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## **Type 8525B transceiver programming using the 8531 or 8532 control head**

### **1. Introduction**

The 8525B transceiver may be programmed using the 8531 or 8532 control head. The functions which may be programmed are summarised below:

- 99 P-Channels with USB/LSB selection and Selective Call, Emergency or Two-tone call options.
- Beacon Mode
- Two-tone frequencies (T1/T2/T3/T4)
- PTT-Cutout time
- Antenna Select output - Band or Frequency
- Deletion of all P-channels.

In addition the following settings may be viewed but not changed:

- Preamble length
- Selective Call self address
- Selective Call send address
- Scan program enabled/disabled
- Quietline enabled/disabled
- Beeps setting

When in the programming mode the transceiver is force-muted and the transmit function is disabled.

### **2. Connecting the programming head.**

In order to program the 8525B an 8531 or 8532 must first be connected to the transceiver and Link 1 fitted on the Microprocessor Controller PCB inside the transceiver. The control head can be connected in one of three ways:

1. Using a standard 8531 or 8532 control head connected to Option R on the 8525B.
2. Using the 8531 front panel only. In this case, remove the front panel assembly from the control head housing and connect it in place of the 8525B front panel on the transceiver.

- Using an adapter to connect the 8531 or 8532 control head directly to the P15 (10 way ribbon connector) on the transceiver motherboard. The connections for the required adapter are:

15 Way D-type Connector	Signal	10 Way Ribbon Connector
4	Power On	6
5	Data	4
7	Clock	1
9,10	Earth	7
14	Interrupt	2
15	<b>A</b> Rail	8

### 3. Channel Selection

In normal operation of the 8525B, P-channels override EPROM channels (discussed further in the channel programming section), with the user only seeing channel numbers between 1 and 99 on the 2 digit LED display.

In the programming mode, however, the user has a full display and can see both EPROM and P-channels. These are interleaved for convenience ie when pressing the channel up pad, the channel sequence would be channel 1, P1, 2, P2, 3, etc. Thus it is always possible for the person programming the channels to see both the EPROM channel and the P-channel which would ordinarily override it. **'delete'** channels also appear in the same way as P-channels.

Channel selection is achieved in the same way as for an 8528/8528S transceiver - ie use the channel up/down pads or the recall channel number sequence.

### 4. Channel Programming

P-channels may be programmed in much the same way as with an 8528. In the 8525B, however, any programmed P-Channels will override the corresponding EPROM channel ie P43 replaces EPROM channel 43 and appears on the 8525B display as '43'. In addition, a special 'dummy' P-channel (called a 'delete' channel) may be programmed which effectively deletes the corresponding EPROM channel.

When programming P-Channels, options such as USB/LSB and RFDS Emergency and Two-tone signalling can be programmed. These options are programmed after programming the Rx frequency and before programming the P Channel number.

#### 4.1 Programming an ordinary P-Channel (Refer 8528 Operators Handbook)

<u>Action</u>	<u>Display will show</u>	<u>Remarks</u>
Select a channel - for example	CHL Tx 12.345.6 1 Rx 12.345.6	
Press <b>Enter</b>	Entr Tx _____ 1 Rx 12.345.6	Next action must be started within 60 seconds.
Press number pads for Tx frequency required.	Entr Tx 2.111.0 1 Rx 12.345.6	Limit: 2000 to 24000 (2000 to 23000 for option H)
Press <b>Enter</b>	Entr Tx 2.111.0 1 Rx _____	
Press number pads for receive freqy (if same as Tx, press <b>Enter</b> )	Entr Tx 2.111.0 1 Rx 2.111.0	Limit: 250 to 30000
Press <b>Enter</b>	Entr OPTION 1 __U__	USB is selected by default.
Press <b>Call</b> button to select S/t1/t2/t3/t4 or nothing. Press <b>Emgcy Call</b> for option E	Entr OPTION 1 t2_U__	Each press of Call button selects next option.
Press <b>USB/LSB</b> pad to select U or L.	Entr OPTION 1 t2L__	Each press selects next option.
Press <b>Enter</b>	Entr Tx 2111 P__ Rx 2111	
Press number pads for channel number	Entr Tx 2111 P12 Rx 2111	
Press <b>Enter</b>	CHL Tx 2111 P12 Rx 2111	

