


Engineer: Chris Samios	Date: 2/26/04	 <b>JPS Communications</b> 5800 Departure Drive, Raleigh, NC 27616			
Drawn: Jack Curtis	Date: 2/26/04				
Approved: Chris Samios	Date: 2/27/04	Title: ACU RADIO APPLICATION NOTES			
Issued/ Revised	Date: 2/11/05	Size: A	Dwg. #: <b>5961-271237-APP</b>	Rev: <b>B2</b>	Sheet: 1      Of    2

**APPLIES TO:**

Motorola Spectra Mobile (Spk/Mic Connectors)  
Motorola Spectra Plus Mobile (Spk/Mic Connectors)  
Motorola XTL-5000 Mobile (Spk/Mic Connectors)

**RADIO MODIFICATIONS:**

To use this interface cable the radio will require connection to the accessory connector HLN4472A for the Spectra Mobile or HLN6863A for the XTL-5000. These standard accessory connectors are supplied with new radios and are required to provide the External Speaker output (2 Pin Female Molex) that is to be connected to the interface cable. The Microphone connector is part of the interface cable. The radio has a 10 pin microphone connector but the interface cable is like the microphone cable and only the center 6 pins are utilized. This connector is keyed to center position to prevent misalignment. (See interface cable drawing)

**RADIO PROGRAMMING:**

1. Mobile radios should normally be programmed for low transmit power.
2. It is essential that Microphone Off-Hook disable function be turned off to allow the radio to transmit and receive PL tones. Under the Conventional Configuration, set "Hub Defeats PL" to Disable (No check mark in the feature selection block).

**RADIO CONTROLS:**

1. Adjust the Volume Control until the yellow "SIGNAL" indicator on the associated DSP Module flashes with receive audio. This is approximately level 9 to level 11.

**CABLING:**

Standard ACU-1000 and ACU-T Interface cables are made up of a 2 foot long TRP Radio Tray Interface cable and the appropriate 13-foot extension cable.

ACU-1000 Interface Cable	JPS P/N 5961-291237	(5961-271237 + 5961-261002-00)
ACU-T Interface Cable	JPS P/N 5961-281237	(5961-271237 + 5961-281013-00)
TRP-1000 Shelf Interface Cable	JPS P/N 5961-271237	
RF Connector Type	Mini UHF	

**DSP-1 JUMPERS:**

JP1	Low Impedance *
JP2	Balanced *

**DSP PROGRAMMING:**

RX Level	3*	(0dBm)*	
TX Level	6*	(0dBm)*	
Squelch Type	VOX*		(See note below)
COR Polarity	Active Low*		
High Frequency Equalizer	6	(3.5dB Boost)*	
RX Audio Delay Time	2*	(100mS)*	
TX Audio Delay (Radio Type)	0*	(No Delay)*	(See note below)
Noise Reduction Value	0*	(Off)*	
VOX/VMR Threshold	1*	(Med1)*	
VOX/VMR Hang Time	3*	(775mS)*	
COR Inhibit After PTT	1*	(100mS)*	(See note below)
All Others	As needed		

