

realwear[®]

NAVIGATOR 500

User Guide



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RealWear Navigator 500



The RealWear Navigator™ is the world's first hands-free Android™ tablet class wearable computer for industrial workers. The RealWear Navigator™ provides the foundation for Connected Worker programs.

Use it in wet, dusty, hot, dangerous, and loud industrial environments.

A fully rugged head-mounted device, it optionally snaps into safety helmets or attaches to bump caps and can be used with safety glasses or corrective eyewear.

The high-resolution micro display fits just below your line of sight and views like a 7" tablet. It's an industrial dashboard: there when you need it and out of your way when you don't.

The Navigator works with powerful software applications from our solution partners in four core categories, each optimized for completely hands-free voice control. That means no scrolling, swiping, or tapping - just simple voice commands.

Use it for remote collaboration in real-time, acceptance testing, remote commissioning, auditing, document navigation, digital workflow, visual assist, on-demand training, and data visualization.

Navigator Features



100% Hands free

Voice based operating system with local speech recognition in loud areas.



Powerful Audio

Integrated speaker and 3.5mm audio jack for use with hearing protection.



Unmatched Noise Cancellation

Navigator uses four microphones and advanced algorithms to perform noise cancellation prior to voice recognition.



PPE Compatible

Designed to work with standard hard helmets, bump caps and safety glasses.



Full-Shift Internal Battery

Field swappable for continuous use.



Outdoor Display

Viewable in bright sunlight.



Shock Resistant

Resistant to 2-meter drops onto concrete from any angle.



Built Rugged

Fully operational from -20° C to +50° C.

Navigator Product Specifications

Core Platform & Functions

2.0 GHz 8-core Qualcomm® Snapdragon™ 662 with Adreno 610 GPU - OpenGL ES 3.2 & OpenCL 2.0

Included Applications

Document Navigator, Camera with Barcode Reader, Video Recorder, Media Player, Calculator, Pedometer, Timer

Languages Supported

Dutch, Chinese (Cantonese), Chinese (Mandarin), Chinese (Traditional), Czech, English, French, German, Italian, Indonesian, Japanese, Korean, Polish, Portuguese, Russian, Spanish, Thai

Memory

64 GB Internal Storage / 4 GB RAM / MicroSD slot (max card supported 512 GB)

Operating System

Android 11 (AOSP) + WearHF™ hands-free interface

Connectivity & Sensors

Bluetooth

Bluetooth 5.1 Low Energy

Wi-Fi

802.11 a/b/g/n/ac – 2.4GHz and 5GHz

GPS and Location

GPS, GLONASS, A-GPS, BeiDou, Galileo, QZSS, SBAS. NavIC support. Dual-frequency GNSS (L1 + L5). Qualcomm® Sensor-Adjusted Positioning

IMU

6-DOF (3-axis accelerometer, magnetometer, and gyroscope), software enhanced stabilization

Battery

Capacity

2600 mAh/10.0 wH Li-Ion, rechargeable and field swappable

Battery Life

Full shift (9-10 hours) with typical use

Physical Characteristics

Weight

9.28 oz/263g

Ruggedization

MIL-STD-810H, 2-meter drop test

Dedicated Keys

Power key, application-specific Action key, volume up/down

Ports

3.5mm audio, 1 USB Type-C

Boom Arm

Adjust six ways for all head sizes, left or right eye compatible, display flips out of the way when not in use

Display

Type

20° field-of-view, 1-meter fixed focus 24-bit color LCD, 0.33 inch diagonal, outdoor visible

Resolution

WVGA (854x480)

Audio

Microphone

4 digital microphones with active noise cancellation
Accurate voice recognition even in 95 dBA of typical industrial noise

Speaker

Internal 91 dB loudspeaker

Multimedia

Camera

48 MP camera with pixel binning, low light performance down to 5 Lux with up to 2x zoom

Video

Up to 1080p @30fps with 5x zoom. Codecs: VP8, VP9 and hardware encoding support for H.264, H.265 HEVC

Accessories

Included

RealWear Navigator 500™, USB Type-C Charging Cable, Workband, Removable Battery, Quick Start Cards

Optional

Spare Battery, 6 Battery Multi-Charger, Hard Hat
Clips, Bump Cap and Tri-Band Strap, Ear Bud
Hearing Protection Headphone rated at 33dB noise

reduction rating (NRR), Soft Pouch Carrying Case,
Semi-Rigid Carrying Case, Hard Hat, Baseball Cap
with Navigator clips, Micro SD card

RealWear Navigator™ 500 Software Brief

Navigator software is optimized for safe and secure jobs, taking hands-free to new heights of productivity and connectivity.

Android Enterprise Support

All Navigator devices can be managed by either RealWear Foresight or by an EMM (Enterprise Mobility Management) system. Android Enterprise standards allow for device management of the Navigator by most EMM providers – please see <http://www.realwear.com/support> for information on currently supported EMM providers or contact your provider directly. Enrolling your device is easy: simply use the Configuration app on the Navigator to scan the QR code generated by your EMM system.

Core Functions	
Operating System	Android 11 AOSP (Android Open Source Project)
Usability	
Optimized UI	Head movements and voice commands utilized for intuitive hands-free control Easy access to core Android capabilities such as Notifications and device settings Display automatically orients for left or right eye dominance
Keyboard	Fully hands-free keyboard with gestures and voice including: • Standard keyboard • Secure Entry mode enables hands-free password entry without compromising security • Full dictation for improved productivity • ABC Mode keyboard entry
My Controls	Commonly used controls accessible from any activity
My Files	Browse and sort through files using clear, simple navigation Read full filenames Large thumbnails Delete files
Document Viewer	Access PDF files easily with full zoom and pagination controls Create and use your own bookmarks for quick reference
Media Player	Native playback support for audio and video files built into My Files
Security	
Android 11 Security	Security patch level – October 2021 RealWear Release 1 Compliance with current enterprise IT security policies API Level 29 support for developers
Screen Lock	Option to secure your device with a custom PIN or fingerprint scan, required at device wake and power on
Customization and Configuration	

Centralized WearHF configuration	OS level and App level customization and configuration. Default values and preferences can be stored in a common configuration space and updated, refreshed, or managed for easier deployment and support
Cloud Services	Fully manageable by RealWear Foresight Cloud or select EMM providers
Language	Software support and voice recognition for 17 languages Dynamic and individual language strings can be adjusted or improved by administrators or by over the air (OTA) updates

Most Advanced Camera System for Harsh Environments	
Hands-free for industry	Command and control all features while keeping your hands free for work
Barcode Reader	Built-in code reading software to handle most barcode formats
Preview	Instant preview of photos and videos
Smooth Transitions	Seamless experience from “MY CAMERA” to “MY PHOTOS” and “MY MEDIA”
Low Light Performance	Proven performance in low light settings and situations
Field of View (FOV)	Wide angle range or standard range - Standard: Improves visibility of camera view when used with a baseball cap. Enhanced zoom to provide even more magnification for small or far away subjects - Wide: Full width of camera view is captured
Focus and Exposure	Switch between Autofocus or Manual Focus at any time: lock focus and exposure to one of 9 points in the frame for better photos in non-ideal lighting conditions
Image and Video Stabilization	Automatic image and video stabilization allows more accurate remote mentoring, compliance and inspections. This feature is enabled by default but can be disabled by the end user.
Flashlight	Flashlight functionality can be controlled directly from the camera app or My Controls Flash settings for photos: On/Off/Auto
Camera Controls (MORE OPTIONS)	- Exposure level - Flashlight controller - Aspect ratio 16:9 and 4:3 - Image resolution: High and low - Video resolution: High and Low - Frame rate: 15, 25, 30 - Video Stabilization: On or Off - Picture preview - Manual focus - Field of view: narrow and wide - Direct access to your photos and video

Navigator Safety Guidelines

Battery Performance

A rechargeable battery powers your device. Always use only the original type of RealWear battery that came with the device. Use the battery only for its intended purpose. Never use any charger or battery that is damaged. If the battery is completely discharged, it may take a few minutes before the charging indicator appears on the display or before the device can be used. The full performance of a new battery is achieved only after 3 to 4 complete charge and discharge cycles. The battery can be charged and discharged for multiple cycles, but it will eventually wear out. Unplug the charger from the electrical plug and the device when not in use. Ensure that you do not leave the fully charged battery connected to the charger. If left unused, a fully charged battery will lose its charge over time.

Warning: There is a risk of explosion while charging if a battery other than the specified model is used.

Battery Replacement

If the Navigator battery is not charging properly, replace the battery with an original RealWear battery. If a replacement battery is being used for the first time or if the battery has not been used for a prolonged period, it may be necessary to connect the charger and then disconnect and reconnect it to begin charging the battery.

Avoid Short Circuit

Do not short-circuit the battery. An accidental short-circuit can occur when a metallic object such as a coin, clip, or pen causes direct connection of the positive (+) and negative (-) terminals of the battery. This might happen, for example, when you carry a spare battery in your pocket or toolbox. A short-circuit at the terminals may damage the battery or the connecting object.

Avoid High Temperatures

Leaving the battery in hot or cold places, such as in a closed car in summer or winter conditions, will reduce the capacity and lifetime of the battery. For the best results, try to keep the battery between -10°C and +50°C (+14°F and 122°F). A device with a hot or cold battery may not work temporarily, even when the battery is fully charged. Battery performance is particularly limited in temperatures well below freezing.

Battery Disposal

Do not dispose of batteries in a fire as they may explode. Batteries may also explode if damaged. Dispose of batteries according to local regulations and recycle when possible. Do not dispose as household waste. Do not dismantle, open or shred cells or batteries. In the event of a battery leak, do not allow the liquid to come in contact with the skin or eyes. In the event of leak or a hazard seek medical help immediately.

Child Safety

Do not allow children to play with your device or its accessories. Keep it out of their reach. They could hurt themselves or others or could accidentally damage the device or accessories. Your device and its accessories may contain small parts, which could be detached and create a choking hazard.

Health and Safety Warnings

Stop using RealWear Navigator or its display immediately if you experience a headache, vertigo, dizziness or nausea. Do not use Navigator display while operating any vehicle. Move the boom arm completely out of your line of sight when not using the display. Maintain situational awareness of your surroundings while using Navigator.

Safety and Usage Guidelines

- Do not use Navigator while driving
- Always wear Navigator with eye protection.
- Always use your dominant eye for comfortable viewing.

Disposal of Old Electrical and Electronic Equipment



The symbol of the crossed-out wheeled bin indicates that within the countries in the European Union, this product, and any enhancements marked with this symbol, cannot be disposed as unsorted waste but must be taken to separate collection at their end-of-life.

Disposal of Battery



Please check local regulations for disposal of batteries. The battery should never be placed in municipal waste. Use a battery disposal facility if available.

Guideline for Headphone and Earphone



To prevent possible hearing damage, do not listen at high volume levels for long periods.

A pleine puissance, l'écoute prolongée du baladeur peut endommager l'oreille de l'utilisateur.

