

VX7 User's Guide



Copyright © November 2007 by LXE Inc.
All Rights Reserved
E-EQ-VX7OGWW-F



Notices

Notice:

LXE Inc. reserves the right to make improvements or changes in the products described in this manual at any time without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, LXE assumes no liability resulting from any errors or omissions in this document, or from the use of the information contained herein. Further, LXE Incorporated, reserves the right to revise this publication and to make changes to it from time to time without any obligation to notify any person or organization of such revision or changes.

Copyright Notice:

This manual is copyrighted. All rights are reserved. This document may not, in whole or in part, be copied, photocopied, reproduced, translated or reduced to any electronic medium or machine-readable form without prior consent, in writing, from LXE Inc.

Copyright © 2007 by LXE Inc. An EMS Technologies Company.
125 Technology Parkway, Norcross, GA 30092 U.S.A. (770) 447-4224

Trademarks:

LXE® and Spire are registered trademarks of LXE Inc. **RFTerm®** is a registered trademark of EMS Technologies, Norcross, GA.

Microsoft, Windows and the Windows logo are registered trademarks of Microsoft Corporation in the United States and/or other countries.

Java® and Java-based trademarks and logos are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. or other countries, and are used under license.

Intel and Intel XScale are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

RAM® and RAM Mount™ are both trademarks of National Products Inc., 1205 S. Orr Street, Seattle, WA 98108.

The **Cisco** Square Bridge logo is a trademark of Cisco Systems, Inc.; Aironet, Cisco and Cisco Systems are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

Summit Data Communications, Inc. Summit Data Communications, the Summit logo, and “The Pinnacle of Performance” are trademarks of Summit Data Communications, Inc. All rights reserved.

Symbol, the Symbol logo and Spectrum24 are registered trademarks of Symbol Technologies, Inc.

The **Bluetooth®** word mark and logos are owned by the Bluetooth SIG, Inc. and any use of such marks by LXE, Inc. is under license.

Wavelink® and Wavelink Avalanche® are registered trademarks and the Wavelink logo, tagline and Avalanche MC are trademarks of Wavelink Corporation, Kirkland, WA.

All other brand or product names are trademarks or registered trademarks of their respective companies or organizations.

When this manual is in PDF format: “**Acrobat®** Reader® Copyright © 2007 Adobe Systems Incorporated. All rights reserved. Adobe®, the Adobe logo, Acrobat®, and the Acrobat logo are registered trademarks of Adobe Systems Incorporated.” applies.



The user is strongly cautioned to read Appendix B, “Regulatory Notices and Safety Information”. Important safety cautions, warnings and regulatory information is contained in Appendix B.



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 LXE through your local sales representative, or visit www.lxe.com.

Revision Notice
VX7 User's Guide
Upgrade From Revision E to Revision F

Section	Explanation
Entire Manual	Updated specific references to Microsoft Windows CE .NET to generic references to Microsoft Windows CE to reflect the availability of either Windows CE .NET or CE 5.0 operating systems on the VX7. Added Bluetooth information and instruction.
Accessories	Revised Accessories listing.
Strain Relief Cable Clamps	Added new section.
AppLock and the VX7	Revised section.
Vehicle 12-80VDC Power Connection	Revised graphics.
Appendix B – Regulatory Notices and Safety Information	Added translated Chinese Class A statement and Republic of Singapore IDA Standards text. Revised “R&TTE Directive Requirements”.

Note: A complete revision history is included in Appendix B, “Regulatory Notices and Safety Information”.



Table of Contents

THE VX7 VEHICLE MOUNT COMPUTER	1
Introduction	1
Document Conventions	2
Environmental Specifications	3
Quick Start	4
Troubleshooting	5
Components	6
The Full-Screen Display	9
VX7 Control Panel	9
Microsoft Windows CE Control Panel	9
PCMCIA, ATA and SD Slots	9
AppLock and the VX7	10
Single Application AppLock	10
Multi Application AppLock	10
Using the Touchscreen	10
Using the Keypad	11
The Keyboards	12
The 95-key QWERTY Keyboard with Pointing Device	13
Key Maps	13
NumLock and the VX7	13
CapsLock and the VX7	13
Scroll Lock and the VX7	14
Keyboard Backlight	14
Pointing device	14
The 60-key QWERTY Keyboard	15
IBM 3270 Keypad Overlay	15
IBM 5250 Keypad Overlay	15
Key Maps	16
Unused Key Functions	16
NumLock and the VX7	17
Keyboard Backlight	17
Keyboard LEDs	17
CAPS LED	17
Secondary Keys LED	18
Control Keys	19
General Windows CE Keyboard Shortcuts	20
PS/2 Keyboard/Mouse	20

USB Keyboard/Mouse.....	21
Input Panel (Virtual Keyboard).....	21
Enabling the Input Panel.....	22
Power Supply.....	23
Uninterruptible Power Supply Battery Pack.....	23
Backup Battery.....	23
Getting Help.....	24
Manuals and Accessories.....	24
Manuals.....	24
Accessories.....	24

INSTALLATION..... 29

Install Mounting Brackets.....	29
RAM Mount System.....	30
Components.....	30
Torque Measurements.....	31
Procedure.....	31
Step 1a – Mount Vehicle RAM Mount Bracket.....	31
Mounting Dimensions.....	32
Step 1b – Mount Vehicle RAM Clamp Mount.....	33
Mounting Dimensions.....	34
Step 2 – Attach RAM Mount Ball to the VX7.....	35
Step 3 – Assemble Optional Keyboard Brackets.....	36
Step 4 – Attach VX7 and Bracket Assembly to RAM Mount.....	38
Completed Assembly.....	40
U-Bracket Mount System.....	41
Components.....	41
Mounting Positions.....	42
Torque Measurements.....	42
Procedure.....	43
Step 1 - Mount Bottom Mounting Bracket To Vehicle.....	43
Mounting Dimensions.....	43
Step 2 – Attach Rear Bracket VX7.....	44
Step 3 – Attach VX7 Assembly To Bottom Mounting Bracket.....	45
Step 4 – Assemble Optional Keyboard Brackets.....	46
Step 5 – Complete Assembly.....	48
Completed Assembly.....	49
Install Stylus Tether and Sleeve.....	50
Install/Remove Touchscreen Protective Film.....	51
Remote LXE Keyboard Bracket Assembly.....	52
Remote Keyboard Mounting Dimensions.....	53
UPS Battery Pack Remote Mount.....	54
UPS Battery Pack Remote Mounting Dimensions.....	54
Connect Keyboard.....	55

LXE Keyboard.....	55
PS/2 Keyboard and Mouse	56
Connect Antenna	57
External Antenna	57
Remote Vehicle Mount Antenna	57
Internal Antenna	58
Connect Serial Barcode Scanner	59
Connect Serial Printer or PC.....	61
Ethernet and USB Ports	62
USB Mouse.....	63
Connect External Headset.....	64
Connect Power Cable and Optional UPS Battery Pack	65
External Power Supply, Optional.....	66
Vehicle 12-80VDC Power Connection	67
Power Adapter Cable	73
Fuse Replacement for the VX7	74
Strain Relief Cable Clamps	75
OPERATION	77
Powering On/Off.....	77
Keyboard Backlight	78
95 Key Keyboard.....	78
60 Key Keyboard.....	78
PS/2 and USB Keyboards.....	78
Display and Touchscreen.....	79
Adjusting Screen Display	79
Cleaning the Display	79
Disabling the Touchscreen	79
Disabling the Touchscreen Heater.....	79
Calibrating the Touchscreen.....	80
Touchscreen Protective Film.....	80
Touchscreen and Mouse	80
Adjust Speaker Volume	81
Microsoft Windows CE Event Sounds.....	81
Power Management	81
Laser Barcode Scanner Warnings.....	82
Enter Data.....	82

Keyboard Entry.....	83
Touchscreen Entry.....	83
Right Click.....	83
Tethered Barcode Scanner.....	84
Aiming the Barcode Scanner.....	84
Distance from Label.....	84
Successful Scan.....	84
Unsuccessful Scan.....	84
Bluetooth Scanners.....	85
Voice Data.....	85
Bluetooth Devices.....	86
APPENDIX A KEY MAPS.....	87
95-key Keypad with Pointing Device.....	87
Key Map 101-Key Equivalencies.....	87
60-key Standard Keypad.....	88
Key Map 101-Key Equivalencies.....	88
IBM 3270 Keypad Overlay.....	93
IBM 5250 Keypad Overlay.....	93
APPENDIX B REGULATORY NOTICES AND SAFETY INFORMATION.....	95
Approvals.....	96
Revision History.....	107
INDEX.....	111

Illustrations

Figure 1 VX7 Components, Top View	6
Figure 2 VX7 Components, Front View	6
Figure 3 VX7 Components, Bottom View	7
Figure 4 VX7 Components, Back View	7
Figure 5 VX7 Control Panel	7
Figure 6 VX7 Access Panel	8
Figure 7 The VX7 PCMCIA, CF and SD Slots	9
Figure 8 Switchpad Menu	10
Figure 9 The LXE Keyboards with Cable	12
Figure 10 The 95-key QWERTY Keyboard	13
Figure 11 The 60-key QWERTY Keyboard	15
Figure 12 IBM 3270 Specific Keypad	15
Figure 13 IBM 5250 Specific Keypad	15
Figure 14 Keyboard LEDs	17
Figure 15 The CapsLock Key	17
Figure 16 The Secondary Key	18
Figure 17 The Keyboard Display Controls	19
Figure 18 Small and Large Virtual Keyboards	21
Figure 19 Input Panel Properties	22
Figure 20 Connect Vehicle RAM Mount Bracket to Vehicle	31
Figure 21 VX7 RAM Bracket - Mounting Dimensions (Not To Scale)	32
Figure 22 RAM Clamp Mount Components	33
Figure 23 Assembled RAM Clamp Mount	33
Figure 24 RAM Clamp Mount - Mounting Dimensions (Not To Scale)	34
Figure 25 Attach RAM Mount Ball to VX7	35
Figure 26 Attach Keyboard Mounting Bracket	36
Figure 27 Attach Keyboard to Mounting Plate	37
Figure 28 RAM Assembly without Keyboard	38
Figure 29 RAM Assembly with Keyboard	39
Figure 30 Completed RAM Mount Assembly	40
Figure 31 Suggested Mounting Positions	42
Figure 32 Connect Bottom Bracket to Vehicle	43
Figure 33 VX7 Bracket - Mounting Dimensions (Not To Scale)	43
Figure 34 Attach Rear Bracket to VX7	44
Figure 35 Attach VX7 Assembly to Bottom Bracket	45
Figure 36 Attach Rear Bracket and Keyboard to VX7	46
Figure 37 Attach Keyboard Assembly to VX7	47
Figure 38 Integrated UPS Battery Pack Mount	48
Figure 39 VX7 in Vehicle Bracket	49
Figure 40 Stylus Tether Mounting Holes	50
Figure 41 Tethered Stylus, Typical Installation	50
Figure 42 VX7 Touchscreen Protective Film	51
Figure 43 Remote Keyboard Bracket Assembly	52
Figure 44 Remote Keyboard - Mounting Dimensions	53
Figure 45 Remote UPS Battery Pack Mount	54
Figure 46 UPS Battery Pack Remote Mounting Dimensions	54
Figure 47 Keyboard Connection Location and Keyboard	55
Figure 48 VX7 PS/2 Keyboard/Mouse Dongle Cable	56
Figure 49 Connect External 2.4GHz Antenna	57
Figure 50 Internal Antenna Cables	58
Figure 51 Connect Serial Scanner Cable	59

Figure 52 VX7 with Generic Barcode Scanner Attached	60
Figure 53 Generic Barcode Scanner	60
Figure 54 Connect Serial Cable to COM3	61
Figure 55 VX7 Ethernet/USB-H/USB-C Dongle Cables	62
Figure 56 Connect Ethernet/USB Dongle Cable	62
Figure 57 Connect USB Device to Dongle Cable.....	63
Figure 58 Connect Ethernet Cable to Adapter Cable.....	63
Figure 59 Connect External Headset	64
Figure 60 Connect Power Cable to VX7	65
Figure 61 Optional Power Configuration	66
Figure 62 Vehicle Power Connection Cable (Fuse Not Shown).....	67
Figure 63 Connecting the Power Cable to the Vehicle.....	67
Figure 64 Vehicle Connection Wiring Color Codes.....	68
Figure 65 Direct Connection (No UPS Battery Pack)	69
Figure 66 Integrated Mount UPS Battery Pack Connection	70
Figure 67 Remote Mount UPS Battery Pack Connection	71
Figure 68 Power Adapter Cable, VX1/2/4 to VX7.....	73
Figure 69 Fuse Replacement.....	74
Figure 70 Strain Relief Cable Clamps	75
Figure 71 Slide Clamp Over Cable.....	75
Figure 72 The VX7 Power Switch.....	77
Figure 73 Touchscreen Calibration, Calibration Targets	80
Figure 74 Caution Labels Class II Scanner.....	82
Figure 75 Caution Labels Class IIIA Scanner	82
Figure 76 Scan Beam.....	84
Figure 77 95-Key LXE QWERTY Keyboard.....	87
Figure 78 60-Key LXE QWERTY Keyboard.....	88
Figure 79 IBM 3270 Specific Keypad	93
Figure 80 IBM 5250 Specific Keypad	93

The VX7 Vehicle Mount Computer

Introduction

The VX7 Vehicle Mount Computer (VMC) is a rugged, vehicle-mounted, Microsoft® Windows® CE equipped computer. The VX7 is capable of wireless data communications from a fork-lift truck or any properly configured vehicle using a 2.4 GHz radio.

