

{TESS+} VHF Training

Module 3: iCOM equipment programming

Read more about {TESS+}: www.wfp.org/telecommunications-security-standards

Email: TESS@wfp.org



Session objectives

- Program iCOM radios with the standard codeplug
- Test admin functionality (stun, un-stun, silent interrogate, emergency)
- Program iCOM repeater with standard codeplug

Radio configuration – iCOM programming software

- Install the correct software for iCOM radios depending on the device that you are going to program:



- CS-F2100D: handheld
- CS-F3160_F5060: mobile and base
- CS-FR5000: repeater

Program iCOM handheld radio



IC-F1100D



IC-F1100DT

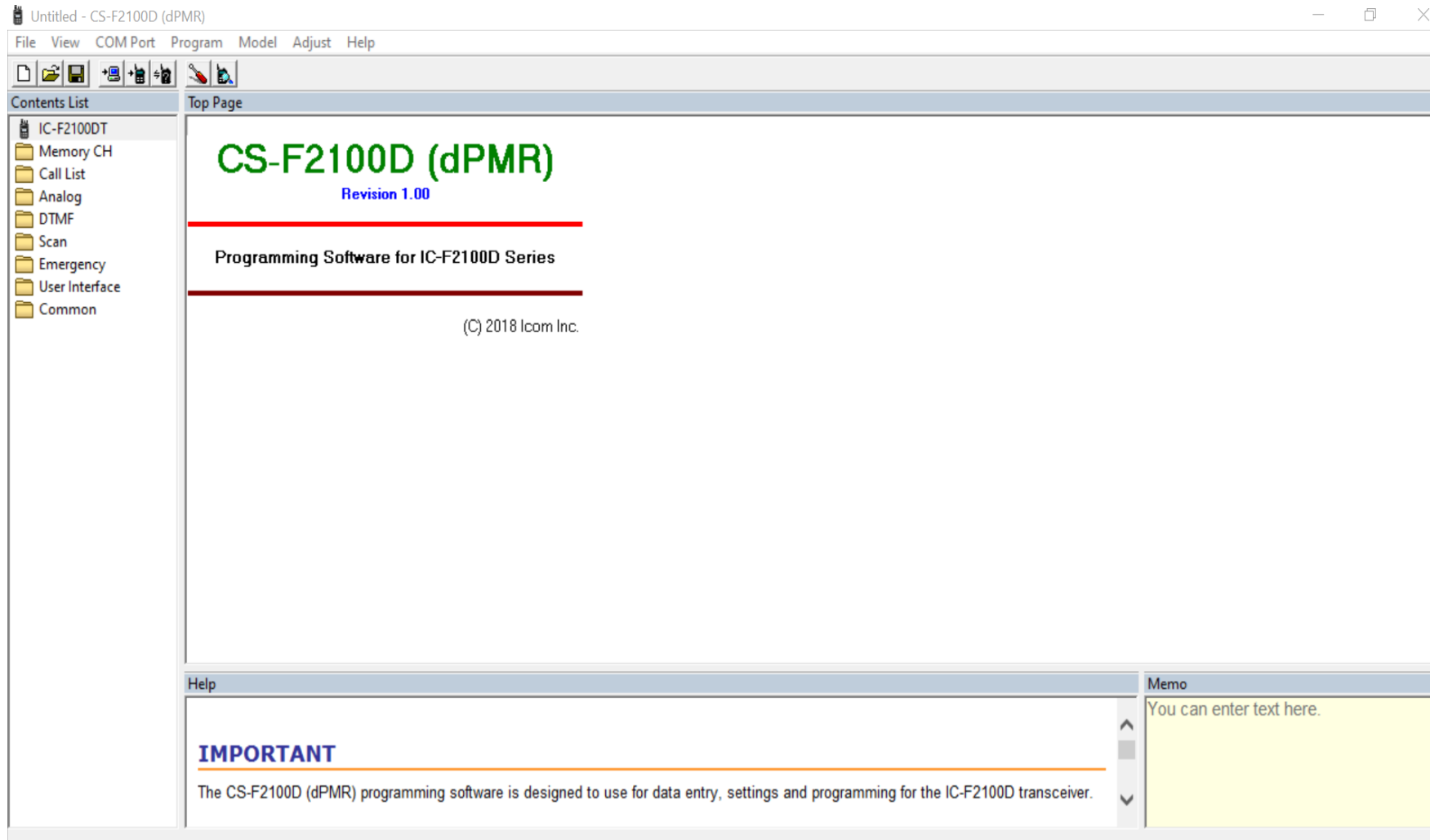


IC-F1100DS



Program iCOM handheld radio

- Run CS-F2100 (for handheld) – read standard codeplug file



Program iCOM handheld radio

- Add SelV channel, update the frequency PL (Continuous Tone)

