

# **MANUAL AND USER GUIDE**

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Transmitter Model CGS-TM  
Receiver Model CGS-RM

## RECEIVER, MODEL CGS-RM

Dimensions:	4.0" L x 2.6" W x 1.0" H (100.5 mm x 65.0 mm x 26.6 mm)
Weight:	125 g with batteries
Battery Type:	Two (2) AA 1.5 V Alkaline batteries (OR) Two (2) AA 1.2 V NiMH Rechargeable batteries
Operating Frequencies:	72.1 MHz–75.9 MHz
Stability:	± 0.1%, crystal reference, PLL
FM Deviation:	Narrow-band FM, 10 kHz P-P, 100 µS de-emphasis
Freq Response:	200 Hz to 15 kHz
Signal–Noise Ratio:	60 dB at 10 µV
Receive Antenna:	Integral with earphone cord
Audio Output:	35 mW
Output Connector:	3.5 mm mono phone jack
Controls:	Volume: thumbwheel/on/off/volume
Indicators:	"On" LED
Note:	Specifications are electrical performance
Warranty:	5 years parts and labor (90 days on accessories)

**NOTE: SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.**

## SYSTEM SPECIFICATIONS

### FM TRANSMITTER, MODEL CGS-TM

Dimensions:	4.0" L x 2.6" W x 1.0" H (100.5 mm x 65.0 mm x 26.6 mm)
Weight:	125 g with batteries
Battery Type:	Two (2) AA 1.5 V Alkaline batteries (OR) Two (2) AA 1.2 V NiMH Rechargeable batteries
Operating Frequencies:	72.1 MHz–75.9 MHz
Stability:	± 0.1%, crystal reference, PLL
Modulation:	Narrow-band FM, 10 kHz P-P, 100 µS pre-emphasis
RF Output:	1.5 mW typical
Freq Response:	100 Hz to 15 kHz P-P, ± 3 dB at 1% max. THD
Signal–Noise Ratio:	55 - 60 dB, with CGS-RM Receiver
Compressor:	Compressor uses adjustable slope and noise gate
Transmit Antenna:	Integral with 39" microphone cord
Microphone:	Noise-cancelling, Headset type, 39 in. cord, 3.5 mm mono phone plug
Controls & Indicators:	On/Off switch, slide-type; "On" Indicator LED
Mic Connector:	3.5 mm mono phone jack
Warranty:	5 years parts and labor (90 days on accessories)

## WIRELESS SYSTEM CGS-TM, CGS-RM INSTALLATION GUIDE & USER MANUAL

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## SYSTEM OVERVIEW

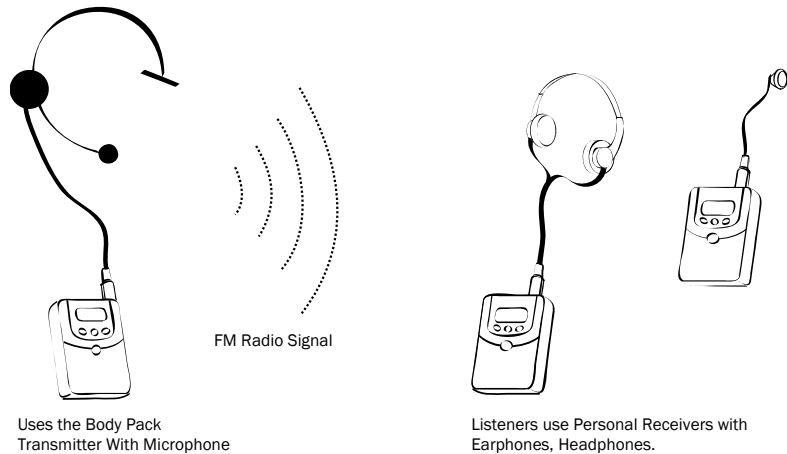
This wireless system is a portable, high-performance wireless system composed of the CGS-TM Transmitter and CGS-RM Receivers. The system allows one-way transmission of voice to group members using an FM radio signal. Using the system helps group members overcome background noise and distance from the person speaking.

The wireless system can be used for large or small groups and in noisy or quiet environments.

Your wireless system has two principal parts: the transmitter and the receiver. Much like a miniature radio station, the transmitter and microphone pick up the sounds you want to hear and broadcast them over an FM radio signal. The receivers and headphones are used to pick up the broadcast up to 100 meters away.

To avoid difficulties, please read through these instructions as you begin to use the system. Then save them for questions that arise as you continue to use your system.

