller plug end of the power cable to the booster's "12 VDC" jack. Later, you will connect the other ends of the power cable to the receiver and vehicle power.
6. Set the booster's On/Off switch to "On."
7. Mount the booster using four #6 or #8 self-drilling screws (or other fasteners).

2.4 Installing the IR Extender

TracNet 100 includes a wireless keyboard and remote control for use with MSN TV service. To communicate wirelessly with the receiver, these IR devices must point directly at the receiver's IR eye, located on the receiver's front panel. If the IR eye can't "see" the device, it cannot receive its commands.

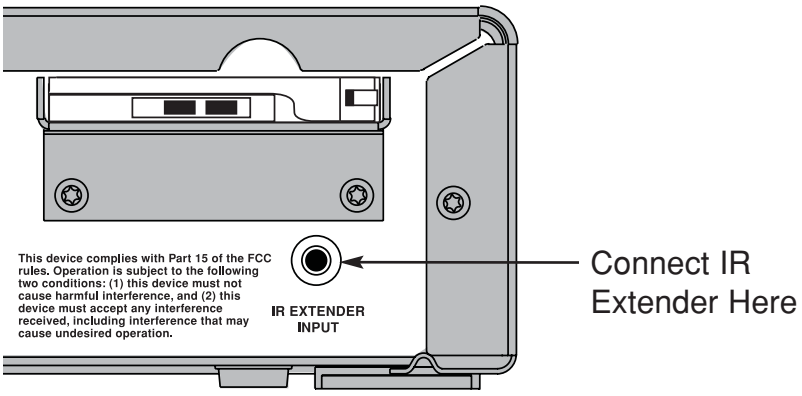
Figure 2-11 *IR Eye on Receiver Front Panel*



If you mount the receiver inside a cabinet or under a seat, the receiver will not have a clear line of sight to the wireless keyboard and remote. For these cases, an IR extender is provided. The IR extender allows you to mount an additional, tiny IR eye discretely anywhere while you hide the receiver in a cabinet.

1. Connect the IR extender cable to the receiver's "IR Extender Input" jack.

Figure 2-12 *IR Extender Connection on Receiver*



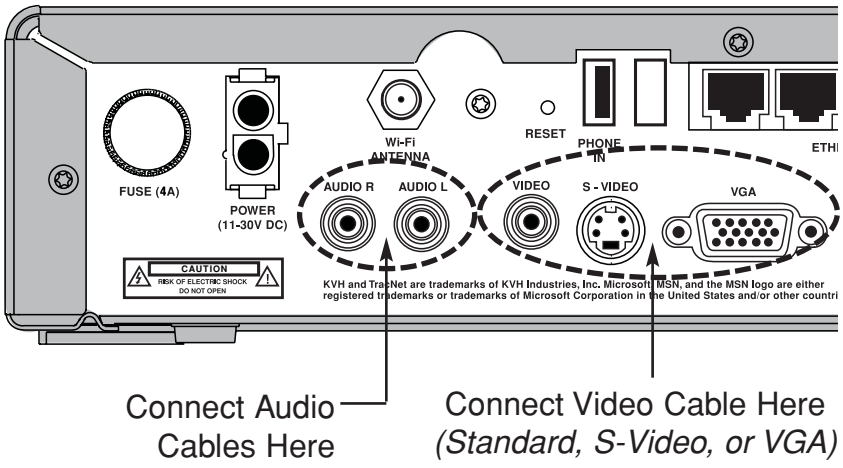
2. Place the IR extender's eye in a location within direct line-of-sight to the wireless IR devices.

These instructions explain how to hook up the TracNet 100 receiver directly to a TV. However, the wiring setup of your entertainment system may require different connections. For example, if you have a VCR connected to the TV, you will need to connect the TracNet 100 receiver to the VCR's available inputs rather than the TV.

2.5 Connecting to Your TV

The TracNet 100 system includes standard audio/video cables with RCA-type connectors for connecting the Internet receiver to your TV. The receiver also includes S-Video and VGA jacks for TVs that can support those connections.

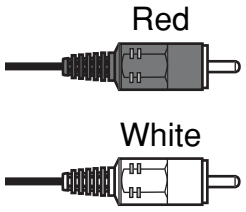
Figure 2-13 *Receiver Audio/Video Connections*



Connecting the Audio Cables

1. Connect the red and white audio cables to the receiver's "Audio R" and "Audio L" jacks. The jacks are color-coded.
2. Connect the other ends of the audio cables to the TV's audio inputs (labeled "In" or "Input"). If the TV has only one audio input jack, connect the white audio cable and leave the red cable disconnected.

Standard Audio



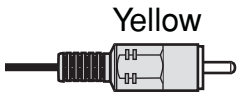
Connecting the Video Cable

Connect the receiver to your TV's video input using **one** of the following cables:

Using the yellow standard video cable:

1. Connect the yellow video cable to the receiver's "Video" jack.
2. Connect the other end of the video cable to your TV's standard composite video input.

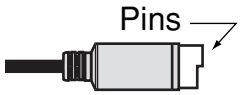
Standard Video



Using an S-Video cable:

1. Connect an S-Video cable *(not supplied)* to the receiver's "S-Video" jack.
2. Connect the other end of the S-Video cable to your TV's S-Video input.

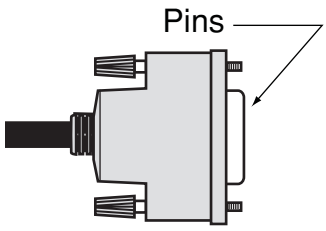
S-Video



Using a VGA cable

1. Connect a VGA cable *(not supplied)* to the receiver's "VGA" jack.
2. Connect the other end of the VGA cable to your TV's VGA input.

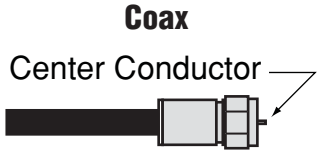
VGA



If your TV only has an RF coaxial connector:

You will need to purchase an RF modulator (Radio Shack model 15-2526 or equivalent) and a coax cable to connect your TV to the TracNet 100 receiver.

Coax



2.6 Connecting Power

The TracNet 100 receiver requires a 12 volts DC (VDC) power input supporting 25 watts. A power "Y" cable with two connector ends and flying leads is supplied with the system.

KVH offers an optional power wiring kit (KVH part # 72-0216) that includes two alternatives to the supplied power cable:

- Power cable with accessory power (cigarette lighter) connector (for cars)
- AC/DC power supply with attached cables (for RVs)

For your own safety, shut down vehicle/vessel power before you connect the receiver power wires.

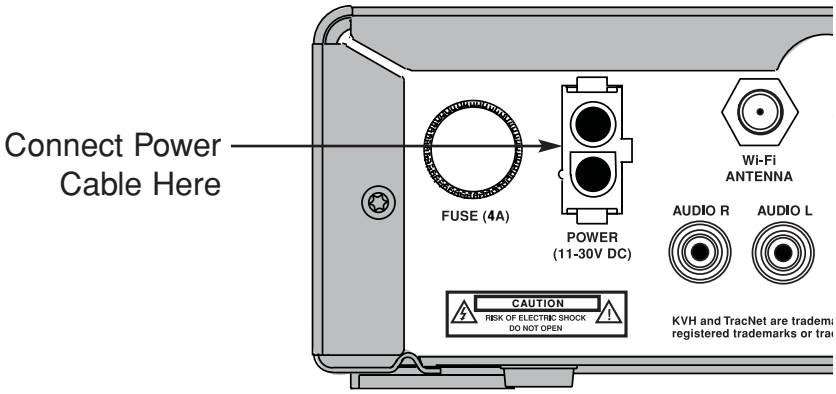
Follow the steps below to connect the supplied power cable to the receiver. *If you purchased the optional power wiring kit, refer to the instructions that came with the kit.*

1. Before you connect the power wires, disconnect vehicle/vessel power.

   If installing on a car, remove the key from the ignition and remove the negative lead from the vehicle's battery.

2. Plug the large connector end of the power cable into the receiver's "Power" jack. *The small plug end should already be connected to the booster.*

Figure 2-14 *Receiver Power Connection*



3. Connect the power cable's individual wires to a dedicated 12 VDC circuit. Connect the black negative wire to ground (power return), and connect the red positive wire to clean +12 VDC power.

   If installing on a car, connect the black wire to its own dedicated chassis ground (such as a pillar ground screw) within 18" of the receiver. The black wire must make contact between the metal of the ground screw and the metal of the vehicle frame. Connect the red wire to +12 VDC switched (accessory) power.

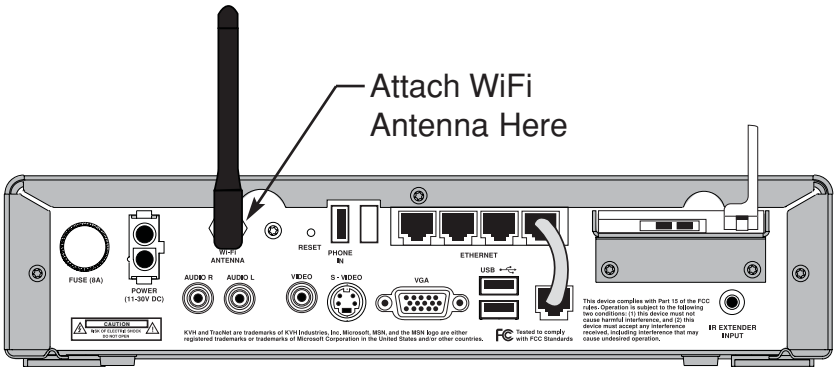
4. Reconnect vehicle/vessel power.