Contents List Zone 1: (112 Remaining)

CH	Atr	Inh	Text	CH Type	Frequency (MHz)			C.Tone				Analog		Scan List	
					RX	TX	TX Inh	RX	TX	RF PWR	SQL Tight	Lock-out	Auto Reset	Bandwidth	Signaling Profile
1- 1	AB		UN RP 1	Analog	158.325000	153.325000	141.3	<	L1			Tim-A	N	1	
1- 2			SPX 1	Analog	152.325000	<	141.3	<	L1			Tim-A	N	1	
1- 3			SPX 2	Analog	142.500000	<	141.3	<	L1			Tim-A	N	1	
1- 4															
1- 5															
1- 6															
1- 7															
1- 8															

Analog - Signaling Profile: (31 Remaining)

List	CH Mute	Switch Action				Signaling			5-Tone								
		Moni	Sel	Call	PTT	Log-In/Off	Log-out	Emg-out	Decode	Form	RPT	L	STN	L	ID	L	Pos
1	OR	Both				L-OFF	5T	5T	5T	USER			14	15	BTM	12345678	
New																	

Program iCOM handheld radio

- Check SelV functions (SelV ID, stun, un-stun, silent interrogate)

CH	RX Code	Text	ID Dec	Bell	Emer Cancel	ABC	Ringer	Auto TX	Aud	Stun	Scan
1	140406801	CALL	ON				Melody1		Aud		
2	290406801	STUN	ON			16				Stun	
3	340406801	UNSTUN	ON			16				Revive	
4	440406801	INTERROG	ON			16					
5	99999	EMER II	ON				Melody11/R				
6	640406801	EMER EXI	ON		ON						
7	91++++++	ACK	ON								
8	++++++										
G	—	GROUP		Blink		—	PIPi		—	Aud	

Program iCOM handheld radio

- Write/clone
- Test admin functionality (stun, un-stun, silent interrogate, emergency)



Live demonstration - program iCOM handheld

- The facilitator will now show you how to program an iCOM handheld radio with SelV functionality.

Time needed:
appx 30mins



Admin functionality using iCOM radios

- Divide into three groups of 4 people
- Use a handheld radio and do the following:
 - program it with a network controller codeplug
 - Stun / un-stun and silently interrogate another user radio
 - Initiate and deal with an emergency alert
 - Confirm the features work as expected



Exercise



The network controller codeplug contains features that, when used incorrectly, can seriously disrupt network operations. Make sure to program this codeplug in network controller radios only!

