



ACU-M™ Quick Start Guide

Purpose

Congratulations on your purchase of the JPS Interoperability Solutions ACU-M. The purpose of the ACU-M Quick Start Guide is to provide a quick reference for configuration and operation of the ACU-M.

Product Overview

The versatile ACU-M provides interoperability between a local operator and up to 4 radio systems or other four-wire communications devices. It is feature rich, simple to use and can be networked and managed remotely. Top mount display provides a quick indication of current interoperability cross-connections and illustrates the status of connected devices (COR, PTT, signal, and network links). Its intuitive control panel enables sure operation and provides field diagnostics and programming capabilities.

Package Contents

- 1) ACU-M
- 2) Handset & Cable
- 3) “ACU Controller and Resource CD” and Quick Start Guide
- 4) 120 - 240 VAC Power Supply
- 5) Power Cable for connection to vehicle +12 VDC (Cigarette Lighter)
- 6) Plastic Mounting Bracket

Powering ACU-M

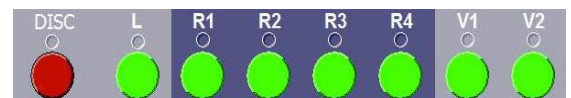
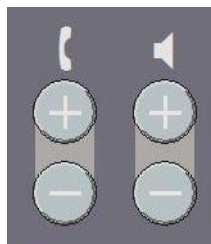
- 1) Connect the AC Power Supply provided to the ACU-M rear panel and to an AC power source.
- 2) Or connect the supplied vehicular +12 VDC cable to a +12 VDC source and the ACU-M rear panel.
- 3) Toggle the unit's rear panel On/Off Power switch to ON.
- 4) The ACU-M will perform a walking LED test and display the current Software version and IP Address. When complete, the MAIN menu will be displayed.



Front Panel Controls

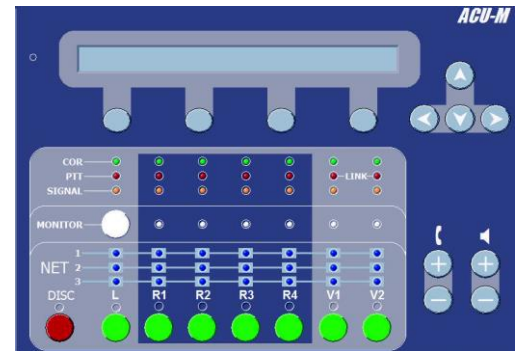
Control Buttons

- Handset/Headset Volume Up/Down
- Speaker Volume Up/Down (Internal and External Speaker)
- Monitor: Depress and select port to monitor its RX Audio
- Port: (L for Local Operator, R1 to R4 for the radio ports, and V1 and V2 for the two VoIP/RoIP channels)- Depress any two in succession to create cross-connections.
- DIS:- Depress and then select a port to disconnect it from a current cross-connection.



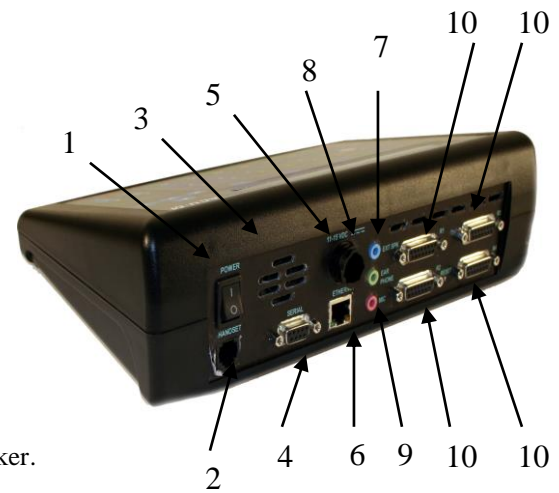
LEDs and Their Purposes

- COR - Indicates detection of a valid audio signal on a port.
- PTT - Indicates TX mode commanded
- Signal - Indicates detection of a ports RX audio strength.
- Net - Indicates which ports are cross-connected
- Monitor - Indicates if a port's RX Audio is being monitored by the Local Operator
- Port - Momentary indication of port selection prior to connection. Extinguishes after connection made or 3 seconds expires. After 3 seconds, port selection must be re-entered.



