

# Motorola radio programming tips 011609

To program radios with an existing codeplug file

1: Radio config./radio wide/home page

Set Home mode/channel

Note: To find out what this should be set to go to zone/channel assignment. You will need to know both the correct zone and the correct channel.

2: Trunking/trunking system 1/typeII/III page

Put in individual ID. You can get the ID by pressing the call button on the radio, then turn the mode knob one click to the left, it will then display MY ID and a six digit number starting with 7.

You do not use the seven or any zeros right after the 7 for the ID you put into the radio. Example if the ID you got from the radio was 700120 you would only put 120 in as the individual ID.

3: After you have verified the things listed below your ready to program the radio. To do this go to Tools/Cloning/Clone radio. When the clone radio box opens up click on read serial number , another window Window will appear for you to select a COM port, you will normally select COM 1, then click OK.

After the serial number is read and the hour glass disappears, then click program. After a couple of minutes you should get Write Successful.

## **Verify the following settings before programming**

### **For all Radio Models**

#### **In Radio Config./Radio wide/Advanced TAB – Set Ultra Narrow Immediate Filter to 7.8 Khz.**

1: In Radio Config./Radio wide/Advanced II TAB - short key press Duration for Emg.- set to 500ms

2: In Radio Config./Radio wide/ TX Audio Control TAB- place checks in analog and digital boxes, set type to AGC, set output to 6, then set total to 3 for Astro Spectra W4, and all XTL series mobile radios. This should be output 6 and total 6 for Astro Spectra W3 radios. This should be set to output 6 and total 0 for all portables.

3: Astro Spectra/Radio Config./Display and Menu/Advanced TAB – check save dim state box  
(this only applies in mobile radios)

4: In Radio Config./Radio wide/General Tab – Set Out of Range Indicator to Display only. Set Imbalanced Coverage Indicator to No Indication.

### **For XTL Series mobiles**

Set Ignition Switch to Required.

### **Call Button**

Setting one control head button to call in Astro Spectra W4 or a Trunking menu item to Call in XTL mobiles and XTS handhelds allows the user to see the radios unit ID by pressing that button then turning the mode switch one click to the left. This also requires the correct settings in the Trunking personality that are listed below.

### **Trunking Settings:**

Trunking Configuration/Smartzone TAB – check Display Site Trunking and check Full Spectrum Control Channel scan.

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Trunking System/General TAB – Type set to II. System ID 880A. Connect Tone 105.88. Coverage Type to SmartZone.

Trunking System/Type II TAB – Affiliation Type to Automatic. Individual ID set to correct ID.

Trunking System/Channel Assignment TAB – each range set correctly. Note: see screen print at end.

Trunking System/OBT Control Channel TAB – make sure control channel list is up to date.

Trunking System/Advanced TAB – set Channel Bandwidth(KHz) to 12.5KHz.

Trunking System/Digital TAB – set BER to 5% for both CC and voice on newer Astro 25 radios that have this setting available.

Trunking Personality/Emergency TAB – check the following: Emergency Call, Emergency Alarm, Console Ack Required, Revert PTT ID.

Trunking Personality/Scan TAB – Scan List Selection set to the scan list that you want the radio to use when channels that are assigned to this trunking personality are used.

Trunking Personality/Advanced TAB- Conversation type needs to be set to PTT ID .Check Talk Permit Tone.

Trunking Personality/Emergency Revert TAB - set the Revert Talkgroup to the talkgroup needed for Emergency transmissions. Normally the SRC talkgroup for the area for State Units and the INT for the area for local units. This makes sure that State Radio Dispatch sees the Emergency on their console. Set the Astro Strapping to Digital.

Trunking Personality/Talkgroup TAB – make sure that all talkgroups have the TX Voice Signal Type set to Digital.

Trunking Personality/Call/Page TAB – Set Private Call Type to Enhanced PC. Set operation to list only.

### Scan Settings:

4: Scan configuration/ Radio Wide TAB – set both hold times to 2 seconds, 1second if using talkback for the Designated Voice TX member.

4.5 Scan configuration/ Radio Wide TAB – check nuisance channel delete. Astro 25 radios will not give you this function as a menu item unless you check this.

5: Scan Configuration/Trunking TAB – set System Search time to 1 second

6: Each scan list general page:

Scan type: priority monitor for trunked only, conventional for conventional only, talkgroup for both trunked and conventional. Note: Talkgroup type scan lists do not work well because of the fact that you can not have a priority channel and this type of scanning is slow. We normally use only conventional or Priority Monitor type scan lists. If we use a talkgroup scan list to scan both conventional and trunked the scan list should be as small as possible. You can have up to 20 scan lists in Motorola radios.

