Communications Van
Radio Reference

Cupertino 469

Cupertino Office of Emergency Service

1 July 2019

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190701

Notes

1 Contact Information

Fire, Ambulance, other Emergency (9-1-1 alternate)	408-299-3233
Cupertino Service Center	
Main Office …….……	408-777-3170
After hours, non-emergency …..……..…….	408-299-2311
After hours, Emergency …….……..…….	408-299-2507
Cupertino City Office ……..……..	408-777-3200
Citizens Corp Coordinator ……	408-215-8459
CARES Emergency Coordinator ……..…..	408-839-8798
CARES AEC, Training ……..……..	408-533-2517
CARES AEC, Membership ……..…..	408-813-4168
CARES AEC, PSC Vehicle Manager…….……...	408-761-3647
Santa Clara County Radio Room ……...	408-808-7887

2 Operating Frequencies

CARES Frequencies

CH 1, TAC 1 (Resource Net)	147.570	Simplex, PL=151.4 , TX
CH 2, TAC 2 (Message Net)	146.460	Simplex, PL=151.4 , TX
CH 3, TAC 3 (Command)	440.150 +	PL=100.0 W6TDM
CH 4, Assignment Pending	441.000	Simplex, PL=151.4 CT
CH 5, TAC 5 (Tactical)	147.585	Simplex, PL=151.4, T
CH 6, TAC 1 (Resource Net)	147.570	Simplex, PL=151.4, CT
CH 7, TAC 2 (Message Net)	146.460	Simplex, PL=151.4, CT
CH 8, TAC 3 (Command)	440.150	Simplex PL=100.0
CH 9, Assignment Pending	TBD	
CH 10, TAC 5 (Tactical)	147.585	Simplex, PL=151.4, CT

County Frequencies

CH 21, SCC Message Net	147.360 +	PL=110.9 W6TI
CH 22, SCC Message Alt 1	145.450 –	PL=100.0 K6FB
CH 23, SCC Command	442.500 +	PL=100.0 WB6ZVW
CH 24, SCC Command Alt	443.275 +	PL=107.2 K6SNY
CH 25, SCC Resource Net	146.115 +	PL=100.0 AA6BT
CH 26, SCC Resource North	145.270 –	PL=100.0 W6ASH
CH 27, SCC Resource South	444.625 +	PL=110.9 N6NAC
CH 28, SCC Hospital Net	145.230 –	PL=100.0 N6NFI
CH 29, NTS Net	146.640 –	PL=162.2 WR6ABD

Packet Frequencies

SCC Office Bldg (San Jose)	145.750	223.620	W1XSC-1 (CUP Pri)
Crystal Peak (South County)	145.730	223.560	W2XSC-1
Mountain View	144.310	223.540	W3XSC-1
Frazier Peal (Above Milpitas)	145.690	223.600	W4XSC-1 (CUP Sec)
Extra (Training, Backup)			W5XSC-1

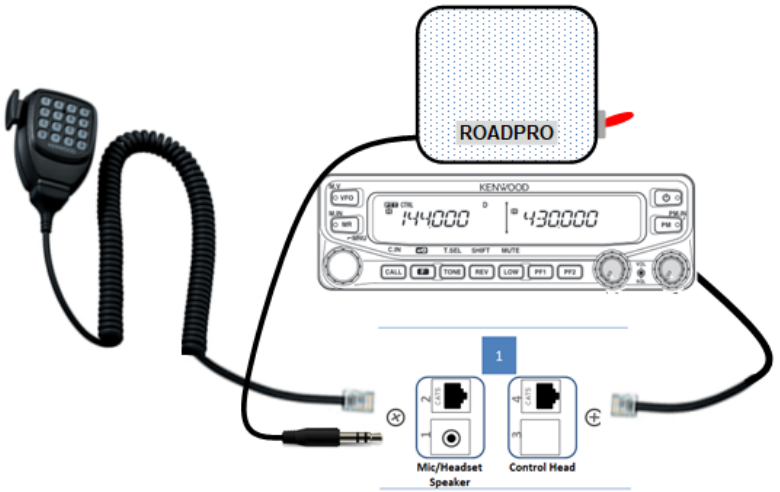
Emergency Alert System, stations of interest

