



Introduction

The new SmarTrunk Systems OMNI Logic Board Programming Software (available for download at our web site) is used to configure and program the new ICOM and Vertex 3G boards as well as some of the older non-3G boards for Vertex, ICOM and Alinco as specified below. This software makes it possible for the technician to customize the product for specific trunking, dispatch and conventional applications. This Software also allows the dealer to program certain features that are not possible by Keyboard Programming. Please refer to the New Features Section for information on these items. For features not covered in this document, or for custom requirements and applications, please contact SmarTrunk Systems for more information.

Recent **3G** boards compatible with this software:

ICOM: ST-866ICFor FS (FS denotes with scrambler option). Also same as UT-117

Vertex: ST-865VT60F or FS (FS denotes with scrambler option)

Older (non-3G) logic boards compatible with the new Omni Programming software:

ICOM: ST-865IC (Same as UT-105)

VERTEX: ST-865VT50 (Same as VTP-50)

Basic Start Up and Operation

1. Download the Multi-Product "Omni Logic Board Programming Software" from our website and install it to your PC.
2. Install the logic board into the radio according to the instructions included with your logic board.
3. Start the OMNI Logic Board Programmer Software on the desktop PC.
4. Connect the Radio Programming Cable between the PC serial port and radio transceiver.
5. Using the Programming Software "Serial Port" drop down menu, select appropriate serial port for communicating with the desk top PC.
6. Using the "PRODUCT" drop down menu, select the logic board model to be programmed.
7. Proceed to customize the logic board as required by entering data on the Program's Main Screen.
8. Set the radio transceiver, with logic board installed, to the PROGRAM or SUB CLONE mode. Please refer to the radio's programming Instructions on this procedure.
9. From the "CLONE" drop down menu, select "Establish Communications with Logic Board". Now select "Write to Logic Board" to write the data. Selecting "Read from Logic Board" will load the board's parameters to the programming screen.
10. Repeat steps 7 thru 9 to program additional Logic Boards.

New Features (Available on 3G Boards Only)

This section covers features that are now included in new 3G Logic Board designs. Any Logic Board model, which may not include one or more of these features, will have that feature disabled on the Main Screen.

CALLER ID DISPLAY

Caller ID information is now available on all SmarTrunk compatible transceivers equipped with a display.

A Caller ID is displayed upon receipt of an incoming call. The Caller ID displayed on the transceiver is the Subscriber Number of the originating caller if the call was originated by a Mobile to Mobile Call. In the case of Group Dispatch Calls (calls originated by pressing the PTT switch), the Caller ID displayed will be that of the Group ID selected, and not the individual ID of the user originating the call. The Caller ID information will be displayed immediately upon receipt of a received call. If Caller ID information is not available, the transceiver display will not change.

A Caller ID Recall Stack is also available. By pressing the Caller ID Programmable Function Key on the transceiver, a user may scroll through the Caller ID Recall Stack. Caller ID Stack contents are displayed on a LIFO (last in-first out) basis. Up to ten Caller ID numbers can be recalled. If the Caller ID Recall Stack contains no Caller ID information, a low 'chirp' tone is generated, and the transceiver display will not change. A 'chirp' tone is generated each time the Caller ID Function Key is pressed, and the display will be updated with the next Caller ID in the stack. A high 'chirp' tone is generated when the most recent Caller ID information is displayed. This tone is also generated when the Caller ID Recall Stack rolls over to the most recent Caller ID.

A Call can be initiated to any displayed Caller ID. When the desired Caller ID is displayed, pressing the PTT switch will immediately initiate the call. Caller ID Memory Stack information is only available when the transceiver is in the idle mode. Caller ID information cannot be accessed if the transceiver is currently engaged in a call.

If power to the transceiver is turned off, previous Caller ID information in the Logic Board is cleared. Caller ID is not available for Landline Calls at this time. Please note that older Smartrunk Base Controllers require both a hardware and firmware upgrade to incorporate this new feature. The ST-853CI controller has been shipping since February 2004, and is Caller ID ready.

The Caller ID Stack can only be accessed by a transceiver that supports the Programmable Function Key for this feature.

SCROLLING AND DISPLAY OF ALPHANUMERIC ID's FOR A PTT CALL

The new 3G Logic Boards now have the ability to store and display up to 16 Group or Individual names (Alpha Tags) of up to 10 upper case characters each (though only the amount of characters allowed by the radio's display will appear). Each Alpha Tag is assigned to an individual or group system ID using the SmarTrunk software. Tags can be scrolled for monitoring calls and/or for initiating a PTT call. Scrolling is done by a radio button, which has been assigned this function. Alphanumeric Tags cannot be programmed using the transceiver keypad.

NOTE: While programming an individual radio ID will allow a PTT call to an individual radio, if the individual remains selected, all calls made by that individual radio's group will be heard. The primary reason for programming an individual ID in this area would be so a user can make individual calls on a radio without a keypad.

In transceivers that cannot display Alpha Tags, the Codes will be displayed in a different format consisting of the pre-programmed "data field" selected (by scrolling) followed by the " * " character, and the actual Group Code. For example if pre-programmed data field 1 is selected, and the Group Code is '1234', then the display will indicate "1*1234". NOTE: Do not program any Alpha Tags if the transceiver is not SmarTrunk 3G compatible.