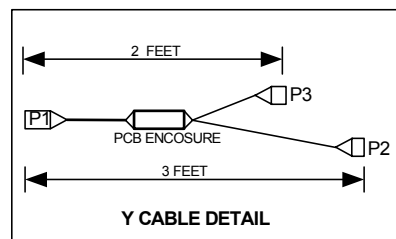
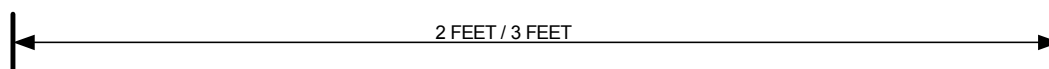
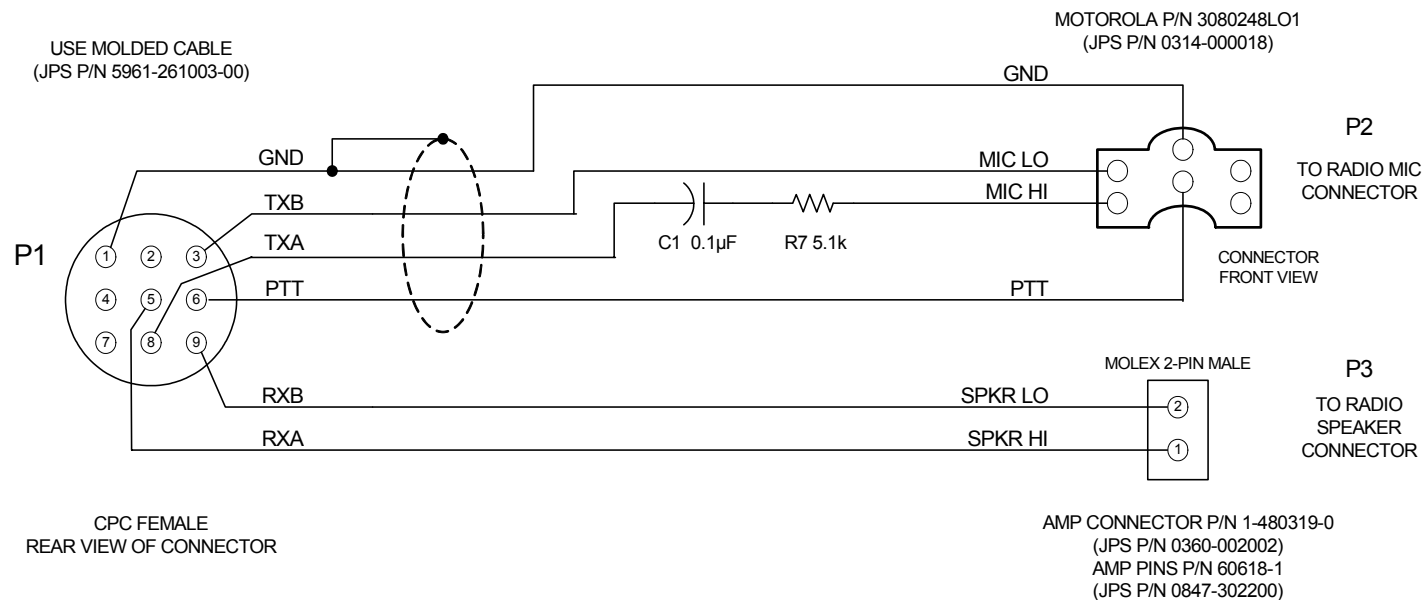
(\* Indicates Default Value)

**NOTES:**

1. For trunked radios, COR Inhibit After PTT time may need to be increased to prevent “ping-pong” effect. If this does not resolve the problem, Squelch Type may need to be changed to VMR.
2. If the radio is trunked, set TX Audio Delay to 4 (800ms).

Rev	ECO	Date
B1		2-11-05

# PURCHASED PART



COMPONENT PCB  
(JPS P/N 5961-271000)