The VX7 features an SVGA color TFT display. The touch-screen display supports graphic features and Microsoft Windows CE icons that the Windows CE operating system supports. The keyboard is illuminated to facilitate use in dimly lit areas.

The VX7 is a tablet-style computer and features. The touch-screen display supports graphic features and Microsoft Windows CE icons that the Windows CE operating system supports. An illuminated keyboard is available to facilitate use in dimly lit areas.



The VX7 provides the power and functionality of a desktop computer in a vehicle mounted unit, with a wide range of options:








- 400MHz Intel® PXA255 CPU
- Windows CE .NET or CE 5.0 Operating System
- Wireless LAN radios with internal, single external or dual external antenna options
- Optional Bluetooth module
- Ethernet port
- USB Host and Client ports
- Choice of indoor or outdoor full screen display

- Available touch screen protective film
- Available Uninterruptible Power Supply (UPS) Battery Pack
- Available RAM Mount™ options
- Extended temperature version includes touchscreen heater

Note: The “VX7 Reference Guide” contains VX7 technical information and advanced functions.

Document Conventions

This reference guide uses the following document conventions:

ALL CAPS	All caps are used to represent disk directories, file names, and application names.
Menu Choice	Rather than use the phrase “choose the Save command from the File menu”, this manual uses the convention “choose File Save ”.
“Quotes”	Indicates the title of a book, chapter or a section within a chapter (for example, “Document Conventions”).
< >	Indicates a key on the keyboard (for example, <Enter>).
	Indicates a reference to other documentation.
	Differences in operation or commands due to radio type.
ATTENTION	Keyword that indicates vital or pivotal information to follow.
	Attention symbol that indicates vital or pivotal information to follow. Also, when marked on product, means to refer to the manual or operator’s guide.
	International fuse replacement symbol. When marked on the product, the label includes fuse ratings in volts (v) and amperes (a) for the product.
<i>Note:</i>	Keyword that indicates immediately relevant information.
Caution 	Keyword that indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury.
WARNING 	Keyword that indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.
DANGER 	Keyword that indicates an imminent hazardous situation, which, if not avoided, will result in death or serious injury.

Environmental Specifications

Feature	Specification
Operating Temperature	
Standard version	-4°F to 122°F (-20°C to 50°C) [non-condensing]
Extended Temperature version	-22° to 122° F (-30°C to 50°C [condensing]
Storage Temperature	
Standard version	-22°F to 140°F (-30°C to 60°C) [non-condensing]
Extended Temperature version	-22°F to 140°F (-30°C to 60°C) [condensing]
Water, Sand Dust	IP66 per IEC60529
Operating Humidity	
Standard version	Up to 90% non-condensing at 104°F (40°C)
Extended Temperature version	100%
Vibration	Based on MIL Std 810F
ESD	15 kV
Bluetooth Range	32.8 feet (10 meters) Direct line of sight only

Quick Start

This section's instructions are based on the assumption that your new system is pre-configured and requires only accessory installation (e.g. antenna, external keyboard and/or barcode scanner) and a power source.

Use this guide as you would any other source book -- reading portions to learn about the VX7, and then referring to it when you need more information about a particular subject. This guide takes you through installation and operation of the LXE VX7.

In general, the sequence of events is:

1. Install Vehicle Mounting Bracket on vehicle and secure VX7 in Mounting Bracket Assembly (see "Installation", later in this manual).
2. Connect power cable to the VX7. The power cable can also be connected to a UPS battery pack, which is then connected to the VX7.
3. Connect accessories to VX7, e.g. scanner, antenna, etc.
4. Secure all cables to the VX7 with the Strain Relief Cable Clamps.
5. Turn the VX7 on.
6. When instructed, calibrate the touchscreen.
7. The screen may appear white while applications and drivers are loading. When complete, set Date and Time (see the "VX7 Reference Guide").
8. Configure radio (see the VX7 Reference Guide").
9. Warmboot to ensure all registry settings are saved.
10. Device is ready for use.

The VX7 and its keyboard should be mounted in an area in the vehicle where it:

- Does not obstruct the vehicle driver's vision or safe vehicle operation.
- Can be easily accessed by anyone seated in the driver's seat.



If your VX7 has AppLock installed, please contact your system administrator for setup and processing information.

AppLock is configured by an administrator to limit general users to only certain programs.

Troubleshooting

Can't calibrate the touch screen, change the date/time or adjust the volume.	AppLock is installed and running on the mobile device. AppLock restricts User access to running programs. Changes or modifications require Administrator access. Refer to AppLock in the <i>VX7 Reference Guide</i> for setup and processing information.
RFterm opens and runs upon each cold reset and warm reset.	Tap File Exit to close the RFTerm application.
The VX7 seems to lockup as soon as it is warm booted.	There may be small delays while the wireless client connects to the network, authorization for Voxware-enabled applications complete, Wavelink Avalanche management of the VX7 startup completes, and Bluetooth relationships establish or re-establish.

Components

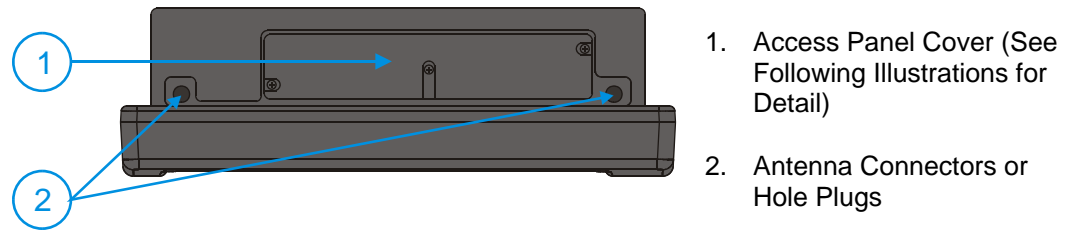


Figure 1 VX7 Components, Top View

Note: When the internal antenna option is ordered, the internal antenna is mounted on the inside of the Access Panel Cover.

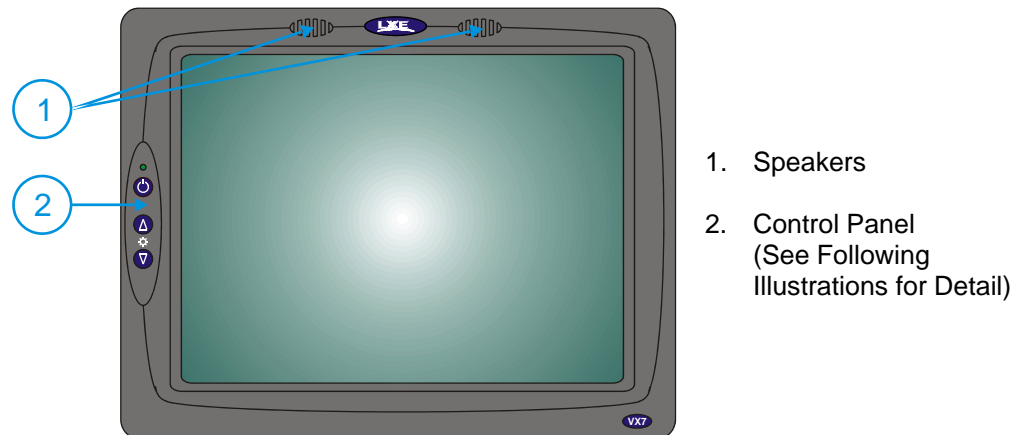


Figure 2 VX7 Components, Front View

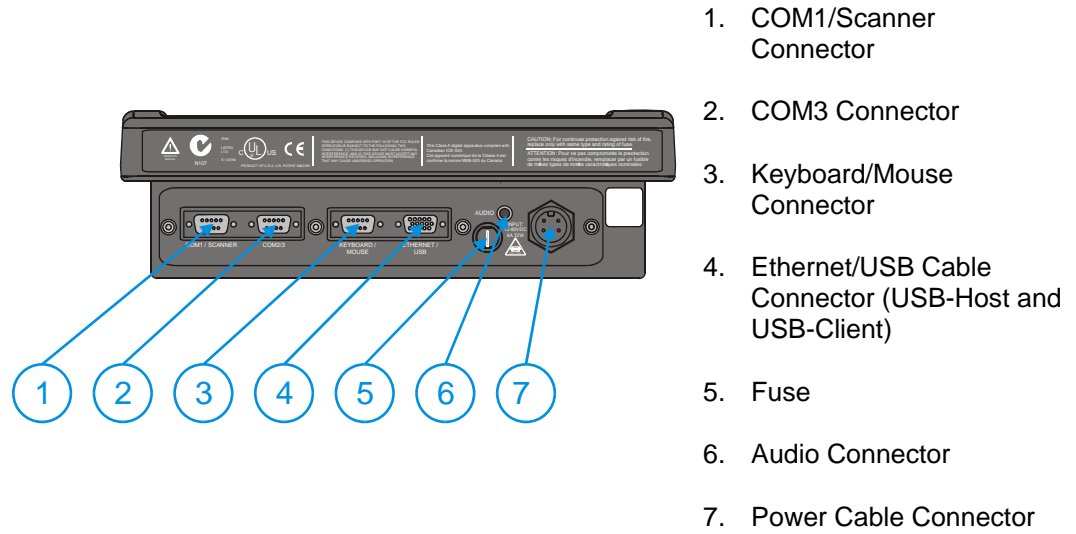


Figure 3 VX7 Components, Bottom View

Note: COM1 is configured with Pin 9 +5V. COM3 is labeled “COM2/3” and is configured with Pin 9 RI. Please see the VX7 Reference Guide for details.

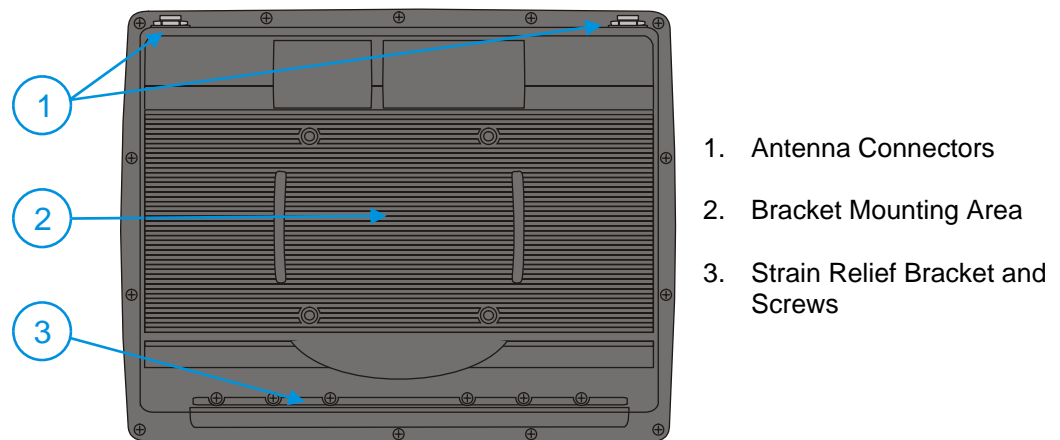
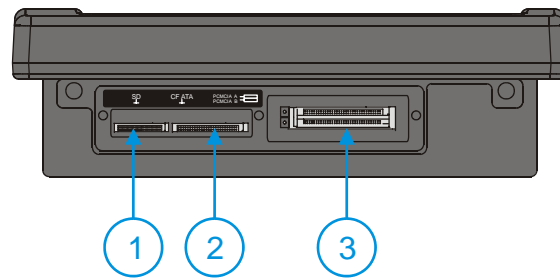


Figure 4 VX7 Components, Back View



Figure 5 VX7 Control Panel



1. SD Memory Card Slot
2. Compact Flash ATA Hard Drive
3. PCMCIA Slots

Figure 6 VX7 Access Panel

Note: The tethered access panel cover is not shown in the illustration above.