ALPHA-TAGGED SPEED DIAL DISPLAY

The Logic Board now has the ability to display Turbo or Speed Dial Numbers in an alphanumeric format. Alphanumeric Turbo or Speed Dial Tags are programmed into the Logic Board using the SmarTrunk programming software. Alphanumeric Tags cannot be programmed using the transceiver keypad. Up to 10 alphanumeric characters may be programmed in the Turbo/Speed Dial Tag field. Characters entered may only be in UPPER case. When programming Alpha Tags, note of how many characters can be displayed on the transceiver's screen and limit entries to this amount of characters.

If an Alpha Tag is not programmed, then the actual Speed Dial number will appear in the display. Do not program Turbo/Speed Dial Alpha Tags if the transceiver is not SmarTrunk 3G compatible.

SPEED DIAL LOCK

The Logic Board can store Speed Dial Numbers that are programmed by the transceiver's keypad, or by using this software designed for Logic Board programming. When using this software, an option is provided that allows the dealer to 'lock-out' a user from changing a pre-programmed Speed Dial Number. This feature allows the dealer to program Speed Dial Numbers for users, but inhibits the user from re-programming the selected Speed Dial location. Other Speed Dial locations that are not locked out may be programmed and changed by the user as required. Check this field to inhibit users from re-programming the Speed Dial Number in this location.

MOBILE OPERATION WITH A DTMF MICROPHONE

Some mobile transceivers were only able to operate in the Dispatch Mode due to incompatibilities with the DTMF microphone. The 3G Logic Board supports Smartrunk dialing commands from a DTMF microphone.

When using a radio transceiver equipped with a DTMF microphone, DTMF over dial digits may be transmitted only if the user presses the PTT switch first, and then begins dialing. Commands from the DTMF microphone to the Logic Board will only be accepted as commands if a DTMF key is selected without pressing the PTT switch.

When using a DTMF microphone with a mobile transceiver, be sure to enable the 'DTMF Microphone' option in the Logic Board by checking this option in this programming software. Do not use this option for portable transceiver operation as it will slow down the trunking connection process. Also, do not use this option with the Vertex "Command Microphone".

AUTOMATIC REGISTRATION

This feature allows the Logic Board to automatically register on a trunking system. Registration occurs on power up, and also when roaming to a new system with a different System ID Number. Also included is the "late-to-join" and "re-join" features.

This feature is compatible with the ST-510 Network System. **This feature should never be used except in conjunction with an ST-510 network.**

VOICE ENCRYPTION

Some Logic Boards are now equipped with a Voice Encryption feature. If the Logic Board that you are using has the Voice Encryption Option installed, microphone audio and discriminator audio PCB jumpers may need to be removed in the ICOM transceivers. No modification should be required in Vertex or Motorola products.

The Programmable Function Key, which is normally used as the Group Switch, now has a dual function. During idle operation, the Group Switch is normally used to display and scroll through the various programmed Group Codes. When a transceiver is engaged in a call, this Function Key becomes the Encryption Switch. By pressing this switch, the Encryption feature is toggled ON or OFF. A high 'chirp' tone is generated when the Encryption feature is turned ON. A low 'chirp' tone is generated when the Encryption feature is turned OFF. Transceivers that can display alpha characters will indicate 'ENCR ON' and 'ENCR OFF'. The user may turn the Encryption feature ON or OFF any time while engaged in a call. At the end of a call, the Encryption Switch function returns to the Group Switch function, and the Encryption stays in the mode it was set to when the last call was ended.

The Encryption feature is also available at any time while in the Conventional Mode of operation. While in Conventional Mode, the transceiver has control of the Voice Encryption. The transceiver must therefore be programmed to use the Voice Encryption using factory Programming Software.

The Logic Board will always remember the last position of the Voice Encryption feature. The Voice Encryption feature will therefore remain ON or OFF, as selected by the user for future calls.

The Logic Board Encryption is of Speech Inversion type. Please note that the Encryption feature is not available for landline calls at this time.

MANDOWN CALL

The Man Down Call can be initiated by a user by pressing and holding the Man Down button on the transceiver for one second. Any top or side button on the transceiver, that can be programmed as the Turbo Dial 'A' key in the radio programming software, may be used. This button is typically a red button on the top of the transceiver.

Once the MDE button is pressed for at least one second, three beep tones will be generated, and EMGR CALL is displayed on the transceiver. The user then has up to five seconds to press the Man Down button again to cancel the call if desired. After this time period, the transceiver will execute a connect procedure to the SmarTrunk System. This function is pre-programmed in the Logic Board to call subscriber code "0000". If a connection cannot be made, one additional connect procedure will be attempted in 20 seconds. A busy tone will indicate that a connection could not be made.

Upon successful connection to the SmarTrunk System, the transceiver will begin to cycle between a transmit and receive sequence. This sequence consists of a programmed time to transmit, and a programmed time to receive. Programmable time intervals range from 10 seconds ON and 10 seconds OFF to 3 minutes ON and 3 minutes OFF can be selected from the Mandown Timer drop down menu of the Logic Board Programming Software. A continuous transmit option is also provided. Each time the transceiver alternates between transmit and receive, a beep tone is generated to alert the user that the Man Down call is in progress. The Man Down call will continue until a disconnect code is received from the SmarTrunk System, or the user terminates the call by pressing the Man Down button.

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