Charger Use Safety Instructions

Warning: To use the charger follow these instructions:

- Make sure that the cable plug is properly connected.
- Keep the charger away from liquids.
- In case of any strange smell or noise from the charger, disconnect it and contact support.
- Before cleaning the cable or charger, disconnect from power supply.
- When using an extension cable, check the integrity of the ground conductor.
- Disconnect the charger from Navigator once the battery is fully charged.
- Do not use this charger in wet areas This charger is for indoor use only.
- Do not insert or remove the plug with wet hands.
- Do not open the charger. For any issues, contact support.
- Do not cut, break or bend the cable in a knot.
- Do not put any objects on the cable that may let it overheat. It may damage the cable and cause fire or electrocution.
- Do not use any cable other than the original cable as it may cause short circuit or electrocution.

Navigator Connectivity

Operating Frequency Bands for RealWear Navigator™ 500

Wi-Fi operating frequency band(s) details are as follows:

Bluetooth (2400-2483.5MHz): 11.93 dBm
WIFI 2.4G (2400-2483.5MHz): 14.98 dBm
WIFI 5G (5150-5250MHz): 14.71 dBm
WIFI 5G (5250-5350MHz): 13.17 dBm
WIFI 5G (5470-5725MHz): 13.47 dBm
WIFI 5G (5725-5850MHz): 13.48 dBm

5G Wi-Fi Connection Information

Operations in the 5.15 — 5.35GHz band are restricted to indoor use only.

Bluetooth

BT 5.1 LE (Low Energy)

Navigator Box Contents

The list of items in the RealWear Navigator™ 500 box are:

RealWear Navigator™ 500:

- USB cable type C
- Navigator Quick Start Card
- Swappable Battery
- RealWear Workband

Included with purchase of Navigator, but shipped in a separate box:

- Navigator Regional Wall Charger

Navigator Device Overview



Front View

- | | |
|-------------------------------------|-------------------------------------|
| 1. Record Indicator Light | 8. Camera |
| 2. Shoulder Joint | 9. Elbow Joint |
| 3. Flashlight | 10. Action Button |
| 4. Display Pod | 11. Power Button/Fingerprint Sensor |
| 5. Mic A1 (Mic A2 on opposite side) | 12. Speaker (one on each side) |
| 6. Display Pod Pivot | 13. Side Accessory Clipping points |
| 7. Boom Arm | |

Rear View



- | |
|-----------------------------|
| 1. Battery Pack |
| 2. Display Window |
| 3. Audio Jack |
| 4. USB-C Charging Port |
| 5. Micro SD Card Slot Cover |
| 6. Rear Band |
| 7. Camera Module |

Navigator Device Overview – Details

Power Button/ Fingerprint Sensor



There is a button/sensor on the front of the battery side of the device. This is used to unlock Navigator, power on, power off, put into Sleep Mode, or wake from Sleep.

Action Button



The action button is the large, textured button beside the power button, and serves multiple purposes. A single tap serves as a failsafe method of returning you to your home screen. Three quick, consecutive taps will toggle the microphone array between front and back configurations. Pressing and holding the action button will open the Language Select menu and will cycle through a list of supported languages. Release the button to select your desired language.

Left/Right Buttons

Micro SD Card Door



The MicroSD card door, located on the inside of the Navigator band, can be opened with a 001 Phillips Head screwdriver. Insert a FAT32 formatted microSD card with a maximum capacity of 256 GB? for portable storage.

Details Continued

Swappable Camera



The Swappable Camera is located above the boom arm and can be pivoted up and down. It is capable of taking 48 MP photos and 1080p videos. It also includes a built-in flashlight that can be controlled with your voice.

Boom Arm



The Boom Arm allows the user to adjust the positioning of the Display Pod and allows for 6 degrees of freedom, which means it can be adjusted up and down, left and right, and forward and back. It is comprised of a Shoulder, Elbow, and Wrist joint (imagine the human arm). Its orientation can be inverted to allow use by left or right eye dominant users.

Display Pod Pivot



The Display Pod can pivot in multiple directions to allow you to view the Navigator display from the angle you need.

Display Pod



The Display Pod can be rotated and adjusted so the user can see the display clearly. The Display itself is an 854x480p 24-bit LCD Display with 20-degree field-of-view and 1-meter focal depth, meaning that it appears like a 7in. Tablet at arm's length.

Microphone Array



There are two sets of two microphones on Navigator. The Primary Microphones handle user input, while the reference microphones cancel external noise. The front microphones, active by default, are located on the display pod. The Primary Mic is downward-facing, close to the user's mouth, and the reference mic is upward-facing to pick up and remove background noise.

The rear microphones are located on the side of the device opposite from the boom arm. These are used when issuing voice commands while the boom arm is out of your field of view.

Speakers



A 91 dB loudspeaker that sits above each ear.

Battery Compartment



You can remove the battery cap with a small counterclockwise turn followed by a pull. Once removed, tilt the device to remove the battery. To replace, insert a fresh battery, press to secure the battery cap and turn slightly clockwise to lock in place. Secure the flap.

USB-C Port



For all charging and data transfer, you must use the USB-C port, which is located next to the battery compartment, beneath the rear flap on the side opposite the boom arm.

Auxiliary Jack (Headphones)



Headphones can be connected to Navigator using the 3.5mm headphone jack on the back of the Navigator, under the flap on the side of Navigator, on the opposite side from the USB-C charging port. We recommend using RealWear 33 dB noise-reduction earbuds with your Navigator.

Workband



This is an adjustable Velcro strap that rests across the top front of the wearer's head. If mounting via hard-hat or bump cap, this can be removed.

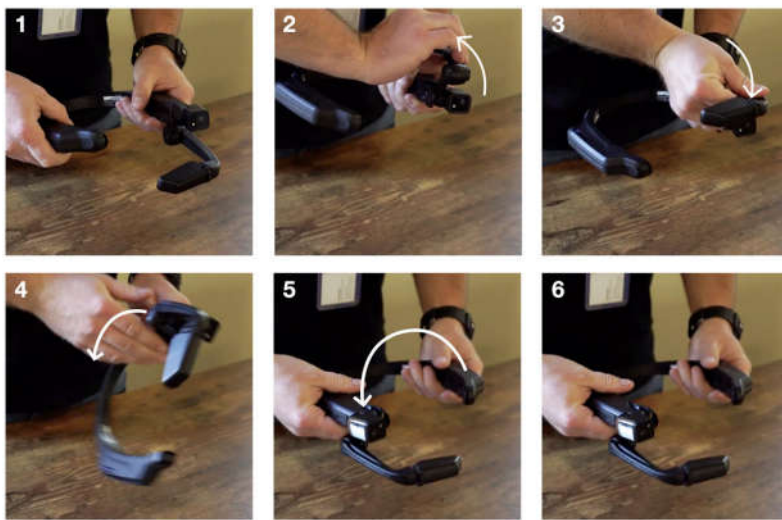
Navigator Setup Guide

Wearing Navigator

This article will walk you through how to wear your Navigator device and ensure the best possible experience.

Step 1 - Determining Left- or Right-Eye Configuration

Navigator can be set up so that the display and camera are aligned with the left or right side of your head.



First, it is important to determine your dominant eye, to do so, follow the simple instructions in this [linked article](#). Viewing Navigator's display with your dominant eye will allow for the most clear and comfortable use of the device.

Step 2 - Get Navigator Ready

Before wearing, hold Navigator level with the boom-arm/display on the left or right, whichever is your dominant eye side. Bend the boom so it forms a slight "Z" shape as shown below.



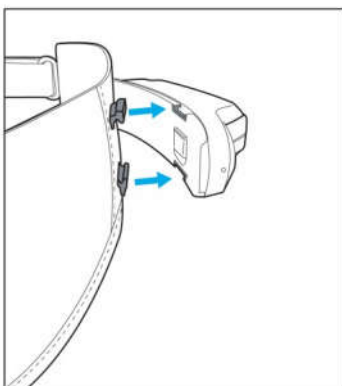
Step 3 - Ensure proper head-mounting accessories are in place.

You may mount Navigator to a baseball cap, bump cap or hard hat, or you may use the RealWear Workband. These can include the single strap, tri-strap, hardhat with clips, bump cap with tri-strap, baseball cap or Workband with mounting kit.



Step 4 - Workband

Before positioning Navigator, put the Workband over your head and adjust the Velcro straps to fit comfortably. Then, push the clips on the Workband into the slots on each side of Navigator:



Place Navigator and Workband on your head.

Next, position the device on your head so that it is roughly level with ground. Workband should be positioned horizontally across your forehead. For an optimal experience, it is recommended that the display is close to the center line of your face, in front of and close to your eye.



Step 5 - Adjusting the fit

Ensure that the display pod is not positioned too far to the outside or too far in front of your eye.



Move the display towards the center line by pushing from the outside inward.



Then holding the boom arm with one hand and holding the back of Navigator with the other, push the display pod inward so that it is close to, in front of and slightly below your eye.



Step 7 – Power On Navigator

Before putting Navigator on your head, press and hold down the fingerprint sensor button for about three seconds then release the button.

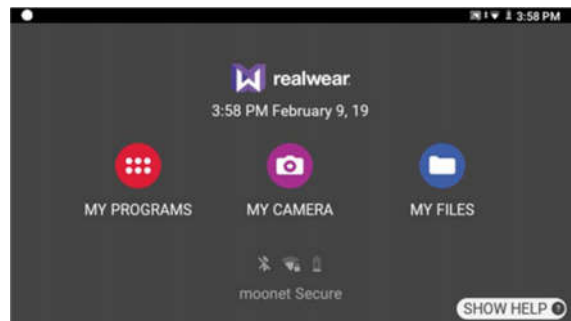


In about ten to fifteen seconds you will hear a sound as the start-up sequence completes. Navigator is now powered on and ready to wear. You should now be able to see the screen.

Make sure that the display pod is rotated so that all four corners of the screen are clearly visible to your eye. With your Navigator powered on, and the display pod positioned correctly, you will see the entire Navigator Home Screen.

Step 8 - Fine tuning

It is best to tilt and rotate the display pod to make minor adjustments.



Warning: If you are not able to clearly see what is on screen, review how your device and display setup - double check the fitting of the strap or headwear and if your display is correctly setup for your dominant eye.

Step 9 - Fine tune the camera



When you are ready to use the camera, you will need to make some final adjustments so that the view of the camera is forward and unobstructed.

Remote configuration for Navigator from web browser

Generate a QR Code for Configuration from a Web Browser

The Configuration App (found in My Programs) scans a QR code that can contain setup information for language, time zone, time, and WiFi connections. A web page enables anyone to create the QR code.

