



USER GUIDE

FEARLESS WW

WIRED-WIRELESS TECHNOLOGY ALLOWS YOU TO SWITCH SEAMLESSLY FROM ONE COMMUNICATION MODE TO THE OTHER.

CONNECT THE HELMET VIA NEXUS FOR WIRED MODE AND DISCONNECT IT TO GO WIRELESS WITH NO COMMUNICATION INTERRUPTION.

COMMUNICATE IN ANY CONDITION THANKS TO WW TECHNOLOGY.

WARNING: BATTERY CHARGE

MAKE SURE THE HELMET IS CHARGED AHEAD OF USE.

CHARGE IT BY USING THE USB-C PORT ON THE HELMET SIDE.

IF THE BATTERY IS COMPLETELY EMPTY, IT CAN ONLY BE CHARGED VIA USB-C, NOT VIA NEXUS CONNECTOR.

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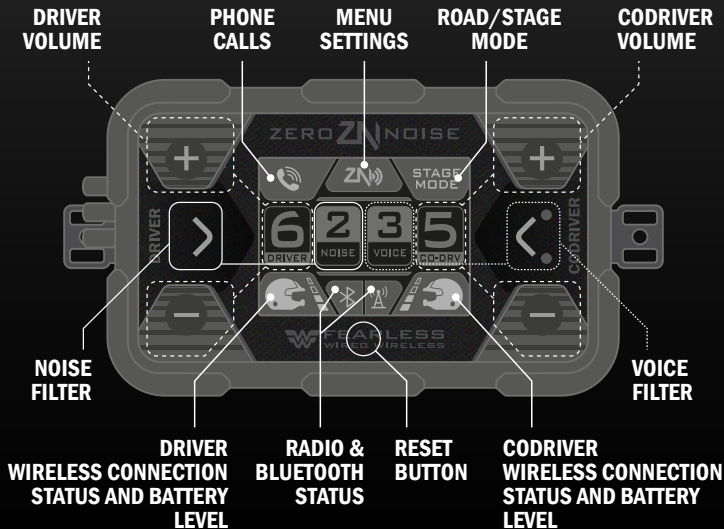
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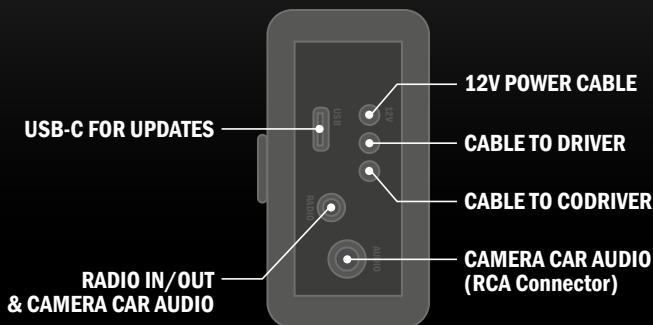
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1. KEYBOARD AND TOUCH DISPLAY



2. AMPLIFIER CONNECTIONS PANEL



ROLLBAR INSTALLATION

Use the supplied zip-ties to anchor the metal bracket onto the rollbar.

POWER SUPPLY CAR BATTERY

Connect the 12V cable to the car battery.

ON/OFF

The Fearless WW starts automatically when connected to the power supply.

To turn off the unit, press and hold the RESET button for 2 seconds. The Fearless WW will restart automatically.

CONNECTION

Each cable is labeled DRIVER and CODRIVER.

Plug in the Nexus connectors to the helmets (compatible with ALL helmets) and/or pair and connect via wireless to helmets (compatible with WW Bell helmets only).

HELMET BATTERY CHARGE

IMPORTANT. Make sure the helmet battery is charged ahead of use.

⚠ IF THE BATTERY IS COMPLETELY EMPTY, IT CAN ONLY BE CHARGED VIA USB-C, NOT VIA NEXUS CONNECTOR.

CHARGE MODES

1. USB-C

(Recommended): connect the helmet via USB cable to a power supply. This is the safest way to charge your helmet. Always keep a USB cable in the car and a power supply available, either from the car, or a power bank.

