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Thank you for choosing the Galaxy Audio CTS Wireless Microphone System. You have joined hundreds of thousands of other satisfied Galaxy customers. Since 1977 Galaxy Audio’s professional experience in design and manufacturing ensure our products quality, performance and reliability.

For the most up to date manual and information visit www.galaxyaudio.com.
System Overview

The CTS system is specifically designed for a variety of performance art. The CTS system has 18 different groups, and each group consists of 14 compatible receiving channels. The CTS system is capable of searching for vacant channels automatically. Syncing the transmitter with the receiver is simple via IR.

The CTS system consists of a receiver, transmitter, and power adaptor. The transmitter can either be a handheld or a belt pack (choice of headset or lavalier mic). Systems also include a 1/4" signal cable and a quick start guide.

All CTS systems include the following components:
- CTS Receiver
- One 1/4" Audio Cable
- Power Adapter
- Two Antennas
- MREWD Single/Dual Rack Kit
- Quick Start Guide

Handheld Microphone Systems include the following:
- HH85 Handheld Transmitter

Lavalier/Headset Microphone systems include the following:
- MBP85 Bodpack Transmitter
- Microphone (choice of Lavalier, or Headset)
Functions of the CTSR Receiver

CTSR Receiver Features

Front Panel

1. Power Switch.  
With red light indicator, press it one second to turn it on or off.

2. IR Window

3. IR Sync Signal Button: Pressing button starts 10 second transmitter synchronization indicated by flashing icon. During the 10 seconds aim the transmitter IR window at the receiver IR window and the transmitter will sync to the receiver frequency.

4. LCD Display Panel

5. System setting button

6. System Menu up button

7. System Menu down button

8. SQL decrease button

9. SQL increase button

10. Automatically Search for vacant channels
Functions of the CTSR Receiver

**Rear Panel**

1. DC power socket
2. Balanced audio output socket: XLR
3. Unbalanced audio output socket: 1/4”
4. Antenna Socket

**Receiver LCD Functions**

<table>
<thead>
<tr>
<th>Display</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>IR</td>
<td>IR Syncing Indicator</td>
</tr>
<tr>
<td>AF</td>
<td>Audio Level</td>
</tr>
<tr>
<td>GP</td>
<td>Current Group Number</td>
</tr>
<tr>
<td>CH</td>
<td>Current Channel Number</td>
</tr>
<tr>
<td>FREQUENCY</td>
<td>Current Frequency</td>
</tr>
<tr>
<td></td>
<td>Mute, it will disappear when the mic is on</td>
</tr>
<tr>
<td>RF</td>
<td>Receiving Signal Level</td>
</tr>
<tr>
<td>SQ</td>
<td>Squelch Level</td>
</tr>
<tr>
<td></td>
<td>Antenna A/B status</td>
</tr>
<tr>
<td>AUTO</td>
<td>Automatically Search for vacant channels</td>
</tr>
<tr>
<td></td>
<td>Transmitter Battery Level</td>
</tr>
</tbody>
</table>
Mounting & Connecting the Receiver

MREWD Single/Dual Rack Kit

DC power adapter
Balanced output cable
1/4 inch output cable

BNC CONNECTOR & CABLE:
For front mounting antenna to rack ears.
Part# AS-EXT50/BNC (optional)

Rack-Mounting Two CTS Receivers
Rack Brackets for mounting Two Receivers side by side
Included Parts: MREWD

Connect to sound system microphone input
1. IR SYNC Setting

Press the [ADS] button, the icon 🔄 will flash for 10 seconds. During the 10 seconds aim the transmitter IR window at the receiver IR window and the transmitter will sync to the receiver frequency. When the sync is complete the icon 🔄 will disappear and the display will return to its normal state.
2. Selecting Frequency

Press the **SET** button. The GP flashes to indicate the group can be chosen by pressing the **▲** or **▼** button, to confirm press the **SET** button. It will return back to the original state without any operation within 5 seconds. Press **SET** to confirm the group selection, the CH flashes to indicate the channel can be chosen, press the **▲** or **▼** button to choose, Press **SET** again to exit setting mode automatically after confirmation.

When choosing frequencies from the “U” group, press **SET** button, and the top three numbers before the point flash, press **▲** or **▼** buttons to choose, 1MHz for every push, and press **SET** again to confirm, then the last three number after the point blink, press **▲** or **▼** buttons to choose, every step for 25kHz.

3. SQL Setting and Change

The CTSR receiver has a build-in adjustable SQL (Squelch Level) function which silences the output when the receiver does not get a strong or quality signal from the transmitter, instead of reproducing noise. When squelch is adjusted, the threshold of the signal quality or level is adjusted.

Press SQL **▲** or **▼** to change the value. The higher value means the lower reception sensitivity and stronger anti-interference ability.