To setup the device, complete the following procedure:

1. Open a Web browser in your computer.
2. Visit realwear.setupmyhmt.com or <http://www.realwear.com/configure>
3. Click the 'Configuration' button on the page and then 'First Time Setup'. (Note: you can also click the 'Configuration' link on the top navigation bar:)
4. Select the desired language and click 'Next'. You will need to select the world region first, then the time zone.
5. The 'Set Automatically' checkbox will default to checked with the values from your computer or phone. If you desire different settings, uncheck the box and change any values necessary.
6. When the Date & Time values are set, click 'Next'.
 - Optional: Enter the WiFi access point name (or SSID) and password to setup the Wi-Fi network for your Navigator. Note: most simple WiFi networks use WPA/WPA2 PSK security.
7. Click 'Generate Code'. A QR code will display on the computer screen.
8. With Navigator positioned on your head, say "NAVIGATE HOME". Say "MY PROGRAMS", then say "CONFIGURATION". Navigator will begin to beep.
9. Scan the QR code by pointing the Navigator camera so the QR code is within the target outline on the display.
10. When the QR code is scanned a tone will sound and you will be returned to the previous screen.



The preceding steps can also be accomplished using the RealWear Companion app, available on the App Store and Google Play.

Note: when you power on the Navigator device for the first time a remote configuration screen will be displayed. You may return to the configuration app at any time by saying "NAVIGATE HOME" > "MY PROGRAMS" > "CONFIGURATION".

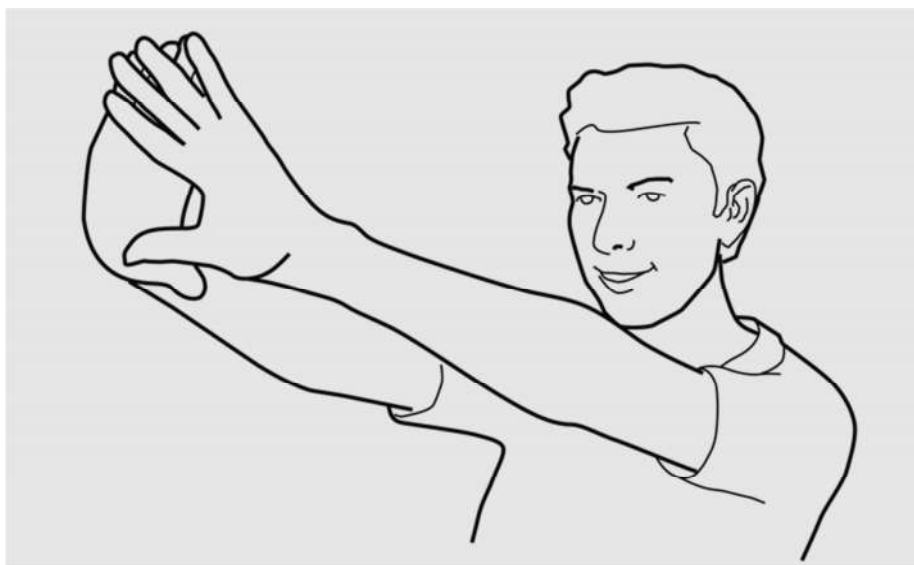
Determining Eye Dominance

Eye dominance is the tendency to prefer visual input from one eye to the other. It is best to use your dominant eye when viewing the display.

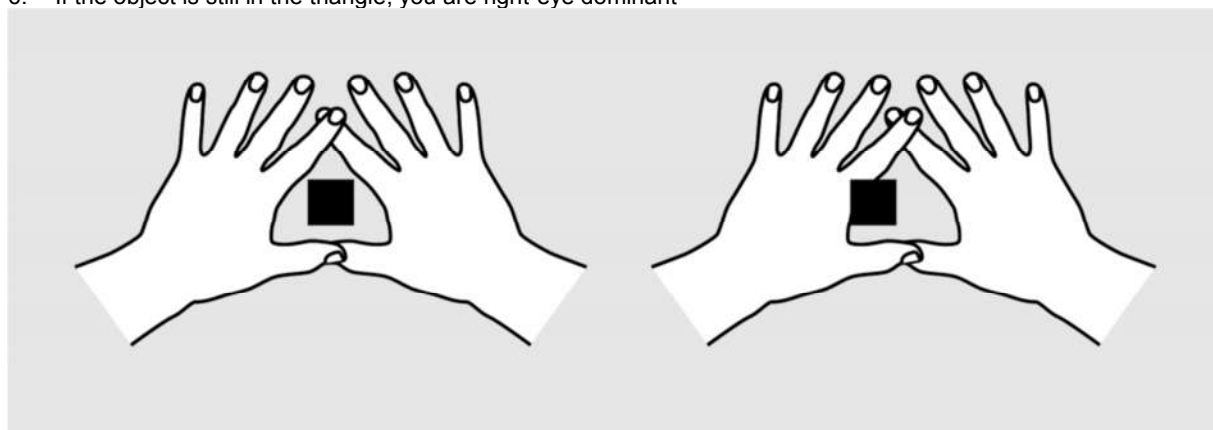
Eye dominance is not related to right- or left-handedness.

To determine which eye is dominant:

1. Form a triangle with your hands placed together at arm's length.



2. With both eyes open, focus on any distant object centered in the triangle (such as a light bulb or door knob).
3. Maintaining focus on the object centered in the triangle and - keeping your head and both hands still - close your right eye.
4. If the object is still in the triangle, you are left-eye dominant.
5. Maintaining focus on the object centered in the triangle and - keeping your head and both hands still - close your left eye.
6. If the object is still in the triangle, you are right-eye dominant



7. If the object is in the triangle with either eye, then you are dominant eye neutral.

Headwear with Navigator Devices

(Check the RealWear Website for specific model availability.)



Compliant with your PPE, Navigator can be mounted several other ways in order to increase stability, comfort, and safety.

Mounting with Hardhat and optional accessory clips.



Headwear continued

Navigator can be mounted to a bump cap using a tri-band strap.



Mounting with tri-band strap and bump cap

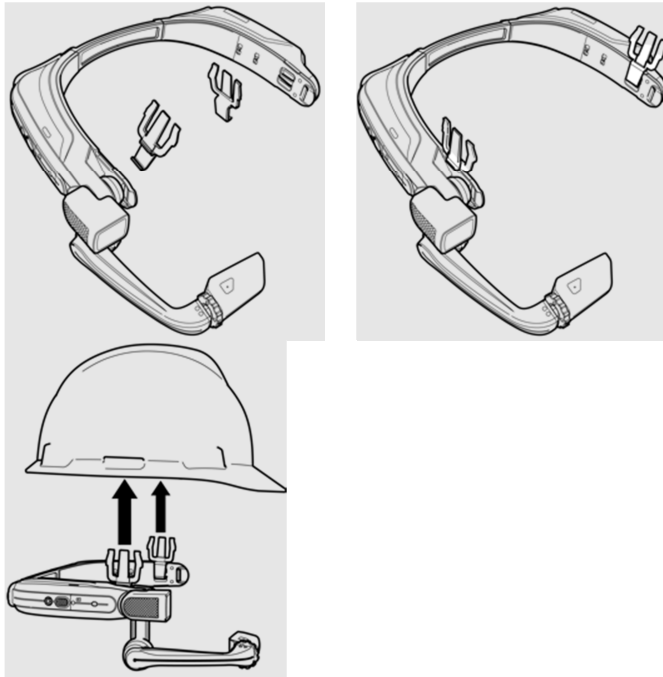


Mounting with a specially modified RealWear Baseball Cap



Using Navigator with a Hard Hat

To get hard hat clips, visit shop.realwear.com.



1. Hook the Hard Hat Clips into the Navigator band and snap them into place.
2. Slide the clips into the hard hat accessory slots; Navigator band should sit outside of the hard hat's harness.
3. Put on the hard hat and if applicable, tighten until secure and comfortable.
4. To remove Navigator from the hard hat, pinch the clip fingers and push the clip out of the hard hat slots.

Using Navigator without a Hard Hat

If using Workband, connect the clips on the Workband to the slots on Navigator.

Wearing Navigator with Eye Protection

If you wear eyeglasses to operate a computer, or eye protection for your work, continue to wear the same glasses or eye protection while using Navigator. While Navigator devices are designed to work well with or without eyeglasses or eye protection, RealWear recommends wearing eye protection while using an Navigator.

Navigator Charging Basics

Navigator Direct Charging

To charge the Navigator battery while installed in the Navigator, use the included Wall Charger and USB-C cable.

To recharge the battery:

1. Connect the USB Type-C charging cable to the Type-C USB port located under the rubber lid on the rear of the boom-side housing. Using the USB-C cable and USB C port will ensure the shortest charging time.
2. Connect the charging cable to the wall charger.
3. Plug the wall charger into an electrical outlet. The power button LED will blink throughout the charging cycle, changing color from Red to Yellow to Green, depending on the amount the battery has charged. Green signifies a full charge.

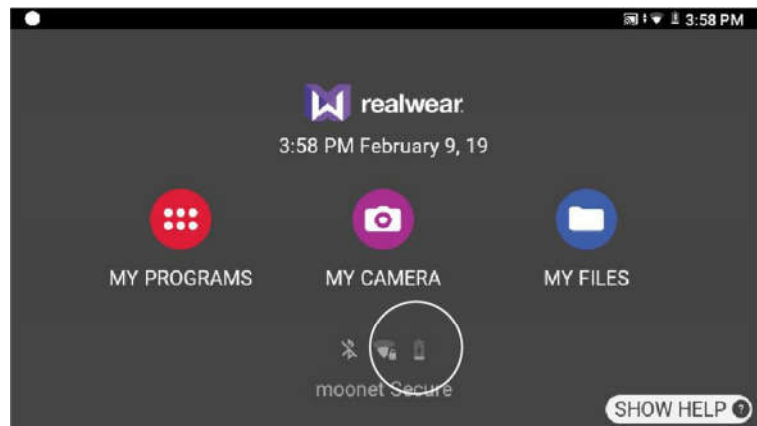
A Red light means the battery is less than 10% charged.

A Yellow light means the battery is less than 60% and charging.

A Green light means the battery is more than 60% charged.

A Blue light means bluetooth pairing mode is active.

The battery icon will display the Navigator battery charge level.



Inserting Rechargeable Battery

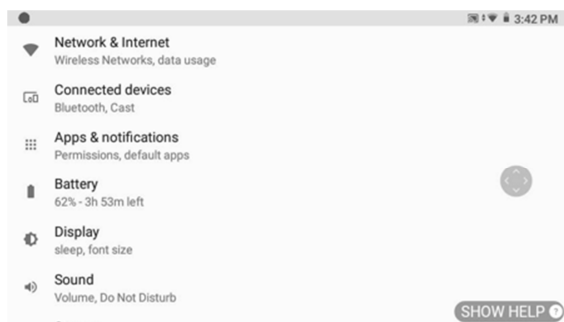
The RealWear Navigator requires a rechargeable battery to function. The device ships with the battery already installed. To remove the battery, press in on the tab behind the fingerprint sensor and pull the battery away from the Navigator. To insert the battery, align the connections on the battery with the connections in the Navigator battery compartment, then press down on the battery until it clicks into place.



