⬧DATALOGIC

Rhino™ II A6 with Android™

Rugged Vehicle Mount Computer

User's Manual

Table of Contents

NOTES

Introduction

Conventions

This manual uses the following conventions:

"Mobile computer", "Vehicle Mount Computer", "VMC" and
"Rhino II" refer to Rhino II vehicle mount computer.

The label artworks may be only a draft. Refer to the product labels
for more precise information.

Product Presentation

The Rhino II vehicle mount computers, available in both 10" and 12" display sizes, set the standard for ruggedness in the warehouse. A sealed design tested to IP65/IP67 ensures operation in the toughest environments. The capacitive touch models feature 3 mm anti-glare armored glass, while still allowing use of gloves.

Tailored for warehouse management, the Rhino vehicle computer increases productivity through reduced errors during receiving, putaway, picking and shipping activities. Adding a handheld bar code scanner such as Datalogic's PowerScan™ allows for quick data entry and location confirmations.

The Rhino vehicle computer is equipped with an internal isolated power supply 12-48VDC, ignition sense to automatically control the power, and an optional battery backup for the ultimate protection against data loss. The Rhino vehicle computer fits different mounting and space constraints. Mounting options include various brackets and RAM mounts for the vehicle computer along with ABCD or QWERTY external keyboards.

Available Models

The Rhino II is available in different models depending on the options it is equipped with. All options are listed below:

- Internal power supplies: 12-24VDC and 24-48VDC
- Screen sizes: 10" and 12"
- Freezer Model (WEC7 10" only)

For further details about the Rhino II models refer to the web site: http://www.datalogic.com.

The currently available models are:

- 943200009 10" Rhino II Android 7.1 12-48 VDC
- 943200023 12" Rhino II Android 7.1 12-48 VDC.

Out of the Box

The Rhino II package contains:

- Rhino II vehicle mount computer.
- Power cable (2.9m ≈ 9.5').
- Bag: 4 mounting screws and washers for use with RAM mounts.
- Bag: rubber cable slot seals and cable ties.
- Quick Start Guide
- Safety & Regulatory Addendum.

Remove all the components from their packaging; check their integrity and compare them with all the packing documents.

CAUTION

Keep the original packaging for use when sending products to the technical assistance center. Damage caused by improper packaging is not covered under the warranty.

General View

Front View

Manual Screen Blank Mode

Brightness/Volume Control

4 Programmable Keys

Home Function

Capacitive Touch Display 3 mm non-reflecting armored glass
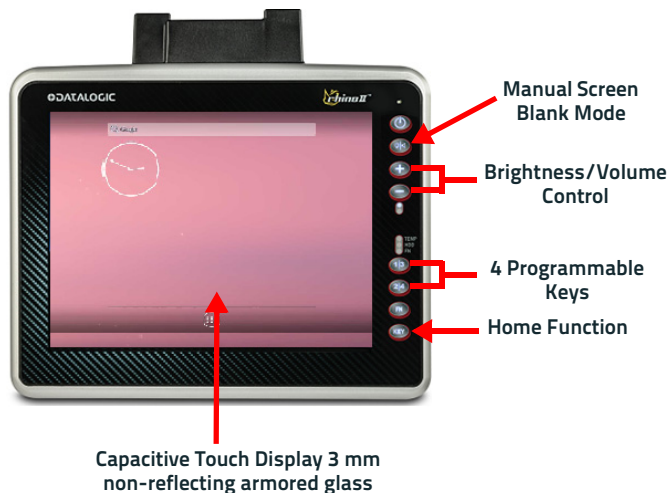
Back View

VESA 75 Mounts

Bottom View

Ethernet RJ45
10/100/1000 Mbps

Fuse

1 x USB 2.0 (top)
1 x USB 3.0 (bottom)

Not usable
on Android
Models

Power
Connection

Serial Ports
COM1 – 5V pin 9
COM2 – 12V pin 9

Speaker Jack
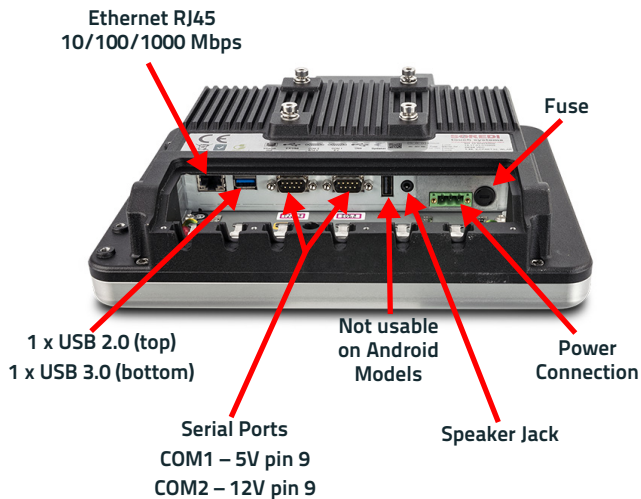
Accessories

Keyboards

95ACC1330	External Keyboard QWERTY
95ACC1374	Compact Keyboard, External, QWERTY
95ACC1331	External Keyboard, ABCD

Cable Covers

94ACC0173	Cable Cover, 5 poles, w 2.9m power cable (for quick disconnect)
94ACC0160	Speaker Cable Cover

Mounts

94ACC0172	Fixed Mounting Bracket, 130 degree
94ACC0155	Keyboard External Mounting Bracket
94ACC0175	Quick Change V Mount
94ACC0035	RAM Mount 4" rail base
94ACC0034	RAM Mount with round base
94ACC0156	Scanner holder
94ACC0154	Vehicle Mounting Bracket, 10 degree

Power Supplies

94ACC1061	AC/DC Power Brick
94ACC0165	DC Power Cable, 2.9M
94ACC0041	External 72-80 VDC Voltage Converter

> **CAUTION**
>
> **Use only a Datalogic approved power supply and cables. Use of an alternative power supply will invalidate any approval given to this device and may be dangerous.**

Getting Started

Power Connection

The internal power supply 12-48VDC is electrically isolated. The wires are already connected to the provided cable. The wires of the 3-pole input connector must be connected to DC Plus, DC minus and ignition.