2. NEXUS:

connect the helmet to the Fearless WW via Nexus. The battery will charge when the Fearless WW is in **ROAD MODE**, and the Charge option in the secondary Menu has been enabled (more details below in **Secondary Menu, Battery Charge**)

HELMET PAIRING

FIRST USE: it is necessary to register wireless helmets to the Fearless WW.

IMPORTANT: One helmet at a time starting with the driver.

- 1. Press once the button on the side of the driver helmet.**
- 2. The light on the helmet button will start blinking as it is searching for a Fearless WW to connect to.**
- 3. Long press the driver helmet icon (Black) on the Fearless WW display, the icon will turn blue when the helmet is connected.**

Use the same procedure with the codriver helmet icon to pair the helmet.

LED colours and light patterns are combined to convey a precise message:

- Green light: helmet battery level above 20%.**
- Red light: helmet battery level below 20% and/or the battery is recharging.**
- Fixed light: helmet currently connected to a near Fearless WW.**
- Blinking light: helmet in Pairing Mode and searching for a near Fearless WW to connect to.**

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3. MAIN MENU



BLACK

NO HELMET REGISTERED

You can start pairing a new helmet (driver or codriver). The helmet you are going to register must not be paired to any other Fearless WW. If this is not the case, reset the helmet by pressing the button on the side three times quickly. After a successful reset, the button light will start blinking. The helmet is ready for a new registration.



RED

HELMET REGISTERED FOR, BUT CURRENTLY NOT CONNECTED. If the icon (driver or codriver) is red and you turn on the paired helmet, the helmet will connect automatically. The icon will turn blue showing battery charge status. The light on the helmet will turn steady blue.



BLUE

HELMET REGISTERED AND CONNECTED

The battery state of charge indication is constantly updated. Four full bars correspond to battery level above 80%. All four empty bars correspond to battery state of charge below 20%, which is also signaled by a red light on the helmet button.

GETTING THE SOUND RIGHT

Preliminary step: Adjust ZN microphone to be at 5mm distance from your lips.



VOLUME CONTROL

Adjust the volume independently for the DRIVER and CODRIVER. Use the +/- buttons to adjust volume.

Left buttons control DRIVER output volume, and right buttons control CODRIVER output volume.

Select BOOST from the settings menu for extra volume.



SOUND FILTERS CONTROL

Fearless WW uses an adaptive noise cancelling technology that can deal with changing conditions. There are two independent sound filter controls on the Fearless WW.

The higher the filter value, the more the noise is being reduced.

NOISE FILTER. Reduces the intensity of the noise coming from the car. Setting can be changed with the > button.

VOICE FILTER. Reduces the noise generated by the type of surface (terrain, tarmac, snow). Setting can be changed with the < button.

Sound comfort is subjective, therefore the ideal setting can be found with the right balance of the two sound filter controls.



BLUETOOTH

The Bluetooth channel is ON in ROAD mode and OFF in STAGE mode when RACE mode is enabled (default behavior). However, if RACE mode is disabled (custom behavior), Bluetooth can be turned on/off independently on the ROAD STAGE mode.

With Bluetooth enabled on the Fearless WW, turn ON Bluetooth on your smartphone and find FEARLESS WRC WIRELESS to pair and connect the devices.

- Bluetooth volume configuration (additional settings):
Adjust the Input/Output volumes independently from the settings menu.

To enter the menu simply touch the MENU icon on the main screen, then navigate to BT IN VOL and BT OUT VOL settings with > < buttons.

The volume level ranges from 0 to 9, as for the DRIVER and CODRIVER output volumes, and can be modified by using +/- buttons.

Once the most suitable tuning has been found, you can go back to the main screen by touching again the MENU icon.



RADIO

The Radio channel is ON in ROAD mode and OFF in STAGE mode when RACE mode is enabled (default behaviour). However, if RACE mode is disabled (custom behavior), the Radio can be turned on/off independently.

