

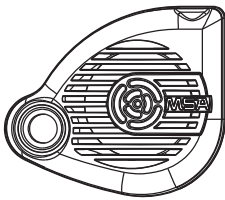
Amplifier P/N 10023056
Amplifier Kit P/N 10024074
Amplifier RI P/N 10051289
Amplifier RI Kit P/N 10051290

ClearCommand® Communications System

OPERATING AND MAINTENANCE INSTRUCTIONS

Voice Amplifier/Radio Interface

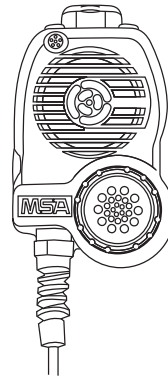
Amplifier



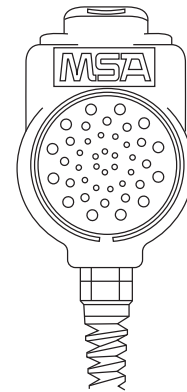
Amplifier Radio
Interface (RI)



Lapel
Microphone



Basic PTT



See Page 8 for Part Numbers

⚠ WARNING

Read this manual carefully if you have, or will have, the responsibility for using or servicing the product. The ClearCommand Communication System from MSA will perform as designed only if used and serviced according to the instructions. Otherwise, the product could fail to perform as designed and persons who rely on this product could sustain serious personal injury or death.

The warranties made by MSA with respect to the product are voided if the product is not installed, used, and serviced in accordance with the instructions in this manual. Please protect yourself and your employees by following the instructions. Please read and observe the WARNINGS and CAUTIONS inside. For any additional information relative to use or repair, write or call 1-800-MSA-2222 during regular working hours.

This product is NIOSH certified as an accessory for the Ultra Elite® Facepiece for use with all MSA MMR breathing apparatus. Only the Amplifier and Amplifier Radio Interface are approved by NIOSH for use in a CBRN application when used in an approved configuration.

For More Information, call 1-800-MSA-2222 or Visit Our Website at www.MSAnet.com



MINE SAFETY APPLIANCES COMPANY
PITTSBURGH, PENNSYLVANIA, U.S.A. 15230

INTRODUCTION

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NIOSH APPROVAL INFORMATION CAUTIONS AND LIMITATIONS

- I - Contains electrical parts which have not been evaluated as an ignition source in flammable or explosive atmospheres by MSHA/NIOSH.
- N - Never substitute, modify, add, or omit parts. Use only exact replacement parts in the configuration as specified by the manufacturer.
- S - Special or critical User's Instructions and/or specific use limitations apply. Refer to User's Instructions before donning.

SPECIAL OR CRITICAL USER'S INSTRUCTIONS

1. Do not alter this unit. You will void the intrinsic-safety rating, and may affect the intrinsic-safety of the device.
2. Evaluate this unit, and any radio transceiver with which it may be used, before entering a hazardous atmosphere. Be certain that this unit is not affected adversely by radio frequency energy.
3. Evaluate this unit, and any radio transceiver with which it may be used, as a source of radio frequency interference to other apparatus before entering a hazardous atmosphere.
4. Misuse or abuse of the ClearCommand Communications System, or the equipment to which it is attached, or using this equipment in a manner or situation not intended by the manufacturers, may result in damage to the ClearCommand, or equipment connected to the ClearCommand Communications System, or may result in personal injury or death to the user or persons dependent on the user.
5. Always inspect the ClearCommand Communications System for damage before use. If damage is found, tag the cable and immediately remove the device from service. NEVER USE A DAMAGED OR NON-FUNCTIONAL COMMUNICATION SYSTEM!

DESCRIPTION

The ClearCommand Communications System Amplifier Radio Interface (RI) Version allows a user to communicate clearly and easily, both face-to-face and over a hand-held radio, while wearing an SCBA equipped with an Ultra Elite Facepiece.

The system consists of three main components that attach to the user's radio:

- An internal microphone assembly
- An Amplifier or Amplifier RI hooked to the facepiece with a mounting bracket. The Amplifier RI (Radio Interface) includes an ear speaker and a cable to connect to a lapel microphone or Push-To-Talk.
- A Lapel Microphone or optional Basic Push-To-Talk (PTT) with specific radio interface connection. The amplifier can be attached or removed from the facepiece in seconds without tools.

Note: To complete the system, the user must select and purchase the proper Lapel Microphone or Basic Push-To-Talk (PTT) Unit that fits their specific radio. (see Table in Parts List)

When the Amplifier RI Assembly is connected to the Lapel Microphone, communication is the same as with the Basic PTT interface.