C1 JPS P/N 0327-104101  
R7 JPS P/N 1820-512000  
JU4

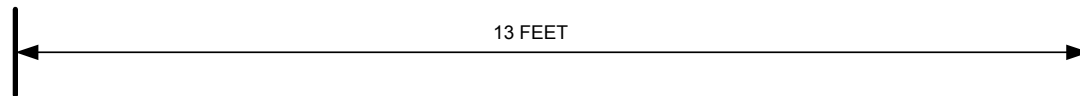
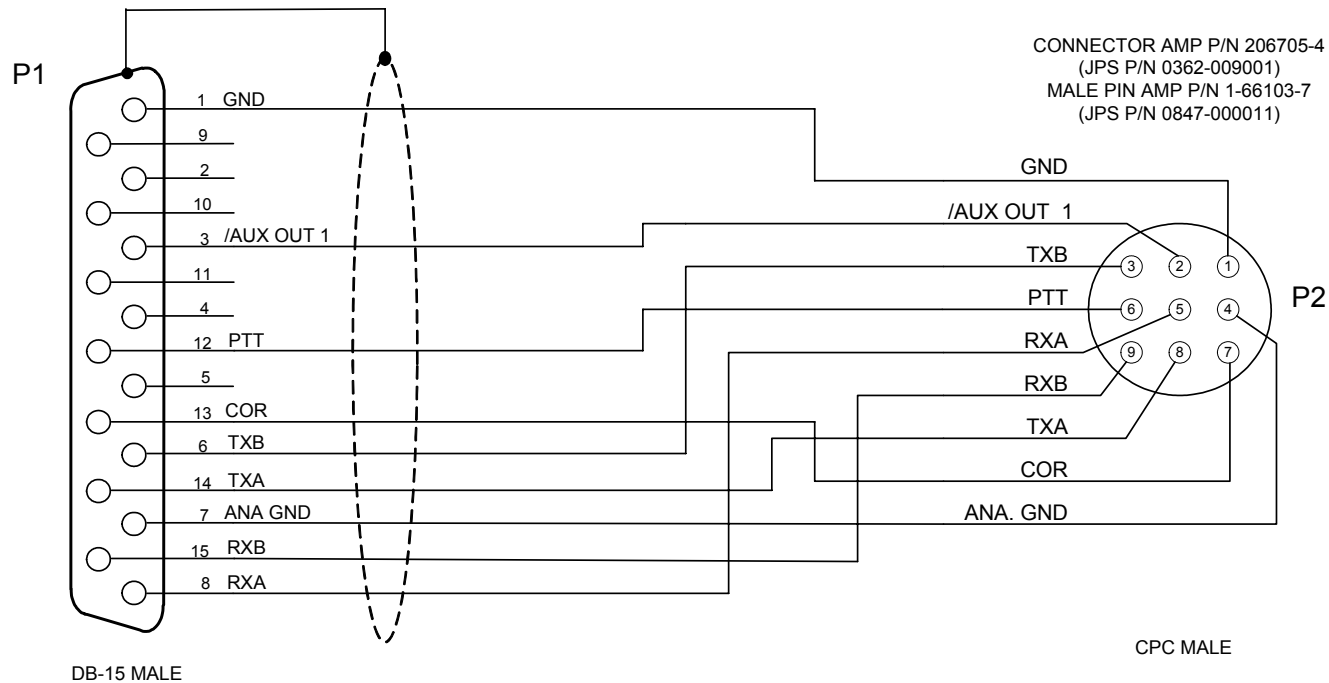
NOTES: SHIELD DRAIN CONNECTED TO PIN 1 OF P1 ONLY.

USED WITH:  
MOTOROLA SPECTRA MOBILE (MIC/SPK CONNECTORS)  
MOTOROLA SPECTRA PLUS MOBILE (MIC/SPK CONNECTORS)  
MOTOROLA XTL-5000 MOBILE (MIC/SPK CONNECTORS)

Designed By:	JAC	<b>Raytheon JPS Communications</b> Raleigh, NC USA		
Drawn By:	EDV	Title CABLE, CPC TO MOTOROLA SPECTRA MIC/SPK		
Checked By:	CTS	Size A	Document Number <b>5961-271237</b>	Rev B1
		Issued Date	NOVEMBER 15, 2003	Sheet <u>1</u> of <u>1</u>

# PURCHASED PART

Rev	ECO	Date
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- NOTES: 1) USE BELDEN 9934 SHIELDED CABLE.  
2) CONNECT SHIELD DRAIN TO SHELL OF P1 ONLY.  
3) CONNECTORS P1 AND P2 MUST BE MOLDED TO THE CABLE.  
4) CABLE MUST BE LABELED WITH THE RAYTHEON/JPS P/N AND REV, VENDOR CODE AND DATE (MM/YY).

