



⚠ SAFETY WARNING

ZERONOISE AMPLIFIERS ARE EXTREMELY POWERFUL, AND HIGH VOLUMES CAN POTENTIALLY HARM YOUR EARS. APPROPRIATE USE OF THE SYSTEM IS THE USER'S RESPONSIBILITY.



You can find the ZeroNoise App on Play Store/A-pple Store. It allows you to connect to the intercom via Wi-Fi to control it from a smartphone and access updates easily and safely.

INTRODUCTION

The Pit-Link system is the digital amplifier that brought superior voice clarity in top competitions such as WRC and Dakar. The intercom has been completely re-designed to improve usability, reliability and protection from water and dust.

Pit-Link integrates Clearvoice™, the unique ZN technology to isolate voice, and cancel the noise coming from the engine and the surface.

The display provides a comprehensive, real-time control and information, unlocking a wide array of advanced functionalities and simplifying complex operations. Moreover, ZN Link, the new interchangeable cables system, allows to change cables and standards on the fly, facilitating repairing on the field.

Here's what's important to understand to quickly harness its full potential.

INTERACTIVE INDEX. CLICK TO GO TO THE SECTION

QUICK FEATURES OVERVIEW

FULL INSTRUCTIONS

1. SYSTEM SETUP

2. COMMUNICATION

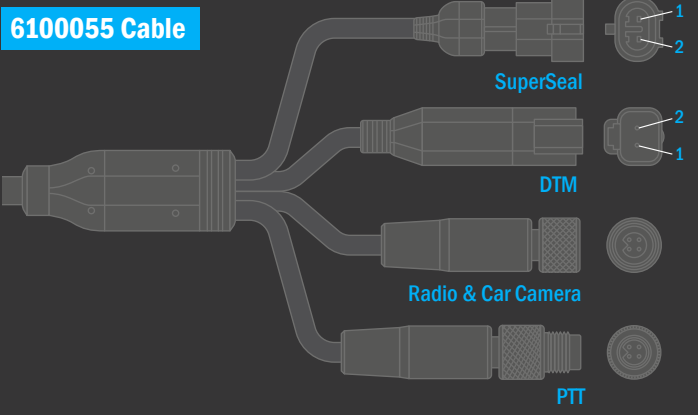
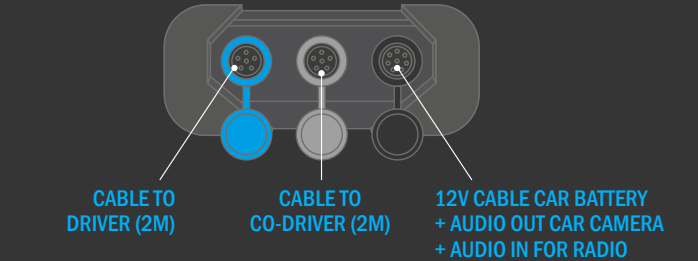
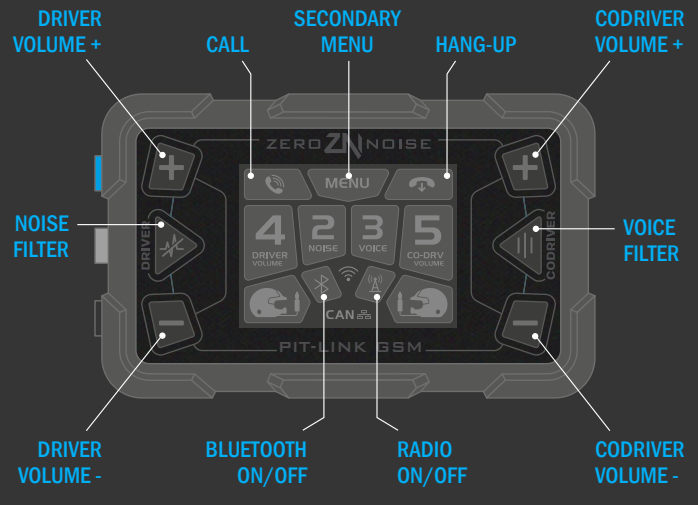
3. AUDIO SETTINGS

