



# FEMA



## Motorola CPS Software is Your Friend (no, no, really it is, now that it is GUI)





# FEMA



## Instructor Introduction



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**Federal Emergency Management Agency**

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## Course Introduction

### Overview fo CPS (Customer Programming Software)

#### Objectives:

- /// Gain a working knowledge of the most important parts of the hardware and software
- /// Ability to write and modify .CPG files for the radio type and situation
- /// Comfortable using the CPS software and solving problems using the CPS help



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A radio is a radio is a radio but radios are people too





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## Help! And other helpful things

- /// Context sensitive
- /// What window you are in
- /// What question you ask
- /// What level you are on



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## 1st Help Example

The screenshot displays a software interface for configuring a radio. The main window has a menu bar (File, Edit, View, Feature, Tools, Record, Window, Help) and a toolbar with various icons. Below the menu is a tabbed interface with tabs for Secure, Secure II, Phone, Smart PTT, Scan, and Advanced. The 'Tx Options' tab is selected, showing settings for Time Out Timer (3), Transmit Deviation (5.0 kHz), Transmit Deviation T/A (5.0 kHz), Channel Spacing (25.0 kHz), and Tx Voice/Signal Type (Non-ASTRO). There are also checkboxes for Transmit Emphasis and Reverse Burst/ Turn-Off Code. A help window titled 'ASTRO Saber & XTS3000 CPS' is open, showing a 'The Radio Information Window' section with a definition and a 'Radio Information' button.

File Edit View Feature Tools Record Window Help

Secure Secure II Phone Smart PTT Scan Advanced

ASTRO ASTRO Call ASTRO Talkgroup Options

General Rx Options Tx Options Direct/Talkaround Signaling MDC

Time Out Timer: 3 --- 60 (sec)

Transmit Deviation: 5.0 kHz

Transmit Deviation T/A: 5.0 kHz

Channel Spacing: 25.0 kHz

Tx Voice/Signal Type: Non-ASTRO

Transmit Emphasis

Reverse Burst/ Turn-Off Code

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Close Help

Close Help Expand All

ASTRO Saber & XTS3000 CPS

Help Topics Back Print Options

Add Bkmrks. See Bkmrks.

### The Radio Information Window

**DEFINITION:**

The Radio Information window includes high-level information used when programming or troubleshooting radio.

The **view-only** status of Radio Information fields represented with a "glasses" cursor. The glasses cursor appears when the cursor hovers over a field.

Click on any page title below (underlined in green) to see more information.

[Radio Information](#)





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## 2nd Help Example

The screenshot displays a software interface with a menu bar (File, Edit, View, Feature, Tools, Record, Window, Help) and a toolbar. The main window has tabs for Secure, Secure II, Phone, Smart PTT, Scan, and Advanced. Under the Phone tab, there are sub-tabs for ASTRO, ASTRO Call, and ASTRO Talkgroup Options. The ASTRO sub-tab is active, showing further sub-tabs: General, Rx Options, Tx Options, Direct/Talkaround, Signaling, and MDC. The Tx Options sub-tab is selected, showing fields for Time Out Timer (3), Transmit Deviation (5.0 kHz), Transmit Deviation T/A (5.0 kHz), Channel Spacing (25.0 kHz), and Tx Voice/Signal Type (Non-ASTRO). A help window titled "ASTRO Saber & XTS3000 CPS" is open, displaying the "Tx Options Page (Conventional Personality)" help text. The help text includes a definition, access conditions, and a list of included fields.

File Edit View Feature Tools Record Window Help

Secure Secure II Phone Smart PTT Scan Advanced

ASTRO ASTRO Call ASTRO Talkgroup Options

General Rx Options Tx Options Direct/Talkaround Signaling MDC

Time Out Timer: 3

Transmit Deviation: 5.0 kHz

Transmit Deviation T/A: 5.0 kHz

Channel Spacing: 25.0 kHz

Tx Voice/Signal Type: Non-ASTRO

22 of 86

Close Help

Close Help Expand All

ASTRO Saber & XTS3000 CPS

Help Topics Back Print Options Add Bkmarks See Bkmarks

### The Tx Options Page (Conventional Personality)

**DEFINITION:**

The Tx Options page allows you to view or define functionality having to do **only** with the radio's transmit mode for individual **Conventional Personalities**.