The ground wire (yellow - green) inside the cable must be connected to the ground contact.
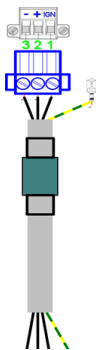
1. IGN	Ignition	Grey
2. +	Positive charge	Brown
3. -	Negative charge	Black
4. GND	Mass	Yellow/ Green

Autostart
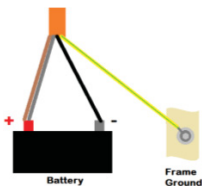
Start with the ignition key
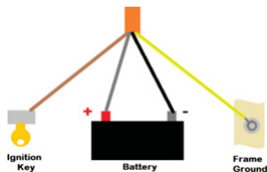
Fasten the Cables

There are three different types of gaskets. Choose the right one according to the size of the cable.
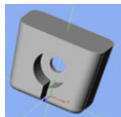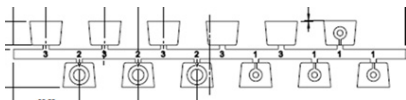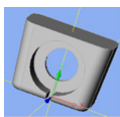
Type 1: e.g. USB cable   Type 2: e.g. power cable   Type 3: no cable
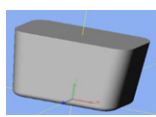
Type 1 and Type 2: cut the cable at its thinnest point (see the left picture below). After the rubber gasket is cut off, nothing must protrude from it (see the middle picture below). Slide the sealing rubber over the cable (see the right picture below).
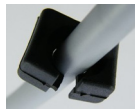
Place the sealing rubber into the appropriate cut-out (wide side up). The upper edge must be flush with the housing. Fix the cable to the corresponding tab with the cable tie, and then cut off the protruding cable tie. Seal unused cable glands with rubber seal type 3.
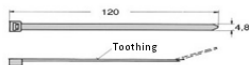
The cable cover is mounted in 3 steps:

1. Place the cable cover at an angle and slide it into the groove provided.

2. Push the cable cover downwards (ensure it doesn't slip out of the groove).

3. Fix with the screws provided.

Power On

Connect a power source to the Rhino II and press and hold the power button for a few seconds to start the device.

To shutdown the device, press and hold the power button for a few seconds. The device will power off according to its current shutdown mode.
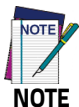
> **NOTE** **The Rhino II has 3 different startup mode settings. Power on may require the presence of the ignition signal. See Startup/Shutdown Modes on page 19 for more details.**

> **NOTE** **To ensure a reliable operation at low temperatures, we recommend to turn on the device when its temperature is over 0°C.**

Desktop Window

As soon as the mobile computer is on, the Android 7.1 desktop appears on the screen. Wait a few seconds before starting any activity, so that the mobile computer completes its startup procedure.
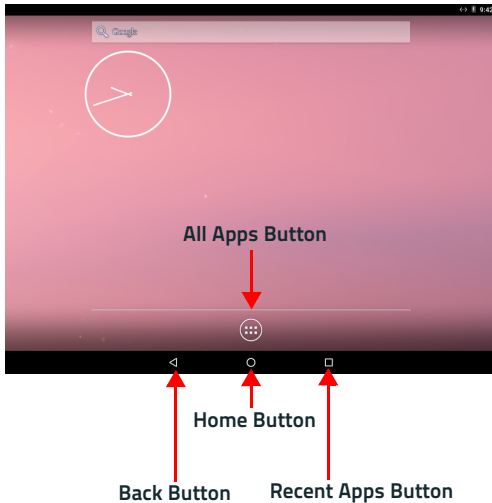
All Apps Window
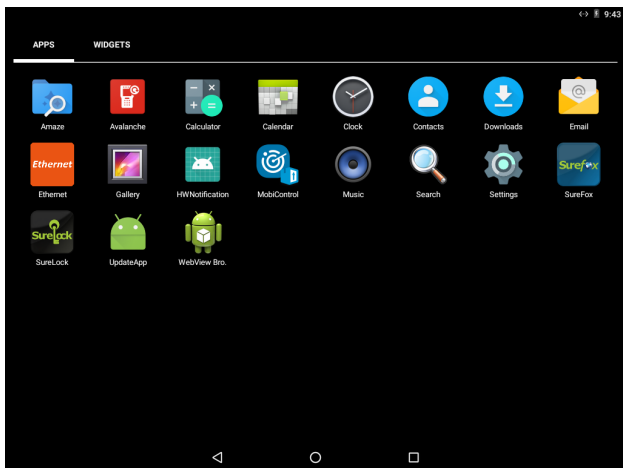
Adjusting the Screen Brightness

To adjust the screen brightness:

- Ensure the Automatic Brightness Control is disabled.
- Press the **+** button to increase the brightness.
- Press the **-** button to decrease the brightness.

Adjusting the Volume

To adjust the volume, press the FN button first

- Press + button to increases the volume. The computer will play the Default Sound at the new volume setting.
- Press the - button to decreases the volume. The computer will play the Default Sound at the new volume setting.

Using the Accessories

Using an External Keyboard

You can use many standard USB compatible keyboards. Datalogic recommends the use of a sealed/ruggedized key-board:

- Sealed/rugged keyboards are available from Datalogic including: full sized QWERTY, ABCD, or mini QWERTY USB keyboards
- The keyboard attaches to one of the two USB ports on the Rhino. It is automatically detected and prepared for use.

For information on installing the rugged keyboard and its mount, see the Rhino II Installation manual.

Using a Barcode Scanner

Your can use either a USB or serial scanner with the Rhino II computer. Be sure to order your scanner with the ap-propriate cable.

Connecting a USB Scanner

1. Remove the cable compartment cover plate.
2. Plug the cable into one of the USB ports. Depending on the scanner you are attaching, you may hear a series of beeps and the Good Read light may flash.
3. Choose a rubber plug for the scanner cable with the appropriate sized hole. Run the cable through the hole, then insert the plug into a slot on the terminal.
4. If desired, use a nylon tie-wrap to secure the cable to the post inside the cable compartment. Replace the cable compartment cover
5. The scanner should now be ready for use. To test, run any program that accepts keyboard input and perform a scan. If the

data does not display in the application, consult the user manual for the scanner.

Connecting a Serial Scanner

COM1 provides 5VDC on pin 9, COM2 provides 12 VDC. Verify which voltage the scanner requires and connect to the appropriate COM port.

1. Remove the cable compartment cover plate.
2. Plug the cable into the desired COM port. Depending on the scanner you are attaching, you may hear a series of beeps and the Good Read light may flash.
3. Choose a rubber plug for the scanner cable with the appropriate sized hole. Run the cable through the hole, then insert the plug into a slot on the terminal.
4. If desired, use a nylon tie-wrap to secure the cable to the post inside the cable compartment. Replace the cable compartment cover
5. Configure the serial wedge program for the selected port and baud rater. The scanner should now be ready for use. To test, run any program that accepts keyboard input and perform a scan. If the data does not display in the application, consult the user manual for the scanner.

