User's Manual

CV41

With Microsoft® Windows® Embedded Standard 2009 Operating System

CV41W

1

Using the Vehicle Mount Computer

This chapter introduces the CV41W Vehicle Mount Computer with Windows® Embedded Standard 2009 operating system. Use this chapter to learn about the basic features and available accessories.

About the CV41W Vehicle Mount Computer

The rugged CV41W Vehicle Mount Computer is designed for real-time data collection applications in warehousing, distribution, work-in-process, time and attendance, and stationary applications. The CV41W is highly configured and runs on the Microsoft Windows Embedded Standard 2009 operating system. Additionally, the CV41W supports the use of terminal emulation applications, browser-based applications, or custom applications.

Overview of the CV41W Features

The CV41W includes these standard features:

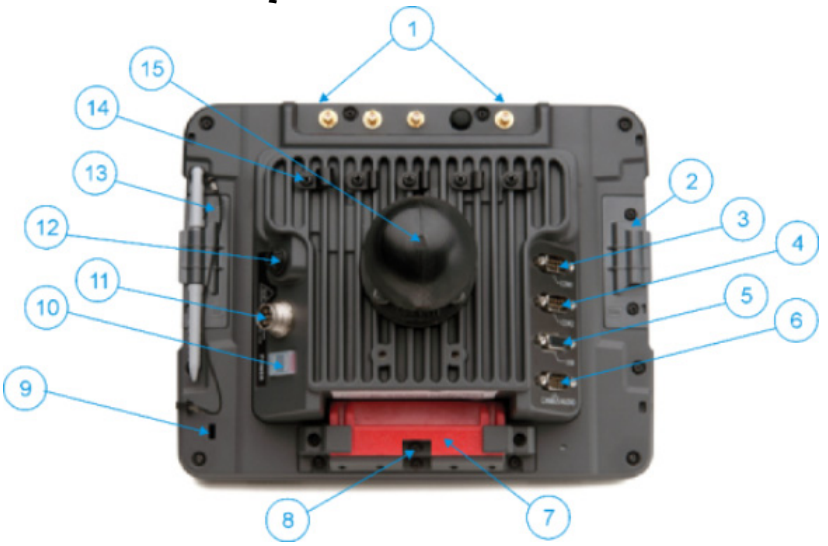
- 8" color display with a resolution of 800 x 480.
- Two USB ports, two COM ports, a CANBUS port, an Ethernet port, a headphone jack, and a microphone jack
- 1 GB of RAM expandable to 2 GB of RAM
- Customer-accessible SD slot for memory cards up to 32 GB
- 802.11a/b/g, Bluetooth®, GPS, and WWAN radios
- Intel Atom 1.6 GHz processor

The CV41W Vehicle Mount Computer has an IEEE 802.11a/b/g radio installed and Wi-Fi® certified for interoperability with other 802.11a/b/g wireless LAN devices.

CV41W Front View

Callout	Description
1	Power button
2	Speakers
3	Ambient light sensor
4	Microphone

CV41W Back View with Quick Mount Smart Dock

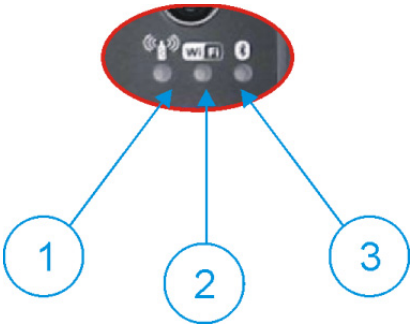


Callout	Description
1	Antenna connectors
2	SIM card access panel
3	COM 1
4	COM 2
5	USB connector
6	CAN/audio connector
7	Quick release handle
8	Provision for padlock
9	Provision for laptop security cable
10	Power switch
11	Power connector
12	Fuse
13	SD card access panel
14	Strain relief clamp
15	RAM ball

About the LEDs

The LEDs on the CV41W tell the state of the computer. Use this section to learn about the connection and system LEDs.

