

6-Wire Control Head (Option G422AA) Owner's Guide

Table of Contents

Introduction	1
Option G422AA.....	3
6-Wire Control Head	3
Functions	3
Control Head Front Panel	4
Control Head Rear Panel.....	4
Connector Data	5
AC Power Supply	8
Installation	9
General	9
Installing the 6-Wire Control Head	9
Remote Control Instructions.....	12

Introduction

This manual covers the installation of the 6-Wire Control Head, offered as option G422AA for the following MICOM-3 radio sets:

- RM-125, RM-125R
- RM-500, RM-500R.

Caution During installation work, strictly observe the applicable safety precautions and local regulations.

For other safety information, see the “Owner’s Guide, MICOM-3F/3T/3R HF-SSB Transceivers”, Publication 6886867J01, and the Owner’s Guide of the specific radio set.

Option G422AA

The option G422AA includes the following main items:

- 6-Wire Control Head. This item can be ordered for desktop use, or mounted in a 19" rack (see Figure 5)
- AC power supply for the 6-Wire Control Head, provides DC power to the 6-Wire Control Head (see Figure 4)
- AC power cable for the AC power supply
- Owner's Guide, 6-Wire Control Head (Option G422AA), Publication 2072-09682-00 (this manual).

The connection between the 6-Wire Control Head and the REMOTE CONTROL connector of the controlled radio must be provided and installed by the customer. For short ranges (a few meters), the two units can be directly connected by means of a suitable cable, with individually shielded twisted pairs. For longer ranges, suitable transmission equipment, capable of providing a low-speed RS-232 link and one full-duplex audio channel, must be used.

Contact the manufacturer or your local distributor for technical details.

6-Wire Control Head

Functions

The 6-Wire Control Head is a stand-alone unit with its own power (supplied by the AC power supply) that enables operators at a remote location to control a radio set using the regular operating procedures.

The 6-Wire Control Head has a front panel similar to that of the MICOM-3 radios, and thus it provides full access to all the functions that can be controlled from the radio front panel. It also has an internal speaker, connectors for audio accessories, and a remote control connector that is intended for connection to the MICOM-3 rear-panel REMOTE CONTROL connector.

A local operator can still control the radio set using the radio set front panel: any action made by either the local or remote operator is reflected both on the radio set and 6-Wire Control Head panel.

Note When both operators try to transmit at the same time, the radio will serve the operator that pressed the PTT first.

When necessary, the local operator can disable the remote control functions by means of a switch located on the radio set rear panel. In this case, the 6-Wire Control Head still reproduces the audio and displays the status of the radio set, as determined by the local radio operator.

Control Head Front Panel

The front panel of the control head is shown in Figure 1. For operating procedures, you may use the information appearing in the “Owner’s Guide, MICOM-3F/3T/3R HF-SSB Transceivers”, Publication 6886867J01.