Priority 1 = selected channel

Priority 2 – not normally used

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Non- priority members = We are using fixed for most State Agencies. Some locals prefer to use Operator select.

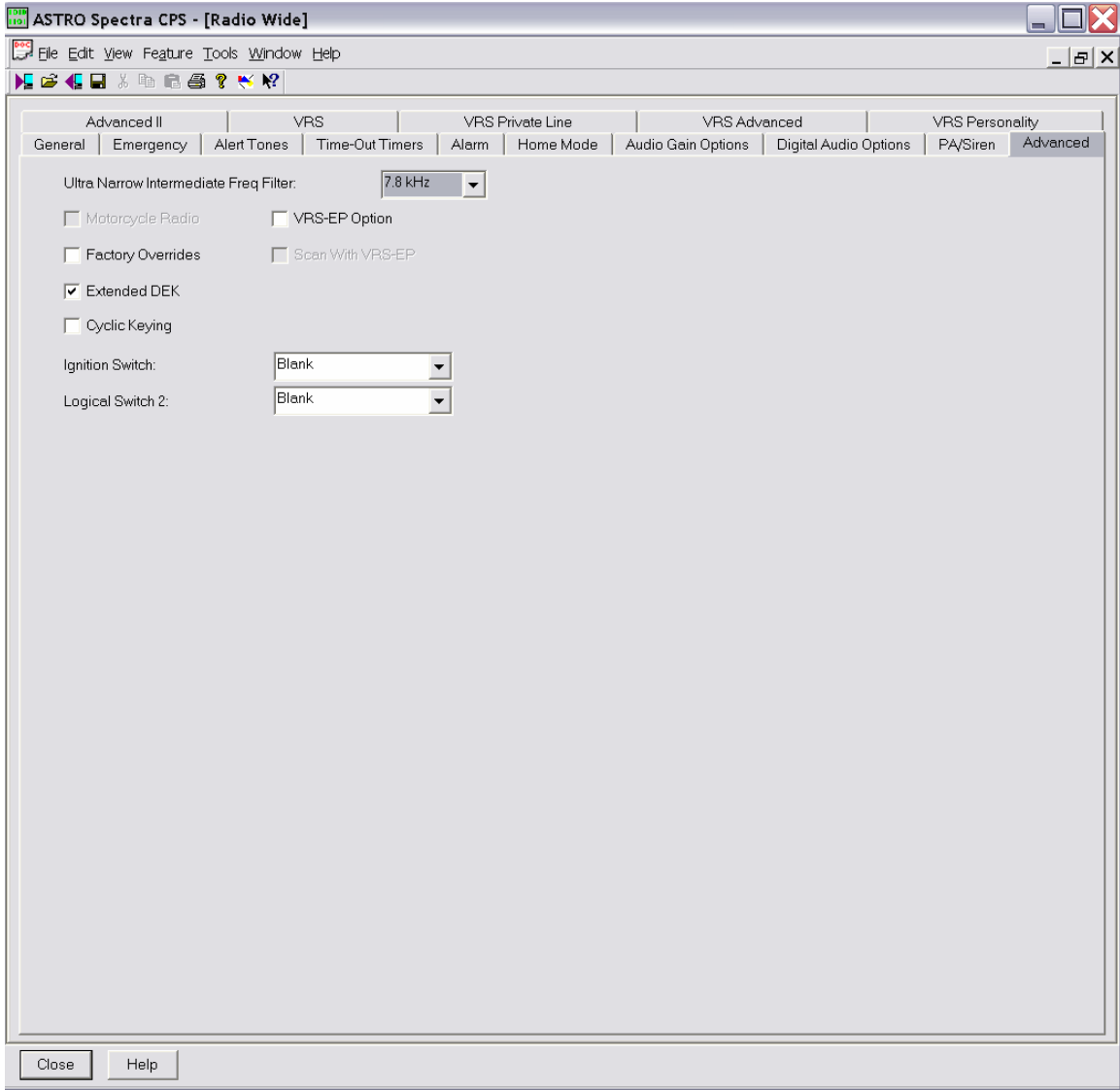
Designated Voice TX member – normally set to selected channel. Talkback can be used but has created problems with some agencies talking back on an unintended channel.

Note: If using talkback for Designated Voice TX Member in the scan lists you must check HUB suspends scan. If using Selected Channel for Designated Voice TX Member you do not need to check this.

