One-Year Limited Warranty

This Senal product is warranted to the original purchaser to be free from defects in materials and workmanship under normal consumer use for a period of one (1) year from the original purchase date or thirty (30) days after replacement, whichever occurs later. The warranty provider's responsibility with respect to this limited warranty shall be limited solely to repair or replacement, at the provider's discretion, of any product that fails during normal use of this product in its intended manner and in its intended environment. Inoperability of the product or part(s) shall be determined by the warranty provider. If the product has been discontinued, the warranty provider reserves the right to replace it with a model of equivalent quality and function.

This warranty does not cover damage or defect caused by misuse, neglect, accident, alteration, abuse, improper installation or maintenance. EXCEPT AS PROVIDED HEREIN, THE WARRANTY PROVIDER MAKES NEITHER ANY EXPRESS WARRANTIES NOR ANY IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. This warranty provides you with specific legal rights, and you may also have additional rights that vary from state to state.

To obtain warranty coverage, contact the Senal Customer Service Department to obtain a return merchandise authorization ("RMA") number, and return the defective product to Senal along with the RMA number and proof of purchase. Shipment of the defective product is at the purchaser's own risk and expense.

For more information or to arrange service, visit www.senalsound.com
or call Customer Service at 212-594-2353.

Product warranty provided by the Gradus Group.
www.gradusgroup.com

SENAL®
A **Gradus Group** Brand

Senal is a registered trademark of the Gradus Group.
© 2017 Gradus Group LLC. All Rights Reserved.

GG2

Table of Contents:

senal | **AWS-2000**
BROADCAST **ADVANCED WIRELESS MICROPHONE SYSTEM**

* Concerning licensing: Apply to professional and consumer Camera for recording， such as interview， television programm.

Thank you for choosing Senal.

The Senal AWS-2000 is a versatile, lightweight, yet rugged wireless system that is ideal for a wide variety of professional uses such as ENG, interviews, conferences, lectures, and live theater production. The included AWS-2000T beltpack transmitter, AWS-2000R camera mount receiver, and optional AWS-2000P plug-on transmitter have an operating range of up to 500 feet. Each component is packed with features that will enable videographers and directors to capture broadcast-quality audio. The intuitive design and an uncomplicated menu structure make the AWS-2000 system easy to set up and effortless to use.

The portable receiver features a one-touch frequency scan and infrared sync that allows you to effortlessly find a clear channel for your devices. This true-diversity receiver uses dual antennas and reception circuits that eliminate audio dropouts and RF interference. To further protect audio from unwanted interference, the AWS-2000 system includes 3-level squelch and pilot tone. Other features such as selectable mic/line input and variable RF power output give this wireless system the ability to deliver clean, accurate, and pristine audio.

Each component is powered by two AA batteries. An integrated Micro-USB port can be used to charge NiMH batteries without removing them from the battery compartments. Advanced OLED display technology provides easy-to-see screens, even in dim lighting conditions. Top display orientation assures that the displays are easy to read regardless of where they're mounted or carried. Removable antennas make this wireless system compact and easy to transport, and allows you to easily change an antenna if it's damaged. Rugged metal housing on each component makes the AWS-2000 system ideal for travel or location use and able to withstand the rigors of the most demanding environments.

Specifications

AWS-2000T Transmitter

Reference input level	-26 dBV
Frequency response	80 Hz to 15 kHz
Signal-to-noise ratio	<100 dB
Pilot tone frequency	32.768 kHz
Power requirement	2.0 to 3.6 V
Operating temperature	32°F to 131°F (0°C to 55°C)
Dimensions without antenna (H × W × D)	2.8 × 2.3 × 0.8 in. (7 × 5.08 × 2 cm)
Weight	3 oz. (84 g)

AWS-2000R Receiver

Frequency response	80 Hz to 15 kHz
Total harmonic distortion	<0.9%
Pilot tone frequency	32.768 kHz
Power requirement	2.0 to 3.6 V
Operating temperature	32°F to 131°F (0°C to 55°C)
Dimensions without antennas (H × W × D)	3.1 × 2.3 × 0.8 in. (8 × 5.8 × 2 cm)
Weight	4 oz. (116 g)

