

Safety Instructions – Usage in Ex-Hazardous Areas

1 Note

This document contains the safety instructions necessary for the safe use of the REALWEAR NAVIGATOR® Z1 model T21S device in explosive and potentially explosive atmospheres. Such areas or zones are referred to as “ex-hazardous areas” in this document.

2 Introduction

This document contains information and safety regulations which are to be observed – without fail - for safe operation of the device under the described conditions. Non-observance of this information and instructions can have serious consequences and / or may violate regulations. Please read the manual and these safety instructions before using the device. In case of any translation or printing errors, the English version shall apply.

3 Application

3.1 ATEX, IECEx & UKEx

The REALWEAR NAVIGATOR® Z1 model T21S is approved for use in zone 1, zone 2, zone 21 and zone 22 in accordance with directives 2014/34/EU (ATEX) and the IECEx System.

Marking:

ATEX:  II 2G Ex ib IIC T4 Gb

 II 2D Ex ib IIIC T200°C Db

EU Type Examination Certificate: EPS 23 ATEX 1 215 X

CE-designation  2004

IECEx: Ex ib IIC T4 Gb

Ex ib IIIC T200°C Db

IECEx Certificate: IECEx EPS 23.0053X

UKEX:  II 2G Ex ib IIC T4 Gb

 II 2D Ex ib IIIC T200°C Db

UK Type Examination Certificate: EPS 23 UKEX 1 216 X

UKCA-designation  2503

Temperature range: -20 °C ... +55 °C

3.2 NEC & CEC

The REALWEAR NAVIGATOR® Z1 model T21S is approved for use in Division 1 and 2 Class I, II, III.

3.3 Manufacturer

i.safe MOBILE GmbH

i_Park Tauberfranken 10

97922 Lauda-Koenigshofen Germany

4 Faults and Damage

Before entering ex-hazardous areas, the safety of the device must be checked. If there is any reason to suspect that the safety of the device has been compromised, it must be withdrawn from use and removed from any ex-hazardous areas immediately.

Measures must be taken to prevent any accidental restarting of the device. The safety of the device may be compromised, if, for example:

- Malfunctions occur.
- The housing of the device shows damage.
- The device has been exposed to excessive loads.
- The device has been stored improperly.
- Markings or labels on the device are illegible.
- Permitted limit values have been exceeded.

It is recommended that a device displaying errors or for which an error is suspected be sent back to an authorized service center to be checked.

5 Ex-relevant / Intrinsic Safety Regulations

Use of this device assumes that the operator observes the conventional safety regulations and has read and understood the user manual, safety instructions and safety certificate. The following additional safety regulations must be complied with:

5.1 Charging and battery

- The device may only be charged outside ex-hazardous areas using the i.safe PROTECTOR 2.0 USB-C Cable (or other equipment approved by i.safe MOBILE GmbH.)
- Spare battery packs may only be charged outside ex-hazardous areas using the i.safe PROTECTOR 2.0 USB-C Cable and i.safe MOBILE GmbH approved charging equipment (e.g. charging cradles).
- Battery removal and installation may only be done outside the ex-hazardous areas.
- Individual (uninstalled) batteries may not be taken into the ex-hazardous areas.
- Ensure proper installation of the battery before entry into ex-hazardous areas. The battery must be properly mounted and screwed down with all screw covers in place.
- The device may only be charged at temperatures between +5°C and +40°C.

5.2 Connections and covers

- Physical connections to other equipment are only permitted outside ex-hazardous areas, using the i.safe PROTECTOR 2.0 USB-C Cable (or other equipment approved by i.safe MOBILE GmbH).
- Inside ex-hazardous areas, the covers of the USB connector must be kept closed.
- The audio jack can be used to connect approved headsets inside ex-hazardous areas.
- To ensure the integrity of ingress protection (IP), check that all gaskets are present and functional.
- During charging any headset or accessory must be unplugged from the audio jack.

5.3 Usage environments

- The device may not be taken into zones 0 or 20.
- The device may not be exposed to any aggressive acids or alkalis.
- The device must be protected from impacts with high impact energy, against excessive UV emission and high electrostatic charge processes.
- The permitted ambient operating temperature range is -20°C to +55°C.