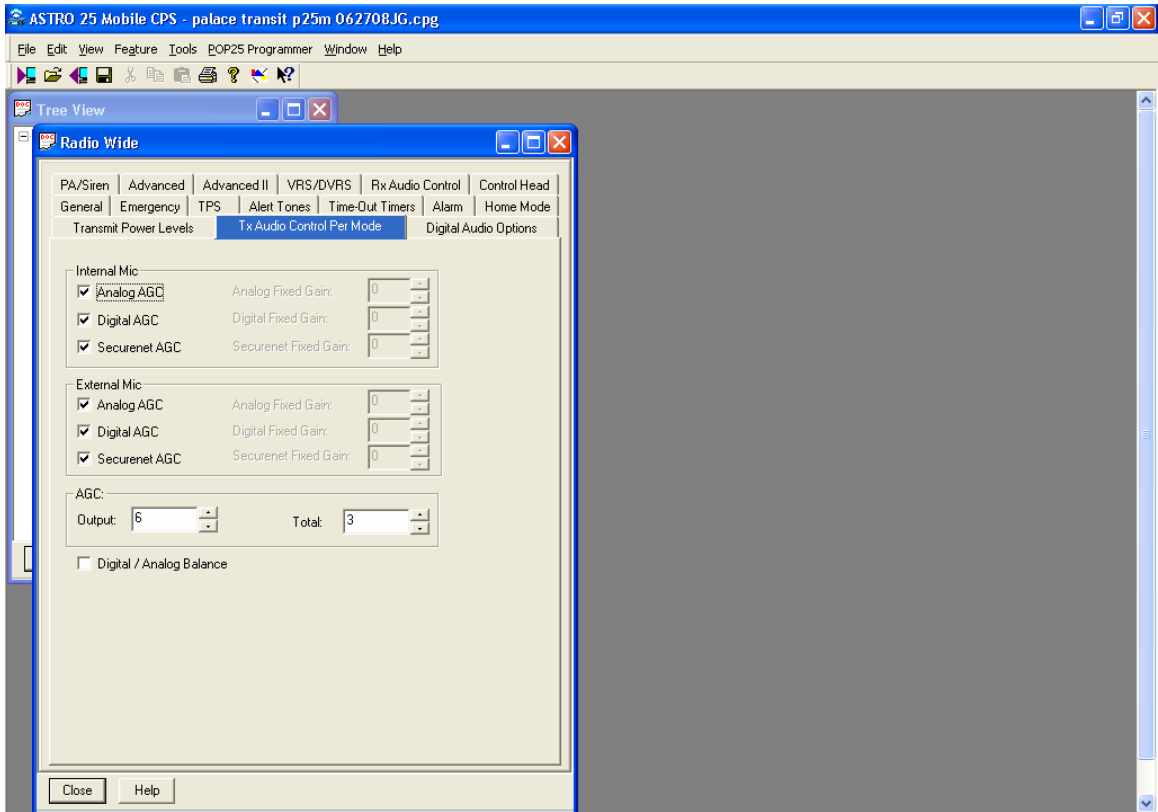
8: In the second to the last channel of the last zone put our Test talkgroup (HEX ID 63).

9: In the last channel of the last zone put VMMDDYY. Where V=version M=month D=day Y = two digit year. Assign that to a conventional personality with the national law freq. (155.475).

