



**3010 SERIES FIRE APPARATUS
INTERCOM SYSTEM**

INSTALLATION & OPERATION MANUAL



**3010 SERIES FIRE APPARATUS
INTERCOM SYSTEM**

INSTALLATION & OPERATION MANUAL

REVISION 4a



TABLE OF CONTENTS

SYSTEM ORIENTATION	1
3010 Series Intercoms	1
System Overview	2
3010 Series Front Panel	3
3010 Series Rear Panel	4
Definitions	5
PRE-INSTALLATION	6
Intercom Location	6
Headset Modules	7
Daisy-Chaining the Headset Modules	8
Routing the CA Cables	9
Intercom Connections	10
Intercom Adjustments	11
Optional Foot Switch	11
INSTALLATION	12
Mounting the Intercom	12
Mounting the Headset Modules	12
Installing the CA Cables	13
Power & Ground Connections	14
Radio Connections	15
Intercom Adjustments	16
Auxiliary Input & Output	17
SYSTEM TEST	18
INTERCOM OPERATION	
Headsets	20
Volume Controls	23
Radio Select Controls	24
Digital Message Recorder	25
MODULAR PLUG INSTALLATION	26
TROUBLESHOOTING	27
Alternator Whine & Other Distracting Noises	28
Troubleshooting a Headset Location	29
Advanced Troubleshooting	30
WIRING DIAGRAMS & SCHEMATICS	
HM-10 Wiring	35
PP-20 Wiring	36
CA Cable Wiring	36
SPECIFICATIONS	37
OPTIONS & ACCESSORIES	38
WARRANTY	40

FIRECOM IS A DIVISION OF SONETICS CORPORATION

7340 SW Durham Road • Portland, Oregon 97224 U.S.A. • 800-527-0555 • 503-684-6647 • Fax: 503-620-2943
email: firecom@aol.com • www.firecom.net

© 1995, Rev. 1/97, Rev. 2/97, Rev. 6/98, Rev. 7/99. Sonetics Corporation. All rights reserved. The information in this document is subject to change without notice.
No part of this document may be copied or reproduced in any form without the prior written consent of Sonetics Corporation.

SYSTEM ORIENTATION

3010 SERIES INTERCOMS

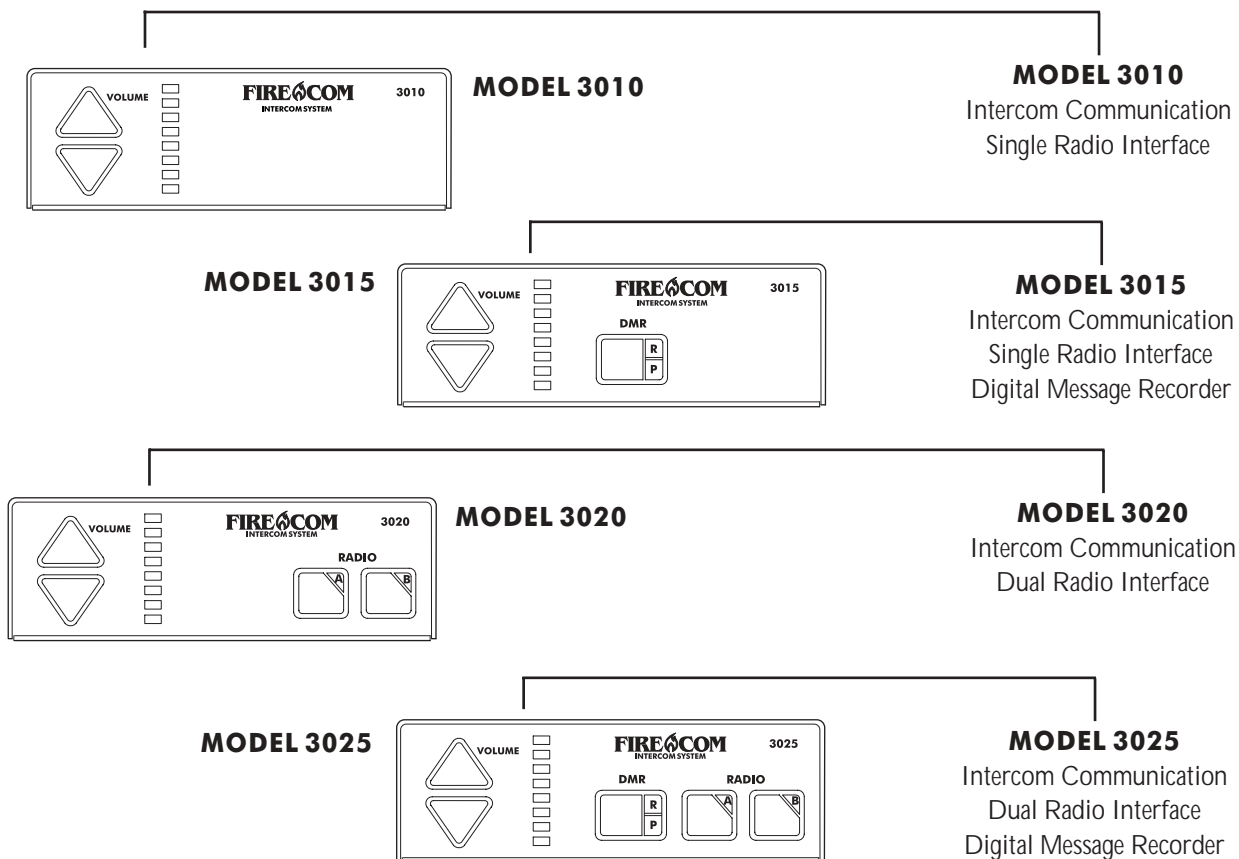
The Firecom 3010 Series Apparatus Intercom Systems, when used with Firecom noise-attenuating headsets, provide protection from hearing loss that can occur from exposure to high noise levels, while also providing each firefighter clear communication with the other crew members.

Each crew member will hear all radio traffic and be able to communicate over the intercom. Crew members wearing Radio-Transmit Headsets may transmit over the apparatus radio, selected at the main Intercom Unit, from any headset position in the system.

The 3010 Series Intercoms feature advanced circuitry that effectively suppresses distracting background noise and eliminates clipping without affecting communication. The result is clear, crisp on-board communication like never before.

There are 4 models of intercoms in the Firecom 3010 Series. Figure 1 shows the front of the 4 different models and describes the differences between the different models.

FIGURE 1:
3010 Series Intercom



SYSTEM ORIENTATION

SYSTEM OVERVIEW

This section provides an overview of the 3010 Series Intercom System and an introduction to its individual components. Figure 2 shows a typical system. Refer to this diagram for each component.

INTERCOM

The main control unit for the 3010 Series Intercom System which contains all the controls and interface circuitry.

2-WAY RADIO

The existing 2-way radio in the apparatus.

MOBILE RADIO INTERFACE CABLE

Provides the interface connections between the 3010 Series Intercom Unit and the 2-way radio in the apparatus. There are many different cable assemblies available; the particular cable needed depends on the make and model of your radio. Contact your local Firecom Dealer for more information regarding an Interface Cable specific to your radio.

POWER CABLE ASSEMBLY

Provides the power connections for the 3010 Series Intercom Unit. The power connections should be made at the same place as the power connections for your radio.

HM-10 HEADSET MODULES

Headsets are plugged into the Headset Modules to interface them into the system. The HM-10 is the standard Headset Module for use inside the apparatus.

PP-20 PUMP PANEL MODULE

A water-resistant Headset Module for use on the exterior of the apparatus (i.e. at the pump panel, at the tail-board, etc.).

CA CABLES

Six-conductor flat cable which connects the 3010 Series Intercom Unit to the HM-10 and the PP-20 Headset Modules.

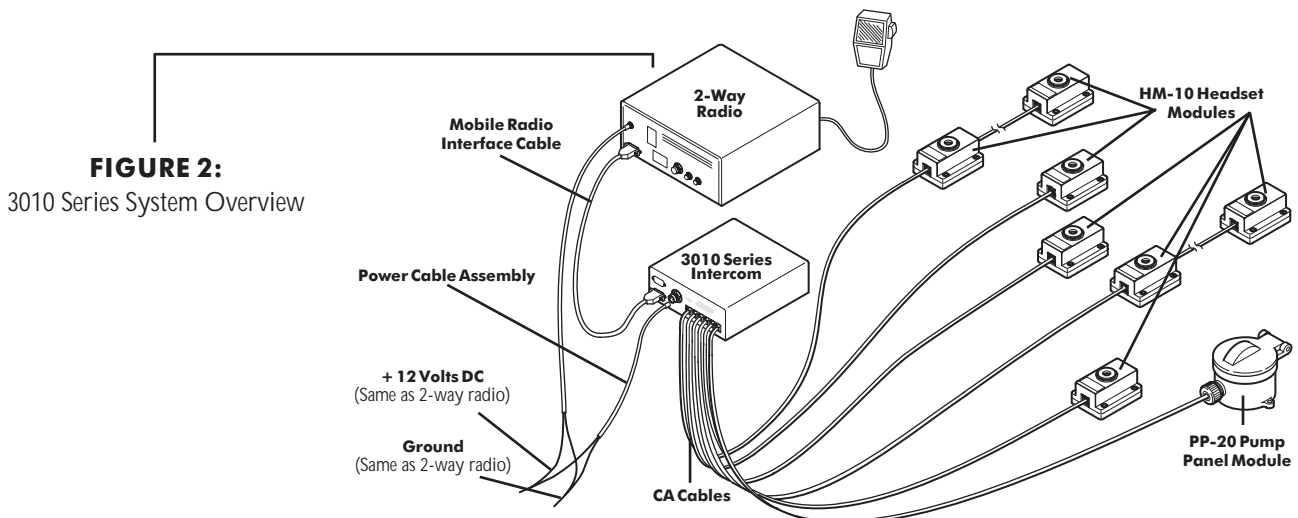


FIGURE 2:
3010 Series System Overview

SYSTEM ORIENTATION

3010 SERIES FRONT PANEL

Figure 3 shows the Front Panel of the 3025 Intercom. Listed below are the different items on the Front Panel and what they control/signify. These controls are explained further in "Intercom Operation" (page 24).

VOLUME UP & VOLUME DOWN BUTTONS

Adjusts the master volume for the Intercom System.

VOLUME INDICATOR LED'S

8 LED's which indicate the master volume level setting.

DIGITAL MESSAGE RECORDER BUTTON (3015 & 3025 ONLY)

Used for saving and playing a message that has been recorded by the Digital Message Recorder (DMR).

PLAY LED (3015 & 3025 ONLY)

A yellow LED which lights to indicate the Digital Message Recorder is playing a recorded message

RECORD LED (3015 & 3025 ONLY)

A green LED which lights to indicate when the Digital Message Recorder is recording a message.

RADIO SELECT BUTTONS (3020 & 3025 ONLY)

Used to select which radio will be keyed and transmitted on when the PTT on a Radio-Transmit Headset is pressed.

RADIO SELECT LED'S (3020 & 3025 ONLY)

Lights up to show the status of the selected/keyed radio. Green when the radio is selected, Red when the radio is keyed for transmission.