AWS-2000P Plug-On Transmitter

Reference input level	-20 dBV
Frequency response	80 Hz to 15 kHz
Phantom power voltage	48 V
Signal-to-noise ratio	<100 dB
Pilot tone frequency	32.768 kHz
Power requirement	2.0 to 3.6 V
Operating temperature	32°F to 131°F (0°C to 55°C)
Dimensions (H × W × D)	4.1 × 1.7 × 1.7 in. (10.5 × 4.3 × 4.3 cm)
Weight	4.7 oz. (133 g)

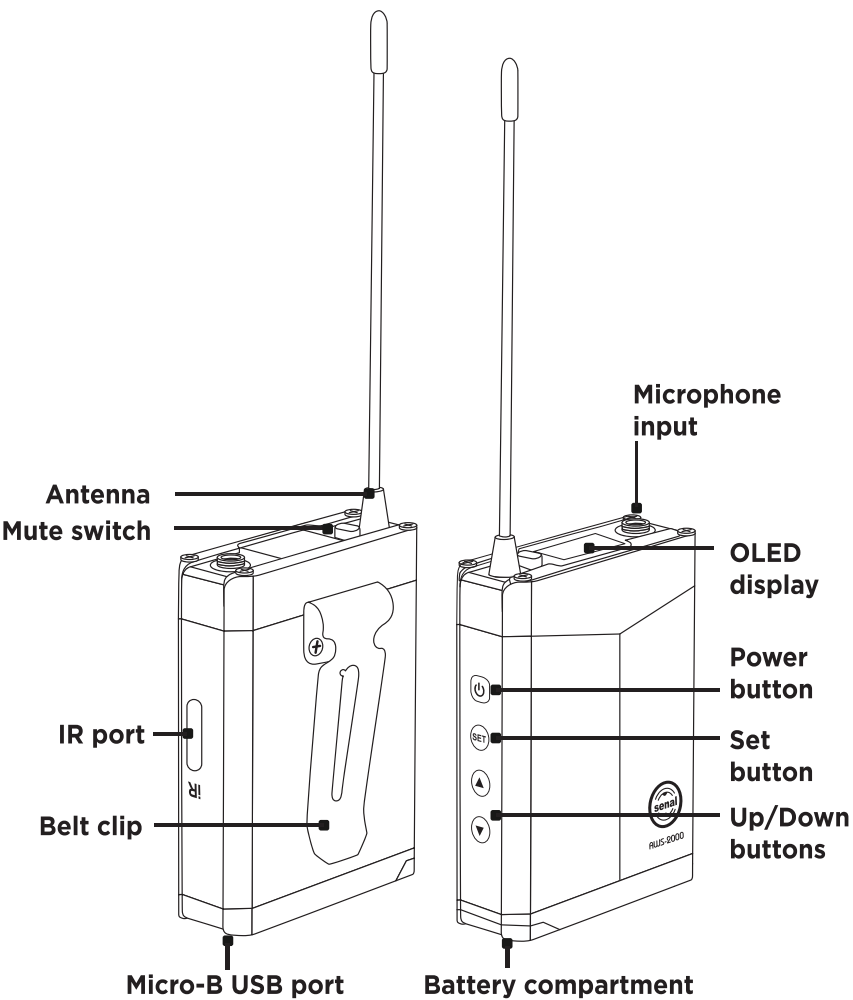| Problem	Solution
One of the antenna reception indicators is always off.	This indicates that one of the antennas is not operating correctly. Replace the antenna on the side of the missing level indicator. **Note:** The receiver will operate with only one antenna, but it will no longer operate as a true-diversity receiver. You will run a greater risk of interference or dropouts.
The receiver or the transmitter won't operate. LOCKED appears on the screen.	Unlock either device by pressing and holding the Set button to access the menu mode. Scroll to the LOCK menu, and press the Set button to make the menu selection blink. Use the Up/Down buttons to select UNLOCK or ON W/LEVEL, and press the Set button (see page 18).
Pilot tone is on, squelch is on, but there is still too much interference.	Rescan to find a frequency that is free of interference, and sync your devices.
The receiver input signal is too high/too low.	• Make sure you have selected the correct input level on the transmitter (line/mic) (see page 19). • Use the Up/Down buttons to adjust the transmitter output level.
Everything is set properly, but there is no signal from the microphone.	• If you're using a condenser microphone, make sure phantom power is turned on. • Make sure that pilot tone is activated on both the receiver and transmitter. If pilot tone is active on only one device, there will be no audio. • Make sure the transmitter is not muted.
My input device is not receiving signal from the receiver. Signal is too low/too high.	• Make sure you have made the correct connections to your input device. • Use the Up/Down buttons to adjust the receiver's main output. • Refer to the input device's user manual to enable the recording function.
I installed fresh batteries, but the battery meter does not read full. The meter shows that the battery is fully charged, but the battery runs out sooner than expected.	Confirm that you have selected the correct battery type. To change the battery type, see the *Battery* section under *Common Advanced Functions* on page 30.