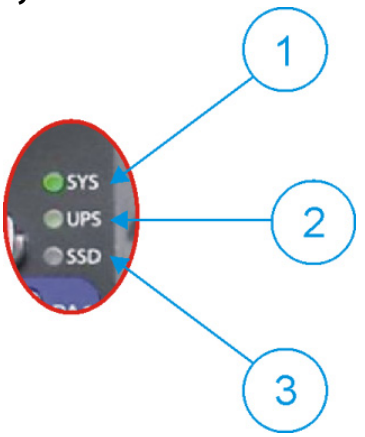
Connection LEDs



Connection LED Status Descriptions

Callout	LED	State	Description
1	WWAN	Solid green	The CV41W is connected to WWAN.
		Off	The CV41W is not connected to WWAN.
2	Wi-Fi	Solid amber	The CV41W is connected to Wi-Fi.
		Off	The CV41W is not connected to Wi-Fi.
3	Bluetooth	Blinking slowly	Bluetooth is paired but not connected to a device.
		Blinking medium	Bluetooth is paired and connected to a device.
		Blinking fast	Bluetooth is discovering a device.
		Off	Bluetooth hardware has been turned off.

System LEDs



Connection LED Status Descriptions

Callout	LED	State	Description
1	System	Solid green	The CV41W is on, or the CV41W is on but the backlight or display may be off.
		Blinking green every 4.5 seconds	The CV41W is in suspend mode, or external power is not present.
		Blinking green every 1.5 seconds	The CPU temperature is less than -20°C (-4°F), the heater is warming the CPU for 30 seconds, or the CV41W needs to be moved to a warmer environment.
		Off	The CV41W is off, external power is not present, or it is in suspend mode.
2	UPS	Solid green	(External power present) The UPS battery is charging. (External power not present) The CV41W is off or the UPS battery is not present.
		Solid amber	(External power present) There is no UPS battery present, the CV41W is out of charging temperature range, a charge timeout has occurred, or there is a charging fault. (External not present) UPS battery is supplying power and is discharging.
		Off	The UPS battery is fully charged, or it is not charging.
3	SSD	Flashing green	Read or write activity is occurring.

Callout	LED	State	Description
		Off	There is no read or write activity.

CV41W Accessories

The CV41W does not ship with any accessories. All accessories are sold and ordered separately. For help, contact your local Intermec sales representative.

CV41W Accessories

Accessory	Description
Quick Mount Smart Dock	The smart dock provides a mount for the CV41W, and supplies conditioned power to the CV41W. For more information, see the CV41W Mounting Kit Reference Guide.
RAM Mounting Kit	Use this mounting kit to attach the CV41W to a variety of surfaces, including a vehicle or to your desktop. For more information, see the CV41W Mounting Kit Reference Guide.
U-Bracket Mounting Kit	Use this mounting kit to attach the CV41W to a vehicle such as a forklift. For more information, see the CV41W Mounting Kit Reference Guide.
10-60 VDC Power Connection Kit	Use this kit to supply 10-60 VDC power to the CV41W.
72-144 VDC Power Connection Kit	Use this kit to supply 72-144 VDC power to the CV41W.
AC Power Supply	Use the AC power supply to power to the CV41W. The power supply can be connected to a 120V or to a 230 V supply. If you are outside of the United States, you must supply your own power cord.

Mounting the CV41W

To properly mount the CV41W to a desktop or vehicle, you must purchase the smart dock and one of the following mounting kits:

- RAM Mounting Kit

- U-Bracket Mounting Kit

For more information on installing the smart dock and mounting kits, see the CV41W Mounting Kit Reference Guide.

Connecting the CV41W to Power

For the CV41W to operate, you must attach it to the smart dock and provide power to the CV41W through a DC/DC power supply or an AC/DC power supply.

There are three power options for the CV41W. You must order one of these power options separately:

- 10-60 VDC Power Connection Kit
- 72-144 VDC Power Connection Kit
- AC Power Supply

For more information on installing the DC power options, see the CV41W Vehicle Mounting Kit Reference Guide.

Once you have connected the smart dock to power and attached the CV41W to the smart dock, press the **Power** switch on the back of the smart dock to supply power to the CV41W.

About the Internal UPS Battery

The CV41W contains an internal UPS battery that is automatically charged when the CV41W is placed in a powered smart dock. The UPS battery can power the CV41W for a minimum of 30 minutes at -20°C (-4°F) or higher. The UPS battery allows you to continue using the CV41W when not mounted in a dock or when the vehicle battery is being changed.

If the UPS battery becomes critically low on power, the CV41W performs a controlled shutdown. You can recharge it by placing the CV41W back into the smart dock. You can fully charge a discharged UPS battery in approximately 4 hours.