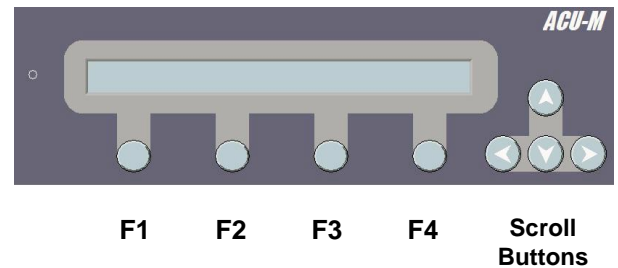
Rear Panel Description and Connections

- 1) Power On/Off Switch - Controls the DC input power to the unit.
- 2) Handset Connection - RJ-12C jack to connect the Handset with integrated PTT switch (provided).
- 3) Internal Speaker - Provides the Local Operator the means of hearing RX Audio from selected ports.
- 4) Serial - Male DB-9 connector provides serial RS-232 interface for remote control capabilities.
- 5) Power Connector – 4-pin CPC connector to input +9 to +15 VDC.
- 6) Ethernet - Female RJ-45 connector provides Ethernet network interface for remote control and RoIP capabilities.
- 7) Ext Speaker - Female 3.5 mm audio connector to interface external speaker.
- 8) Ear Phone - Female 3.5 mm audio connector for external headset use.
- 9) Mic - Female 3.5 mm audio connector for external headset use.
- 10) Port R1 thru R4 – Male DB-15 connectors interface a radio/resource to a specific ACU-M port.



Configuration Buttons

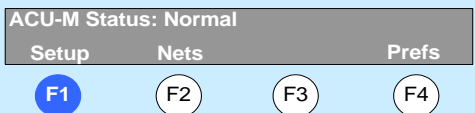


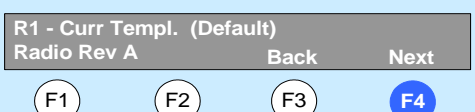
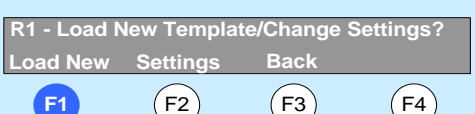
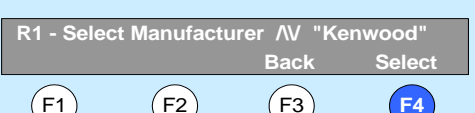

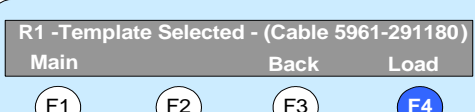
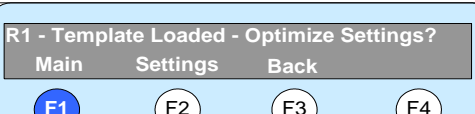
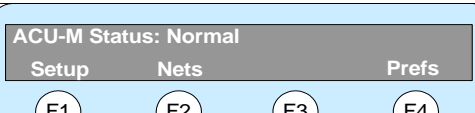
- Function Buttons - (F1, F2, F3, F4) Soft key buttons; their function is driven by the current display menu.
- Scroll Buttons - Up/Down, Left/Right Buttons; used to navigate display options.
- Display- 2 Line / 40 Character per line LCD Display



Basic ACU-M Configuration

A) Configuring a Port With a Stored Template

Note: The template file contains predefined set-up values and is intended to be used as a reference point in the configuration of a port. Some settings may need to be optimized for best operation due to conditions at an incident scene. Please refer to Section C “Verifying Radio/Resource Operation” below.

<p>Step 1 - PORT SETUP Once the ACU-M completes successful power-up sequence, the MAIN menu screen will be displayed. Select F1 - Setup</p>	
<p>Step 2 - CHOOSE PORT Select the interface to set-up by using the Up/Down scroll buttons to the desired radio port (L, R1, R2, R3, or R4)</p>	
<p>Step 3 - SELECT PORT Press F4 - SELECT. This selects the port to configure.</p>	
<p>Step 4 - CURRENT TEMPLATE The current loaded radio template will be displayed. If no template has been loaded, (Default) will be displayed. Select F4 - Next.</p>	
<p>Step 5 - LOAD NEW TEMPLATE Select F1 - LOAD NEW. To adjust any of the settings in a template, select F2 - Settings.</p>	
<p>Step 6 - SELECT MANUFACTURER Use Up/Down scroll buttons to desired radio manufacturer. Manufacturer's names are in alphabetical order. Press F4-SELECT.</p>	
<p>Step 7 - SELECT MODEL After manufacturer selected, use Up/Down scroll buttons to desired model. Press F4 - SELECT.</p>	
<p>Step 8 - TEMPLATE SELECTED After model selected, the corresponding JPS Communications cable # for the selected template is displayed. This should be recorded to assist in physically connecting the radio to the port. Press F4 - LOAD.</p>	
<p>Step 9 - TEMPLATE SETTINGS? Press F1 - MAIN to return to the MAIN menu. F2 - SETTINGS may be selected to view/change port configuration parameters. Note: Refer to the “ACU-M Training and Resource CD”.</p>	
<p>Step 10 - MAIN MENU Return to MAIN Menu.</p>	

B) Connecting a Radio to a Port

- 1) Once the template has been loaded for the port, the physical connection must be made from the ACU-M to the radio.
- 2) Select the correct cable based on the JPS Cable Part Number indicated in Step 8 above.
Note: Some radios require modifications. Check the Application Note for the radio being used.
- 3) Connect the radio interface end of the cable to the radio and the Male DB-15 end to the corresponding port (R1) on the ACU-M.
- 4) Use steps below to establish a connection to the configured port and verify proper operation. A companion radio is recommended to communicate with the radio cabled to the ACU-M.