It is possible to connect a Radio device with a 3.5mm jack connector.

- Radio volume configuration (additional settings):
Adjust the Input/Output volumes independently from the settings menu.

To enter the menu simply touch the MENU icon on the main screen, then navigate to RADIO IN VOL and RADIO OUT VOL settings with > < buttons.

The volume level ranges from 0 to 9, as for the DRIVER and CODRIVER output volumes, and can be modified by using +/- buttons.

Once the most suitable tuning has been found, you can go back to the main screen by touching again the MENU icon.

CAR CAMERA

Connect a camera with RCA connector to get audio from the Fearless WW (see image).

The RCA channel is OFF in ROAD mode and ON in STAGE mode when RACE mode is enabled (default behaviour).

RCA is ON when RACE mode is disabled (custom behaviour).

- RCA volume configuration (additional settings):
Adjust the Output volume from the settings menu.

To enter the menu simply touch the MENU icon on the main screen, then navigate to CAMERA CAR settings with > < buttons.

The volume level ranges from 0 to 9, as for the DRIVER and CODRIVER output volumes, and can be modified by using +/- buttons. Once the most suitable tuning has been found, you can go back to the main screen by touching again the MENU icon.



ROAD/STAGE MODE

Press ROAD STAGE icon on display to switch between ROAD and STAGE modes when RACE mode is enabled (default behavior).

In ROAD mode BT and RADIO are ON and CAMERA CAR is OFF, while in STAGE mode BT and RADIO are OFF and CAMERA CAR is ON.

If you disable RACE mode (custom behavior), BT and RADIO can be custom enabled/disabled from display in an independent way and RCA is enabled.

In custom mode, the icon on display shows CUSTOM MODE instead of ROAD STAGE.



MENU

Access the secondary menu to set additional volumes and features by touching the MENU icon on the main screen.

To navigate menu settings use > < buttons. To modify the value of the currently selected setting use +/- buttons on the left or right side of the intercom.

4. SECONDARY MENU

RADIO VOL IN/OUT

Adjust the Input/Output volumes for the RADIO channel independently until the most suitable tuning has been found.

BLUETOOTH VOL IN/OUT

Adjust the volume of voice calls and/or music from a Bluetooth connected device (e.g., smartphone).

CAMERA CAR

Adjust the Output volume for the RCA channel until the most suitable tuning has been found.

DRIVER VOLUME ATTENUATION

Driver can hear him/her-self at a lower volume by reducing the overall noise. Adjust the attenuation value to obtain the desired feeling.

The possible values range from 0 (no attenuation at all, standard volume) to a maximum value of 9 (the higher the value the lower the volume).

LCD DISPLAY BRIGHTNESS

Adjust the display brightness to best fit all external light conditions and improve display readability.

VOLUME BOOST

Enable this option for extra volume.

BLUETOOTH AUTOANSWER

Enable this option to automatically answer an incoming call from a BT connected smartphone.

BATTERY CHARGE

Enable this option to recharge the WW Bell helmet via the Nexus connector

IMPORTANT - WW Bell helmets can be recharged via Nexus in ROAD mode only.

In this case the system will work in WIRELESS mode while charging the battery.

When helmets are recharging, the light on their power buttons will be red.

ADVICE: recharge the helmet via USB cable when you are not using it!

RACE MODE

Enable this option to use the intercom with the standard ROAD and STAGE behavior.

Disable it to have the freedom to customize and test all volumes and filters, together with BT, RADIO, and RCA volumes. Settings from CUSTOM MODE are kept in sync and applied to STAGE.

SETTINGS RESET

Enable this option to factory reset all audio settings.

Use with CAUTION, if you enable this option all your current settings will be overwritten.

ADVANCED

Bootloader mode for firmware update: This procedure is useful to upload a new firmware version on the board.

The same procedure is valid for updating the Fearless WW and the WW Bell helmets.