2.7 Connecting the WiFi Antenna

The WiFi antenna allows you to connect a laptop computer wirelessly to the TracNet 100 network.

1. Attach the WiFi antenna to the receiver's "WiFi Antenna" jack. Screw down the antenna's base to secure in place.
2. Position the antenna upward, as shown below, to ensure optimum reception.

Figure 2-15 *Receiver WiFi Antenna Connection*



To avoid overheating, do not block the receiver's vents.

2.8 Mounting the Receiver

Once all cables are connected, mount the TracNet 100 receiver inside the vehicle/vessel. Before you begin, consider the following installation guidelines:

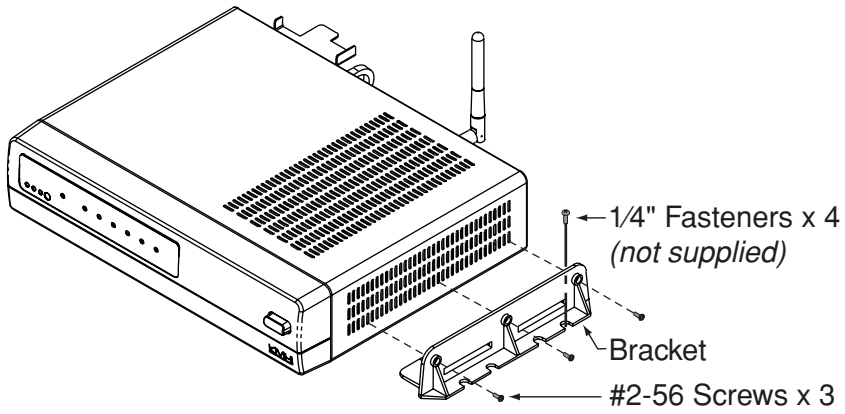
- Mount the receiver in a dry, well-ventilated area.
- To avoid interference, mount the receiver away from electrical devices that generate RF noise (such as a microwave, plasma TV, or electrical motor).
- Mount the receiver away from any heat sources.
- Do not mount the receiver in an area surrounded by metal.
- Make sure the receiver's front and rear panels will be accessible to the user. The user needs access to the power switch on the front of the receiver and the EVDO card on the back of the receiver.

To mount the receiver, use the two plastic mounting brackets supplied with the system.

1. Attach the two mounting brackets to the sides of the receiver using three #2-56 screws. Simply screw these fasteners into the vent slots.
2. Secure the brackets to the mounting surface using appropriate ¼" fasteners *(not supplied)*.

   Be sure to leave enough slack in the connecting cables (service loop) for easy serviceability.

Figure 2-16 *Receiver Mounting*



2.9 Installing Batteries in the Remote and Keyboard

The MSN TV wireless remote control and keyboard are battery-operated. Follow the steps below to prepare these devices for normal operation.

1. Install two AAA batteries in the remote control's battery compartment.
2. Pull the white tab on the back of the keyboard to remove the protective plastic from the battery compartment. Four AA batteries are already installed.
3. Remove the plastic wrapping that covers the front of the keyboard.

3 — Getting Started

This section explains how to turn on the TracNet 100 receiver and start using the MSN TV service or a PC network connection.

Contents

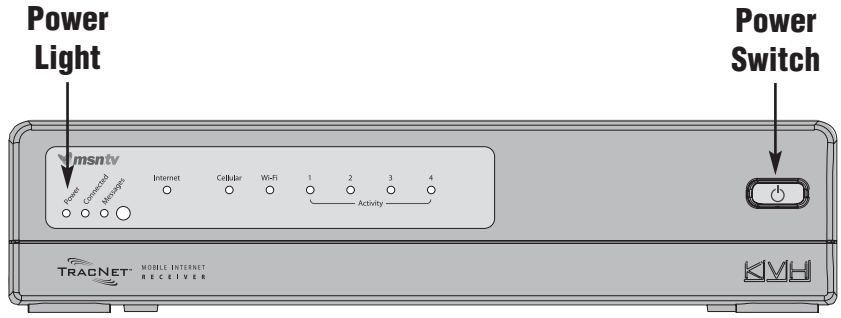
3.1 Using the MSN TV Service

Follow the steps below to turn on the TracNet 100 receiver and start using the MSN TV Internet service.

Turning On the System

1. Press the power switch on the front panel of the TracNet 100 receiver. The "Power" light will start flashing green.

Figure 3-1 *TracNet 100 Front Panel*



2. If the "Power" light does not come on and start flashing, press the **MSN Power** button on the MSN TV remote control or keyboard.

Figure 3-2 *MSN TV Remote Control and Keyboard*

The MSN TV remote control requires two AAA batteries. The MSN TV keyboard requires four AA batteries (preinstalled).

3. Turn on your TV. If the TracNet 100 receiver is connected to a different device, such as a VCR, turn that device on as well.

The TV screen will go blank for a short period every time you start up the TracNet 100 receiver. This is normal. Simply wait 2 minutes for the MSN TV screen to appear.

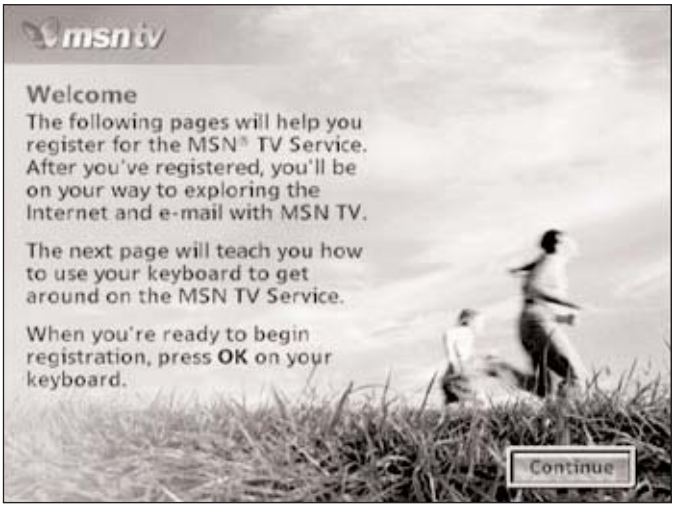
4. Wait for the MSN TV service to load. It will take about two minutes to fully start up. During startup, the TV will first show an MSN TV bootup screen *(see below)*. Then the screen will go totally blank for 30 seconds before the MSN TV Welcome or Sign In screen appears.

Figure 3-3 *MSN TV Bootup Screen*

If you have not inserted your activated EVDO card into the TracNet receiver's PC card slot, you will not be able to access the MSN TV service. See Section 2.2, "Installing the EVDO Card" on page 12 for details on installing the EVDO card. ***Be sure to turn off the receiver power switch before you install the card!***

5. a. **If you haven't yet created an MSN TV account:** The TV will show an MSN TV Welcome screen. Follow the onscreen instructions to create an account. See *"Creating a New MSN TV Account" on page 36* for details.

Figure 3-4 *MSN TV Welcome Screen - New Account*



b. **If you have an MSN TV account:**
The TV will show a Sign In screen. Wait 30 seconds to ensure you have a good network connection, then check the signal strength indicator on the Sign In screen.

If bars are present, you have cell coverage. Enter your MSN TV password to sign into your MSN TV account.

If no bars are present, you are currently outside the range of the nearest cell tower. Wait until you travel to an area with good cell coverage.

Figure 3-5 *MSN TV Sign In Screen - Existing Account*

For complete details about how to use the MSN TV service, refer to the MSN TV User's Guide.

Creating a New MSN TV Account

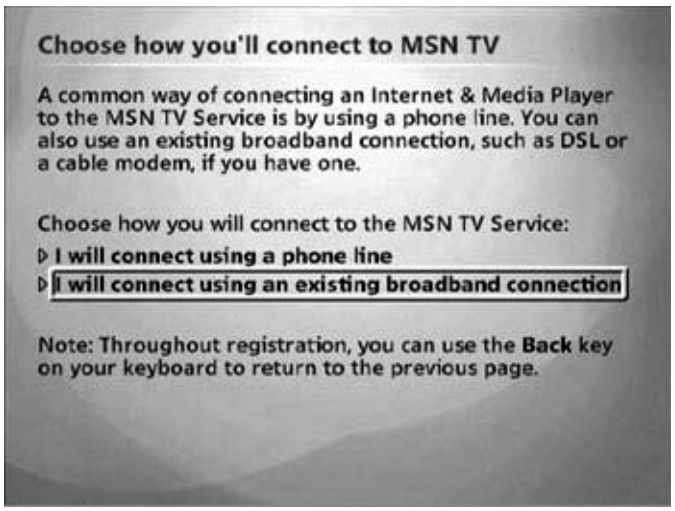
When you turn on the TracNet 100 system for the first time, the TV will show a "Welcome" screen (see Figure 3-4 on page 34). To create your MSN TV account, select the **Continue** button using your MSN TV remote or keyboard. Then follow the step-by-step instructions on your screen.

During this process, you will be asked for some specific information. All of this information will be electronically encoded and encypted to help ensure security and confidentiality. MSN TV will only use this information to create your account and to bill you for your service plan.

Be sure to select the following options along the way:

- At the screen titled "Choose how you'll connect to MSN TV," select **I will connect using an existing broadband connection**.