C) Verifying Radio/Resource Operation

- 1) Once the radio has been physically connected to the ACU-M port (R1), it will be necessary to verify proper operation.
- 2) Use steps outlined below in the “Creating a 2-Port Connection” section to create a connection between the Local Operator (L) and the radio port to be verified (R1).
- 3) With a companion radio, transmit and present audio traffic to the radio connected to the ACU-M radio port to be verified (R1).
- 4) Verify on the front panel of the ACU-M, the radio port’s (R1) green COR LED is illuminated and the amber SIGNAL LED flashes on audio peaks during this audio traffic session.

Note: Refer to the application note that was included with the factory cable. Ensure that any specified radio software settings or any other radio modifications have been performed.

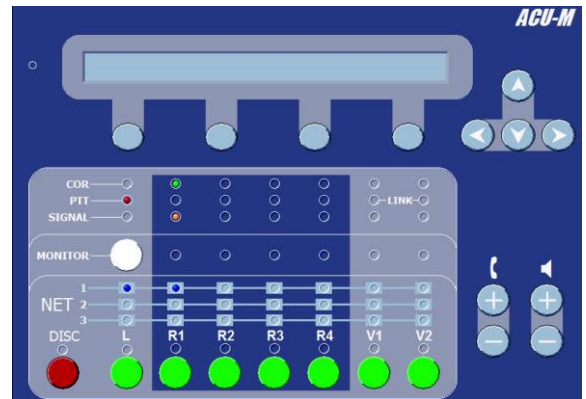
- 5) Repeat Step 3 and on the front panel of the ACU-M, verify the red PTT LED on the Local Operator (L) position is illuminated and audio is present at the ACU-M speaker and handset earpiece during this audio traffic session.
- 6) Reverse the operation by initiating an audio traffic session from the Local Operator handset. Press the handset PTT button and present audio to the handset microphone.
- 7) Verify on the front panel of the ACU-M, the Local Operator (L) green COR LED is illuminated and the amber SIGNAL LED flashes on audio peaks during this audio traffic session.
- 8) Repeat Step 6 and on the front panel of the ACU-M, verify the red PTT LED on the cross-connected radio port (R1) is illuminated. The radio connected to the radio port (R1) being verified should be in TX mode and there should be audio present on the companion radio speaker during this audio traffic session.
- 9) Repeat steps 1 through 8 for any additional Radio/Resources to be verified (R2-R4).

Note: The ACU-M contains many sophisticated features that JPS Interoperability Solutions has developed to optimize operations and resolve problems that can occur in the crowded communications environment that is likely to exist at an incident scene.

Basic ACU-M Operation

Creating a 2-Port Cross-Connection

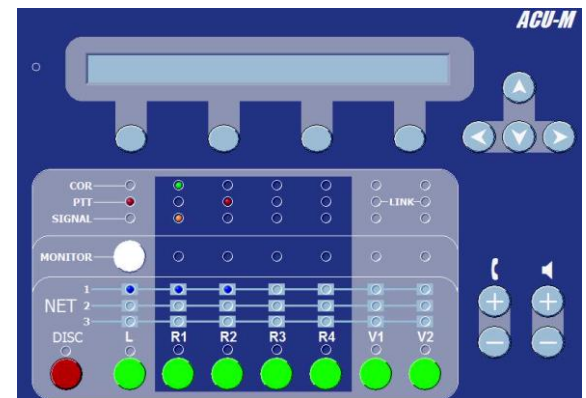
- 1) Push green port button of first port to connect (L).
- 2) Within 3 seconds, push green port button of second port to connect (R1).
- 3) This cross-connects the ACU-M Local Operator with the radio/resource connected to port R1.
- 4) The Net LEDs for the radio/resources connected will illuminate in the associated Net Row (Net 1).
- 5) Traffic received on a radio/resource connected to the ACU-M Local Operator, will be heard in the operator's handset/headset and the ACU-M speaker. If the operator keys the handset and speaks, this audio will be transmitted on the radio/resource.