Resetting the Terminal

1. Open **Settings** application.
2. Tap **Backup & reset**.
3. Tap **Factory data reset**.
4. Tap **RESET TABLET**.

LED Indicators

LED	Status	Description
Blue	Solid	FN toggled on
Red	Solid	High Temperature Warning
Yellow	Solid	HD Access

Rhino II Configuration

The following features can be configured by the user. To modify the default settings, create a file named UtilConfig.cfg with the new settings and copy it in "/data/datalogic" folder using adb tool. Then restart the device.

When the device is reset the default configuration is restored.

For a detailed description of UtilConfig.cfg file format, refer to Appendix 1 - UtilConfig.cfg File Format on page 39.

For further details on adb tool, refer to Appendix 3 – Adb Tool Usage on page 43.

Startup/Shutdown Modes

The Rhino II has 3 modes of controlling Startup and Shutdown. Each mode controls how the Ignition Sense power connector wire (IGN) and the Rhino II's front panel Power button (PWR) work together.

Mode 1 (default)

In the default mode (mode 1), IGN must be at a voltage greater than 10VDC and PWR must be pressed and held for a specified duration to power up the VMC. To shut down the device, remove the positive voltage from IGN or press and hold the PWR button for a specified duration.

Mode 0

This mode allows IGN or PWR to control the Startup/Shutdown. To power up the VMC, connect IGN to positive voltage or press the PWR

button. To shut down the VMC, disconnect IGN or press the PWR button. In Mode 0 you must use either IGN or PWR to control the VMC. You cannot use both of them.

> **NOTE**
>
> **If the VMC is powered up via IGN, but powered down via PWR, it will immediately begin to power up again.**

Mode 3

This mode is seldom used. The VMC powers up as soon as it is connected to a power source. Both IGN and PWR are ignored.

Power off countdown

When powered down via IGN, the VMC will displays a countdown screen advising the user the remaining time before the device shuts down. The shutdown time is controlled by the configuration file.

Configuration

Key - Section name	Parameter – Info
[Hardware]	
PowerOnMode	Sets the Startup/Shutdown mode. *0 = IGN or PWR.* *1 = IGN and PWR (default).* *3 = AutoOn.*
IgnStartTimeSec	Seconds after IGN goes high before theVMC begins booting. *3 = default.*

Key - Section name	Parameter – Info
IgnOffDelayTimeSec	Seconds after IGN disconnects before the VMC shuts down. *30 = default.*
DelayPowerKey	Minimum time in 10ms units for which power key must be pressed before going active. *0 = default.*

Front Panel Keys

The keys **FN**, **1/3**, **2/4** and **KEY**, on the right side of the device, are programmable. The programming is set by command lines in the "\Utilities\UtilConfig.cfg" file.

1/3 and **2/4** are programmable as two keys each, giving a total of four available keys. When directly pressed, **1/3** and **2/4** keys enable respectively functions **1** and **2**.

After a **FN** key press, the device is set into function mode, the blue function LED lights up and **1/3** and **2/4** keys enable respectively functions **3** and **4**.

To turn off function mode, press **1**, **2** or **FN**.

By default, the keys have the following functions:

- **Power** – Starts and shutdowns the terminal according to the current Startup/Shutdown mode.
- **1** – Up arrow
- **2** – Down arrow
- **3** – Back
- **4** – Return
- **KEY** – Home

Configuration

In [Keyboard] section, for each button there is a a keyword called Frontkey_*XX*, where *XX* is the name of the button.

Each button can be configured to send one ore more keycodes or to launch an application.

Use the following syntax:

Frontkey_XX=#EXT=<virtual keycode>[..<virtual keycode>] to assign keycodes.

Frontkey_XX=<Application path> to launch an application. (S1..S4 only)

The virtual keycodes are listed in Appendix 2 - Virtual Keycodes Reference on page 41.

Example:

```
Frontkey_S1=#EXT=VK_TAB,VK_RETURN
```

would cause the S1 key to transmit TAB followed by RETURN.

```
Frontkey_S1=/Android/Data/Datalogic/Sample
```

will launch the Sample program when the button 1 is pressed.

The PWR button should not be reprogrammed, but this option is available if required. Set PWR to blank to let it execute Startup/Shutdown. Set Plus and Minus buttons to blank to let them respectively increase and decrease backlight brigthness.

These are the default values from the factory:

- Frontkey_PWR=
- Frontkey_S1=#EXT=VK_UP
- Frontkey_S2=#EXT=VK_DOWN
- Frontkey_S3=#EXT=VK_ESCAPE
- Frontkey_S4=#EXT=VK_RETURN
- Frontkey_KEY=#EXT=VK_HOMEPAGE
- Frontkey_FNPlus=
- Frontkey_FNMinus=

Other parameters that control the state of keys are listed below:

Key - Section name	Parameter – Info
[Hardware]	
FNKeyTimeout	Time in 10ms units for which FN key state stays active after pressure. *800 = default.*

Key - Section name	Parameter – Info
HWKeyLockFNOff	Control the state of the keys when function mode is OFF. *0 = default.* *Bit 1 (1): PWR* *Bit 2 (2): BL* *Bit 3 (4): +* *Bit 4 (8): -* *Bit 5 (16): S1* *Bit 6 (32): S2* *Bit 7 (64): FN* *Bit 8 (128): KEY*
HWKeyLockFNOn	Control the state of the keys when function mode is OFF. *0 = default.* Same bitmask as HWKeyLockFNOff.

HWKeyLockFNOff and HWKeyLockFNOn control the state of the keys when the function mode is OFF or ON. Each of the keywords is an 8 bit mask: set the specific bit to 1 to lock the respective key.

Example:

```
HWKeyLockFNOff=34
```

disables the BL (2) and S2 (32) buttons when the function mode is not set.

```
HWKeyLockFNOn=128
```

disables the KEY (128) button when the function mode is set.

> **NOTE**
>
> **Be aware that if you control the PWR button, you can lock the Rhino II. If the startup mode is set to IGN and PWR and you disable the PWR button, this will block the Rhino II from being powered up.**

Screen Blanking

You may need to blank the screen when your vehicle is in motion, a requirement in some countries. You can do it by applying a positive voltage to a designated COM port pin. You must use an external sensor that will either provide a positive voltage or close a relay when the vehicle moves.