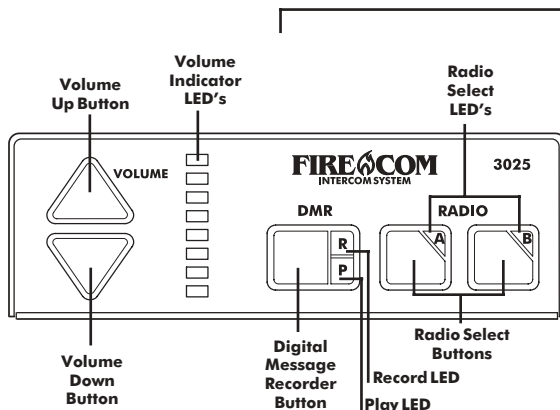


FIGURE 3:
3025 Face Panel

SYSTEM ORIENTATION

3010 SERIES REAR PANEL

Figure 4 shows the Rear Panel of the 3025 Intercom. This section describes the different connections located on the rear of the intercom.

RADIO INTERFACE JACKS

A 9-Pin D-Sub connector, which provides the attachment point for the Mobile Radio Interface Cable. The jack for radio B is only present on the 3020 & the 3025.

POWER CONNECTOR

A 2-Pin connector, where the Power Cable Assembly is plugged in, interfacing the 3010 Series Intercoms to the vehicle's power supply.

MODULAR JACKS

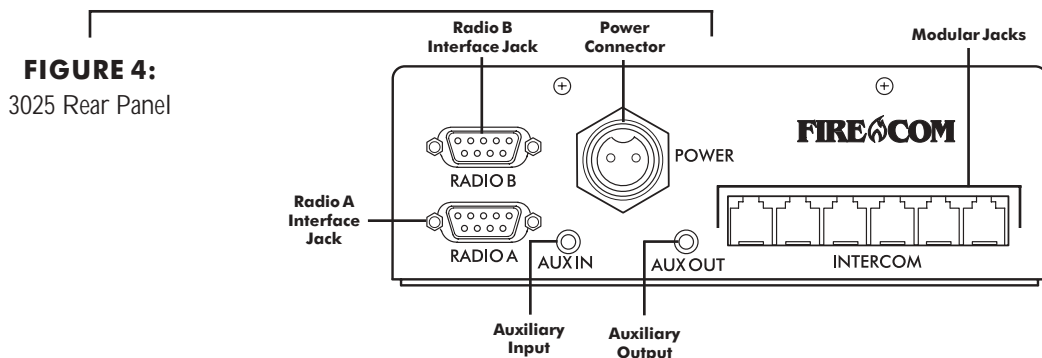
These modular jacks are the connection points for the CA Cables leading from the Intercom Unit to the Headset Modules.

AUXILIARY INPUT

A 3.5 mm mono (2 conductor) jack used to bring miscellaneous audio (such as a CD or a cassette tape player) into the intercom system.

AUXILIARY OUTPUT

A 3.5 mm mono (2 conductor) jack used to bring Intercom Audio and Radio Receive Audio out of the intercom system.



SYSTEM ORIENTATION

DEFINITIONS

This section lists some of the more common terms used in this manual and gives their description. Familiarize yourself with these terms before proceeding with the installation of a 3010 Series Intercom.

CA CABLE:	Flat, six conductor cable, which may have RJ-12 Modular Plugs on each end, used to make connections between the intercom unit and the HM-10's or PP-20's.
DMR:	The Digital Message Recorder on the 3015 or 3025 Intercom.
HEADSET LOCATION:	Any combination of CA Cables, HM-10's, PP-20's and headsets connected to a single port on the rear of the intercom.
HM-10:	Black plastic module with a single headset jack used to connect a headset into the intercom system. For use inside the vehicle.
INTERCOM AUDIO:	Audio present when communicating via the intercom system. Intercom audio is heard only on board the apparatus.
INTERCOM-ONLY HEADSET:	The Intercom-Only Headset receives both intercom and receive audio at all times. This headset has a Black or Yellow PTT for intercom communication, and is NOT capable of radio transmission.
INTERCOM PORT:	Any one of the six modular jacks on the rear of the Intercom.
INTERCOM UNIT:	Any model 3010 Series Intercom.
PP-20:	A round metal, water resistant, module with a single jack for headset connection. For use on the exterior of the vehicle.
RADIO INTERFACE PORT:	A 9-pin D-sub jack on the rear of the Intercom Unit.
RADIO INTERFACE CABLE:	The cable which plugs into the Radio Interface Port on one end, and connects to a 2-way radio on the other.
RADIO-TRANSMIT HEADSET:	The Radio-Transmit Headset receives both intercom and receive audio at all times. The mic is ALWAYS active for intercom communication, and has a Red PTT for radio communication.
RECEIVE AUDIO:	Audio from incoming radio transmissions. This is the same audio that is heard from the radio's speaker.
RJ-12 MODULAR PLUG:	The six conductor plugs on the ends of the CA Cables. These connectors plug into the Headset Modules and the Intercom.
TRANSMIT AUDIO:	Audio signals being transmitted on the radio via a Radio-Transmit Headset with the Red PTT button pressed.
TRANSMIT PRIORITY PORT:	The Intercom Port closest to the power connector on the rear of the intercom. This port has transmit priority over the other 5 ports.



PRE-INSTALLATION

Before installing the Firecom 3010 Series Intercom System, it is VERY IMPORTANT to take a little time and plan the installation. This section will provide information to assist in planning the installation. You should read AND UNDERSTAND all of the information contained in this section, as well as the sections on the System Orientation (page 1) and Installation (page 12) BEFORE installing the 3010 Series Intercom onto the apparatus.

IMPORTANT

Taking a little time to plan the installation BEFORE installing the 3010 Series Intercom System may prevent many installation errors which could result in improper system operation.

If you have any questions regarding the information contained in this section, contact your local Firecom Dealer for clarification BEFORE proceeding with the installation.

INTERCOM LOCATION

When choosing a location to mount the 3010 Series Intercom Unit, the following conditions should be considered:

- The intercom should be close to the 2-way radio and the appropriate power connections.
- Allow for at least 3 inches clearance on the sides and rear of the intercom unit for service and installation.
- The intercom should be placed where it will be easy to route all the CA Cables from the Headset Modules.
- The intercom should be placed where the controls may be easily accessed.

PRE-INSTALLATION

HEADSET MODULES

There are 2 different types of Headset Modules for the 3010 Series Intercom system (Figure 5). The HM-10 is the standard module and is designed for use inside the apparatus where it is protected from the elements. The HM-10 also has a second connection for Daisy-Chaining (page 8).

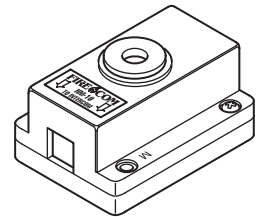
The second type of headset module is the PP-20. The PP-20 is a water and corrosion resistant module for use on the exterior of the apparatus (i.e. the pump panel, the tail-board, etc.).

Listed below are some of the items to consider when choosing the location of the headset modules:

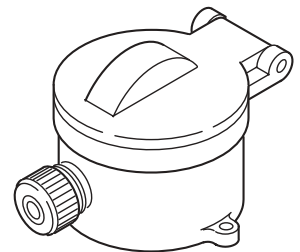
- The module should be placed convenient to the user.
- The module should be placed with the plug facing the direction of exit from the vehicle. This may help to prevent damage to the headset plug, comm cable or the headset module itself if the user attempts to exit the vehicle while still wearing the headset.
- The headset comm cable should hang clear of obstructions.
- The modules should be mounted close enough to the windows so the user may look out the window without straining the headset module or the comm cable.
- The modules should be positioned so that routing the CA Cables to the modules can be accomplished in a neat and orderly fashion.
- The modules should be placed to provide access to the jacks on the module for the CA Cables. The CA Cable from the intercom will be inserted into the jack beneath the label on the headset module.
- If you are connecting two headset modules via a "Daisy-Chain", allow clearance on the side opposite the label on the HM-10 for the CA Cable to be routed to the second headset module (page 8).

FIGURE 5:
3010 Series Headset Modules

HM-10 MODULE



PP-20 MODULE



PRE-INSTALLATION

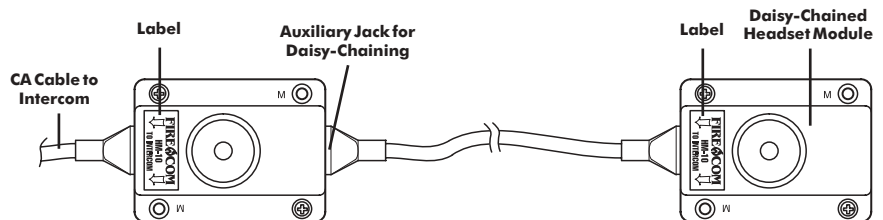
DAISY-CHAINING THE HEADSET MODULES

Daisy-Chaining the Headset Modules is a method used to increase the number of headset positions available, or a method of reducing the number of cable runs and the length of the cable runs. Daisy-Chaining the Headset Modules is easy to accomplish, but must be well thought out in advance considering the following requirements:

- The Headset Modules in a Daisy-Chain must be connected in a **SPECIFIC** manner (Figure 6).
- The CA Cable from the Intercom unit should **ALWAYS** be plugged into the Headset Module via the modular jack under the label.
- The modular jack on the other end of the Headset Module (behind a removable plastic tab), is for the CA Cable which leads to the next Headset Module in the Daisy-Chain.
- **DO NOT** mix headset types (Intercom-Only vs. Radio-Transmit) that are plugged into a Daisy-Chain.
- A maximum of 2 Intercom-Only Headsets may be plugged into a Daisy-Chain at any time.
 - You may have more Headset Modules in the Daisy-Chain, but **NEVER** plug more than 2 Intercom-Only Headsets into the Daisy-Chain at any one time.
- A maximum of 1 Radio-Transmit Headset may be plugged into a Daisy-Chain at any time.
 - You may have more Headset Modules in the Daisy-Chain, but **NEVER** plug more than 1 Radio-Transmit Headset into the Daisy-Chain at any one time.

IMPORTANT Improper Daisy-Chains in a system may result in operational problems and reduced system performance. If you have any questions regarding Daisy-Chains, contact your local Firecom Dealer for more information.

FIGURE 6:
Daisy-Chaining The Headset Module





PRE-INSTALLATION

ROUTING THE CA CABLES

The path along which you intend to run the CA Cables from the Intercom to the Headset Modules should also be planned BEFORE the installation. The items below are some of the items to consider when planning where to route the CA Cables.

- Route the CA Cables away from hot surfaces (such as the vehicle exhaust system).
- Route the CA Cables away from any moving equipment on the vehicle.
- Route the CA Cables away from the antenna or the antenna cable.
- DO NOT store excess cable. The length of each CA Cable should allow for approximately 10 inches of excess cable in each run for service loops (VERY IMPORTANT, especially in installations with a radio operating in the lower frequencies).
- When routing the CA Cables through bulkheads or other sheet metal, use a rubber grommet in the hole to prevent damage to the cables.

PRE-INSTALLATION

INTERCOM CONNECTIONS

MODULAR JACKS

On the rear of the intercom, there are 6 modular jacks (Figure 7). These jacks are for connecting the CA Cables from the Headset Modules to the intercom. All of these modular jacks will provide intercom and radio communication to the headset positions.

PRIORITY TRANSMIT

It may be desirable for one member of the crew to have priority for transmitting on the radio. The modular jack closest to the power connector is the Priority Transmit Position (Figure 7). Any headset position plugged into this jack will have priority for radio transmit over all other headset positions. When the person in this position presses the PTT on the headset, ALL transmissions from any other headset position will be stopped and the person in the priority position will be able to transmit.