KCBS	740 KHz	LP1, National Primary EAS Station
KFBK	1530 KHz	CA State Primary EAS Station
KLIV	1590 KHz	Public AM Station, a CNN affiliate
WQGH344	1670 KHz	Cupertino Community Radio

3 Radio Operations

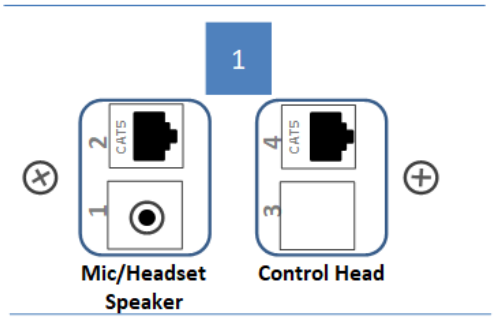
The three main radio operating positions are outfitted with a Kenwood TM-V71 radios and a kit with the necessary operating accessories.

1. The radio bodies are located in the equipment rack.
2. The radio “control heads” are situated in front of each operating position.
3. Three cables connect each radio to the operating positions:
    1. Head Extender cable
    2. Push to Talk cable
    3. Two channel audio cable
4. These cables terminate at the Radio Interface. See the following section for details.
5. A remote single channel speaker is located at each position; it can be switched to listen to either the left or right side of the radio.
6. Either a (i) hand Mic and speaker or (ii) headset with PTT foot peddle can be used. See the following sections for details.



Radio Interface

The Radio Interface links all operator controls with the radio body. Each Interface has houses three connectors that are specific to the radio; they cannot be used as a VANnet network connection. These connectors are:



1. ***Mic/Headset, Top Left***; connects either a hand Mic or the headset adaptor.
2. ***Radio Speaker***, ***Bottom Left***; connects either the local speaker or the headphone cable. These connectors can be identified by the ***double black rings*** on the connector barrel (see picture below).
3. ***Radio Control Head, Top Right;*** connects the radio head. DO NOT insert any other network device into this connector. This cable should always be connected. ***DO NOT REMOVE***.

Operating with a Microphone

To operate with a microphone, do the following:

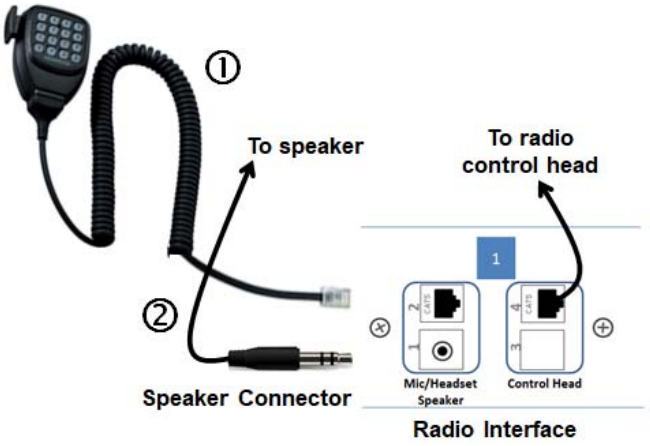
_____ 1. Retrieve the microphone for this operating position.

_____ 2. Plug the microphone into the Radio Interface, ***top left***.

_____ 3. Plug the radio speaker into the Radio Interface, ***lower left***.

_____ 4. Speaker operations are either Left or Right Channel at a time. Use the speaker switch to select either channel.

_____ 5. Verify normal radio operations.



Operating with a Headset

To operate with a Headset, do the following:

_____ 1. Retrieve the following components for this operating position.

- Heil Headset ①
- Headset adaptor ②
- PTT Footswitch ③

_____ 2. Plug the headset microphone jack (***single black ring*** on the connector barrel) into the Headset Adaptor.

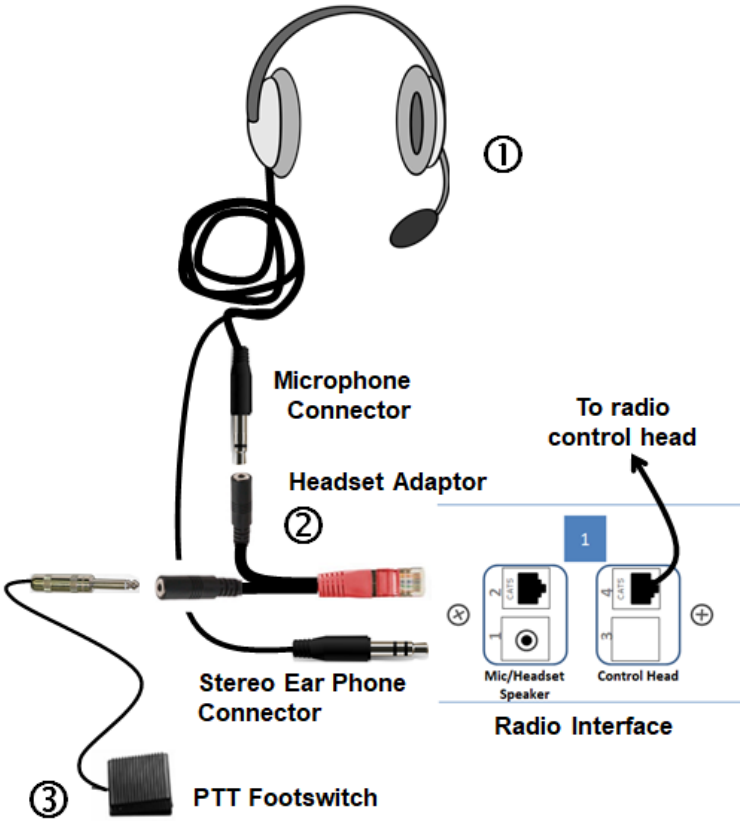
_____ 3. Plug the Foot Switch jack (larger ¼" connector) into the Headset Adaptor.

_____ 4. Plug the Headset Adaptor into the Radio Interface, ***top left***.

_____ 5. Plug the headset earphone jack (double black rings on the connector barrel) into the Radio Interface, ***lower left***.

_____ 6. Set the radio volume and squelch controls for comfortable listening.

_____ 7. Verify normal radio operations.



4 Radio / Antenna Connector Reference

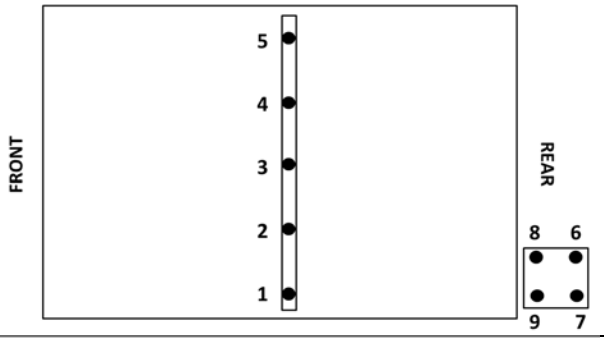
Antenna Numbering

No	Type	Normal Use	Location
A1	2M/440	R2 – County Message Net	Roof
A2	37.00 MHz	R7 - EOC	Roof
A3	Multi-band	R8 – Public Safety	Roof
A4	2M/440	Spare	Roof
A5	480 MHz	R6 - City Trunk	Roof
A6	2M/440	R4 – Shift Supervisor	Mast
A7	220 MHz	R5 - Packet	Mast
A8	2M/440	R1 – Resource Net	Mast
A9	2M/440	R3 – City Mess Net	Mast

Radio Numbering

No	Type	Position	Normal Antenna
R1	Kenwood TM-71A	Resource Net	A8
R2	Kenwood TM-71A	County Message Net	A1
R3	Kenwood TM-71A	City Message Net	A9
R4	Kenwood TM-71A	Shift Supervisor	A6
R5	Alinco DR235 - Packet	Shift Supervisor	A7
R6	Kenwood TK8180 – City	Shift Supervisor	A5
R7	CDM1250 – EOC	Shift Supervisor	A2
R8	Scanner	Shift Supervisor	A3
B1	BSP Connector 1		
B2	BSP Connector 2		
C1	Cab Connector 1		A4
C2	Cab Connector 2		