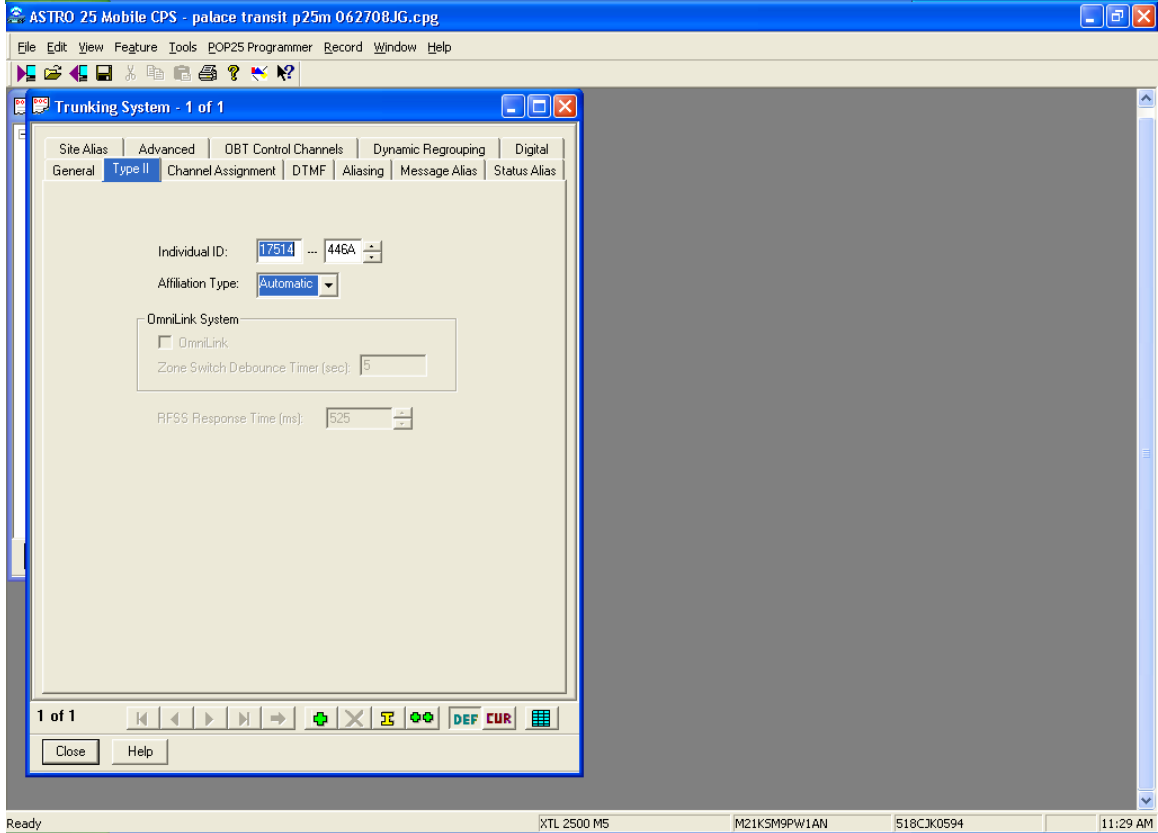
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