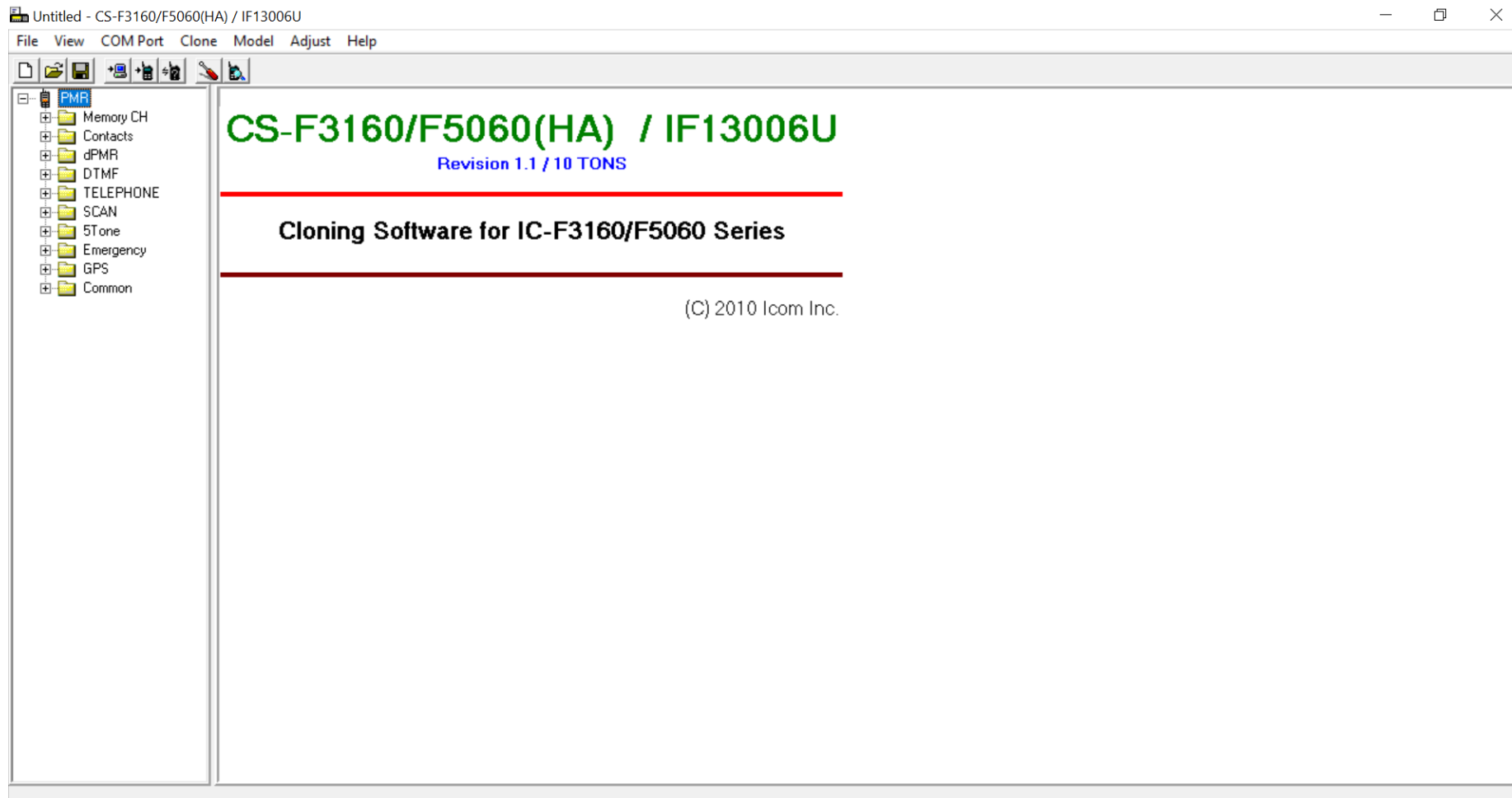
Program iCOM base/mobile radio

 iCOM



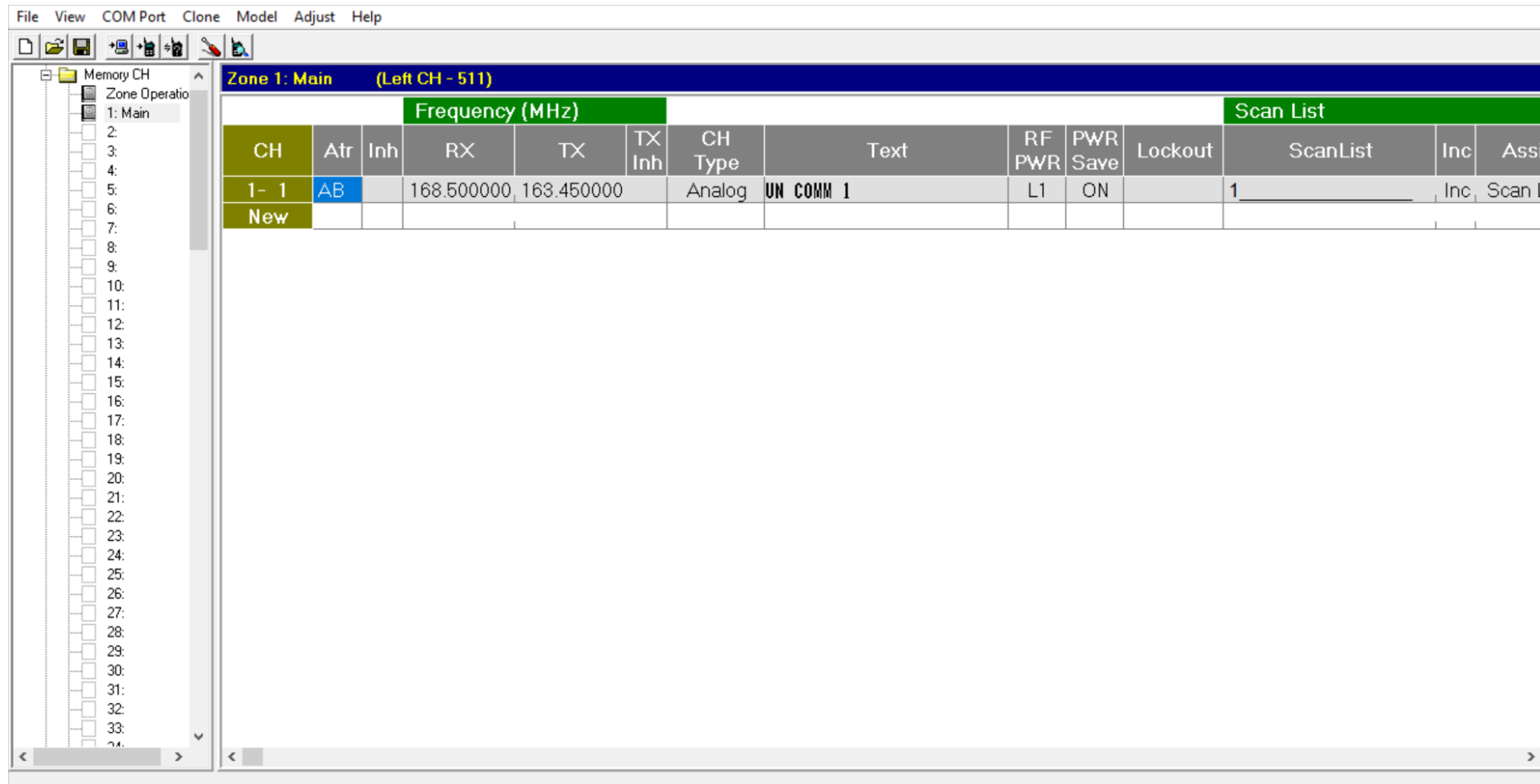
Program iCOM base/mobile radio

- Run CS-F3160_F5060 (for mobile and base) – read standard codeplug file



Program iCOM base/mobile radio

- Add SelV channel, update the frequency PL (Continuous Tone)