Antenna Numbering, Roof View



5 Radio Isolation Panel

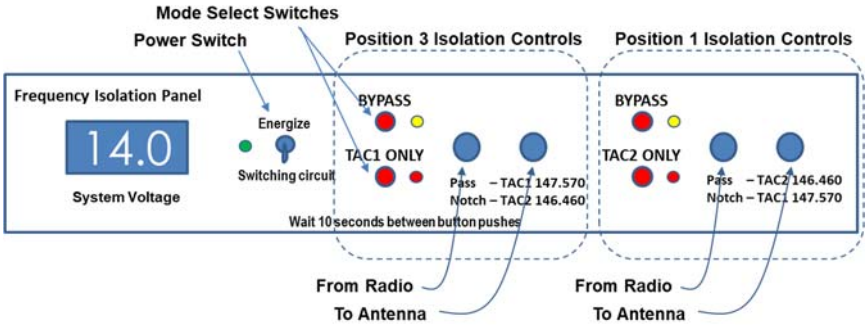
Introduction

The "**XXX Isolation Panel**" is used to ensure the CARES TAC1 and TAC2 frequencies are sufficiently isolated so that communications can occur simultaneously on both channels.

Specifically, this panel addresses the problem where a Comm 469 operator is transmitting on TAC1 while a field resource is transmitting on TAC2. Because the TAC2 radio receiver is saturated by the TAC1 transmission, the TAC1 field transmission is never received. The same occurs when the situation is reversed.

The set up for normal CARES operations is:

1. Operating position 1. CARES resource net on TAC1 147.570
2. Operating position 3. City message net on TAC2 146.460



Set up for normal CARES operations

_____ 1. Set the radio at Position 1 to CARES resource net, TAC1, 147.570.

_____ 2. Set the radio at Position 3 to CARES message net, TAC2, 146.460.

_____ 3. On the Isolation Panel, verify the TAC1 ONLY LED is lit.

_____ 4. On the Isolation Panel, verify the TAC2 ONLY LED is lit.

If either are in BYPASS Mode, do the following:

_____ 5. Energize the Isolation Panel (switch to the right of the volt meter).

_____ 6. If TAC1 shows it is in BYPASS mode, press the RED button marked TAC1 ONLY to enable Isolation on TAC1.

_____ 7. If TAC2 shows it is in BYPASS mode, press the RED button marked TAC2 ONLY to enable Isolation on TAC2.

_____ 8. Deenergize the Isolation Panel.

NOTE: Wait at least 10 seconds before toggling between the positions' BYPASS and TACx ONLY choices.

Set up for non-CARES operations

_____ 9. Set the radio at Position 1 to the desired frequency.

_____ 10. Set the radio at Position 3 to the desired frequency.

_____ 11. Energize the Isolation Panel (switch to the right of the volt meter).

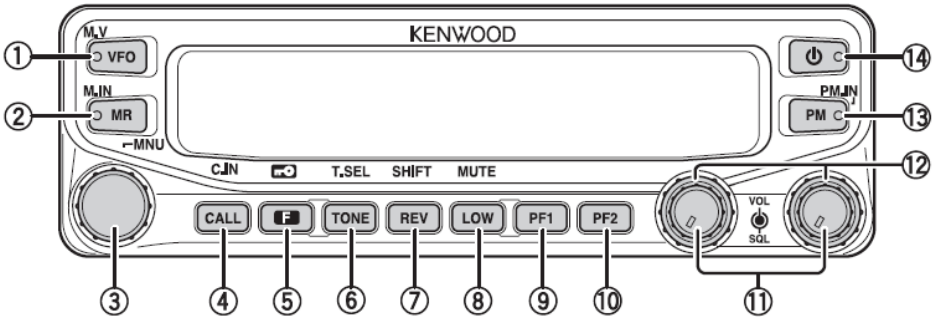
_____ 12. If Position 1 needs to be in BYPASS mode, Press the RED button marked BYPASS above the TAC2 ONLY label to enable Bypass on the Position 1 radio.

_____ 13. If Position 3 needs to be in BYPASS mode, Press the RED button marked BYPASS above the TAC1 ONLY label to enable Bypass on the Position 3 radio.

_____ 14. Deenergize the Isolation Panel.

6 Kenwood TM V71 144/440 Dual Band

This section covers the Kenwood TM V71 144/440 Dual Band radio and specific operational setup steps. Button reference numbers are listed in (parenthesis). See *Section 2, Operating Frequencies* for channel assignments.