The Full-Screen Display

The VX7 Display is a TFT color unit capable of supporting SVGA graphics modes. The resolution is 800 x 600 pixels.

VX7 Control Panel

The VX7 control panel contains the status LED, power button and display brightness adjustment buttons. Please refer to the “Operation” section, later in this manual, for details on the VX7 Control Panel.

Microsoft Windows CE Control Panel

The Microsoft Windows CE .NET or CE 5.0 Control Panel provides standard Windows CE .NET options for configuring the VX7, such as:

- Sound volume
- Display configuration



Please consult your System Administrator or refer to commercially available Microsoft Windows CE user guides or the on-line Help application for these standard configuration options.

PCMCIA, ATA and SD Slots

The VX7 has two PCMCIA slots. These slots are intended for use with Type I or II cards, such as LXE’s 2.4GHz radios. These slots are hot swappable per PCMCIA specifications.

The Compact Flash (CF) slot contains the Compact Flash ATA hard drive. This drive contains the Operating System and the Documents and Settings. The VX7 does not operate without this card installed. The CF card is not hot swappable.

One Secure Digital (SD) slot is provided for SD memory cards. The SD card is hot swappable.

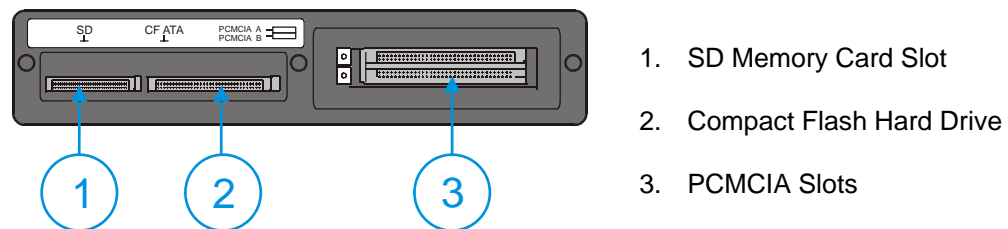


Figure 7 The VX7 PCMCIA, CF and SD Slots

Please see the “VX7 Reference Guide” for more details on the PCMCIA, CF and SD slots.

AppLock and the VX7

AppLock may be installed and running on the mobile device. AppLock restricts access to programs and the Windows CE Control Panel. Please contact your system administrator for details.

Single Application AppLock

Single application AppLock restricts a user to one application. The user is unable to exit the application (or if the application exits, it immediately restarts).

Note: Single application AppLock is obsolete. Please contact your LXE representative if you desire to upgrade to multi application AppLock.

Multi Application AppLock

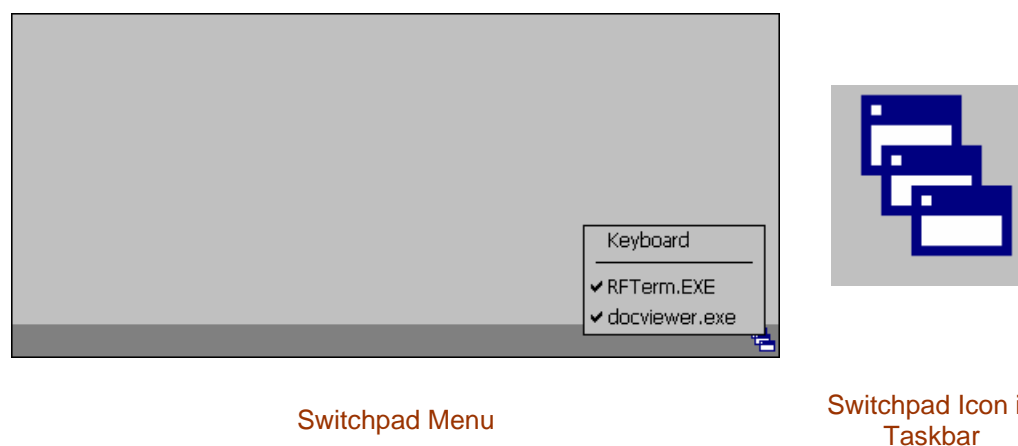


Figure 8 Switchpad Menu

A checkmark indicates applications currently active or available for Launching by the user. When Keyboard is selected, the VX7 default input method (Input Panel, Transcriber, or custom input method) is activated.

Note: If “Keyboard” is not present in the window, an older version of AppLock is installed. Please contact your LXE representative for upgrade information, if desired.

Using the Touchscreen

Note: The touch screen must be enabled.

When the mobile device enters end-user mode, a Switchpad icon (it looks like three tiny windows one above the other) is displayed in the taskbar. The taskbar is always visible on top of the application in focus.

When the user taps the Switchpad icon, a menu is displayed showing the applications available to the user. The user can tap an application name in the popup menu and the selected application is brought to the foreground. The previous application continues to run in the background. Stylus taps affect the application in focus only. When the user needs to use the Input Panel, they tap the Keyboard option. Input Panel taps affect the application in focus only.

The figure shown above is an example and is shown only to aid in describing how the user can switch between applications using a stylus.

Using the Keypad

One switch key sequence (or hotkey) is defined by the administrator for the end-user to use when switching between locked applications. This is known as the **Activation key**. When the switch key sequence is pressed on the keypad, the next application in the AppLock configuration is moved to the foreground and the previous application moves to the background. The previous application continues to run in the background. End-user key presses affect the application in focus only.

See the *VX7 Reference Guide* for AppLock setup instruction.

The Keyboards

The following keyboard options are available for the VX7:

- LXE 95-key QWERTY keyboard with integrated pointing device – a customized rugged keyboard connected to the VX7 via a watertight connector.
- LXE 60-key QWERTY keyboard – a customized rugged keyboard connected to the VX7 via a watertight connector
- A standard PS/2 keyboard via an adapter cable attached to the “Keyboard/MOUSE” port on the VX7. The adapter cable also provides a connector for a PS/2 mouse.
- A USB keyboard via a dongle cable attached to the “Ethernet/USB” connector is available on certain VX7’s. Your system administrator can determine if your VX7 supports a USB keyboard.
- A software keyboard, or virtual keyboard, can be displayed on the touch screen. The virtual keyboard can be used in place of, or in addition to, a physical keyboard.

For more details on each keyboard type, please refer to the appropriate section later in this section.



95 key with Integrated Pointing Device



60 key

Figure 9 The LXE Keyboards with Cable

The 95-key QWERTY Keyboard with Pointing Device

Designed for ease of use with the Windows CE operating system, the 95-key keyboard with pointing device connects via a cable to the keyboard port on the VX7. Additional Windows keys (the Windows logo key and the Application key) and an integrated pointing device are provided for use with Windows CE operating system.



Figure 10 The 95-key QWERTY Keyboard

Note: The 2nd key function is available on the 60-key keyboard only.

Key Maps

The 95-key keyboard supports all 104 keyboard functions (101 keyboard standard plus Windows keys) and includes an integrated pointing device and left and right mouse buttons. However, because the keyboard only has 95 keys, all functions are not visible (or printed on the keyboard). Therefore the VX7 keyboard supports what is called hidden keys -- keys that are accessible but not visible on the keyboard.

The hidden keys supported by the VX7 are listed in Appendix A, “Key Maps”.

NumLock and the VX7

For the 95-key keyboard, the NumLock key and the numeric keys are backlit **green** when NumLock is off. When NumLock is on, the backlight for the NumLock key and the numeric keys is **amber**.

The default value for NumLock is On.

The warmboot behavior of NumLock can be configured. Please refer to the “VX7 Reference Guide” for more information.

CapsLock and the VX7

For the 95-key keyboard, the CapsLock key is backlit **green** when CapsLock is off. When CapsLock is on, the backlight for the CapsLock key is **amber**.

The default value for CapsLock is On.

The warmboot behavior of CapsLock can be configured. Please refer to the “VX7 Reference Guide” for more information.

Scroll Lock and the VX7

For the 95-key keyboard, the Scroll Lock key is backlit **green** when Scroll Lock is off. When Scroll Lock is on, the backlight for the Scroll Lock key is **amber**.

The default values for CapsLock and Scroll Lock are Off.

Keyboard Backlight



The 95-key keyboard backlights each key with an LED. The keyboard backlight is manually controlled using the “backlight” key in the upper right hand corner of the keyboard. Pressing the backlight key cycles the keyboard backlight through the levels of backlight intensity:

- Off
- Maximum intensity
- Medium intensity
- Low intensity.

Pointing device

The mouse pointer may not always be visible. Please see “Touchscreen and Mouse” later in this manual for more details.

The 60-key QWERTY Keyboard

The 60-key keyboard has 101 keyboard functions, including a numeric keyboard pad. Please refer to Appendix A, “Key Maps”, for keypress combinations.

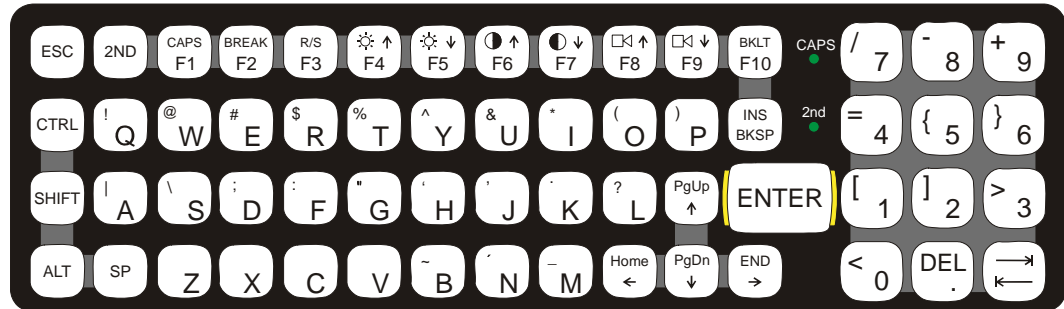


Figure 11 The 60-key QWERTY Keyboard

IBM 3270 Keypad Overlay



Figure 12 IBM 3270 Specific Keypad

The 60-key keypad is available with an IBM 3270 overlay designed to allow the user to enter terminal emulator commands when running LXE’s RFTerm™ program.

IBM 5250 Keypad Overlay



Figure 13 IBM 5250 Specific Keypad

The 60-key keypad is available with an IBM 5250 overlay designed to allow the user to enter terminal emulator commands when running LXE’s RFTerm™ program.

Key Maps

The 60-key keyboard supports all 101 keyboard functions. However, because the keyboard only has 60 keys, all functions are not visible (or printed on the keyboard). Therefore the VX7 keyboard supports what is called hidden keys -- keys that are accessible but not visible on the keyboard.

The hidden keys supported by the VX7 are listed in Appendix A, “Key Maps”.

Unused Key Functions

There are several key functions on the 60-key keyboard that are not used on the VX7. These include:

- <2nd> <F3> – The Resume/Suspend function is not used, as the VX7 does not support these power management modes.
- <2nd> <F4> and <2nd> <F5> – The Display Brightness functions are not used as the display brightness is adjusted by the buttons on the VX7 control panel.
- <2nd> <F6> and <2nd> <F7> – The Contrast functions are not used as the contrast is not adjustable on the TFT display on the VX7.
- <2nd> <F8> and <2nd> <F9> – The Volume control keys are not used as volume is adjusted via the Microsoft Windows CE Control Panel.
- <2nd> <F10> – Please see “Keyboard Backlight” later in this section for details on toggling the keyboard backlight.

NumLock and the VX7

The 60-key keyboard does not have a NumLock indicator or key. NumLock can be toggled On or Off using the <2nd> <SHIFT> <F10> keypress sequence.

The default value for NumLock is On.

The warmboot behavior of NumLock can be configured. Please refer to the “VX7 Reference Guide” for more information.

Keyboard Backlight

The LXE keyboard keys are backlit with LEDs. The backlight is manually controlled using the <2nd> + <CTRL> + <F10> keypress sequence.

Keyboard LEDs

The VX7 keyboard has two (2) LED indicators.