If you use a relay, the positive voltage from pin 9 of the selected COM port should be wired as input to the relay. The output from the sensor or relay should be wired to pin 1 (DCD) or pin 6 (DSR) of the selected COM port. The screen blanking cable from Datalogic (p/n 94ACC0157) is wired to pin 9 (pink) and pin 6 (grey).

Configuration

Key - Section name	Parameter – Info
[General]	
ScreenBlankBits	Setting the bit to 0 will disable screen blanking on the corresponding pin. *15 = default.* *Bit 1 (1): COM1:DCD* *Bit 2 (2): COM1:DSR* *Bit 3 (4): COM2:DCD* *Bit 4 (8): COM2:DSR*

Automatic Brightness Control

The light sensor allows to automatically adjust the backlight brightness. The sensitivity of the sensor, the delay before it reacts and the brightness levels are configurable by the parameters listed below.

NOTE

You cannot use + and - keys to adjust brightness if automatic brightness control is enabled.

Key - Section name	Parameter – Info
[Hardware]	
BLStartValue	Brightness level of backlight at power on. *255 = default.* *Range 0..255*
BrightCtrlAuto	Enable/Disable automatic backlight brightness. *0 = Manual brightness control by + and – buttons (default).* *1 = Automatic brightness control by light sensor.* Below parameters are effective only if automatic brightness is 1.
BrightCtrlDelay	Time in 100ms before the brightness changes after the light has changed. *0 = default.* *0..20 = 0..2s*
BrightCtrlSensorDark	Maximum light level to switch from bright to dark. *8 = default.* *Range 0..255*

Key - Section name	Parameter – Info
BrightCtrlSensorBright	Minimum light level to switch from dark to bright. *200 = default.* *Range 0..255*
BrightCtrlBLDark	Brightness level when the backlight is switched to dark. *12 = default.* *Range 0..255*
BrightCtrlBLBright	Brightness level when the backlight is switched to bright. *255 = default.* *Range 0..255*

Temperature Sensor

Rhino II has a temperature sensor that can be enabled to switch off the VMC when the temperature exceeds the configured range. Use the parameters listed below.

Key - Section name	Parameter – Info
[Hardware]	
TempReadSec	Read cycle in seconds for temperature (T) logging when the configured range is exceeded. T is logged when: T < TempLimitMin or T > TempLimitMax *60 = default.* *0 = disable.*
TempLimitMin	See above. *-30 = default.*
TempLimitMax	See above. *70 = default.*

Upgrading the Rhino II Android Firmware

When you upgrade the Rhino II firmware, you update the operating system (OS), the drivers and the included Applications.

You have two options:

- Local upgrade.
- Upgrade with adb tool (see Appendix 3 – Adb Tool Usage on page 43).

In both cases, you need to download the upgrade OTA package from the Datalogic website.

Local Upgrade

1. Make the OTA package accessible to the Rhino II. You have two options:
   a. Copy the OTA package in an SD card and then insert the Sd card in the Rhino II SD card slot.
   b. Copy the OTA package in a USB flash drive and then plug the USB flash drive into one of the Rhino II USB ports.
2. Open the UpdateApp application.
3. Select the OTA package you want to install.
4. Tap **INSTALL UPDATE**.
5. A window is displayed asking if you want to continue. Tap:
   a. **YES** to continue.
   b. **NO** to cancel.
6. Wait for some minutes. During the upgrade, information will be displayed showing the current status of the process.

Remove the top cover to access the SD card reader slot.

During the update, if the UPS Battery Board is installed, ensure that the battery level is at least 20%.

Applications

Avalanche

Ivanti Wavelink Avalanche™ enables rapid deployment and central management of Rhino II installations, providing an easy way to implement and maintain a complete device management solution.

Follow the instructions on the screen to register your device.

SureLock

With 42Gears SureLock you can secure and lock the Rhino II to ensure its responsible usage, improve productivity and reduce maintenance cost.

It allows access to only required applications and prevents the users from making any intended or unintended changes in the device. Only administrators can access the password protected settings to either modify lockdown configurations or exit the lockdown.

A Datalogic Standard version of SureLock is preloaded on the Rhino II. You have the option to upgrade to the Advanced version by contacting 42Gears: http://www.42gears.com/contact.html.

Refer to
https://www.42gears.com/products/surelock/surelock-android
for further details on SureLock.

SureFox

Businesses require use of browsers to run web applications on devices with Android and there may be situations when controlled web access for the users is required to ensure appropriate use of the devices.

SureFox creates locked browsing environment in your devices with Android making them apt for deployments as public web kiosks or as field devices for your mobile workforce. You can specify the websites that you wish to allow. SureFox will then block all other websites and allow the users to browse the allowed websites in locked down kiosk mode.

A Datalogic Standard version of SureFox is preloaded on the Rhino II. You have the option to upgrade to the Advanced version by contacting 42Gears: http://www.42gears.com/contact.html.

Refer to https://www.42gears.com/products/surefox-secure-browser/surefox-android for further details on SureFox.

MobiControl

SOTI MobiControl is an enterprise mobility management solution that secures and manages the Rhino II throughout its entire lifecycle, from deployment to retirement. It controls all aspects of business mobility — tracking physical assets, managing applications and content, as well as keeping the device and the data safe and secure.

For further details, refer to the SOTI website: https://www.soti.net/products/mobicontrol.

Communications

Setting Up Ethernet Communications

Ethernet communications usually do not require special configuration. The Rhino II default settings are configured to use DHCP to automatically get an IP address from a DHCP server.

To use a Static configuration:

1. Open the **Ethernet** application.

2. Tap **Configure Ethernet**.

3. Select **Static IP**.

4. Set your network parameters: **IP address**, **DNS address**, **Netmask** and **Gateway address**.
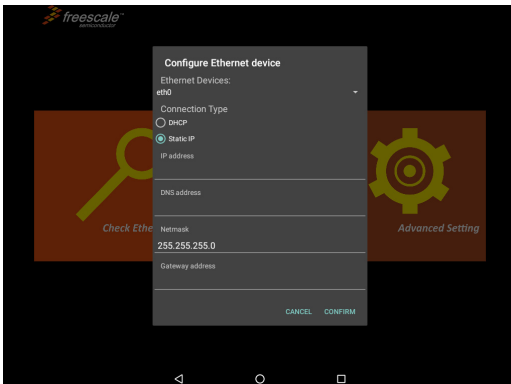
Check Ethernet Communications

1. Open the **Ethernet** application.
2. Tap **Check Ethernet**.

Connection information will be displayed on the top right corner of the screen.