5.4 Accessories

- Only accessories approved by i.safe MOBILE GmbH may be used in ex-hazardous areas.
- Accessory camera modules:
 - Camera module removal and installation may only be done outside the ex-hazardous areas.
 - Uninstalled camera modules may not be taken into the ex-hazardous areas.
 - Ensure proper installation of the camera module before entry into ex-hazardous areas.
 - The camera module must be properly mounted and screwed down with all screw covers in place.
 - Ensure the connector is clean and free of debris.
 - A camera module is required to be installed.
 - The device must not be used in the ex-hazardous areas without a camera module installed.
- Adjustment of the head strap in ex-hazardous areas is not permitted.

NAVIGATOR Z1 Connectivity

Operating Frequency Bands for RealWear NAVIGATOR Z1

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

Wi-Fi 2.4G: 18.99dBm

Wi-Fi 5G:

5150-5250-2472: 19.86dBm

5250-5350: 19.35dBm

5470-5725: 19.77dBm

5725-5850: 12.92dBm

Wi-Fi 6G (5945-6425): 13.57dBm for VLP

Bluetooth operating frequency band and EIRP is: 2402-2480: 14.88dBm

5G Wi-Fi Connection Information

Operations in the 5250 — 5350 band are restricted to indoor use only.

	AT	BE	BG	HR	CY	CZ	DK
	EE	FI	FR	DE	EL	HU	IE
	IT	LV	LT	LU	MT	NL	PL
	PT	RO	SK	SI	ES	SE	UK(NI)

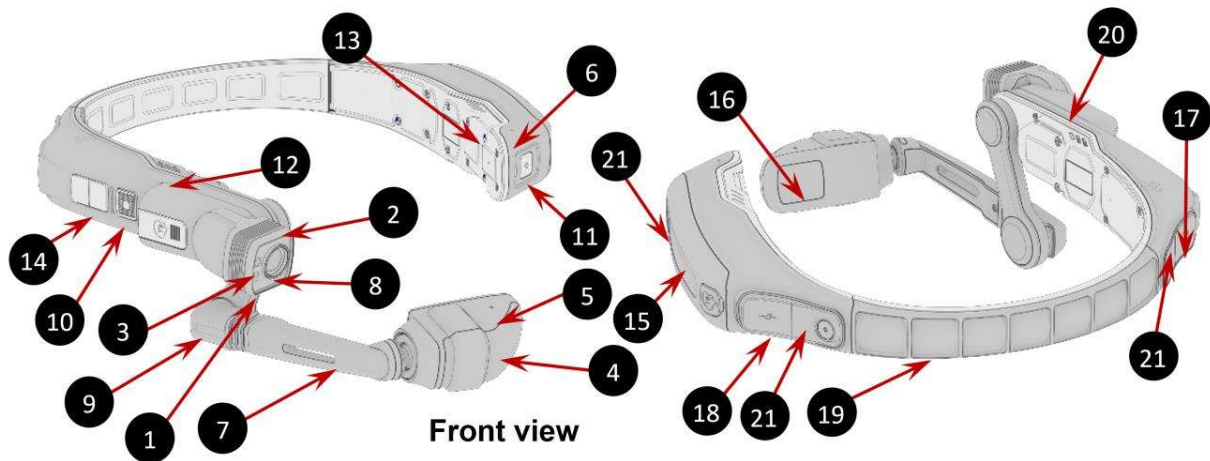
NAVIGATOR Z1 Box Contents

The list of items in the RealWear NAVIGATOR Z1 box are:

RealWear NAVIGATOR Z1 with preinstalled battery

- Protective Carrying Case
- i.safe MOBILE Charging Cable, USB-C
- Tri-band Strap
- T8 Screwdriver
- NAVIGATOR Z1 Quick Start Guide

