



Installation, Adjustment, and Operation Instructions

Remote Microphone P/N 61-95039A-V2

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CONTENTS	LOCATION
1. Applicability, General Specs, and Overview	p. 3
2. Schematic Overview of System	p. 4
3. Installation	
Electrical Installation	p. 5
Typical Customer Installation	p. 6
Physical Installation	p. 8
Connections	p. 9
4. Use	p. 11

1. APPLICABILITY, GENERAL SPECS AND OVERVIEW

APPLICABILITY

These instructions cover the installation, adjustment and use of Remote Microphone 61-95039A-V2 and application to LMG Speaker Switch models 17-95160 and 17-95161.

GENERAL SPECIFICATIONS

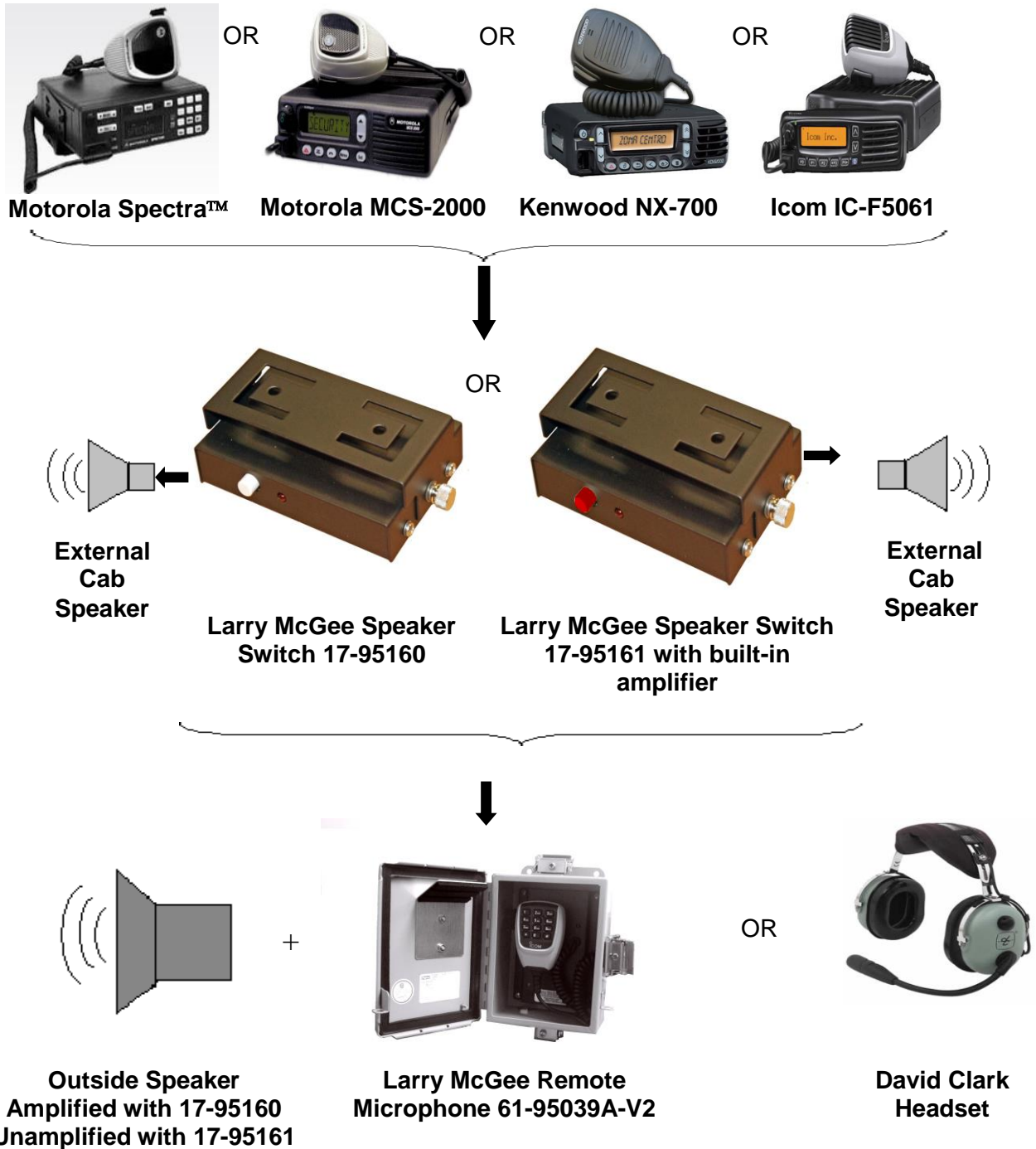
Construction:	Waterproof rugged aluminum enclosure
Enclosure size:	8" x 6" x 4"
Additional features:	Quick release latches on three sides, provision for padlock on outside casing, 30 feet of cable (or longer by request), DTMF keypad, LED that indicates when PTT switch is actuated
Mounting pattern:	(4) .25 D holes with 4.25" width and 6.25" length between hole centers
Remote Microphone output Impedance:	50 ohms (nominal)
Remote Microphone output level:	Adjustable from -5 to -25 dBm, voice
Remote Microphone minimum load:	600 ohms
Input power requirement:	12V DC (nominal), 10V min (13.8 max)
Input current:	50 mA max