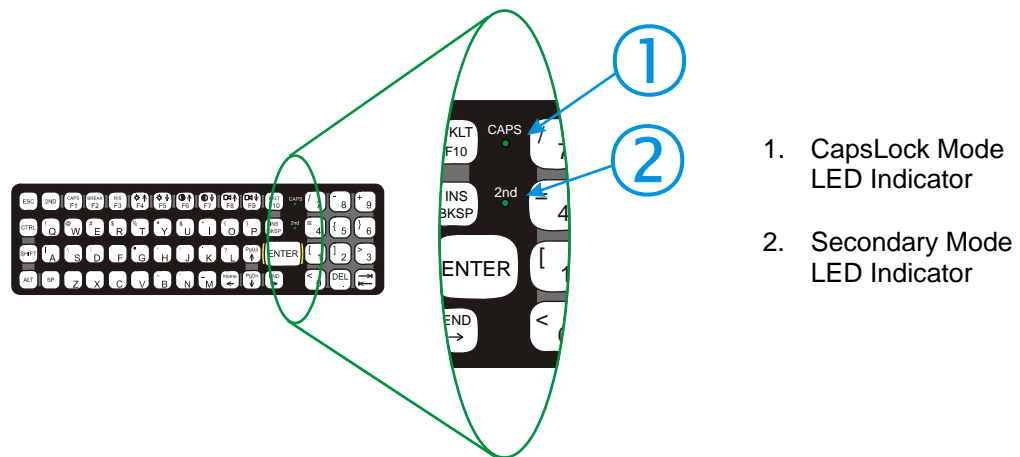


Figure 14 Keyboard LEDs

CAPS LED

This LED indicates the state of the keyboard CapsLock mode. If CapsLock is enabled this LED is illuminated green. When CapsLock is off, the LED is dark.

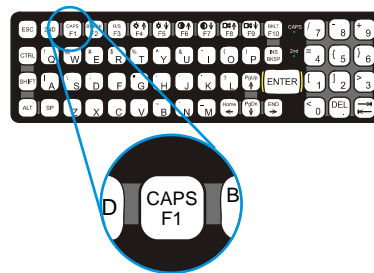


Figure 15 The CapsLock Key

Press <2nd> then <F1> to toggle CapsLock On and Off.

The default value of CapsLock is “Off”. For information on configuring the behavior of CapsLock after a reboot, please refer to the “VX7 Reference Guide”.

Secondary Keys LED

The keyboard is equipped with several secondary keys. These keys are identified by the superscripted text found on the keyboard keys. The secondary keys are accessible by using two (2) keystrokes: the <2nd> key followed by the superscripted key.

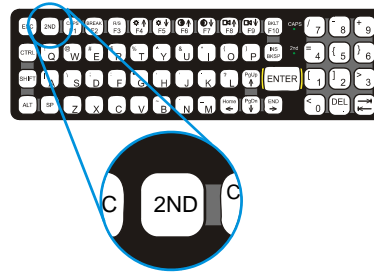


Figure 16 The Secondary Key

Once the <2nd> state is enabled (by pressing the <2nd> key) the Secondary Mode LED is illuminated and the <2nd> state is enabled until another key is pressed. The <2nd> key is toggled on with a <2nd> keypress and then immediately off with another <2nd> keypress.

For example:

Press <2nd> and <F1> to turn CapsLock on and off.

Press <2nd> and <↑> to initiate the PgUp command.

Press <2nd> and <Q> to type the “!” key.

Press <2nd> and <BkSp> to enter the Insert (Ins) mode.

Control Keys

The keyboard has several control keys, some of which are not used on the VX7.

Note: The 2nd functions of the <F4> and <F5> keys are not used as the display brightness is adjusted via the buttons on the control panel.

The 2nd functions of the <F6>, and <F7> keys are not used as the VX7 has TFT LCD screen with no provision for contrast adjustments.

The 2nd functions of the <F8> and <F9> keys are not used as the sound volume on the VX7 is controlled with the Volume and Sounds icon in the Microsoft Windows CE .NE Control Panel.

The <F10> key is used to toggle the backlight as part of the keypress sequence <2nd> + <CTRL> + <F10>. This key sequence immediately toggles the status of the keyboard backlight. Pressing <2nd> + <F10> has no effect on the keyboard backlight.

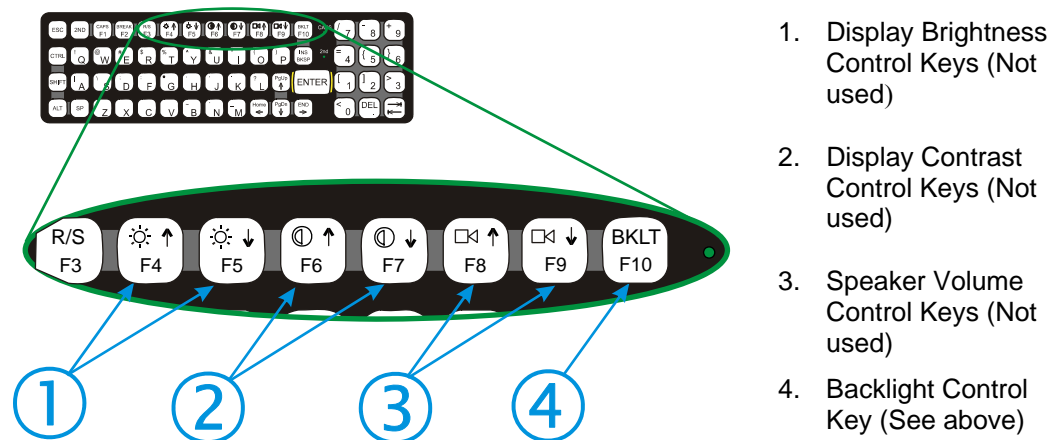


Figure 17 The Keyboard Display Controls

General Windows CE Keyboard Shortcuts

Use the keyboard shortcuts in the chart below to navigate with any VX7 keyboard. These are standard keyboard shortcuts for Windows CE applications.

Press these keys ...	To ...
CTRL + C	Copy
CTRL + X	Cut
CTRL + V	Paste
CTRL + Z	Undo
DELETE	Delete
SHIFT with any of the arrow keys	Select more than one item in a window or on the desktop, or select text within a document.
CTRL+A	Select all.
ALT+ESC	Cycle through items in the order they were opened.
CTRL+ESC	Display the Start menu.
ALT+Underlined letter in a menu name	Display the corresponding menu.
Underlined letter in a command name on an open menu	Carry out the corresponding command.
ESC	Cancel the current task.

The touchscreen provides equivalent functionality to a mouse:

- A touch on the touchscreen is equivalent to a left mouse click.
- Many items can be moved by the “drag and drop” method, touching the desired item, moving the stylus across the screen and releasing the stylus in the desired location.
- A double stylus tap is equivalent to a double click.
- A touch and hold is equivalent to a right mouse click.

PS/2 Keyboard/Mouse

A standard PS/2 keyboard and mouse can be attached to the VX7 using the appropriate dongle cable. The dongle cable attaches to the VX7 and provides two PS/2 connectors, one labeled “Keyboard” and one labeled “Mouse”. Please refer to documentation provided with the PS/2 keyboard and mouse for more information on their operation.

Note: The PS/2 keyboard and mouse cannot be hot swapped. Power down the VX7 before connecting or disconnecting these PS/2 devices.

The mouse pointer may not always be visible. Please see “Touchscreen and Mouse” later in this manual for more details.

USB Keyboard/Mouse

A standard USB keyboard and/or mouse can be attached to the VX7 using the appropriate dongle cable. The dongle cable attaches to the VX7 and provides a USB connector. Please refer to documentation provided with the USB keyboard and mouse for more information on their operation.

The mouse pointer may not always be visible. Please see “Touchscreen and Mouse” later in this manual for more details.

Input Panel (Virtual Keyboard)

The Input Panel may be enabled via the Input Panel icon in the Windows CE Control Panel. The Input Panel can be displayed as a large or small keyboard.

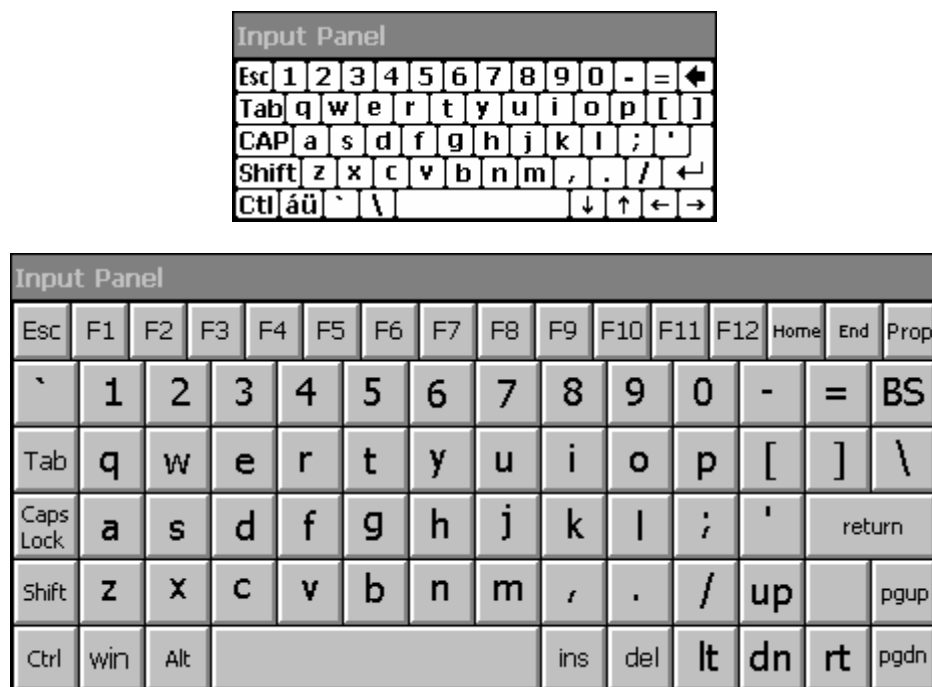


Figure 18 Small and Large Virtual Keyboards

Virtual keyboards display the actual character a keypress results in. For example, pressing the <Shift> key on the virtual keyboard toggles the characters displayed on the keys between upper and lower case. The <áü> key toggles the keys between standard and international symbols. The <Shift> and <áü> keys can be used in combination for capitalized international characters.

Note: When the virtual keyboard is displayed, the physical keyboard is still active, if attached. Therefore it is possible to input data from both keyboards.

Enabling the Input Panel

The Input Panel is disabled by default. To enable the Input Panel, select **Start | Settings | Control Panel | Input Panel** icon. Make sure the “Allow applications to change the input panel state” checkbox is checked and warmboot the VX7.

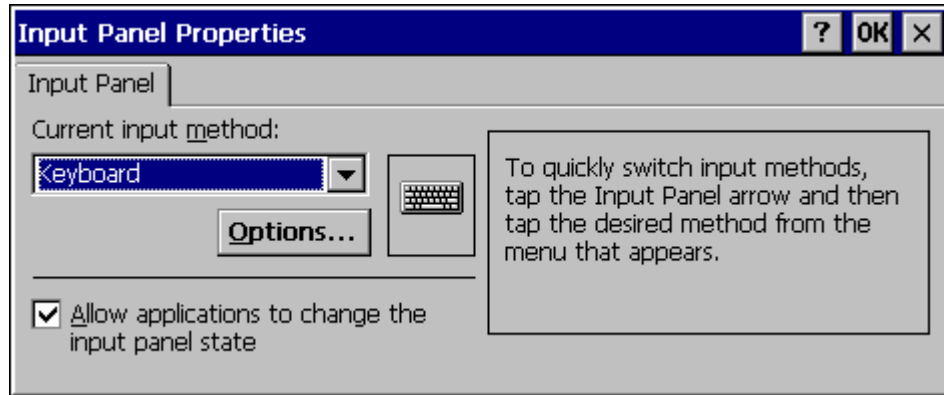


Figure 19 Input Panel Properties

Power Supply

Vehicle power input for the VX7 is 12V to 80V DC and is accepted without the need to perform any manual adjustments within the VX7. See the section titled “Installation”, sub-section titled “Vehicle 12-80V DC Direct Connection”. An optional Uninterruptible Power Supply (UPS) battery pack is available for the vehicle power supply connection.

If 12V to 80V DC power is not available – for example, in an office environment – an optional external Input Power Supply can be used to convert AC wall power to an appropriate DC level. See the section titled “Installation”, sub-section titled “External Power Supply”.

Power input is fused for protection and the fuse is externally accessible. See section titled “Installation”, sub-section titled “Fuse Replacement for the VX7”.

Uninterruptible Power Supply Battery Pack

An optional Uninterruptible Power Supply (UPS) battery pack is designed to provide power to the VX7 for short periods of time when vehicle power is unavailable (such as when vehicle batteries are swapped). Fully charged, the UPS battery powers the VX7 for a minimum of 15 minutes at 25° C (77° F) ambient temperature.

The Power Status LED on the VX7 indicates the UPS battery status:

Green – Running on 12V – 80V power input

Solid Yellow – Running on UPS battery, battery is not low on power

Flashing Yellow – Running on UPS battery, battery is critically low.

Backup Battery

The internal 190 mAh Lithium backup (coin cell) battery provides power to maintain date and time when the VX7 is not powered from an external source.

Caution



Danger of explosion if battery is incorrectly replaced.

Replace only with the same type or equivalent type recommended by the manufacturer.