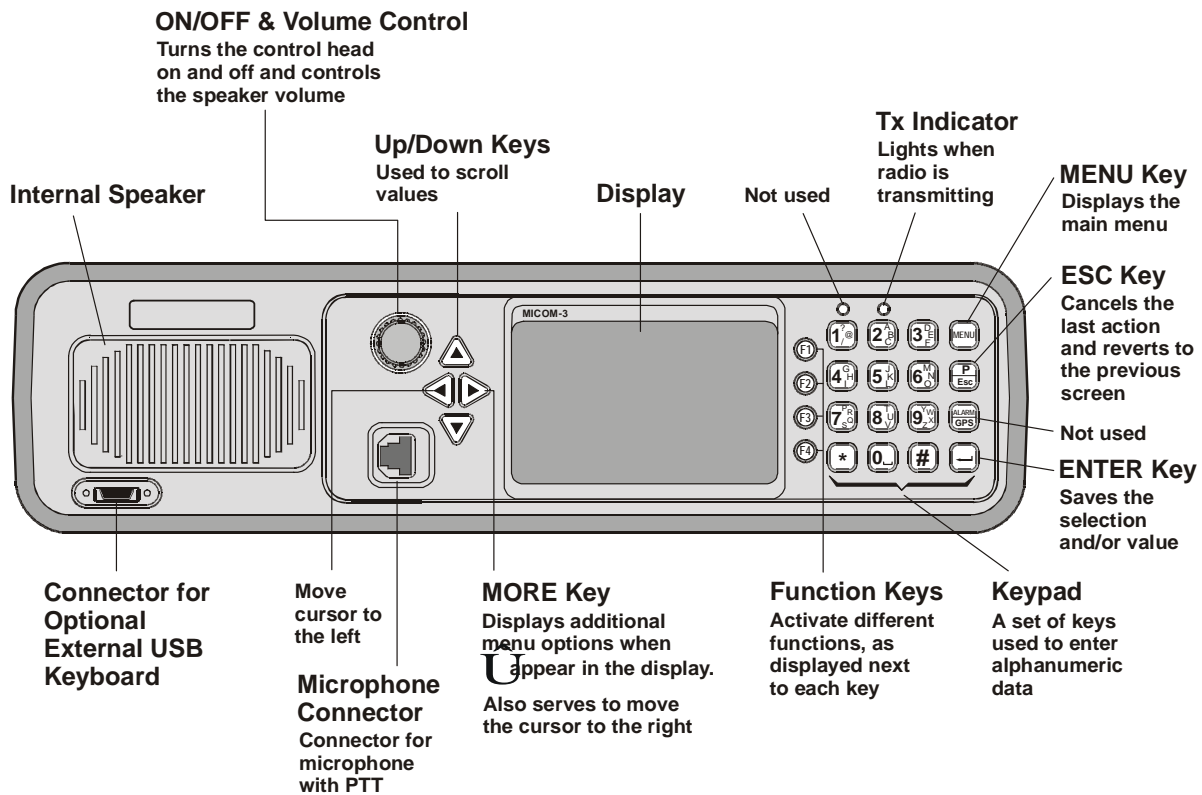


Figure 1. 6-Wire Control Head Front Panel

Control Head Rear Panel

The components located on the rear panel of the control head are identified in Figure 2. The figure shows the rack-mounted version of the 6-Wire Control Head.

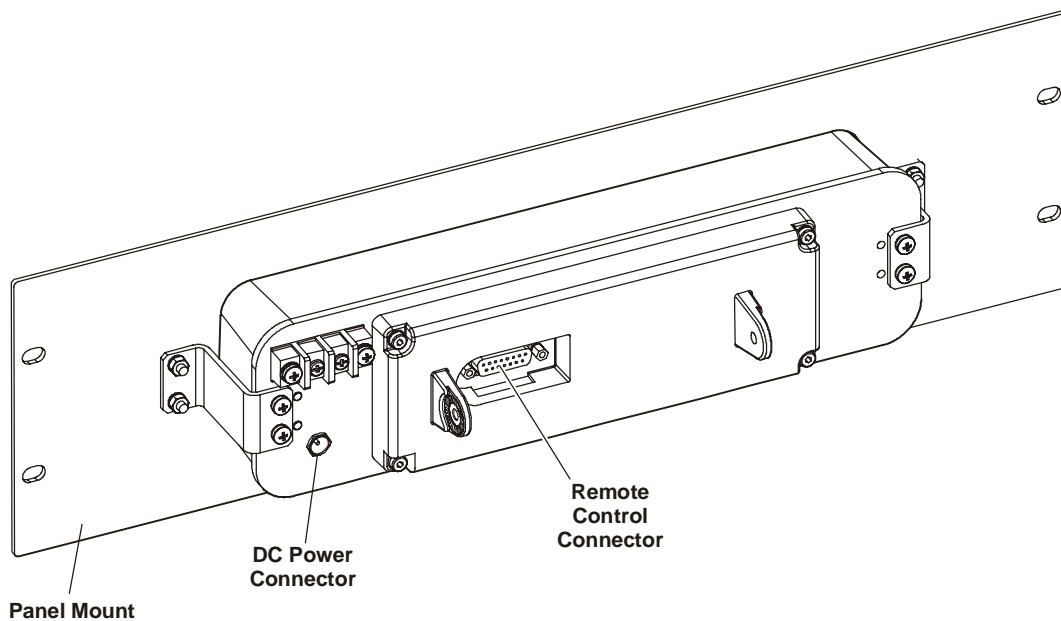


Figure 2. 6-Wire Control Head, Rear Panel

The rear panel has the following components:

- 3 mm round connector for connecting the DC power cable from the AC power supply
- 15-pin male D-type connector for connecting the control table.

Connector Data

Table 1 lists the functions of the connector pins in the 6-Wire control head remote control, and Table 2 lists the functions of the 15-pin REMOTE CONTROL connector on the radio rear panel. Figure 3 shows the interconnection diagram between the connectors of the master and slave units.

You may use this information to prepare cables for your specific application. Contact the manufacturer or your local distributor if you need additional information.

Table 1. 6-Wire Control Head Remote Control Connector, Pin Functions

Pin	Designation	Function
1	13.8 VDC	+13.8 V nominal output voltage, current limited (max. 200 mA)
2	NC	Not connected
3	GND	Ground

4	NC	Not connected
5	NC	Not connected
6	AUDIO P_IN	Differential input for the radio audio receive signal (nominal impedance: 600 Ω); may pass through ground-isolation transformer, in accordance with order
7	AUDIO N_IN	
8	NC	Not connected
9	NC	Not connected
10	AUDIO IN	Input for the radio receive audio (nominal impedance: 600 Ω . Referenced to ground (pin 3)
11	AUDIO OUT	Microphone audio output to radio (nominal impedance: 600 Ω). Referenced to ground (pin 3). Nominal output level: 1 VRMS across 600 Ω for full radio transmit power
12	RX_DATA	Serial data receive input from the radio, accepts RS-232 levels
13	TX_DATA	Serial data transmit output to the radio, at RS-232 levels
14	AUDIO P_OUT	Differential transmit audio output to the radio microphone input (nominal impedance: 600 Ω); may pass through ground-isolation transformer, in accordance with order. Nominal output level: 0.5 VRMS across 600 Ω for full radio transmit power (other levels available upon special order)
15	AUDIO N_OUT	

Table 2. Radio REMOTE CONTROL Connector, Pin Functions

Pin	Designation	Function
1	13.8 VDC	+13.8 V nominal output voltage, current limited (max. 200 mA)
2	NC	Not connected
3	GND	Ground
4	NC	Not connected
5	NC	Not connected
6	AUDIO P_IN	Differential input for the radio set microphone input (nominal impedance: 600 Ω); may pass through ground-isolation transformer, in accordance with order
7	AUDIO N_IN	
8	NC	Not connected
9	NC	Not connected
10	AUDIO IN	Microphone input (nominal impedance: 600 Ω). Referenced to ground (pin 3)
11	AUDIO OUT	Receive audio output (nominal impedance: 600 Ω). Referenced to ground (pin 3). Nominal output level: 1 VRMS across 600 Ω
12	RX_DATA	Serial data receive input from the control head, accepts RS-232 levels
13	TX_DATA	Serial data transmit output to the control head, at RS-232 levels
14	AUDIO P_OUT	Receive audio differential output to the control head (nominal impedance: 600 Ω); may pass through ground-isolation transformer, in accordance with order. Nominal output level: 0.5 VRMS across 600 Ω (other levels upon special order)
15	AUDIO N_OUT	