OVERVIEW OF INSTALLATION, ADJUSTMENT AND USE

Remote Microphone 61-95039A-V2 is a handheld microphone with a weather-tight steel enclosure and an integral DTMF keypad. There is also a bright PTT indicator LED that is visible from the front panel. The Remote Microphone is typically mounted at the rear of a work truck and provides a second position from which to transmit over the vehicle's mobile radio.

When using a Remote Microphone with an Icom F5061 or Kenwood NX-700 radio, the use of a speaker switch box (such as LMG 17-95160) provides a method to convert internal radio speaker audio and switch it to outside speaker. When a Remote Microphone is used with a Kenwood NX-700, the speaker switch box provides a method for reducing the microphone's signal to the required level.

2. TYPICAL SCHEMATIC OVERVIEW OF SYSTEM



USERS NOTE: Speaker switches are optional when using Remote Microphone 61-95039A-V2 with Motorola Spectra™ and Motorola MCS-2000 radios. Speaker switches are useful for the Icom IC-F5061 and Kenwood NX-700 to route audio to external amplified speaker and recommended for the Kenwood NX-700 to reduce the microphone's signal to the required level of the radio.

3. INSTALLATION

ELECTRICAL INSTALLATION

Your remote microphone may be equipped with an Icom or Motorola microphone. The jack locations for the Motorola or Icom microphones used in Remote Microphone 61-95039A-V2 can be seen in Figure 1 below.