4. CONNECTIVITY: BLUETOOTH, RADIO, CAR CAMERA, WI-FI, CAN-BUS

5. FIRMWARE UPDATES

6. SAFETY WARNING

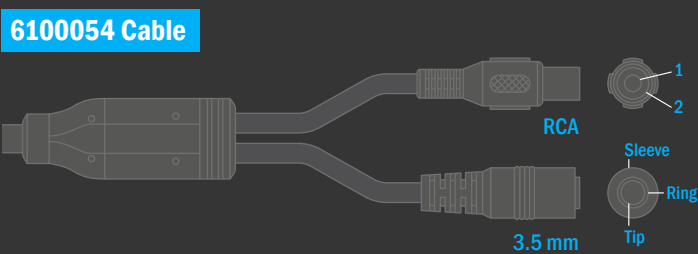
QUICK FEATURES OVERVIEW



CONNECTOR	PIN	FUNCTION	CONNECTOR COUNTERPART
SuperSeal	1	+12V	282080-1 housing + 282403-1 pin
	2	GND	
DTM	1	CAN_H	DTM06-2S
	2	CAN_L	

Connect the connector of the cable 6100055 labeled as Radio & Car Camera to the cable with code 6100054 available on the ZeroNoise catalog website.

Connect the connector of the cable 6100055 labeled as PTT to the cable with code 6100056 available on the ZeroNoise catalog website.



CONNECTOR	PIN	FUNCTION	CONNECTOR COUNTERPART
RCA	1	RCA_OUT	RCA male type connector
	2	GND	
3.5 mm	Ring	Radio_IN	3.5mm male connector
	Sleeve	GND	
	Tip	Radio_OUT	

Power Up

The system turns ON automatically when connected to the car's power supply, so there's no power button on the unit.

Precise Audio Control

Adjusting your sound is simple with the display. You can independently control driver and co-driver volumes and fine-tune noise cancelling filters for car noise and terrain noise using intuitive on-screen controls. The display's ability to show these settings visually makes it far easier to get the perfect audio balance.

Seamless External Connectivity

Connecting your smartphone via Bluetooth, or integrating a Radio or Camera Car audio is simplified, with visual icons and dedicated menu controls on the display for volume adjustments.

Can-bus Connectivity

The intercom can be connected to the car Can-bus and controlled remotely from the dashboard with no direct interaction with the intercom itself.

PTT

A push-to-talk function is available for communication using a PTT button. It can be enabled on the secondary menu.

[BACK TO INDEX](#)

1. SYSTEM SETUP

Installation

1. With Velcro applied on the bottom of the intercom box
2. On a roll-bar using the supplied zip-ties to secure its metal bracket.

Power Supply

1. Connect the power supply cable to the multi-pin connector on the side of the intercom
2. connect the 12V cable to the car battery.

Automatic Power On/Off

The intercom starts automatically when connected to the power supply. It will turn OFF when the car battery is OFF.

Reset

The intercom can be rebooted by enabling the reset option on the secondary menu. The secondary menu is accessible through the menu icon at the top of the display. Additionally, this option resets all parameters on the display and on the secondary menu of the intercom to default values.

[BACK TO INDEX](#)

2. COMMUNICATION

Wired Connection

You can connect any compatible Nexus helmet by plugging in the provided Nexus connectors, which are labelled for the DRIVER and CO-DRIVER. The corresponding helmet icon on the display should become green upon connection. This ensures compatibility with all Nexus helmets you may already own.

PTT function

PTT can be enabled from the secondary menu. If AUTOANSWER is OFF you can answer incoming calls using the PTT button, otherwise the call is automatically answered. You can press the PTT button for two seconds to recall the last number called by the paired smartphone.

- PTT OFF: When communicating, press the PTT button to hang up the call.
- PTT ON: When communicating, keep the PTT button pressed to open the microphone.

[BACK TO INDEX](#)

3. AUDIO SETTINGS

Achieving optimal sound clarity is crucial, and the Pit-Link offers granular control through the Clearvoice™ technology.

IMPORTANT - Microphone Position

For the best performance, adjust the ZN microphone on the helmet to be 5mm or less distance from your lips.