1. Power On Sequence

_____ 15. Turn on the radio by pressing the **Power** button (**14**, top right).

_____ 16. Make sure the radio is in a known state, first by pressing **[VFO]** (**1**).

_____ 17. Then, select Memory Mode by pressing **[MR]** (**2**).

_____ 18. Adjust the **Squelch** (**12**, right knobs, outer ring).

_____ 19. Adjust the **Volume** (**11**, right knobs, inner ring).

_____ 20. Select the LEFT band for transmit by PRESSING the left **BAND** button (**11**-left).

_____ 21. Select the desired 2 meter frequency with the **Tuning** knob (**3**). Refer to Page 2 for the list of frequencies.

_____ 22. Select the RIGHT band for transmit by PRESSING the right **BAND** button (**11**-right).

_____ 23. Microphone operation is as usual.

Note: The Kenwood TM-V71 is a very flexible and configurable radio and allows you to set up your frequencies in the Left and Right channels any way you wish. While this document presents the VHF frequencies in the Left Channel and the UHF frequencies in the Right Channel,

2. Change Power Level

_____ 24. Press **[LOW]** (**9**) to toggle the transmit output power as follows: High Power –> Middle Power –> Low Power –>…

3. Storing a Frequency to Memory

_____ 25. Press **[VFO]** (**1**) to select **VFO** mode.

_____ 26. Select the 2 meter band by PRESSING the left **BAND** button (**11**) or the 440 band by PRESSING the right **BAND** button (**11**).

_____ 27. Enter the frequency by using the **Tuning** control (**3**). Press the **Tuning** control to select the **MHz** digit, press it again to select **KHz** digit.

_____ 28. For Repeaters, set the Offset Direction. Press the **[F]** then **[SHIFT]** button (see the next menu set after **[F]** is pressed). The selection is advanced from "**Simplex**" to "**+**" to "**-**", and then "**Simplex"**. Press any blank menu key or button to accept the change.

_____ 29. For Repeaters, turn Tone on. Press **[Tone]** (**7**). Repeat pressing **[Tone]** until **T** (Tone) is displayed on the menu (left of "**FM**").

_____ 30. Select the Tone Frequency. Press **[F]** then [**T.SEL]** buttons (see the next menu set after **[F]** is pressed). Turn the **Tuning** control until the desired tone is selected. Press any blank menu key or button to accept the change.

_____ 31. Store the Frequency. Press the **[F]** menu button, a memory channel number appears and flashes below the "**FM**" display and above the frequency last digit. Select an empty memory location by turning the **Tuning** Control. Press the **[M.IN]** (**2**) button to store the frequency.

_____ 32. Verify memory channel entry. Select Memory Mode **[MR]** (**2**). The display should show the entered frequency and offset.

4. Clear a Memory Channel

_____ 33. Press **[MR]** (**2**) to select **Memory** mode. Tune to the memory location to be deleted.

_____ 34. Turn off the Radio (**14**)

_____ 35. Press **[MR]** (2) and **Power** button (**14**) at the same time.

36. A confirmation message will appear on the display: **CLEAR?**
Press the Tuning control (**3**) to clear the Memory channel
Press **[F](ESC)** to cancel the operation.

7 Kenwood TM-V71 Advanced Settings

Cross-Band Operations

To set up Cross-Band operations, do the following:

_____ 1. Set the left Channel with the desired 2 meter frequency, and the right channel with the desired 440 frequency.

_____ 2. Enter Menu Mode
Press **[F]**, **Tuning** control to access the Menu.

_____ 3. Enable Repeater Option to Cross Band
1. Rotate the **Tuning** control to select **Menu 403 (RPT.MOD)**.
2. Press the **Tuning** control to select this menu.
3. Rotate the **Tuning** control to select operating mode CROSS.
4. Press the **Tuning** control to deselect this menu.

_____ 4. Enable Repeater Hold
Optional: You can set the transceiver to remain in transmit mode for 500ms (1/2 second) after the signal drops. To use this feature,
1. Rotate the **Tuning** control to select **Menu 404 (RPT.HLD)**.
2. Press the **Tuning** control to select this menu.
3. Rotate the **Tuning** control to select ON or OFF.
4. Press the **Tuning** control to deselect this menu.