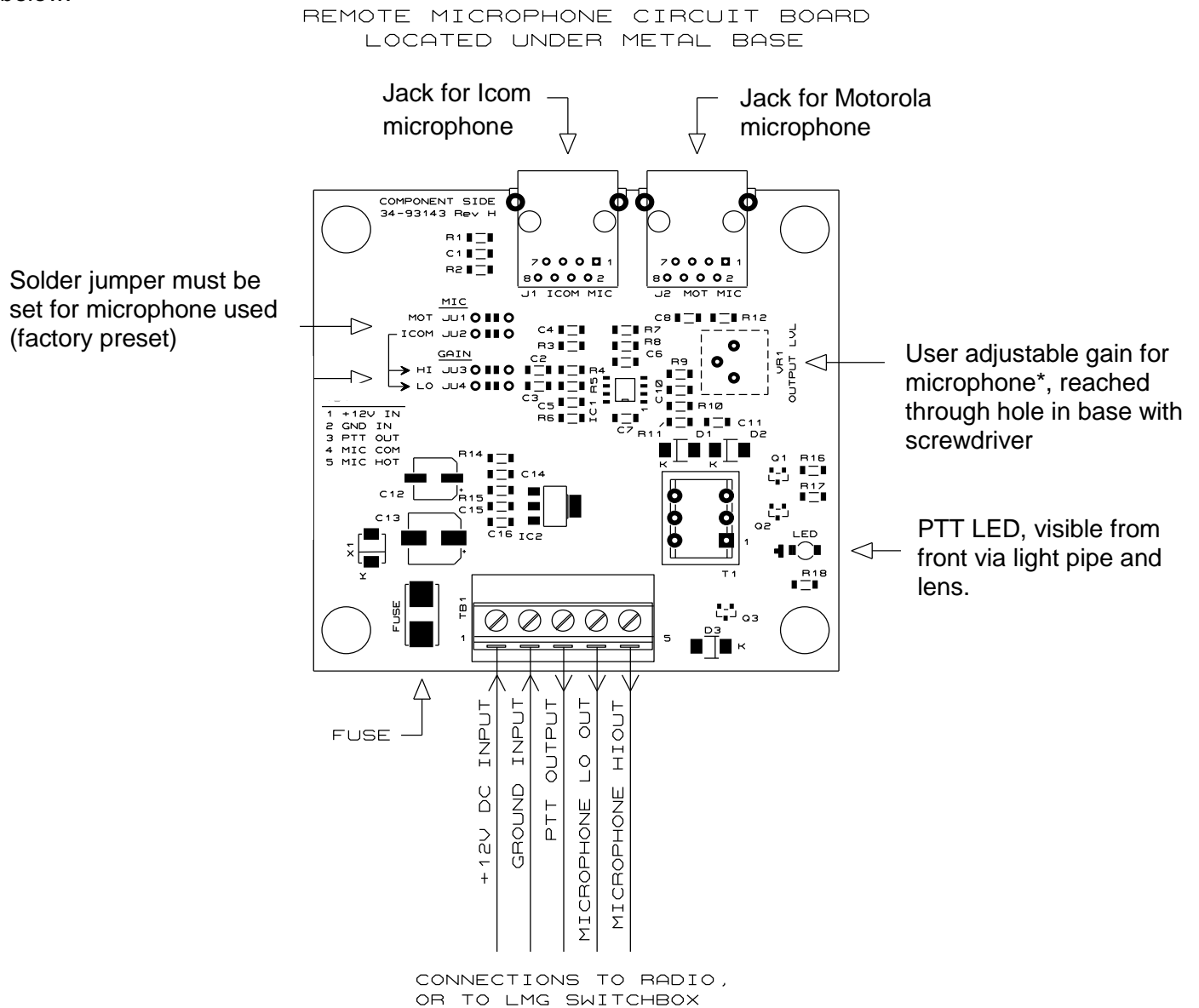


Figure 1: Remote Microphone Circuit Board

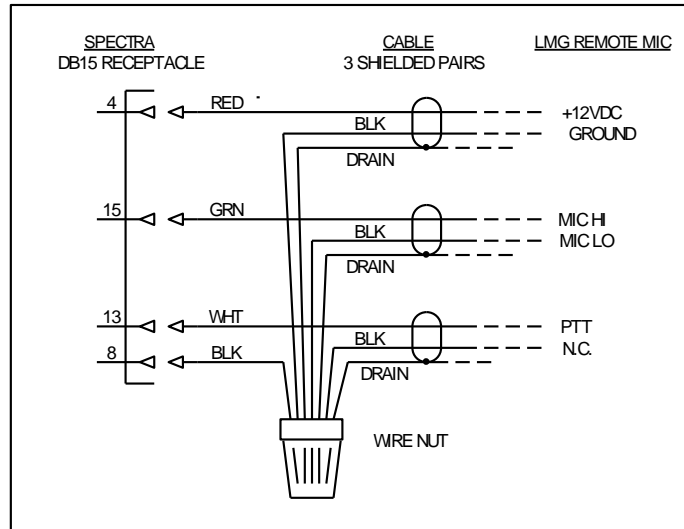
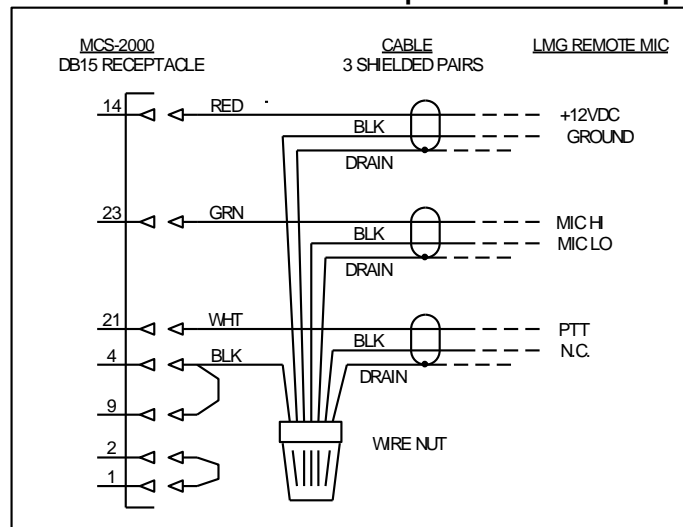
*The mic level is adjustable on the circuit board inside the Remote Microphone. The mic level is originally adjusted to the customer's request at the factory to allow proper radio modulation when transmitting from either the Remote Microphone or a DTMF microphone mounted on the mobile radio, however we recommend further adjustment. Using a screw driver, you can adjust the potentiometer from the front panel until the proper radio modulation is reached. If you choose to adjust the mic level, we recommend you use a deviation meter since vibration will occur between the actual and the recommended settings. The typical settings for radios compatible with the Remote Microphone can be found in Table 1, p.6.