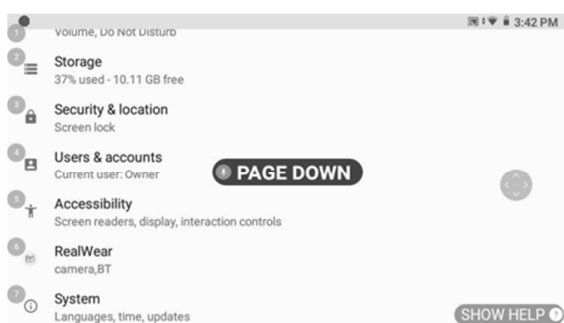
Configuring your Navigator

Settings

To configure Navigator settings, from the Home Screen, say “SETTINGS”:



Say “PAGE DOWN” to see more options:



Settings provides access to important system level controls and capabilities. Each of the following Settings options can be select by speaking the corresponding commands:

- Network & Internet
- Connected devices
- Apps & notifications
- Battery
- Display
- Sound
- Storage
- Security and location
- Users & accounts
- Accessibility
- RealWear
- System

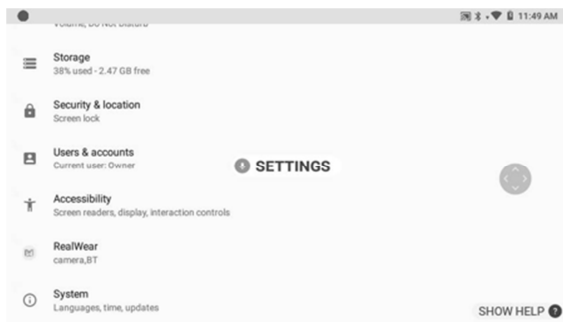
Navigator Configure Continued

Setting Up Screen Lock

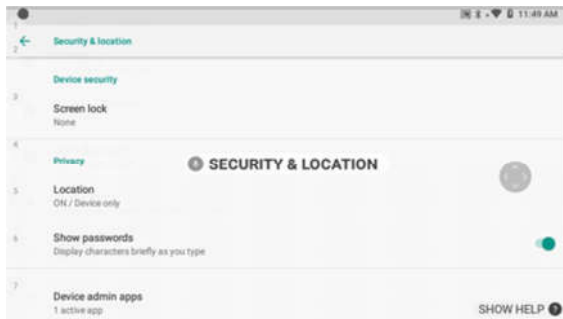
Using Android's Screen Lock feature protects your Navigator device from unauthorized access. To setup the screen lock, do the following:

Step 1:

Enter Settings one of two ways. You can say "MY CONTROLS", then "MORE SETTINGS". Or you can say "NAVIGATE HOME", then "MY PROGRAMS", then "SETTINGS".

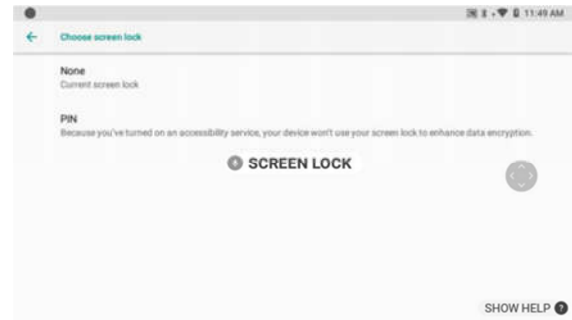


Step 2: Say "PAGE DOWN", then say "SECURITY AND LOCATION".



(Note, the Settings page will be scrolled to the last location visited after a reboot and may not appear at the top of the Settings page.

Step 3: Say 'SCREEN LOCK' or select using the 'SELECT ITEM #' command. On the screen above the correct command would be "SELECT ITEM 3"

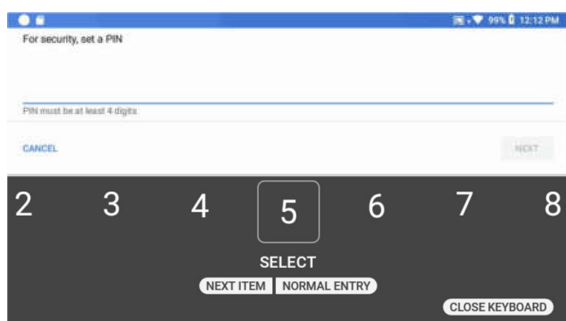


Step 4: Say the word 'PIN'.

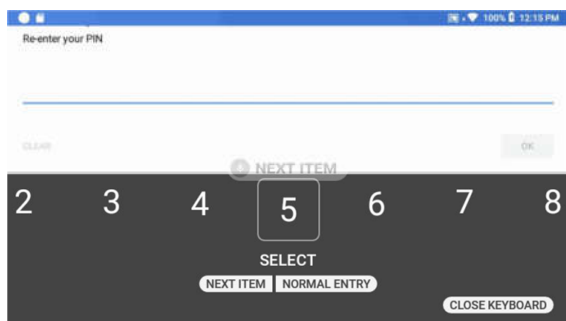
Step 5: You must first choose to enable or disable Secure Start-Up before creating your PIN. If you choose "YES" you will see the randomized keypad detailed in Unlocking the Navigator: Device Boot when starting your device; if you choose "NO" you will only see the default Sleep Mode PIN entry method when waking or powering on the device.



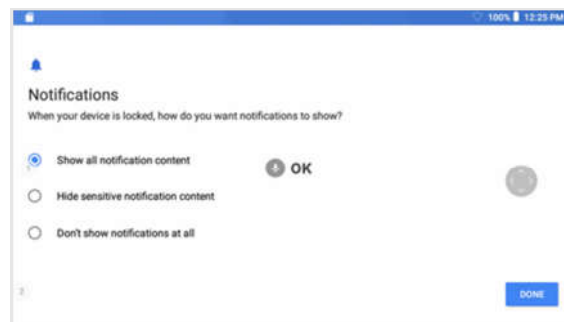
Step 5: Move your head left or right until the number you want to select is within the frame. Say "SELECT" to enter that number.



Step 6: Repeat to input your desired PIN sequence. The PIN may be from 4 to 16 digits. When complete say "NEXT ITEM".



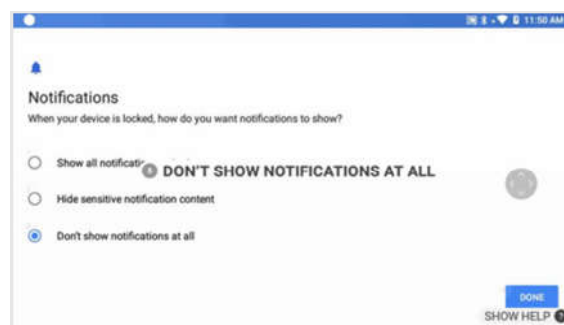
Step 7: Re-enter the PIN for confirmation. When finished, say "NEXT ITEM" or say "CLOSE KEYBOARD", then say "OK".



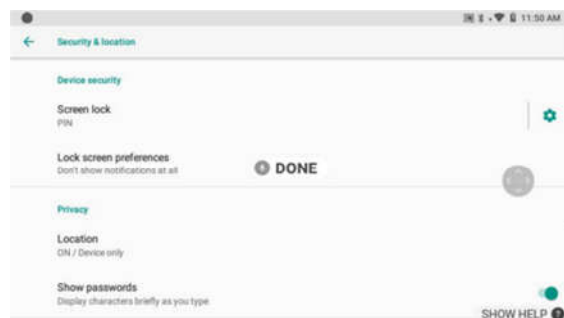
Step 8 Select desired Notifications display option. This will determine if the Navigator will display notifications on the Home screen when the device is locked.

You can opt to view all the notifications or hide specific notifications.

You can also opt to hide all the notifications. The default is "Show all notifications". Simply say "SHOW ALL NOTIFICATIONS", "HIDE SENSITIVE NOTIFICATION CONTENT" or "DON'T SHOW NOTIFICATIONS AT ALL" to select.



Step 9: When finished, say 'DONE'.



The Screen Lock is enabled, and the device will lock the next time it goes to sleep. You can press the power button for one second or less to lock the device. Or if the device is idle for an amount of time selected in Settings>Display>Sleep.

Navigator Configure Continued

Unlocking Navigator Using PIN

When screen lock is enabled, the device requires a PIN number upon waking from sleep mode or when the device is restarted. Once unlocked the device will go to the Home Screen in the case of a reboot of the device or will return to the last screen open in the case of waking from sleep mode.

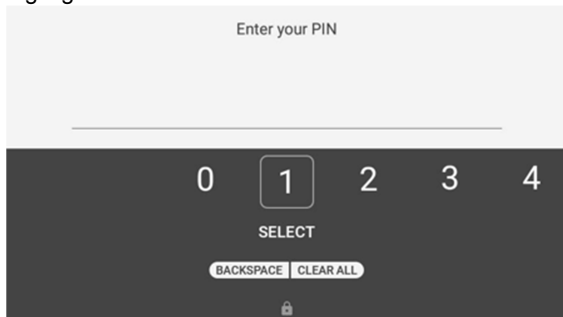
To unlock the device:

Sleep Mode

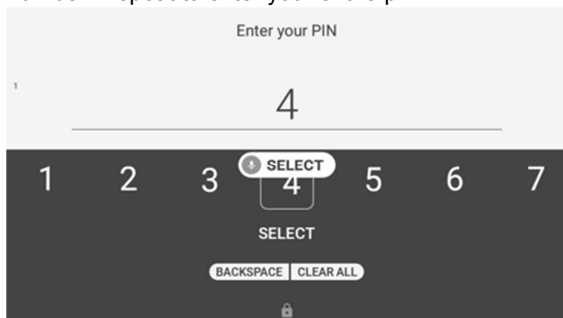
Step 1: Press the Power button. When the lock screen appears say "UNLOCK".



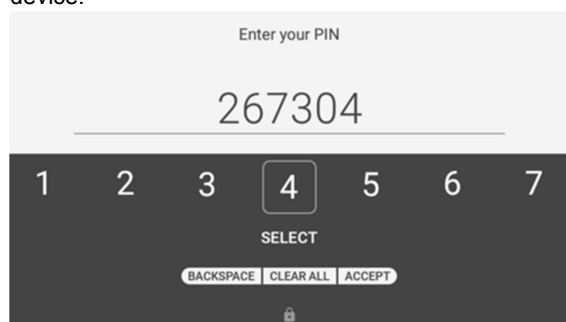
Step 2: Input your PIN. Move your head left or right to highlight numbers.



Step 3: When highlighted, say "SELECT" to enter the number. Repeat to enter your entire pin.



Step 4: When finished, say "ACCEPT" to unlock the device.



Device Boot

When powering on a device with a PIN lock set and the Secure Start Up option enabled, the PIN entry interface is modified to use phonetic identifiers in a random grid to protect the security of the PIN. All other PIN entry modes are disabled at this time.

1. When the device is ready to be unlocked, say "ENTER PIN". If the screen is upside down say "ROTATE"

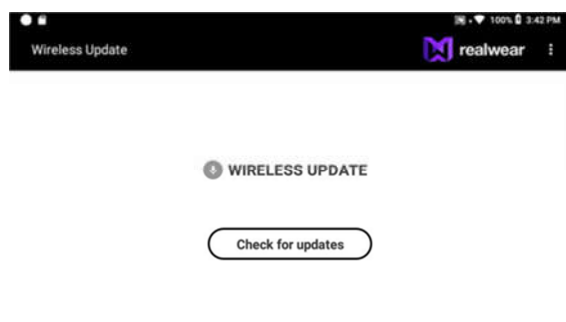
Navigator Configure Continued

Wireless Update

Your device is already configured to keep its operating system up to date via over-the-air (OTA) updates distributed by RealWear. The Navigator will not update automatically, it requires a user to launch the update.