**ACCESSED ONLY:**

When the **Receive Only** field is **not** enabled.  
Click on any **CPS** field title below (in **green**) to see a description.

**INCLUDED FIELDS:**

<a href="#">Time Out Timer</a>	<a href="#">Transmit Emphasis</a>
<a href="#">Transmit Deviation</a>	<a href="#">Reverse Burst / Turn-Off Code</a>
<a href="#">Transmit Deviation T/A</a>	<a href="#">Hot Keypad</a>
<a href="#">Channel Spacing</a>	<a href="#">Transmit Power Level</a>
<a href="#">Tx Voice/Signal Type</a>	

Go to the Conventional Personality Window



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## 3rd Help Example

The screenshot shows a software interface with several tabs: 'ASTRO', 'ASTRO Call', and 'ASTRO Talkgroup Options'. Under 'ASTRO Call', the 'Tx Options' tab is selected. The interface includes fields for 'Time Out Timer' (set to 3) and '60 (sec)', 'Transmit Deviation' (set to 5.0 kHz), and checkboxes for 'Transmit Emphasis' and 'Reverse Burst/ Turn-Off C'. A help popup window is overlaid on the interface, titled 'Transmit Deviation T/A'. The popup text reads: 'The CPS retrieves and allows you to **view-only** the maximum variation amount (in KHz) that the selected carrier / frequency can vary or swing from its designated un-modulated T/A (Talkaround) Frequency. This Talkaround Tx Deviation is based on the selection made in the Tx Deviation field for the current Conventional Personality.' Below the text is a link: '\* [See More Information](#) \*'. The background interface also shows a 'Power Level' section with a radio button for 'Low'.





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You can get more information by signing up for online information at:

<https://molcontactus.motorola.com/Member/admin/newmoluser/newtomol.asp>



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## SERVICE AND REPAIR NOTES

# Bulletin

TECHNICAL INFORMATION /COMMERCIAL, GOVERNMENT & INDUSTRIAL SOLUTIONS SECTOR  
8000 W. SUNRISE BLVD. / PLANTATION, FL 33322 /

SRN - 1362  
APC - 749,008  
Feb. 2002

Memo To: SRN Mailing List

Deadline: December 31, 2002

From: Radio Product Division Plantation Florida

Subject: HT1250 LS+ fails to transmit with audio accessories

### Symptoms:

HT1250 LS+ radio may exhibit Transmit Audio Loss when used with headset or remote speaker microphone.

### Potential Problem Radios:

**Model Numbers:** AAH25RDH9DP5\_N, AAH25RDH9DP6\_N, AAH25SDH9DP5\_N, AAH25SDH9DP6\_N,  
AAH25RDH9DP5\_NST, AAH25RDH9DP6\_NST, AAH25SDH9DP5\_NST, AAH25SDH9DP6\_NST.

**Serial Number Range:** 749TBNxxxx thru 749TCBxxx and 008TBUxxxx thru 008TCBxxxx

### Cause:

HT1250 LS+ radios have a new front shield design that eliminated the need for the ground clip attached to the main board shield SH303. During this change over a very limited quantity of radios with the original front cover shield, 4280498Z01 -A (See photo of original front cover shield below), escaped without the ground clip attached to SH303. If a customer experiences the symptom expressed in this bulletin please follow the corrective actions below.

### Corrective Action:

Add the adhesive backed finger contacts part number 3980667Z01 to the SH303 shield as shown in photo below. Order replacement parts through Americas Aftermarket Parts Division. They can be contacted at **800-422-4210** or through **Motorola**

**On Line** ([www.businessonline.motorola.com](http://www.businessonline.motorola.com)).

**This bulletin is informational only. No labor Warranty is intended or implied.**



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## Reading and writing is not arithmetic

- /// Old RIBs and new virtual modems
- /// Cables and connectors
- /// How to grow a tree
- /// What to do when the PC and radio are not on speaking terms.