Maximizing the Internal UPS Battery Usage

You can maximize the internal UPS battery usage by changing the battery power scheme.

To set the battery power scheme:

1. Go to the Power Options screen.
   - In Classic View, tap **Start** > **Control Panel** > **Power Options**. The Control Panel Screen appears.
   - In Category View, tap **Start** > **Control Panel** > **Performance and Maintenance** > **Power Options**.
2. In the Power Scheme drop-down menu, select **Battery Power**.
3. Adjust the power option times by selecting the desired times in the drop-down menus.
4. Tap **OK** when you are finished to save your changes and exit the Power Properties screen.

About the Backup Battery

The CV41W has a permanent Lithium-Ion battery installed to maintain the time, date, and CMOS setup information for a minimum of 90 days. The Lithium-Ion battery is not user-replaceable and should last five years before it needs replacement.

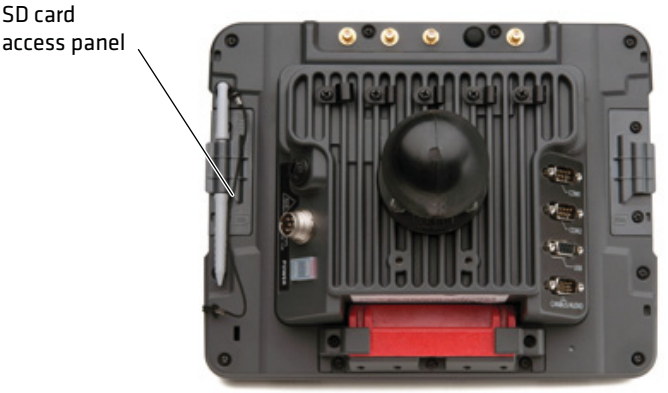
The backup battery must only be changed by authorized service personnel. For more information, contact your local Intermec service representative.

Installing an SD Card

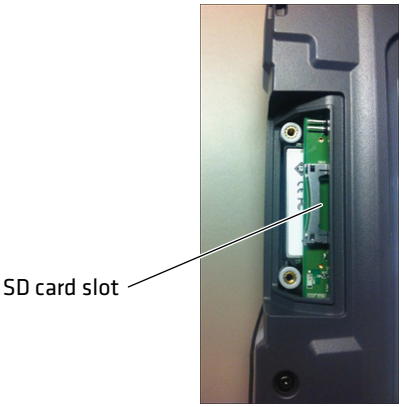
You can use an SD card to increase file storage and install software. The computer supports an optional 32 GB maximum capacity SD card.

To install an SD card on the CV41W:

1. Remove the CV41W from the smart dock.
2. Press the **Power** button to place the CV41W in Suspend mode.
3. Using a small Phillips screwdriver, remove the two screws that secure the SD card access panel.



4 Insert the SD card into the SD card slot.



5 Reattach the SD Card Access Panel and torque the screws to 4-5 in/lbs.

6 Attach the CV41W back into the smart dock.

7 Press the **Power** button to resume the CV41W from Suspend mode.

About the Phone

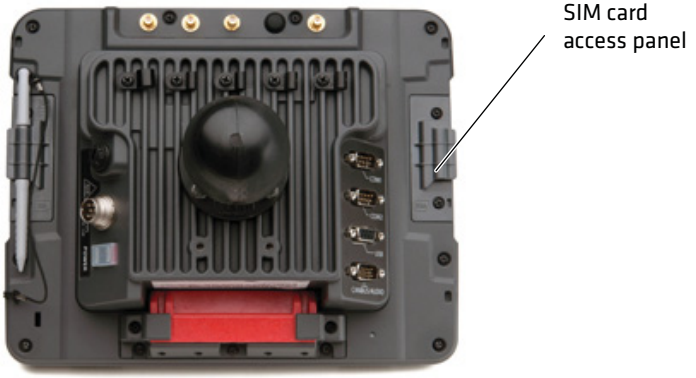
The CV41W supports UMTS cellular technology. The phone features include a speaker and a microphone. You can also use a Bluetooth headset or hands-free kit.