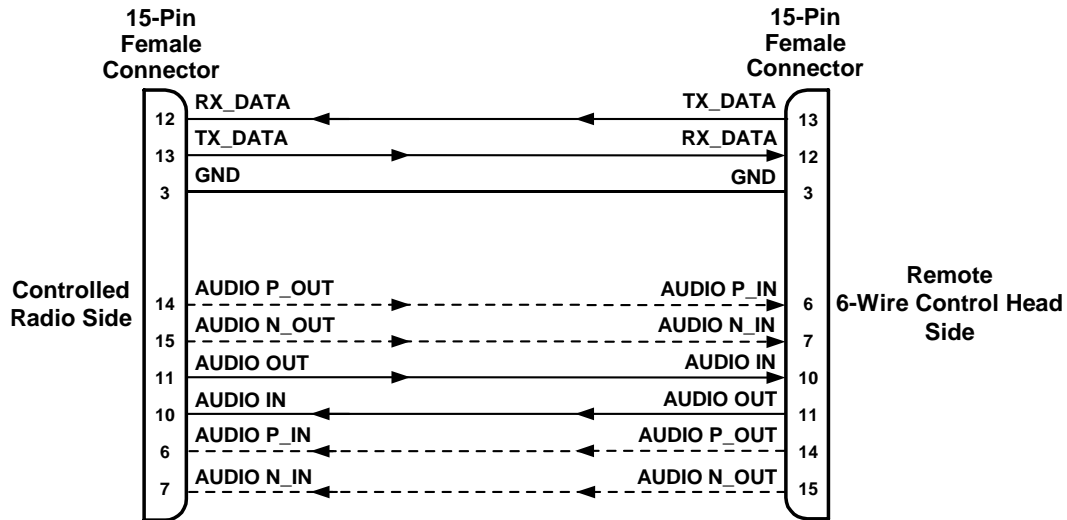


Figure 3. Interconnection Diagram

AC Power Supply

The AC power supply is a compact power supply unit that provides the required operating voltage (nominally 13.8 VDC) for the 6-Wire Control Head. Figure 4 shows a general view of the AC power supply.

The AC power supply operates on 110/230 VAC, 50/60 Hz. It has a short DC output cable with a 3 mm round plug for connection to the control head, and a standard IEC three-prong connector for the AC power cable.

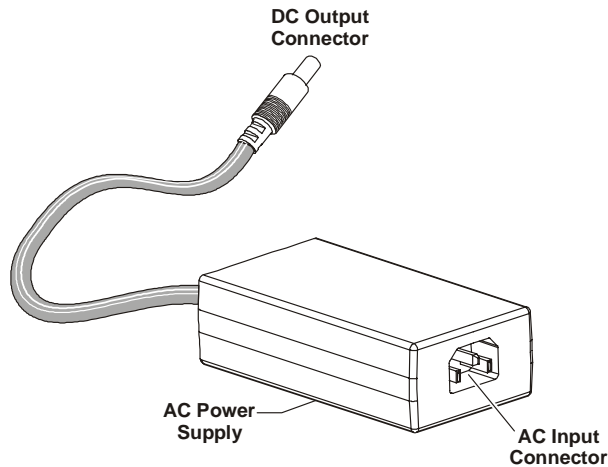


Figure 4. AC Power Supply

Installation

General

The 6-Wire Control Head can be ordered in two versions:

- Desktop version, has an adjustable base for placing the 6-Wire Control Head on a desktop
- Rack mount version, comes installed on a panel intended for installation in 19" racks.

The two versions are illustrated in Figure 5.

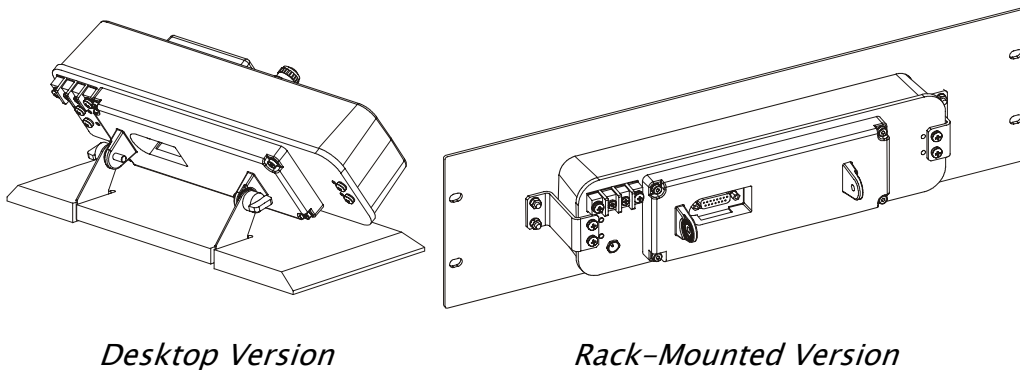


Figure 5. 6-Wire Control Head Versions

Note *Before starting the installation, inspect the received equipment and make sure that all the items listed on the packing slip has been received and are in good condition. Report immediately any discrepancies.*