Radio Model	Preset Microphone Level
Motorola Spectra	230 mV
Motorola MCS-2000	230 mV
Motorola GM300	230 mV
Kenwood NX-700	180 mV (reduced to 5 mV at radio)
Icom IC-F5061	300 mV

Table 1: Radio-specific Mic Level presets

TYPICAL CUSTOMER INSTALLATION

The following diagrams illustrate the typical customer installation of Remote Microphone 61-95039A-V2 to Motorola Spectra, Motorola MCS-2000, Motorola GM300, Kenwood NX-700, and Icom IC-F5061 radios. Since these diagrams represent the “typical” or common installation, please verify the diagrams with your radio model before installation. The Remote Microphone can either be powered through the radio or directly from the battery of the vehicle. If using the Kenwood NX-700 radio, please note that installation assumes the use of a speaker switch box or a 22 K resistor in order to reduce the level of the microphone’s signal.


Figure 2: Installation of LMG Remote Microphone to Motorola Spectra (typical)

Figure 3: Installation of LMG Remote Microphone to Motorola MCS-2000 (typical)

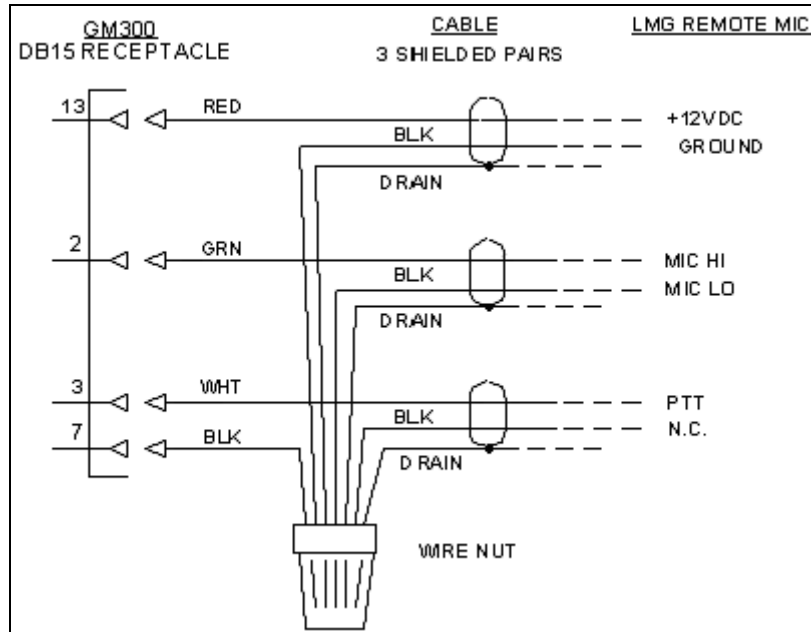


Figure 4: Installation of LMG Remote Microphone to Motorola GM300 (typical)