**FIGURE 1: HOW THE WIRELESS SYSTEM WORKS**



Speaker wears the body-pack transmitter and headset microphone. The voice is broadcast as an FM radio signal over a distance of up to 100 meters. Listeners use the pocket receiver and headphone to hear the speaker's voice directly, with reduced background noise.

## LIMITED WARRANTY

Our products are engineered, designed, and manufactured under carefully controlled conditions to provide you with many years of reliable service. CGS warrants the wireless system against defects in materials and workmanship for FIVE (5) years. During the first five years from the purchase date, we will promptly repair or replace the wireless system.

WE HAS NO CONTROL OVER THE CONDITIONS UNDER WHICH THIS PRODUCT IS USED. CGS, THEREFORE, DISCLAIMS ALL WARRANTIES NOT SET FORTH ABOVE, BOTH EXPRESS AND IMPLIED, WITH RESPECT TO THE CGS-TM, CGS-RM, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. CGS SHALL NOT BE LIABLE TO ANY PERSON OR ENTITY FOR ANY MEDICAL EXPENSES OR ANY DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES CAUSED BY ANY USE, DEFECT, FAILURE OR MALFUNCTIONING OF THE PRODUCT, WHETHER A CLAIM FOR SUCH DAMAGES IS BASED UPON WARRANTY, CONTRACT, TORT OR OTHERWISE, THE SOLE REMEDY FOR ANY DEFECT, FAILURE OR MALFUNCTION OF THE PRODUCTS REPLACEMENT OF THE PRODUCT. NO PERSON HAS ANY AUTHORITY TO BIND CGS TO ANY REPRESENTATION OR WARRANTY WITH RESPECT TO THE CGS-TM, CGS-RM. UNAUTHORIZED REPAIRS OR MODIFICATIONS WILL VOID THE WARRANTY.

The exclusions and limitations set out above are not intended to, and should not be construed so as to contravene mandatory provisions of applicable law. If any part or term of this Disclaimer of Warranty is held to be illegal, unenforceable, or in conflict with applicable law by a court of competent jurisdiction, the validity of the remaining portions of this Disclaimer of Warranty shall not be affected, and all rights and obligations shall be construed and enforced as if this Limited Warranty did not contain the particular part or term held to be invalid.

Your warranty becomes effective the date you purchase your system. Your returned warranty card is our way of knowing when your warranty begins. It also gives us important information about your system including the serial number. This information will help us serve you better in the future. Please take a moment to complete and mail the attached card. Thank you.

## COMPLIANCE

This transmitter is authorized by rule under the Low Power Radio Service (47 C.F.R. Part 95) and must not cause harmful interference to TV Reception or United States Navy SPASUR installations. You do not need an FCC license to operate this transmitter. This transmitter may only be used to provide: auditory assistance to persons with disabilities, persons who require language translation, or persons in educational settings; health care services to the ill; law enforcement tracking services under agreement with a law enforcement agency; or automated maritime telecommunications system (AMTS) network control communications. Two-way voice communications and all other types of used not mentioned above are expressly prohibited.

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.

If TV channel 13 is used in the area, the installer shall reduce or adjust the RF radiated power so that nearby TV channel 13 receivers do not receive radio interference from the system.

## SAFETY INFORMATION

### HEARING SAFETY



### **CAUTION!**

This product is designed to amplify sounds to a high volume level which could potentially cause hearing damage if used improperly.

### **To protect your hearing and the hearing of others:**

1. Make sure the volume is turned down before putting on the earphone or headphone. Then adjust the volume to a comfortable level.
2. Set the volume level at the minimum setting that you need to hear.
3. If you experience feedback (a squealing or howling sound), reduce the volume setting and move the microphone away from the earphone or headphone.
4. Do not allow children **or other unauthorized persons** access to this product.

### BATTERY SAFETY AND DISPOSAL



### **CAUTION!**

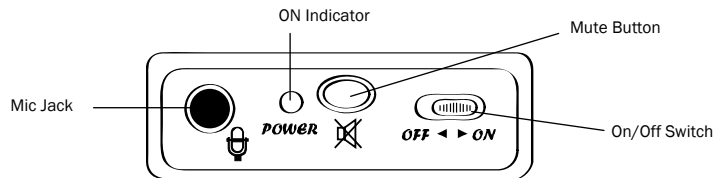
Do not attempt to recharge disposable batteries, which may explode, release dangerous chemicals, cause burns or other serious harm to the user or product.

## OPERATING INSTRUCTIONS

### USING THE CGS-TM TRANSMITTER

1. Plug the microphone cord into the “Mic” jack on top of the transmitter.
2. Turn the power switch on top of the transmitter to “On.”
3. Position the Headset Microphone boom as close to the wearer's mouth as possible without actually touching. Lapel Clip microphones should be attached to a collar or lapel, as close to the wearer's mouth as possible.