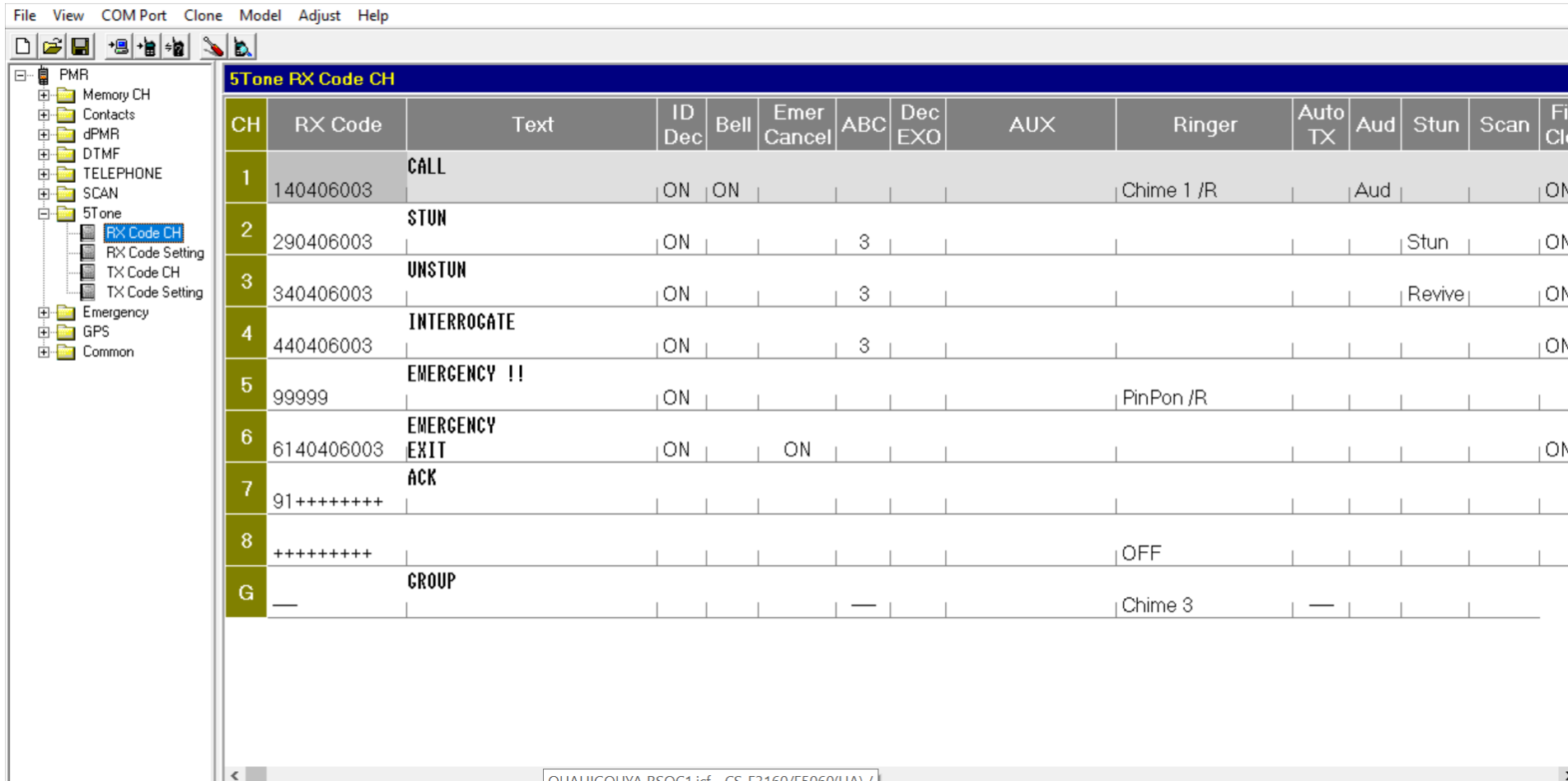


The screenshot displays the iCOM software interface. The main window is titled "Zone 1: Main (Left CH - 511)". On the left side, there is a tree view showing "Memory CH" and "Zone 1: Main" with a list of channels from 1 to 34. The main area contains a table with the following columns: CH, Atr, Inh, RX, TX, TX Inh, CH Type, Text, RF PWR, PWR Save, Lockout, Scan List, Inc, and Assi. The table has one row with the following data: CH: 1- 1, Atr: AB, Inh: (empty), RX: 168.500000, TX: 163.450000, TX Inh: (empty), CH Type: Analog, Text: UN COMM 1, RF PWR: L1, PWR Save: ON, Lockout: (empty), Scan List: 1, Inc: Inc, Assi: Scan L. Below the table, there is a "New" button.

Frequency (MHz)												Scan List		
CH	Atr	Inh	RX	TX	TX Inh	CH Type	Text	RF PWR	PWR Save	Lockout	ScanList	Inc	Assi	
1- 1	AB		168.500000	163.450000		Analog	UN COMM 1	L1	ON		1	Inc	Scan L	
New														

Program iCOM base/mobile radio

- Check SelV functions (SelV ID, stun, un-stun, silent interrogate)



The screenshot shows the '5Tone RX Code CH' configuration window in the iCOM software. The window has a menu bar (File, View, COM Port, Clone, Model, Adjust, Help) and a toolbar. On the left is a tree view showing the software's structure, with '5Tone' expanded to show 'RX Code CH' selected. The main area contains a table with columns for channel settings.

CH	RX Code	Text	ID Dec	Bell	Emer Cancel	ABC	Dec EXO	AUX	Ringer	Auto TX	Aud	Stun	Scan	File Clo
1	140406003	CALL	ON	ON					Chime 1 /R		Aud			ON
2	290406003	STUN	ON			3						Stun		ON
3	340406003	UNSTUN	ON			3						Revive		ON
4	440406003	INTERROGATE	ON			3								ON
5	99999	EMERGENCY !!	ON						PinPon /R					
6	6140406003	EMERGENCY EXIT	ON		ON									ON
7	91++++++	ACK												
8	++++++								OFF					
G	—	GROUP				—			Chime 3	—				

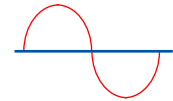
Program iCOM base/mobile radio

- Write/clone
- Test admin functionality (stun, un-stun, silent interrogate, emergency)

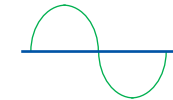


Programming repeater with standard codeplug

- Parameters to program a repeater:



Tx Frequency



Rx Frequency



TPL tone



Power level

Programming a repeater with standard codeplug

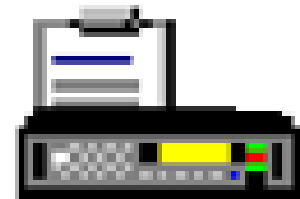
Resources:

- See the programming manual "Programming iCOM repeaters" in the {TESS+} online repository which will guide you on how to program an iCOM repeater.