POWER CONNECTIONS

The 3010 Series Intercom requires +12 volts DC (with a negative ground) at 0.25 amps. The 3010 Series Intercom comes with a Power Cable Assembly and a 1/4 amp, slo-blo, in-line fuse. We suggest connecting the Intercom power and ground to the apparatus power busses, preferably to the same connection points as the radio.

RADIO INTERFACE

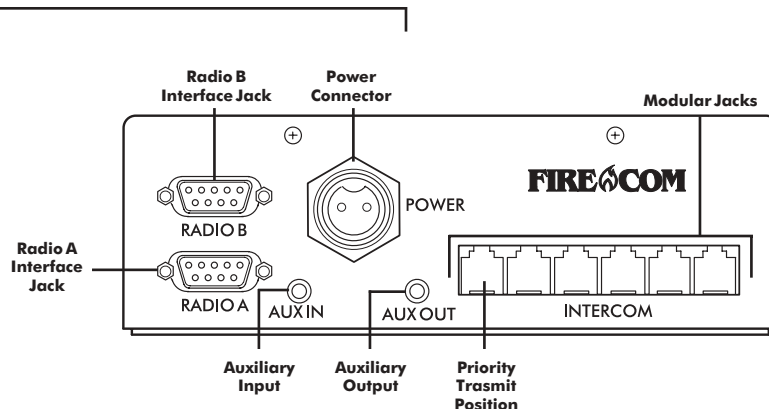
A universal Radio Interface Cable is supplied with the 3010 Series Intercoms. This cable is a 9-wire, shielded cable which terminates with bare wires.

IMPORTANT

ALL connections to the 2-way radio should be performed by a Qualified Radio Technician to ensure proper interface between the 2-way radio and the 3010 Series Intercom System.

There are many different interface cables available from Firecom to interface the 3010 Series Intercom with specific radios. These "dedicated" interface cables will make interfacing the radio easier, but should still be done by a qualified radio technician. Contact your local Firecom Dealer for more information regarding the availability of an interface cable for your radio.

FIGURE 7:
3025 Rear Panel



PRE-INSTALLATION

INTERCOM ADJUSTMENTS

After the Intercom System and the radio interface have been properly installed, there are some adjustments which **MUST** be performed for proper operation of the system. These adjustments are outlined on page 16 in this manual.

These adjustments to the intercom **MUST be performed by a qualified Radio Technician to ensure proper operation of the 2-way radio and 3010 Series Intercom System.**

IMPORTANT

OPTIONAL FOOT SWITCH

The optional Foot Switch (FS-1) is used in situations where the user cannot, or does not wish to, use the headset mounted Push-To-Talk. The Foot Switch is plugged into the Daisy-Chain Jack (Figure 8) on the Headset Module of the person using the Foot Switch. When selecting the location of the Foot Switch, it should be convenient to the user, but in a location where it will not be accidentally depressed. Routing the CA Cable to that headset module must also be considered when choosing a location.

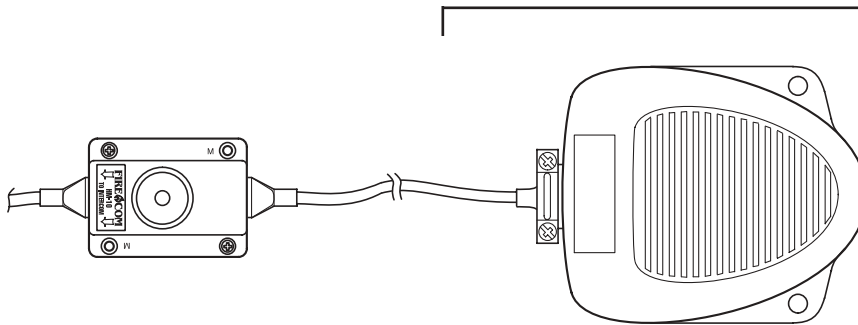


FIGURE 8:
Foot Switch
(Remote PTT)

INSTALLATION

IMPORTANT

BEFORE INSTALLING the Firecom 3010 Series Intercom, make sure you have read **AND UNDERSTOOD** the **ENTIRE** installation procedure. You should also read the sections on **Pre-Installation** (page 6) and **System Orientation** (page 1). If any item in the **Installation Procedure** is not understood, or if you have any questions which are not addressed in this manual, contact your local Firecom Dealer for more information **BEFORE** you proceed with the installation.

MOUNTING THE INTERCOM

1. Using the mounting bracket as a template, mark the location of the mounting holes.
2. Drill 2 holes for the #8 sheet metal screws (supplied).

IMPORTANT

Be sure the area behind the panel you are drilling into is free of wires or other obstructions that could be damaged while drilling the holes.

3. Install the mounting bracket with the sheet metal screws (Figure 9).
4. Remove the 4 screws (2 on each side) closest to the rear of the intercom unit and mount the intercom on the mounting bracket with the 4 screws.

IMPORTANT

DO NOT completely tighten the intercom mounting hardware until the entire installation is complete.

MOUNTING THE HEADSET MODULES

5. Using the Headset Module as a template (Figure 10), mark the location of the mounting holes. The holes in the HM-10 used for mounting the module are marked with a letter "M".
6. Drill 2 holes for the #6 sheet metal screws (supplied).

IMPORTANT

Be sure the area behind the panel you are drilling into is free of wires or other obstructions that could be damaged while drilling the holes.

7. Position the Headset Module and secure with the provided sheet metal screws.

FIGURE 9:

The Mounting Bracket

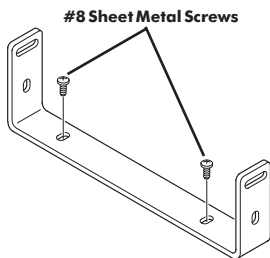
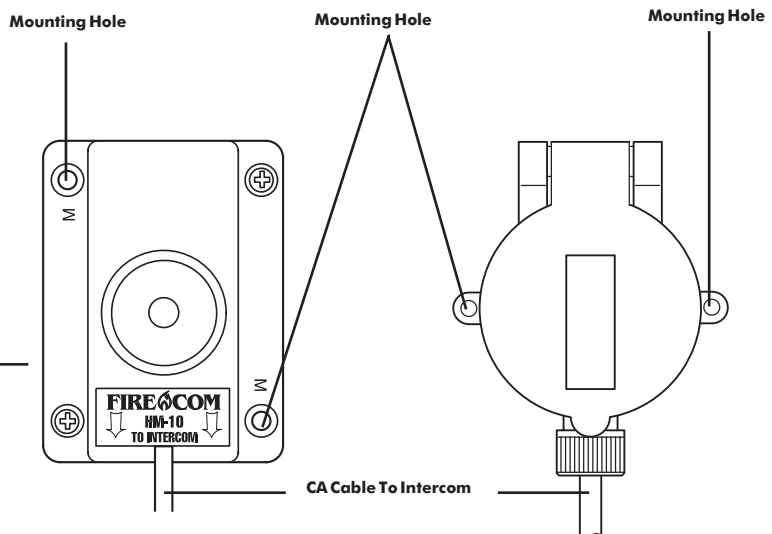


FIGURE 10:

The 3010 Headset Modules



INSTALLATION

INSTALLING THE CA CABLES

8. Slide a Bend Relief Grommet over one end of the flat CA Cable, (small end first).
9. Attach a RJ-12 Modular Plug to the end of the flat CA Cable (see page 26 for instructions if necessary).

ALWAYS make sure the printed side of the cable is facing the release-tab on the RJ-12 Modular Plug (Figure 13). This ensures proper orientation of the plug on each end of the cable.

IMPORTANT

10. Remove the screws holding the HM-10 together (Figure 11) and remove the bottom plate of the HM-10.
11. Lift the jack slightly out of the HM-10 and insert the RJ-12 Modular Plug into the Jack in the HM-10 as shown in Figure 12.

If the CA Cable is going from the Headset Module to the Intercom, it MUST be inserted into the Modular Jack on the same side of the HM-10 as the "Firecom" label. If the CA Cable is part of a "daisy-chain", you will need to remove the plastic tab which covers the access hole to the second Modular Jack on the HM-10. See "Daisy-Chaining the Headset Modules (page 8).

IMPORTANT

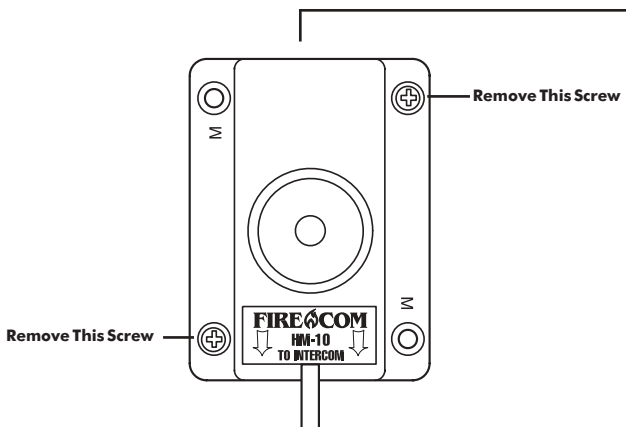


FIGURE 11:
Opening The HM-10

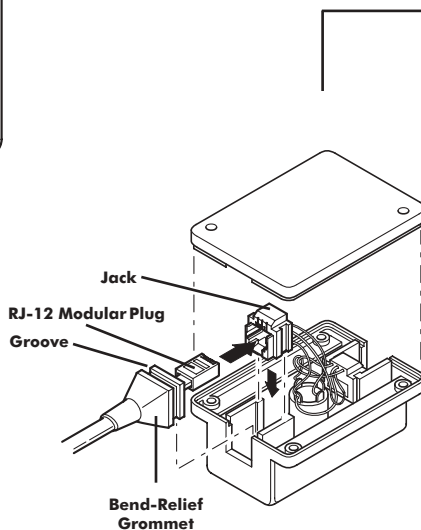


FIGURE 12:
Installing a CA Cable into a
HM-10 Module

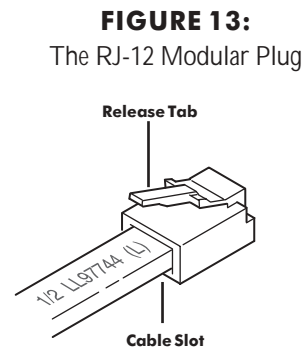
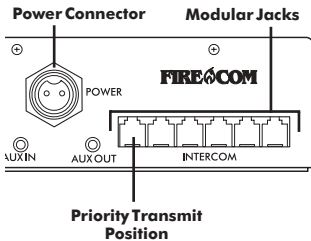


FIGURE 13:
The RJ-12 Modular Plug

INSTALLATION

FIGURE 14:
Modular Jacks



12. Insert the Bend Relief Grommet into the HM-10 so the groove in the grommet is over the side case of the HM-10 (Figure 12).
13. Replace the bottom plate of the HM-10 and secure with the 2 screws.
14. Mount the HM-10 in place on the apparatus.
15. Route the CA Cables to the rear of the Intercom Unit (or the next Headset Module in a Daisy-Chain).
16. Attach an RJ-12 Modular Plug to the end of the flat CA Cable (see page 26 for instructions if necessary).
17. With the "release-tab" on the RJ-12 Modular Plug facing up (Figure 14), insert the RJ-12 Modular Plug into a modular jack on the rear of the intercom unit (Figure 14).

IMPORTANT

The Modular Jack closest to the power connector (Figure 13) is the Priority Transmit Position. The Headset Location plugged into this jack will have priority over all other Headset Locations for transmitting on the radio.