Dispose of used batteries according to the manufacturer’s instructions.

Getting Help

All LXE manuals are now available on one CD and they can also be viewed / downloaded from the LXE ServicePass website on the ServicePass / Documentation page. Contact your LXE representative to obtain the LXE Manuals CD or logon information for the ServicePass web pages.

You can also get help from LXE by calling the telephone numbers listed on the LXE Manuals CD, in the file titled “Contacting LXE”. This information is also available on the LXE website.

Explanations of terms and acronyms used in this guide are located in the file titled “Glossary” on the LXE Manuals CD.

Manuals and Accessories

Manuals

The following manuals are available on the LXE Manuals CD:

- [VX7 Reference Guide](#)
- [Contacting LXE](#)
- [LXE Technical Glossary](#)

Accessories

The table below lists the available VX7 accessories.

- Where two parts numbers are listed for a given part, the part number ending in “-R” is the RoHS compliant version.
- When only one part number is listed, the part is RoHS compliant unless otherwise noted.

VX7 Brackets	
Bracket, U Style, VX6 VX7	9000A021UBRACKET-R
Bracket, U Style w/ Integrated Keyboard Mount, VX7	9000A025UBRKTWKBDMNT-R
Kit, VXX U-Bracket to VX6 VX7 Adapter	9000A022BRKTADPTKIT-R
Kit, VXX U-Bracket to VX7 Adapter w/ Keyboard Mount	9000A026BRKTADPKBDMN-R
Bracket, RAM Mount VX6 VX7	9000A023BRKTRAMMOUNT-R
Bracket, Combo RAM VMT Mount w/ Keyboard Mount, VX7	9000A027BRKTRAMWKBMN-R
Bracket, VXX RAM ball on plate	9000A028RAMPLATEBALL-R
Bracket, RAM keyboard mounting plate	9000A029RAMKBDPLATE-R
Bracket, RAM keyboard arm	9000A030RAMKBDARM-R
Bracket, RAM Squeeze Mount, VX6 VX7	9000A031BRKTRAMSQZMT-R
Bracket, Combo RAM Squeeze Mount w/Keyboard Mount	9000A032BRKTRAMSQKBMT-R
Bracket, RAM Backup Mounting Plate	9000A033BACKUPPLATE


Keyboard Brackets	
Bracket, Remote, Keyboard, LXE	9000A012BRKTRMTLXE-R
Bracket, Remote, Mouse Keyboard	9000A018BRKTMKBDRMT 9000A018BRKTMKBDRMT-R
Keyboards	
Keyboard, LXE Standard, D9, ANSI/PC Overlay, QWERTY	9000A157KBDSTDD9ANSI 9000A157KBDSTDD9ANSI-R
Keyboard, LXE Standard, D9, IBM 5250 Overlay, QWERTY	9000A158KBDSTDD95250 9000A158KBDSTDD95250-R
Keyboard, LXE Standard, D9, IBM 3270 Overlay, QWERTY	9000A159KBDSTDD93270 9000A159KBDSTDD93270-R
Keyboard, Rugged PC Style w/Mouse, PS2 D9	9000A160MOUSEKBDD9 9000A160MOUSEKBDD9-R
Data Cables	
Cable, Combo D15 to USB and Ethernet Adapter 1 Ft	9000A071CBLD15USBETH
Cable, Combo D15 to USB-H, USB-C and Ethernet Adapter	9000A075CBLUSBHCETH
Cable, Keyboard/Mouse Dual PS2 Adapter 1 Ft	9000A072CBLD9DUALPS2
Cable, Printer/PC, D9 to D25	9000A053CBL6D9D25 (above part is <i>not</i> RoHS compliant)
Cable, PC, D9 to D9	9000A054CBL6D9D9
Power Cables	
Cable, Input Power, 12 FT, VX5 VX6 VX7	9000A073CBLPWR12FT-R
Adapter Cable, VX1 VX2 VX4 Power Cable to VX5 VX6 VX7	9000A077CBLPWRADPTR
Power Supplies	
Power Supply, External, AC, W/US Power Cord VX5 VX6 VX7	9000A318PSACUS-R
Power Supply, External, AC, No Power Cord VX5 VX6 VX7	9000A318PSACWW-R
UPS Battery and Cables	
Battery, UPS Lead Acid, VX5 VX6 VX7	9000A378UPSBATTPACK-R
Cable, UPS Battery, Remote Mount Extender, 6 Ft	9000A074CBLUPSEXTNDR
Antenna and Antenna Mount Kits	
Replacement antenna, 2.4GHz	153180-0001
Remote Mount Antenna Assembly Kit, 8 Ft Cable	9000A279ANTREMOTE8-R
Remote Mount Antenna Assembly Kit, 6 Ft Cable	9000A278ANTREMOTE6-R
Right Angle Remote Mount Antenna Assembly Kit, 6 Ft Cable	9000A280ANTREMOTE6RT
Right Angle Remote Mount Antenna Assembly Kit, 15 Ft Cable	9000A281ANTREMOT15RT
Miscellaneous	
Stylus, with Tethers and Sleeves, 5 Pack	9000A510STYLUS
Protective Film, 12 in Display, 10 Pack, VX5 VX7	9000A511PROTFILM12IN

Voice Recognition Accessories	
Headset coiled adapter cable, with quick disconnect connector to a 2.5 mm audio jack. A headset (see below) is required	9000A076CBLHEADSET1
Headset, Single Band	HX1A501SINGHEADSET
Headset, Dual Band	HX1A502DUALHEADSET
Headset, Behind the Ear, Dual Ear	HX1A503BTHHEADSET
Foam, Replacement Block, Headset	HX1A504HSBLOCKFOAM
Yoke, Replacement for Dual Band Headset	HX1A505DUALYOKE
Yoke, Replacement for Single Band Headset	HX1A506SINGLEYOKE
Replacement Microphone Foam, Wind Screen, 10 pack	HX1A508WINDSREEN10
Replacement Microphone Foam, Wind Screen, 50 pack	HX1A509WINDSREEN50
Replacement Headset Foam, Ear Cover, 10 pack	HX1A510FOAMEAR10
Replacement Headset Foam, Ear Cover, 50 pack	HX1A511FOAMEAR
Tethered Scanners	
Scanner, Powerscan, SR, 8' Cbl, WW	8300A326SCNRPWRSR8DA9F 8300A326SCNRPWRSR8DA9F-R
Scanner, Powerscan, SR, 12' Cbl, US	8300A327SCNRPWRSR12DA9F (above part is <i>not</i> RoHS compliant)
Scanner, Powerscan, SR, Low Temp, 8' Cbl	8300A332SCNRS8D9FLT (above part is <i>not</i> RoHS compliant)
Scanner, Powerscan, SR, Low Temp, 12' Cbl	8300A333SCNRS12D9FLT (above part is <i>not</i> RoHS compliant)
Scanner, Powerscan, LR, 8' Cbl, WW	8310A326SCNRPWRLR8DA9F 8310A326SCNRPWRLR8DA9F-R
Scanner, Powerscan, LR, 12' Cbl, US	8310A327SCNRPWRLR12DA9F 8310A327SCNRPWRLR12DA9F-R
Scanner, Powerscan, LR, Low Temp, 8' Cbl	8310A332SCNRL8D9FLT (above part is <i>not</i> RoHS compliant)
Scanner, Powerscan, LR, Low Temp, 12' Cbl	8310A333SCNRL12D9FLT (above part is <i>not</i> RoHS compliant)
Scanner, Powerscan, XLR, 8' Cbl, WW	8320A326SCNRPWRXLR8DA9F 8320A326SCNRPWRXLR8DA9F-R
Scanner, Powerscan, XLR, 12' Cbl, US	8320A327SCNRPWRXLR12DA9F (above part is <i>not</i> RoHS compliant)
Scanner, Powerscan, XLR, Low Temp, 8' Cbl	8320A332SCNRX8D9FLT (above part is <i>not</i> RoHS compliant)
Scanner, Powerscan, XLR, Low Temp, 12' Cbl	8320A333SCNRX12D9FLT (above part is <i>not</i> RoHS compliant)
Scanner, LS3408 Fuzzy Logic SR, D9 Interface Cable, 8ft	8510A326SCNRFZYDA9F 8510A326SCNRFZYDA9F-R
Scanner, LS3408 Extended Range, D9 Interface Cable, 8ft	8520A326SCNRERDA9F-R

Bluetooth Scanner and Accessories	
PowerScan 7000BT Scanner RS-232 with pointer	8700A301SCNRBTSRI
PowerScan 7000BT Base Station, RS232, without universal power supply.	8700A501BASERS232
PowerScan 7000BT Base Station Power Supply, Std US, 120V	8700A502PSACUS
PowerScan 7000BT, RS232 Cable for Base Station, DB9S, Coil, 8'	8700A001CBL8DA9F
PowerScan 7000BT Battery Charger with Power Supply, Four Station, US Std	8700A503CHGR4US
PowerScan 7000BT Battery Pack	8700A504BATT
Bluetooth Standard Range Fuzzy Logic laser scanner	8810A326SCNRBTFZ
Bluetooth Auto range "LORAX" scanner	8820A327SCNRBTER
Desk Cradle, Radio/Charging, Multi-Interface	8800A001CRADLERCMI
Desk Cradle, Charge Only, Multit-Interface	8800A002CRADLECMI
Forklift Cradle, Radio/Charging, Multi-Interface	8800A003CRADLEVRCMI
Forklift Cradle, Charge Only, Multi-Interface	8800A004CRADLEVCMI
US AC Power Cord	8800A051POWERCORD
Universal Desktop Power Supply 90-264VAC	8800A301ACPS
9-60VDC Forklift Power Supply	8800A302DCPS
Power Cable (connects Power Supply to Forklift)	8800A052DCPWRCABLE
Cable Assembly, DA9F, 9 ft, Cradle to Terminal	8500A051CBL9DA9F
Forklift Rugged Scanner Holder with RAM mount	8800A005STAND
8800 Spare Battery	8800A376BATTERY
Single slot Universal Battery Charger Adapter Cup	8800A377CHGRADPTRCUP
Single Slot Battery Charger w/International Power	8800A378CHGR1SLOT
Universal Battery Charger, 4 slot. Requires 4 adapter cups	8800A379CHGRBASE
Scanner Holster for Belt	8200A501HOLSRBELT
Mounted take up Reel	8000A501INDREEL
Auto Sense Intellistand, Hands Free Scanning	8500A505STANDSMT
Strap with Scanner Clip	9000A411SCNRSTRAP

Installation

Install Mounting Brackets

Caution:  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 is not to be co-located with other transmitters.

Equipment Needed: Phillips No. 1 screwdriver and a Torque wrench capable of measuring to 50 inch pounds (5.64±.56 N/m).

Note: Torquing tool is not supplied by LXE. Bolts, washers, and wrench needed when attaching the bottom mounting bracket to the vehicle are not supplied by LXE.

Several types of mounting systems are provided for the VX7:

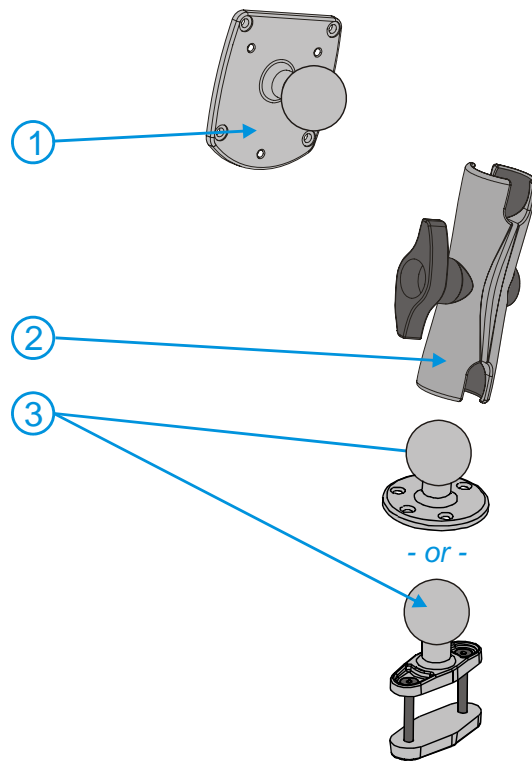
- RAM mount system:
 - Available RAM ball base or RAM clamp mount
 - Optional integrated keyboard bracket
- U-Bracket system:
 - Optional integrated keyboard mounting bracket
 - Provision for integrated UPS battery mount
 - Available without U-Bracket for vehicles previously equipped with an LXE vehicle mounted computer
- Remote mount for keyboard
- Remote mount for UPS battery pack

Before installation begins, verify you have the applicable vehicle mounting bracket assembly components necessary for your mount type, as shown in the following figures.