Adding Port to an Existing Net

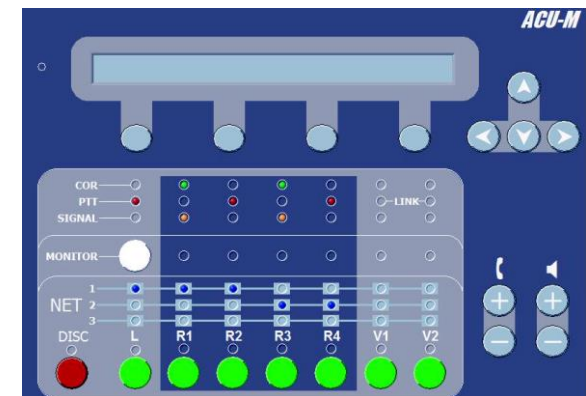
- 1) Push green port button of desired port to add (R2).
- 2) Within 3 seconds, push green port button of any port in current cross-connection (L or R1).
- 3) This adds the port to that existing cross-connection (L, R1, and R2).
- 4) The Net LED for the added radio/resource will be illuminated in the associated Net Row.

Note: Order of steps 1 and 2 may be reversed.



Creating Multiple Nets

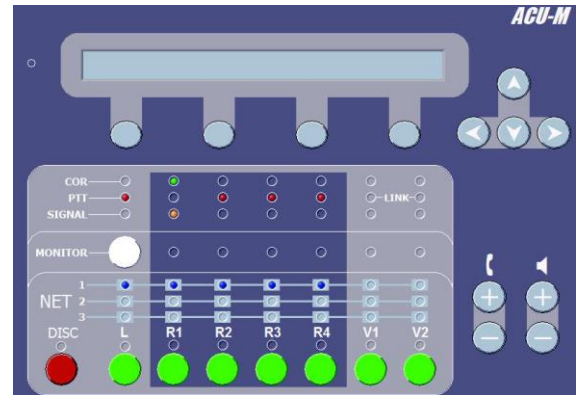
- 1) With an existing Net created, push green port button of desired port to create a new Net (R3).
- 2) Within 3 seconds, push green port button of second port (R4).
- 3) This cross-connects radio/resources on ports R3 and R4 in a second Net (Net 2).
- 4) The Net LEDs for the radio/resources connected will illuminate in the associated Net Row (Net 2).



Combine Two Nets

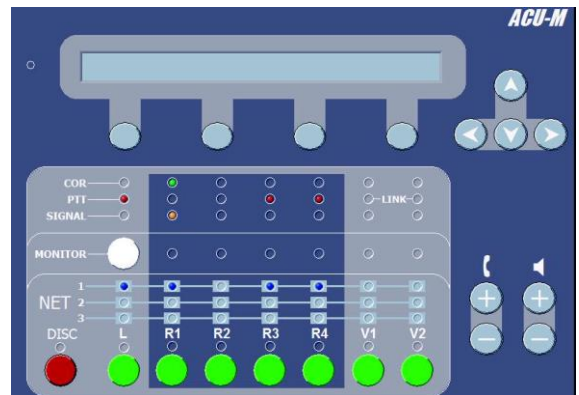
- 1) Push green port button of any radio/resource in Net 1 (L).
- 2) Within 3 seconds, push green port button of any radio/resource in Net 2 (R3).
- 3) This joins Net 1 (L, R1, and R2) and Net 2 (R3 and R4) into a common Net (Net 1)

Note: Order of steps 1 and 2 may be reversed.



Disconnecting

- 1) Push the red DISC button.
- 2) Within 3 seconds, push the green port button of the radio/resource to disconnect (R2).
- 3) This disconnects that radio/resource (R2) from the existing cross connection.
- 4) The Net LED will extinguish for the disconnected port in the associated Net Row.
- 5) To disconnect any other port, repeat Steps 1 and 2, selecting the green port button of the radio/resource to disconnect.
- 6) **Note:** Order of steps 1 and 2 may be reversed.



Local Monitor of a Port

- 1) Push the white MONITOR button.
- 2) Within 3 seconds, push the green port button of the radio/resource (R1).
- 3) This selects monitoring of the RX audio by the Local Operator from the radio/resource connected to the selected port (R1).
- 4) The MONITOR LED for the selected port will illuminate indicating port is being monitored.
- 5) To monitor additional ports, repeat Step 1 and Step 2 for the port to be monitored (R2).

Notes: Order of steps 1 and 2 may be reversed. Participation in an Active Net is not required for a port to be monitored by the Local Operator.

- 6) To stop monitoring a port, repeat Step 1 and Step 2 for that port. Repeating the process toggles monitoring on and off.