18. Repeat steps 8 through 17 until all remaining Headset Modules have been connected with the CA Cable to the Intercom Unit or the next Headset Module in a Daisy-Chain.

POWER & GROUND CONNECTIONS

Before making the power connections, make sure the apparatus master switch is OFF!

IMPORTANT

19. Connect the Power Cable Assembly to the rear of the Intercom Unit.
20. Connect the black wire (from pin 1) to the vehicles negative ground.

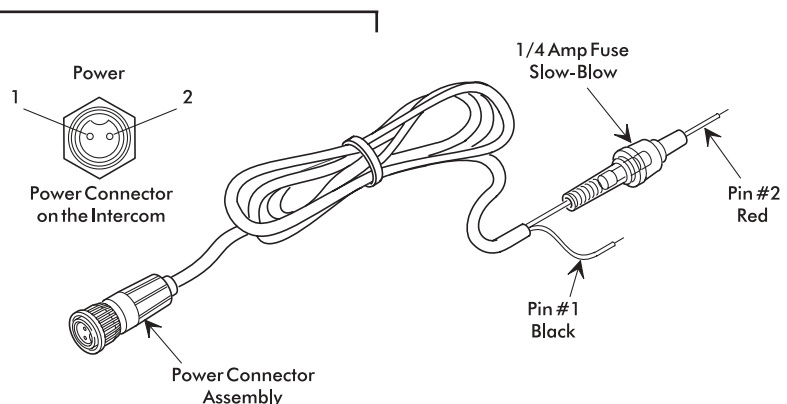
IMPORTANT

We suggest connecting the intercom power connections to the apparatus power busses (preferably, to the same point that the 2-way radio is connected).

21. Connect the red wire (from pin 2) to one end of the supplied in-line fuse holder.
22. Connect the other end of the fuse holder to the vehicles switched +12 VDC.

The 3010 Series Intercom System is installed and ready for connection to the radio.

FIGURE 15:
Power Cable Assembly



INSTALLATION

RADIO CONNECTIONS

To ensure proper operation, the connections to the radio should be performed by a qualified Radio Technician.

IMPORTANT

- If you are use a radio-specific interface cable, follow the directions included with the interface cable, then proceed with step 27 in this Installation Procedure.

If you are unsure if your Interface Cable is the proper one, or if you want to know if Firecom manufactures a Radio-Specific Interface Cable for your radio(s), contact your local Firecom Dealer.

IMPORTANT

- Plug the 9-Pin plug on the end of the supplied MR-0X Mobile Radio Interface Cable into the desired Radio Interface Jack on the rear of the intercom (Figure 16).

Tighten the 2 screws on the plug of the MR-0X. If these screws are not tightened, the 9-pin plug may vibrate loose and cause problems with transmission, receptions or other radio problems.

IMPORTANT

- Using the information in Figure 17, connect the wires on the MR-0X Mobile Radio Interface Cable to the appropriate places on the 2-way radio.
- If the intercom is a 3020 or a 3025, repeat steps 23 to 25 for the second radio.

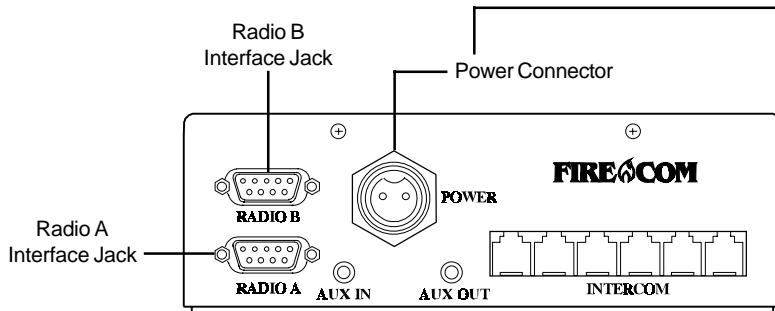


FIGURE 16
3025 Rear Panel

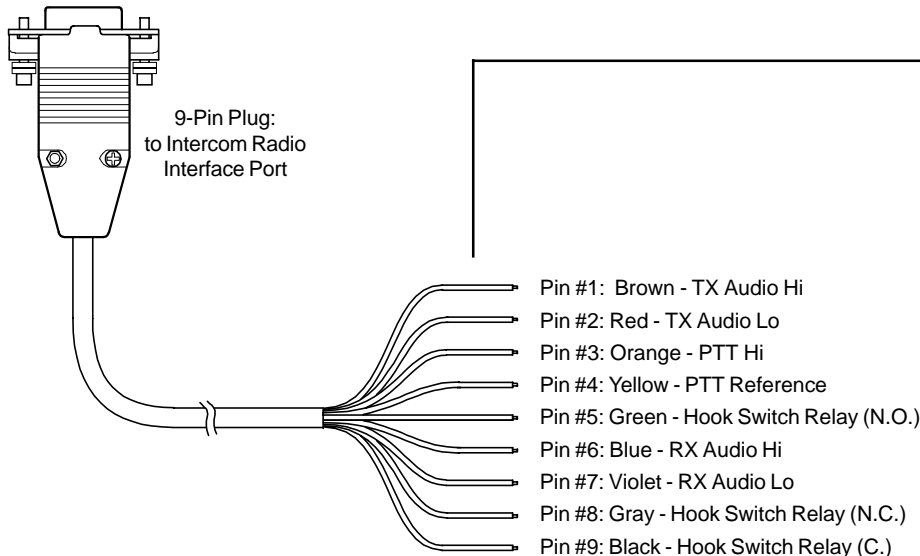


FIGURE 17
MR-0X Universal Radio Interface Cable

INSTALLATION

INTERCOM ADJUSTMENTS

In order to match the Transmit and Receive Audio to the radio, it will be necessary to perform some adjustments. These items are adjusted by switches and variable resistors located on the circuit board inside the intercom unit (Figure 18).

IMPORTANT

These adjustments MUST be performed by a Qualified Radio Technician. Failure to perform these adjustments may result in problems hearing and transmitting radio signals when using the Intercom System.

RECEIVE AUDIO ADJUSTMENT

27. Turn the 2-way radio on, and adjust the radio volume to the normal level for use **WITHOUT THE INTERCOM INSTALLED**.
28. **Radio A (all models):** Adjust VR3 to set the Receive Audio so that it is at the same level as the audio heard when listening to someone speak over the intercom.
29. **Radio B (3020 & 3025 only):** Adjust VR4 to set the Receive Audio so that it is at the same level as the audio heard when listening to someone speak over the intercom.

HOOK SWITCH ADJUSTMENT

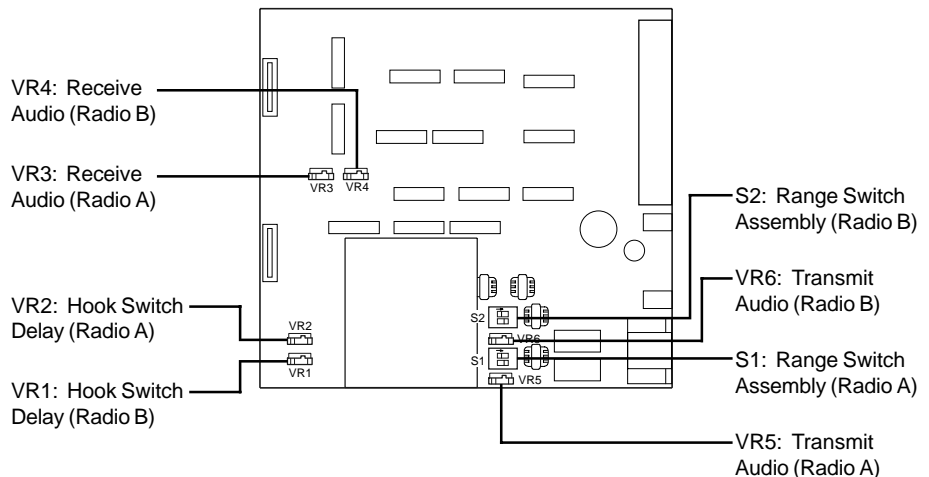
The Hook Switch is used by some radios to sense when the hand mic has been taken “off-hook.” This information is for many different functions, including disabling a programmed or scanning function. If the radio is a multi-channel radio with a scanning mode, it may be necessary to make the proper hook switch connections and adjustments to the intercom. **A change to the radio programming may also be needed.** The Firecom 3010 Series Intercoms have an adjustable delay between pressing the Push-To-Talk on the headset and the keying of the radio. The minimum delay is 0.2 seconds, the maximum is 3.5 seconds.

30. **Radio A (all models):** Adjust VR2 for the proper delay time.
31. **Radio B (3020 & 3025 only):** Adjust VR1 for the proper delay time.

IMPORTANT

If a delay between pressing the PTT and keying the radio is NOT necessary for your radio, make sure it is set to the minimum time.

FIGURE 18
3010 Series Adjustments



INSTALLATION

TRANSMIT AUDIO ADJUSTMENT

The Transmit Audio is adjusted by using the Range Switch Assemblies, and Variable Resistors VR5 & VR6. Each range switch assembly has 2 switches which select ranges for the Transmit Audio adjustment (see table 1 for the range switch settings), and the Variable Resistors adjust the Transmit Audio level within these ranges.

32. **Radio A (all models):** Using a Service Monitor, adjust the Range Switch Assembly S1 and VR5 for proper transmitter deviation and no transmitted audio clipping.
33. **Radio B (3020 & 3025 only):** Using a Service Monitor, adjust the Range Switch Assembly S2 and VR6 for proper transmitter deviation and no transmitted audio clipping.

S1	S2	Mic To Output Gain
On	On	+19 dB to -2 dB
Off	On	-1 dB to -22 dB
Off	Off	-20 dB to - 42 dB

(Maximum Signal At Mic Jack: 1.1 v pk-pk)

TABLE 1
Range Switch Settings

AUXILIARY INPUT & OUTPUT

On the back of the 3010 Series Intercom, there are 2 jacks labeled “Aux In” and “Aux Out”. These jacks are 3.5 mm mono (2 conductor) jacks. The auxiliary input signal will be mixed with the radio and intercom audio. The auxiliary input signal CANNOT be directed to the transmit circuits for radio broadcast, nor will it be recorded by the Digital Message Recorder. The auxiliary output signal strength will be exactly 1/2 the strength of the signal in the headsets. The auxiliary output signal will consist of intercom audio, receive audio from radios A & B and any audio present from the auxiliary input.

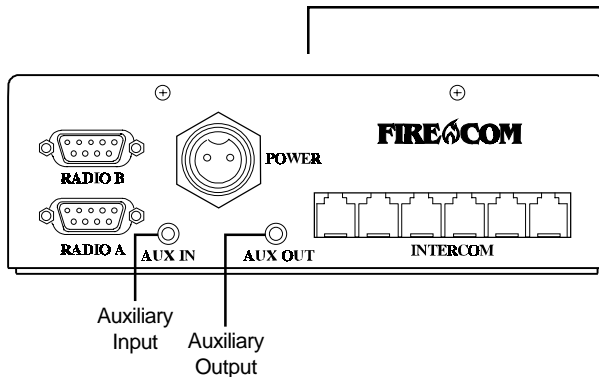


FIGURE 19
3025 Rear Panel

SYSTEM TEST

This procedure tests all functions of the 3010 Series Intercom System and should be used to test the system for proper operation after installation. In the event of a system failure, it may also be used to help identify and isolate the exact symptom before troubleshooting a problem, and to test the system after repair work has been performed.