Figure 3-6 *MSN TV - Choose Broadband Connection*



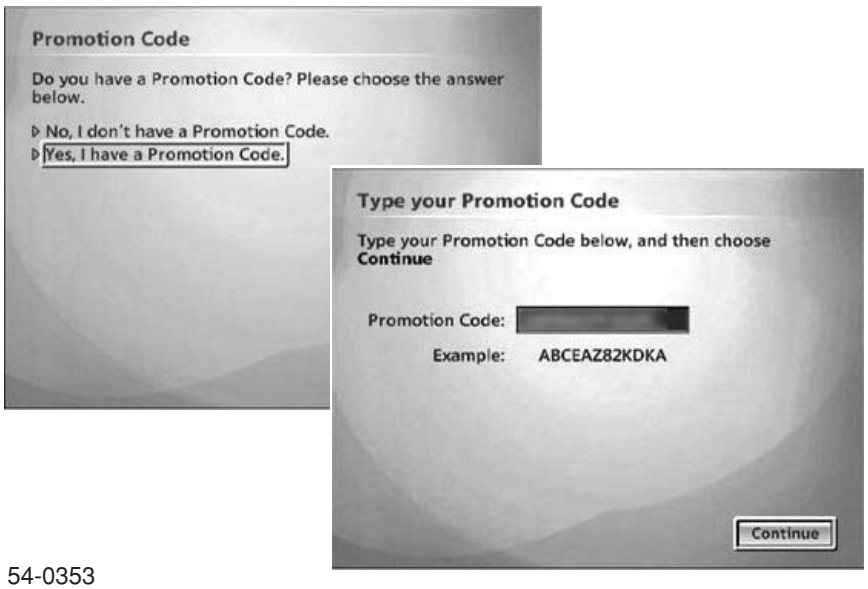
- At the screen titled "Establish Your MSN TV Account," you can choose to create a new e-mail address or use your existing Hotmail or MSN e-mail address. This e-mail name and password will become the account you'll use for MSN TV.

Figure 3-7 *MSN TV - Set Up E-mail*

- At the screen titled "Promotion Code," be sure to select **Yes, I have a Promotion Code**. Then type in your promotion code in the box on the next screen. When you called KVH to order your EVDO card, KVH's Activation Department gave you a promotion code to enter. This code will personalize your MSN TV service for your particular mobile environment (boat, car, or RV).

If you do not have a promotion code, call KVH at 866-399-8509. *You must enter the correct promotion code for the system to work properly. Even if you did not get your EVDO card from KVH, you still need to get your free promotion code from KVH.*

Figure 3-8 *MSN TV - Enter Promotion Code*



Checking Signal Strength

The MSN TV Sign In and Home pages include a signal strength indicator. The more bars that appear, the stronger the cellular signal and the faster your download speeds. If no bars appear, you have traveled outside the range of the nearest cell tower.

Figure 3-9 *Signal Strength Indicator on MSN TV Screens*

Turning Off the System

To turn off the system, press the power switch on the front panel of the TracNet 100 receiver (see Figure 3-1 on page 33) or turn off vehicle/vessel power. The **MSN Power** button on the remote and keyboard does **not** power off the system; it only turns off the MSN TV video while the router portion of the TracNet 100 receiver remains powered and active.

If you are using the optional cigarette lighter (accessory) power adapter to power the TracNet receiver, you will need to unplug the cable from the vehicle power outlet if the outlet remains powered when you turn off the vehicle. Leaving the TracNet power cable connected might drain the vehicle's battery.

3.2 Using a Networked Computer

In addition to enjoying MSN TV service on your TV, you can also connect your laptop computer to the Internet via TracNet 100, your personal mobile hotspot. The TracNet 100 receiver's internal router allows you to connect your computer using either a wired or wireless connection.

To connect your computer to TracNet 100, you first need to set up a network connection. Follow the instructions in *Section 4, "Setting Up Your Network" on page 41.*

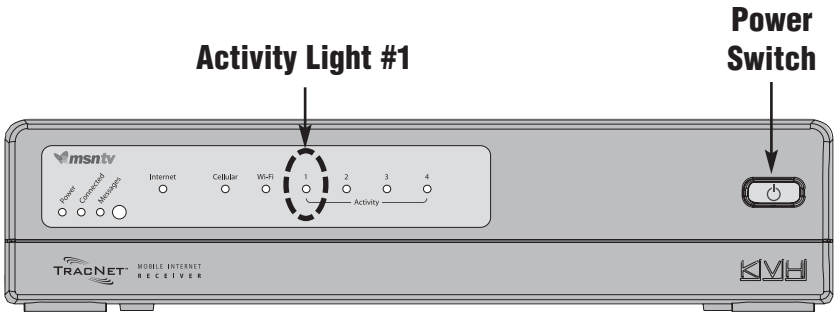
The MSN TV service can only be viewed on your TV. When you connect with a computer, you simply use your computer's web browser to surf the web. However, you might want to keep the MSN TV service displayed on your TV to check cellular signal strength (see page 38).

Once you have configured your computer for a network connection, follow the steps below to start using your computer via the TracNet 100.

Turning On the System

1. Apply vehicle/vessel power. Then press the power switch on the front panel of the TracNet 100 receiver. The #1 "Activity" light will illuminate green. Other router lights may illuminate or blink as well.

Figure 3-10 *TracNet 100 Front Panel*



For details about what each status light indicates, refer to Section 5.2, "System Status Lights" on page 69.

2. Wait two minutes for the system to initialize.
3. Turn on your networked computer.
4. Connect to the TracNet 100 network using your wired or wireless connection.
5. Once you are connected, launch your web browser.

If you experience any problems getting connected, refer to *Section 5, "Troubleshooting" on page 57*.

Turning Off the System

To turn off the system, press the power switch on the front panel of the TracNet 100 receiver (see Figure 3-1 on page 33) or turn off vehicle/vessel power. The **MSN Power** button on the remote and keyboard does **not** power off the system; it only turns off the MSN TV video while the router portion of the TracNet 100 receiver remains powered and active.

If you are using the optional cigarette lighter (accessory) power adapter to power the TracNet receiver, you will need to unplug the cable from the vehicle power outlet if the outlet remains powered when you turn off the vehicle. Leaving the TracNet power cable connected might drain the vehicle's battery.

3.3 Protecting Your Broadband Connection from Intrusion

TracNet 100 accesses the Internet and MSN TV via an internal mobile EVDO router with full wireless network capability. This wireless network is accessible to anyone within range of the TracNet 100 receiver (even hundreds of feet away). Therefore, if your wireless network is open (no security settings applied), unauthorized users outside your vessel/vehicle will be able to "piggyback" on your connection, resulting in slower speeds for you.

To block intruders from using your network, and optimize your connection, KVH highly recommends that you establish basic security settings on the TracNet 100 router. All you need to do is launch the router's setup wizard, which will walk you through the simple process step by step. Follow the instructions in *Section 4.3, "Configuring TracNet 100 for Network Security" on page 49*.

4 — Setting Up Your Network

This section explains how to set up your computer for a wired or wireless connection via TracNet 100. It also explains how to use the router configuration wizard to apply security settings to your network.

Contents

4.1 Setting Up Your Computer for a Wired Connection

Follow the steps below to configure your laptop computer for a wired Ethernet connection via TracNet 100. If you want to set up a wireless connection, test a wired connection first, then refer to *Section 4.2, "Setting Up Your Computer for a Wireless Connection" on page 46*.

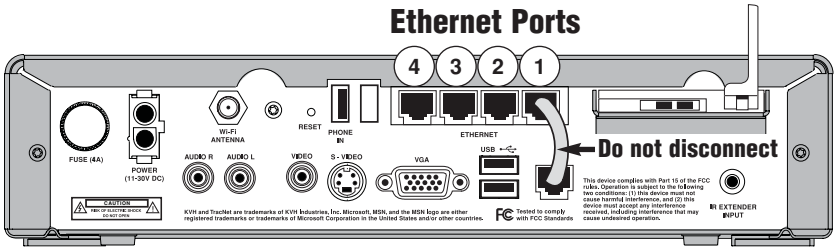
Your computer must have a network interface card installed and all network cabling must be 100 Mbps fast Ethernet UTP CAT-5 cables with RJ45 connectors.

Connecting Your Computer to the TracNet 100 Receiver

1. Make sure the TracNet 100 receiver and your computer are both powered off.
2. Connect one end of a straight Ethernet cable to an available Ethernet port (#2, 3, or 4) on the back of the TracNet 100 receiver. Do not disconnect the short patch cable connected to Ethernet port #1; this port is reserved for the MSN TV link.

Do NOT use a "crossover" cable. The connection will only work with a straight Ethernet cable.

Figure 4-1 *TracNet 100 Rear Panel*

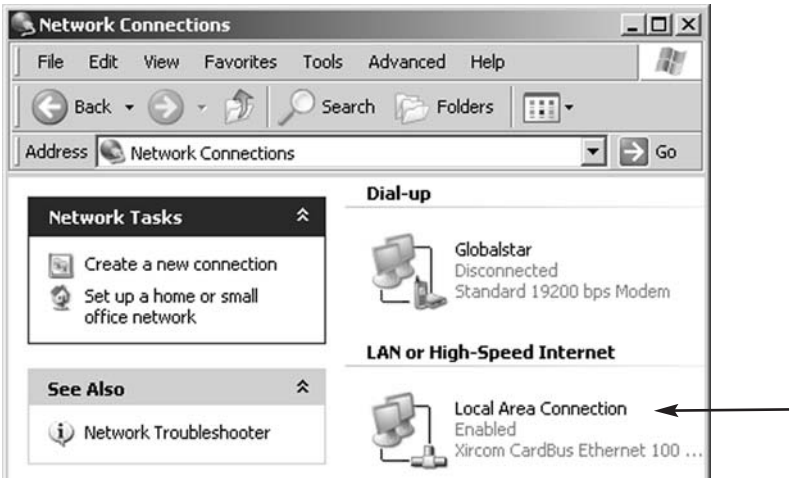


3. Connect the other end of the cable to your computer's Ethernet port.
4. Turn on the TracNet 100 receiver.
5. Wait two minutes, then turn on your computer.