_____ 5. Enable transmit a Repeater ID
Recommended: Set up your radio to transmit your ID every 10 minutes. Set this up as follows:
1. Rotate the **Tuning** control to select **Menu 406 (ID.TX)**.
2. Press the **Tuning** control to select this menu.
3. Rotate the **Tuning** control to select MORSE (CARES does not have the voice module is not installed in our radios).
4. Press the **Tuning** control to deselect this menu.

_____ 6. Enter the Repeater ID
If you enabled Repeater ID above, then set the call sign you wish to transmit as follows:
1. Rotate the **Tuning** control to select **Menu 405 (RPT.ID)**.
2. Press the **Tuning** control to select this menu. The first character position will blink.
3. Rotate the **Tuning** control to enter the desired character.
4. Press the **Tuning** control to move to the next character position. The next character position will blink.
5. Repeat steps 4d and 4e for all other character positions.
6. Press the **Tuning** control to deselect this menu.

_____ 7. Exit Menu Mode
Press **[F]**, **(ESC)** at any time to exit Menu Mode.

_____ 8. Turn off the Radio. Then, press the **[Tone]** and the **Power** button (**14**) at the same time. The radio is now in Cross-Band.

_____ 9. Repeat the above step to turn off Cross-Band Operations.

Radio Reset

There are 4 types of transceiver reset available:

VFO Reset:	Use to initialize the VFO and accompanying settings.
PART (Partial) Reset:	Use to initialize all settings other than the Memory channels, the DTMF memory, and the PM channels.
PM Reset:	Use to reset only the Programmable Memory channels to their default values.
FULL Reset:	Use to initialize all transceiver settings that you have customized.

Note: Unless otherwise directed, only perform a ***VFO*** or ***PART Reset*** on the radios. All other reset options will require a frequency reload.

Perform a reset on the transceiver by key operation:

_____ 10. Turn the transceiver off.

_____ 11. Press **[F] + Power On**

_____ 12. Rotate the Tuning control and select your desired reset type: VFO, PART, PM, or FULL.

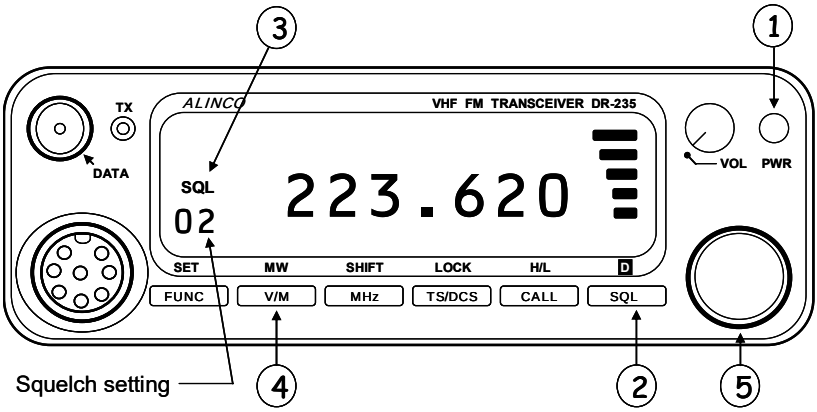
_____ 13. Press the Tuning control to set the reset type.

_____ 14. To Cancel: Press [**TONE**] (BACK) to return to the previous display or [**F**] (**ESC**) to cancel the reset.

_____ 15. Press the Tuning control again to perform the reset.

8 Alinco DR-235T, Packet

This section covers the Alinco DR-235T radio used for Packet radio and specific operational setup steps. Button reference numbers are listed in



(parenthesis).

1. Power On Sequence

_____ 1. Turn the radio on by pressing the **PWR** button (**1**)

_____ 2. Set the Squelch by pressing the **SQL** key (**2**). The **SQL** (**3**) icon appears on the display and the squelch level will be shown. Set the Squelch level to 2. After 5 seconds, the display returns to normal.