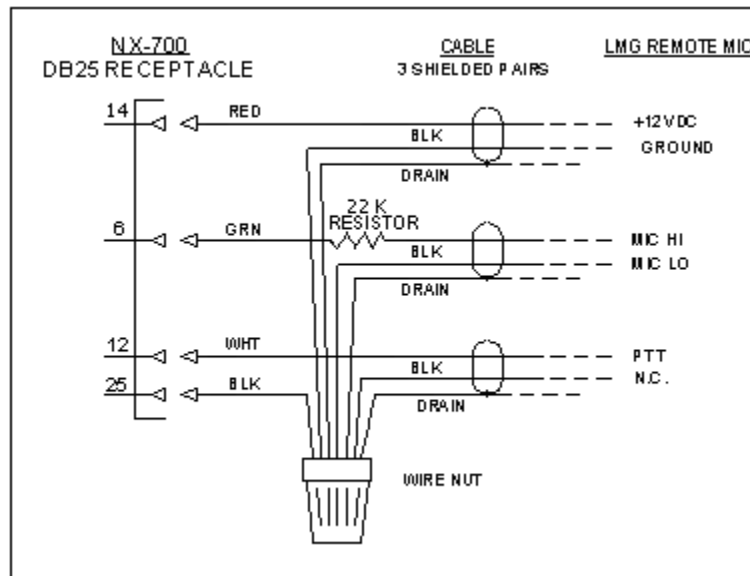


Figure 5: Installation of LMG Remote Microphone to Kenwood NX-700 (typical)
 (Note: Receptacle Pin No. 14 of the Kenwood radio will supply sufficient power for Remote Microphone or Speaker Switch 17-95160, however, an alternate power source is necessary for Speaker Switch 17-95161)

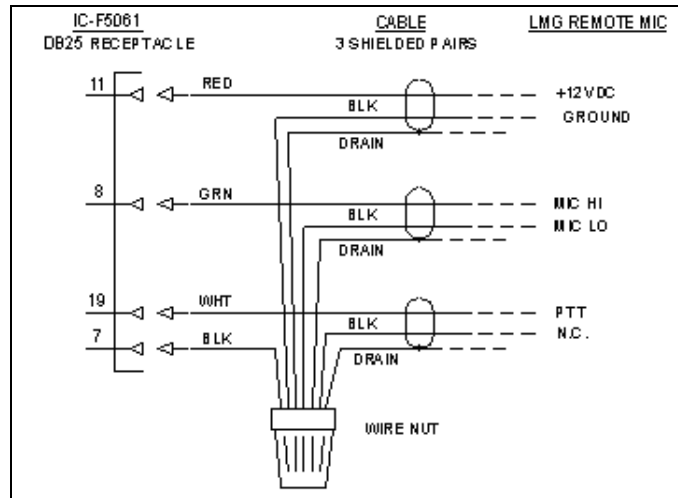


Figure 6: Installation of LMG Remote Microphone to Icom IC-F5061 (typical)

(Note: Receptacle Pin No. 11 of the Icom radio will supply sufficient power for Remote Microphone or Speaker Switch 17-95160, however, an alternate power source is necessary for Speaker Switch 17-95161)

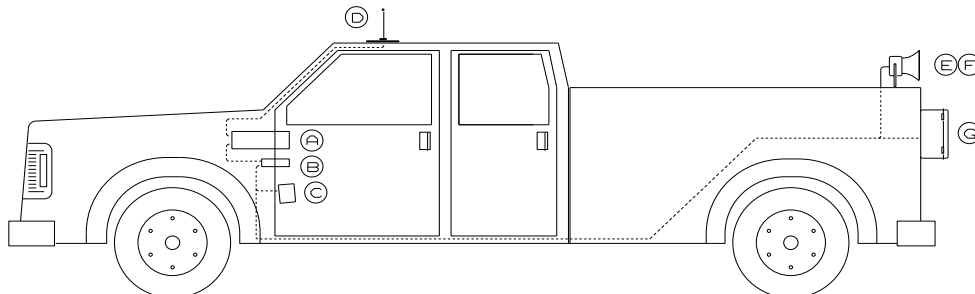
Radio and Connector	Radio Pin No.		
	PTT	MIC+	MIC -
Motorola Spectra DB15	13	15	8
Motorola MCS-2000 DB25	21	23	4 & 9
Motorola GM300	3	2	7
Kenwood NX-700 DB25	12	6	25
Icom IC-F5061 DB25	19	8	7

Table 2: Summary of radio pin locations for connections of Remote Microphone to Motorola, Kenwood, and Icom radios

PHYSICAL INSTALLATION

The Remote Microphone, noted as (G) in Figure 7 below, is typically mounted on the rear of the vehicle. The unit should be orientated so that it is accessible to the user.