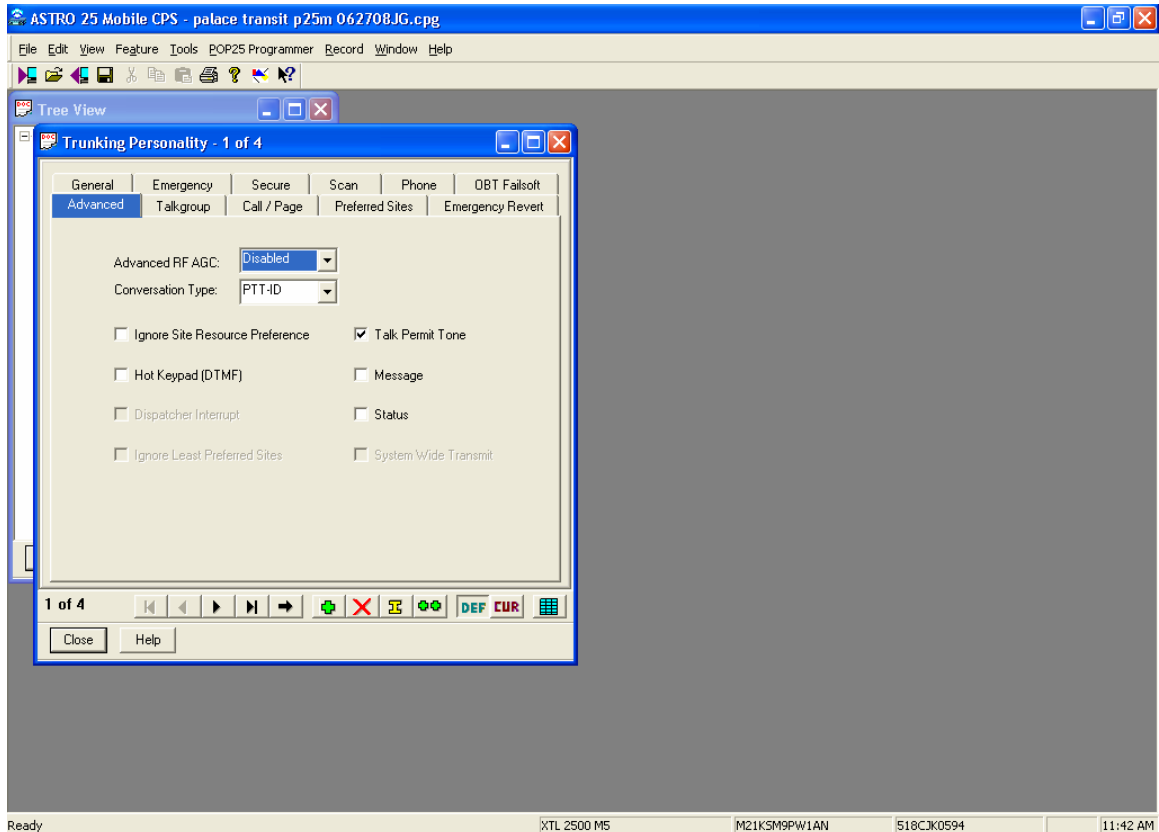
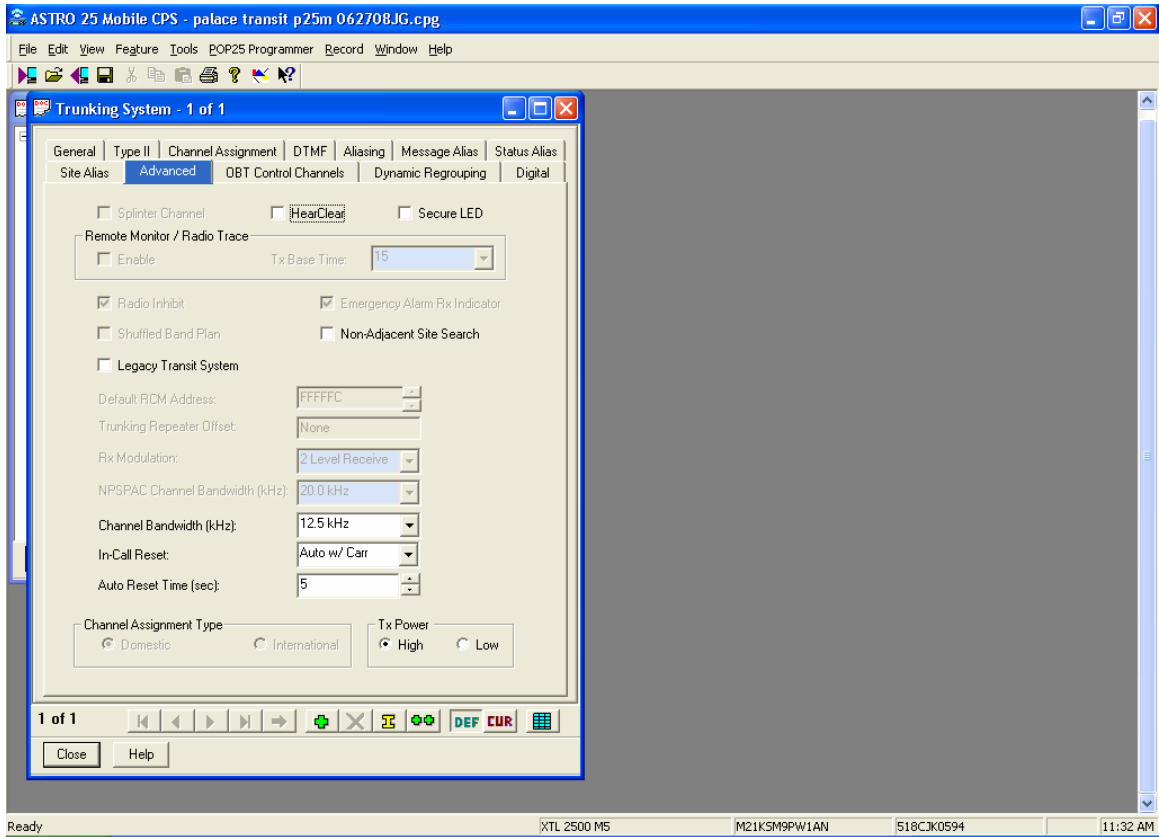