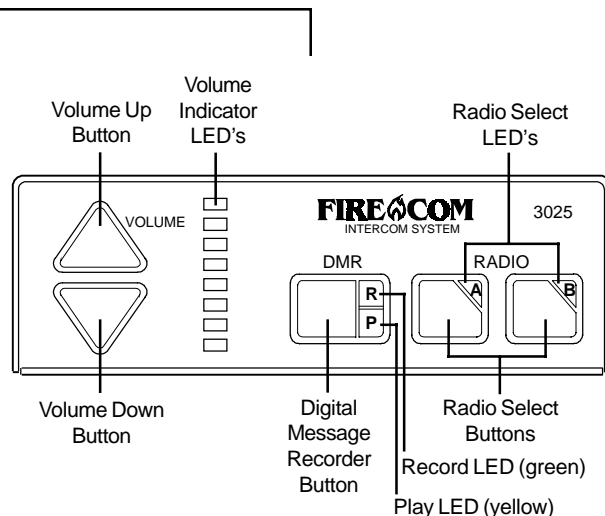
POWER ON

1. Turn on the apparatus master switch
2. Confirm that power is applied to the intercom by observing that at least one Volume Indicator LED (Figure 20) is lit.
3. Adjust the Volume Control (Figure 20) to the middle of its range.

TEST INTERCOM OPERATION

4. Plug a headset into the appropriate Headset Module.
5. Turn the headset Volume Control all the way down (counterclockwise).
6. Put the headset on your head and adjust the headband/headstrap for a comfortable fit.
7. Adjust the microphone boom to place the microphone in front of your mouth and approximately 1/8" from you lips.
8. Speak into the microphone to confirm intercom operation. You should hear yourself through the headset speakers.
 - If the headset is a UH-20 or a FH-20, press and hold the black Push-To-Talk (PTT) button in the ear dome while speaking into the microphone.
 - If the headsets is a UH-40 or a FH-40, you may need to press, and release, the yellow PTT button on the ear dome to turn the microphone on before speaking into the headset.
9. Turn the headset volume control fully clockwise.
10. While speaking into the microphone, adjust the volume control on the intercom unit slightly louder than a comfortable listening level.

FIGURE 20
3025 Face Panel





SYSTEM TEST

11. Adjust the headset volume for a comfortable listening level.
12. Monitor radio communications. Verify that the incoming radio transmissions are the same volume as the intercom volume.
13. Repeat steps 4 to 12 for each headset/headset position on the apparatus.

TEST RADIO COMMUNICATION

Steps 14 to 16 are for Radio-Transmit Headsets only! These are the models FH-10 and UH-10, and have a red PTT on the ear dome.

IMPORTANT

14. Put on a Radio-Transmit Headset (Model FH-10 or UH-10)
15. Test radio transmission by pressing the red PTT button on the ear dome and speaking into the microphone. You should transmit on the radio.
16. If there is an optional foot switch installed, test radio transmission by pressing the foot switch and speaking into the microphone on the headset.
17. Repeat steps 14 to 16 for each Radio-Transmit Headset on the apparatus.

TEST THE DIGITAL MESSAGE RECORDER

18. When the 2-way radio is receiving a transmission, the green Record Indicator (Figure 20) should light, indicating that the Digital Message Recorder (DMR) is recording the transmission.
19. After the Record Indicator goes out, press and hold the DMR Button until the yellow Play Indicator (Figure 20) and the green Record Indicator briefly flash. The message is now saved.
20. Press the DMR Button. The yellow Play Indicator will light and the saved message will play.

SYSTEM DYNAMIC TEST

21. Start the apparatus engine.
22. Using a Radio-Transmit Headset close to the intercom unit, check the intercom and radio functions.

Final adjustment of the Volume Controls may be required under actual apparatus operating conditions.

If excessive engine/siren noise is present in the headsets, the intercom volume level should be reduced slightly. To compensate for this reduced volume, you must speak louder into the microphone.

IMPORTANT

INTERCOM OPERATION

HEADSETS

Firecom offers many different styles of headsets for use with the 3010 Series Intercom System. Headsets are available in an Over-The-Head (Figure 21), or Under-The-Helmet (Figure 22) style. Either of these styles can be Radio-Transmit capable, or Intercom-Only.

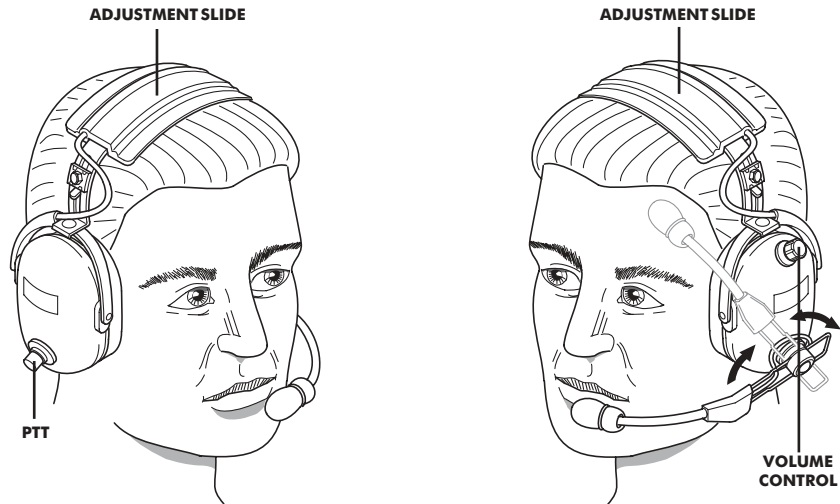
For more information regarding the different models of headsets available, contact your local Firecom Dealer.

RADIO-TRANSMIT HEADSETS

The Radio-Transmit Headsets receive both intercom and radio communications at all times. The mic is always activate for intercom communications. Radio-Transmit Headsets are typically used at the Driver, Officer and Pump Panel positions.

There are 2 models of Radio-Transmit Headsets available for use with the 3010 Series Intercom System: the UH-10 and the FH-10. There is a RED Push-To-Talk (PTT) button located on the ear dome which allows communication on the radio.

FIGURE 21:
FH Style Headset



INTERCOM OPERATION

INTERCOM-ONLY HEADSETS

The Intercom-Only Headsets receive both intercom and radio communications at all times, but are NOT radio-transmit capable. Intercom-Only Headsets are typically used at the jumpseat positions, due to the high ambient noise level at these locations (engine noise, etc.).

There are 4 models of Intercom-Only Headsets: the UH-20, the FH-20, the UH-40 and the FH-40.

- The UH-20 and the FH-20 have a BLACK PTT button on the ear dome. Press and hold this black PTT to speak on the intercom.
- The UH-40 and the FH-40 have a YELLOW PTT on the ear dome. Press and release the yellow PTT to turn the microphone on. Press and release the yellow PTT again to turn the microphone off.

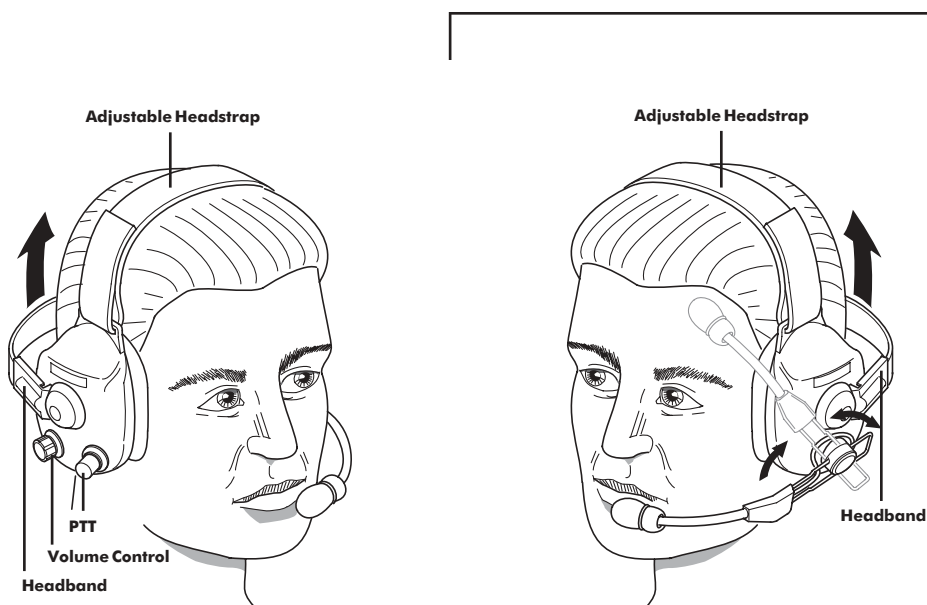


FIGURE 22:
UH Style Headset

INTERCOM OPERATION

HEADSET ADJUSTMENT

The vertical fit of the headset is changed by adjusting the headband (FH models) or the headstrap (UH models).

- Over-The-Head (FH) style headsets (Figure 21): These headsets have adjustable headbands with slide mechanisms located at each side above the ear domes. If the adjustment slides become loose, gently tighten the self-locking nuts on the slide mechanisms.
- Under-The-Helmet (UH) style headsets (Figure 22): These headsets have an adjustable headstrap to adjust the height of the ear domes.

For maximum comfort, wear the headset as far back on the head as possible, while ensuring that the ear domes still completely cover the ears. If discomfort is felt in the jawbone, you are wearing the headset too far forward.

MICROPHONE PLACEMENT

The microphones used on Firecom headsets are noise-canceling electret microphones. The placement of the microphone is VERY important. For proper operation, the microphone should be positioned in front of the mouth and no more than 1/8" away from the lips (Figure 23).

FIGURE 23:
Microphone Placement



No More Than 1/8" From Lips

IMPORTANT

Placement of the microphone is CRITICAL. If the microphone is positioned incorrectly, you will experience drastic reduction in volume and clarity of the intercom and radio communication.

LEFT & RIGHT DRESS

The Firecom headsets may be adjusted so that the mic is on the right side (right dress) or left side (left dress).

- Over-The-Head (FH) style headsets: Rotate the Mic Boom ONLY in an upward direction (Figure 21), page 20.

IMPORTANT

ALWAYS rotate the Mic boom upwards as shown to prevent damage to the Mic Boom and the Mic Cable.

- Under-The-Helmet (UH) style headsets: Rotate the Mic Boom and the rear Headband ONLY in an upward direction (Figure 22), page 21.

IMPORTANT

ALWAYS rotate the Mic Boom and the rear Headband upwards as shown to prevent damage to the Mic Boom, the Mic Cable and the Headband Cable.

HEADSET VOLUME CONTROL

Located on the ear dome of each Firecom Headset is a volume control for adjusting the volume of headset speakers. This allows each user to adjust the volume to the preferred level. Turning the Volume Control clockwise increases the volume, turning the control counter-clockwise decreases the volume.

INTERCOM OPERATION

VOLUME CONTROLS (ALL MODELS)

VOLUME INDICATOR

The Volume Indicator is a vertical row of 8 colored LED's. The bottom 3 are green, the next 3 are yellow and the top two are red. Minimum volume is indicated by only the bottom green indicator being lit. Maximum volume is indicated by all eight LED's being lit.

When power is turned off to the intercom, the intercom "remembers" the last volume setting and will return to that volume level when power is turned on again.

IMPORTANT

VOLUME UP BUTTON (ALL MODELS)

Pressing this button once increases the intercom volume by one step and also lights one more LED in the Volume Indicator. Once maximum volume has been reached (all LED's in the Volume Indicator are lit), pressing the Volume Up Button will have no effect.