Precautions ⚠

- Please read and follow these instructions, and keep this manual in a safe place.
- Keep this unit away from water and any flammable gases or liquids.
- Use only the correct, recommended voltage.
- Do not attempt to disassemble or repair the equipment—doing so will void the warranty, and Senal will not be responsible for any damage.
- Clean the units with only a soft, dry cloth.
- Use only parts, accessories, and attachments provided by the manufacturer.
- Make sure that this product is intact and that there are no missing parts.
- To avoid damage to this product, be careful not to overtighten or improperly thread any of the threaded fittings.
- Exposure to high sound levels can cause permanent hearing loss. Avoid listening at high volumes for extended periods of time.
- All images are for illustrative purposes only.

Box Contents

- AWS-2000T Beltpack transmitter
- AWS-2000R Portable true-diversity receiver
- Balanced locking Mini-to-XLR output cable
- Locking Mini–to-Mini output cable
- Camera mount for AWS-2000R
- Dual mounting bracket
- Carry case
- Antennas (×2)
- AA batteries (×4)

Overview AWS-2000T Body-Pack Transmitter

Microphone input

Antenna

Mute switch

OLED display

Power button

IR port

Set button

Belt clip

Up/Down buttons

Micro-B USB port   **Battery compartment**

* Note: this device use only with supplied belt clip.

Frequency Chart

AWS-2000A (522 to 554 MHz)

	Gr. 1	Gr. 2	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10
Ch. 1	523.025	522.725	522.800	522.925	522.650	523.550	523.750	523.850	523.950	523.000
Ch. 2	525.475	523.450	526.000	525.375	525.100	526.650	525.500	527.625	526.100	524.050
Ch. 3	526.875	526.475	528.400	529.375	529.100	529.250	527.375	531.175	528.500	527.825
Ch. 4	529.475	530.925	530.150	534.225	533.950	532.200	529.500	537.200	530.250	531.375
Ch. 5	532.425	532.350	533.200	538.875	538.600	534.100	531.375	541.600	533.300	537.400
Ch. 6	534.325	534.825	537.200	543.425	543.950	538.750	533.375	547.675	537.300	541.800
Ch. 7	538.975	536.300	539.950	548.175	547.900	544.100	537.375		540.050	547.875
Ch. 8	544.325	540.625	544.975			548.050	538.625		545.075	
Ch. 9	548.275	545.175	547.675				542.625		547.775	
Ch. 10		553.725	549.000				548.125		549.100	
Ch. 11			552.400				552.000			

AWS-2000B (554 to 586 MHz)

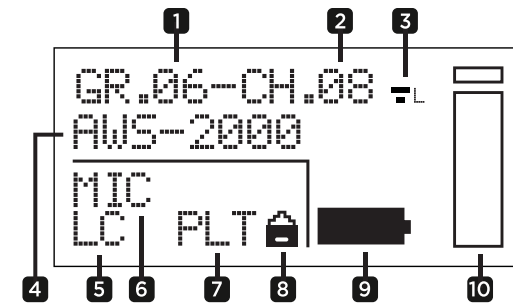|	Gr. 1	Gr. 2	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10
Ch. 1	559.750	558.800	558.000	558.350	559.575	558.825	560.250	554.550	561.425	557.800
Ch. 2	560.850	560.250	559.750	561.425	561.900	561.225	562.050	558.225	563.150	562.350
Ch. 3	562.700	565.300	560.850	564.425	563.475	565.350	564.000	560.700	566.300	564.375
Ch. 4	564.850	570.700	562.700	567.275	565.725	567.375	567.500	568.575	569.525	566.625
Ch. 5	567.500	572.775	564.850	569.675	569.625	572.550	569.050	570.675	571.250	570.000
Ch. 6	569.050	574.325	573.450	573.875	574.725	575.625	577.600	573.300	574.550	572.925
Ch. 7	571.450	576.450	578.325	576.425	576.150	578.925	580.050	575.175	576.575	575.775
Ch. 8	581.000	584.375	584.100	583.250	581.475	583.575	585.300	579.450	579.875	578.475
Ch. 9				584.225	585.900	585.975		582.375	582.725	580.800