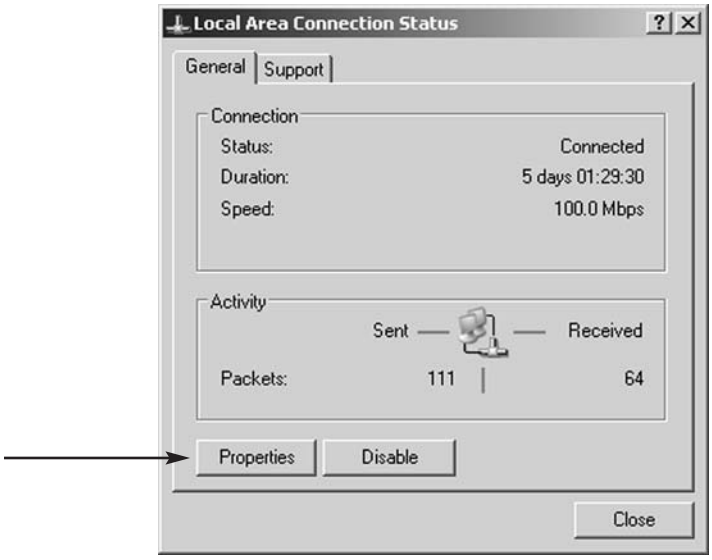
Configuring Your Computer (Windows 2000/XP)*

1. At the Windows Control Panel, double-click the **Network Connections** (or **Network and Dial-up Connections**) icon. *You can find the Control Panel either through the Start menu or "My Computer."*

2. At the Network Connections window, double-click the **Local Area Connection** icon for the Ethernet connection you're using for TracNet.

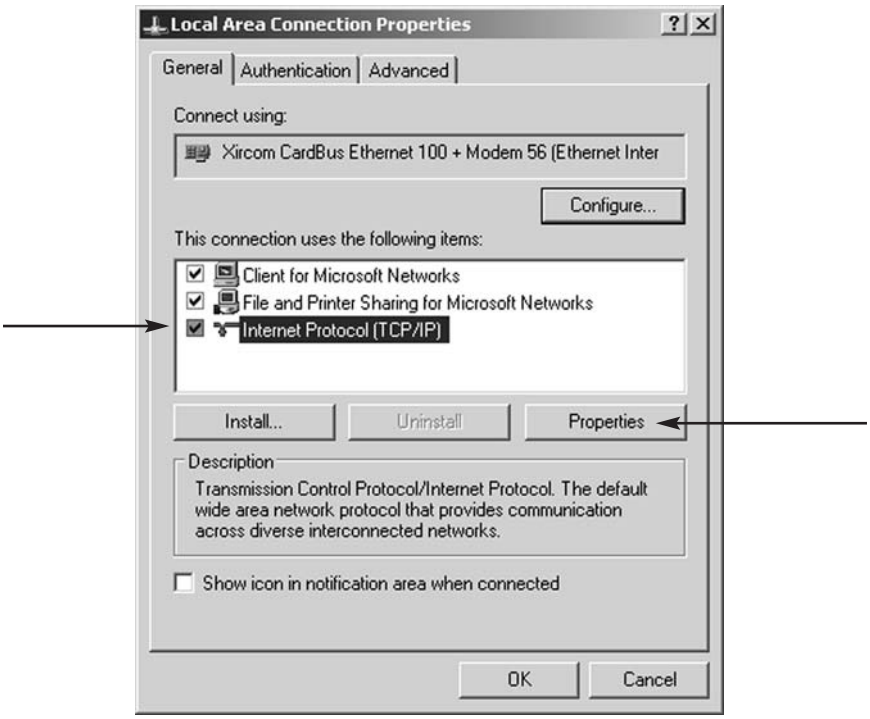


3. Local Area Connection Status: At the General tab, click the **Properties** button. *This screen only displays if your computer is currently connected to a network. If this screen doesn't appear, simply skip to Step 4.*

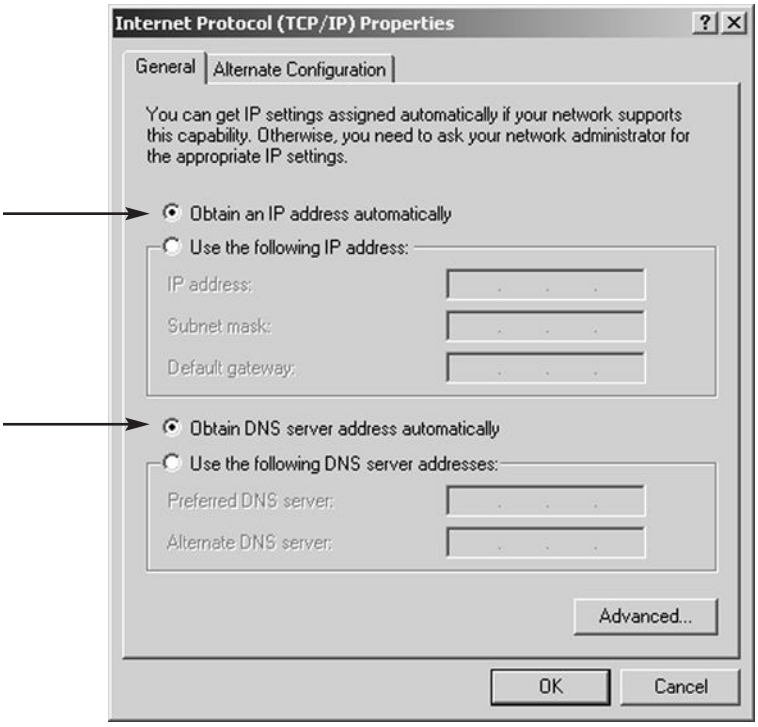


* KVH Technical Support supports only Windows 2000/XP for a wired connection. While this section shows screens as they appear in Windows XP, they are nearly identical in Windows 2000.

4. Local Area Connection Properties: At the General tab, select **Internet Protocol (TCP/IP)**, then click the **Properties** button.



5. Internet Protocol (TCP/IP) Properties: At the General tab, select **Obtain an IP address automatically** and **Obtain DNS server address automatically**. Then click the **OK** button.



6. Local Area Connection Properties: Click the **OK** button.
7. Restart your computer.

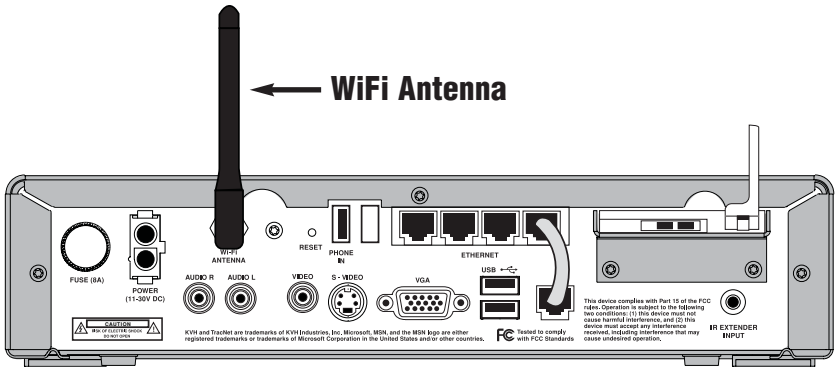
4.2 Setting Up Your Computer for a Wireless Connection

Follow the steps below to configure your laptop computer for a wireless connection to TracNet 100.

NOTE: These instructions are specific to a Windows® XP operating system, which KVH Technical Support fully supports. However, the system is compatible with any 802.11b device.

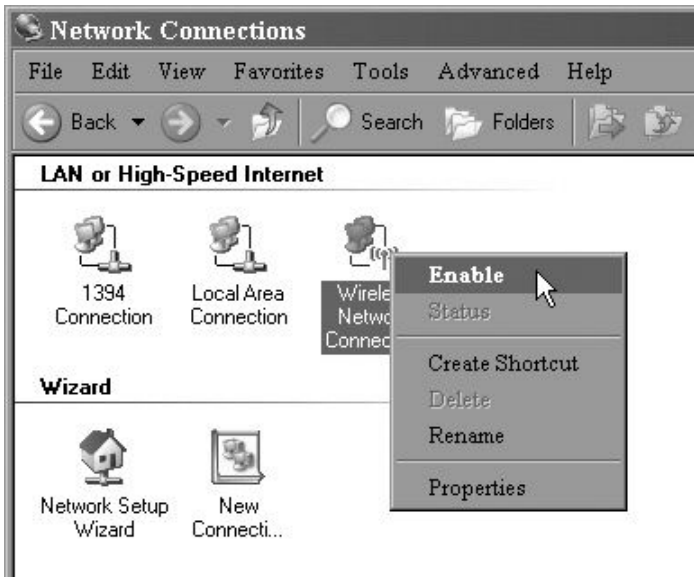
1. Make sure the TracNet 100 receiver and your computer are both powered off.
2. Make sure the WiFi antenna is connected to the receiver's "WiFi Antenna" jack.