RAM Mount System

Components

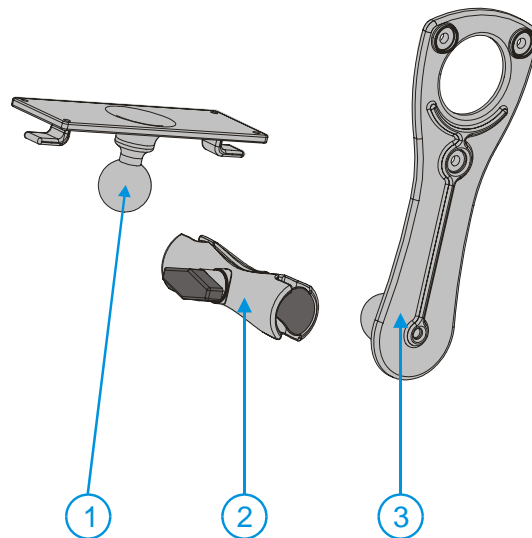
RAM Mounting Assembly



The RAM mounting assembly consists of the following parts:

1. VXX RAM ball bracket
2. RAM arm, size D
3. RAM ball base
- or -
RAM clamp mount
RAM Clamp Mount includes:
Upper Clamp Piece with Ball
Lower Clamp Piece
Bolts (2 each)
Nylon locking nuts (2 each)
4. Hardware (not shown):
Bolts, 1/4-20x5/8 (4 each)
Washers, 1/4 locking (4 each)
Washers, 1/4 flat (4 each)
RAM wrench

RAM Integrated Keyboard Mount



The optional RAM integrated keyboard mount consists of the following parts:

1. Keyboard mounting plate.
2. RAM arm, size C
3. Keyboard mounting bracket
4. Hardware (not shown):
Screws, 8-32x5/8 (4 each) for use with the 95 key keyboard
Screws, 10-32x5/8 (4 each) for use with the 60 key keyboard
Bolts, 1/4-20x5/8 (3 each)
Washers, 1/4 locking (3 each)
Washers, 1/4 flat (3 each)

Torque Measurements

You will need a torquing tool capable of torquing to 50 inch pounds (5.64±.56 N/m).

Torque all screws and bolts according to the following table:

For these screws and bolts...	Torque to
1/4 bolts	50.0±5 in/lb (5.64±.56 N/m)

Procedure

Step 1a – Mount Vehicle RAM Mount Bracket

Note: If you are using the RAM clamp mount, please skip to Step 1b.

1. Determine the position for mounting the RAM ball base. Be sure to position the RAM bracket to allow access to the switches and ports on the bottom of the VX7.
2. Attach the RAM ball base to the vehicle mounting surface using four 1/4 bolts (or equivalent) fasteners.

Note: 1/4 bolts not included.

IMPORTANT: Mount to the most rigid surface available.

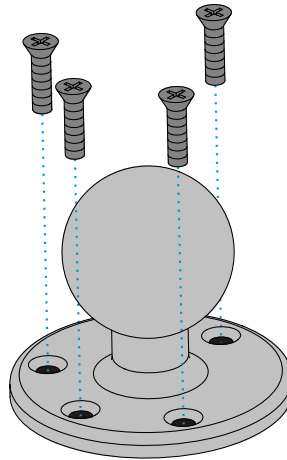


Figure 20 Connect Vehicle RAM Mount Bracket to Vehicle

Mounting Dimensions

Note: Drill and tap holes for 1/4 bolts.

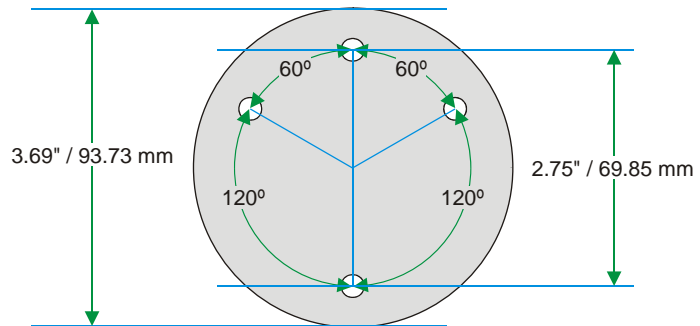


Figure 21 VX7 RAM Bracket - Mounting Dimensions (Not To Scale)

Step 1b – Mount Vehicle RAM Clamp Mount

Note: If you are using the RAM ball base, complete Step 1a and skip Step 1b.

1. Determine the position for mounting the RAM clamp mount. The clamp mount can be used on a beam (such as on a fork lift truck) up to 2.5" (63.5 mm) wide and approximately 2" (50.8 mm) thick. The clamp may be attached to a thicker beam by substituting longer bolts (not included). Be sure to position the RAM clamp mount to allow access to the switches and ports on the bottom of the VX5.
2. Position the upper clamp piece with ball (A) on the beam. Place the bolts (B) through the holes in the upper clamp piece.
3. Position the lower clamp piece (C) below the beam. Align the bolts with the holes in the lower clamp piece.
4. Place the nylon locking nuts (D) on the bolts and tighten the bolts.

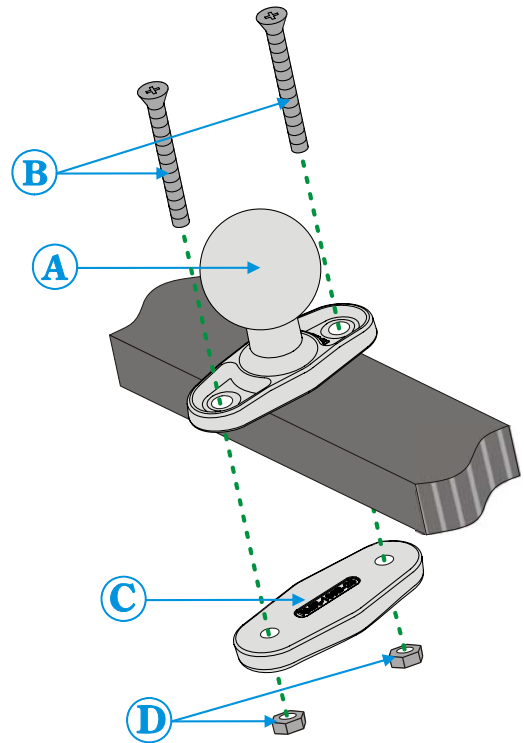


Figure 22 RAM Clamp Mount Components

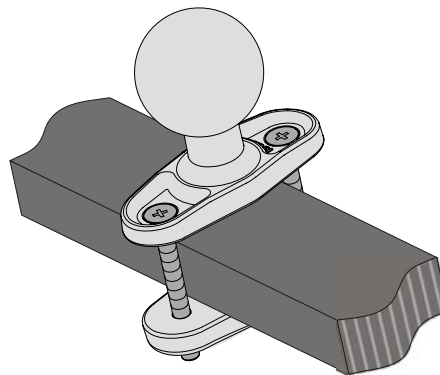
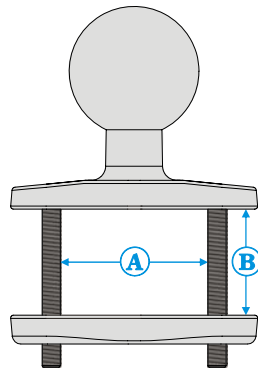


Figure 23 Assembled RAM Clamp Mount

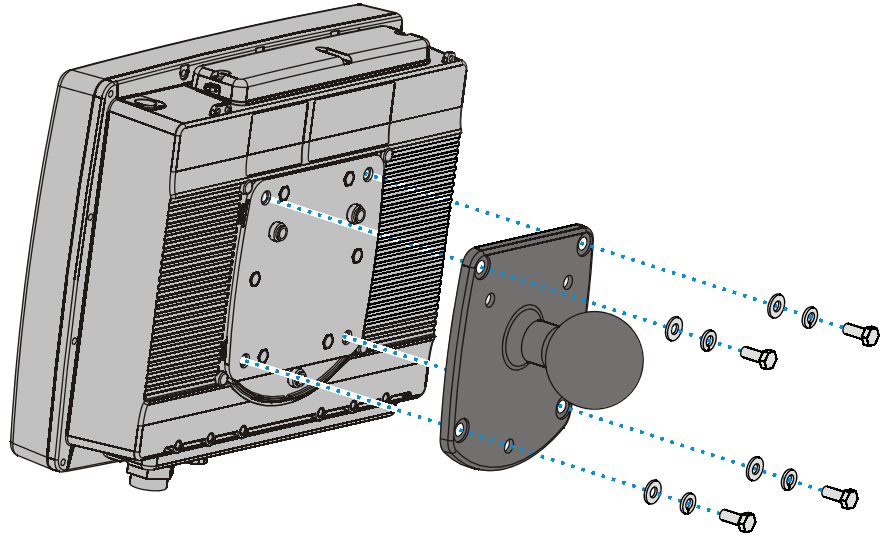
Mounting Dimensions

- A 2.56" (65.02 mm)
B 1.84" (46.74 mm)
Varies depending on bolt length

Figure 24 RAM Clamp Mount - Mounting Dimensions (Not To Scale)

Step 2 – Attach RAM Mount Ball to the VX7

1. Turn the VX7 off before attaching the RAM mount ball.
2. Place the VX7 face down on a stable surface.
3. Position the RAM ball bracket on the rear of the VX7, aligning the curved edge on the RAM mount bracket with the curved edge on the VX7. Attach with four 1/4-20x5/8 bolts, using one flat washer and one locking washer per bolt. Place the locking washer on the bolt before the flat washer.

**Figure 25 Attach RAM Mount Ball to VX7****Caution**

Failure to use one ¼ flat washer and one ¼ locking washer per bolt can result in damage to the backplate of the VX7 computer.

Step 3 – Assemble Optional Keyboard Brackets

1. If using the optional integrated keyboard mount, attach the keyboard mounting bracket to the RAM mounting bracket with three 1/4-20x5/8 bolts, using one flat washer and one locking washer per bolt. Place the locking washer on the bolt before the flat washer.

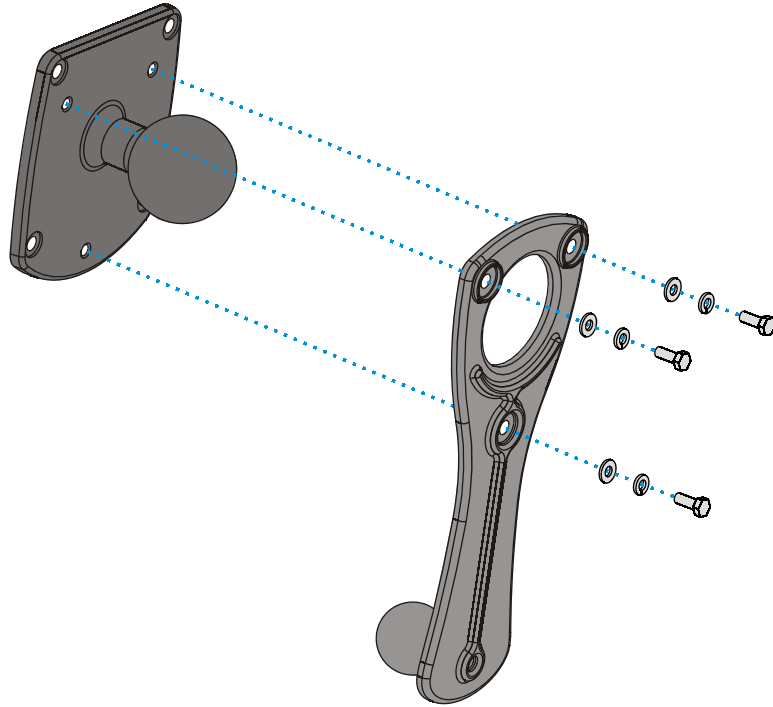


Figure 26 Attach Keyboard Mounting Bracket

2. If using the optional integrated keyboard mount, attach the keyboard to keyboard mounting plate, using the appropriate screws:
 - For the 95 key keyboard, use four 8-32x5/8 screws
 - For the 60 key keyboard, use four 10-32x5/8 screws

Note: 95-key keyboard shown.