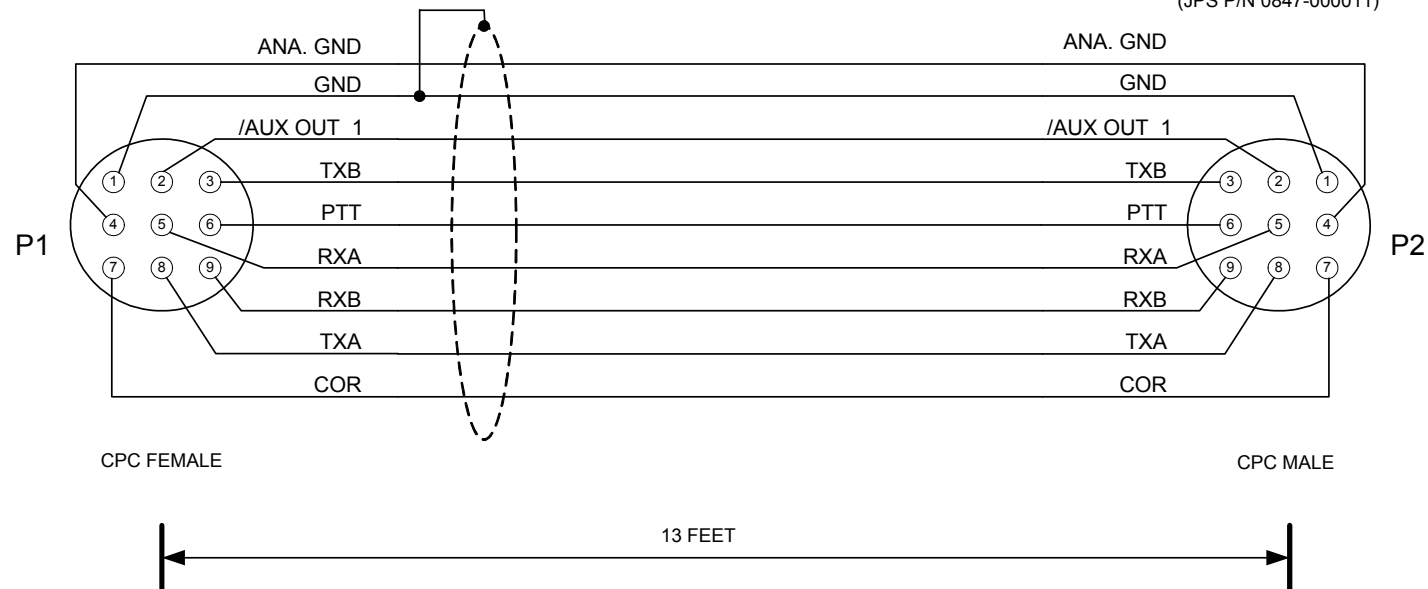
Designed By: JAC	<b>Raytheon JPS Communications</b>		
Drawn By: JAC	Title CABLE, ACU-1000 RADIO EXTENSION - 13 FT		
Checked By: RBP	Size A	Document Number <b>5961-261002-00</b>	Rev A
Issued Date JANUARY 5, 2004		Sheet <u>1</u> of <u>1</u>	

Rev	ECO	Date
A		

## PURCHASED PART

CONNECTOR AMP P/N 206708-1  
(JPS P/N 0362-005003)  
FEMALE PIN AMP P/N 1-66105-8  
(JPS P/N 0362-005002)

CONNECTOR AMP P/N 206705-4  
(JPS P/N 0362-009001)  
MALE PIN AMP P/N 1-66103-7  
(JPS P/N 0847-000011)



- NOTES: 1) USE BELDEN 9934 SHIELDED CABLE.  
2) CONNECT SHIELD DRAIN TO PIN 1 OF P1 ONLY.  
3) CONNECTORS P1 AND P2 MUST BE MOLDED TO THE CABLE.  
4) CABLE MUST BE LABELED WITH THE RAYTHEON/JPS P/N AND REV, VENDOR CODE AND DATE (MM/YY).

Designed By: JAC	<b>Raytheon JPS Communications</b> Raleigh, NC USA		
Drawn By: JAC	Title CABLE, ACU-T RADIO EXTENSION - 13 FT		
Checked By: RBP	Size A	Document Number <b>5961-281013-00</b>	Rev A
Issued Date JANUARY 5, 2004		Sheet <u>1</u> of <u>1</u>	