NAVIGATOR Z1 Overview



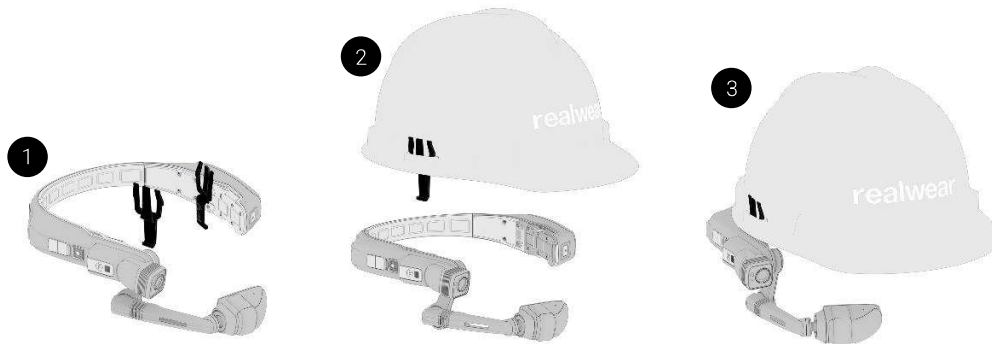
Callout	Definition	Callout	Definition
1	Active camera indicator light	12	Speaker
2	Shoulder joint	13	Side accessory clipping points
3	Flashlight	14	+ (plus) and – (minus) buttons
4	Display pod	15	Battery pack
5	Mic A1 (Mic A2 on opposite side)	16	Display window
6	Mic B1 (Mic B2 on opposite side)	17	3.5mm audio jack
7	Boom arm	18	USB-C charging power
8	Camera	19	Rear band
9	Elbow joint	20	Camera module
10	Action button	21	Battery status indicator
11	Power button	22	Dust Cover

NAVIGATOR Z1 Setup Guide

Using the device with a Hard Hat

To get hard hat clips, contact your reseller or visit shop.realwear.com.

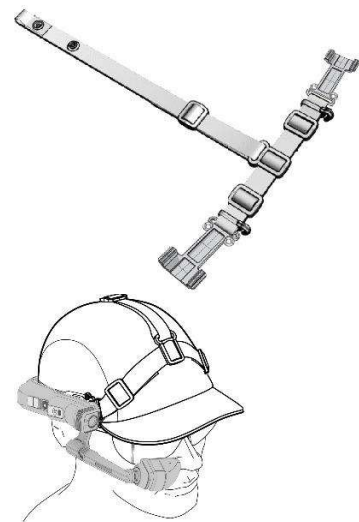
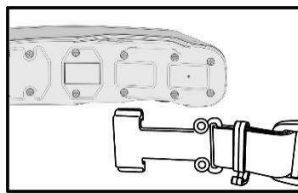
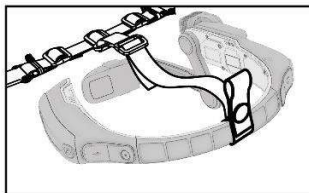
1. Hook the Hard Hat Clips onto the device and snap them into place.
2. Slide the clips into the hard hat accessory slots; the device should sit outside of the hard hat's harness.
3. Put on the hard hat and if applicable, tighten until secure and comfortable.
4. To remove the REALWEARNAVIGATOR® Z1 from the hard hat, pinch the clip fingers and push the clip out of the hard hat slots.



Using the device with a RealWear Tri-band strap

1. Wrap the end of the Tri-Band Strap's top band around the rear of the device and snap closed.
2. Snap the Device clips onto the left and right side device mounting points.

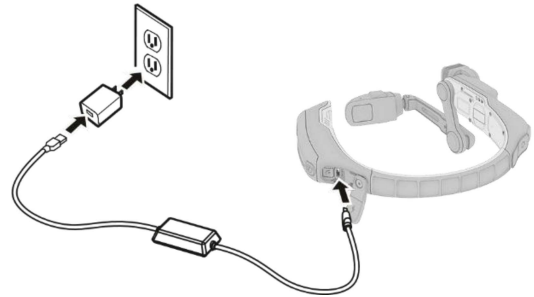
Move the adjustment buckles as needed for the best fit.



Charging the Device

Connect the USB-C charging cable as shown.
Connect the cable to the wall charger as shown and plug in.

A Red light means the battery is extremely low or dead.
A Yellow light means the battery is less than 100% and charging.
A Green light means the battery is full.



Safety Warning Only use the Provided Charger

The USB cable included with the device is a special USB-C cable for data transfer and charging. It includes a safety box that protects the device's safety circuits from power surges. These surges can damage the device and may occur when connecting the device to computers, wall chargers, car chargers, and other power sources that are not certified or approved as intrinsically safe. It is the only cable approved for charging the device and for moving files to and from the device.