Figure 4-2 *TracNet 100 WiFi Antenna*



3. Turn on the TracNet 100 receiver.
4. Wait two minutes, then turn on your computer.
5. Insert your wireless card into your computer and configure it to operate with your computer, if you haven't already done so. *Refer to the instructions that came with your card for details.*
6. At the Windows Control Panel, double-click the **Network Connections** icon. *You can find the Control Panel either through the Start menu or "My Computer."*

7. At the Network Connections window, right-click the **Wireless Network Connection** icon for the wireless card you're using for TracNet. At the pop-up menu, select **Enable**.

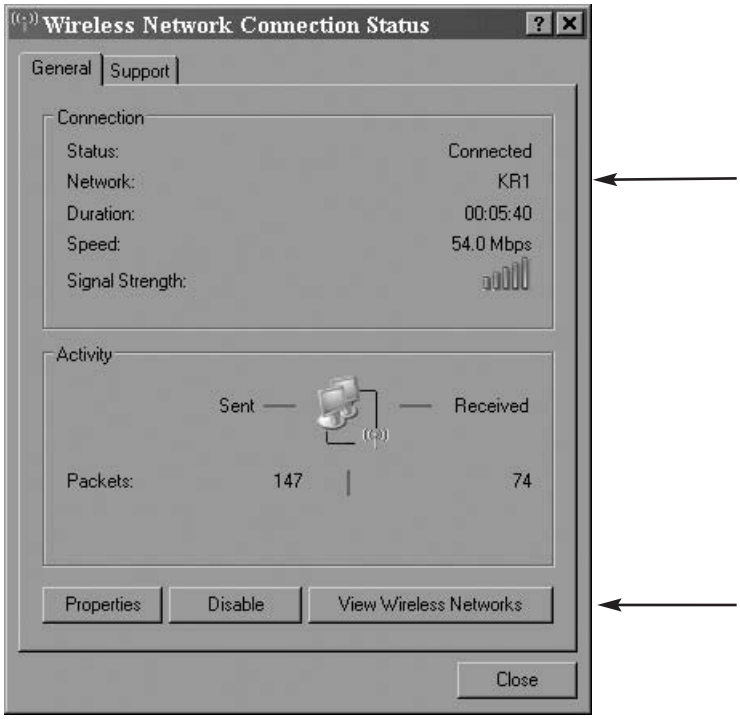


8. At the Network Connections window, right-click the **Local Area Connection** icon for your computer's wired Ethernet connection. At the pop-up menu, select **Disable**. *You should avoid enabling both a wireless connection and a wired connection at the same time.*

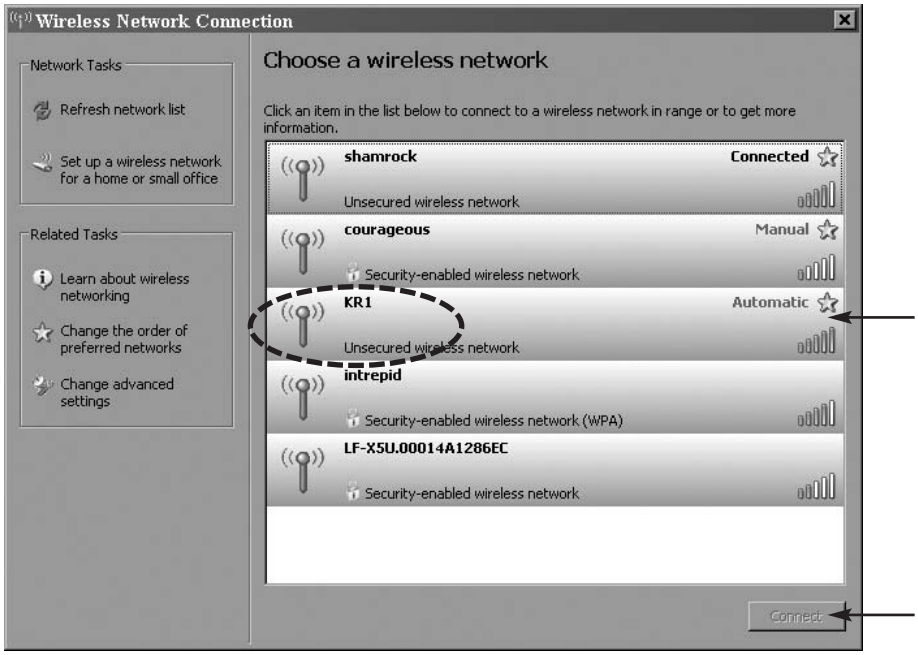
9. Double-click the icon for your wireless connection in the computer's system tray (located in the bottom right-hand corner of the desktop next to the clock). *The appearance of this wireless icon varies by card manufacturer.*

If the pop-up menu has a "Disable" selection instead of "Enable," your wireless network connection is already enabled.

10. Wireless Network Connection Status: Verify that Status is **Connected** and Network is **KR1**.



11. If Network is not **KR1**, click the **View (or Scan) Wireless Networks** button to bring up the Wireless Network Connection window. Select **KR1** then click the **Connect** button.



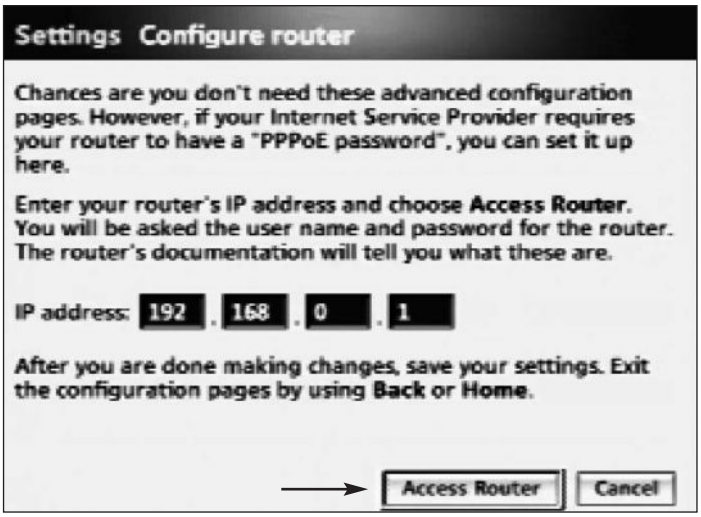
4.3 Configuring TracNet 100 for Network Security

These instructions explain how to use the TracNet 100 router setup wizard to establish basic security settings on your broadband network. This will help protect your network from unauthorized use. You can find the router setup wizard at the router setup screen, which is accessible from the MSN TV interface or a computer's wired Ethernet connection.

Accessing the Router Setup Screen via MSN TV

1. Turn on the TracNet 100 receiver and wait 2 minutes for MSN TV to boot up.
2. At the MSN TV Sign In screen, select **Settings**.

3. At the Settings screen, select **Choose Connection Setting**. Then, at the Connection Settings screen, select **Configure Router**.
4. At the Configure Router screen, make sure "IP Address" is **192.168.0.1**, then select **Access Router**.



Do not try to access the router setup screen via a wireless connection; use a wired Ethernet connection instead.

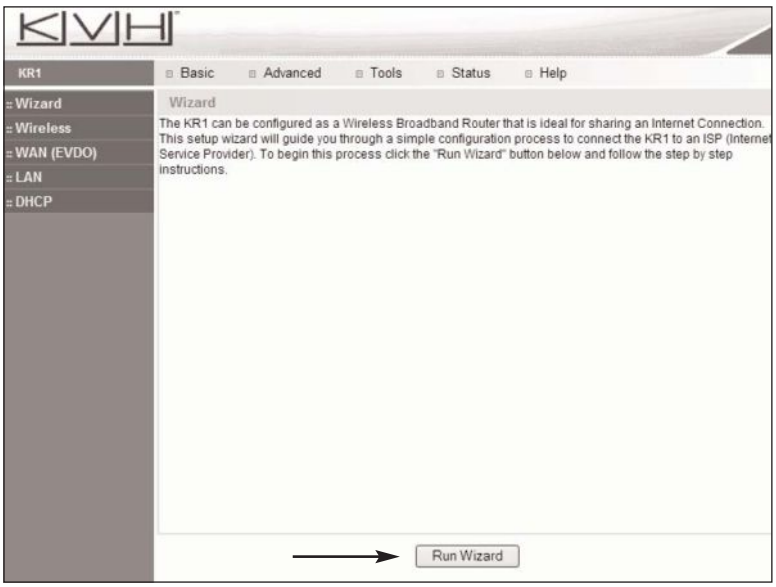
Accessing the Router Setup Screen via a Computer

1. Using a straight Ethernet cable, connect your computer to any one of the available Ethernet ports on the back of the TracNet 100 receiver.
2. Turn on the TracNet receiver, wait one minute, then turn on your computer.
3. Open your web browser and enter "**http://192.168.0.1**" in the URL address box.

Using the Router Setup Wizard

1. Logon window: Type "**admin**" in the User name box but leave the Password box blank. Then click **OK**.

2. Once you are logged in, the router setup screen appears. Click **Run Wizard** to start the setup wizard. *(The Run Wizard button is at the bottom of the screen; move the cursor all the way down the sidebar on the left to get to the button.)*



3. At the Welcome screen, click **Next**.

4. Set Password: You may enter a password of your choice to protect your admin account from unauthorized access. This admin password will control access to the router setup screen. If you want to set a password, select the following:

   - New Password: Enter your desired password.
   - Confirm Password: Re-enter your password.