The installation of the 6-Wire Control Head includes three main steps:

1. Installation of 6-Wire Control Head itself.
2. Connection of control cable between the 6-Wire Control Head and the controlled radio.
3. Preparing the controlled radio for remote control.

Installing the 6-Wire Control Head

Installing the Desktop Version

For the following steps, refer to Figure 6.

1. Place the desktop control head in the intended location.
2. Connect the power cable of the AC power supply to the control head DC power connector.
3. Check that the control head ON/OFF switch/volume control is at OFF (fully counterclockwise position).
4. Connect the AC power cable to the AC power supply, and then connect the other end to a grounded AC outlet capable of providing 110 VAC or 230 VAC, 50/60 Hz.
5. At this stage, you may connect the control cable to the rear-panel remote control connector.
6. If necessary, connect the prescribed equipment to the control head accessories connector.

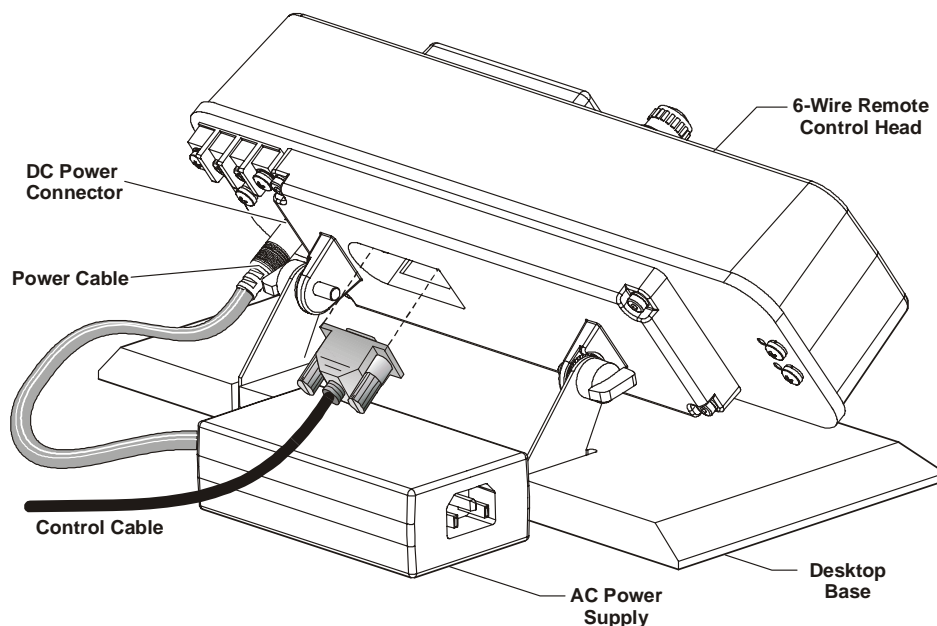


Figure 6. Installing the Desktop Version

Installing the Rack-Mount Version

1. Identify the prescribed position of the 6-Wire Control Head in the rack.
2. Attach the control head to the rack rails, using four screws (not supplied).
3. Place the AC power supply in the rack, near the control head, and then connect the power cable of the AC power supply to the DC power connector of the control head.
4. Check that the control head ON/OFF switch/volume control is at OFF (fully

counterclockwise position).