- **Connect the device to your PC via the USB-C port.**
- **Press the power button 5 times in a 1-second time span to enter bootloader mode.**
- **WW Intercom:**
When the device has been recognized as a peripheral named RPI-RP2, simply drag and drop the `WRC_WW_BS_vXXX_firmware.uf2` binary to the unit. New firmware will flash automatically.
- **Fearless WW:**
When the device has been recognized as a peripheral named RPI-RP2, simply drag and drop the `WRC_WW_PU_vXXX_firmware.uf2` binary to the unit. New firmware will flash automatically.
- **Reboot the device.**

SUGGESTED GUIDELINES

Suggested guidelines for Fearless WW and helmets initial setup:

- 1. Turn on the WW intercom.**
- 2. Always turn on one helmet at a time and pair it with the desired user (driver or codriver) on the intercom.**

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5. FAQs

First time registration, no device is registered to the Fearless WW. How can I set up the WW communication system for the first time?

- All helmet icons on the Fearless WW are BLACK, this means No helmets have been paired to the Fearless WW.
- Pairing a new DRIVER helmet:
 1. Pick the helmet and turn it ON by pressing once the button on the side. The helmet button light will start blinking.
 2. Reset the helmet to make sure it has not been previously paired to another Fearless WW by pressing quickly three times the helmet button.
 3. On the Fearless WW, press and hold the DRIVER helmet icon for a couple of seconds. The icon will start blinking. This means the Fearless WW is searching for a new helmet to register and connect to.

Two things can happen now:

A. The Fearless WW and the WW Bell helmet find each other, the registration is ok (icon on the Fearless WW stops blinking and turns RED and then blue). LED on the helmet button stops blinking.

SUCCESS!

B. The Fearless WW and the helmet do not find each other and the timeout for registration (30 seconds) elapses. The icon on the Fearless WW stops blinking and remains BLACK. Try again starting from step 2. If the problem persists, reboot the Fearless WW and start the process again.

- Associating a new CODRIVER helmet: you can follow the same procedure as for the DRIVER, this time interacting with the CODRIVER helmet icon on the Fearless WW.

- At this point, you have both DRIVER and CODRIVER helmets registered and connected to the Fearless WW via wireless (both helmet icons are BLUE). You can then connect the helmets with cables and the WW system will automatically switch to WIRED mode.

The transition between the two modes is based on how the system condition change: cable connection/disconnection, wireless connection/disconnection, and so on.

Remember:

Be careful to always connect the cable labelled DRIVER to the helmet wirelessly connected as the driver; same thing applies to the CODRIVER.

How can I reset a WW Bell helmet registration to a Fearless WW?

The WW Bell helmet is currently connected to your Fearless WW, but you want to deregister it to change helmet.

Quickly press 3 times (in a 1-second time span) the power button on the helmet side.

You should see three quick flashes of the helmet light showing the reset was successful.

After that the LED resumes its normal blinking pattern.

You can now turn off the helmet and store it.

On the Fearless WW, the icon of the user (driver or codriver) to which the helmet was linked should have turned black.

This shows that the reset was successful on the Fearless WW side as well.

How can I factory reset the Fearless WW (i.e., no registered helmets, default audio settings)?

To reset the Fearless WW to factory settings, quickly press 3 times in a row (in a 1-second time span) the button "hidden" under the FEARLESS WIRELESS logo at the bottom of the display.

If the reset was successful, all helmet icons on the Fearless WW will turn black, this means the Fearless WW has no associated helmets.

Remember

- Also the helmets paired with this Fearless WW must be reset.

- The Fearless WW reset will also take the volumes and filters to factory default settings.

My WW intercom is paired and connected to some helmets. How can I deregister a helmet and register the same helmet again or a different one?

- I need to change the helmet for the DRIVER:

- Deregister the current helmet:

Pick the helmet currently associated as DRIVER and reset it.

- The LED on the helmet button will start blinking.

- The icon on the intercom will become black again.

- Turn off the helmet before proceeding further.

Simply press the button once and hold until the LED turns off.

- Register a new helmet as DRIVER: as in step 2 of previous section "First time registrations, no one is registered to the intercom".