1. Setup and Configuration

Use the RealWear ONE App
Scan this code from your smartphone to download the RealWear ONE App



1. Download the RealWear ONE app from the Appstore for your smartphone OS
2. Launch RealWear ONE app from your smartphone.
3. Follow the steps in the application to connect to your device and configure.

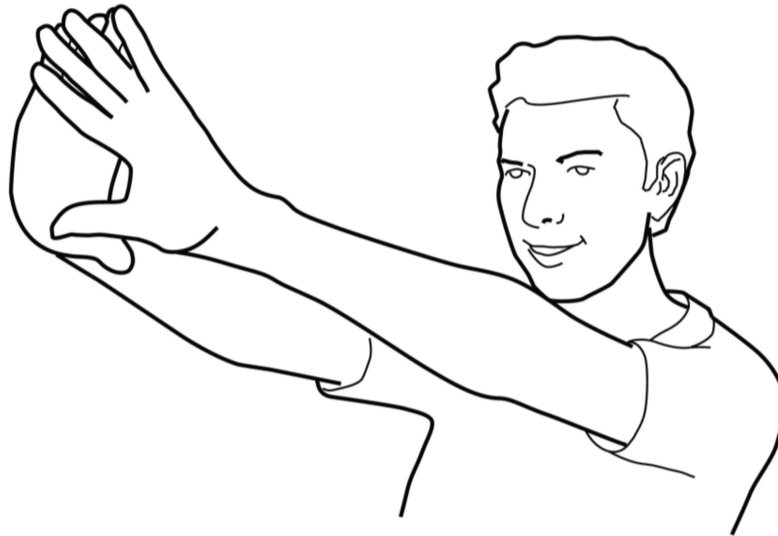
2. Check your eye dominance

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.

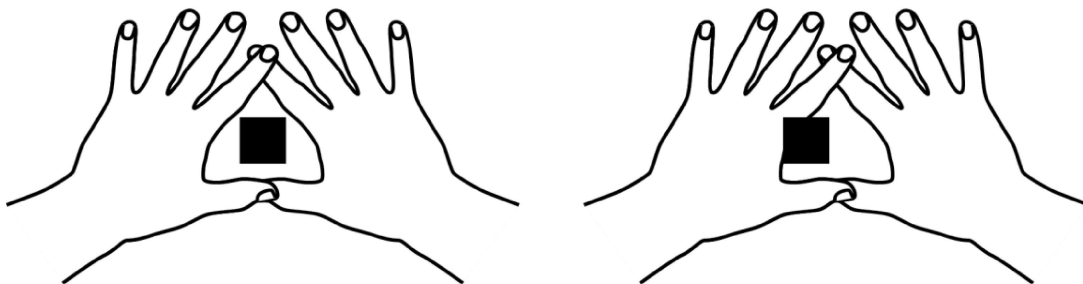
Eye dominance is not related to right- or left-handedness.

To determine which eye is dominant:

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



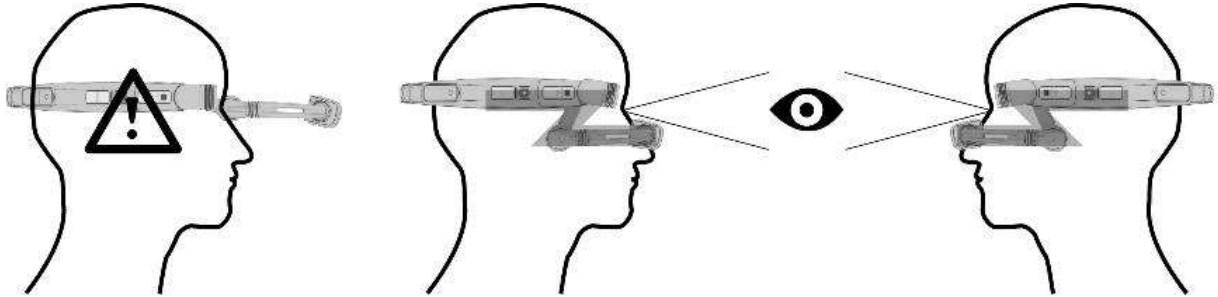
2. With both eyes open, focus on any distant object centered in the triangle (such as a light bulb or door knob).
3. Maintaining focus on the object centered in the triangle and - keeping your head and both hands still - close your right eye.
4. If the object is still in the triangle, you are left-eye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