Troubleshooting

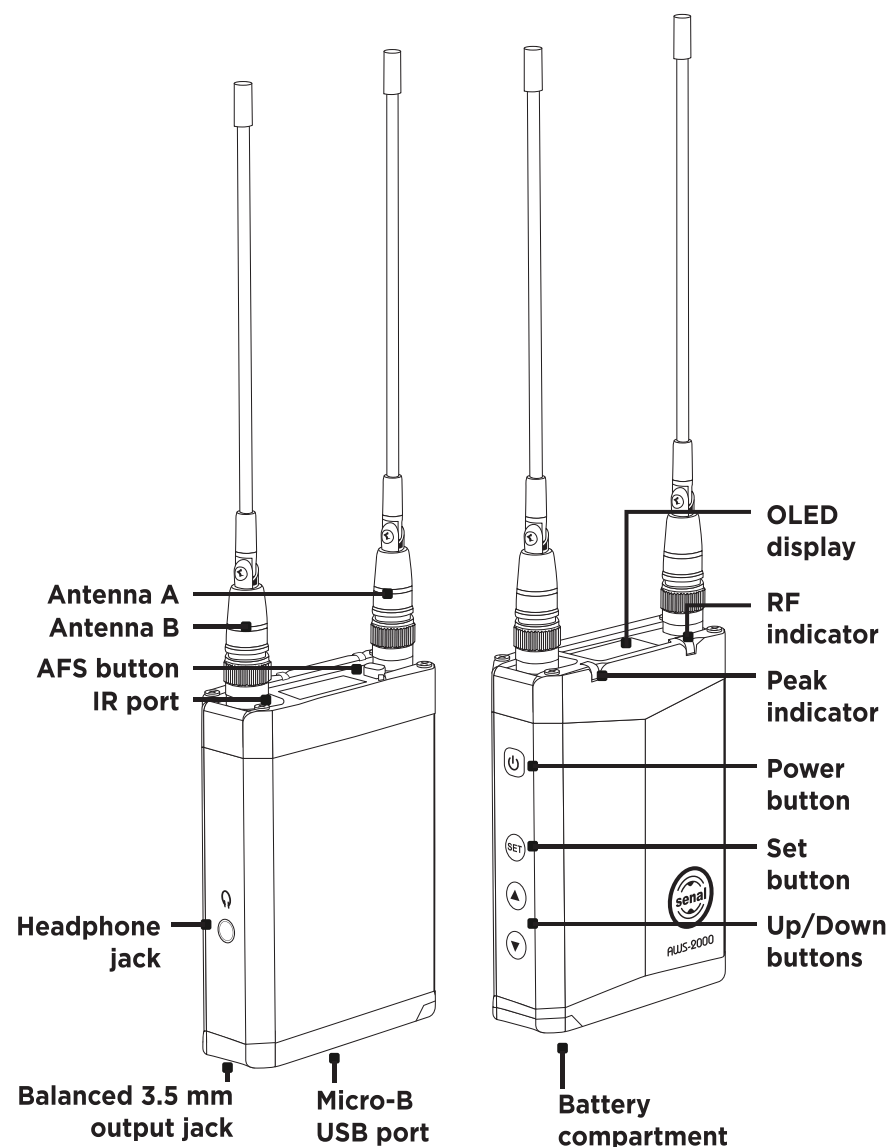| Problem	Solution
SYNC ERROR appears when syncing devices.	• Make sure that both the transmitter and receiver are powered on. • Make sure that both IR ports are facing each other, and that they are no more than 8 inches (20 cm) apart. • If you are using multiple transmitters and receivers, make sure that the transmitter and receiver are from the same frequency group (see *Frequency Chart* above).