VOLUME DOWN BUTTON (ALL MODELS)

Pressing this button once decreases the intercom volume by one step and also lights one less LED in the Volume Indicator. Once minimum volume has been reached (only the bottom green LED in the Volume Indicator lit), pressing the Volume Down Button will have no effect.

The minimum volume level is not "zero" volume. It is NOT possible to turn the intercom audio off using the Volume Control Buttons.

IMPORTANT

The Volume Controls on the 3010 Series Intercoms adjust the volume of INTERCOM COMMUNICATION ONLY! The Volume Controls DO NOT adjust the volume of the Receive Audio from the radio(s). To adjust the volume of the Receive Audio, adjust the Receive Audio Adjustment (page 16) or the radio's volume control.

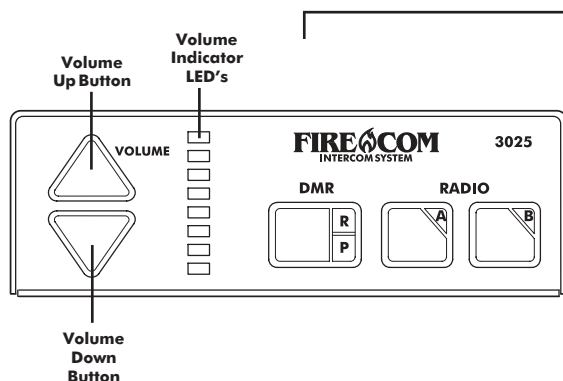


FIGURE 24:
Volume Controls
and Indicators

INTERCOM OPERATION

RADIO SELECT CONTROLS (3020 & 3025 ONLY)

The Radio Select Controls/Indicators on the 3020 & 3025 ONLY control which radio will be transmitted on when a PTT Button on a Radio-Transmit Headset is pressed. They do NOT control which radio is heard in the headsets. BOTH radios are monitored at all times in the headsets

RADIO A SELECT BUTTON

Pressing the Radio A Select Button, selects radio A as the radio for transmission. The green Radio A Selected Indicator will then light.

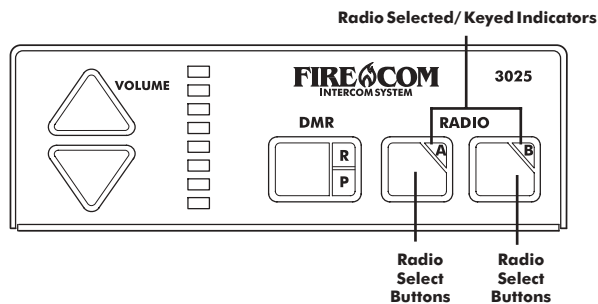
RADIO B SELECT BUTTON

Pressing the Radio B Select Button, selects radio B as the radio for transmission. The green Radio B Selected Indicator will then light.

RADIO SELECTED/KEYED INDICATORS

The Radio Select Indicators will light with a green color when that radio is selected. It will change to red when the PTT Button on a Radio-Transmit Headset is pressed. The indicator will return to green when the PTT Button is released.

FIGURE 25:
Radio Select
Controls & Indicators



INTERCOM OPERATION

DIGITAL MESSAGE RECORDER (3015 & 3025 ONLY)

The optional Digital Message Recorder (DMR) provides about 30 seconds of voice recording. You can record radio communications and play them back immediately. Firecom technology provides you with unlimited, instantaneous replays of incident, address, apparatus assignments, or other critical information. Figure 26 shows the Controls for the DMR on the Front Panel of the 3025.

The Digital Message Recorder is ONLY available on the 3015 & 3025 models. If you have a model 3010 or 3020, you do NOT have a Digital Message Recorder, and you may skip this section.

IMPORTANT

RECORDING A MESSAGE

The Digital Message Recorder on the 3015 & 3025 will record every incoming radio transmission. When a new message is received, the previous message will be deleted from memory unless the message is saved.

SAVING A MESSAGE

When a message is recorded that you wish to save, press and hold the DMR Button (Figure 26) until the green Record Indicator and the yellow Play Indicator flash briefly. This activates the Message Hold mode and the message will be saved.

The DMR will continue to record messages while saving the desired message. If another transmission is received that you wish to save, follow the above procedure to save the message.

The Digital Message Recorder saves one message at a time, any new message saved will replace any previously saved message.

IMPORTANT

PLAYING A RECORDED MESSAGE

To play a recorded message, the message **MUST** first be saved. Once a message has been saved, press the DMR Button (Figure 26) to play the recorded message. The yellow Play Indicator will light while the message is playing.

A Message MUST be saved BEFORE playing. You cannot play a recorded message unless it has been saved first.

IMPORTANT

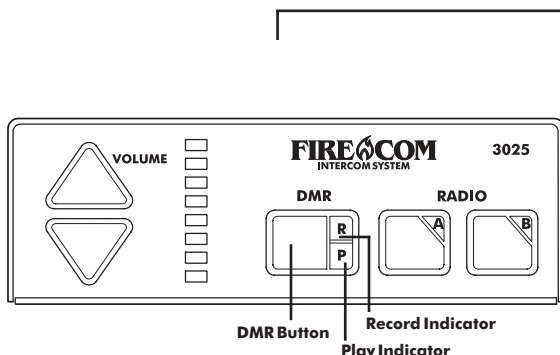


FIGURE 26:
Digital Message Recorder
Controls & Indicators

MODULAR PLUG INSTALLATION

This section describes the installation of the RJ-12 Modular Plugs onto the flat CA Cable.

1. Using the cutter blade on the crimping tool (labeled "A" in Figure 27), cut the flat CA Cable so the cut is clean and 90 degrees to the sides of the cable.
2. Fully insert one end of the CA Cable between the stripping blades (labeled "C" in Figure 27) until the end of the cable hits the stop (labeled "B" in Figure 27).

FIGURE 27:
RJ-12 Modular Plug
Crimping Tool

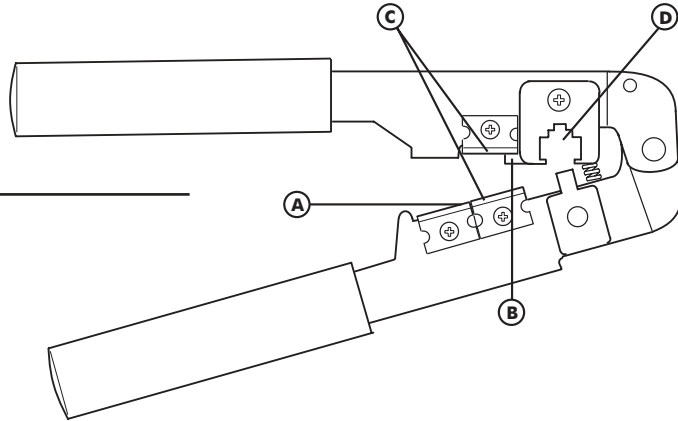


FIGURE 28:
The Stripped CA Cable

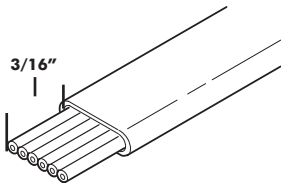
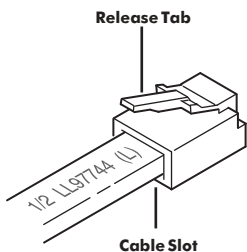


FIGURE 29:
The RJ-12 Modular Plug



3. Squeeze the handles of the crimping tool together until the tool bottoms out.
4. While holding the handles together, pull the cable out of the tool.
5. The stripped insulation should expose approximately 3/16" of wire (Figure 28).
6. Push a RJ-12 Modular Plug into the plug holder on the crimping tool (labeled "D" in Figure 27) until the release tab on the plug locks into position.
7. Holding the cable so that the printed side of the cable is toward the release-tab on the plug, push the cable into the plug as far as it will go.

ALWAYS make sure the printed side of the cable is facing the release-tab on the RJ-12 Modular Plug (Figure 29). This ensures proper orientation of the plug on each end of the cable.

8. Squeeze the tool handles COMPLETELY together. You may feel the crimper finish punching the contacts through the insulation on the wires.
9. Let the handles spring open.
10. Push down on the release-tab on the RJ-12 Modular Plug (Figure 29) and remove the RJ-12 Modular Plug from the crimping tool.
11. Inspect the plug to ensure that the cable is held securely in place.
12. Repeat this procedure as necessary to install a RJ-12 Modular Plug on each end of each CA Cable.



TROUBLESHOOTING

The Firecom 3010 Series Intercom System, when installed properly, and adjusted according to specifications, will perform reliably and offer you the finest in hearing protection and enhanced communication. However, as with any electronic equipment, occasionally a malfunction may occur.

In the following sections, you will find information that will help familiarize you with the intercom system and aid in the troubleshooting process.

If the symptoms you are experiencing are not covered in this manual, or if you are having difficulty troubleshooting your system, contact your local Firecom Dealer for assistance.

IF THE SYSTEM DOES NOT OPERATE AS EXPECTED, CHECK THE FOLLOWING ITEMS FIRST

- Check that the apparatus master switch is on.
- Check the fuse or circuit breaker.
- Check system wiring and interconnections.
- Check the orientation of ALL RJ-12 Modular Connectors on BOTH ends of each CA Cable. See "Modular Plug Installation" (page 26).
- Check that the headsets are plugged in all the way.
- Check intercom and headset control settings.
- Check for corrosion on headset plugs.
- Check all intercom ports for bent or stuck pins that can be straightened.

If these steps do not correct the problem, continue with the advanced troubleshooting procedures on page 30.

TROUBLESHOOTING

ALTERNATOR WHINE & OTHER DISTRACTING NOISES

Because of the level of ambient noise present with the apparatus motor running, alternator whine and other noises may not be noticed in the communications systems until an intercom is added. A noisy system will always be apparent, however, once an intercom is installed.

COMMON CAUSES OF NOISE ON THE COMMUNICATION CIRCUIT

- Improper installation
- Intercom adjusted improperly
- Radio Interface not connected properly
- Intercom power connections dirty, loose or connected to the wrong location
- Battery terminals corroded
- A faulty alternator

Generally, the problem is not caused by the alternator. It is usually the result of a difference in potential between the apparatus radio signal ground and the intercom signal ground. Additional sources may also exist in the apparatus electrical system.

TO REDUCE OR ELIMINATE ALTERNATOR WHINE

- Connect the apparatus radio to the cleanest power source possible: a source with out motors (i.e. heaters, windshield wipers, etc.), sirens, strobes or flashers.
- Use the same precautions when connecting the intercom power.
- Ensure that the power and grounds connections for the radio and the intercom are clean and tight.
- Ensure that the power and grounds wires for the radio and the intercom are no smaller in diameter than 18 AWG.
- Keep all battery connections clean and free from dirt and corrosion.
- Use separate noise filters on radio and/or intercom power as needed.

TROUBLESHOOTING

TROUBLESHOOTING A HEADSET LOCATION

This procedure will help determine if a problem exists in a particular headset location, and which component in the headset location is faulty.