- I need to change the helmet for the CODRIVER:

You can follow the same procedure explained for the DRIVER, this time interacting with the CODRIVER helmet icon on the intercom.

How can I factory reset the WW helmet?

To reset the helmet to factory settings, quickly press 3 times in a row (in a 1-second time span) the power button on the helmet side.

This procedure makes sure the helmet has been unpaired from any other Fearless WW and it is ready for a new pairing. You should see three quick flashes showing the reset was successful.

After that the light will go back its normal blinking pattern: this means the helmet is searching for a nearby Fearless WW to pair with.

How can I reboot Fearless WW?

Press once and hold for 2 seconds the hidden button under the FEARLESS WIRELESS logo in the intercom to reboot the unit and ensure all wireless connection settings are re-loaded.

How can I check the WW helmet battery status?

Helmets can ALWAYS be recharged by using the USB-C interface. However, how do I know that the helmet needs to be recharged?

- On the helmet side:

- The LED light is green if the battery state of charge is above 20%

- The LED light is red if the battery state of charge is below 20%

- On the Fearless WW if the helmet is connected via wireless (BLUE icon):

- The corresponding icon (DRIVER or CODRIVER helmet) shows an indication of the current battery state of charge.

- The number of full bars corresponds to the battery charge percentage (i.e., all full bars mean battery full, 3 full bars mean battery below 80%, and so on).

- Four empty bars correspond to battery state of charge below 20%.

If this is the case, you should put the helmet in charge.

It takes up to a couple of hours to completely charge the helmet.

Battery autonomy with helmet always on is around 5 hours.

How can I connect my smartphone to the WW system?

1. Enable Bluetooth on the Fearless WW by pressing the "insert icon" icon on the touch display and wait for it to turn blue.

2. Bluetooth is on by default in ROAD mode and can be enabled in CUSTOM mode by pressing the icon.

3. Enable Bluetooth on your smartphone and find FEARLESS WRC WIRELESS to pair the devices.

Audio from Bluetooth will be heard by both driver and codriver that can participate in the same phone call.

How can I pair my WW headsets to the Fearless WW ?

- If you need to pair the driver/codriver headsets for the first time, then follow the same procedure described in the FAQ section First time registration
- Headset icons can be accessed in the secondary MENU; they work in the same way of the helmet icons .
- Recommended: pair all four devices, two helmets and two headsets to the Fearless WW.

After first pairing is done, turn off all four devices.