Ready XTL 2500 M5 M21KSM9PW1AN 518CJ0594 11:24 AM

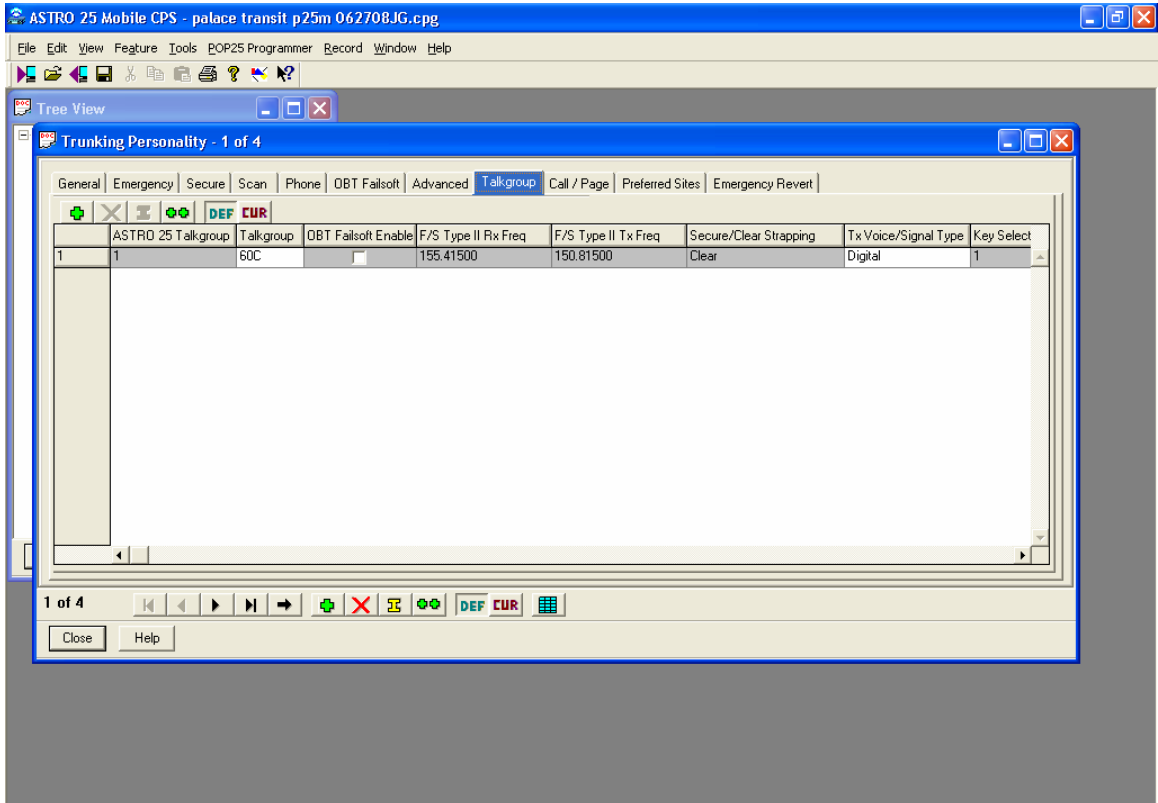


Ready XTL 2500 M5 M21KSM9PW1AN 518CJ0594 11:29 AM