Setting Up 802.11 Radio Communications

The Rhino II has an internal 802.11 a/b/g/n 2x2 MIMO radio module.

1. Open **Settings**.
2. Tap **Wi-Fi**.
3. Turn on the Wi-Fi toggle.
4. Tap a listed network. If it needs a password, you'll see the Lock symbol. After you connect:
   - **Connected** is showed under the network name.
   - The network is **Saved**. When your device is near and Wi-Fi is on, your device automatically connects.

For advanced Wi-Fi settings (Proxy, Wi-Fi Direct, Static IP, certificates, etc.) see the Google Android Support pages.

Setting Up Bluetooth Radio Communications

The Rhino II has an on board Bluetooth module compatible with Bluetooth 4.0 specification.

Turn Bluetooth on:

1. Open **Settings**.
2. Tap **Bluetooth**.
3. Turn on the Bluetooth toggle.

Before you can connect to a Bluetooth accessory, you must pair it:

1. Tap the name of the Bluetooth device you want to pair with your device.
2. Follow the on-screen steps. If needed, insert a passcode.

After pairing, your devices can connect with each other automatically.
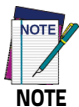
While the Bluetooth settings are open, nearby devices can see your device.

Connecting Android Debug Bridge (ADB)

Refer to Appendix 3 – Adb Tool Usage on page 43.

Wireless and Radio Frequencies Warnings

WARNING

Use only the supplied or an approved replacement antenna. Unauthorized antennas, modifications or attachments could damage the product and may violate laws and regulations.

Most modern electronic equipment is shielded from RF signals. However, certain electronic equipment may not be shielded against the RF signals generated by Rhino II.

Datalogic recommends persons with pacemakers or other medical devices to follow the same recommendations provided by Health Industry Manufacturers Associations for mobile phones.

Persons with pacemakers:

- **Should ALWAYS keep this device more than twenty five (25) cm from their pacemaker and/or any other medical device;**

- **Should not carry this device in a breast pocket;**

- **Should keep the device at the opposite side of the pacemaker and/or any other medical device;**

- **Should turn this device OFF or move it immediately AWAY if there is any reason to suspect that interference is taking place.**

- **Should ALWAYS read pacemaker or any other medical device guides or should consult the manufacturer of the medical device to determine if it is adequately shielded from external RF energy.**

WARNING

In case of doubt concerning the use of wireless devices with an implanted medical device, contact your doctor.

Turn this device OFF in health care facilities when any regulations posted in these areas instruct you to do so. Hospitals or health care facilities may use equipment that could be sensitive to external RF energy.

RF signals may affect improperly installed or inadequately shielded electronic systems in motor vehicles. Check with the manufacturer or its representative regarding your vehicle. You should also consult the manufacturer of any equipment that has been added to your vehicle.

An air bag inflates with great force. DO NOT place objects, including either installed or portable wireless equipment, in the area over the air bag or in the air bag deployment area. If a vehicle's wireless equipment is improperly installed and the air bag inflates, serious injury could result.

Turn off the device when in any area with a potentially explosive atmosphere. Observe restrictions and follow closely any laws, regulations, warnings and best practices on the use of radio equipment near fuel storage areas or fuel distribution areas, chemical plants or where any operation involves use of explosive materials.

Do not store or carry flammable liquids, explosive gases or materials with the device or its parts or accessories.

Areas with a potentially explosive atmosphere are often, but not always, clearly marked or shown.

Sparks in such areas could cause an explosion or fire, resulting in injury or even death.

WARNING

Appendix 1 - UtilConfig.cfg File Format

Keywords (Properties)

The basic element contained in the CFG file is the keyword or property. Each keyword has a name and a value, delimited by an equals sign (=). The name appears to the left of the equals sign. The key cannot contain the characters equal sign (=) or the semi colon (;), as these are reserved characters. The value can contain any character.

```
name=value
```

Sections

Keywords may (but don't have to) be grouped into arbitrarily named sections. The section name appears on a line by itself, in square brackets ([and]). All keywords after the section declaration are associated with that section. There is no explicit end of section delimiter; sections end at the next section declaration, or at the end of the file. Sections may not be nested. The section cannot contain the character closing bracket (]).

```
[section]
a=a
b=b
```

Comments

Semicolons (;) at the beginning of the line indicate a comment. Comment lines are ignored.

```
; comment text
```
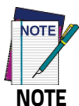

Section and property names are not case sensitive.

Appendix 2 – Virtual Keycodes Reference

VK_RETURN	VK_F1
VK_ESCAPE	VK_F2
VK_BACK	VK_F3
VK_DELETE	VK_F4
VK_TAB	VK_F5
VK_SPACE	VK_F6
	VK_F7
VK_INSERT	VK_F8
VK_CAPITAL	VK_F9
VK_LCONTROL	VK_F10
VK_RCONTROL	VK_F11
VK_LSHIFT	VK_F12
VK_RSHIFT	
	VK_LMENU
VK_UP	VK_HOMEPAGE
VK_DOWN	VK_POWER
VK_LEFT	VK_VOLUME_UP
VK_RIGHT	VK_VOLUME_DOWN
VK_HOME	
VK_END	
VK_PRIOR	
VK_NEXT	

NOTES

Appendix 3 – Adb Tool Usage

Android Debug Bridge (adb) is a versatile command-line tool that lets you communicate with the device. The adb command facilitates a variety of device actions, such as installing and debugging applications, and it provides access to a Unix shell that you can use to run a variety of commands on a device.

To use adb with Rhino II device, follow these steps:

1. Install adb tool on your PC:
   - Download and install SDK Platform Tools:
     https://developer.android.com/studio/releases/platform-tools.html.

2. Enable **Developer options** and **Debugging**:
   - Open **Settings**.
   - Scroll to the bottom and select **About tablet**.
   - Scroll to the bottom and tap **Build number** 7 times.

3. Connect the device to the local network via Wi-Fi or via Ethernet.

4. Get the device IP address from Android:
   - Open **Settings**.
   - Scroll to the bottom and select **About tablet**.
   - Tap **Status**.

5. Type the following command on your PC:
   ```
   adb connect [device IP]:5555
   ```

6. From Rhino II device (only on first connection):
   - accept the RSA key that allows debugging through your PC.

7. Type:

   ```
   adb devices
   ```

The Rhino IP address is displayed.

8. From now on, you can use adb commands from your PC as described in Android documentation for app developers https://developer.android.com/docs.