Step 1: Power ON the Navigator and connect to a Wi-Fi network.

Step 2: Navigate to My Programs and say "WIRELESS UPDATE"

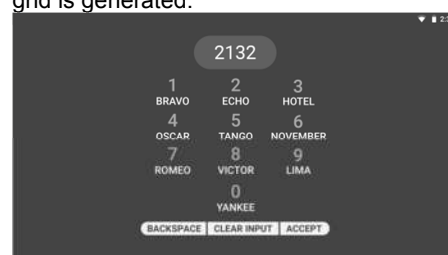


Step 3: An update may already have downloaded. If not, you may say "CHECK FOR UPDATES".

SCREEN".



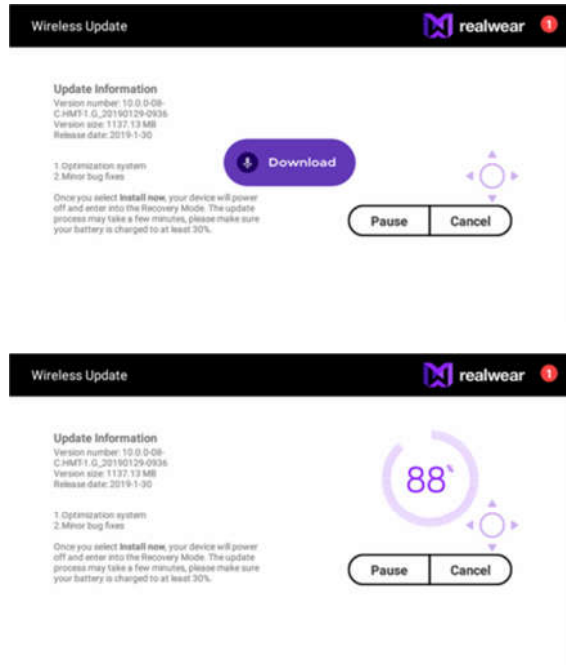
2. Say the phonetic identifier for the PIN numbers, then say "ACCEPT" when the PIN is finished to unlock the device and complete the boot sequence. These identifiers are randomly changed each time the grid is generated.



A message will display if you're up to date.

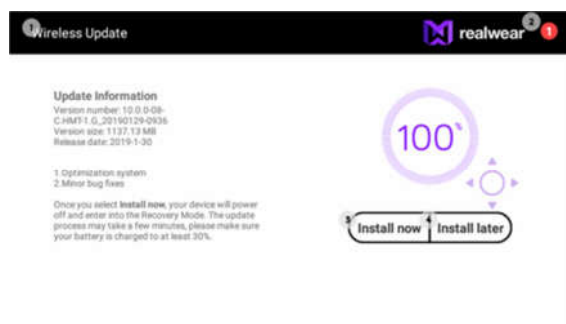
If there is an available update, an option to download the package is displayed.

Step 4: Say “DOWNLOAD” or say, “SELECT ITEM (followed by the item number)”. The software update download will start. The download time depends on the size of the package and the network connectivity.

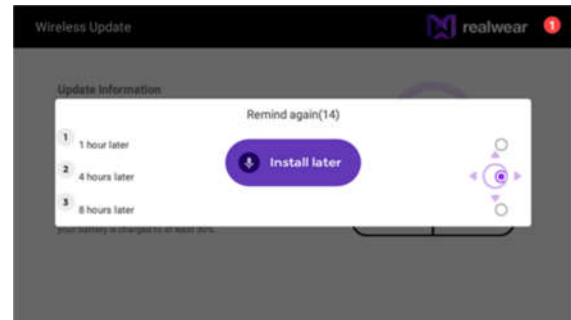


We recommend muting the microphones if the download is large. Just say "MUTE MICROPHONE". When the download has finished, briefly press the large black Action Button on the boom-side of the Navigator housing. Then you can install the update via voice commands.

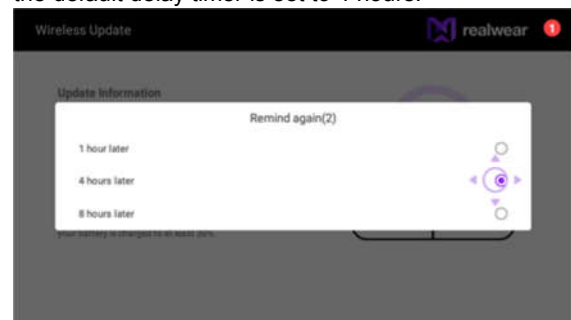
Step 5: Once the download is complete, an option to install now or later is displayed.



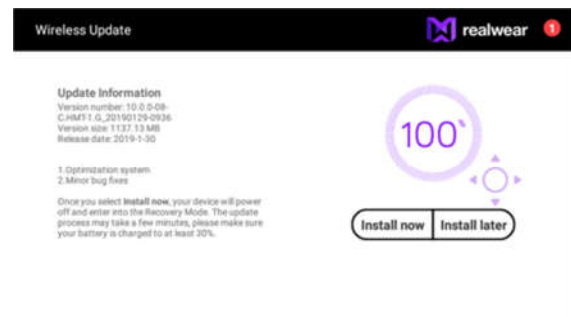
Step 6: If you say “INSTALL LATER”, a pop-up to set the installation delay time is displayed for about 15 seconds.



You can set the installation delay time to by 1, 4 or 8 hours. If the delay time is not set within the given time, the default delay timer is set to 4 hours.



Step 7: Say “INSTALL NOW” to install and update the Navigator software immediately.



Warning Messages to Note During Software Update

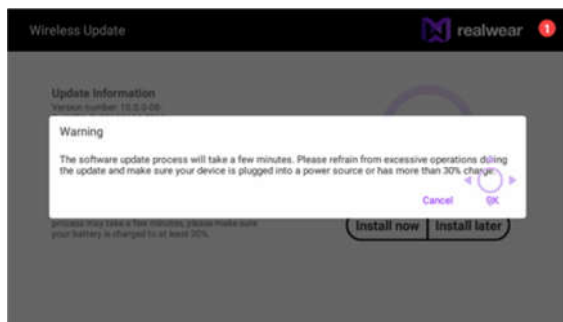
'Be sure to read the following warning messages before proceeding with the software update'

Battery Alert

'We recommend not to use Navigator during the software update. Also ensure that there is at least 30 % charge before installing an update.'

Software Update Warning

'When the software update begins, the following warning is displayed.'



Say "OK" to proceed with the update.



The Navigator will reboot itself upon completion of the update.

Navigator Configure Continued

Selecting Navigator Interface Language

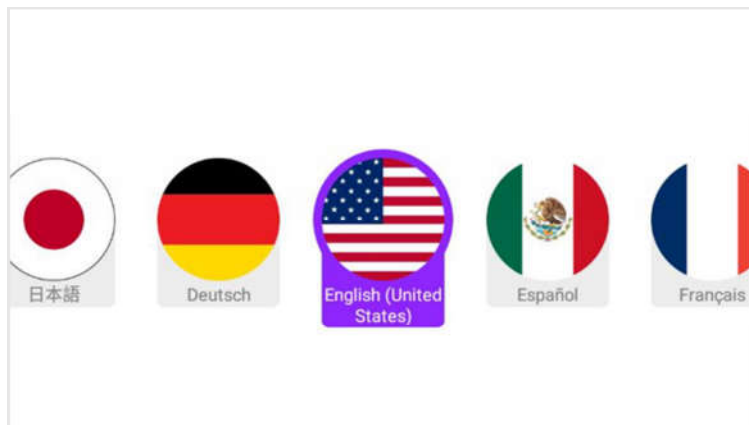
Navigator supports the following languages:

1. Dutch
2. Chinese (Cantonese)
3. Chinese (Mandarin)
4. Chinese (Traditional)
5. Czech
6. English
7. French
8. German
9. Italian
10. Indonesian
11. Japanese
12. Korean
13. Polish
14. Portuguese
15. Russian
16. Spanish
17. Thai

To select the user interface language:

Step 1: Press and hold Action Button A on the boom-side housing.

Step 2: All the supported languages are displayed as preview, using their respective Country flags:

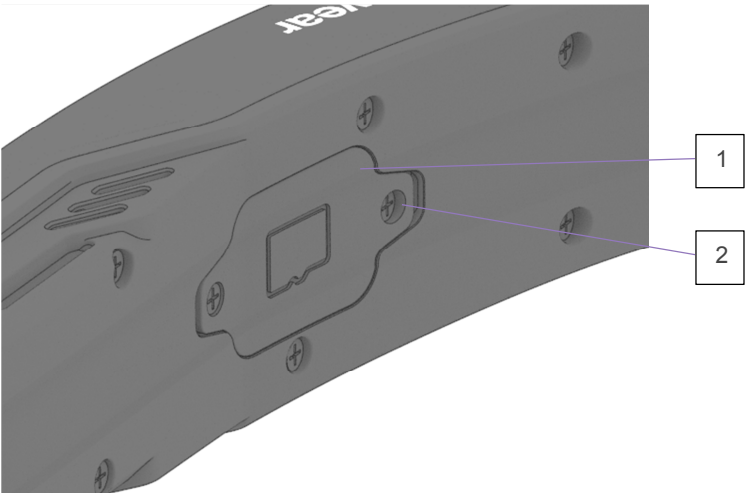


The device automatically scrolls through the language list and highlights one language at a time, for about two seconds each.

Step 3: When the desired language is highlighted, release the Action button and the device will immediately reconfigure to show commands only in that language.

Navigator MicroSD Card

You can insert a MicroSD card into the specified slot and store media files and documents.



	Part Name	Action
1	MicroSD card slot door	Covers the MicroSD card slot. Open this door to insert/remove the micro SD card.
2	Screw to open MicroSD card slot	Holds the MicroSD card slot door. Unscrew to open the door using a Phillips #00 screwdriver.

How to insert a MicroSD card:

Step 1: Unscrew the MicroSD card slot door and pull the edges to open.



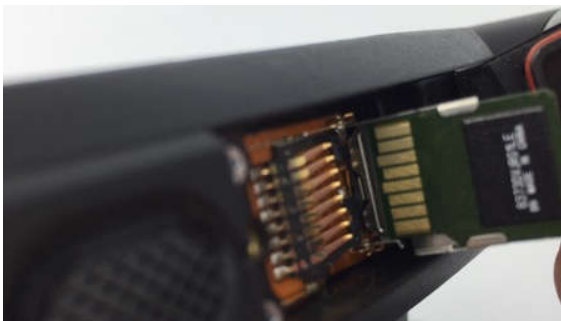
Step 2: Open the MicroSD card slot door and hold open with your thumb.