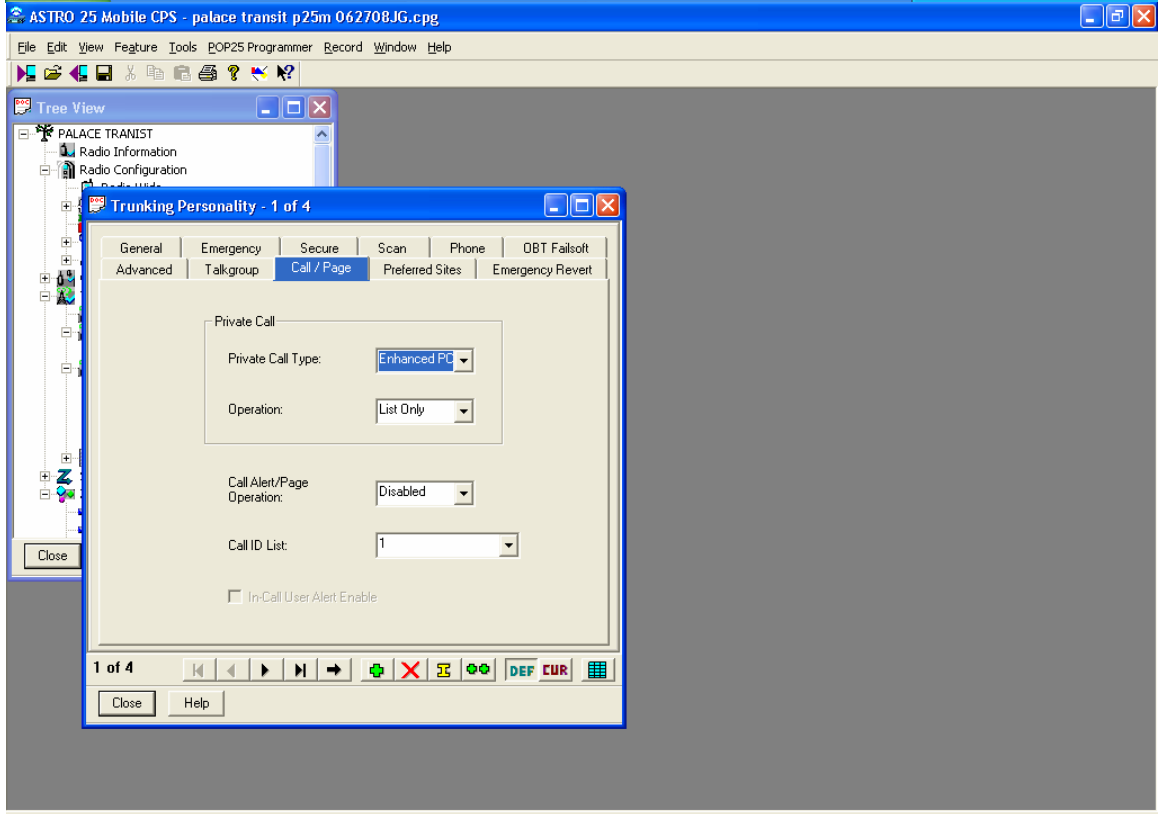
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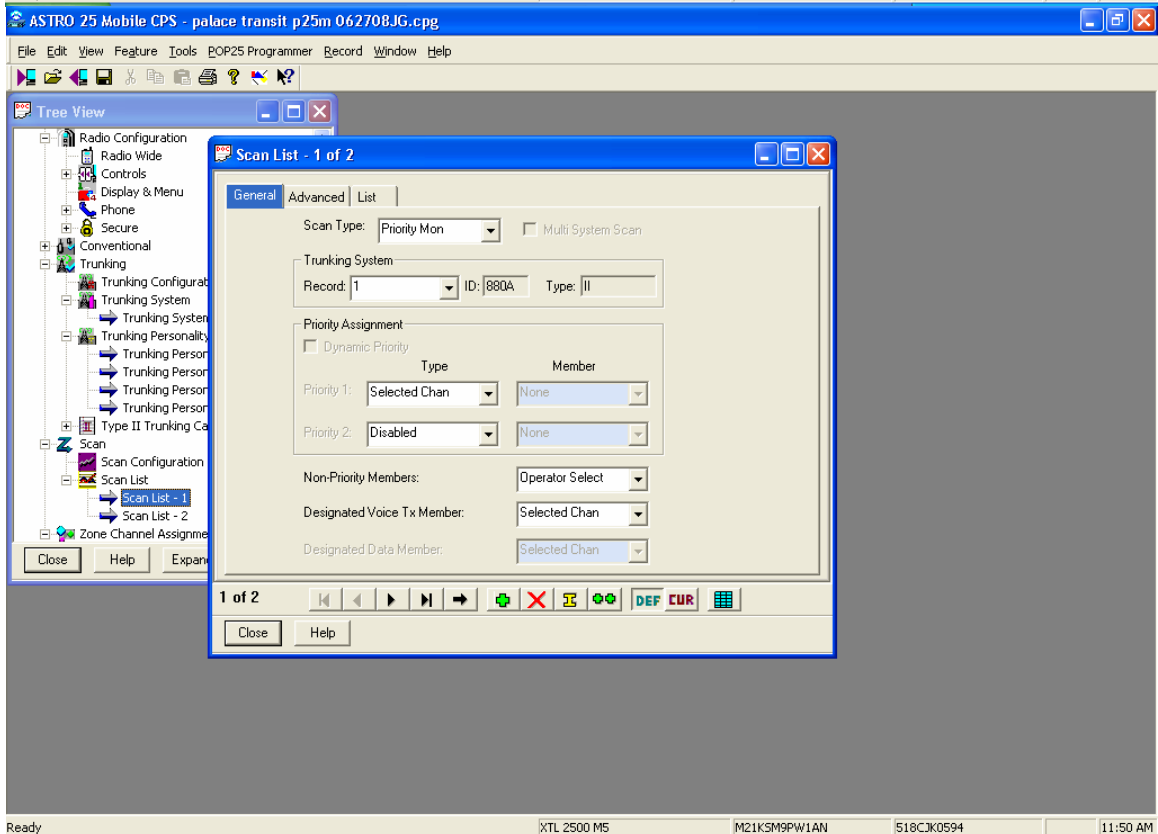
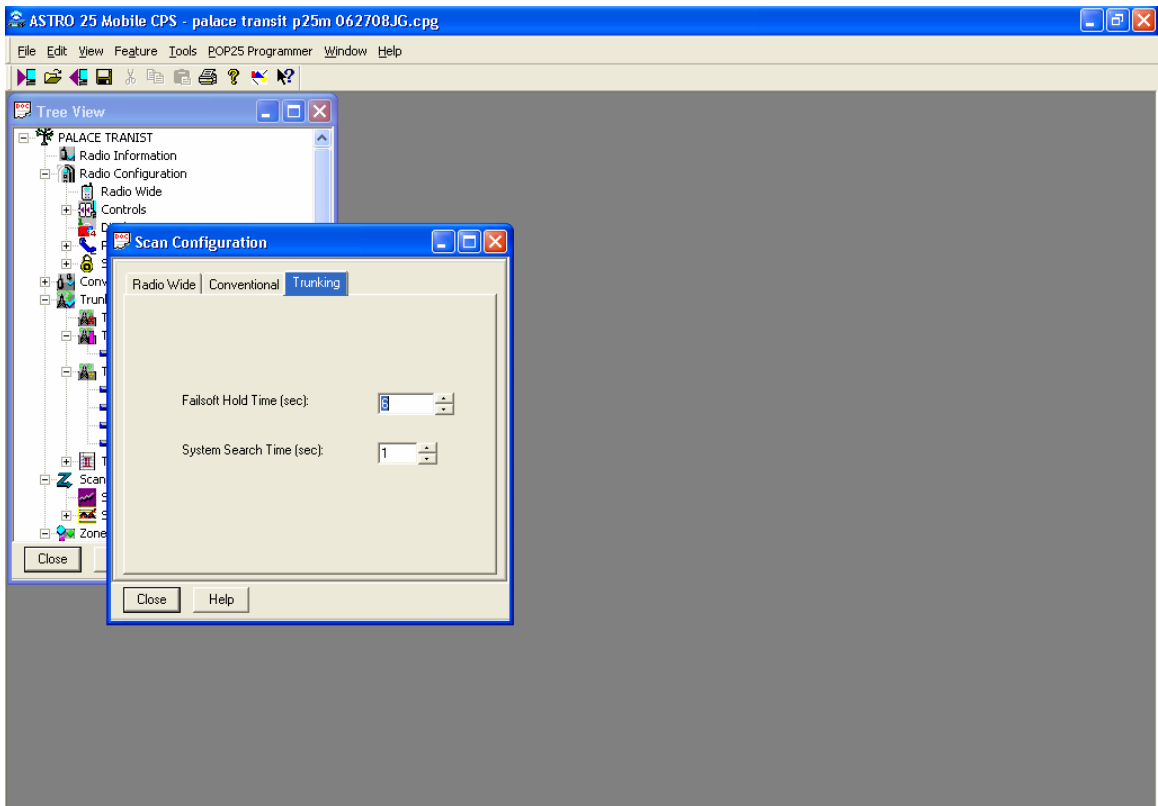