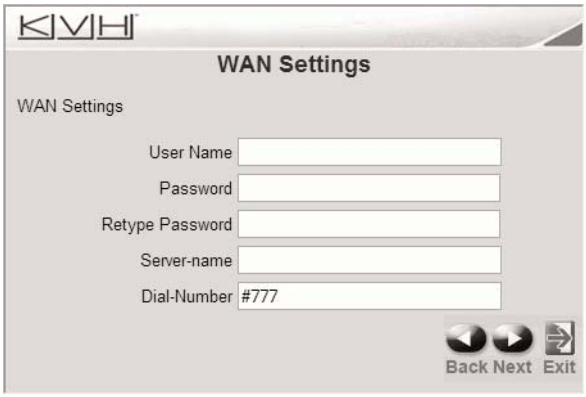
   Click **Next**.

Admin Password:

_____

5. Choose Time Zone: Select your time zone from the drop-down menu. Then click **Next**.

6. WAN Settings: Just click **Next**. Your service provider does not require a user name and password. Keep the Dial-Number as #777.



7. Set Wireless LAN Connection: Select the following:

SSID:

_____

Channel:

_____

- SSID: Enter a unique name. This will be the name of your network. SSID names can contain up to 32 ASCII characters. **The SSID is case-sensitive.**
- Channel: If you wish, you may change the specific channel that the system uses for communications. Select the desired channel from the drop-down menu or simply leave "Auto Select" checked.

Click **Next**.

8. Setup Encryption: You may select from three levels of encryption to protect your network from outside intrusion.

Security Type	Description
None	Your network will NOT be secure
WEP	(Wired Equivalent Privacy) Wireless security protocol for Wireless Local Area Networks (WLAN)
WPA-PSK	User authentication based on a passphrase

Select your desired encryption type. Then click **Next**.

KVH recommends you use WPA-PSK encryption. This option not only provides the highest level of security, but it is also easier to use than the WEP option.

9. **If you selected "None":**
Skip to Step 10.

If you selected "WEP":
Select the following:

- Authentication: Select Shared Key to create a secure network. **Do not select Open System. If you select Open System, your network will not be secure.**
- WEP Encryption: Select either 64Bit or 128Bit encryption.
- ASCII Key: Enter a 10-character (alpha-numeric) code of your choice for "Shared Key" encryption.

Click **Next**.

WEP Encryption Only

ASCII Key:

_____

If you selected "WPA-PSK":
Select the following:

- Passphrase: Enter a passphrase of your choice. The passphrase must be between 8 and 63 alpha-numeric characters.
- Confirm Passphrase: Re-enter your passphrase.

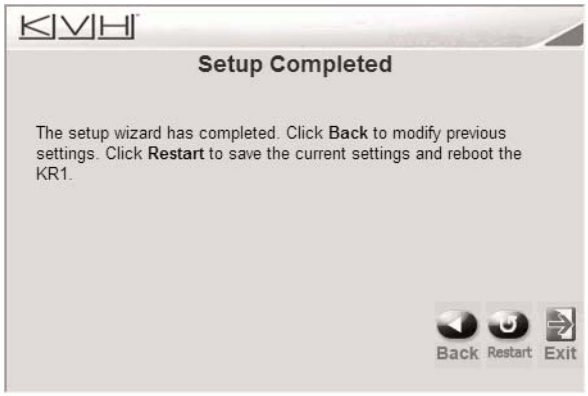
Click **Next**.

WPA-PSK Encryption Only

Passphrase:

_____

10. Setup Completed: Click **Restart** to restart the router.



11. Wait for the router to restart. When it is done, turn off the TracNet 100 receiver, wait 30 seconds, then turn the receiver back on.
12. If you want to connect a computer to the TracNet system, be sure to configure your computer for the security settings you just set up in the router. Refer to the instructions that came with your card for details.

More advanced network configuration information is available for download from KVH's web site. Just go to www.kvh.com, navigate to the TracNet 100 product page, then open the Manuals tab in the sidebar.

5 — Troubleshooting

This section identifies some basic problems along with their possible solutions. It also explains what the receiver lights mean and how to get Technical Support.

Contents

5.1 Basic Troubleshooting Guide

If you are experiencing a problem with your TracNet 100 system, first check the table below to see if the problem is listed. If it is, follow the basic troubleshooting steps on the associated page. If the problem is not listed in the table below, refer to *Section 5.4, "Technical Support" on page 71*.

Problem	See Page:
The MSN TV screen does not appear on my TV	60
The MSN TV screen appears, but it won't connect	61
I lost my MSN TV broadband connection	61
The service is very slow	63
I can't connect my computer wirelessly	64
I can't connect my computer via Ethernet cable	66
My TracNet 100 system shuts down on its own	67
I can't sign in to MSN TV - Incorrect password message	67
Not all web sites or applications display properly on my TV	67
My USB device (printer, camera) doesn't work with TracNet	68
My MSN keyboard or remote control is not working	68
The MSN TV screen shows an update is needed	68

The MSN TV screen does not appear on my TV

For details about what each status light indicates, refer to Section 5.2, "System Status Lights" on page 69.

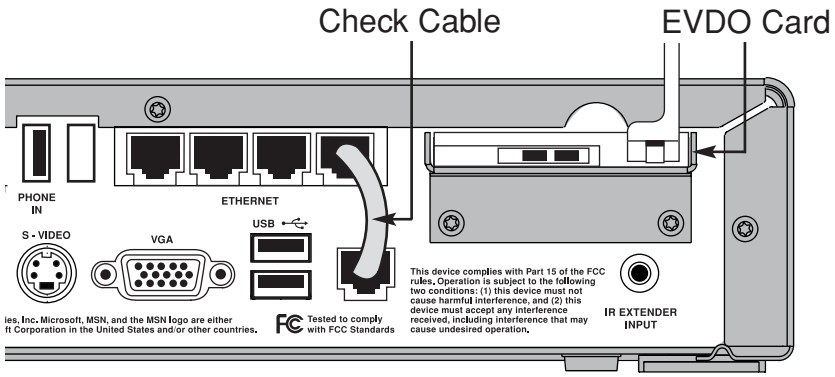
1. Always wait 2 minutes for the system to initialize after you turn it on. **During startup, the screen will go blank for 30 seconds before the MSN TV Sign In screen appears. This is normal.**
2. Check the lights on the front of the TracNet 100 receiver.
   a. **If no lights are lit**, press the power switch on the front of the receiver. If no lights come on, check the power connection on the back of the receiver. The receiver requires at least 11 VDC input. If the power is OK, check the 4-amp fuse on the back of the receiver.
   b. **If the Power light is out, but the #1 Activity light is lit**, press the MSN Power button on the MSN remote or keyboard. *Be sure to point the remote/keyboard directly at the front of the receiver or the IR extender's "eye."* If the Power light still does not come on, check the batteries in the remote or keyboard.
3. Check the audio/video cables on the back of the TracNet 100 receiver. Ensure they are fully plugged in and plugged into the correct jacks. The standard A/V jacks are color-coded. Also be sure the audio/video cables are connected properly to your TV. If you wired the system through a VCR or distribution box, be sure it is also turned on and connected properly.
4. Switch the input on your TV until you see the MSN TV screen. Try the "TV-Video" or "Input" button on your TV's remote control.
5. Try resetting the system. Turn off the power switch on the TracNet 100 receiver, wait 30 seconds, then turn the receiver back on.

The MSN TV screen appears, but it won't connect OR I lost my MSN TV broadband connection

1. Wait 30 seconds then try again. When you first turn on the system, always wait 2 minutes for MSN TV to establish a network connection.
2. Check the #1 Activity light on the front of the TracNet 100 receiver. If it is off, check the short Ethernet patch cable on the back of the TracNet 100 receiver. Make sure it is connected to the correct RJ45 jacks, as shown in the figure below.

You can also check the status of the jumper cable from the MSN TV menu. From the Sign In screen, select "Settings," then "Choose Connection Setting," then "Check Broadband Status." If the cable is connected properly, Connection Status will show "Okay."

Figure 5-1 *TracNet 100 Receiver Rear Panel*



3. Check the signal strength bars on the MSN TV screen. If you have no bars, you are probably outside the coverage area of the nearest cell tower. Wait until you have at least 2 bars before you try again to connect.
4. The cell network might have reached maximum capacity and is simply unable to support any additional users. This can occur at peak times in urban areas or during major events.
5. Check for signal blockage. If you are traveling along the fringe of a cell coverage area, the following things may block the signal enough to lose reception: trees, buildings, bridges, tunnels, heavy rain, or hills.

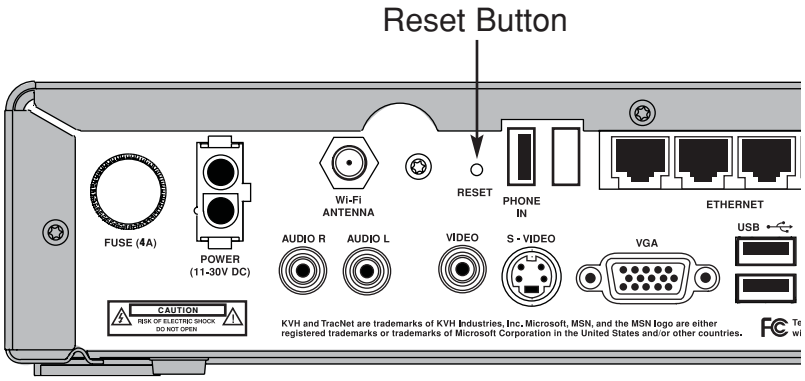
Verizon's EVDO service is rapidly expanding into new areas. To view latest coverage information, visit ***www.kvh.com/tracnetcoverage****.*

If you didn't get your KPC650 EVDO card from KVH, *make sure you activate the card following the directions provided with the card (you will need a laptop computer with a card slot and Windows 2000, Me, or XP installed). The TracNet system will not work without an activated card.*

6. Check the EVDO card on the back of the TracNet 100 receiver. Ensure it is securely plugged into the card slot. The blue light on the card should be lit solid or blinking. If the blue light is off, turn off the power switch on the TracNet 100 receiver, remove and re-insert the card into the card slot, then turn the receiver back on. **Do not remove the EVDO card while the TracNet 100 receiver is powered on.**
7. If you have an external antenna/booster installed, ensure the booster cable is securely plugged into the EVDO card. The cable should be plugged into the port on the right, not the left, for optimum performance. Also make sure the booster is turned on (its power light is lit).
8. Check the TracNet 100 receiver's location for possible interference. The receiver should not be installed in an area surrounded by metal or near any electrical devices that generate RF noise, such as a microwave, monitor, plasma TV, or electric motor.
9. Try resetting the system. Turn off the power switch on the TracNet 100 receiver, wait 30 seconds, then turn the receiver back on.
10. If none of the previous steps solves the problem, and you do not suspect poor cell coverage, reset the TracNet 100 router to its factory default condition. Using the end of a large paperclip, press the small Reset button on the back of the TracNet receiver. Hold the Reset button in for 10 seconds, then release. Then repeat Step 9 to reset the system.