Step 3: Unlock the metal compartment and swing out to open.



Step 4: Insert the MicroSD card into compartment as shown below.



Step 5: Close the compartment and slide compartment left to lock in place.



Step 6: Close the MicroSD card slot door.

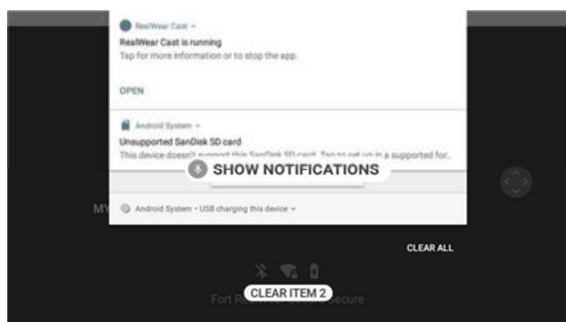


Step 7: Re-insert the screw and tighten to secure.

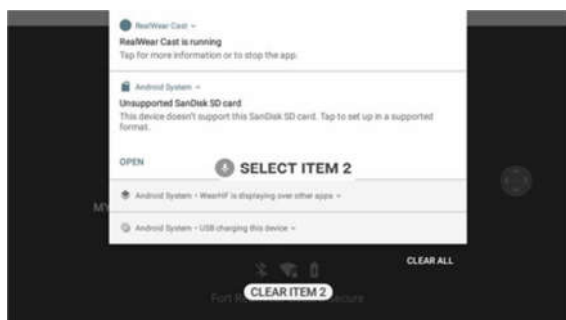
Setting Up and Using a MicroSD Card

Complete the following procedure to setup the MicroSD card. When first installed, the card will need to be formatted.

Step 1: Say "SHOW NOTIFICATIONS". One of the notifications should be an SD card message. It is expected that the message will state the card is unsupported, but this simply means it needs to be formatted. Follow the steps on this page to format and configure the card.



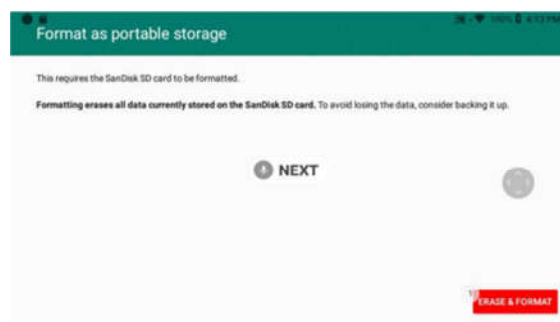
Step 2: Use the "SELECT ITEM #" command to select the notification number and setup the MicroSD card. Then say "OPEN".



Step 3: Say "USE AS PORTABLE STORAGE"



Step 4: Say "NEXT"

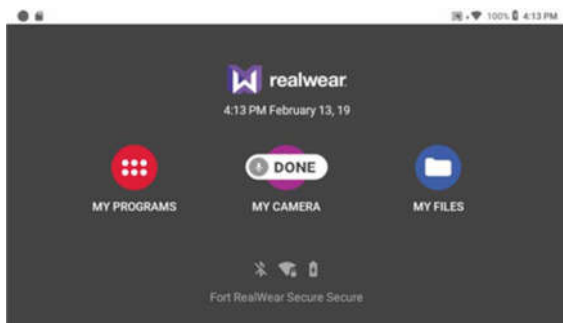
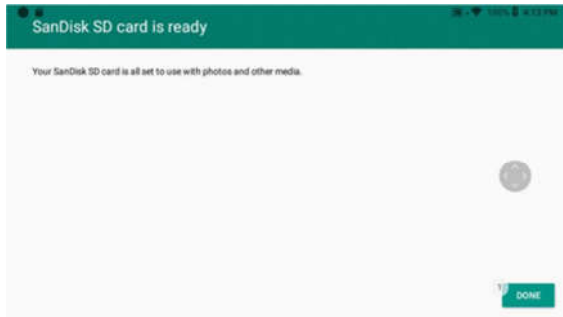


Step 5: Say "ERASE AND FORMAT". The MicroSD card formatting progress is displayed.

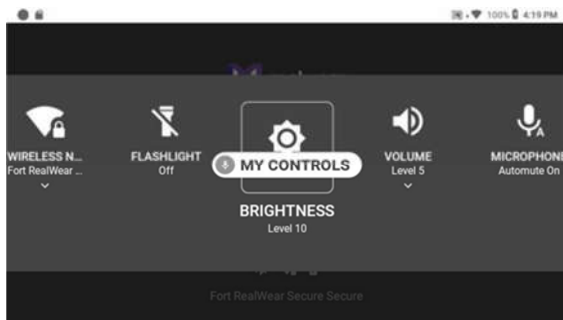


MicroSD Card Setup Continued

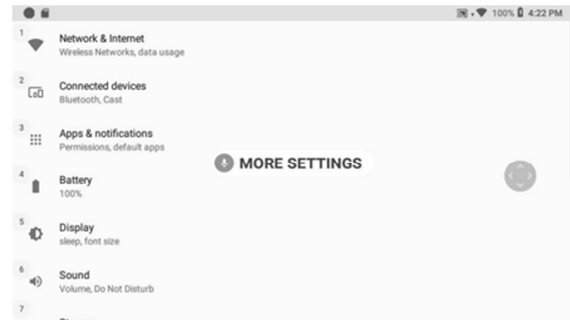
Step 6: When finished, say "DONE"



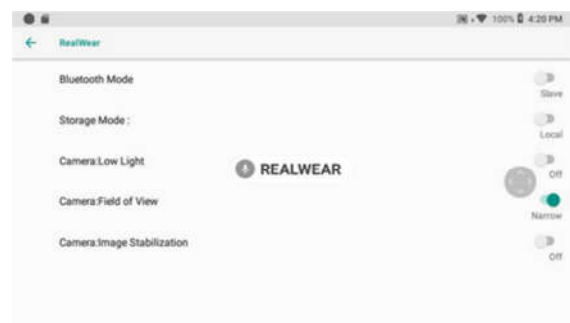
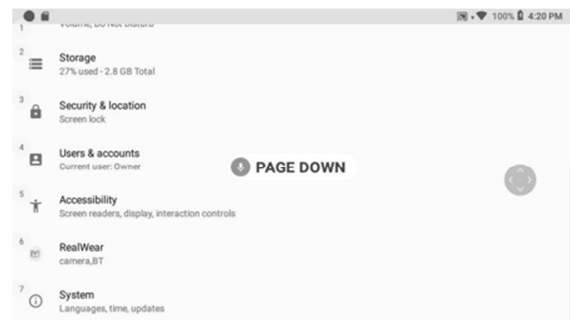
Step 7: Now enable the card as the default storage.
Say "MY CONTROLS"



Step 8: Say "MORE SETTINGS"



Step 9: Say "PAGE DOWN", then say "REALWEAR"



Step 10: Say "STORAGE MODE" to toggle between Local Storage and SD Card. When the Storage Mode toggle shows on and is labeled 'SD Card' you are ready to use your SD Card.



Navigator Device Care

Powering Off the Navigator

RealWear recommends that you power off your Navigator device when not in use to conserve battery and ensure the longevity of the device. You can do so in two ways:

A. Hands Free

1. Say "MY CONTROLS"
2. Say "POWER OPTIONS"
3. Say "POWER DOWN"

B. Manual

1. Simply press and hold the silver power button on the boom-side of the device for three seconds.
2. Release the power button as soon as the tone is heard.
3. A Shutting Down screen will show briefly and then the device will turn off.

Rebooting the Navigator

A. Hands Free

1. Say "MY CONTROLS"
2. Say "POWER OPTIONS"
3. Say "REBOOT"

B. Manual

1. Follow steps for turning off device
2. After device is fully off and the power light is off, press and hold the power button for 3 seconds. The device will boot up.

Sleeping/Waking the Navigator

A. Hands Free

1. Say "MY CONTROLS"
2. Say "POWER OPTIONS"
3. Say "SLEEP NOW"
4. When asleep, a single, brief press of the Power Button will wake up the Navigator.

B. Hands On:

- Press the power button briefly (less than one second) and release to sleep or wake up the device.

Storing the Navigator

The Navigator is built rugged, but to ensure a long and healthy life:

Power off the device or put to sleep when not in use.

1. Store the Navigator device in a cool, dry place.
2. Place the device on a level surface or securely hang it on a wall.
3. If mounted, you can keep the Navigator device connected to a hard-hat or bump cap as needed.

Navigator Care Continued

Cleaning the Navigator device

Follow these instructions for cleaning the different areas of the Navigator:

- Navigator is water resistant so cleaning with a damp cloth and mild soap is appropriate. Ensure that all covers are firmly secured when cleaning. Navigator should never be submerged.
- You may also use isopropyl alcohol wipes to clean and lightly sterilize the hard surfaces of Navigator. Dry surfaces or simply allow to air dry.
- Display and Camera glass: Use a standard micro-fiber cloth to wipe off glass parts. You can use screen cleaner to enable the sharpest possible images.
- Fabric parts: Under normal use the Overhead Strap and Rear Head Pad are expected to eventually wear down and need replacement. Replacement straps and pads can be purchased at <http://shop.realwear.com>. They may be cleaned with alcohol wipes, but excessive cleaning may accelerate wear.
- Battery: Should the battery become dirty, clean with a dry cloth alone or in combination with alcohol. If dirty, they may be cleaned with cloth, cotton swaps, toothbrush, and alcohol if needed. The contacts should not corrode. If the battery appears as all damaged, replace the battery immediately.
- Battery: The battery must always be kept dry. An indicator on the battery housing will turn red if exposed to excessive moisture. If the indicator is red, the warranty is voided, and the battery should be immediately disposed of properly.

Cleaning Navigator Accessories

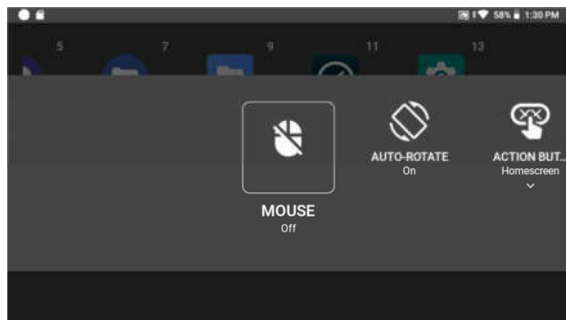
- Hardhat Clips: Hardhat mounting clips are made of plastic and can be cleaned with alcohol wipes or water. Tip: Toothpicks can be used to remove dirt in hard-to-reach areas.
- Hearing Protection Ear Buds: The RealWear Hearing Protection Ear Buds are an electronic component with a metal connector, and cleaning of the buds themselves is not recommended. A polish with a dry or lightly damp cloth should be sufficient. Too much moisture could cause damage to the speakers.
- Foam Tips for Hearing Protection Ear Buds: The foam tips for the ear buds are comprised of memory foam. You may clean with a dry cloth. Too much moisture could damage the foam. The Foam Tips are considered consumables and are expected to eventually require replacing.
- Replacement parts can be purchased at <http://shop.realwear.com>.