Activating the UMTS Phone

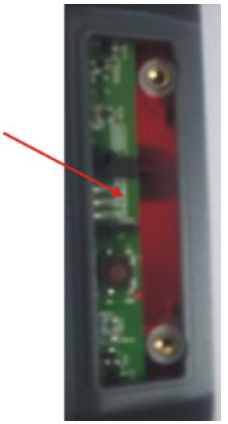
You can use a SIM card to activate the UMTS phone on your computer. You can purchase the SIM card from your network provider.

To install the SIM card and activate the UMTS radio:

1. Remove the CV41W from the smart dock.
2. Press the **Power** button to place the CV41W in Suspend mode.
3. Using a small Phillips screwdriver, remove the SIM Card Access Panel.



4. Insert a SIM card into the SIM Card Slot.



5. Reattach the SIM Card Access Panel and torque the screws to 4-5 in/lbs.

6 Attach the CV41W back into the smart dock.

7 Press the **Power** button to resume the CV41W from Suspend mode.

Adjusting the Volume

You can change the CV41W volume, for sounds you hear when you tap the screen or scan bar codes with a scanner, to adjust to your needs and the environment.

To adjust the volume:

1 On the keypad, tap the **ALT** key to enable the secondary keys.

2 Tap **F9** to increase volume or **F10** to decrease the volume.

3 Repeat Steps 1 and 2 to increase or decrease volume.

About the Touch Screen

8" color touch screen display with a resolution of 800 x 640 pixels. The display also comes with a heater to reduce condensation on the external surface of the display when moving between sub-freezing temperatures and normal temperatures.

If you are going to use the CV41W in extreme cold conditions for an extended period of time, you should turn on the power at room temperature for at least 15 minutes prior to using it. This process of "warming up" helps preserve the lighting on the display.

The default screen appears on the display when you turn on the CV41W. This screen appears unless you are running ITE. If you have installed ITE, it launches after the initial booting process.

Enabling the Defroster

If your CV41W contains an optional defroster, you can use it to help reduce condensation on an external surface when you are moving between sub-freezing and normal temperatures.

To enable the defroster:

1. Tap **Start** > **Control Panel** > **Screen**. The Screen Properties screen appears.
2. Tap **Enable Defroster**. The Peripherals screen appears.
3. Set the **Defroster trip point** in degrees Celsius. When the temperature reaches the defroster trip point, the defroster automatically turns on.
4. Tap **OK** to save and exit the Peripherals screen.

Navigating the Touch Screen

Use a stylus or your fingers to navigate the touch screen on the CV41W.

Touch Screen Navigation

Action	Description
Tap	Touch the screen once with the stylus or finger to select options, open or close applications, or launch menus.
Double tap	Double tap the screen with the stylus or your finger to launch applications.
Drag	Hold the stylus or your finger on the screen and drag across the screen to select text and images.
Tap and hold	Tap and hold the stylus or your finger on an item to see a menu of actions available for that item. On the pop-up menu that appears, tap the action you want to perform.

Adjusting the Screen Brightness

By default, the CV41W has a built-in ambient light sensor that adjusts the screen brightness automatically depending on the current lighting conditions. You can adjust the brightness of the screen manually if you do not want to use this feature.

To adjust the screen brightness manually:

1 On the keypad, tap the **ALT** key to enable the secondary keys.

2 Tap **F7** to increase brightness or **F8** to decrease the brightness.

3 Repeat Steps 1 and 2 to increase or decrease volume.

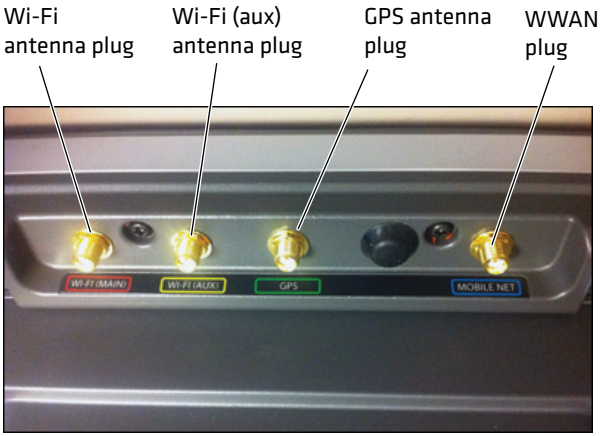
Installing an External Antenna

You can purchase an a WI-FI or GPS antenna to mount on a wall, forklift, or other flat surface using either screws or small patches of adhesive-backed hook and loop fastener material.