The Lapel Microphone Unit can be used without the Amplifier RI. The Lapel Microphone interface contains a remote speaker and microphone with a Push-To-Talk Button. This unit allows remote, shoulder mounted, radio transmission and reception.

When the Amplifier RI Microphone is connected to the Basic PTT, the user presses the button to transmit and incoming radio messages are heard at the Amplifier RI ear speaker.

The Lapel Microphone is equipped with the following:

- Female connection for the male connector of the helmet microphone assembly.
- Belt clip on the back of the Lapel Microphone for attaching the Lapel Microphone to the user's clothing. (An optional, clothespin type clip assembly is also available as an accessory)
- Microphone, speaker, and a Push-To-Talk Button.
- The Push-To-Talk Button is protected against inadvertent operation by a guard. The unit is shipped with the taller guard. When the taller guard is removed, the Push-To-Talk Button becomes fully exposed and easier to access. The shorter guard is included and available for replacement.
- Cable and radio-specific connector.
- Connection port for an optional remote finger Push-To-Talk Button used when wearing a Level A Suit.

INTRODUCTION

The amplifier operates from two standard AAA alkaline batteries and notifies the user when the batteries need replaced. Each Amplifier and Amplifier RI has a low battery LED indicator.

Intrinsically-Safe Rating

The ClearCommand Communications System is certified Intrinsically-Safe in the United States for use in Class 1, Division 1, Groups A, B, C, D, E, F, and G hazardous locations.

The ClearCommand Communications System is certified intrinsically-safe in Canada CAN CSA-C22-2-No.157-92. Failure to follow this warning can result in serious personal injury or death.

Note: The intrinsically-safe level of any system which uses the ClearCommand Communications System is that of the lowest intrinsically-safe rating of any single component in the system.

WARNING

Risk of Explosion - Use only Helmet Communication Systems with the proper intrinsically safe rating in hazardous environments. Misuse can result in serious personal injury or death.

A copy of the Control Drawing may be obtained by downloading it from MSA's website, www.msanet.com/catalog/product852.html or by contacting MSA's Customer Service Department directly:

Phone: 1-800-MSA-2222

Fax: 1-800-967-0398

Email: info@msanet.com

Mail: Attn: Customer Service
Mine Safety Appliances Company
PO Box 426
Pittsburgh, PA 15230

Ensure each component of the intrinsically safe system is suitable for the Hazardous (Classified) Location prior to entering.

CAUTION

Substitution of components may eliminate or compromise intrinsic safety.

WARNING

Ensure the radio used is intrinsically safe before entering a hazardous atmosphere. Failure to following this warning can result in serious personal injury or death.

CAUTION

The ClearCommand Communications System must be tested before entering a hazardous atmosphere. If the ClearCommand Communications System fails to operate as designed, disconnect at the radio and use the radio independently from the communication system.

PREPARING FOR USE

PREPARING FOR USE

Attachment of Amplifier or Amplifier RI to Bracket

1. Ensure dust cover is open on mounting bracket (two pin) connector.



2. To attach the amplifier onto the bracket with the hook at the front of the amplifier:
 - a. Align the amplifier so the connector is correctly in position.

- b. Press the amplifier into place on the bracket and tighten thumbscrew on back side of mounting bracket.



3. If not using radio, wrap the cable around the lens ring and connect the cable to the clip on the right side.

DONNING THE UNIT

⚠ WARNING

Always test the ClearCommand Communications System for damage and be sure it operates properly before entering any hazardous atmosphere. Do not use this device unless it passes all inspection and operational tests. Failure to follow this warning can result in serious personal injury or death.

⚠ CAUTION

Ensure radio is at the lowest volume setting. Control the volume for the Microphone and Ear Speaker Assembly or Lapel Microphone with the volume control on the radio.

Amplifier

1. Don the SCBA Ultra Elite Facepiece following the instructions supplied with the SCBA.

2. Turn the Voice Amplifier ON:
 - a. Depress the on/off button on the amplifier and then release it.
 - b. Look through the facepiece lens. A small, red LED should be illuminated at the top of the amplifier housing. If the LED is flashing, the battery is low and must be replaced before you use the amplifier.
 - c. For amplifier operation the on/off button must be ON. All facepiece audio is reproduced at the amplifier.

Note: The on/off button remains ON until you press and release the button. Always be sure to turn the unit OFF (red LED should not be illuminated) before storing the facepiece. If left ON, the battery will be depleted.