For more information, refer to the Android adb tool documentation: https://developer.android.com/studio/command-line/adb.

Technical Features

Technical Data

Physical Characteristics	
Construction	Coated aluminum, no fan design
Dimensions	10 inch: 27.8 x 22.3 x 6.4 cm / 10.9 x 8.8 x 2.5 in 12 inch: 32.4 x 25.1 x 7.1 cm / 12.7 x 9.9 x 2.8 in
Weight	3.4 Kg / 7.5 lb (10 inch Freezer Models) 3.6 Kg / 7.9 lb (10 inch Standard Models) 4.7 Kg / 10.4 lb (12 inch Standard Models)
Display	Resistive/Freezer Model: 10.4 inch SVGA 800x600, 400 NITS; Capacitive/Standard Models: 10.4 inch XGA 1024 x 768, 350 NITS 12.1 inch XGA, 1024 x 768, 500 NITS
Function Buttons	4 programmable keys (S1-S4)
Mounting	VESA: 75 mm pattern
Screen Blanking	Optional
Speakers	Optional: downward facing, waterproof
Touchscreen	Resistive, 4 Wire (Freezer model only); Capacitive (all OS); 3 mm, non-reflecting, hardened glass; Gloves support

Environmental	
Humidity	10 to 90% at 40 °C / 104 °F; non-condensing
Temperature	Operating: -20 to 55 °C / -4 to 131 °F (without heater, Capacitive models); -30 to 55 °C / -22 to 131 °F (with heater, minimal condensation using freezer-rated model - 10" only)
Shock & Vibration	Class 5M3 at EN 60721-3-5: 1998 (landcrafts)
Particulate and Water Sealing	IP65/IP67
Electrical	
Backup Battery	Optional backup battery for up to 30 min. runtime; 2,500 mAh @ 10.8 VDC; 27 Wh; Battery charging: 0 to 50 °C / 32 to 122 °F Battery operating: -20 to 50 °C / -4 to 122 °F
Power supply	Choice of 12 VDC; 12/48 VDC isolated internal power supplies
Light Indicators	On front bezel
Wireless Communications	
Local Area Network (WLAN)	Wi-Fi: 802.11a/b/g/n (2.4 GHz and 5 GHz); Cisco CCX v4; Wired Ethernet: 1 x GbE, RJ-45 (bottom)
Personal Area Network (WPAN)	Bluetooth® Wireless Technology 4.0
Antennas	Diversity antennas under top cap; Optional cab mount antenna

Interfaces	
Interfaces	1 x Ethernet 10/100/1000 Mbps; RJ45; USB: 2 x USB 2.0 Type A (bottom) 1 x USB 2.0 Type A (top) Serial: 2 x RS-232 (bottom); COM1: 5 V on pin 9; COM2: 5/12 V on pin 9
Interface Slots	1x Mini-PCIe, half or full size slot (full size used for Wi-Fi)

System	
Operating System	Android 7.1 Nougat
Processor	Freescale NXP ARM Quad Core: 1 GHz
Memory	2 GB RAM
Storage	8 GB eMMc

Software	
Configuration & Maintenance	SureLock and SureFox pre-licensed; SOTI MobiControl, Wavelink Avalanche agents available
Terminal Emulation	Wavelink Velocity TE and StayLinked Smart TE clients available
Soft Keyboards	Includes QWERTY layouts for English, German, Italian, Spanish, Polish; Azerty French layout; Function Key layout (F1-F12)

Safety & Regulatory	
Agency Approvals	The product meets necessary safety and regulatory approvals for its intended use.
Certifications	Certified for CE/FCC; RoHS compliant

Warranty	
Warranty	1-Year Factory Warranty.

NOTES

Troubleshooting the Rhino II

If you send the Rhino II in for service, it is your responsibility to save the computer data and configuration. Datalogic is responsible only for ensuring that the hardware matches the original configuration when repairing or replacing the computer.

Problems While Operating the Rhino II

Problem	Solution
You press **Power** and nothing happens	• *Make sure you are connected to a power supply.* • *Make sure the brightness is not set all the way to the darkest or lightest setting. Press the + key until you reach the desired brightness level.* • *Make sure you are pressing the Power button for at least the minimum duration set in the configuration (default 3 seconds).* • *If the Rhino II will not reboot, contact Datalogic or your local Datalogic service representative for help.*

Problem	Solution
The Rhino II appears to be locked up and you cannot enter data.	• Press and hold Power to turn off the Rhino II and then turn it back on. • If the Rhino II will not reboot, contact Datalogic or your local Datalogic service representative for help.

Problems with Wireless Connectivity

Problem	Solution
When you turn on the Rhino II after it was suspended for a while (10 to 15 minutes or longer) and it no longer sends or receives messages over the network.	*The host may have deactivated or lost your current terminal emulation session. In a TCP/IP direct connect network, you need to turn off the "Keep Alive" message (if possible) from the host so that the TCP session is maintained while a Rhino II is suspended.*
The network connection icon in the taskbar appears to be communicating, but the host computer is not receiving any data from the Rhino II.	In a TCP/IP network, there may be a problem with the connection between the access point and the host computer. Check with your network administrator or use your access point user's manual.

Problem	Solution
The Rhino II is not communicating with the access point.	• The Rhino II is not connected to the access point. Make sure the access point is turned on and operating. You may also be using the Rhino II out of range of an access point (no green bars). Try moving closer to an access point to reestablish communications. • Make sure the Rhino II is configured correctly for your network. The radio parameters on the Rhino II must match the values set for all access points the Rhino II may communicate with. • The radio initialization process may have failed on the 802.11 radio. Try rebooting the Rhino II. • If you have tried these possible solutions and nothing happens, you may have a defective radio card. For help, contact Datalogic or your local Datalogic service representative.

NOTES

Maintenance

Cleaning the Device

Periodically clean the Rhino II device using a soft cloth slightly dampened with only water or Isopropyl Alcohol (70%). Do not use any other cleaning agents (e.g. different alcohol, abrasive or corrosive products, solvents) or abrasive pads to clean the device.

If the plastic areas are very dirty use only a cloth dampened with water.

Ergonomic Recommendations

In order to avoid or minimize the potential risk of ergonomic injury follow the recommendations below. Consult with your local Health & Safety Manager to ensure that you are adhering to your company's safety programs to prevent employee injury.