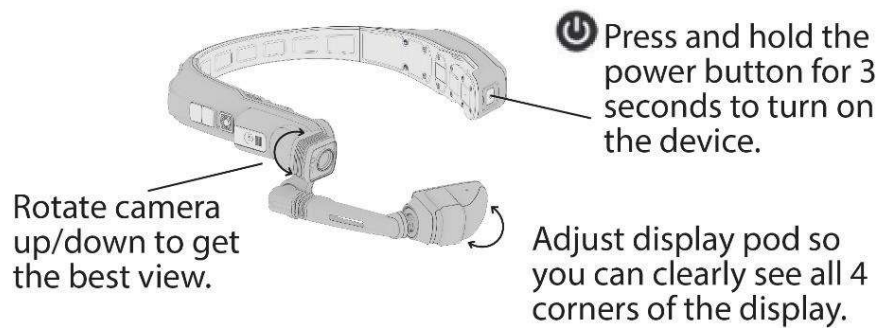
7. If the object is in the triangle with either eye, then you are dominant eye neutral.

3. Put on the device

Do not extend the display too far from your eye. Keep the display as close to the eye as possible for the best viewing experience. Adjust the overhead strap such that the device rests horizontally, slightly above the tops of your ears. Position the shoulder and elbow joints into a "Z" shape, below the line of sight, left or right eye.



4. Turn on the device



5. Scan the Configuration QR Code from the device

1. The device will automatically launch into configuration mode.
2. Point the camera at the QR code you generated in Step 1.
3. The device will detect the QR code and configure the device.

Note: Once the device connects to Wi-Fi an update of RealWear Device Agent may occur.

6. Say What You See

The device is controlled by voice and head motion. Say what you see on the screen and move your head to navigate. If you get stuck say "SHOW HELP".

Remote configuration for NAVIGATOR Z1 from web browser

RealWear Cloud is a robust web-based software platform tailored for managing and controlling RealWear Devices. Offering centralized fleet management, remote control, and customized device configurations, it simplifies the user experience with an intuitive interface. Integrated with third-party services and prioritizing security and compliance, RealWear Cloud provides in-depth performance analytics and support, making it an essential tool for optimizing headset utilization across various industries.

You can easily get your device online following RealWear Cloud's intuitive 'get-connected' flow.

If you don't yet have a RealWear Cloud Workspace you can sign up here <https://get-started.realwear.com>

Get your devices online

1. Login to your RealWear Cloud Account through <https://cloud.realwear.com>
2. Head over to Wi-Fi in the navigation menu
3. Click the plus button
4. Enter your Wi-Fi credentials and mark the network as 'Exportable'
5. Save your settings
6. Click the small QR code next to your Wi-Fi settings
7. Scan this QR code on first boot of the device or using the 'Configuration App' in My Programs
8. Head over to Devices in the navigation bar
9. Click the plus button
10. Click Add a single device
11. Enter the serial number of your device and a device name
12. Click Insert Device
Your Device shows as Visible when it connects to RealWear Cloud

RealWear Cloud Basics

In this next section we'll have a look at some of the features of RealWear Cloud including our RealWear App Marketplace

RealWear is constantly updating its web platform, if you need up to date guidance since this document was created you can always check <https://support.realwear.com> where you'll always find the most up to date information

RealWear App Marketplace

The RealWear App Marketplace is the go-to destination for apps supported on RealWear Devices. Our incredible Software Vendors build amazing apps specifically for RealWear Devices which are available to install in the RealWear App Marketplace here: <https://marketplace.realwear.com>

The RealWear App Marketplace has the latest apps and you can also install them from your device

1. **Install an app (From App Marketplace)**
2. Find the app you want to install
3. Click 'Login to Install'
4. Log in with your RealWear Cloud credentials
5. Click Install; Choose your device
6. Click install

Install an app (From RealWear Cloud)

1. Login to your RealWear Cloud Account through <https://cloud.realwear.com>
2. Head over to Devices in the navigation menu
3. Click your device
4. Click apps
5. Choose the app you want to install and send it to your device.
6. Your app will be installed in a few minutes providing your device is online and can see RealWear Cloud.