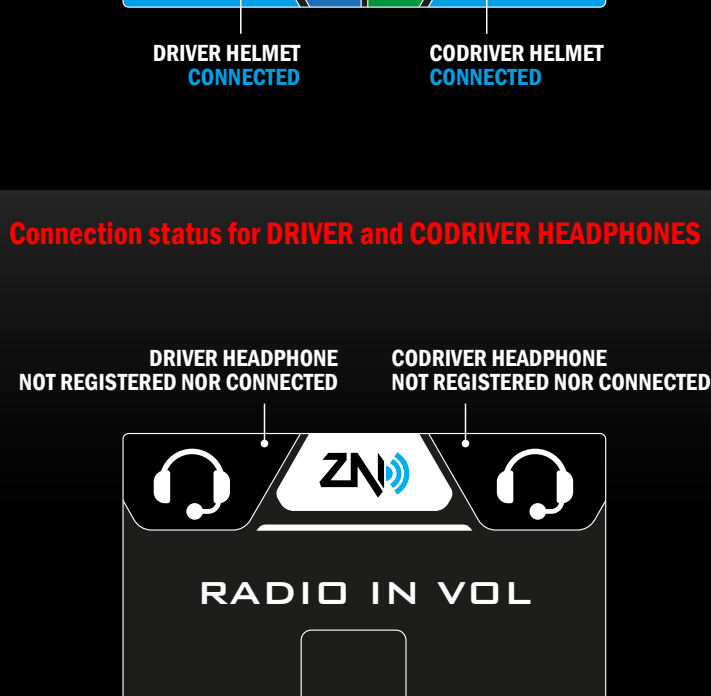
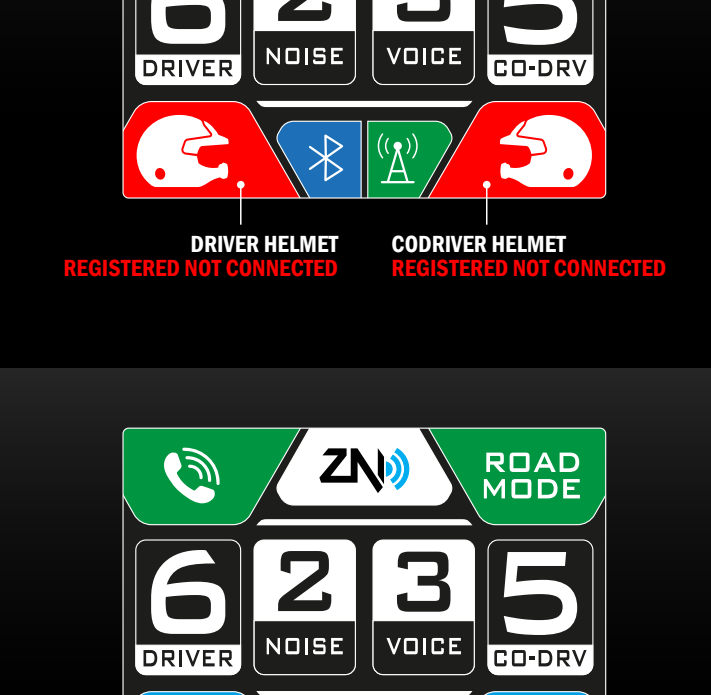
Either the helmet or the headset can be actively used at the same time, therefore turn on either one or the other to begin using the Fearless WW, the same applies to the codriver.

How can I use headsets with the Fearless WW and how can I switch between helmet and headset?