Ready XTL 2500 M5 M21KSM9PW1AN 518CJ0594 11:43 AM



Ready XTL 2500 M5 M21KSM9PW1AN 518CJ0594 11:46 AM

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The screenshot displays the Motorola radio programming software interface. The main window is titled "ASTRO 25 Mobile CPS - palace transit p25m 062708.JG.cpg". The "Trunking System - 1 of 1" dialog box is open, showing the "Channel Assignment" tab. The dialog box contains two sections: "Rx Channel Ranges (MHz)" and "Tx Channel Ranges (MHz)".

**Rx Channel Ranges (MHz)**

Range	Spacing (kHz)	Start	End
<input checked="" type="checkbox"/> 1	15.00	155.41500	156.24000
<input checked="" type="checkbox"/> 2	12.50	157.20000	157.41250
<input checked="" type="checkbox"/> 3	15.00	157.47000	161.61000

**Tx Channel Ranges (MHz)**

Range	Spacing (kHz)	Start	End
<input checked="" type="checkbox"/> 1	15.00	150.81500	154.64000
<input checked="" type="checkbox"/> 2	15.00	154.65000	155.31000
<input checked="" type="checkbox"/> 3	12.50	161.80000	162.01250

The dialog box also includes a "1 of 1" indicator, navigation buttons, and "Close" and "Help" buttons. Below the dialog box, a "Zone Channel Assignment" window is partially visible, showing "Close", "Help", and "Expand All" buttons. The Windows taskbar at the bottom shows the system tray with "Ready", "XTL 2500 M5", "M21K5M9PW1AN", "518CJK0594", and "1:03 PM".

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