

STEELMAN™ *PRO*

WIRELESS
CHASSISEAR®
NOISE | VIBRATION | HARSHNESS

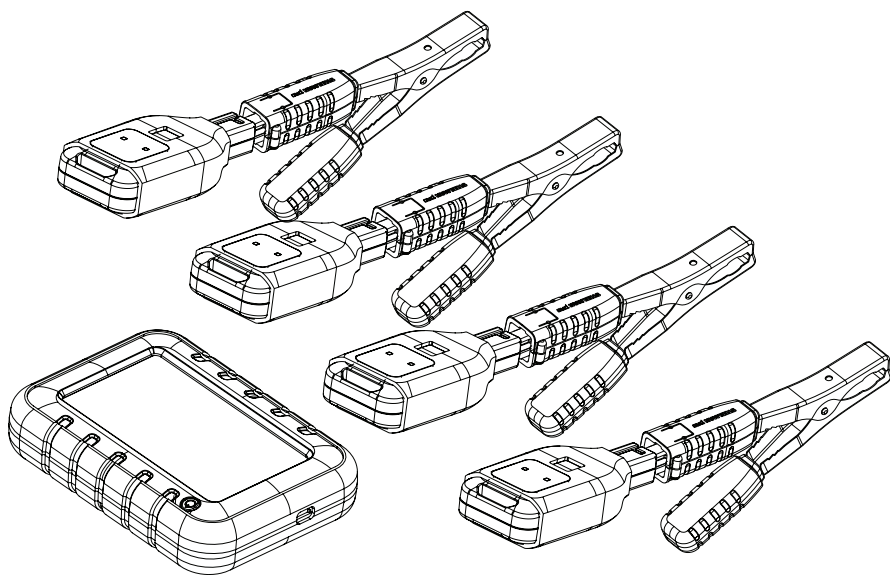


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SAFETY INSTRUCTIONS

NOTE: Please heed the following safety warnings and precautions:

To prevent personal injury or vehicle damage please read safety precautions and warnings before working on vehicle.

- 1.) Always perform automotive testing in a safe environment.
- 2.) Wear eye protection that meets ANSI standards.
- 3.) Keep clothing, hair, hands, tools, test equipment, etc., away from all moving or hot engine parts.
- 4.) Operate vehicle in a well-ventilated work area. Exhaust gases are toxic.
- 5.) Use blocks on drive wheels and never leave vehicle unattended while running tests.
- 6.) Use extreme caution when working on the ignition coil, distributor cap, ignition wires and spark plugs. These components create hazardous voltages when the engine is running.

NOTE: Changes or modifications to this equipment not expressly approved by JS Products will void the warranty of this product.

NOTE: It is the responsibility of the user to use only the accessories supplied with this equipment. Use of 3rd party accessories will void the warranty.

 **WARNING:** Cancer and Reproductive Harm. www.P65Warnings.ca.gov

OVERVIEW

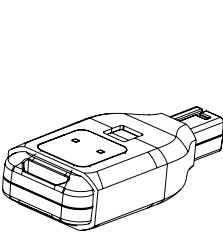
The STEELMAN PRO™ Wireless ChassisEAR2® is a versatile noise, vibration, and harshness (NVH) diagnostic tool. The STEELMAN PRO™ Wireless ChassisEAR2® Digital Control Unit receives NVH sounds from up to six transmitters that are connected to precision piezo microphones embedded inside of the included sensor clamps. These clamps can be attached to almost any location on a vehicle that is experiencing elusive NVH to amplify sounds and aid in locating NVH. The unit can be used on a vehicle either while parked or during a road test.

Some examples of areas where NVH originates and this unit can be used are:

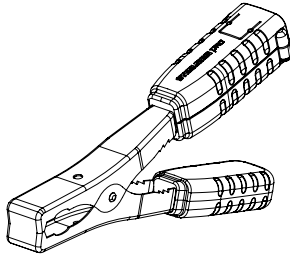
- Wheel Bearings
- Fuel Injectors
- Brake Calipers
- Alternators
- C.V. Joints
- Water Pumps
- Leaf and Coil Springs
- Power Steering Pumps
- Differentials
- AC Compressors
- Transmissions
- Accessory Pulleys
- Body Mount Points
- Motor Mounts
- Interior Trim
- Engine Bay

Please read carefully the following instructions to ensure optimum use of the product.