Since system performance and antenna polarization are site-dependent, a permanent mounting location may require some experimentation. In most fixed installations, you should mount the antenna initially in a vertically-polarized position, with the cable from the antenna parallel to the floor and ceiling. For information on purchasing an antenna, contact your local Intermec sales representative.

To connect an external antenna:

1 Secure the antenna to one of the antenna plugs on the CV41W.

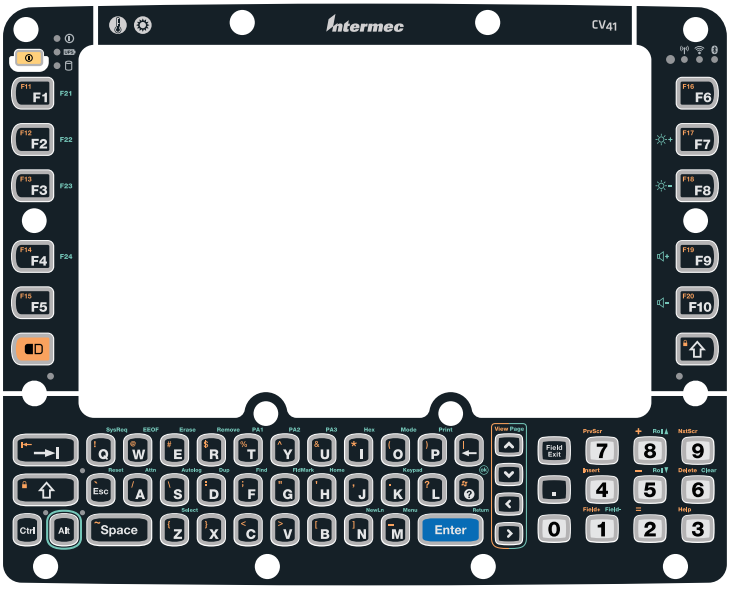


2 Using your own hardware, secure the external antenna to a wall, forklift, or other flat surface.

About the Keypad

The CV41W comes with one standard keypad overlay. The computer has a keypad backlight for low light conditions. By default, the keypad is enabled. You can disable the keypad backlight to conserve power.

CV41W Keypad Overlay



Enabling or Disabling the Keypad Backlight

You can enable or disable the keypad backlight to conserve power.

To enable or disable the keypad backlight:

1. Tap **Start** > **Control Panel**. The Control Panel screen appears.
2. Double-tap **Power**. The Power menu appears.
3. Select the **Schemes** tab.
4. Select the check box to enable the keypad backlight. Clear the check box to disable the backlight.
5. Tap **OK** to save your changes and exit the Power creen.

Setting the Keypad Backlight Timer

The keypad backlight and the display backlight share the same timer. When the display is on, the keypad backlight is also on. Use this section to learn how to set the keypad backlight timer.

To set the keypad backlight timer:

1. Tap **Start** > **Control Panel**. The Control Panel screen appears.

2. Double-tap **Power**. The Power Properties screen appears.
3. Adjust the desired backlight times by selecting the desired times in the drop-down menus.
4. Tap **OK** when you are finished to save your changes and exit the Power Properties screen.

Entering Characters on the Keypad

You need to use the orange modifier key and the ALT key to access all characters and functions on the keypad.

To type a character:

- Press a key for that character.

To type a character or access a function on the overlay:

- Press the **Orange** or **ALT** key and then press the key for the character or function.

To type an uppercase letter:

- Press the **Up Arrow** on the keypad and then press the key to type an uppercase character.

Physical and Environmental Specifications

Physical Dimensions

Dimensions	26.8 x 21.4 x 1.7 cm (10.6 x 8.4 x 6.6 in)
Weight	2.1 kg (5.6 lbs)

Environmental Specifications

Standard Operating temperature	Non-condensing: -20°C to 50°C (-4°F to 122°F)
Extreme operating temperature	Condensing: -30°C to 50°C (-22°F to 122°F)
Storage temperature	Non-condensing: -30°C to 60°C (-22°F to 148°F)
Relative humidity	Up to 90% non- condensing at 40°C (104°F) with extended temperatures up to 100%
Water and dust	IP66

ESD	15 kV
Vibration	MIL-STD-810F, composite wheeled vehicles
Crash	SAE-J 1455

Power and Electrical Specifications

Input power	DC input voltage: 10-60 VDC Input current: 4.6 Amps Input fuse: 10 A time delay
External power supply	AC adapter: 120-240 VAC to 12 VDC
Backup battery (CMOS)	Internal lithium-ion battery

Operating System

Microsoft Windows Embedded Standard 2009

Hardware

Processor	Intel Atom CPU at 1.6 GHz
Memory	1 GB expandable to 2 GB SDRAM
Removable storage	Compact Flash or Secure Digital

Touch Screen Specifications

8” color WVGA display with a resolution of 800 x 480 pixels, with optional heated display.