FIGURE 2: CGS-TM TRANSMITTER TOP VIEW



#### Note On The Transmitter Antenna:

The microphone cord is the transmitting antenna. Do not bunch up the cord, wrap it tightly around your body, or wrap it around the transmitter. For maximum range, the cord should hang as straight as possible. The transmitter can be placed in a pants pocket, or clipped onto a belt or waistband. Make sure the transmitter is turned OFF when not in use.

## IN CASE OF DIFFICULTY

If your wireless system is not working, check the following:

1. Read through the manual and user guide carefully to verify proper setup and installation of your system.
2. Make sure the batteries are fresh or completely charged and that the “plus” and “minus” terminals are installed correctly.
3. If the rechargeable batteries will only work for a short period of time (less than 1 hour) even after they are fully charged, they must be regenerated. Leave them in the receiver or transmitter with the unit turned on, for 5–6 hours. Then turn receiver or transmitter off, place it in the charger, and charge for 14–16 hours. This should restore normal battery life. Rechargeable batteries will gradually lose their capacity over time and should be replaced every year.
4. Make sure the *microphone* is plugged into the CGS-TM Transmitter and the *headphone* is plugged into the CGS-RM Receiver.
5. Move the transmitter and receiver closer together. You may be out of range. When using the system indoors, it's normal for the signal to momentarily disappear in certain locations. This is called a “drop-out.” Moving a few feet will restore the signal.
6. Do not try to use more than one transmitter on the same channel in close proximity to each other. MORE THAN ONE TRANSMITTER ON THE SAME CHANNEL WILL RESULT IN INTERFERENCE IF THEY ARE CLOSE TOGETHER. Keep the transmitters at least 100 meters apart or use separate channels for each system used.
7. If you are still hearing interference on the receivers, turn the transmitter off and listen with a receiver. If you hear the interference with the transmitter off, you need to change to a clear channel.

## NOTICE

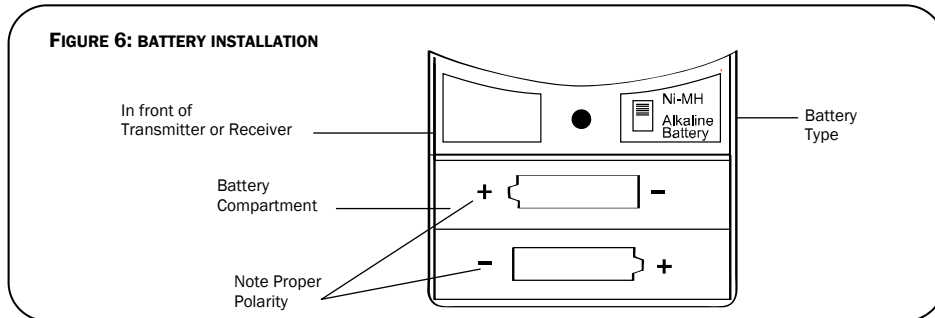
We assume no liability for improper use or operation of this equipment. The user is cautioned to operate the volume controls at the lowest acceptable level, and in a manner that will not cause damage to hearing. Ear pieces and accessories should be worn using good judgment and for their intended purpose.

Users are cautioned that changes or modifications not expressly approved by CGS. could void the user's authority to operate the equipment.

## BATTERY INFORMATION

### INSTALLATION

Press the batteries into place, observing proper battery polarity. Incorrect insertion of the battery is difficult, and if forced, may cause both mechanical and electrical damage to transmitters or receivers not covered by the warranty. Units will not work with the battery incorrectly installed.



### NON-RECHARGEABLE BATTERIES

In normal use, two AA 1.5 V alkaline batteries will last about 30 hours in the CGS-TM Transmitter and approximately 60 hours in the CGS-RM Receiver. If the sound becomes weak or distorted, replace the batteries. Do not leave dead batteries in the receivers. Battery corrosion is not covered by the five year warranty.

### RECHARGEABLE BATTERIES

The CGS-TM Transmitter and CGS-RM Receivers can use rechargeable AA batteries. On an overnight charge, these NiMH batteries are designed to operate a CGS-TM Transmitter for approximately 24 hours, and CGS-RM Receivers for 50 hours.

The battery installed in the transmitter / receiver may be recharged only if it is a NiMH battery.

### Important Rechargeable Battery Information

They must be charged for a complete charge cycle before the first use (approximately 15 hours). Rechargeable batteries will need to be replaced after 1–2 years of use. Do not dispose of batteries in fire. Do not open batteries — toxic chemicals inside.