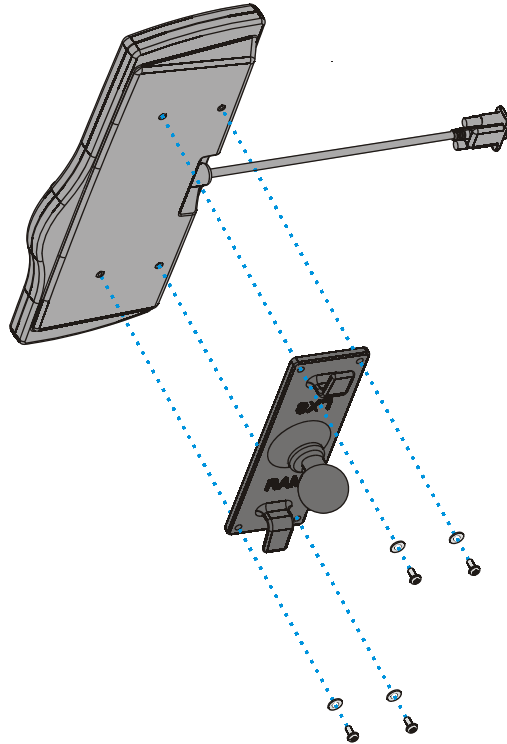


Figure 27 Attach Keyboard to Mounting Plate

Note Excess keyboard cable length can be looped around the hooks on the bottom of the keyboard mounting plate.

Step 4 – Attach VX7 and Bracket Assembly to RAM Mount

1. If the optional integrated keyboard bracket is not used, slip the RAM arm over the ball on the vehicle RAM ball bracket. Insert the ball of the RAM mount bracket into the RAM arm. Adjust the VX7 to the desired position and tighten the knob on the RAM arm using the supplied RAM wrench.

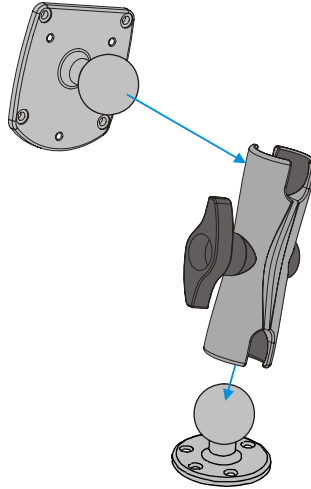


Figure 28 RAM Assembly without Keyboard

Note: RAM ball base shown.

2. If using the optional integrated keyboard bracket, there are two arms included. Slip the larger RAM arm over the ball on the vehicle RAM mount bracket. Insert the ball of the RAM mount bracket into the RAM arm. Adjust the VX7 to the desired position and tighten the knob on the RAM arm using the supplied RAM wrench.

Slip the smaller arm over the RAM ball on the keyboard mounting bracket. Insert the RAM ball on the keyboard mounting plate into the RAM arm. Adjust the keyboard to the desired position and tighten the knob on the RAM arm using the supplied RAM wrench.

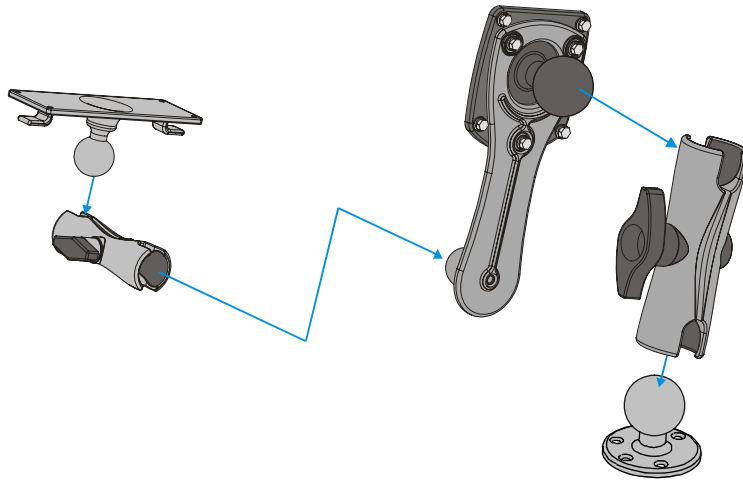


Figure 29 RAM Assembly with Keyboard

Note: RAM ball base shown.

Note Excess keyboard cable length can be looped around the hooks on the bottom of the keyboard mounting plate.

Make sure there is a minimum 1" (25.4 mm) clearance between the VX7 and the keyboard.

Completed Assembly

RAM Mount

RAM Mount with Integrated Keyboard Mount

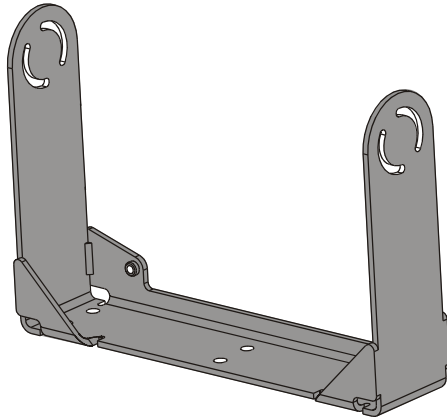
Figure 30 Completed RAM Mount Assembly

Note: RAM ball base shown.

U-Bracket Mount System

Components

Bottom Mounting Bracket

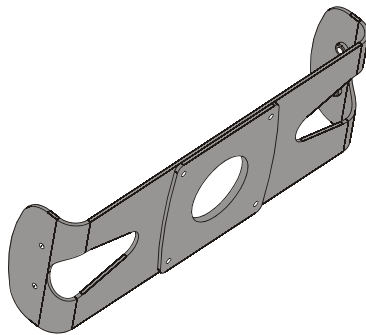


This bracket is mounted to the vehicle. The VX7 can be mounted to the bottom mounting bracket with or without an integrated keyboard mounting bracket. Additionally, the UPS battery pack may be mounted to the bottom mounting bracket.

If the optional UPS battery pack is to be mounted to the bottom bracket, use the following parts included with the UPS battery pack (not shown):

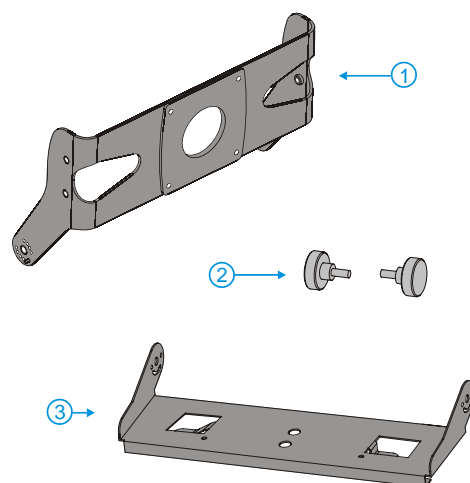
- 1" long aluminum spacer w/through hole (2 each)
- 1/4 flat washer (2 each)
- 1/4 locking washer (2 each)
- screw, pan head, 1/4-20x2 (2 each)

Back Bracket without Keyboard Mount



1. Rear Bracket
2. Hardware (not shown):
 - 1/4 flat washer (8 each)
 - 1/4 locking washer (8 each)
 - 1/4 flat washer (8 each)

Back Bracket with Keyboard Mount



1. Rear Bracket
2. Adjustment knob (2 each)
3. Keyboard Mounting Plate
4. Hardware (not shown):
 - 1/4 flat washer (8 each)
 - 1/4 locking washer (8 each)
 - 1/4 flat washer (8 each)
 - Screws, 8-32x5/8 (4 each) for use with the 95 key keyboard
 - Screws, 10-32x5/8 (4 each) for use with the 60 key keyboard

Mounting Positions

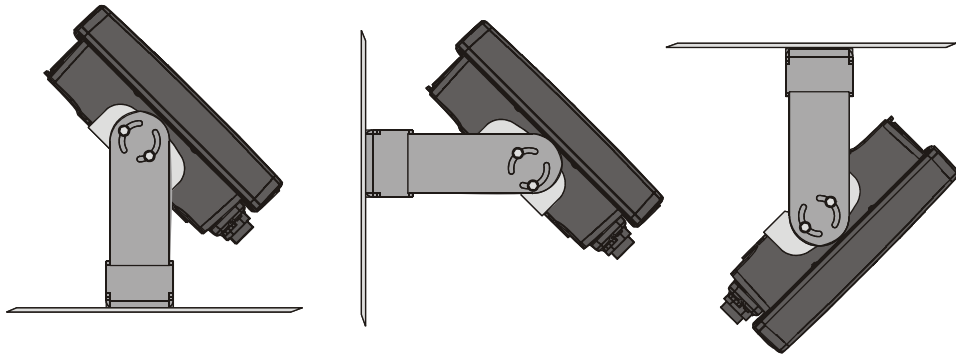


Figure 31 Suggested Mounting Positions

The viewing angle can be adjusted through a wide range to provide the best viewing angle.

Torque Measurements

You will need a torquing tool capable of torquing to 50 inch pounds (5.64±.56 N/m).

Torque all screws and bolts according to the following table:

For these screws and bolts...	Torque to
#6 screws	8.0±.5 in/lb (0.9±.05 N/m)
#8 screws	16.0±1 in/lb (1.8±.11 N/m)
1/4 bolts	50.0±5 in/lb (5.64±.56 N/m)

Procedure

Step 1 - Mount Bottom Mounting Bracket To Vehicle.

1. Position the bracket to allow access to the switches and ports on the bottom of the VX7.
2. Attach the bottom mounting bracket to the vehicle mounting surface using a minimum of four 1/4 bolts (or equivalent) fasteners.

Note: 1/4 bolts and washers not included. It is recommended to use lock washers and flat washers on the fasteners.

IMPORTANT: Mount to the most rigid surface available.

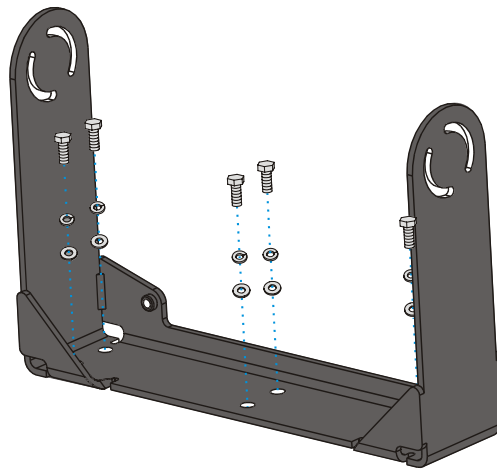


Figure 32 Connect Bottom Bracket to Vehicle

After the bottom bracket has been attached to a rigid surface, you are ready to assemble the VX7 bracket configuration.

Mounting Dimensions

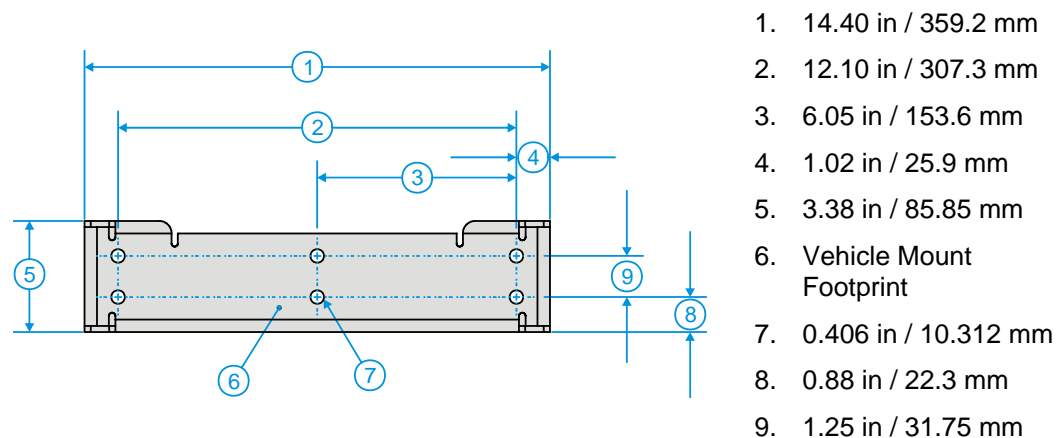


Figure 33 VX7 Bracket - Mounting Dimensions (Not To Scale)

Step 2 – Attach Rear Bracket VX7

1. Turn the VX7 off before attaching the rear bracket.
2. Place the VX7 face down on a stable surface.
3. Align the rear bracket with the holes on the back of the VX7. Attach with four 1/4-20x5/8 bolts, using one flat washer and one locking washer per bolt. Place the locking washer on the bolt before the flat washer.

Note: Back bracket with keyboard mount shown.