Standard Communications

- 802.11a/b/g
- Bluetooth
- USB
- Serial

Wireless LAN

Data rates	Supports all 802.11a/b/g data rates.

Security	WPA, WPA2, 802.1x (EAP-TLS, TTLS, LEAP, PEAP, EAP-FAST), WEP

Regulatory Notices and Safety Information

Waste Electrical and Electronic Equipment (WEEE)

Important:

This symbol is placed on the product to remind users to dispose of Waste Electrical and Electronic Equipment (WEEE) appropriately, per Directive 2002-96-EC. In most areas, this product can be recycled, reclaimed and re-used when properly discarded. Do not discard labeled units with trash. For information about proper disposal, contact your supplier.

Class B Digital Device

NOTICE

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.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and 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 turning the equipment off and on, 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 into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTICE

Changes or modifications made to this equipment not expressly approved by Intermec may void the FCC authorization to operate this equipment.

EMC Directive Requirements

This is a Class B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Canada, Industry Canada (IC) Notices

This Class B digital apparatus complies with Canadian RSS-GEN issue 3:2010 and RSS-210 issue 8:2010.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Radio Frequency (RF) Exposure Information

The radiated output power of the CV41 is below the Industry Canada (IC) radio frequency exposure limits. The CV41 should be used in such a manner such that the potential for human contact during normal operation is minimized.

This device has been certified for use in Canada. Status of the listing in the Industry Canada's REL (Radio Equipment List) can be found at the following web address:
http://www.ic.gc.ca/app/sitt/reltel/srch/nwRdSrch.do?lang=eng

Additional Canadian information on RF exposure also can be found at the following web address:
http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08792.html

Canada, avis d'Industry Canada (IC)

Cet appareil numérique de classe B est conforme aux normes canadiennes RSS-GEN numéro 3:2010 et RSS-210 numéro 8:2010.

Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement.

Informations concernant l'exposition aux fréquences radio (RF)

La puissance de sortie émise par de le CV41 est inférieure à la limite d'exposition aux fréquences radio d'Industry Canada (IC). Utilisez le CV41 de façon à minimiser les contacts humains lors du fonctionnement normal.

Ce périphérique est homologué pour l'utilisation au Canada. Pour consulter l'entrée correspondant à l'appareil dans la liste d'équipement radio (REL - Radio Equipment List) d'Industry Canada rendez-vous sur: http://www.ic.gc.ca/app/sitt/reltel/srch/nwRdSrch.do?lang=eng

Pour des informations supplémentaires concernant l'exposition aux RF au Canada rendez-vous sur :
http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08792.html

ANATEL (Brazil)

Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não causar interferência a sistema operando em caráter primário.

Li-Ion Battery

When disposing of the CV41W main battery, the following precautions should be observed: The battery should be disposed of properly. The battery should not be disassembled or crushed. The battery should not be heated above 212°F (100°C) or incinerated.

R&TTE Directive Requirements (Applies only to equipment operated within the EU/EFTA)

Information to User

A label on the exterior of the device should resemble one of the labels shown below (the label contains the part number of the installed radio card). The labels shown below and affixed to the device, identify where the device may be used and where its use is restricted. Use of a device is prohibited in countries not listed below or otherwise identified by the label. (May or may not include the 0560 Notified Body Number. Substitute 4 digit Notified Body Number may also be applied.)

RF Safety Notice

This device is intended to transmit RF energy. For protection against RF exposure to humans and in accordance with FCC rules and Industry Canada rules, this transmitter should be installed such that a minimum separation distance of at least 20 cm (7.8 in.) is maintained between the antenna and the general population. This device can only be co-located with FCC ID:TWG-SDCMSD30G.