CAUTION

- Reduce or eliminate repetitive motion
- Maintain a natural position
- Reduce or eliminate excessive force
- Keep objects that are used frequently within easy reach
- Perform tasks at correct heights
- Reduce or eliminate vibration

- Reduce or eliminate direct pressure
- Provide adjustable workstations
- Provide adequate clearance
- Provide a suitable working environment
- Improve work procedures.

Safety and Regulatory Information

NOTE
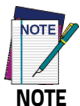
Read this manual carefully before performing any type of connection to the Rhino II.

The user is responsible for any damage caused by incorrect use of the equipment or by inobservance of the indication supplied in this manual.

General Safety Rules

- Before using the device and the battery pack, read carefully the Safety and Regulatory Addendum.

- Use only the components and accessories supplied by the manufacturer for the specific Rhino II being used.

- Do not attempt to disassemble the Rhino II, as it does not contain parts that can be repaired by the user. Any tampering will invalidate the warranty.

- When replacing the battery pack or at the end of the operative life of the Rhino II, disposal must be performed in compliance with the laws in force in your jurisdiction.

- Do not submerge the Rhino II in liquid products.

- For further information or support, refer to this manual and to the Datalogic web site: www.datalogic.com.

Power Supply

The device is intended to be supplied by an external DC power appropriate to the installed power supply (12-24VDC or 24-48VDC)

and/or by UL Listed/CSA Certified Power Unit LPS/SELV power source which supplies power directly to the unit via the attached power connector.

Any changes or modifications to equipment, not expressly approved by Datalogic could void the user's authority to operate the equipment.

Marking and European Economic Area (EEA) $C \in$

In radio systems configured with mobile computers and access points, the frequencies to be used must be allowed by the spectrum authorities of the specific country in which the installation takes place. Be absolutely sure that the system frequencies are correctly set to be compliant with the spectrum requirements of the country.

The Radio modules used in this product automatically adapt to the frequencies set by the system and do not require any parameter settings.

Simplified EU Declaration of Conformity

Hereby, Datalogic S.r.l. declares that the radio equipment type Rhino II is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.datalogic.com.

Statement of Compliance

cs Česky [Czech]	Datalogic S.r.l. tímto prohlašuje, že tento Rhino II je ve shode se základními požadavky a dalšími příslušnými ustanoveními směrnice 2014/53/EU - 2011/65/EU.
da Dansk [Danish]	Undertegnede Datalogic S.r.l. erklærer herved, at følgende udstyr Rhino II overholder de væsentlige krav og øvrige relevante krav i direktiv 2014/53/EU - 2011/65/EU.
de Deutsch [German]	Hiermit erklärt Datalogic S.r.l., dass sich das Gerät Rhino II in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 2014/53/EU - 2011/65/EU befindet.

et Eesti [Estonian]	Käesolevaga kinnitab Datalogic S.r.l. seadme Rhino II vastavust direktiivi 2014/53/EU - 2011/65/EU põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
es Español [Spanish]	Por medio de la presente Datalogic S.r.l. declara que el Rhino II cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 2014/53/EU - 2011/65/EU.
el Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Datalogic S.r.l. ΔΗΛΩΝΕΙ ΟΤΙ Rhino II ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 2014/53/EU - 2011/65/EU.
fr Français [French]	Par la présente Datalogic S.r.l. déclare que l'appareil Rhino II est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 2014/53/EU - 2011/65/EU.
it Italiano [Italian]	Con la presente Datalogic S.r.l. dichiara che questo Rhino II è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 2014/53/EU - 2011/65/EU.
Latviski [Latvian]	Ar šo Datalogic S.r.l. deklarē, ka Rhino II atbilst Direktivas 2014/53/EU - 2011/65/EU būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo Datalogic S.r.l. deklaruoja, kad šis Rhino II atitinka esminius reikalavimus ir kitas 2014/53/EU - 2011/65/EU Direktyvos nuostatas.
nl Nederlands [Dutch]	Hierbij verklaart Datalogic S.r.l. dat het toestel Rhino II in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 2014/53/EU - 2011/65/EU.
mt Malti [Maltese]	Hawnhekk, Datalogic S.r.l., jiddikjara li dan Rhino II jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 2014/53/EU - 2011/65/EU.
hu Magyar [Hungarian]	Alulírott, Datalogic S.r.l. nyilatkozom, hogy a Rhino II megfelel a vonatkozó alapvető követelményeknek és az 2014/53/EU - 2011/65/EU irányelv egyéb előírásainak.
pl Polski [Polish]	Niniejszym Datalogic S.r.l. oświadcza, że Rhino II jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 2014/53/EU - 2011/65/EU.

pt Português [Portuguese]	Datalogic S.r.l. declara que este Rhino II está conforme com os requisitos essenciais e outras disposições da Directiva 2014/53/EU - 2011/65/EU.
sl Slovensko [Slovenian]	Datalogic S.r.l. izjavlja, da je ta Rhino II v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 2014/53/EU - 2011/65/EU.
Slovensky [Slovak]	Datalogic S.r.l. týmto vyhlasuje, že Rhino II spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 2014/53/EU - 2011/65/EU.
fi Suomi [Finnish]	Datalogic S.r.l. vakuuttaa täten että Rhino II tyyppinen laite on direktiivin 2014/53/EU - 2011/65/EU oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
sv Svenska [Swedish]	Härmed intygar Datalogic S.r.l. att denna Rhino II står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 2014/53/EU - 2011/65/EU.

Information for the User

Restrictions of use in all EU Countries. This device is restricted to indoor use when operated in the 5.15 to 5.25 GHz frequency range.

FCC ID/IC Warning

FCC Label Compliance Statement:

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.

To assure continued FCC compliance:

1. Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

This device complies with Industry Canada license-exempt RSS standard(s). 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.

Cet appareil radio est conforme au CNR d'Industrie Canada. L'utilisation de ce dispositif est autorisée seulement aux deux conditions suivantes: (1) il ne doit pas produire de brouillage, et (2) l'utilisateur du dispositif doit être prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

Exposure to Radio Frequency Radiation

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

Europe

This device is used at a distance greater than 20 cm from body.

Radio Technologies and Frequency Bands

Rhino II incorporates the following radio technologies and supports the corresponding Frequencies and Radio-Frequency transmitted power, as specified below:

	RF Module	Frequency Bands	Max Transmission Power
1	BT/SRD	2400 - 2479 MHz	10mW
2	WLAN	2412 - 2472 MHz	100mW
3	WLAN	5150 - 5350 MHz	200mW
4	WLAN	5470 - 5725 MHz	200mW

WEEE Compliance

Information for the user

At the end of its useful life, the product marked with the crossed out wheeled wastebin must be disposed of separately from urban waste.