_____ 3. Set the Volume level to so that the indicator is in the 10 o'clock position.

_____ 4. Select Memory Mode by depressing the **V/M** key (**4**). Verify that the **M** icon appears on the display.

_____ 5. Rotate the **MAIN** Dial (**5**) to select the frequency: 223.620 MHz.

_____ 6. Verify the TNC-to-PC cable is connected.

_____ 7. Press PWR (**1**) to turn off.

2. Change Power Level

_____ 8. Press **[FUNC]** (bottom left) and then [**H/L**] to toggle the transmit output power.

3. Change Frequency

_____ 9. Press the **V/M** key (**4**). Verify that the **V** icon appears on the display.

_____ 10. Rotate the **MAIN** Dial (**5**) to select the frequency. Press the **MHz** key for courser or finer frequency tuning.

4. TNC Power

____ 11. The TNC should power on with the equipment rack. Visually confirm the power-on indicated lights. If it is not on, press the ON button on the TNC.

5. Computer Power On

The PC is mounted under the Packet workstation.

____ 12. Press the ON button on the Packet PC. Log into the PC: Password is _____

____ 13. Find the **Outpost SCC** icon and double-click on it. Verify the **Outpost** Program starts up.

14. When prompted, select or set up your Call Sign. Enter all fields.

____ 15. Select the menu options and confirm or set the following:

Setup > Identification	Enter your Call Sign in the **User Call Sign** field. Enter your first and last name in the **User Name** field. Check the **"Use Tactical Call…"** box. Set the Tactical Call Sign to **CUPEOC**. Set the Tactical ID to **CUP**. Press **OK** when done.
Setup > BBS	Verify the BBS Name is **W1XSC-1**. Press **OK** when done.
Setup > TNC	Tab 1: Interface Type: Verify Device Name is **KPC-3** and Device Type is **TNC.** Tab 4: TNC Comm Port: Verity settings: Comm Port=___, Baud=9600, Data Bits=8, Parity=None, Stop Bits=1. Press **OK** when done.

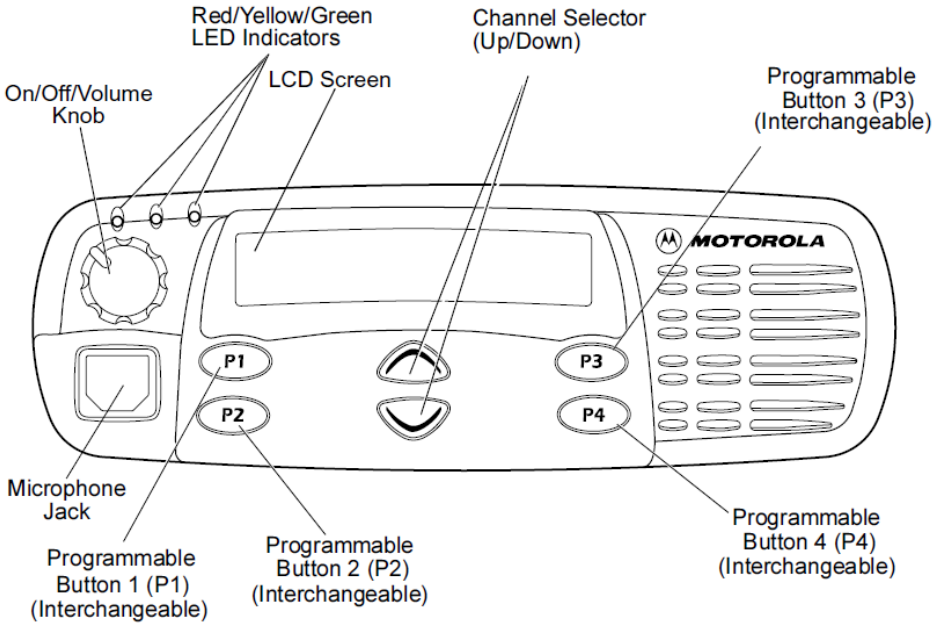
Connect check

____ 16. From Outpost, Press Send/Receive button, top right. Verify the Session Manager Form opens, Outpost connects to the BBS, and retrieves any messages, and closes.

9 Motorola CDM 1250 Low Band, EOC-to-EOC

This section covers the Motorola CDM 1250 Low Band radio and specific operational setup steps. This radio is located in the Supervisors Radio Stack.