Use the lowest setting that rejects noise. High settings will dramatically reduce range.
4. Automatically Search for Vacant Channel

Press [AUTO], the [AUTO] icon will start to flash then available channels within the selected group will be shown on the LCD display. For example, the LCD display shows 15, that means there are 15 vacant channels available. Then Press the button ▲ or ▼ to select an appropriate channel. Once a channel is selected, press [SET] to confirm the setting. If no vacant channel can be found within 5 seconds, receiver will automatically return to the original state. If no channels are available, try scanning another group.

5. Auto Muting

The 🎤 icon is displayed in the receiver LCD screen when the receiver is no longer picking up the transmitter, and the receiver mutes. This prevents the receiver from picking up noise when the transmitter is out of range.

6. Locking and Unlocking

Press [SET] and hold for one second until LCD shows “🔒”. At this time, all buttons except Power will be disabled. All receiver’s setting functions are now locked. To unlock, press [SET] and hold it until the “🔓” icon disappears, the receiver is now unlocked.
Functions:
1. Microphone Grille
2. LCD Display
3. Power and Mute switch: hold for three seconds to power on or off. Click once to mute or unmute output signal
4. System setting button.
5. System selection button.
7. IR port: Receives the IR signal to SYNC to the CTSR receiver.

Changing Batteries:
Unscrew cover to access the Battery Tray. Observe correct polarity markings when installing Batteries.

Battery Life

<table>
<thead>
<tr>
<th>Display</th>
<th>Approximate Hours Remaining (alkaline batteries)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Battery Icon" /></td>
<td>8 Hrs +</td>
</tr>
<tr>
<td><img src="image2" alt="Battery Icon" /></td>
<td>5 to 6 Hrs</td>
</tr>
<tr>
<td><img src="image3" alt="Battery Icon" /></td>
<td>2 to 3 Hrs</td>
</tr>
<tr>
<td><img src="image4" alt="Battery Icon" /></td>
<td>Change Battery</td>
</tr>
</tbody>
</table>

Loosen  Tighten
Functions:

1. Mini XLR input socket
2. Power/Mute switch: Press it and hold for three seconds to power on or off. Click once to mute or unmute output signal
3. Antenna
4. Low battery indicator
5. Mute indicator
6. LCD Display
7. IR window: Receives the IR signal to SYNC to the CTSR receiver
8. System setting button
9. System Up or Down buttons
10. Battery holder

Battery Replacement:
Fold open the Battery Door as shown. Install Batteries while observing correct polarity markings.

The life expectancy of two alkaline batteries is about 8 hours.

<table>
<thead>
<tr>
<th>Display</th>
<th>Approximate Hours Remaining (alkaline batteries)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Battery Icon" /></td>
<td>8 Hrs +</td>
</tr>
<tr>
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</tr>
<tr>
<td><img src="image3" alt="Battery Icon" /></td>
<td>2 to 3 Hrs</td>
</tr>
<tr>
<td><img src="image4" alt="Battery Icon" /></td>
<td>Change Battery</td>
</tr>
</tbody>
</table>
How to Wear the MBP85 Transmitter:
Clip the transmitter to belt ①, or slide a guitar strap through the transmitter's clip ②, as shown in the diagram at left.

For best results, slide the transmitter until the belt is pressed against the base of the clip ③.

Microphones for Body Pack Transmitter

**HS-U3BK Headset Microphone**
Polar Pattern: Unidirectional
Sensitivity: -65dB ± 2dB
Frequency Response: 50Hz-18KHz
Output Impedance: ≤2K Ω
S/N Ratio: ≤38dB

**LV-U3BK Clip-on Microphone**
Polar Pattern: Unidirectional
Sensitivity: -64dB ± 2.2dB
Frequency Response: 100Hz-20KHz
Output Impedance: 2K Ω
S/N Ratio: >44dB

This is just a sample of the many headset options available from Galaxy Audio.
## Main Functions Description of Transmitters

<table>
<thead>
<tr>
<th>Display</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Transmitter Output Power" /></td>
<td>Transmitter Output Power</td>
</tr>
<tr>
<td><img src="image" alt="Battery Status" /></td>
<td>Battery Status</td>
</tr>
<tr>
<td><img src="image" alt="Frequency" /></td>
<td>Current Frequency</td>
</tr>
<tr>
<td><img src="image" alt="Mute Symbol" /></td>
<td>Mute Symbol</td>
</tr>
<tr>
<td><img src="image" alt="Transmitter Output Level" /></td>
<td>Transmitter Output Level</td>
</tr>
<tr>
<td><img src="image" alt="Current Group Number" /></td>
<td>Current Group Number</td>
</tr>
<tr>
<td><img src="image" alt="Current Channel Number" /></td>
<td>Current Channel Number</td>
</tr>
<tr>
<td><img src="image" alt="Function Locked Indicator" /></td>
<td>Function Locked Indicator</td>
</tr>
</tbody>
</table>
Current Frequency Checking:
Press SEL button to show the current frequency, press SET to return. If no operation was performed within 5 seconds, the display will return back to normal display automatically.