For more detailed information about disposal, contact the supplier that provided you with the product in question or consult the dedicated section at the website http://www.datalogic.com.

Informazione per gli utenti

L'apparecchiatura che riporta il simbolo del bidone barrato deve essere smaltita, alla fine della sua vita utile, separatamente dai rifiuti urbani.

Per maggiori dettagli sulle modalità di smaltimento, contattare il Fornitore dal quale è stata acquistata l'apparecchiatura o consultare la sezione dedicata sul sito http://www.datalogic.com.

Information aux utilisateurs

Au terme de sa vie utile, le produit qui porte le symbole d'un caisson à ordures barré ne doit pas être éliminé avec les déchets urbains.

Pour obtenir des informations complémentaires concernant l'élimination, veuillez contacter le fournisseur auprès duquel vous avez acheté le produit ou consulter la section consacrée au site Web http://www.datalogic.com.

Información para el usuario

Al final de su vida útil, el producto marcado con un simbolo de contenedor de bassura móvil tachado no debe eliminarse junto a los desechos urbanos.

Para obtener una información más detallada sobre la eliminación, por favor, póngase en contacto con el proveedor donde lo compró o consultar la sección dedicada en el Web site http://www.datalogic.com.

Benutzerinformation bezüglich

Am Ende des Gerätelebenszyklus darf das Produkt nicht über den städtischen Hausmüll entsorgt werden. Eine entsprechende Mülltrennung ist erforderlich.

Weitere Informationen zu dieser Richtlinie erhalten sie von ihrem Lieferanten über den sie das Produkt erworben haben, oder besuchen sie unsere Hompage unter http://www.datalogic.com.

Support Through the Website

Datalogic provides several services as well as technical support through its website. Log on to www.datalogic.com.

For quick access, from the home page click on the search icon 🔍 , and type in the name of the product you're looking for. This allows you access to download Data Sheets, Manuals, Software & Utilities, and Drawings.

Hover over the Support & Service menu for access to Services and Technical Support.

Reference Documentation

For further information regarding Rhino II refer to the SDK Help on-line, downloadable from our developer portal: https://developer.datalogic.com/mobile-computers.

Warranty Terms and Conditions

The warranty period is 1 year for the device and 90 days for consumables (e.g. battery, power supply, cable etc.) from date of purchase at our company.

NOTES

Glossary

Access Point

A device that provides transparent access between Ethernet wired networks and IEEE 802.11 interoperable radio-equipped mobile units. Hand-held mobile computers, PDAs or other devices equipped with radio cards, communicate with wired networks using Access Points (AP). The mobile unit (mobile computer) may roam among the APs in the same subnet while maintaining a continuous, seamless connection to the wired network.

ASCII

American Standard Code for Information Interchange. A 7 bit-plus-parity code representing 128 letters, numerals, punctuation marks and control characters. It is a standard data transmission code in the U.S.

Barcode

A pattern of variable-width bars and spaces which represents numeric or alphanumeric data in binary form. The general format of a barcode symbol consists of a leading margin, start character, data or message character, check character (if any), stop character, and trailing margin. Within this framework, each recognizable symbology uses its own unique format.

Bit

Binary digit. One bit is the basic unit of binary information. Generally, eight consecutive bits compose one byte of data. The pattern of 0 and 1 values within the byte determines its meaning.

Bluetooth®

A standard radio technology using a proprietary protocol. The onboard Bluetooth® module in the device is compatible with the 2.1 protocol with Enhanced Data Rate (EDR).

Boot

The process a computer goes through when it starts. During boot, the computer can run self-diagnostic tests and configure hardware and software.

Character

A pattern of bars and spaces which either directly represents data or indicates a control function, such as a number, letter, punctuation mark, or communications control contained in a message.

Density (Barcode Density)

The number of characters represented per unit of measurement (e.g., characters per inch).

Dock

A dock is used for charging the terminal battery and for communicating with a host computer, and provides a storage place for the terminal when not in use.

Firmware

A software program or set of instructions programmed on a hardware device. It provides the necessary instructions for how the device communicates with the other computer hardware. Firmware

is typically stored in the flash ROM of a hardware device. While ROM is "read-only memory," flash ROM can be erased and rewritten because it is actually a type of flash memory.

Flash Memory

Non-volatile memory for storing application and configuration files.

Host

A computer that serves other mobile computers in a network, providing services such as network control, database access, special programs, supervisory programs, or programming languages.

Laser

Light Amplification by Stimulated Emission of Radiation.The laser is an intense light source. Light from a laser is all the same frequency, unlike the output of an incandescent bulb. Laser light is typically coherent and has a high energy density.

Light Emitting Diode (LED)

A low power electronic light source commonly used as an indicator light. It uses less power than an incandescent light bulb but more than a Liquid Crystal Display (LCD).

Parameter

A variable that can have different values assigned to it.

RAM

Random Access memory. Data in RAM can be accessed in random order, and quickly written and read.

RF

Radio Frequency.

Scanner

An electronic device used to scan barcode symbols and produce a digitized pattern that corresponds to the bars and spaces of the symbol. Its three main components are:

- Light source (laser or photoelectric cell) - illuminates a barcode.
- Photodetector - registers the difference in reflected light (more light reflected from spaces).
- Signal conditioning circuit - transforms optical detector output into a digitized bar pattern.

SDK

Software Development Kit.

Symbology

The structural rules and conventions for representing data within a particular barcode type (e.g. UPC/EAN, Code 39, PDF417, etc.).

USB

Universal Serial Bus. Type of serial bus that allows peripheral devices (disks, modems, printers, digitizers, data gloves, etc.) to be easily connected to a computer. A "plug-and-play" interface, it allows a device to be added without an adapter card and without rebooting the computer (the latter is known as hot-plugging). The USB standard, developed by several major computer and telecommunications companies, supports data-transfer speeds up to 12 megabits per second, multiple data streams, and up to 127 peripherals.

WLAN

A Wireless Local Area Network links devices via a wireless distribution method (typically spread-spectrum or OFDM radio), and usually provides a connection through an access point to the wider

internet. This gives users the mobility to move around within a local coverage area and still be connected to the network.

WPAN

A Wireless Personal Area Network is a personal area network - a network for interconnecting devices centered around an individual person's workspace - in which the connections are wireless. Typically, a wireless personal area network uses some technology that permits communication within about 10 meters - in other words, a very short range.

DATALOGIC

www.datalogic.com

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