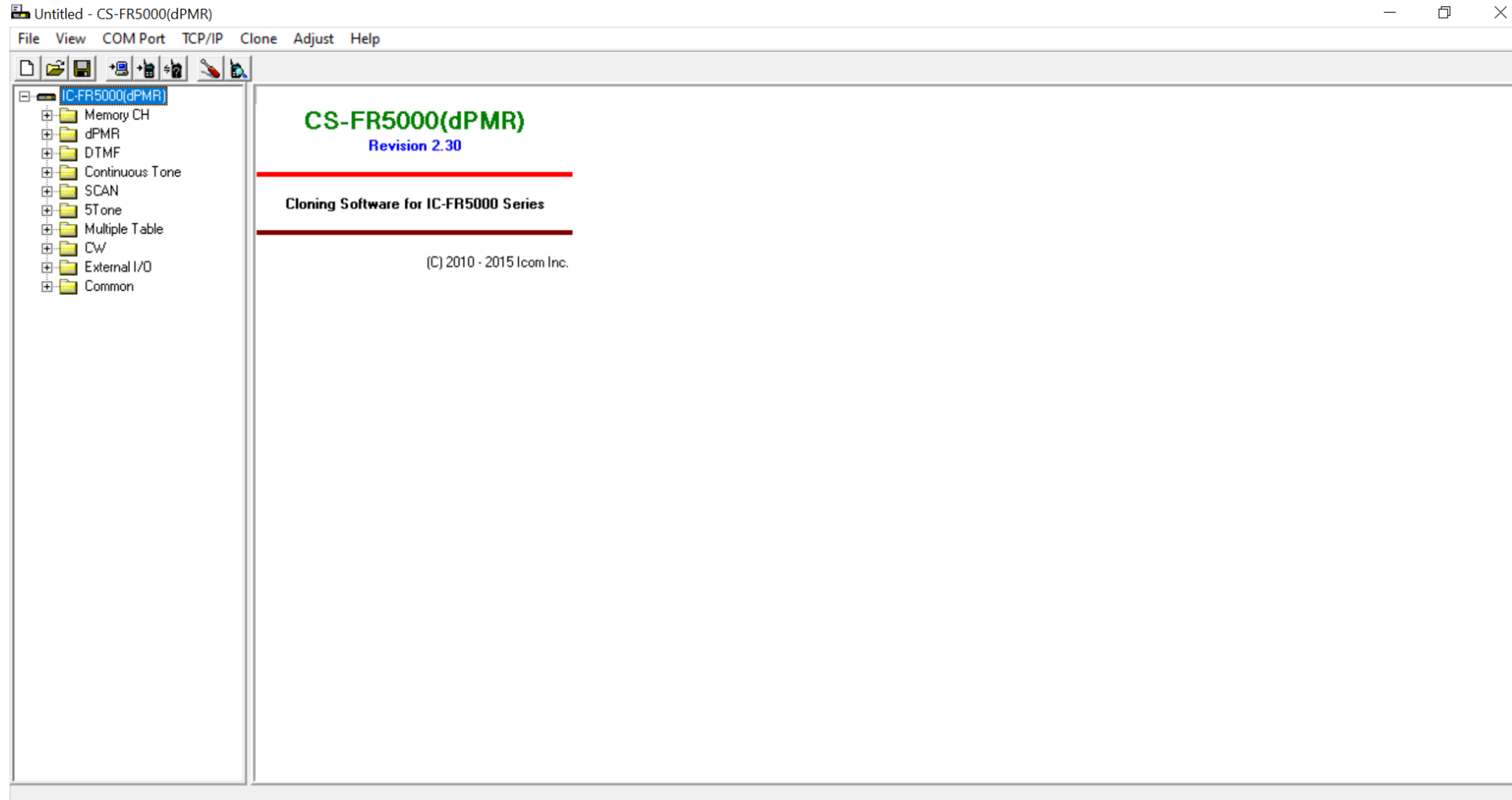
Programming iCOM repeater

 iCOM



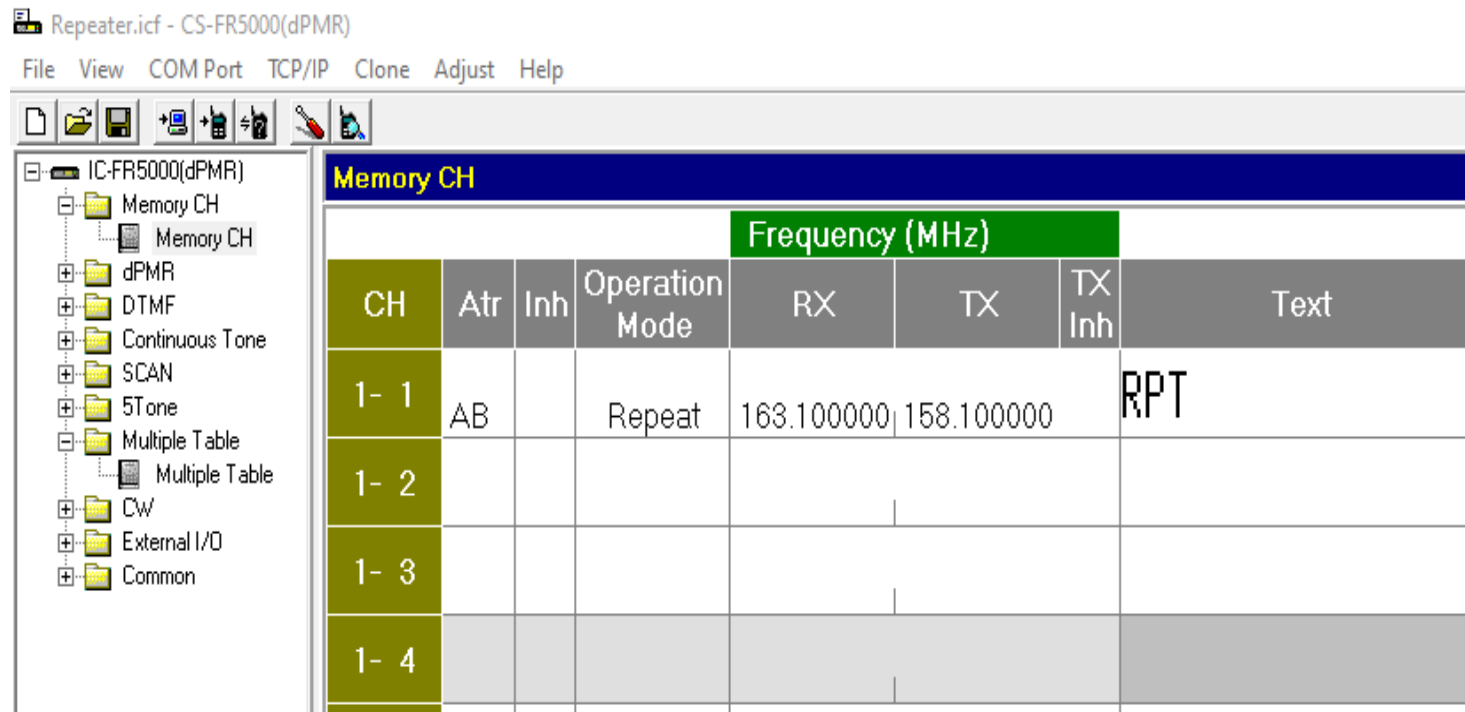
Programming iCOM repeater (CS-FR5000)

- Run CS-FR5000 – read standard codeplug



Programming iCOM repeater

- Add channel and change Tx/Rx frequencies



The screenshot shows the 'Repeater.icf - CS-FR5000(dPMR)' software interface. The main window displays a table for 'Memory CH' with the following columns: CH, Atr, Inh, Operation Mode, RX, TX, TX Inh, and Text. The table contains four rows, with the first row (1- 1) populated with data.

CH	Atr	Inh	Operation Mode	RX	TX	TX Inh	Text
1- 1	AB		Repeat	163.100000	158.100000		RPT
1- 2							
1- 3							
1- 4							

Programming iCOM repeater

- Add TPL tone: Select **Multi Table No. ▶ 1**

Repeater.icf - CS-FR5000(dPMR)