Updating your Firmware from RealWear Cloud

You can schedule firmware updates at your convenience from RealWear Cloud.

1. Login to your RealWear Cloud Account through <https://cloud.realwear.com>
2. Head over to Devices in the navigation menu
3. Click your Device
4. Click Update Firmware
5. Click a version
6. Choose a date
7. The device will update on the requested date so long as it's powered on, plugged in and connected to the internet

Remote Control your device from RealWear Cloud

RealWear Cloud offers wireless Remote Control of your device from a desktop web interface.

1. Login to your RealWear Cloud Account through <https://cloud.realwear.com>
2. Head over to Devices in the navigation menu
3. Click your Device
4. Click Cloud Assistance
5. Agree to the terms
6. RealWear Cloud will create a 1to1 remote connection from the web browser to your device.

For the most up to date RealWear Cloud news,
features and changes you can always checkout
<https://changelog.realwear.com>

Selecting NAVIGATOR Z1 Interface Language

The NAVIGATOR Z1 supports the following languages:

1. Chinese (Cantonese, Mandarin-Simplified and Traditional)
2. Czech
3. Danish
4. Dutch
5. English (American, Australian, British, Indian)
6. French
7. German
8. Indonesian
9. Italian
10. Japanese
11. Korean
12. Norwegian
13. Polish
14. Portuguese (Brazil)
15. Russian
16. Spanish
17. Thai
18. Turkish

To select the user interface language:

Step 1: Press and hold the large, black Action button 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 Z1 Device Care

Powering Off the NAVIGATOR Z1

RealWear recommends that you power off your NAVIGATOR Z1 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 red power button on the battery-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 Z1

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 Z1

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 Z1.

B. Hands On:

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

Storing the NAVIGATOR Z1

The NAVIGATOR Z1-1 and NAVIGATOR Z1 are 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 Z1 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 Z1 device connected to a hard-hat or bump cap as needed.

NAVIGATOR Z1 Care Continued

Cleaning the NAVIGATOR Z1 device

Follow these instructions for cleaning the different areas of the NAVIGATOR Z1-1 or NAVIGATOR Z1:

- The NAVIGATOR Z1 is water resistant so cleaning with a damp cloth and mild soap is appropriate. Ensure that all covers are firmly secured when cleaning. The NAVIGATOR Z1 should never be submerged.
- You may also use isopropyl alcohol wipes to clean and lightly sterilize the hard surfaces of the NAVIGATOR Z1. 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 damaged, replace the battery immediately.
- Battery: The battery contacts must always be kept dry.

Cleaning NAVIGATOR Z1 Accessories

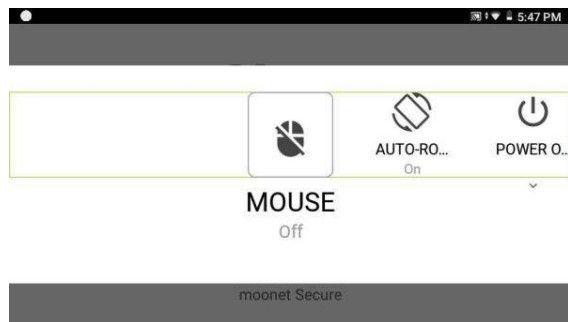
- Hardhat Clips: Hardhat mounting clips are made of plastic and can be cleaned with alcohol wipes or water. Tip: Toothpicks can be used to remove dirt in hard-to-reach areas.
- Tri-band Strap: The Tri-band Strap is comprised of plastic and fabric. It can be cleaned with alcohol wipes, but excess cleaning may accelerate wear. Replacement straps can be purchased at <http://shop.realwear.com>.
- 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 Z1 Interaction Modes