Individual Volume Control

You can adjust the volume independently for the DRIVER and CO-DRIVER using the +/- buttons on their respective sides of the intercom display. The left buttons control the DRIVER's output volume, and the right buttons control the CO-DRIVER's output volume.

VOLUME BOOST

Extra volume power is available by enabling Volume Boost in the secondary menu of the intercom, accessible through the menu icon at the top of the display.

Voice Isolation and Enhancement

- Noise Cancellation: The Clearvoice™ algorithm reduces noise from the car. The higher the setting value (changed with the > button), the more car noise is cancelled.
- Voice Enhancement: The Clearvoice™ algorithm reduces noise generated by the surface. The setting value can be changed with the < button, with a higher value corresponding to a stronger reduction. You should select the right balance between the two that suits your specific environment best.

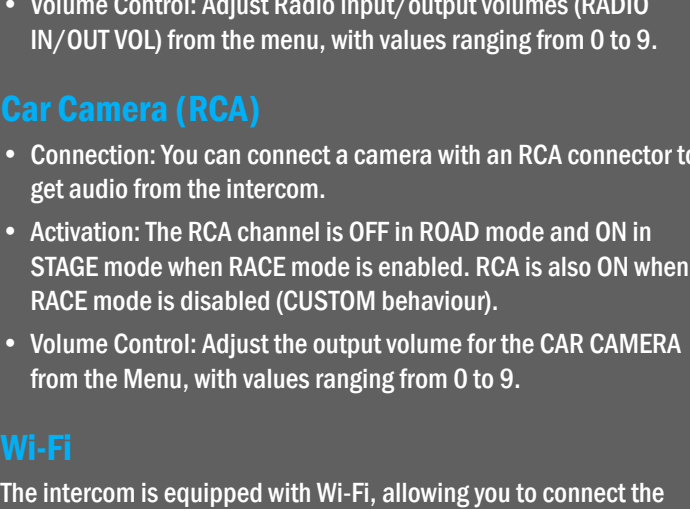
DRIVER FEEDBACK VOL

In the secondary Menu, the DRIVER can reduce his/her own volume to lower overall noise. This attenuation value can be adjusted from 0 (no attenuation) to a maximum of 9 (lowest volume).

[BACK TO INDEX](#)

4. CONNECTIVITY: BLUETOOTH, RADIO, CAR CAMERA ,WI-FI, CAN-BUS

The Pit-Link system integrates various external audio sources seamlessly:



Bluetooth (BT)

- Activation: To connect a smartphone, ensure the intercom is in ROAD mode (where Bluetooth is ON by default) or CUSTOM mode (with Bluetooth explicitly enabled). The Bluetooth icon will appear blue when active.
- Pairing: Activate Bluetooth on your smartphone and find "PITLINK_BT_ABCD" to pair the devices, where ABCD are the same of the MAC address of the device you are connecting to.
- Audio Sharing: Audio from Bluetooth will be heard by both the DRIVER and CO-DRIVER, allowing them to participate in the same phone call.
- Volume Control: Adjust Bluetooth input/output volumes (BT IN/OUT VOL) from the Menu, with values ranging from 0 to 9.
- AUTOANSWER: This option can be enabled in the menu to automatically answer incoming calls from a Bluetooth-connected smartphone.

Radio

- Connection: A Radio device can be connected via the dedicated 3.5mm jack connector.
- Activation: The Radio channel is ON in ROAD mode and OFF in STAGE mode when RACE mode is enabled. In CUSTOM mode (RACE mode OFF), the Radio can be turned on/off independently.
- Volume Control: Adjust Radio input/output volumes (RADIO IN/OUT VOL) from the menu, with values ranging from 0 to 9.

Car Camera (RCA)

- Connection: You can connect a camera with an RCA connector to get audio from the intercom.
- Activation: The RCA channel is OFF in ROAD mode and ON in STAGE mode when RACE mode is enabled. RCA is also ON when RACE mode is disabled (CUSTOM behaviour).
- Volume Control: Adjust the output volume for the CAR CAMERA from the Menu, with values ranging from 0 to 9.