LARRY MCGEE REMOTE MICROPHONE SYSTEM
TYPICAL VEHICLE INSTALLATION DIAGRAM



- (A) Vehicle Radio
- (B) LMG Speaker Switch:
17-95160, without amplifier
17-95161, with amplifier
- (C) Cab Speaker
(Not required with 17-95161)
- (D) Radio Antenna
- (E) Amplified Remote Speaker, use with 17-95160 Speaker Switch
- (F) Unamplified Remote Speaker, use with 17-95161 Speaker Switch
- (G) Larry McGee Remote Microphone, 61-95039A-V2

Figure 7: Locations of Remote Microphone and Optional Speaker Switch Installation in Vehicle

CONNECTIONS

The following figures illustrate the connections for use of Remote Microphone with Speaker Switch 17-95160 or 17-95161. Please consult the respective manuals for additional information.

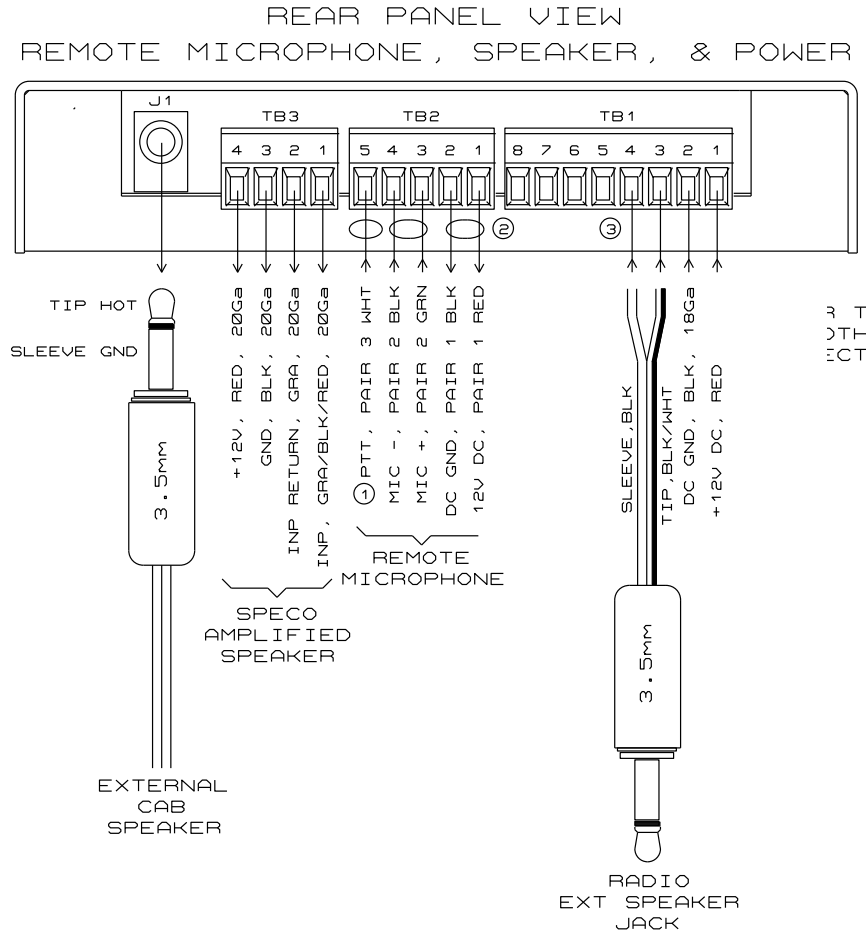


Figure 8: Rear connections for Speaker Switch 17-95160, General

To use remote microphone with Speaker Switch 17-95160:

- ① Take extra BLK wire from pair 3 of TB2 (WHT wire of pair is denoted by ① in Figure 8 above)
- ② Twist BLK wire with all 3 drain wires from 3 TB2 pairs, add another 2-3" piece of stranded wire into a wire nut as shown in Figure 9 below. Insert the loose wire end into TB2-2.