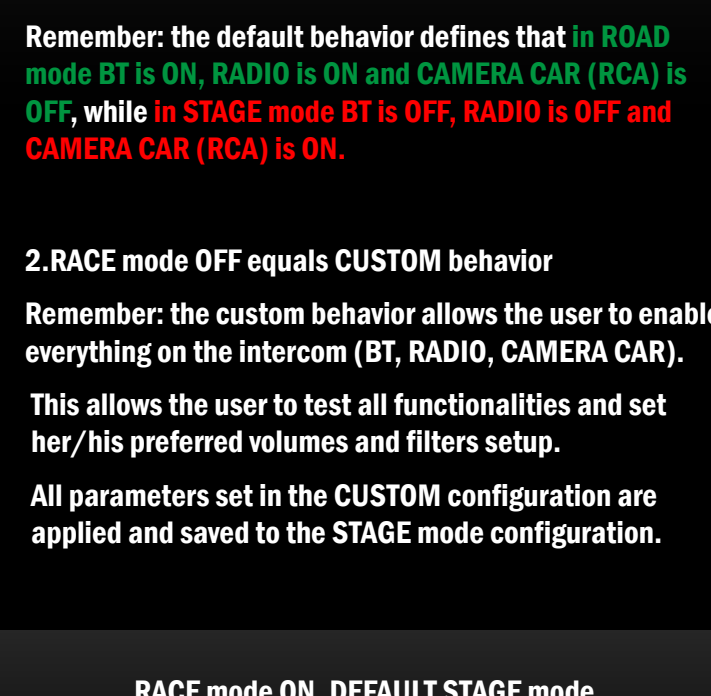
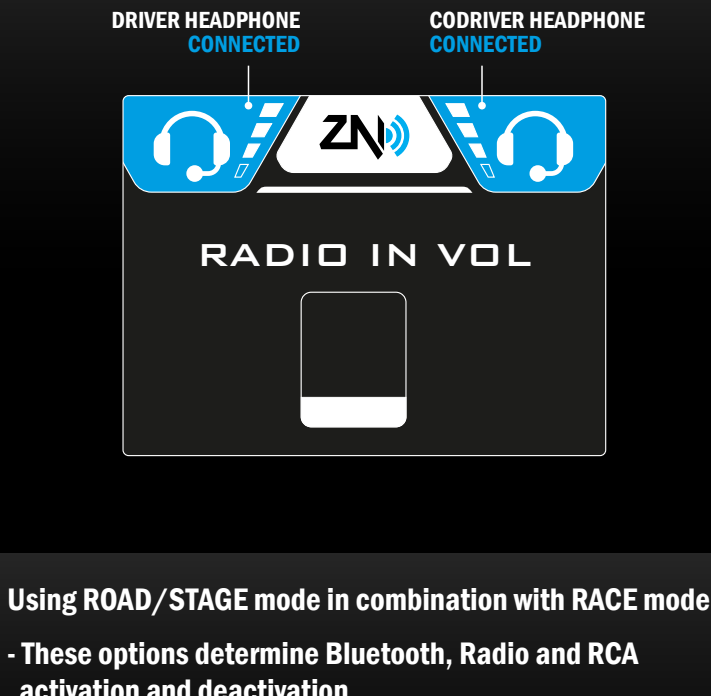
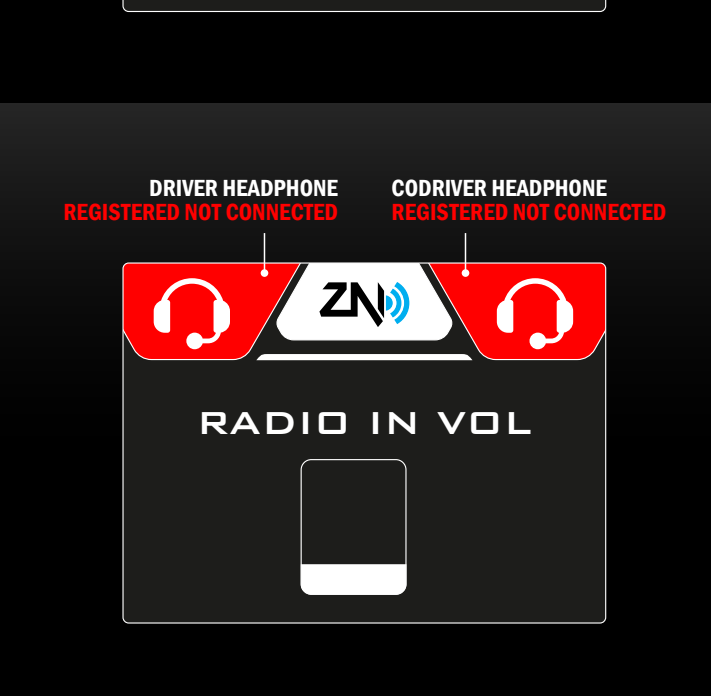
- I have standard helmets and headsets (both wired):
 - The transition from using standard helmets to standard headsets is simple as disconnecting the Nexus connector from the driver helmet and connecting it to the driver headset; same for the codriver.
- I have WW helmets and standard headsets:
 - Switch from WW helmet to standard headphone (procedure for both driver and codriver):
 - Put the driver and codriver WW helmets in WIRELESS mode (helmets connected via wireless, Nexus connectors disconnected).
 - Take helmets off.
 - Connect the respective Nexus connectors to the standard headset.
 - Recommended: Put helmets on charge via USB cable. If you don't put them on charge, **it is recommended to turn them off to preserve their battery charge**. If you forget to turn a helmet off, it will turn off automatically after two minutes of inactivity (if not on charge).
 - Switch back from standard headphone to WW helmet (procedure for both driver and codriver):
 - Disconnect the respective Nexus connector from the standard headphone.
 - If the helmet is powered off, turn it back on and put it on.
 - If the helmet was on charge via USB cable, it should be already powered on, hence simply disconnect the USB cable and put it on.
- I have WW helmets and WW headset:
 - Switch from WW helmet to WW headset (procedure for both driver and codriver):
 - Put the driver and codriver WW helmets in WIRELESS mode (helmets connected via wireless, Nexus connectors disconnected).
 - Take helmets off.
 - Turn on headset: headset will automatically connect, and helmets will be automatically disconnected.
 - Note: If the headset was left on, turn it off and on again to connect it in place of the helmet.
 - Recommended: Put helmets on charge via USB cable. If you don't put them on charge, it is recommended to turn them off to preserve their battery charge. If you forget to turn a helmet off, it will turn off automatically after two minutes of inactivity anyway (if not on charge).
 - Switch back from WW headset to WW helmet (procedure for both driver and codriver):
 - Put the driver and codriver WW headphones in WIRELESS mode (headsets connected via wireless, Nexus connectors disconnected).
 - Take headsets off .
 - Turn on helmets: helmets will automatically connect, and headsets will be automatically disconnected.
 - Note: If the helmet was left on, turn it off and on again to connect it in place of the headphone.
 - Recommended: Put headsets on charge via USB cable. If you don't put them on charge, it is recommended to turn them off to preserve their battery charge.
 - If you forget to turn a headset off, it will turn off automatically after two minutes of inactivity (if not on charge).