Restoring the Factory Presets

To restore all factory presets, follow these steps:

1. Press and hold the Set button to enter menu mode.

2. Scroll to [ADVANCED MENU], and press the Set button.

3. In the advanced menu, scroll to [RESET].

4. Press the Set button. [RESET???] will appear on the screen.

5. Press Set, and the menu selection will blink.

6. Use the Up/Down buttons to choose [YES], and press the Set button to reset the factory defaults.


```
    1           2   3
GR.06-CH.08  L
AWS-2000
MIC
LC  PLT
 4   5  6   7  8   9    10
```

1. Group number

2. Channel number

3. Transmission power indicator

4. Device name

5. Low cut filter

6. Input level indicator

7. Pilot tone indicator

8. Lock indicator

9. Battery level indicator

10. Audio input level meter

Overview AWS-2000R True Diversity Receiver

Antenna A
Antenna B
AFS button
IR port
Headphone jack
Balanced 3.5 mm output jack
Micro-B USB port
OLED display
RF indicator
Peak indicator
Power button
Set button
Up/Down buttons
Battery compartment

If [SYNC ERROR!] appears on the screen, the name selection will be saved on the renamed device. To sync the name with the other device, follow the steps for performing a manual sync on page 15.

Brightness

This menu selection controls the brightness of the characters on the screen.

1. Press and hold the Set button to enter menu mode.

2. In the menu mode, scroll to [BRIGHTNESS]. Press Set to enter the menu. The brightness level will blink.

3. Use the Up/Down buttons to select the level. The characters' brightness level will change as you scroll through the menu.

4. Press the Set button to save the change.

Battery

The correct battery type selection ensures that the meter gives an accurate readout of your battery level. If you select the wrong battery type, the unit will still function, but the battery level indicator might not be accurate.

To change the battery type selection:

1. Press and hold the Set button to enter menu mode.

2. Scroll to [ADVANCED MENU], and press the Set button.

3. In the advanced menu, scroll to [BATTERY]. Press the Set button to enter the menu.

4. Use the Up/Down buttons to scroll to your battery type.

5. Press the Set button to accept the battery type.

Common Advanced Functions
(AWS-2000R Receiver, AWS-2000T Transmitter, and AWS-2000R Plug-On Transmitter)
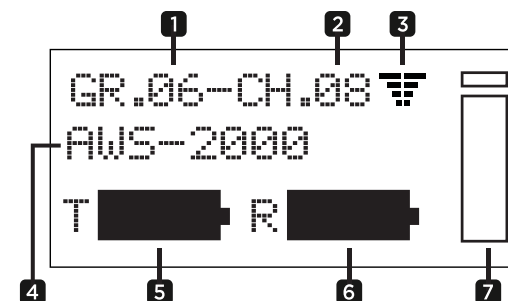
Name

Naming the units makes them easy to identify. This is useful when working with several pairs of transmitters and receivers on a production or shoot. To change the name of the unit, follow these steps:

Note: Changing the name can be done on either the transmitter or receiver.