Power Level:	40-60W
Frequencies:	TX=37.960 MHz, RX=37.080 MHz, PL=85.4
Programming:	This radio is preprogrammed with 2 channels: 1. EOC-to-EOC System Repeater 2. EOC-to-EOC Repeater Output (simplex)



1. Power On Sequence

_____ 1. Turn on the radio by pressing the **On/Off/Volume** Knob, upper LEFT.
If Successful, you will hear a Self-test “tone, two.
If Unsuccessful, you will hear a Self-test tone, one.

_____ 2. Adjust the volume using the **On/Off/Volume** Knob.

_____ 3. Select the EOC Repeater. Use the Channel Selector (up or down) to make your selecting. Use the Hand microphone to key the radio. Note the repeater squelch tail. No tone is issued.

2. Operations

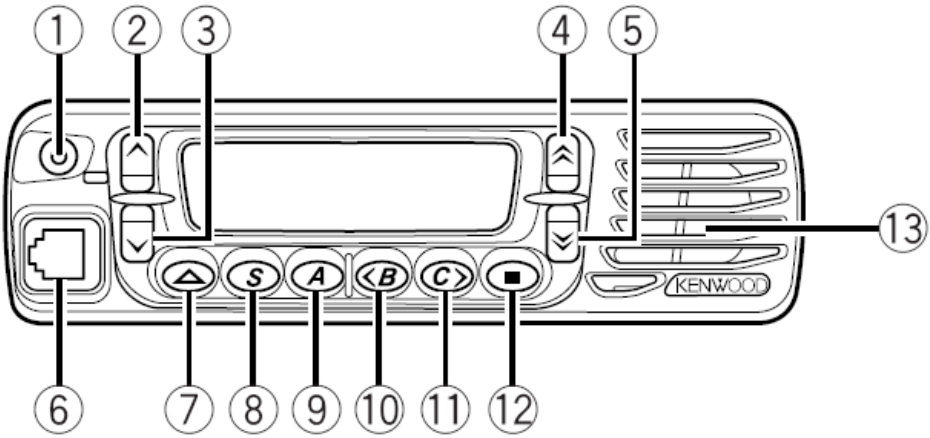
_____ 4. Our Tactical Call is **CUPERTINO EOC**. Do not use your FCC Amateur Radio Call sign on this radio.

3. Ring-down Codes

EOC Location	Designation	Ring down
County Comm Ctr	COM	*266
OpArea EOC	OES	*637
Campbell	CMB	*262
Cupertino	CPT	*278
Cupertino Alt	CPO	*276
Gilroy	GLR	*457
Lockheed Martin	LMC	*562
Los Altos	CLA	*252
Los Altos Hills	LAH	*524
Los Gatos/Monte Sereno	LGT	*548
Los Gatos Alternate	MTS	*687
Milpitas	MLP	*657
Morgan Hill	MHL	*645
Mountain View	MTV	*688
Mountain View Alt		
NASA/AMES	NAM	*626
Palo Alto	CPA	*272
San Jose	CSJ	*275
Santa Clara	SCL	*725
Saratoga	SRG	*774
Sunnyvale	SNV	*768
SCV Water Dist.	VWD	*893
Silicon Valley Red Cross	SCV	728
SJ State Univ.	SJS	*757
Stanford University	SUF	*783
Radio All Call	N/A	####

10 Kenwood TK-8180 UHF, City Trunk

This section covers the Kenwood TK-8180 UHF radio and specific operational setup steps. This radio is located in the Supervisors Radio Stack. This radio is configured on the City of Cupertino Trunk Radio System.



1. Power On Sequence

____ 1. Turn on the radio by pressing the **Power** button (**1**, top left).

____ 2. Adjust the **Volume** using the Up (**2**) or down (**3**) buttons.

____ 3. Select the Talk Group using the Up (**4**) or down (**5**) buttons.

4. Microphone operation is as usual.

2. Operations

____ 5. Our Operational Call is **OES-99**. Do not use your FCC Amateur Radio Call sign.

6. During normal operations, set the Talk Group to **PRIMARY**.

7. when we are deployed with field units with City HTs, set the Talk Group to **EOC**.

Cupertino ARES/RACES
10300 Torre Avenue
Cupertino, CA 95014-3255