#### !! IMPORTANT WARNINGS !!

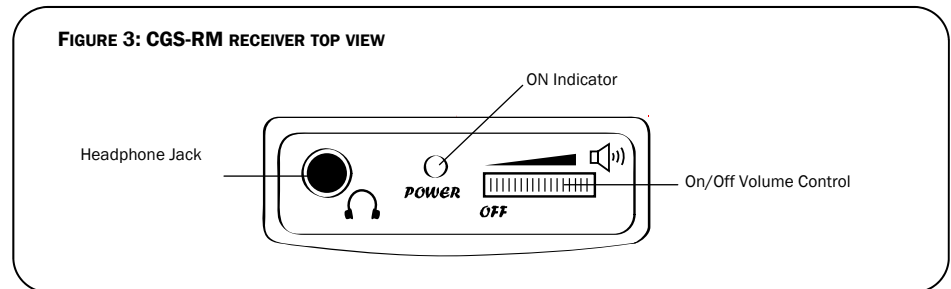
**DO NOT ATTEMPT TO RECHARGE ZINC CARBON (“HEAVY DUTY”), ALKALINE, OR LITHIUM BATTERIES!**

**DO NOT ATTEMPT TO RECHARGE DISPOSABLE BATTERIES!** These batteries may heat up and explode, causing possible injury and damage to the equipment.

Avoid shorting the plus and minus battery terminals together with metal objects. Battery damage and burns can result!

## USING THE CGS-RM RECEIVER

1. Plug the earphone or headphone into the headphone jack on top of the Receiver.
2. Place the headphones over your ears.
3. Turn the power on by rotating the volume control thumbwheel on top of the Receiver.
4. Adjust the receiver volume control to a comfortable listening level. You should be able to hear someone speaking into the transmitter microphone.

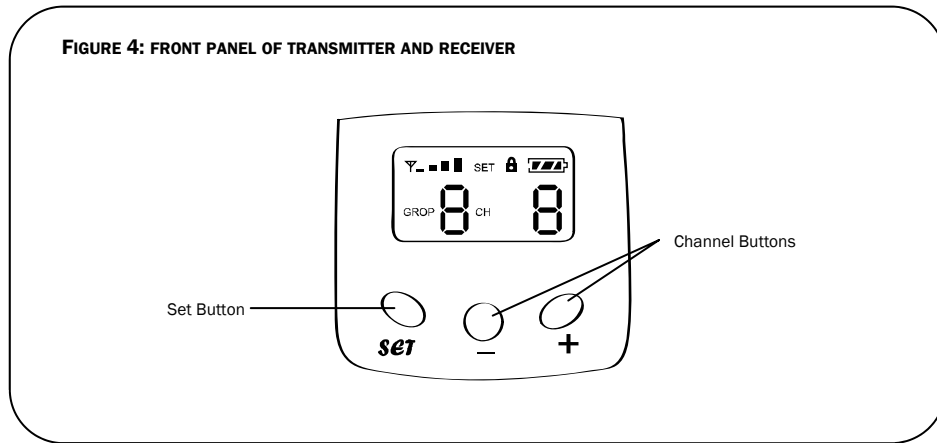


### Note On The Receiver Antenna:

The headphone cord is the receiving antenna. Do not bunch up the cord, wrap it tightly around your body, or wrap it around the receiver. For maximum range, the cord should hang as straight as possible. The receiver can be placed in a pants pocket, or clipped onto a belt or waistband. Make sure the receiver is turned OFF when not in use.

## CHANNEL SELECTION AND SETTING

1. Press "SET" button (at least 3 sec.) to release the lock.
2. Press +/- to select channel.
3. Press the "SET" button (at least 3 sec.) again to lock the channel.



## LCD DISPLAY

- ▬▬▬▬ It means transfer signal strong.
- ▬ It means transfer signal weak. It will disconnect.
- ▬▬▬ It means battery full.
- ▬ It means battery low.

## HINTS FOR USING THE SYSTEM

Normal operating distance between the transmitter and receiver is about 100 meters. The operating range will vary in different buildings and surroundings. In some locations, the signal may momentarily disappear. This is called a "drop-out" and is due to reflection and cancellation of the radio signal. Moving a few feet will restore the signal.

Keep the transmitter and receiver units at least a meter apart. If the transmitter gets too close to a receiver, it can overload the receiver, causing noisy reception or blocking of the signal.

Do not use more than one transmitter on the same channel (frequency) at the same time unless they are physically separated by more than 100 meters. Operating more than one transmitter on the same channel at the same time in the same place will result in interference.