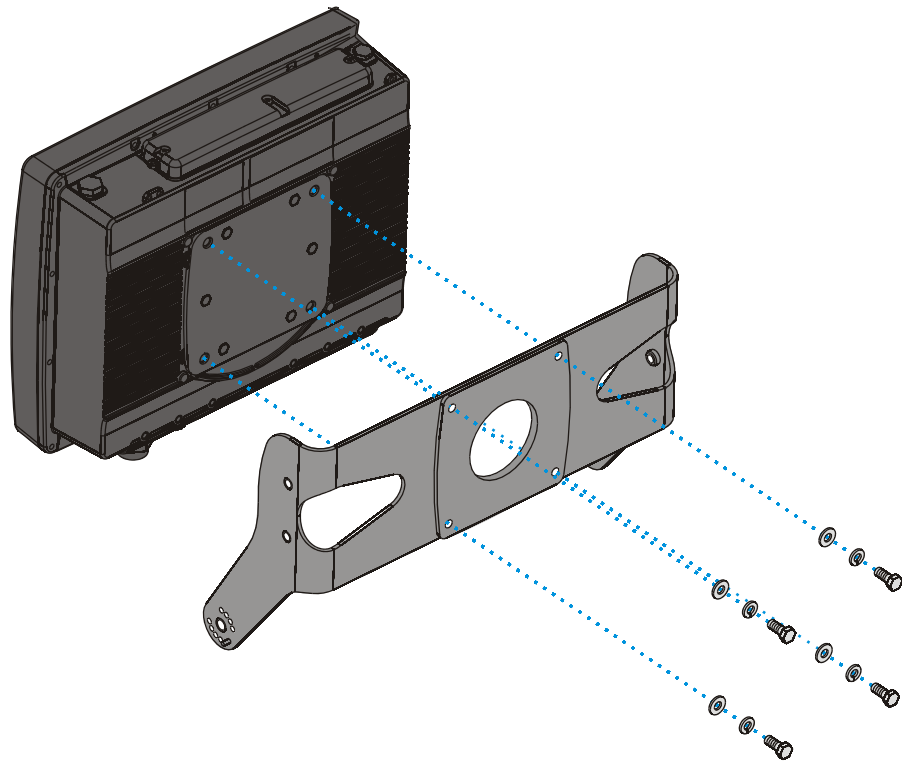


Figure 34 Attach Rear Bracket to VX7

Step 3 – Attach VX7 Assembly To Bottom Mounting Bracket.

1. Place lock washer first, then flat washer on 1/4-20x5/8 bolt. Next insert mounting bolts through the curved apertures in the bottom mounting bracket and into the screw holes on the side of the back mounting bracket.

Note: Back bracket without integrated keyboard mount shown.

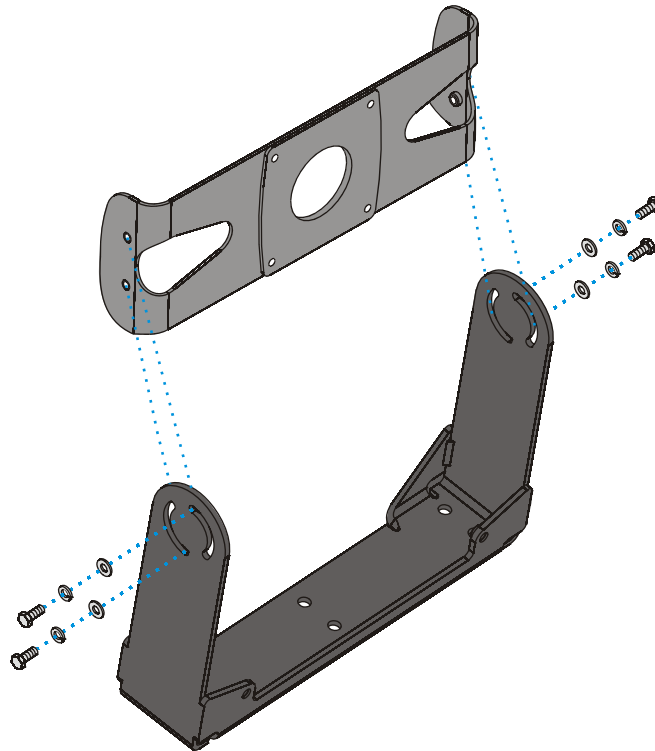


Figure 35 Attach VX7 Assembly to Bottom Bracket

2. Loosely tighten each bolt as it is inserted.

Important: Do not torque bolts until all bolts are in place and viewing angle is adjusted.

3. Loosen the hex bolts on both sides to adjust the viewing angle of the mounted VX7.
4. Torque the hex bolts to 50 ± 5 in/lb ($5.64 \pm .56$ N/m).

Note: Test the torque on the bolts frequently during operation and re-tighten if necessary to 50 ± 5 in/lb ($5.64 \pm .56$ N/m).

Step 4 – Assemble Optional Keyboard Brackets

1. Fasten the keyboard to the keyboard mounting plate. Use four 8-32x5/8 screws to attach the 95-key keyboard. Use four 10-32x5/8 screws to attach the 60-key keyboard.

Note: 95-key keyboard shown.

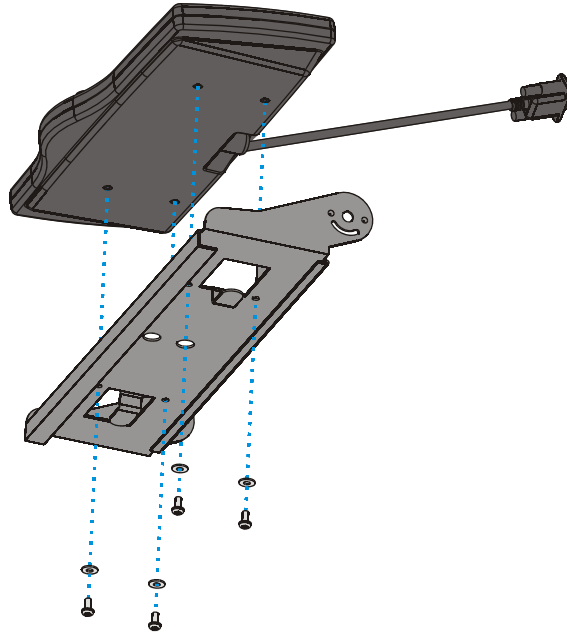


Figure 36 Attach Rear Bracket and Keyboard to VX7

Note Excess keyboard cable length can be looped around the hooks on the bottom of the keyboard mounting plate.

2. Attach the keyboard mounting plate to the side mount brackets using the two adjusting knobs.

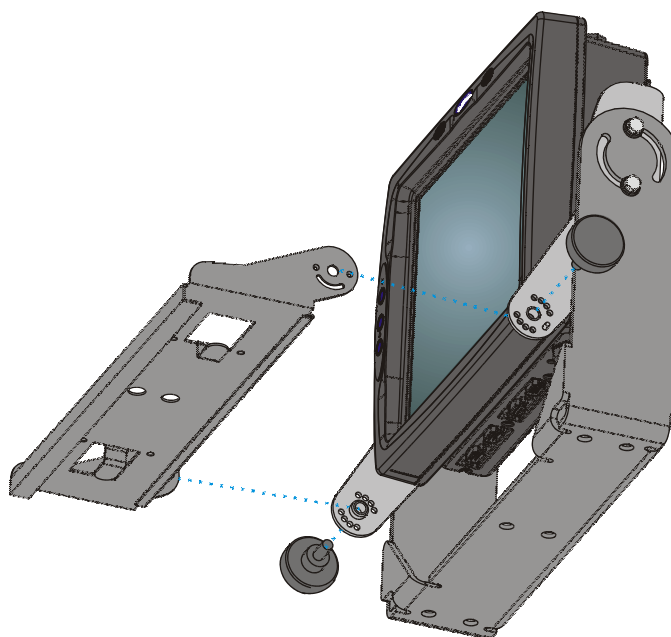


Figure 37 Attach Keyboard Assembly to VX7

3. Adjust the angle of the keyboard by loosening the two adjusting knobs, adjusting the keyboard angle and then tightening the adjusting knobs,

Step 5 – Complete Assembly

1. If using a UPS battery pack, the battery pack can be mounted to the bottom mounting bracket. Place a locking washer and then a flat washer on a 1/4-20x2 bolt. Thread the bolt through the UPS Battery Pack, then through the 1" aluminum spacer and into the mounting bracket.

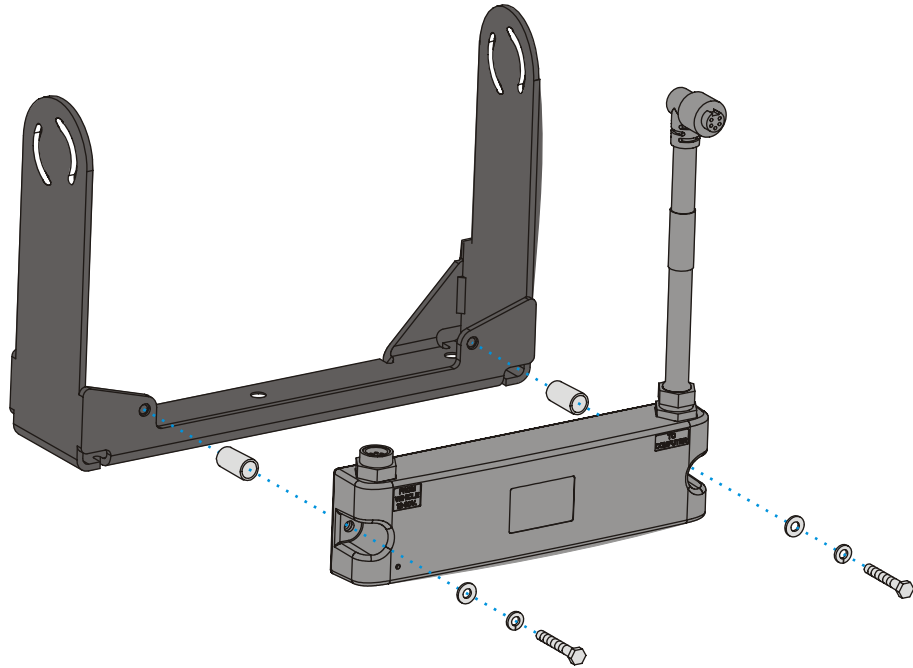


Figure 38 Integrated UPS Battery Pack Mount

2. Connect all cables to the VX7. Secure the cables with the strain relief cable clamps, ensuring a slack loop remains between the cable clamp and the accessory connector.
3. The vehicle mounted bracket and the VX7 are now ready to use.

Completed Assembly



Vehicle Mount Bracket

Bracket with Integrated Keyboard Mount

Figure 39 VX7 in Vehicle Bracket

Install Stylus Tether and Sleeve

The LXE stylus kit includes the stylus, tether and sleeves. The tether allows the stylus to be mounted to the VX7 and the sleeve provides storage for the stylus when not in use.

How To Install Stylus Tether and Sleeves

1. Locate the tether holes on the top of the VX7. (see below):

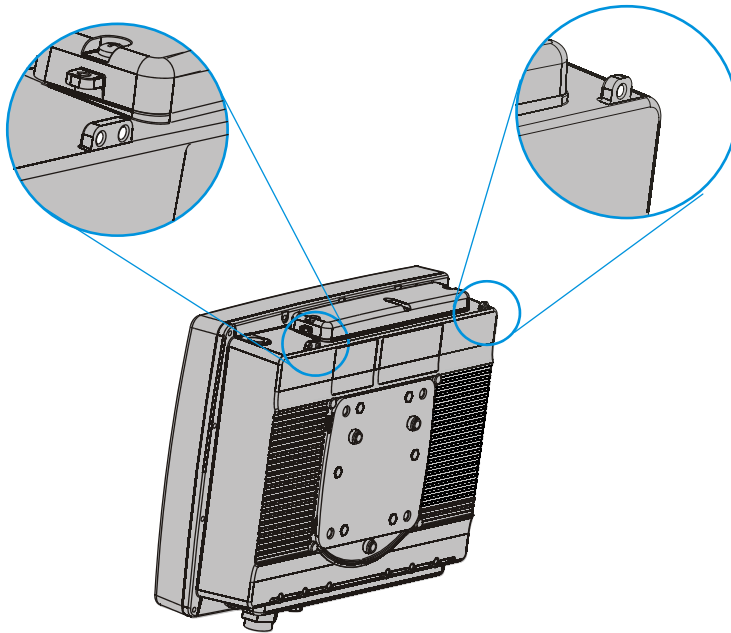
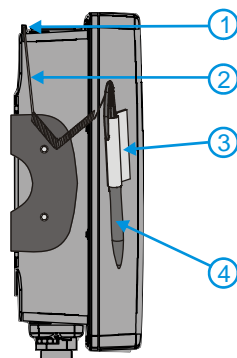


Figure 40 Stylus Tether Mounting Holes

2. Select the mounting hole most convenient for the particular VX7 installation.
3. Slide the clip end of the stylus tether into the tether mounting hole.
4. Determine a convenient location for the stylus sleeve. Apply the adhesive baked Velcro® loop strip to the VX7 or mounting bracket. Attach the Velcro® hook strip on the elastic stylus sleeve to the loop strip.



- 1 Tether Mount
- 2 Tether Cable
- 3 Stylus Sleeve
- 4 Stylus

Figure 41 Tethered Stylus, Typical Installation