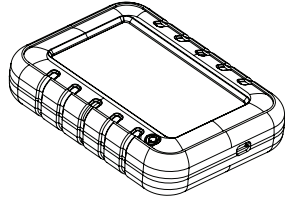
MAIN COMPONENTS



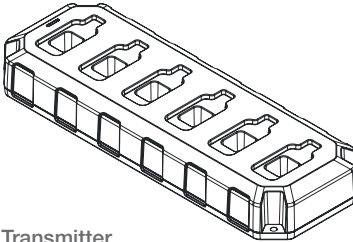
Rechargeable
Transmitter



Sensor
Clamp



Rechargeable
Control Unit



Transmitter
Charging Station



Headphones

COMPONENT DESCRIPTION

Description	Quantity
Rechargeable Control Unit	1
Rechargeable Transmitters	4
Sensor Clamps	4
Transmitter Extension Jumpers	4
Nylon Ties	6
Velcro Straps	6
Transmitter Charging Station	1
120V AC Power Adapter for Charging Station	1
Mini-USB to USB Charging Cable for Control Unit	1
Canvas Storage Bag	1

CHARGING

- 1.) To charge the Control Unit, use the included micro USB/USB cable. Plug the small end into the micro USB port on the left side of the Control Unit. Plug the large end into a USB/DC converter (not included) or into a USB charging receptacle. An LED on the power button will illuminate RED while the Control Unit is charging. The LED will illuminate GREEN when charging is complete.
- 2.) To charge the Transmitters, plug the Charging Station into an AC power source. Insert each transmitter into an available slot on the Charging Station. The Transmitter status LED will illuminate RED while the unit is charging. When charging is complete, the LED will illuminate GREEN and then slowly fade to OFF.

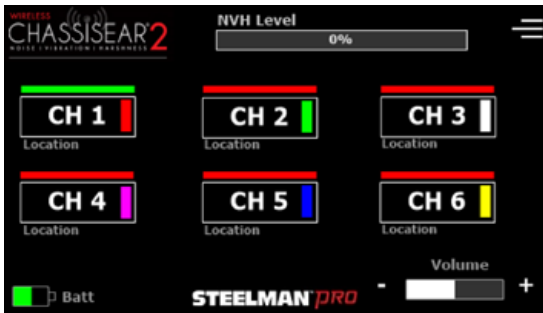
DIAGNOSTIC USE

CAUTION:

It is illegal in many jurisdictions to operate a motor vehicle while wearing headphones. It is strongly recommended that any road testing be conducted with a dedicated driver AND a technician.

- 1.) Power on the Control Unit by pressing the power button once.
- 2.) Power on each Transmitter by plugging them into the Sensor Clamp. The status LED will illuminate BLUE indicating that the Transmitter is powered and active.
- 3.) Place the Transmitters in each location that you wish to examine for NVH.
- 4.) In confined spaces, the Transmitter Jumper can be used to locate the clamp and Transmitter separately. Plug the male end of the jumper into the Sensor Clamp. Plug the Transmitter into the female end of the jumper.
- 5.) Secure Transmitters using included Velcro and nylon ties to ensure they are not lost during road testing.

MAIN SCREEN



Main Screen

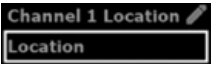
The Main Screen is the landing screen when Wireless ChassisEAR2® is powered on. The use and functions of the main screen are described below:

- 1.)  To select a channel to listen to, tap on the desired channel number button. If the bar on top of the channel number button is green, the channel is active and the transmitted sounds are being played back. If the bar on top is red, the channel is inactive. The location label below the button can be set from the “Location Settings” screen. The vertical color boxes on the right side of the channel button correspond with the boot color on the Transmitters.
- 2.)  The volume buttons control volume output from the control unit. Tap “-” to decrease the volume and “+” to increase the volume. The sound from each Transmitter can be played back through the integrated rear speaker or through the included Headphones by plugging the headphones into the headphone port on the right side of the control unit.
- 3.)  The NVH Level Meter shows the signal (noise) level of the selected channel being transmitted to the Wireless ChassisEAR2® receiver. The color of the meter will change between green, yellow, and red based on the level of the noise received with green being the lowest level and red being the highest.
- 4.)  The Batt Meter shows the current Control Unit battery level. The meter will change to YELLOW when charging is needed soon and RED when battery depletion is imminent. The continuous run-time of the control unit is approximately 3.5 hours.
- 5.)  The hamburger menu button will open the “Location Settings” screen where the location for each Transmitter can be input. Additional settings and functions can be accessed from this screen.

LOCATION SETTINGS SCREEN



Location Settings Screen

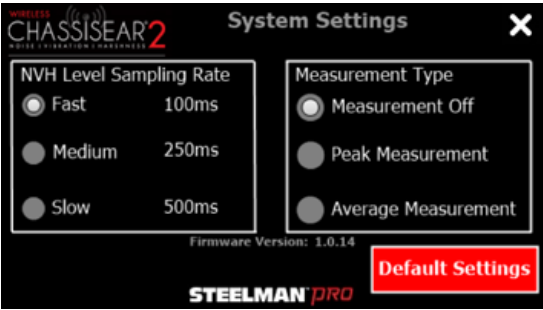


- 1.) To edit Transmitter location information, tap the location text box under the channel location you wish to edit. A digital keyboard will be displayed, allowing the user to type the Transmitter's location. Press "ENTER" to return to the Location Settings screen.