Control Using Gestures

Head gesture list control

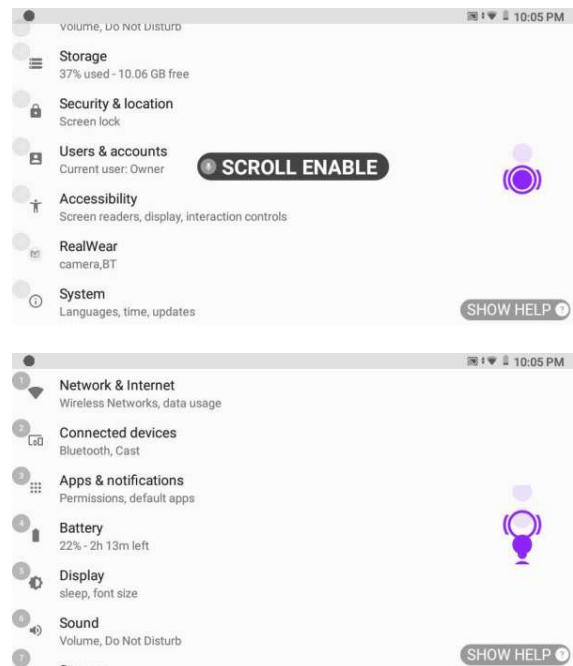
Some interfaces leverage head movement to browse options.



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".

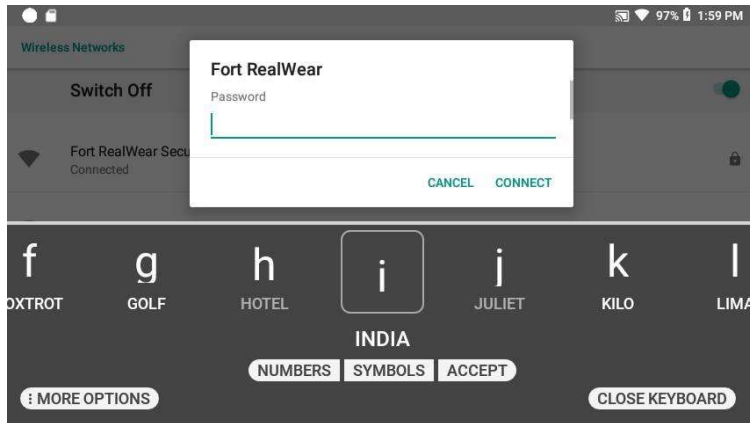
This is extremely useful for quick scrolling to the bottom of a list; when the bottom is reached, quickly say "SCROLL DISABLE".

NAVIGATOR Z1 Interaction Continued

Speech Keyboard

Speech Keyboard is the default method by which text may be entered into a text field using the NAVIGATOR Z1-1 or NAVIGATOR Z1.

Whenever a text entry screen is brought into focus or selected, the hands-free keyboard is displayed automatically.



Speech keyboard provides various input methods:

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

Normal Entry Keyboard

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.

To switch to the Numbers keyboard, say 'NUMBERS'

To switch to the Symbols keyboard, say 'SYMBOLS'

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 Z1 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'.

Speech Keyboard Continued

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.

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
"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 Z1 Interaction Continued

Voice Control

Introducing WearHF™

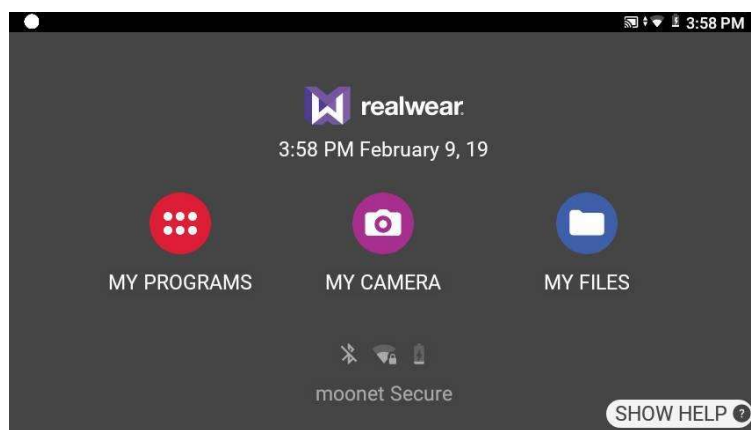
WearHF™ is an innovative software solution that enables you to use your RealWear NAVIGATOR Z1 as a hands-free device.

It is easy to use and loaded with intuitive functions.

Speech Recognition — Say What You See

NAVIGATOR Z1 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 Z1 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, the NAVIGATOR Z1 will continue to listen for and respond to those commands.