6. DISPLAY INDICATIONS

Connection status for DRIVER and CODRIVER HELMETS



Connection status for DRIVER and CODRIVER HEADPHONES



Using ROAD/STAGE mode in combination with RACE mode:

- These options determine Bluetooth, Radio and RCA activation and deactivation.

1. RACE mode ON equals DEFAULT ROAD/STAGE behavior

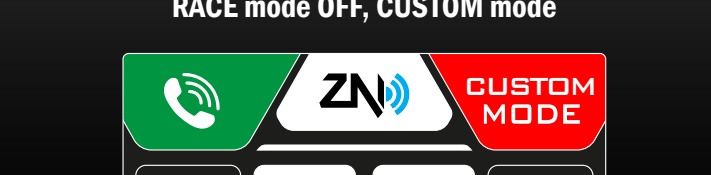
Remember: the default behavior defines that in ROAD mode BT is ON, RADIO is ON and CAMERA CAR (RCA) is OFF, while in STAGE mode BT is OFF, RADIO is OFF and CAMERA CAR (RCA) is ON.

2. RACE mode OFF equals CUSTOM behavior

Remember: the custom behavior allows the user to enable everything on the intercom (BT, RADIO, CAMERA CAR). This allows the user to test all functionalities and set her/his preferred volumes and filters setup.

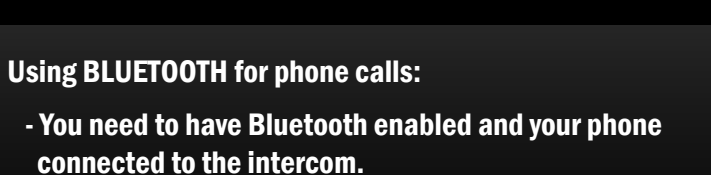
All parameters set in the CUSTOM configuration are applied and saved to the STAGE mode configuration.

RACE mode ON, DEFAULT STAGE mode



STAGE MODE WITH DEFAULT BEHAVIOR: BT OFF, RADIO OFF, RCA ON

RACE mode ON, DEFAULT ROAD mode



ROAD MODE WITH DEFAULT BEHAVIOR: BT ON, RADIO ON, RCA OFF

RACE mode OFF, CUSTOM mode



CUSTOM MODE BEHAVIOR: BT ON, RADIO ON, RCA ON

Using BLUETOOTH for phone calls:

- You need to have Bluetooth enabled and your phone connected to the intercom.

Example, ROAD MODE With BT ON, RADIO ON, RCA OFF



Available to START NEW OUTGOING CALL or ANSWER TO NEW INCOMING CALL.

During a call, the interface offers a way to END CURRENT ONGOING CALL.

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⚠ WARNING:

Zeronoise amplifiers are extremely powerful, the high volume can harm your ears. Use it appropriately. Your safety is our concern, but your responsibility.