1. Examine the headset's label to determine if the headset is an Intercom-Only Headset or a Radio-Transmit Headset.
 - If the headset is a FH-10 or a UH-10, it is a Radio-Transmit headset. The speakers should always be active. The mic should always be active for intercom communication and pressing the Red PTT button on the ear dome should key the radio for radio transmission.
 - If the headset is a FH-20 or a UH-20, it is an Intercom-Only Headset. The speakers should always be active. The mic should be active for intercom communication only when the Black PTT button on the ear dome is pressed. The headset should never cause the radio to key.
 - If the headset is a FH-40 or a UH-40, it is an Intercom-Only Headset. The speakers should always be active. Pressing the Yellow PTT on the ear dome will activate the mic for intercom communication. The mic will remain active until the Yellow PTT is pressed again.
2. Plug the headset into another good headset location.
 - If the headset fails to perform properly in the new location, the headset is faulty. Contact Firecom for a Return Authorization to return the headset for repair.
3. Unplug the CA Cable from the intercom unit and exchange intercom ports with a known good headset location.
 - If the headset location works properly, check the intercom port for bent or stuck pins which can be straightened.
 - If the headset fails to perform properly, the headset location has a faulty component and you should continue troubleshooting the headset location.
4. Check the HM-10 by exchanging it with a known good one.
 - If the new HM-10 works, check the RJ-12 Modular Plug of the faulty HM-10 for bent or stuck pins. If the pins look good and the HM-10 fails to perform properly, it will need to be replaced.
5. Install new RJ-12 Modular Plugs on BOTH ends of the CA Cable (page 26).
6. Replace the CA Cable.



ADVANCED TROUBLESHOOTING

IMPORTANT

This section is designed for use by a **QUALIFIED TECHNICIAN** only!!!

This section is designed to aid in the troubleshooting process of an intercom system that has been working properly, but has now failed. Make sure you read and understand THE ENTIRE procedure BEFORE attempting any of the troubleshooting steps in this section. If there are questions regarding this information, contact your local Firecom Dealer for more information BEFORE proceeding with the troubleshooting steps.

The System Test on page 18 is also a helpful tool in isolating and determining the actual symptoms of the problem.

A) THERE IS NO SOUND IN THE HEADSET FROM EITHER THE INTERCOM OR THE RADIO

1. Check the headset Volume Control. Make sure it is not turned all the way down.
2. Check the headset location for faulty connections or components. See "Troubleshooting a Headset Location" (page 29).
3. Verify that some of the Volume Indicator LED on the front panel of the intercom unit are lit, indicating that the intercom is powered on.
4. Measure the voltage between pins 1 & 2 on the Power Cable. There should be at least 11.0 volts DC present, and not more than 15.0 volts DC.
5. Check the wiring to the intercom and any fuses or circuit breakers in the power circuits to the intercom and correct any faults.
6. If there is sufficient power to the intercom, and it doesn't work, the Intercom Unit is faulty. Contact Firecom for a Return Authorization to return the Intercom Unit for repair.

B) THERE IS SOUND IN THE HEADSET FROM THE INTERCOM, BUT NOT FROM THE RADIO

1. Check the radio volume. Make sure it is not turned all the way down.
2. Adjust the Receive Audio adjustment. See "Intercom Adjustments" (page 16).
3. Verify that receive audio is present by listening to the radio's speaker.
4. If there is no audio from the radio's speaker:
 - a. Disconnect the Radio Interface Cable from the back of the intercom unit. If there is audio from the radio's speaker, the Intercom Unit is faulty. Contact Firecom for a Return Authorization to return the Intercom Unit for repair.
 - b. Disconnect the Radio Interface Cable from the radio. If there is audio from the radio's speaker, the Radio Interface Cable is faulty.
 - c. If there is still no audio from the radio's speaker, the radio is faulty.
5. If there is audio from the radio's speaker, check the connections to pins 6 & 7 on the Radio Interface Port on the back of the intercom unit.



ADVANCED TROUBLESHOOTING

6. Try swapping the intercom unit with a known good one (if one is available). If the problem persists, the problem is in the Radio or the Mobile Radio Interface wiring.
7. If no fault can be found, then the fault must lie in the Intercom Unit. Contact Firecom for a Return Authorization to return the Intercom Unit for repair.

C) THERE IS SOUND IN THE HEADSET FROM THE RADIO, BUT NOT FROM THE INTERCOM

1. Check the headset location for faulty connections or components. See "Troubleshooting a Headset Location" (page 29).
2. The Intercom Unit is faulty. Contact Firecom for a Return Authorization to return the Intercom Unit for repair.

D) THERE IS SOUND IN ONLY ONE EAR

1. Check to see if the headset is a model UH-10S headset. The UH-10S has one "slotted" ear dome without a speaker in it. This is normal operation for a UH-10S.
2. The headset is faulty. Contact Firecom for a Return Authorization to return the headset for repair.

E) YOU CAN HEAR OTHERS ON THE INTERCOM, BUT THEY CANNOT HEAR YOU

1. If the headset is an Intercom-Only Headset with a Black PTT, be sure that the PTT button is fully depressed when trying to talk on the intercom.
2. If the headset is an Intercom-Only Headset with a Yellow PTT, press and release the PTT and test again.
3. Check the headset location for faulty connections or components. See "Troubleshooting a Headset Location" (page 29).
4. The headset is faulty. Contact Firecom for a Return Authorization to return the headset for repair.

F) YOU CAN'T HEAR OTHERS ON THE INTERCOM, BUT THEY CAN HEAR YOU

1. Check the headset location for faulty connections or components. See "Troubleshooting a Headset Location" (page 29).
2. The Intercom Unit is faulty. Contact Firecom for a Return Authorization to return the Intercom Unit for repair.

ADVANCED TROUBLESHOOTING

G) THERE IS A LOUD SQUEAL IN THE INTERCOM SYSTEM WHEN THE INTERCOM VOLUME IS TURNED UP

1. Check for an open mic too near the speakers of a headset. Feedback problems are often fixed by turning the intercom volume down, moving the mic away from the headset speakers, or unplugging a headset when not in use.
2. If the problem persists, unplug the headset locations one at a time from the rear of the Intercom Unit until the squeal stops.
3. Check the headset location for faulty connections or components. See "Troubleshooting a Headset Location" (page 29).

H) THE RADIO RECEIVE AUDIO IS WEAK

1. Check the setting of the radio's volume control. The radio's volume should be set at the normal volume for use with NO intercom system present.
2. Adjust the Receive Audio adjustment. See "Intercom Adjustments" (page 16).
3. Verify proper connection to pins 6 & 7 on the Radio Interface Cable.
4. Try swapping the Intercom Unit with a known good one (if one is available). If the problem persists, the problem is in the radio or the Mobile Radio Interface wiring.
5. If no fault can be found, then the fault must lie in the Intercom Unit. Contact Firecom for a Return Authorization to return the Intercom Unit for repair.

I) THE RADIO KEYS BUT HAS NO TRANSMIT AUDIO (CARRIER BUT NO AUDIO)

1. Check the affected headset location for faulty connections or components. See "Troubleshooting a Headset Location" (page 29).
2. Check the Transmit Audio adjustment. See "Intercom Adjustments" (page 17).
3. Verify connection of pins 1 & 2 on the Radio Interface Cable and the Radio Interface Port.
4. Try swapping the Intercom Unit with a known good one (if one is available). If the problem persists, the problem is in the Mobile Radio Interface wiring.
5. If no fault can be found, then the fault must lie in the Intercom Unit. Contact Firecom for a Return Authorization to return the Intercom Unit for repair.

ADVANCED TROUBLESHOOTING

J) THE RADIO DOESN'T KEY

1. Check the affected headset location for faulty connections or components. See "Troubleshooting a Headset Location" (page 29).
2. Verify proper connection of radio interface pins 3 & 4.
3. Try swapping the Intercom Unit with a known good one (if one is available). If the problem persists, the problem is in the radio or the Mobile Radio Interface wiring.
4. If no fault can be found, then the fault must lie in the Intercom Unit. Contact Firecom for a Return Authorization to return the Intercom Unit for repair.

K) ALTERNATOR AND/OR STROBE NOISE IS PRESENT IN TRANSMIT AUDIO ONLY

1. Verify that the radio interface pins 1 & 2 are connected properly and that all connections are clean and tight.
2. Check adjustment of the Transmit Audio. See "Intercom Adjustments" (page 17). Too much gain here will cause excessive background noise to be transmitted along with the voice. In the worst case, the voice will be somewhat distorted when transmitting from a quiet place, and will become unintelligible in the presence of background noise.
3. Using a voltmeter, measure the incoming power to the intercom, looking for an AC signal. There should be less than 300 mV AC present on the power lines.

L) ALTERNATOR AND/OR STROBE NOISE IS PRESENT IN ALL INTERCOM AUDIO

1. Check for proper positioning of the mic in relation to the speaker's mouth. See "Microphone Placement" (page 22). Improper mic positioning will defeat the noise canceling characteristics of the mics.
2. Inspect the headset microphones, making sure that all slots on both sides of the mic are clean and unobstructed. Obstruction of these slots will hamper or defeat the noise canceling characteristics of the mics.
3. Disconnect any exterior headset locations. If the noise stops, inspect that location for water or other contamination. If contamination is present, contact Firecom for a Return Authorization for repair of the unit.

ADVANCED TROUBLESHOOTING

M) ENGINE NOISE AND SIRENS ARE PRESENT IN TRANSMIT AUDIO

1. Review the set up and operation of the intercom volume. See "Volume Controls" (page 23). The intercom volume is possibly set too high.
2. Inspect the headset microphones, making sure that all slots on both sides of the mic are clean and unobstructed. Obstruction of these slots will hamper or defeat the noise canceling characteristics of the mics.
3. Check adjustment of the Transmit Audio. See "Intercom Adjustments" (page 17). Too much gain here will cause excessive background noise to be transmitted along with the voice. In the worst case, the voice will be somewhat distorted when transmitting from a quiet place, and will become unintelligible in the presence of background noise.

N) INTERCOM VOLUME CONTROL HAS NO EFFECT

1. Contact Firecom for a Return Authorization to return the Intercom Unit for repair.

O) DMR DOES NOT WORK

1. Review the operation of the DMR. See "The Digital Message Recorder" (page 25).
2. Contact Firecom for a Return Authorization to return the Intercom Unit for repair.

P) DMR PLAYBACK IS NOISY

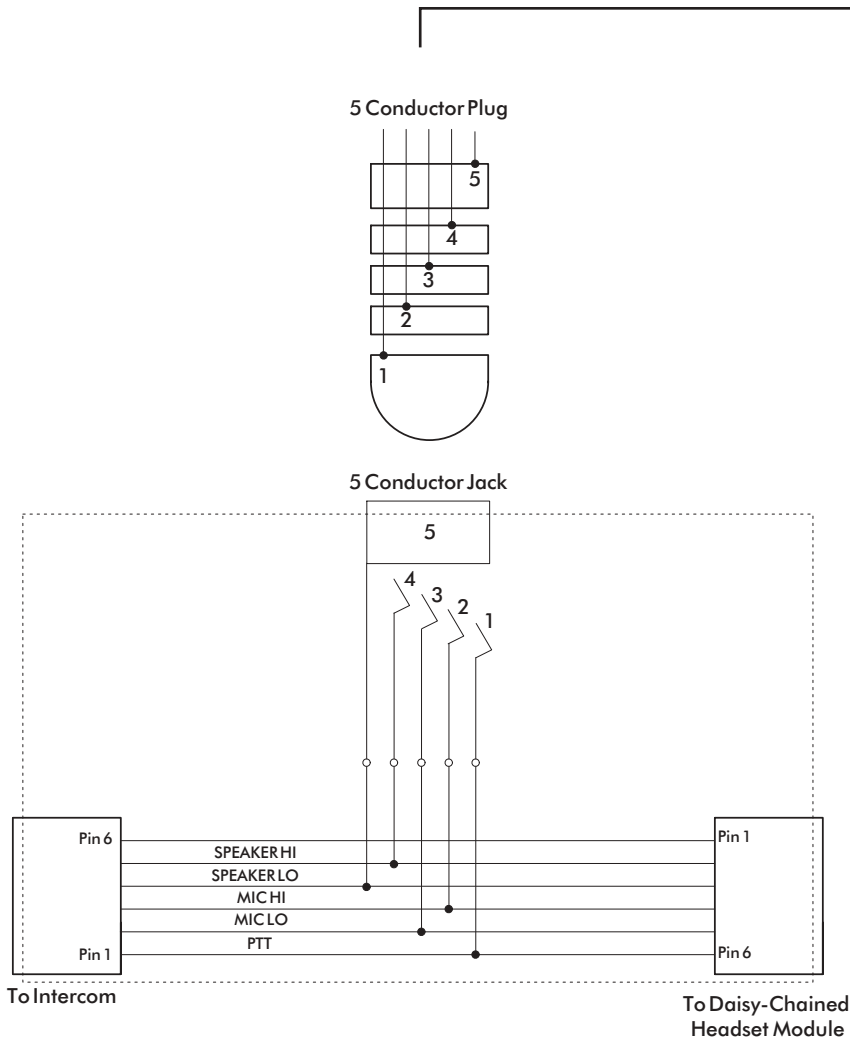
1. Contact Firecom for a Return Authorization to return the Intercom Unit for repair.