Navigator Interaction Modes

Control Using Gestures

Head gesture list control

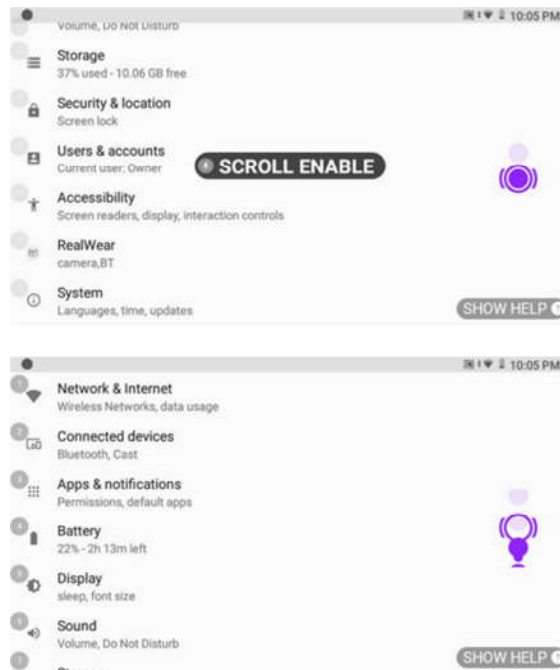
Some interfaces leverage head movement to browse options.



My Controls interface example.

Scroll Enable

From screens with a scroll view, you can say the command "SCROLL ENABLE".



This will enable vertical head scrolling on list user interfaces such as the settings menu and will take the place of the page up and page down commands. To use, look downward and the screen will scroll down one page at a time.

To stop scrolling, bring your head back up to a level position, so that you are looking straight ahead. When you want to stop using this gesture and return to page up/down commands, say "SCROLL DISABLE".

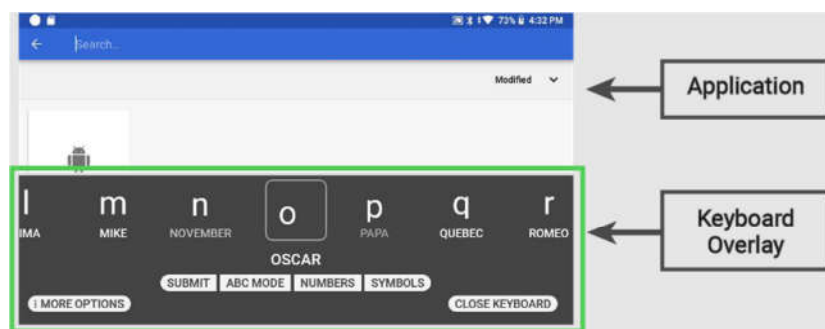
This is extremely useful for quick scrolling to the bottom of a list; when the bottom is reached, quickly say "SCROLL DISABLE".

Navigator Interaction Continued

Speech Keyboard

UPDATED FOR RELEASE 10.2.0

Speech Keyboard is the default method by which text may be entered into a text field using Navigator. When a text entry screen is brought into focus or selected, the hands-free keyboard is displayed overlaying part of the application.



Speech keyboard provides various input methods:

- Normal Entry Keyboard
- Secure Entry Keyboard
- ABC Mode Keyboard
- Scan Code
- Dictation

Normal Entry Keyboard

Using the Normal Entry Keyboard you may enter letters, numbers, or symbols.

The Normal Entry Keyboard opens in the letter list. Scroll left or right to see the code word associated with the character.

To switch to the Numbers keyboard, say "NUMBERS".

To switch to the Symbols keyboard, say "SYMBOLS".

Note, the letter does not have to be in the focus square in order to say each code word. You may speak the phonetic commands for letters either individually or as a group. For instance, you could enter one character at a time by saying "ROMEO", then saying "ECHO" once the "R" character has registered, or you could enter as many letters as is needed with one command.

EXAMPLE: Saying "ROMEO ECHO ALPHA LIMA WHISKEY ECHO ALPHA ROMEO" in one breath without break will enter 'realwear' into the text field.

Remember the command 'SPACEBAR' is part of all three Normal Entry lists; you can say that at any time to add a space.

Secure Entry Keyboard

When a password field is selected, the Secure Entry keyboard appears. This means that phonetic speech commands are disabled, and the user instead uses head movements, left or right, to highlight a character. The user then says "SELECT" to make a selection.

Scan Code

Saying the command "SCAN CODE" opens the barcode reader and allows the user to scan a QR Code for remote keyboard entry using the RealWear Companion app on a mobile phone. This is convenient for passwords and long strings of text. Simply open the RealWear Companion app, select 'Remote Keyboard', enter text and tap on the QR

Code. From the Navigator keyboard say, "SCAN CODE", then scan the QR Code visible on the screen of your smartphone. You can also access the "SCAN CODE" option by saying "MORE OPTIONS".

Dictation

For Speech-to-Text entry, say "DICTATION", then immediately begin speaking freely. Dictation is cloud-based for all languages, so an internet connection may be required. Some languages support local dictation as well. You can also access the "DICTATION" option by saying "MORE OPTIONS". For more information, please visit www.realwear.com/support.

NOTE: If the keyboard becomes hidden or accidentally closed, use the "SELECT ITEM #" command to select the text field again and the speech keyboard will reappear.

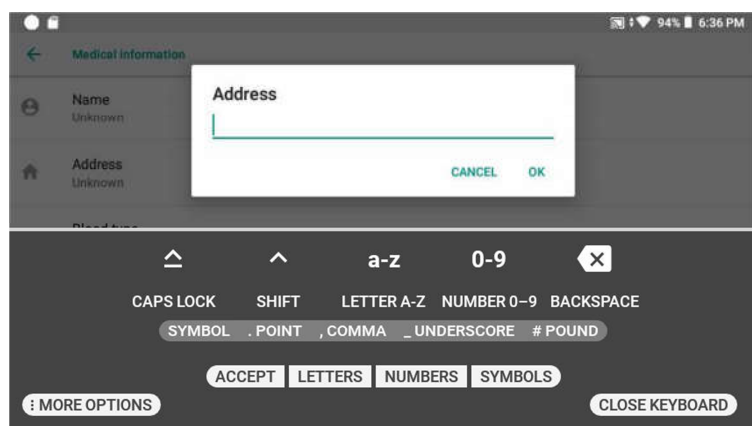
If entering a password for WiFi authentication, simply say "PASSWORD" to activate the speech keyboard.

ABC Mode Keyboard

Introduced as a new feature in Release 10.2.0, ABC Mode for the speech keyboard is an alternative method of entering data into text fields. For longer text entry situations Dictation Mode might be a better, quicker option.

Note: Only English is currently supported in this mode - other languages may work to varying degrees but are not optimized for this mode and could cause user issues.

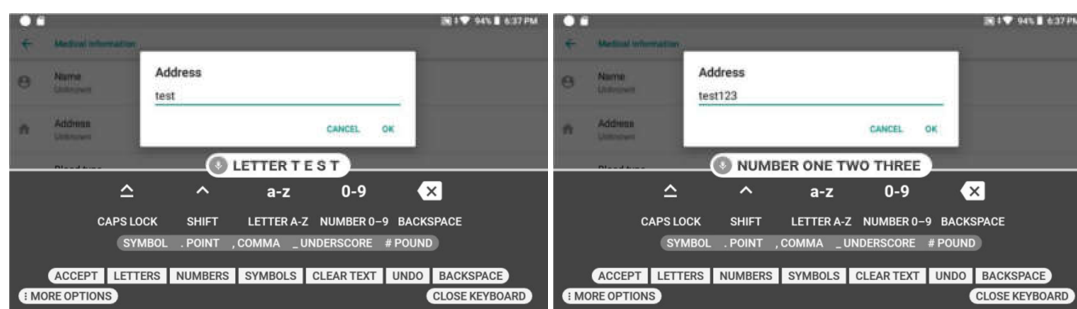
To enter ABC Mode simply say "ABC MODE" while the text entry field is active.



To enter letters say "LETTER (desired letters here)"; for example "LETTER T X T R Y" to enter the string 'txtry'. To enter numbers say "NUMBER (desired numbers here)"; for example "NUMBER NINE FIVE TWO" to enter the number '952'. Changing case, adding spaces, or adding numbers will necessitate a pause in the text string and re-use of the commands as needed.

Extended example:

To enter the text "Sample text 324" the user must say "SHIFT", "LETTER S", "LETTER A M P L E", "SYMBOL SPACEBAR", "LETTER T E X T", "SYMBOL SPACEBAR", "NUMBER THREE TWO FOUR".



At any time the user may switch to other entry modes by simply saying the appropriate command as displayed. For example, say "LETTERS" to return to scrolling letter entry mode.

Speech Keyboard Continued

Keyboard Voice Commands

Voice Command	Action
"SECURE ENTRY"	Toggles to Secure Entry mode
"NORMAL ENTRY"	Toggles to Normal Entry Mode
"SCAN CODE"	Allows user to scan QR code for text entry To set the zoom level for clear scanning say "Zoom level 1-5". For example, to set the zoom level to 3, say "Zoom level 3".
"DICTATION"	Activates dictation and allows user to enter text based on speech recognition.
"NUMBERS"	Toggles to the Number Keyboard
"SYMBOLS"	Toggles to the Symbol Keyboard
"LETTERS"	Toggles to the Letter Keyboard
"ACCEPT"	Accepts the entered information and navigates to the next screen in sequence.
"SPACEBAR"	Inserts a single space.
"BACKSPACE"	Deletes the last character.
"CLEAR TEXT"	Clears the text in the Input box.
"CAPS LOCK"	Toggles between Uppercase and Lowercase letters
"ABC MODE"	Toggles to the ABC Mode keyboard
"LETTER [a-z]"	Starts a text string as spoken by the user. For example "LETTER X Z Y" will enter the text 'xzy' to the field.
"NUMBER [0-9]"	Starts a number string as spoken by the user. For example "NUMBER 4 7 2" will enter the number '472' to the field.
"SYMBOL [?]"	Starts a symbol string as spoken by the user. For example "SYMBOL UNDERSCORE DOLLAR QUOTE" will enter '_\$' to the field.
"MORE OPTIONS"	Displays the "NORMAL ENTRY"/"SECURE ENTRY", 'DICTATION' and 'SCAN CODE' commands
"CLOSE KEYBOARD"	Closes the Speech Keyboard
"SHOW HELP"	Displays pop-up window with the help for commands associated with the current screen.