Transmitter gain adjust:
Press SET, GAIN symbol flashing, press the SEL button to change the relative level in dB. (-9dB, -6dB, -3dB, 0dB, 3dB) then press the SET button again to confirm it or press on Mute button to exit the setting.

Transmitter RF Power adjust:
Press SET twice, the signal icon ⬇️ flashes, press the SEL button to change the relative output level in mW. (5mW, 10mW, 20mW) then press SET again to confirm it or press on Mute button to exit the setting.

* Button SEL on handheld microphone has an identical function as the button ⬇️ on body pack transmitter.

For the body pack, press the SET button multiple times to step through each setting. When the desired setting flashes, use the or buttons to change the parameter to the desired setting. Then press the button multiple times until no setting flashes.
Handheld and Body Pack Transmitter

Mute setting:
On the body pack, press MUTE once, the transmitter will be muted right away and the icon displayed, press one more time to unmute it. For the handheld, repeat the same steps using the button.

Battery Status Indicator:
When the battery is low, the display shows an empty flashing battery icon. The battery status of transmitter and receiver is synchronized. When the battery is too low, an empty battery icon and Lo will appear on the display for about three seconds, then an internal control circuit will force the transmitter into off state automatically. We recommend users change to a pair of new batteries when the battery icon shows as 30%.

Lock and Unlock Setting:
For the handheld, Press SEL button and hold it until LCD shows “”. At this time, all buttons except Power on/off will be disabled. All transmitter’s functions are now locked. Press SEL and hold until the “Lock” symbol goes away to unlock. For the body pack, press and hold the button to lock. Press and hold again to unlock.
**Tips for Improving System Performance**

- Maintain a line of sight between transmitter and antenna.
- Avoid placing the receiver near metal surfaces or any digital equipment (CD players, computers, etc).
- Keep the receiver away from the wall and over 1m to the ground.
- Cellular telephones, two-way radios and other RF transmitters can interfere with the transmitting frequencies, maintain a distance from interfering equipment.

**Troubleshooting**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Indicator Status</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>No sound or faint sound.</td>
<td>Transmitter ON Indicator stop flashing</td>
<td>Turn on transmitter. Make sure the +/- indicator on battery match the transmitter terminals.</td>
</tr>
<tr>
<td></td>
<td>Power indicator off</td>
<td>Make sure AC adapter is securely plugged into electrical outlet and into DC input connector on rear panel of receiver.</td>
</tr>
<tr>
<td></td>
<td>Receiver RF indicator glows</td>
<td>Turn the receiver up. Turn up the Gain adjustment switch in the transmitter. Check the power connection of the receiver and amplifier or mixer.</td>
</tr>
<tr>
<td></td>
<td>Receiver RF indicator off, transmitter indicator ON</td>
<td>Take the receiver away from the metal objects. Check whether there are obstructions between receiver and transmitter. Move the transmitter near the receiver. Check the receiver and transmitter whether use the same frequency.</td>
</tr>
<tr>
<td></td>
<td>Transmitter low battery indicator ON</td>
<td>Change the batteries in transmitter.</td>
</tr>
<tr>
<td>Distortion or unwanted noise bursts.</td>
<td>Receiver RF indicator ON</td>
<td>Remove nearby sources of RF interference (CD players, computers, in-ear monitor systems, etc.)</td>
</tr>
<tr>
<td>Distortion level increases gradually.</td>
<td>Transmitter low battery indicator ON</td>
<td>Replace Transmitter batteries.</td>
</tr>
<tr>
<td>Sound level different from cabled guitar or microphone, or when using different guitars.</td>
<td>Sound level different from cabled guitar or microphone, or when using different guitars.</td>
<td>Adjust Transmitter Gain and Receiver Volume as necessary.</td>
</tr>
</tbody>
</table>
Specifications

CTS System:

Available Channels: 920 Selectable Frequencies
(18 groups of 14 channels)
Band: UHF Frequency
Operating Range Under Optimum Conditions: 300'
Audio Frequency Response: 60Hz - 16kHz
Note: battery characteristics may limit this range.