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## Radio configuration

- /// Radio wide options
- /// Buttons, knobs and switches – whatever (Controls)
- /// What are you looking at (Display and Menu)
- /// Phone home
- /// Secure or not secure, that is the question



# FEMA Radio wide options



Tree View

- 749HEAA149-EPA Play.cpg
  - Radio Information
  - Radio Configuration
  - Controls & Menus
    - Conventional Buttons
    - Menu Items
  - Conventional Personality
  - Signaling
  - Call
  - Message / Status
  - Phone
  - Scan List
  - Personality Assignment to Zone

Radio Configuration

Monitor	Option Board	Voice Storage	Microphone	Password	
Basic	Lights/LEDs	Alert Tones	Scan	Menu	Test

VOX Headset       Tx Inhibit Quick Key Override

Hot Keypad       Audio Processing Filter (APF)

Auto Power Mode       Hook (HUB) Defeats PL

Radio-to-Radio Cloning       Radio Clock Update

Long Press Duration (ms): 1500

Language Selection: English

Disable All Keypad/Microphone Configuration

Tree View

- 465AVU1150-Saber-MRV1.cpg
  - Radio Information
  - Radio Configuration
  - Radio Wide
  - Controls
    - Buttons
    - Hand Held Control Head
    - Switches
  - Display & Menu
  - Phone
    - Phone Configuration
    - DTMF Codes
      - DTMF Code - 1
    - Phone Number
  - Secure
    - Secure Configuration
    - Secure Hardware Encryption ML
  - Conventional
  - Scan
  - Zone Channel Assignment

Radio Wide

Digital Audio Options	Advanced	Advanced II	Surveillance Mode
Time-Out Timers	Home Mode	Audio Gain Options	
<b>General</b>	Emergency	Alert Tones	

Radio Cloning

Block Pending CA/PC

Maximum Channels (Talkgroups): 255

Out of Range Indicator: No Indication

Imbalanced Coverage Indicator: No Indication





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## Buttons, knobs and switches – what ever (Controls)

749HEAA149-EPA Play.cpg

- Radio Information
- Radio Configuration
- Controls & Menus
  - Conventional Buttons
  - Menu Items
- Conventional Personality
- Signaling
- Call
- Message / Status
- Phone
- Scan List
- Personality Assignment

**Conventional Buttons**

Rotary/Top Button | Side Buttons | Front Buttons

Rotary Control: Select Channel (Fixed)

Top Button

Short Press: Toggle Repeater/Talkaround

Long Press: Unassigned

749HEAA149-EPA Play.cpg

- Radio Information
- Radio Configuration
- Controls & Menus
  - Conventional Buttons
  - Menu Items
- Conventional Personality
- Signaling
- Call
- Message / Status
- Phone
- Scan List
- Personality Assignment

**Conventional Buttons**

Rotary/Top Button | Side Buttons | Front Buttons

Front Button P1

Short Press: Light

Long Press: Light

Front Button P2

Short Press: Zone

Long Press: Volume Set

Front Button P3

Short Press: Scan List Edit

Long Press: Phone Mode

749HEAA149-EPA Play.cpg

- Radio Information
- Radio Configuration
- Controls & Menus
  - Conventional Buttons
  - Menu Items
- Conventional Personality
- Signaling
- Call
- Message / Status
- Phone
- Scan List
- Personality Assignment

**Conventional Buttons**

Rotary/Top Button | Side Buttons | Front Buttons

Side Button 1 (Upper)

Short Press: Monitor

Long Press: Sticky Permanent Monitor

Side Button 2 (Middle)

Short Press: Light

Long Press: Toggle Repeater/Talkaround



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## What are you looking at (Display and Menu)

749HEAA149-EPA Play.cpg

- Radio Information
- Radio Configuration
- Menu Items

Radio Call Sub-Menu	Utilities Sub-Menu	Voice Storage
Top Level Menu	Audio/Tones Sub-Menu	Program Lists Sub-Menu
<input checked="" type="checkbox"/> System Scan	<input type="checkbox"/> Repeater/Talkaround	
<input type="checkbox"/> All Group Scan	<input checked="" type="checkbox"/> Edit Mode	
<input checked="" type="checkbox"/> Program Lists	<input checked="" type="checkbox"/> Audio/Tones	
<input checked="" type="checkbox"/> Phone	<input type="checkbox"/> Voice Storage	
<input checked="" type="checkbox"/> Radio Call		
<input checked="" type="checkbox"/> Zone		
<input checked="" type="checkbox"/> Utilities		