Navigator Interaction Continued

Voice Control

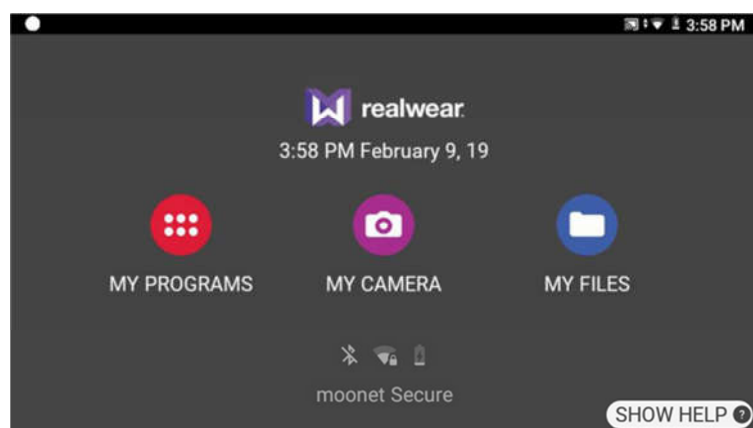
Introducing WearHF™

WearHF™ is an innovative software solution that enables you to use your RealWear Navigator as a hands-free device. It is easy to use and loaded with intuitive functions.

Speech Recognition — Say What You See

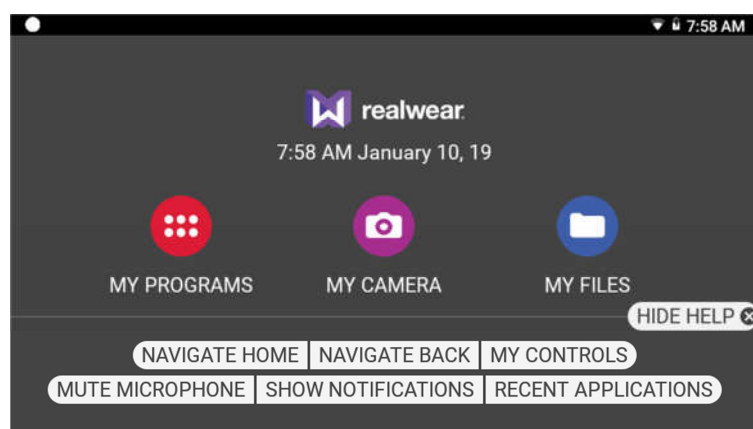
Navigator devices operate based on speech recognition. Instead of pressing or tapping a control button on the screen, all you need to do is speak the name of the respective control. Navigator devices use the latest technology for advanced noise cancellation and speech recognition which work even in the harshest noisy environments. It can recognize many different languages and accents and can detect the command even if you speak in a low voice.

All the commands associated with the specific screen should be displayed clearly on the screen, usually in ALL CAPITAL LETTERS. You can operate the device by speaking the name of any control. For example, the Home Screen has large icons with respective names such as "MY PROGRAMS" or "MY FILES". To access these applications, you can say the application name and the corresponding screen is launched.



Anytime Access Help

You can access the help information regarding the commands associated with a particular screen, with "SHOW HELP" command. The "SHOW HELP" command is displayed on all the screens. The help screen is displayed as a pop-up window. You can either say the command you desire or say "HIDE HELP" to close the pop-up window. Even when the help window is closed, Navigator will continue to listen for and respond to those commands.

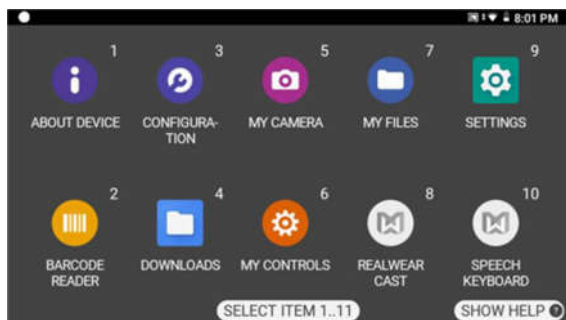


Voice Continued

Alternate Speech Recognition

Sometimes, the control on the screen has no name, is a scroll button without a label, or is a file with an unpronounceable filename such as 3454-x.pdf. WearHF™ automatically proposes an alternative speech command and assigns a number. This number is displayed next to the respective control on the screen. To recall the specific control numbers for that screen, say “SHOW HELP”. To select a specific control, use the number assigned to it. For example, you can say “SELECT ITEM 1” to select the item associated with number 1.

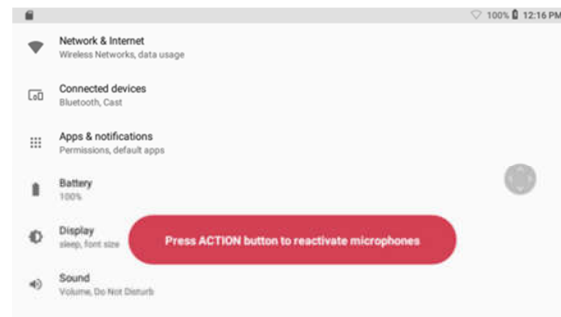
Note some command numbers might be hidden by a SHOW HELP command as it may bring up both the command label popup and the alternative speech command numbers. When you say “HIDE HELP” the command numbers will remain on screen for a moment in order to see those items behind the pop-up window.



Mute Microphone

To stop the speech recognizer, say “MUTE MICROPHONE”. The device will not respond to your voice commands while the microphone is muted, and a red warning sign is displayed on the screen.

To restart the speech recognizer, tap once on the Action button on the side of the device, located just in front of the Power button.



Scroll Up and Down

On screens with scroll views, you can scroll using the following voice commands.

Voice Command	Action
“PAGE UP”	Navigates to 1 page up.
“PAGE DOWN”	Navigates to 1 page down.
“PAGE LEFT”	Navigates to 1 page left.
“PAGE RIGHT”	Navigates to 1 page right.
“SHOW HELP”	Displays pop-up window with the help for commands associated with the current screen.

For example, In Settings page, we can use voice command “PAGE DOWN” to scroll down and “PAGE UP” to scroll up.

Navigator Software Overview

Home Screen

The Home Screen is the primary user interface view and dashboard for the Navigator and is where you start when you power on the Navigator.

The Home Screen allows Navigator users to quickly access files and key applications while providing useful information such as the time, date, WiFi, and battery status.

Jump to primary applications directly from the Home view by simply saying what you see. To launch the apps, simply say the corresponding commands:



"MY PROGRAMS"



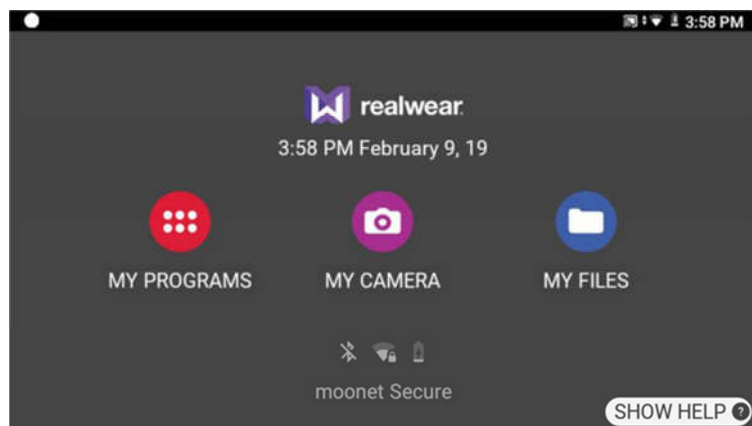
"MY CAMERA"



"MY FILES"

Tip:

- Quickly return Home at any time using the global speech command "NAVIGATE HOME".
- You can also single tap the Action Button once to return to the Home Screen when needed.
- Note: your organization may have modified the home screen to add or subtract some of the launch icons.



Navigator Home Screen

Accessing the Home Screen

To access the Home Screen from anywhere in the system, say "NAVIGATE HOME".

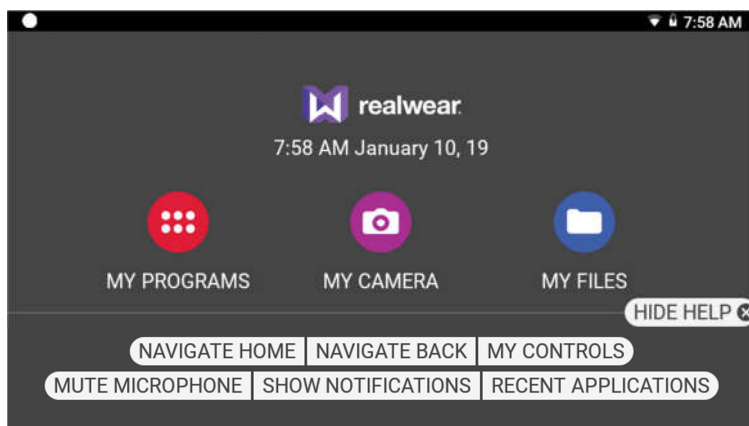
Home Continued

Control Buttons

You can access the various applications by activating the following controls provided in the Home Screen.

Voice Command	Action
"MY PROGRAMS"	Launches application launcher to see and access all the applications installed in the device.
"MY CAMERA"	Launches camera.
"MY FILES"	Launches file manager to easily access documents, videos, photos and other files.
"SHOW HELP"	Opens the help panel.
"MY CONTROLS"	Launches the Control Panel for easy access to some commonly used settings
"SHOW NOTIFICATIONS"	Launches and displays recent notifications.

Home view with Help panel active:



When the Help Panel is open, say "HIDE HELP" to hide.

Software Overview Continued

My Programs

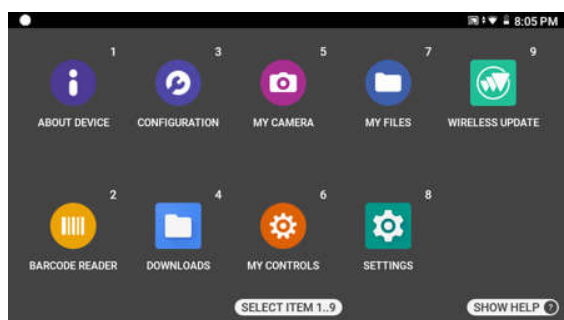


My Programs enables Navigator users to access installed applications.

Applications provided by default are:

- About Device
- Barcode Reader
- Configuration
- Downloads
- My Camera
- My Controls
- My Files
- Settings
- Wireless Update

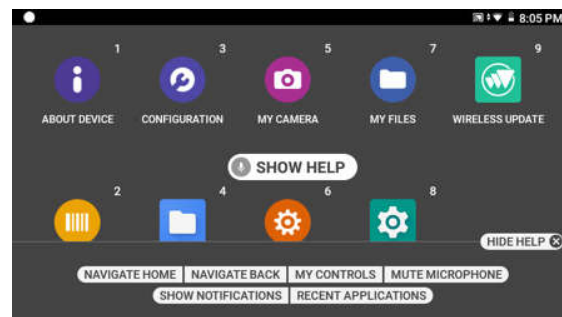
My Programs user interface view.



You can activate any application by just saying the application name as written underneath the application icon even if the icon is not fully visible. For example, to start the camera, say "MY CAMERA".

You can also launch an application by saying the number associated with the application. For example, to launch an application with item number 8, you say "SELECT ITEM 8". You can see up to ten applications in a single screen. To scroll and view other applications, move your head to your left or right.

To view contextual voice commands, say, "SHOW HELP."



The help menu will stay active until you dismiss it by saying "HIDE HELP".