Pressing the Reset button clears all of your router's security settings. Once the system starts back up, run through the router setup wizard again to reestablish your network security preferences. Refer to Section 4.3, "Configuring TracNet 100 for Network Security" on page 49 for details.

Figure 5-2 *TracNet 100 Receiver Rear Panel*



The service is very slow

1. Check the signal strength bars on the MSN TV screen. If you have less than two bars, you might be on the fringe of the nearest cell tower's coverage area. Speeds should improve once you have two or more bars.
2. The cell network might be operating at maximum capacity, resulting in slower speeds. This can occur at peak times in urban areas or during major events.
3. Try using just the MSN TV service or just one networked computer. Fewer computers connected to the network should lessen the demand on the router and improve speed.
4. If your network is not secure, outsiders might be using your wireless connection without your knowledge. This will put excess demand on the system and severely reduce speed. To prevent unauthorized use of your network, apply security settings with the router setup wizard. Follow the steps in *Section 4.3, "Configuring TracNet 100 for Network Security" on page 49.* If you are using a networked computer, also be sure to configure your computer for those same security settings.

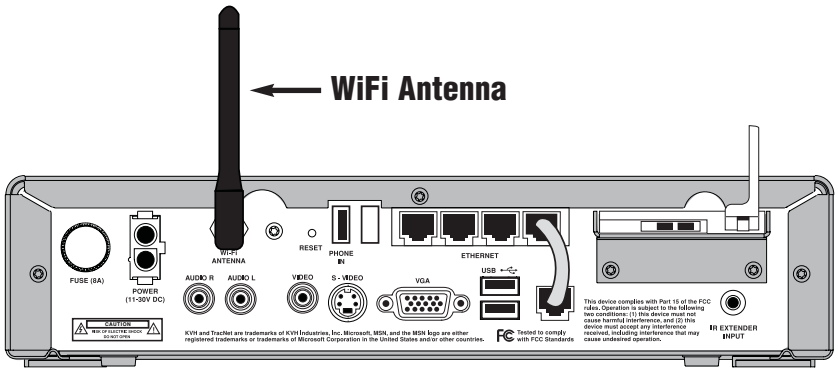
Verizon's EVDO service is rapidly expanding into new areas. To view latest coverage information, visit ***www.kvh.com/tracnetcoverage****.*

You can test your connection speed by going to ***www.toast.net*** *and running the Internet Speed Test.*

I can't connect my computer wirelessly

1. Try using the MSN TV service. If MSN TV connects OK, there is a problem with your wireless network configuration – follow the steps below. If MSN TV does not connect OK, follow the troubleshooting steps for *"The MSN TV screen appears on my TV, but it won't connect" on page 61*.
2. Try moving your computer closer to the TracNet 100 receiver. The range of the receiver's WiFi antenna is limited by the number and thickness of walls and other objects that stand between your computer and the receiver. Metal objects reduce reception the most.
3. Ensure your computer's wireless network connection is enabled and connected. For details, refer to *Section 4.2, "Setting Up Your Computer for a Wireless Connection"* on page 46.
4. Ensure your computer's network security settings (e.g., SSID and passphrase) match the TracNet 100 router's settings. Refer to the instructions that came with your computer's WiFi card for details; steps vary by manufacturer.
5. Check the WiFi antenna on the back of the TracNet 100 receiver. Ensure it is securely connected.

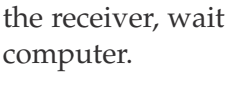
Figure 5-3 *TracNet 100 Receiver Rear Panel*



6. Check the TracNet 100 receiver location for possible WiFi interference. The receiver should not be installed in an area surrounded by metal or near any electrical devices that generate RF noise, such as a microwave, monitor, plasma TV, or electric motor. A 2.4 GHz cordless phone will also disrupt WiFi reception when in use.

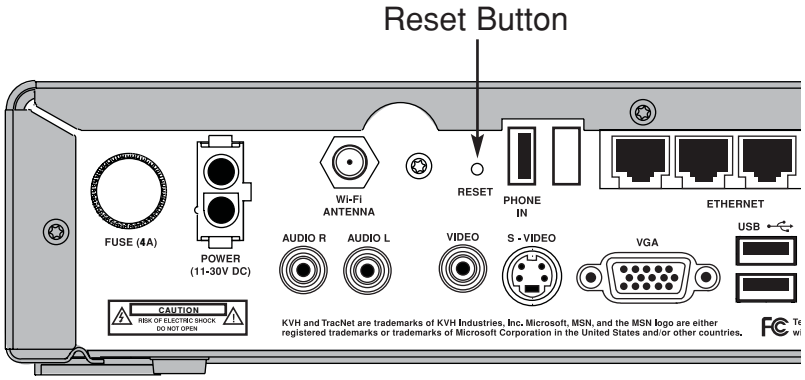
7. Try resetting the system. Turn off the TracNet 100 receiver and your computer. Wait 30 seconds, then turn on the TracNet 100 receiver. After you turn on the receiver, wait 2 minutes, then turn on your computer.

8. If none of the previous steps solves the problem, reset the TracNet 100 router to its factory default condition. Using the end of a large paperclip, press the small Reset button on the back of the TracNet receiver. Hold the Reset button in for 10 seconds, then release. Then repeat Step 7 to reset the system.



Pressing the Reset button clears all of your router's security settings. Once the system starts back up, run through the router setup wizard again to reestablish your network security preferences. Refer to Section 4.3, "Configuring TracNet 100 for Network Security" on page 49 for details.

Figure 5-4 *TracNet 100 Receiver Rear Panel*

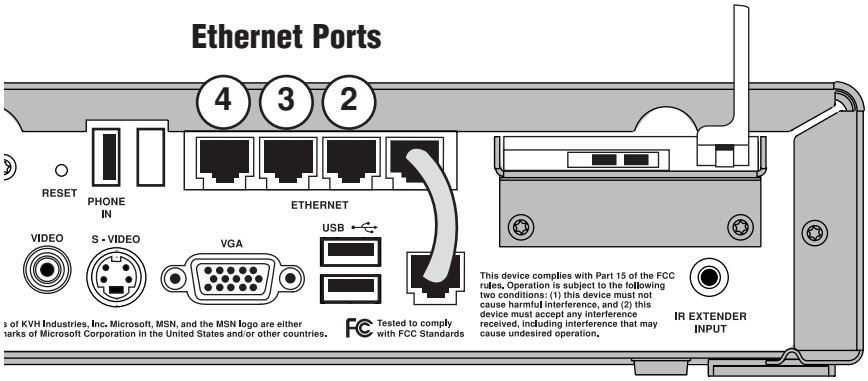


I can't connect my computer via Ethernet Cable

1. Try using the MSN TV service on your TV. If MSN TV connects OK, there is a problem with your computer's Ethernet connection – follow the steps below. If MSN TV does not connect OK, follow the troubleshooting steps for *"The MSN TV screen appears, but it won't connect" on page 61*.

2. Check the associated Activity light on the front of the TracNet 100 receiver (#2, 3, or 4, whichever port you connected to your computer). If the Activity light is off, check the Ethernet cable on the back of the TracNet 100 receiver. Make sure it is connected to the desired RJ45 jack, as shown in the figure below. Also be sure the cable is a straight Ethernet cable, and not a crossover cable.

Figure 5-5 *TracNet 100 Receiver Rear Panel*



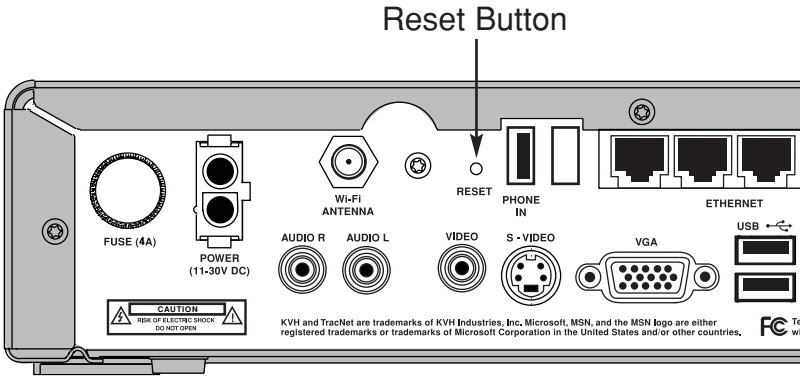
3. Ensure your computer's local area connection (LAN) is enabled and configured properly. For details, refer to *Section 4.1, "Setting Up Your Computer for a Wired Connection" on page 43*.