Wi-Fi

The intercom is equipped with Wi-Fi, allowing you to connect the intercom via the ZeroNoise app. With the app, you can control all intercom functions on the display and install updates from your smartphone easily and safely. Wi-Fi can be enabled from the Menu.

Can-bus

The intercom can be connected to the car Can-bus to be controlled remotely from the dashboard. The DBC file is available on ZeroNoise - GitHub with further information.

[BACK TO INDEX](#)

5. FIRMWARE UPDATES

Firmware can be updated to incorporate bug fixes and general improvements. It can be done through two different procedures; it is recommended to follow the main procedure through the ZeroNoise app and only resort to the alternative procedure if you momentarily have no access to the app.

PRE-REQUISITE for the Main Procedure

Download the last version of the ZeroNoise app from the Play Store or the Apple Store.

- Intercom Unit: Board Update (Main Procedure):
 1. Turn ON the Intercom.
 2. Connect the mobile with the ZeroNoise app to the Intercom Wi-Fi. The password of the Wi-Fi is PasswordABCD, where ABCD are the same of the Wi-Fi you are connecting.
 3. If there is a new version of the mainboard firmware, an "UPDATE" box will be shown on the app.
 4. Press the "UPDATE" box and wait for the updating bar to reach the 100%. The Intercom will reboot with the new firmware version uploaded.
- Intercom Unit: Display Update (Main Procedure):
 1. Turn ON the Intercom.
 2. Connect the mobile with the ZeroNoise app to the Intercom Wi-Fi. The password of the Wi-Fi is PasswordABCD, where ABCD are the same of the Wi-Fi you are connecting.
 3. If there is a new version of the display firmware, an "UPDATE LCD" box will be shown on the app.
 4. Press the "UPDATE LCD" box and wait for the text "LCD uploaded. Device rebooting..." to appear. The Intercom will reboot with the new firmware version uploaded.

PRE-REQUISITE for the Intercom Unit (Alternative Procedure)

Download the last version of the Pitlink.ino.bin firmware from zn-clear-voice/Firmware/PitLink/Board at master · zeronoise-zn/zn-clear-voice · GitHub.

- Intercom Unit: Board Update (Alternative Procedure): This procedure requires a device capable to be connected to the Intercom Wi-Fi:
 1. Turn ON the Intercom.
 2. Connect the device that has the last version of the Pitlink.ino.bin firmware to the Intercom Wi-Fi. The password of the Wi-Fi is PasswordABCD, where ABCD are the same of the Wi-Fi you are connecting to.
 3. Open a Browser and go to the page 192.168.4.1.
 4. Select "Update Mode".
 5. Select "Choose file" and select the Pitlink.ino.bin firmware from the device, then press "Upload firmware".
 6. Wait for the first bar to reach 100%, then press "Start update".
 7. Wait for the second bar to reach 100%. Information about the good end of the process will be shown.
 8. Execute a power cycle by disconnecting and reconnecting the intercom to the power supply.

PRE-REQUISITE for the Intercom Display Unit (Alternative Procedure)

Download the last version of the DisplayPitlink.ino.bin firmware from zn-clear-voice/Firmware/PitLink/Display at master · zeronoise-zn/zn-clear-voice · GitHub.

- Intercom Unit: Display Update (Alternative Procedure): This procedure requires a device capable to be connected to the Intercom Wi-Fi:
 1. Turn ON the Intercom.
 2. Connect the device that has the DisplayPitlink.ino.bin firmware to the Intercom Wi-Fi. The password of the Wi-Fi is PasswordABCD, where ABCD are the same of the Wi-Fi you are connecting to.
 3. Open a Browser and go to the page 192.168.4.1/update.
 4. Select "click to select (.bin) file" and select the DisplayPitlink.ino.bin firmware from the device.
 5. Wait for the bar to reach 100%. Once completed, the Display will automatically reset.
 6. Execute a power cycle by disconnecting and reconnecting the intercom to the power supply.

[BACK TO INDEX](#)

6. SAFETY WARNING

Zeronoise amplifiers are extremely powerful, and high volumes can potentially harm your ears. Appropriate use of the system is the user's responsibility.

[BACK TO INDEX](#)