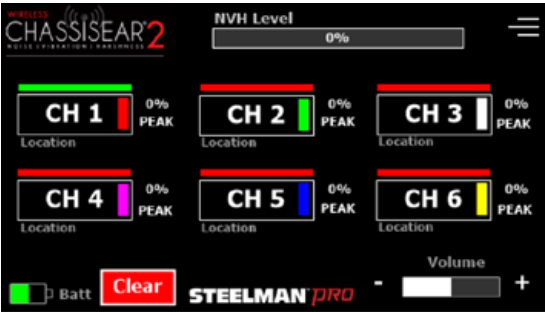
- 2.)  The "Clear" button clears any locations previously entered and automatically returns to the Main Screen.
- 3.)  The "X" button saves all changes and returns to the Main Screen.
- 4.)  The "System Settings" button displays the System Settings screen.

SYSTEM SETTINGS SCREEN



System Settings Screen

- 1.) The “Signal Sampling Rate” box allows the user to select the speed at which the Wireless ChassisEAR2® samples the signal strength. Default is “Fast”. A slower rate will slow the speed at which the signal strength bar graph moves in real time.
- 2.) The “Measurement Type” box allows the user to display the Peak Signal Strength measurement or Average Signal strength next to each channel on the Main Screen. The peak signal strength setting will capture and hold the highest signal level from each channel while it is active. Average signal strength will capture the average signal level from each channel while it is active and then hold that value when another channel is selected. The default setting is “Measurement Off”.
- 3.) “The Default Settings” button restores all settings to their default values and returns to the Main Screen.
- 4.)  The “X” button saves all changes and returns to the Main Screen.

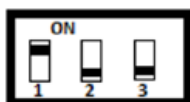
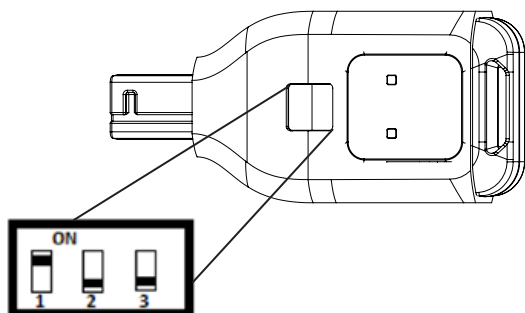


Main Screen with Measurements ON

5. The Peak or AVG measurement appears next to every channel, when selected on the setting screen.
6. The Clear button resets all measurements to 0% to begin the test again.

TRANSMITTER CHANNEL ADJUSTMENT

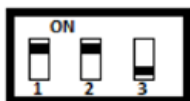
Wireless ChassisEAR2® has six dedicated frequencies for receiving NVH noises that correspond to a dedicated channel on the receiver. Four pre-set Transmitters are included and up to 2 more channels can be added. The Transmitter channel can be adjusted using the dipswitches, located behind the TPR plug on each Transmitter unit. When adding additional Transmitters or replacing old ones, the channel will need to be set before first use. Please see the diagram below for the dipswitch setting for each channel.



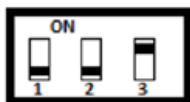
Channel 1



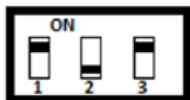
Channel 2



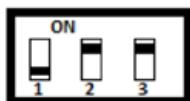
Channel 3



Channel 4



Channel 5



Channel 6

ACCESSORIES AND REPLACEMENT PARTS

Part Number	Description	Quantity
61001	Custom Screen Protector	10
60901	Wireless ChassisEAR2® Control Unit	1
60902	Sensor Clamp	1
60903	Wireless ChassisEAR2® Transmitter	1
60904	Canvas Storage Bag	1
60905	Headphones	1
60906	Color-coded Rubber Boots for Transmitters	6
90915	Velcro Straps	6
90916	Nylon Ties	6
60685	6 Port Charging Station for Transmitters	1
61002	5.5VDC @ 3.5Amps with US Adapter	1
61003	Control Unit Charging Cable	1
60028	Transmitter Jumper Cables	4
91925-03	Aluminum Probe with Rubber Tip	1
78687	Sound Wand	1
78618	USB Wall Charger	1

NOTES



ONE YEAR LIMITED WARRANTY

This product is backed by a one year limited warranty. This warranty covers manufacturer defects and workmanship. The warranty excludes misuse or abuse and normal wear and tear.

When charging the product, the transmitter needs to be placed in the charging base, and the wireless function cannot be used normally. You need to wait until the charging is complete before you can use the wireless function.

#15.105 INFORMATION TO THE USER

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

- 1.) This device may not cause interference, and
- 2.) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- 1.) l'appareil ne doit pas produire de brouillage, et
- 2.) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.



FCC ID: 2AR6X-60605
IC: 24657-60605

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.