465AVU1150-Saber-MRW1.cpg

### Display & Menu

General | **Menu Items** | Advanced

Conventional Menu Items

Available Items:	Selected Items:
MUTE	ZONE
CHAN	PWR
ZONE	KEY
PHON	ERAS
CALL	MUTE

Trunking Menu Items

Available Items:	Selected Items:
MUTE	MUTE
CHAN	
ZONE	
PHON	
CALL	

465AVU1150-Saber-MRW1.cpg

### Display & Menu

General | **Menu Items** | Advanced

Text Configuration

Text Justification:  Left  Right

Channel Text Size: 9

Zone Text Size: 5

Scroll Configuration

Slow Scroll Rate (ms): 1000

Fast Scroll Rate (ms): 250

Slow Scroll Count: 3



# FEMA



## Phone Home

749HEAA149-EPA Play.cpg

- Radio Information
- Radio Configuration
- Controls & Menus
  - Conventional Buttons
  - Menu Items
- Conventional Personality
- Signaling
- Call
- Message / Status
- Phone
  - Phone List
  - Phone System
    - Phone System - 1

Phone System-1 of 1

Connection | Tone Configuration

Code

Access: \*13      Deaccess: #3

Dial Type: Live       PL Required

Override Busy Channel Lockout       Strip PL

Access/Deaccess Type: Immediate Auto

Deaccess Back Porch Delay: 1.0

1 of 1

	Phone Number	Phone A
1	8004248802	EPA
2		
3		
4		



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## Secure or not secure that is the question

The screenshot displays a software interface for configuring a radio system. On the left is a 'Tree View' showing a hierarchical structure of configuration options. The 'Secure' folder is expanded, revealing 'Secure Configuration' and 'Secure Hardware Encryption Multikey List'. The 'Secure Configuration' folder is also expanded, showing sub-items like 'Radio Information', 'Radio Configuration', 'Controls', 'Display & Menu', 'Phone', 'DTMF Codes', and 'DTMF Code - 1'. The 'Secure Configuration' sub-item is selected, opening a 'Secure Configuration' dialog box.

The 'Secure Configuration' dialog box has four tabs: 'General', 'Multikey Options', 'Multikey', and 'Advanced'. The 'General' tab is active, showing the following settings:

- Software Encryption
- XL Encryption
- Secure Hardware Equipped
- Auto Login

Below these settings is an 'OTAR' section with a text input field and two checkboxes:

- Enable
- Generate Key-Loss-Key

At the bottom of the dialog box are 'Close' and 'Help' buttons. At the bottom of the main software window are 'Close', 'Help', and 'Expand All' buttons.



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## Personalities are not channels



Conventional Configuration  
Conventional Personality  
Conventional Personality - 1

Conventional Personality - 61 of 85

Secure II | Phone | Smart PTT | Scan | Advanced | ASTRO | ASTRO Call  
General | Rx Options | Tx Options | Direct/Talkaround | Signaling | MDC | Secure

Receive Only Personality

Receive

Frequency (MHz): 162.40000 PL Code: XZ  
Squelch Type: CSQ DPL Code: 023  
PL Freq (Hz): 67.0  DPL Invert

Transmit

Frequency (MHz): 143.00000 PL Code: XZ  
Squelch Type: Disabled DPL Code: 023  
PL Freq (Hz): 67.0  DPL Invert

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Conventional Personality  
1 NATION 1

Conventional Personality-1 of 44

Basic | Options | Signaling | Scan | Phone | Advanced

Alias: 1 NATION 1 Channel Bandwidth (kHz): 12.5

Rx

Frequency (MHz): 164.450000 Squelch Type: CSQ  
TPL Freq (Hz): 67.0 Code: XZ  
DPL Code: 023  DPL Invert  Rx Only Personality

Tx

Frequency (MHz): 164.450000 Squelch Type: CSQ  
TPL Freq (Hz): 67.0 Code: XZ  Reverse Burst  
DPL Code: 023  DPL Invert  Turn-Off Code

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## Personalities are not channels