File View COM Port TCP/IP Clone Adjust Help

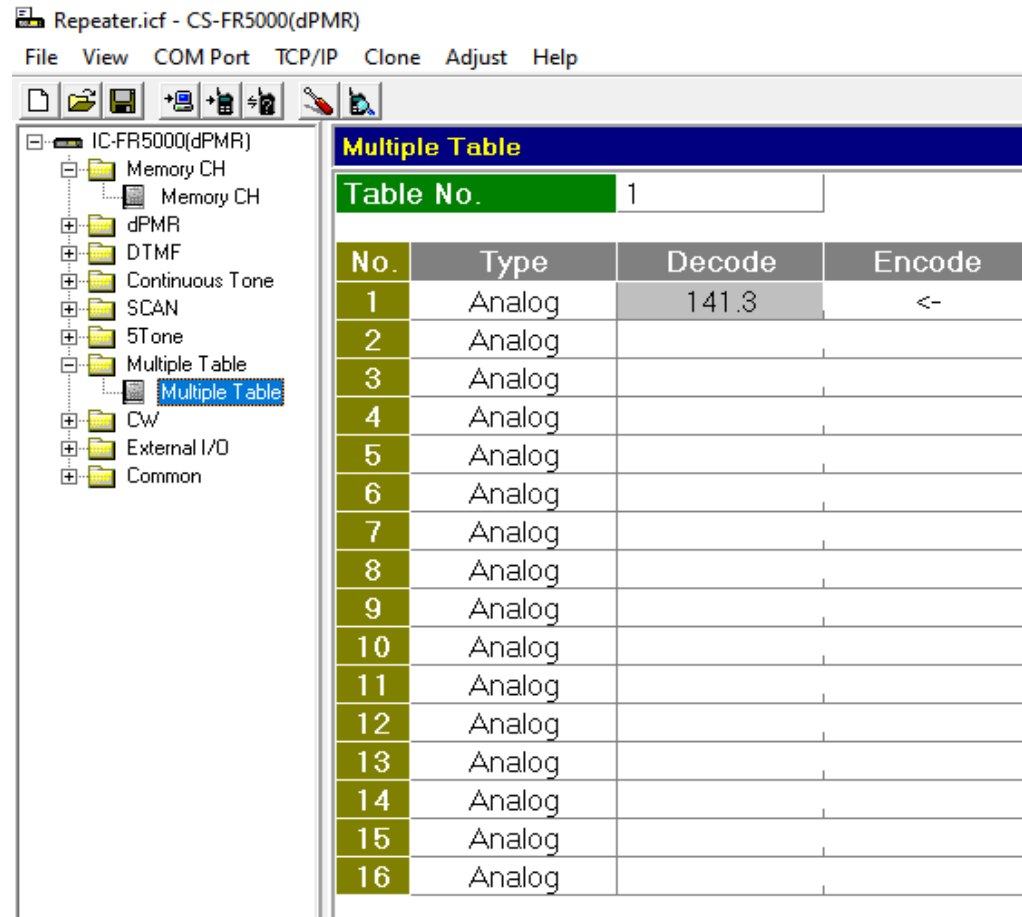
IC-FR5000(dPMR)

- Memory CH
- dPMR
- DTMF
- Continuous Tone
- SCAN
- 5Tone
- Multiple Table
- CW
- External I/O
- Common

Memory CH																					
CH		Atr		Inh		Operation Mode		Frequency (MHz)		TOT		Scan List					CW ID			Multi Table No.	
CH	Atr	Inh	Operation Mode	RX	TX	TX Inh	Text	Local Mic	Repeat/EPTT	RF PWR	Lock-out	Scan List	Inc	Assign	Sel Inh	Auto Scan	CH Type	Auto Reset	ON/OFF	Offset	Multi Table No.
1- 1	AB		Repeat	163.100000	158.100000		RPT CH1			H			Inc				Analog	Tim-B			1
1- 2																					
1- 3																					

Programming iCOM repeater

- Add TPL tone: Modify **Table No.** ▶ **1**, then WRITE



The screenshot shows the 'Repeater.icf - CS-FR5000(dPMR)' software interface. The left sidebar displays a tree view of the configuration options, with 'Multiple Table' selected. The main window shows the 'Multiple Table' configuration screen. At the top, there is a 'Table No.' field with the value '1'. Below this is a table with 16 rows and 4 columns: 'No.', 'Type', 'Decode', and 'Encode'. The first row (No. 1) is highlighted in green and contains the values '1', 'Analog', '141.3', and '<-'. The remaining rows (No. 2-16) are empty.

No.	Type	Decode	Encode
1	Analog	141.3	<-
2	Analog		
3	Analog		
4	Analog		
5	Analog		
6	Analog		
7	Analog		
8	Analog		
9	Analog		
10	Analog		
11	Analog		
12	Analog		
13	Analog		
14	Analog		
15	Analog		
16	Analog		

Live demonstration

- The facilitator will now show you how to program an iCOM repeater.

Time needed:
appx 30mins



Group exercise: programming an iCOM repeater

- The class will now come together for a group exercise where you will setup an iCOM repeater. This exercise is subject to the availability of equipment.

Time needed:
appx 45mins



Student resources & manuals

- SCS VHF-UHF standards V64
- TESS VHF standard codeplugs
- Equipment manuals (iCOM)

Please also see the following **manuals**:

- Programming Manual - Admin functions iCOM SelV
- Programming Manual – Programming iCOM repeater

Questions and remarks