3. Speak into the facepiece in a normal voice. Your voice is projected from the amplifier speaker.

Amplifier RI

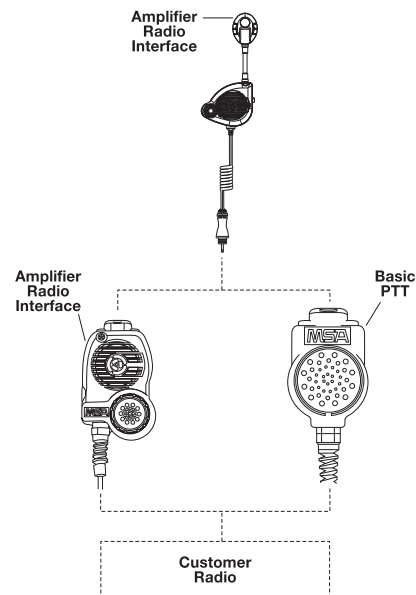
Read the Amplifier Procedure in the Donning the Unit section.

Be sure to observe all CAUTIONS, WARNINGS, and NOTES. Before donning the facepiece, check that the radio interface connector is attached to your radio before use.

Note: The radio interface must be used with the Voice Amplifier RI on/off button turned ON.

Amplifier RI System Operations

1. Don the SCBA Ultra Elite Facepiece following the instructions supplied with the SCBA.
2. Open the dust cover on the top of the Lapel Microphone or Basic PTT.
3. Attach the Voice Amplifier RI cable to the Lapel Microphone or Basic PTT. Ensure the connector is fully inserted.



PREPARING FOR USE

- a. With the radio off, connect the Lapel Microphone or Basic PTT to the radio with the cable located at the bottom of the unit. Then, turn the radio ON.

Note: There are various types of radio cable connectors. Ensure that the radio cable connector is for the radio model being used. Also be sure the connector is attached securely using the attachment method incorporated in the connector.

- b. Depress the tab on the belt clip to open the clip. The belt clip can rotate to conveniently position the unit.
- c. Attach the belt clip in a convenient location that will make it easy to connect the Amplifier RI Cable.

Note: An optional, clothespin style clip assembly is available as an optional spare part to attach Lapel Microphone or Basic PTT to clothing (See Replacement Parts).

4. Adjust the radio volume control to an acceptable audio level.
5. All received audio will be heard on the earspeaker of the Voice Amplifier RI. The radio's internal speaker is disabled in this configuration.
6. The Voice Amplifier can be enabled for full-time use by depressing the amplifier's on/off button to ON.
 - a. If the amplifier is ON, the red LED should be illuminated at the top of the amplifier housing.
 - b. All facepiece audio is reproduced in the amplifier's speaker.
 - c. All incoming radio transmissions is received in the Voice Amplifier RI's earspeaker.

Note: If the Lapel Microphone or the Basic PTT requires a two-pin connector, the wrong Lapel Microphone or Basic PTT is being used.

⚠ CAUTION

Evaluate this unit and any radio transceiver with which it may be used. Be certain the unit is not affected adversely by radio frequency energy.

⚠ CAUTION

Evaluate this unit and any radio transceiver with which it may be used as a source of radio interference to other apparatus before entering a hazardous atmosphere.

⚠ CAUTION

The lapel microphone and Push-To-talk have a cable supplied by the radio manufacturer that may or may not be chemical and flame resistant. The Push-To-Talk, lapel microphone, cable, and radio must be protected from flame, chemicals, and CBRN agents.

Using the Radio Without the Amplifier RI

1. To use the radio independent of the Amplifier RI, detach the radio connector from the radio according to the radio manufacturer's procedures.

⚠ CAUTION

Should any component of the system fail, the user must disconnect the Lapel Microphone Cable from the radio and then hold the radio to the facepiece voicemitter for the stand-alone operations of the radio.

CLEANING AND MAINTENANCE

The ClearCommand Communications System should be cleaned and disinfected after each use. Follow an established cleaning and disinfecting program. Failure to follow this procedure can damage the ClearCommand Communications System.

Remove the Amplifier from the Apparatus

1. Unscrew the thumbscrew and disconnect the amplifier.
2. Close the dust cover on the (two pin) connector.

Cleaning and Disinfecting

2. Prepare a cleaning solution by adding Confidence Plus® Cleaning Solution (P/N 10009971) to water, following the instructions on the Confidence Plus container.

⚠ CAUTION

Although the system is water resistant, never submerge the ClearCommand Communications System modules in water or any other liquid.

3. Clean by wiping with a damp sponge or cloth containing Confidence Plus from MSA. Follow the directions on the Confidence Plus container for mixing directions and recommended times.

Communications System Inspection

1. Inspect the ClearCommand Communications System modules. Look for cracks or other signs of damage which could allow contaminants to enter the module housings. Check that the battery compartment is clear of moisture or debris.
2. Reassemble the amplifier module on the Ultra Elite Facepiece.
3. Check out the system functions.
 - a. Depress the on/off button on the ClearCommand Communications System unit and then release it.
 - b. Look through the facepiece lens. The red LED should be illuminated at the top of the amplifier unit.
 - c. Scrape your fingernail lightly across the voicemitter microphone grille of the voicemitter microphone assembly.