5. Connect the AC power cable to the AC power supply, and then connect the other end to a grounded AC outlet capable of providing 110 VAC or 230 VAC, 50/60 Hz.
6. At this stage, you may connect the control cable to the rear-panel remote control connector.
7. If necessary, connect the prescribed equipment to the control head accessories connector.

Preparing the Radio Set for Remote Control

For the following steps, refer to Figure 7.

1. If the controlled radio set has not yet been put into operation, check that it has been properly installed and that it is ready for operation.
2. Connect the control cable from the 6-Wire Control Head unit to the rear panel REMOTE CONTROL connector.

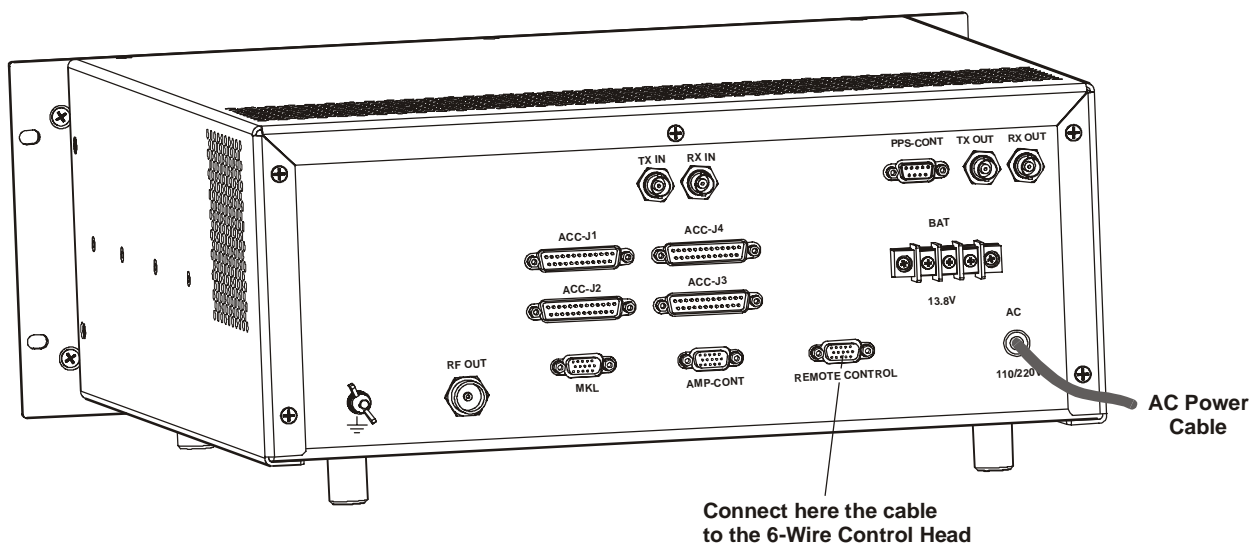


Figure 7. Preparing the Radio Set for Remote Control

Remote Control Instructions

1. When ready to start operation under remote control, connect a microphone to the 6-Wire Control Head.
2. Turn the 6-Wire Control Head on.
3. If the controlled radio set does not yet operate, turn it on and check that it operates properly when controlled from its front panel.
4. You can now start using the 6-Wire Control Head to operate the radio set in the same way you would use the radio set front panel. However, the local operator can also operate the controlled radio set using its front panel.

For operating procedures, you may use the information appearing in the “Owner’s Guide, MICOM-3F/3T/3R HF-SSB Transceivers”, Publication 6886867J01.

5. To stop remote control, turn the 6-Wire Control Head off by setting its ON/OFF switch/volume control to OFF. The radio set continues operating as usual, under the control of its front panel.

Note *Both the radio set and the 6-Wire Control Head automatically detect the presence of the other unit and notify their operator:*

1. *When the radio set operates, it will display REMOTE DETECT when the 6-Wire Control Head is turned on, and REMOTE REMOVE when the 6-Wire Control Head is turned off or disconnected.*
 2. *When the 6-Wire Control Head operates, it will display LOCAL DETECT when the radio set is turned on, and LOCAL REMOVE when the radio set is turned off or disconnected.*
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