Q) DMR PLAYBACK IS WEAK

1. Contact Firecom for a Return Authorization to return the Intercom Unit for repair.

WIRING DIAGRAMS & SCHEMATICS

FIGURE 30:
HM-10 Wiring



WIRING DIAGRAMS & SCHEMATICS

FIGURE 31:
PP-20 Wiring

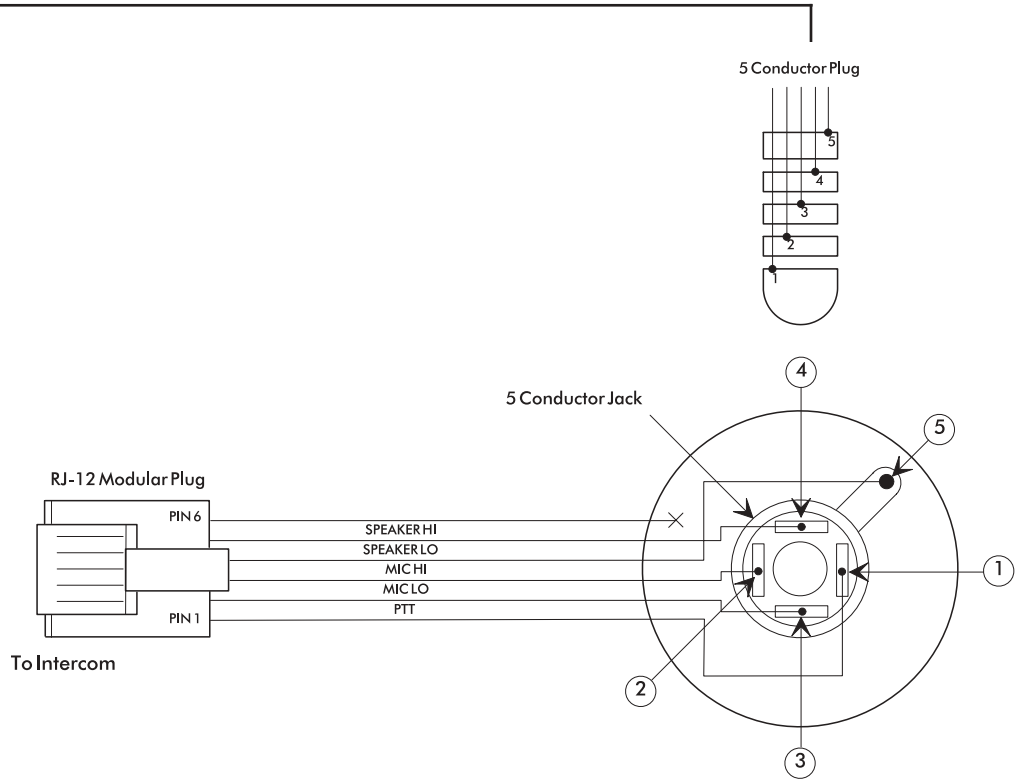
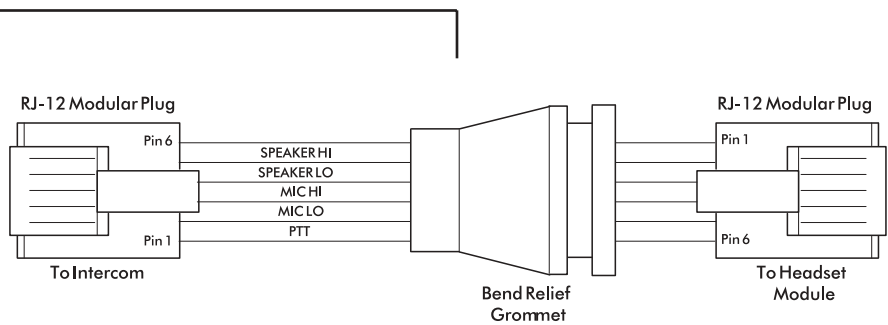


FIGURE 32:
CA Cable Wiring





SPECIFICATIONS

HEADSETS:

Sensitivity: 104 dB re .0002 microbar @ 1000 Hz, 1 mW
Frequency Response: 100-17,000 Hz +5 dB in 6 cc coupler
Impedance: 600 ohms nominal, 150 to 1200 ohm source
Weight: 21.2 oz. (FH models) 19.6 oz (UH models)

MICROPHONE:

DC Bias Supply: 8-16 volts, not polarity sensitive
Source Resistance: 200 to 2200 ohms
Output Voltage: 370 mV @ 114 SPL re .0002 microbar
Frequency Response: Optimized for speech clarity and noise reduction
Max. Amb. Noise Level: 125 dB SPL re .0002 microbar
Weight: 0.2 oz.

INTERCOM:

Size: 6.6" L x 6.1" W x 2" H (with mounting bracket)
Weight: 42.6 oz. (without mounting bracket)
Output: 375 milliwatts into a total of 6
150 ohm headsets (1 each channel)
Power Requirements: 0.15 amps 12 volt nominal, negative ground



OPTIONS & ACCESSORIES

HEADSETS:

All Firecom Headsets for the 3010 Series Intercom System are equipped with a noise-canceling electret condenser microphone on an solid, flexible boom, volume control, adjustable headstrap/headband and liquid foam ear seals. The Firecom headsets provide 24 dB NRR.

FH-10:

Over-the-head style, Radio-Transmit Headset (Red PTT). Part Number: 105-0090-00

FH-20:

Over-the-head style, Intercom-Only Headset (Black PTT).

Part Number: 105-0091-00.

FH-10S:

Over-the-head style, single ear, Radio-Transmit Headset (Red PTT).

Part Number: 105-0094-00

FH-40:

Over-the-head style, Intercom-Only Headset with alternating push-on, push-off PTT (Yellow PTT). Part Number: 105-0091-10

UH-10:

Under-the-helmet style, Radio-Transmit Headset (Red PTT).

Part Number: 105-0092-00

UH-20:

Under-the-helmet style, Intercom-Only Headset (Black PTT).

Part Number: 108-0093-00

UH-10S:

Under-the-helmet style, Radio-Transmit Headset, one slotted ear dome without speaker. (Red PTT). Part Number: 105-0096-00

UH-40:

Under-the-helmet style, Intercom-Only Headset with alternating push-on, push-off PTT (Yellow PTT). Part Number: 105-0093-10

HEADSET MODULES & EXTENSION CORDS:

HM-10:

Interior headset module for use with all headsets listed above.

Part Number: 107-0407-00

PP-20:

A water-resistant headset module for use with all headsets listed above.

Part Number: 107-0413-00

HE-150:

5-foot coiled headset extension cord. For use with all headsets listed above.

Part Number: 108-0675-00

HE-150J:

15-foot coiled extension cord with a male connector at each end, to be used as a jumper between two PP-20 Headset Modules. Part Number: 108-0675-10



OPTIONS & ACCESSORIES

OTHER ACCESSORIES:

CLOTH COVERS:

Replacement cloth covers, sold only by the dozen. Part Number: 108-0003-00

CRIMPER:

Crimping tool used for installing the RJ-12 modular plugs onto the CA Cables (instructions included). Part Number: 440-0011-00

EAR SEAL:

Replacement liquid foam ear seals, sold by the pair. Part Number: 310-0600-10

FOOT SWITCH:

A heavy duty foot switch, for use as a remote PTT. Part Number: 108-0670-10

HEADSTRAP:

Cloth headstrap used on the UH-10, UH-10S, UH-20 & UH-40 model headsets. Part Number: 540-0884-00

HEADSET HANGER HOOKS:

Rubber-coated, steel headset hanger hook. Part Number: 108-0676-00

HANDHELD RADIO INTERFACE:

Works with all Firecom headsets. Contact your local Firecom Dealer for specific information regarding your particular handheld radios.

HS-1:

System Selector Switch. Part Number: 108-0677-10

MIC MUFFS (DOZEN):

Replacement mic muffs with O-rings, sold only by the dozen. Part Number: 108-0004-00

RJ-12:

Modular connectors used with the CA Cable to make the interface cables between the intercom and the headset modules. Part Number: 351-0002-00

TRI-COM:

Triple radio interface for use with the Firecom intercoms. Part Number: 108-0672-10



WARRANTY

TWO-YEAR LIMITED WARRANTY TO ORIGINAL PURCHASER

Sonetics Corporation warrants to the original purchaser of its products, that they will be free from defects in materials and workmanship, under normal and proper use, for the period of two years from date of purchase. Sonetics Corporation will repair or replace, at its option, any parts showing factory defects during this warranty period, subject to the following provisions. This warranty applies only to a new product which has been sold through authorized channels of distribution. All work under warranty must be performed by Sonetics Corporation. All returned products must be shipped to our address, freight prepaid, accompanied by a dated proof of purchase. This warranty is void if the purchaser or others attempt to repair, service or alter the product in any way. This warranty does not apply in the event of accident, abuse, improper installation, unauthorized repair, tampering, modification, fire, flood, collision, or other damage from external sources, including damage which is caused by user replaceable parts (leaking batteries, etc.). This warranty does not extend to any other equipment or apparatus to which this product may be attached or connected. The foregoing is your sole remedy for failure in service or defects. Sonetics Corporation shall not be liable under this or any implied warranty for incidental or consequential damages, nor for any installation or removal costs or other service fees. This warranty is in lieu of all other warranties, express or implied, including the warranty of merchantability or fitness of use, which are hereby excluded. To the extent that this exclusion is not legally enforceable, the duration of such implied warranties shall be limited to two years from date of purchase. No suit for breach of express or implied warranty may be brought after two years from date of purchase.

FIRECOM is a division of the Sonetics Corporation



FIRECOM IS A DIVISION OF SONETICS CORPORATION

7340 SW Durham Road • Portland, Oregon 97224 U.S.A. • 800-527-0555 • 503-684-6647 • Fax: 503-620-2943
email: sales@firecom.com • www.firecom.com

© 1998, Sonetics Corporation. All rights reserved. The information in this document is subject to change without notice.
Printed in the U.S.A.