PREPARING FOR USE

- d. You should hear this sound reproduced in the amplifier speaker.
- e. Depress and release the on/off button again to turn the unit OFF. The LED on the amplifier unit should be OFF.

Facepiece Inspection (perform monthly)

1. Inspect the facepiece rubber behind the bracket for holes or tears.

Note: The mounting bracket must be removed from the facepiece. Refer to P/N 10022713 for installation information.

Storage

To store the ClearCommand Communications System components, be sure that unit is OFF (red LED is not illuminated). For prolonged storage, remove the batteries to prevent battery corrosion. Store the units in a cool, dry place.

Installing the Batteries

In continuous service, battery life will vary depending on user conditions. The battery is not rechargeable.

WARNING

Use only 1.5 Volt Duracell MN2400 or Energizer E92 AAA alkaline batteries. Use of other batteries, or a combination of batteries from different manufacturers, will affect performance of the unit and will void the intrinsic safety approval. Failure to follow this warning can result in serious personal injury or death.

1. Loosen the thumbscrew to open battery door.
2. Insert two AAA batteries according to the battery orientation noted inside the compartment door.
3. Close the battery door and tighten the thumbscrew.

Battery Disposal/Recycling

Dispose of or recycle batteries in accordance with all applicable federal, state, and local regulations.

WARNING

Do not dispose of the battery in fire. It may explode. Failure to follow this warning can result in serious personal injury or death.

TROUBLESHOOTING

TROUBLESHOOTING

Ear Speaker Not Receiving

- Verify that radios communicate with each other with no accessories attached.
- Verify that all connectors are fully engaged.
- Adjust receiving radio volume.
- Position ear speaker near ear by bending flexible boom.

Radio Not Transmitting

- Verify that radios communicate with each other with no accessories attached.
- Verify that all connectors are fully engaged.
- Adjust receiving radio volume.

Garbled or Unclear Communications

- Verify that radios communicate with each other when no accessories attached.
- Verify that all connectors are fully engaged.
- Adjust receiving radio volume. Some radios will produce distorted sound at full volume.
- Adjust position of ear speaker by bending flexible boom.

⚠ WARNING

Do not attempt any repairs beyond those specified in the Troubleshooting Table; otherwise, serious injury or death could result. Only trained or certified personnel, authorized by MSA, are permitted to maintain this Communications System.

Replacement Parts and User's Instructions

Item	Part Number
1. Amplifier	10023056
2. Amplifier RI.....	10051289
3. Bracket and Voicemitter Kit	10023055
4. Bracket and Voicemitter Instructions.....	10022713
5. Two Screws to Connect Microphone Wire to the Mounting Bracket	10034748
6. Dust Cover, Screw, & Washer for Microphone Wire Connection	10025123
7. Mounting Bracket Sub-assembly with Dust Dust Cover Attached	10024077
8. Voicemitter with Gasket Attached Wire & Connection	10024076
9. Retaining Ring for Voicemitter	10023505
10. Cable Clip (with Longer Screw) for RI Pigtail	10024075
11. Amplifier Kit with Bracket and Voicemitter Kit (#3).....	10024074
12. Amplifier RI Kit with Bracket and Voicemitter Kit (#3).....	10051290
13. O-ring for Mic. Connector.....	10025124
14. Lapel Microphone Installation and Operation Instructions.....	10055138
15. Basic PTT Install and Operation Instructions	10056230
16. Helmet Communications System Operation and Maintenance Instructions.....	10046197

Lapel Microphone and Basic PTT Microphone Kits for Radio Interface.
(Contact MSA Customer Service if specific radio is not listed below).

RADIO	LAPEL Mic. Part Number	Basic PTT Part Number
Maxon SP120 SP130 SP140	10042908	10045667
Motorola HT600 MT1000 MTX820 MTX900 Radius P200 P500	10042909	10045668
Motorola HT1000 JEDI MT2000 MTS2000 MTX838 MTX839 MTX8000 MTX9000	10042903	10045662
Motorola Astro / Saber	10042904	10045663
Motorola Radius GP300 P110 SP50 LTS2000	10042905	10045664
Spirit-III GTX SP21	10042912	10045669
Motorola STX MX800 MX840	10042906	10045665
GE Ericsson PCS PC2005	10042907	10045666
GE Ericsson MRK, Prism LPE-200 PX126T		
TRUCK SYSTEM		
Nexus adapter	10045732	
David Clarke		
Switch Craft adapter	10045731	
David Clarke		
Remote Finger PTT	10046574	