Conventional Personality

1 NATION 1

Conventional Personality-1 of 44

	Alias	Radio Rx Freq	Radio Tx Freq	Rx Squelch Code	Rx TPL Frequency	Rx TPL Code
1	1 NATION 1	164.450000	164.450000	CSQ	67.000000	XZ
2	2 NATION 2	164.450000	164.450000	TPL	100.000000	1Z
3	3 SHARED 1	162.700000	162.700000	TPL	100.000000	1Z
4	4 SHARED 2	162.775000	162.775000	TPL	100.000000	1Z
5	5 SHARED 3	166.450000	166.450000	TPL	100.000000	1Z
6	6 SHARED 4	166.475000	166.475000	TPL	100.000000	1Z
7	7 SHARED 5	173.875000	173.875000	TPL	100.000000	1Z
8	8 SHARED 6	173.912500	173.912500	TPL	100.000000	1Z
9	9 RP	173.912500	165.412500	TPL	100.000000	1Z
10	10 MarineCH81	157.075000	157.075000	CSQ	67.000000	XZ
11	Conv Pers 11	155.505000	155.505000	CSQ	67.000000	XZ
12	Conv Pers 12	154.680000	154.680000	CSQ	67.000000	XZ
13	Conv Pers 13	154.875000	154.875000	CSQ	67.000000	XZ
14	Conv Pers 14	155.655000	155.655000	CSQ	67.000000	XZ

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Close



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## Getting in the Zone



Tree View

- 465AVU1150-Saber-MRV1.cpg
  - Radio Information
  - Radio Configuration
  - Conventional
  - Scan
  - Zone Channel Assignment
    - Zone Channel Assignment - 1
    - Zone Channel Assignment - 10 of 12

Zone Channel Assignment - 10 of 12

Zone Channels

Zone: WX

Personality Assignment to Zone-1 of 6

Zone	Channels	Alias	Personality
1		1 NATION 1	Conventional-1
2		2 NATION 2	Conventional-2
3		3 SHARED 1	Conventional-3
4		5 SHARED 3	Conventional-5
5		6 SHARED 4	Conventional-6
6		7 SHARED 5	Conventional-7
7		8 SHARED 6	Conventional-8
8		9 RP	Conventional-9

749HE

Personality Assignment to Zone

- EPA
- USCG
- NIFC
- MATUAL AID
- WX
- ZONE 01

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Close Help



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## Scanning is not reading fast

tree view

465AVU1150-Saber-MRV:

- Radio Information
- Radio Configuration
- Conventional
- Scan
- Scan Configuration
- Scan List
  - Scan List - 1
  - Scan List - 2
- Zone Channel Assignm

Scan List - 2 of 2

General List

DEF CUR

	Zone	Channel	Zone Text	Channel Text
1	1	1	DE A	REGION 1
2	1	10	DE A	REGION 10
3	1	11	DE A	NATIONAL
4	Unassigned	Unassigned		

Scan Configuration

Radio Wide Conventional

Nuisance Mode Delete

Priority Scan Alert

HUB Suspends Scan

Suspend All Scan

Voice Rx Tx Hold Time (sec):

Data Rx Tx Hold Time (sec):

Close Help

tree view

749HEAA149-EPA Play.c

- Radio Information
- Radio Configuration
- Controls & Menus
- Conventional Person
- Signaling
- Call
- Message / Status
- Phone
- Scan List
  - Scan List - 1
  - Scan List - 2
- Personality Assignme

Scan List-1 of 2

General Tx Configuration Advanced List

Priority

Priority 1 (First Scan List Member)

Priority 2 (Second Scan List Member)

Sample Time (ms):

Options

PL Scan Type:

Nuisance Delete

User Programmable

PL Scan Lockout



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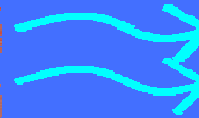


## Clones are twins but twins are not clones



=Clone

Same = Clones



=Twin

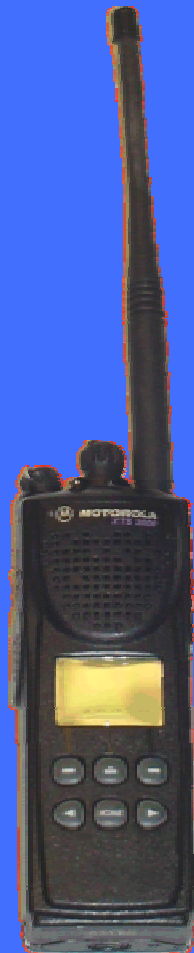
Not Same = Twin



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Twins are siblings but siblings are not twins



=Sibling







# FEMA



## It is time to stop talking now

### Some last things

- /// Check your programming
- /// Take your time
- /// Have fun
- /// Did I say to check your work?