CTSR Receiver:

Frequency Range: CODE D 584~607 MHz
CODE J 514~537 MHz
Channels: 920 Selectable Frequencies
(18 groups of 14 channels)
Power Requirements: 12Vdc, 500mA
Bandwidth: 24MHz
Sensitivity: -102dBm
Signal-to-noise ratio: >105dB(A)
Frequency Response: 60Hz - 15kHz
Output Level: 8dBu Max
Output Connections: Balanced XLR,
Unbalanced 1/4”
IR Sync transmitter with receiver
Dimensions: 1.73” x 8.34” x 6.29”
(44 x 212 x 160 mm)(HxWxD)
Weight: 1.98 lbs (900 g)

HH85 Handheld Transmitter:

Frequency Range: CODE D 584~607 MHz
CODE J 514~537 MHz
Polar Pattern: Cardioid
Element Type: Dynamic
LCD Display: Frequency, Battery Life,
Mute, Gain, RF Power, Lock
Selectable Power: 5, 10, 20mW
Selectable Gain: -3, 0, 3, 6, 9
Power Requirements: 2 “AA” Batteries alkaline
or rechargeable batteries
Battery Life: About 8 Hrs dependent on power setting
Dimensions: 9.68” x 2.08” (246 x 53 mm)(LxDia.)
Weight: 8.8 oz (250 g)

MBP85 Body Pack Transmitter:

Frequency Range: CODE D 584~607 MHz
CODE J 514~537 MHz
LCD Display: Frequency, Battery Life,
Mute, Gain, RF Power, Lock
Selectable Power: 5, 10, 20mW
Selectable Gain: -3, 0, 3, 6, 9
Power Requirements: 2 “AA” size alkaline or
rechargeable batteries
Battery Life: About 8 Hrs dependent on power setting
Dimensions: 3.85” x 2.51” x 0.90”
(98 x 64 x 23 mm)(HxWxD)
Weight: 3.17 oz (90 g)
The frequencies of the Galaxy UHF Wireless Systems are on frequencies that are used by Digital Television stations.

To be assured of the best performance, you should determine on what RF channels the DTV stations in your area are broadcasting, then set your wireless systems on frequencies that are not being used.

You can find that information on this FCC web site. [http://transition.fcc.gov/mb/engineering/dtvmaps/](http://transition.fcc.gov/mb/engineering/dtvmaps/)

Enter the zip code of the location where the wireless system will be used into the location search bar. A list of stations in that area will be listed. Click on the call sign of the stations and the details will appear, showing you the RF channel the TV station is using. Compare these with the chart to the left, and, using the Galaxy frequency charts online, find a frequency that is not on an active DTV RF channel.

For example, if you have an L-Band CTSR and your location has DTV stations on RF channels 45 and 48, you will want to set your CTSR on a frequency that is on RF channel 46 or 47.

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### DTV Frequency Ranges & FCC Consumer Alert

<table>
<thead>
<tr>
<th>DTV RF Channel</th>
<th>Frequency Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>470-476</td>
</tr>
<tr>
<td>15</td>
<td>476-482</td>
</tr>
<tr>
<td>16</td>
<td>482-488</td>
</tr>
<tr>
<td>17</td>
<td>488-494</td>
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<tr>
<td>18</td>
<td>494-500</td>
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<td>19</td>
<td>500-506</td>
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<tr>
<td>20</td>
<td>506-512</td>
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<td>21</td>
<td>512-518</td>
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<td>22</td>
<td>518-524</td>
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<td>524-530</td>
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<td>536-542</td>
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<td>26</td>
<td>542-548</td>
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<td>27</td>
<td>548-554</td>
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<td>28</td>
<td>554-560</td>
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<tr>
<td>29</td>
<td>560-566</td>
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<td>566-572</td>
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<td>572-578</td>
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<td>32</td>
<td>578-584</td>
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<td>33</td>
<td>584-590</td>
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<td>34</td>
<td>590-596</td>
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<td>35</td>
<td>596-602</td>
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<td>602-608</td>
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<td>662-668</td>
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<td>47</td>
<td>668-674</td>
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<td>48</td>
<td>674-680</td>
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<td>49</td>
<td>680-686</td>
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<tr>
<td>50</td>
<td>686-692</td>
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<tr>
<td>51</td>
<td>692-698</td>
</tr>
</tbody>
</table>

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**FCC Consumer Alert for Wireless Microphones (U.S.)**

Most users do not need a license to operate this wireless microphone system. Nevertheless, operating this microphone system without a license is subject to certain restrictions: the system may not cause harmful interference; it must operate at a low power level (not in excess of 50 milliwatts); and it has no protection from interference received from any other device. Purchasers should also be aware that the FCC is currently evaluating use of wireless microphone systems, and these rules are subject to change.

For more information, call the FCC at 1-888-CALL-FCC (TTY: 1-888-TELL-FCC) or visit the FCC’s wireless microphone website at www.fcc.gov/cgb/wirelessmicrophones

Please visit galaxyaudio.com for the latest updates
THREE YEAR LIMITED WARRANTY

WARRANTY Information can be viewed online at http://www.galaxyaudio.com/support/warranty

CTS USER’S MANUAL

Specifications in this manual are subject to change without notice. For the most up to date manual and information visit www.galaxyaudio.com.

1-800-369-7768 www.galaxyaudio.com

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