4. Try resetting the system. Turn off the TracNet 100 receiver and your computer. Wait 30 seconds, then turn on the TracNet 100 receiver. After you turn on the receiver, wait 2 minutes, then turn on your computer.

5. If none of the previous steps solves the problem, reset the TracNet 100 router to its factory default condition. Using the end of a large paperclip, press the small Reset button on the back of the TracNet receiver. Hold the Reset button in for 10 seconds, then release. Then repeat Step 4 to reset the system.

Pressing the Reset button clears all of your router's security settings. Once the system starts back up, run through the router setup wizard again to reestablish your network security preferences. Refer to Section 4.3, "Configuring TracNet 100 for Network Security" on page 49 for details.

Figure 5-6 *TracNet 100 Receiver Rear Panel*



My TracNet 100 system shuts down on its own

1. Using a voltmeter, check the power input to the TracNet 100 receiver. It must measure at least 11 VDC.
2. Check the receiver chassis for excessive heat. If the receiver is installed in an enclosed area without adequate ventilation, the receiver might overheat. If this is the case, relocate the receiver.

I can't sign into MSN TV – Incorrect password

1. The password is case-sensitive. Make sure "Caps Lock" is not engaged on your keyboard.
2. If you have forgotten your password, click the "Forget your password?" link on the MSN TV Sign In page for details about contacting MSN TV for your password.

Not all web sites or applications display properly

Unlike standard browsers, such as Internet Explorer, MSN TV content is specially optimized for display on TV screens. Therefore, when browsing outside the MSN TV portal, certain web sites might appear differently on MSN TV than they would appear on a computer monitor.

My USB device (printer, camera) doesn't work

Your USB device might not be compatible with the TracNet 100 receiver.

If you want to view photos from a digital camera, you need to connect a compatible card reader, and not the digital camera itself, to the TracNet 100 receiver. To view a list of compatible card readers, press the Photos key on the MSN keyboard then select "Help" on the MSN TV Photos page.

If you want to print from the TracNet 100, you need to connect a compatible USB printer. To view a list of compatible printers, press the Print key on the MSN keyboard then select "See Printers List."

My MSN keyboard or remote control is not working

1. Make sure you are pointing the keyboard or remote directly at either the front of the TracNet 100 receiver or the "eye" of the IR extender. The MSN keyboard and remote are IR wireless devices that require a line-of-sight transmission path. IR signals cannot pass through walls.
2. Try moving closer to the IR eye. The MSN keyboard and remote have a maximum range of 12 feet. If you need greater range, consider purchasing an aftermarket RF keyboard with USB adapter.
3. Check the IR extender cable on the back of the TracNet 100 receiver. Make sure it is fully plugged into the "IR Extender Input" jack.
4. Replace the batteries. The MSN keyboard uses four (4) AA batteries. The MSN remote uses two (2) AAA batteries.

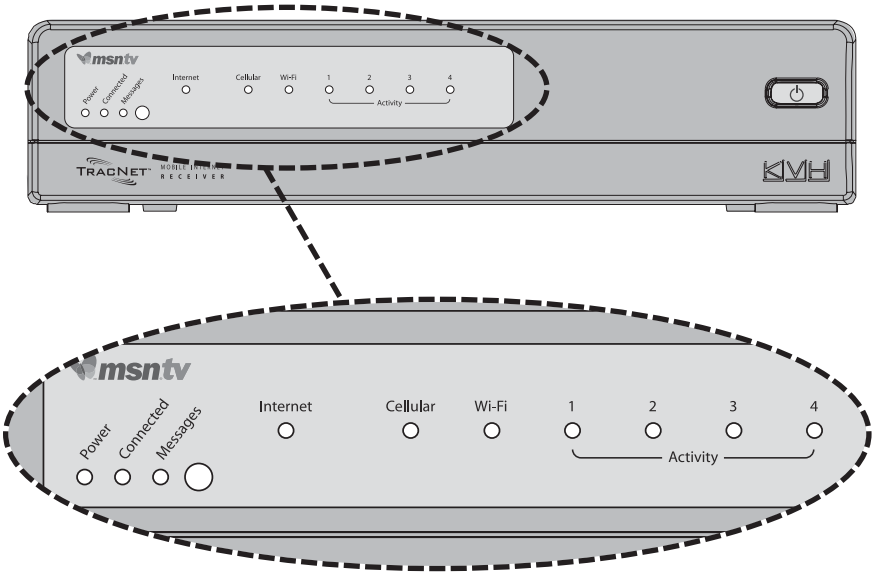
The MSN TV Screen Shows an Update Is Needed

Periodically, Microsoft will release an update to the MSN TV software that will further enhance your MSN TV experience. When a software update is available, the MSN TV screen will show "Player is waiting to take an update" instead of the normal Sign In screen. If you see this message, you can either keep the TracNet 100 system powered up and allow the receiver to download the software automatically, or you can select **Power Off** to shut down and download at a later date. **The new update must be downloaded before you can use the MSN TV service.**

5.2 System Status Lights

Status lights on the front of the TracNet 100 Internet receiver indicate the current status of the system and can help identify problems.

Figure 5-7 *System Status Lights*



Power Light Indications

Light is...	Indication
Off	MSN TV is powered off
Green	MSN TV is powered on
Green, flashing	MSN TV is booting up

Connected Light Indications

Light is...	Indication
Off	MSN TV is not actively connected to the router
Amber	MSN TV is actively connected to the router

*The Power light does not indicate power to the receiver. It only indicates whether MSN TV service is turned on or off (using the **MSN Power** button on the remote or keyboard). Only the receiver's front panel power switch turns receiver power on/off.*

To view your e-mail, press the Mail key on the MSN keyboard.

Messages Light Indications

Light is...	Indication
Off	You do not have any unread e-mail in your MSN TV Inbox
Blue	You have unread e-mail in your MSN TV Inbox

Internet Light Indications

Light is...	Indication
Off	System is not connected to the Internet
Green	System is connected to the Internet
Amber	System is booting up

Cellular Light Indications

Light is...	Indication
Off	No broadband connection
Green	Connected via EVDO or 1xRTT
Green, blinking	System is transmitting data

Wi-Fi Light Indications

Light is...	Indication
Off	No wireless connection
Green	Wireless connection enabled
Green, blinking	Wireless connection in use, data transferring

The #1 activity light should always be lit green. This port is wired to the MSN TV service.

Activity Light Indications

Light is...	Indication
Off	No Ethernet connection
Green	Device connected to the Ethernet port
Green, blinking	Ethernet connection in use, data transferring

5.3 Software Updates

The TracNet 100 system integrates a router, MSN TV circuitry, and a Verizon EVDO card. Each of these components runs on its own unique software, and like any other software, updates might be released from time to time that could enhance the performance of your system. If you registered your product with KVH, you will receive an e-mail notification whenever an important new update is available. To learn more about software updates, please visit **www.kvh.com/upgrades** and select "TracNet 100" from the appropriate product table.

To register your product, fill out the simple online form at www.kvh.com/register.

5.4 Technical Support

If you experience an operating problem or require technical assistance, please contact your local authorized TracNet dealer/installer first. You can find an authorized technician near you by visiting our website at **www.kvh.com/wheretogetservice**.

If an authorized technician is not located nearby, please contact KVH Technical Support directly:

Phone: 866-399-8509
(Mon.-Fri. 9am-6pm; Sat. 9am-2pm ET)

E-mail: techs@kvh.com

Please have your product serial number handy when you call.

Appendices

This section provides technical specifications for the TracNet 100 Internet receiver.

Contents

Appendix A
System Specifications

Receiver General Specifications

Dimensions/weight	10.5" l x 11" w x 2.6" h; 4.7 lb
Input power	11-30 VDC, 25 watts max
Operating temperature	32°F to 131°F (0°C to 55°C)
Humidity	95% max (non-condensing)
EMI/RFI	IEC 945; FCC Part 15J, Class B

Receiver Router Specifications

Standards	IEEE 802.11b/g; 802.3; 802.3u
VPN passthrough/ Multi-sessions	PPTP; IPSec
Device management	Internet Explorer v6 or later; Netscape Navigator v7 or later; other Java-enabled browsers; DHCP server and client
Advanced firewall features	IP filtering; scheduling; NAT (network address translation) with VPN passthrough; MAC filtering
Wireless operating range	Indoors: Up to 328 feet Outdoors: Up to 1312 feet
Wireless frequency range	2.4 GHz to 2.462 GHz
Wireless transmit power	15 dBm ±2 dB
Security	802.11b/802.11g WPA-WiFi protected access (64-,128-WEP with shared key authentication)
External antenna type	Single detachable reverse SMA
Modulation technology	Orthogonal frequency division multiplexing (OFDM)
Wireless data rates with automatic fallback	54 Mbps; 48 Mbps; 36 Mbps; 24 Mbps; 18 Mbps; 12 Mbps; 11 Mbps; 9 Mbps; 6 Mbps; 5.5 Mbps; 2 Mbps; 1 Mbps

External Antenna/Booster Specifications

Booster dimensions/weight	4.5" l x 4" w x 1.25" h; 11.5 oz
Operating temperature	-40°F to 167°F (-40°C to 75°C)
Antenna height	Marine: 4 feet Car, magnetic: 12.25" Car/RV, glass-mount: 15" RV roof-mount: 18"
Frequency, uplink	824-849 MHz, 1850-1910 MHz
Frequency, downlink	869-894 MHz, 1930-1990 MHz
Input power	1 watt max
Output power	3 watts max

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