1. Press and hold the Set button to enter menu mode.

2. Scroll to [ADVANCED MENU], and press the Set button.

3. In the advanced menu, scroll to [NAME].

4. Press the Set button to enter the name menu. The first character of the name will blink.

5. Select a character by using the Up/Down buttons.

6. Press the Set button to move to the next character. Press the Power button to return to the previous character.

7. Repeat steps 3 and 4 until you have completed the name.

8. Continue to press the Set button until the cursor reaches the end of the line.

9. Pressing the Set button automatically opens the [SYNC] menu. Press the Set button.

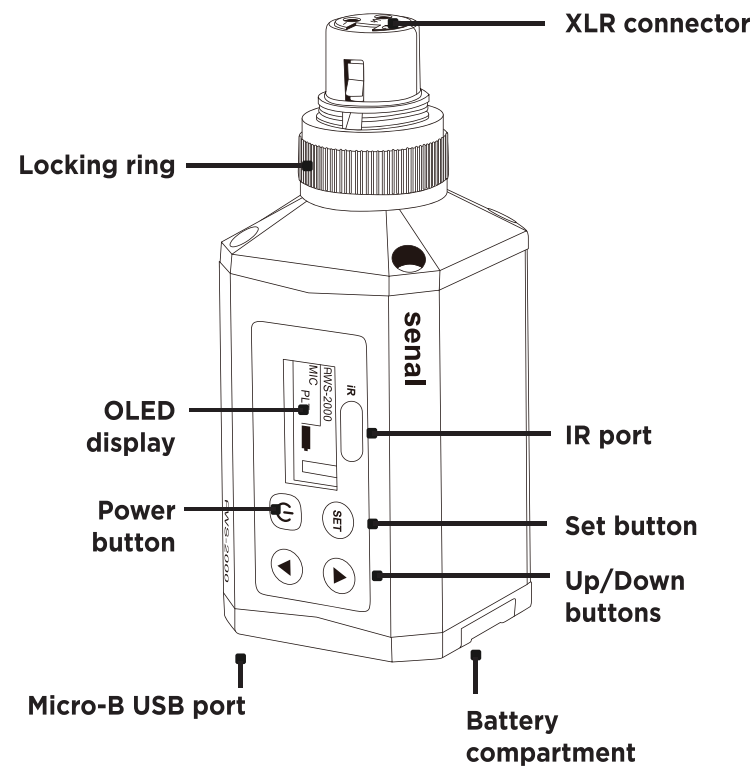10. [YES] will blink on the screen. Press the Set button to sync the name with the other unit.

Note: Make sure the transmitter and receiver are powered on, and the IR ports face each other.

[SYNC ✔] will appear to indicate that the name has been changed, and the name will appear on both the transmitter's and receiver's main screens.

1. Group number

2. Channel number

3. Antenna reception level indicator

   • Icons for left and right antenna reception level should appear as pictured. If they don't, refer to the *Troubleshooting* section at the end of this manual.

4. Device name

5. Transmitter battery level indicator

   • The transmitter's battery level indicator will not appear on the receiver screen unless pilot tone is turned on (see *Pilot Tone* on page 25).

6. Receiver battery level indicator

7. Audio input level meter

Overview AWS-2000P Plug-On Transmitter

XLR connector

Locking ring

OLED display

IR port

Power button

Set button

Up/Down buttons

Micro-B USB port

Battery compartment

4. Use the Up/Down buttons to select [ON]. Press the Set button to save the setting and activate the low-cut filter.

When [LO CUT] is active, [LC] is displayed on the transmitter's screen.

To turn off the low-cut filter, select [OFF] in the [LO CUT] menu.

Mute

For instructions on setting the mute button function, see *Mute (Transmitter)* on page 23 and *Mute (Plug-On Transmitter)* on page 24.

AWS-2000T Transmitter and AWS-2000P Plug-On Transmitter

Pilot Tone

For a description of pilot tone, see page 25.

Important! In order for pilot tone to protect against interference, the pilot tone option must be activated on the transmitter **AND** the receiver.

To activate pilot tone, follow these steps:

1. Press and hold the Set button to enter menu mode.

2. Scroll to [ADVANCED MENU], and press the Set button.

3. In the advanced menu, scroll to [PILOTTONE], and press the Set button. The menu selection will blink.

4. Use the Up/Down buttons to select [ON]. Press the Set button to save the setting and activate the pilot tone.

When the pilot tone is active, [PLT] is displayed on the screen, and the transmitter's battery meter illuminates on the receiver.
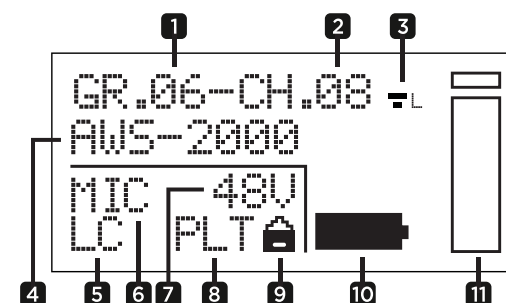
To turn off the pilot tone, select [OFF] in the [PILOTTONE] menu.

Low Cut Filter

The low-cut filter minimizes low-frequency noise that can come from fans, air conditioners, or ambient room noise. The filter rolls off at 100 Hz to prevent unwanted rumble from compromising your audio.

To activate the low-cut filter, follow these steps:

1. Press and hold the Set button to enter menu mode.

2. Scroll to [ADVANCED MENU], and press the Set button.

3. In the advanced menu, scroll to [LO CUT], and press the Set button. The menu selection will blink.

1. Group number
2. Channel number
3. Transmission power indicator
4. Device name
5. Low cut filter
6. Input level indicator
7. Phantom power indicator
8. Pilot tone indicator
9. Lock indicator
10. Battery level indicator
11. Audio input level meter