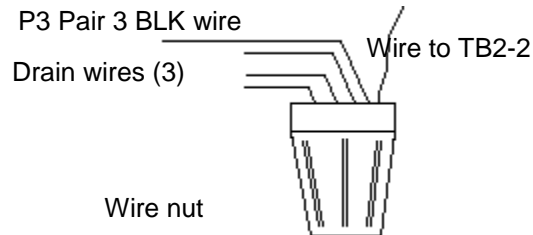


Figure 9: Remote Microphone connections for Speaker Switch 17-95160

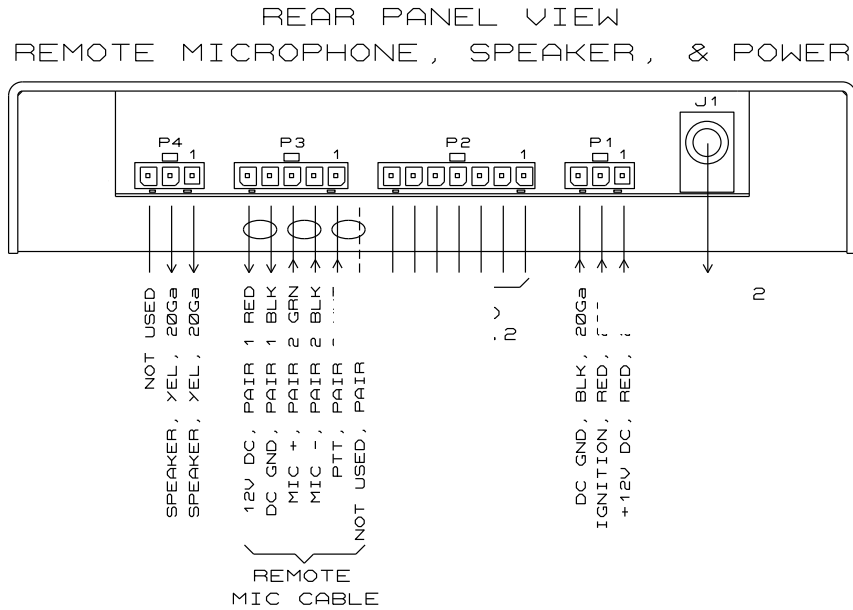


Figure 10: Rear connections for Speaker Switch 17-95161, General

To use remote microphone with Speaker Switch 17-95161:

1. Twist P3 Pair 3 BLK wire with all 3 drain wires from the 3 P3 pairs, add another 2-3" piece of stranded wire into a wire nut (5 total wires) as shown in Figure 11 below.
2. Insert the loose wire end into P3-4

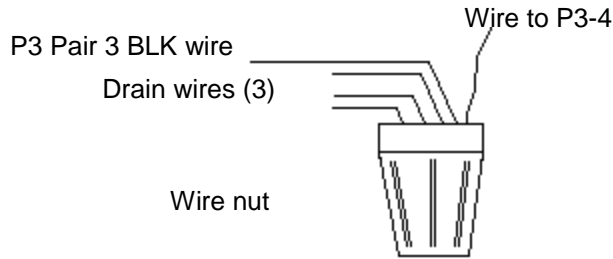


Figure 11: Remote Microphone connections for Speaker Switch 17-95161

4. USE OF REMOTE MICROPHONE 61-95039A-V2

GENERAL USE

Push PTT button on microphone, LED on left corner of front panel will light up when microphone PTT switch is actuated. To send DTMF tones, it is only necessary to press DTMF.

WITH SPEAKER SWITCHES

Model 17-95160

When speaker switch is in “ON” position (white button is pushed in), power is sent to the remote microphone and the LED on the Speaker Switch will light up. Only when the microphone switch is actuated will the LED on the Remote Microphone light up.

Remote microphone, external cab speaker, and outside amplified speaker work simultaneously and can be switched using the speaker switch box to radio speaker audio. Please consult manual for 17-95160 for jumper locations.

Model 17-95161

When speaker switch is in “ON” position (red button is pushed in), power is sent to the remote microphone and the LED on the Speaker Switch will light up. Only when the microphone switch is actuated will the LED on the Remote Microphone light up.

Remote microphone and external cab speaker work simultaneously and can be switched using the speaker switch box to radio speaker audio. An amplified speaker is not necessary since model has a built-in amplifier. Please consult manual for 17-95161 for jumper locations.