**Note:** Duplex channels (where Tx & Rx frequencies are different) can only be programmed on channels P70 - P99.

## 4.2 Programming a dummy P-Channel ('Delete' Channel)

<u>Action</u>	<u>Display will show</u>	<u>Remarks</u>
Select a channel - for example	CHL Tx 12.345.6 1 Rx 12.345.6	
Press <b>Enter</b>	Entr Tx _____ 1 Rx 12.345.6	Next action must be started within 60 seconds.
Press '0'	Entr Tx inhib 1 Rx _____	
Press '0'	Entr Tx inhib 1 Rx .0	
Press <b>Enter</b>	CHL dELEtE d__	
Press number pads for channel number then <b>Enter</b>	CHL dELEtE d23	Channel 23 is now 'deleted'

## 4.3 Removing a P-Channel

<u>Action</u>	<u>Display will show</u>	<u>Remarks</u>
Select channel to be deleted	CHL Tx 12.345.6 P 2 Rx 12.345.6	
Press <b>Enter</b>	Entr Tx _____ P 2 Rx 12.345.6	Next action must be started within 60 seconds.
Press <b>Enter</b>	Entr Tx 12.345.6 P 2 Rx _____	
Press <b>Enter</b>	Entr OPTION P 2 __U__	
Press <b>Enter</b>	Entr 12.345.6 P__ 12.345.6	
Press '00'	Entr Tx 12.345.6 P00 Rx 12.345.6	
Press <b>Enter</b>	CHL Tx 2020 P 1 Rx 2020	Selected channel has been deleted, now on previous channel

**Note:**

If there is a corresponding EPROM channel, the EPROM channel will now operate.

#### 4.4 Removing a 'delete' Channel

<u>Action</u>	<u>Display will show</u>	<u>Remarks</u>
Select channel to be deleted	CHL dELEtE d23	
Press <b>Enter</b>	CHL dELEtE d_	
Press <b>'00'</b>	CHL dELEtE d00	
Press <b>Enter</b>	CHL Tx 4560 22 Rx 4560	Selected channel has been deleted, now on previous channel

**Note:** If there is a corresponding EPROM channel, the EPROM channel will now operate.

#### 5. Enabling P-Channels for Normal Operation

To enable P-Channels, Link 3 on the Microprocessor Controller PCB must be fitted. Without this link fitted, programmed P-Channels will not operate (although all other programmed options will be valid).

**Note:** Issue 1.0 EPROMs do not require link 3 to be fitted in order to enable P-Channels.

#### 6. Option Programming

Many functions that can be user programmed in the 8528 can also be programmed on the 8525B. These have exactly the same effect as in an 8528 but cannot be changed by the user in normal operation.

##### 6.1 Introduction

Several options may be programmed or changed by entering a special set-up mode. The following options may be programmed:

- a) Beacon mode On-Off
- b) Two-tone call frequencies
- c) PTT timer (cut-out)
- d) Antenna Select output - Band or Frequency
- e) Deletion of all P-channels.

The general procedure is the same to enter all set-up modes. Initially the

transceiver must be off and the programming head and link 1 fitted as described above. Then push and hold the required pad to enter the desired mode. Next, switch the transceiver on (do not hold the Power On/Off pad down). The transceiver is now in the set-up mode.

## 6.2 Beacon mode On-Off / Two-Tone Frequencies

1. Hold the **Call** pad and switch on, as above
2. The call preamble length is displayed first, but cannot be changed.
3. Press the **Call** pad to view the selective call calling address and again to view the selective call self-identification.
4. Press the **Call** pad again to view the current beacon mode setting. Press any or pad to turn the Beacon Mode on or off.
5. The two-tone frequencies are set next. **t1** and **t2** have preset frequency pairs but may be changed if necessary. Pressing **Enter** will cycle through **t1 Hi, t1 Lo, t2 Hi, t2 Lo, t3 Hi**, etc. Where required, the number pads may be used to enter a frequency between 300Hz and 2800Hz. Single tones may also be set by setting either the high or low tone to zero.
6. Press the **Call** pad to check each setting and then switch the transceiver off.

## 6.3 PTT timer (cut-out)

If this facility is enabled, the microphone PTT starts a timer every time the transceiver transmits. If the continuous transmit time is greater than that the limit set, the transceiver will be forced back to the receive mode and an error indicated until the PTT is released. Normal operation is then resumed.

The timer is set to 10 minutes at the factory but may be changed to any time between 5 and 35 minutes in 5 minute steps, or disabled completely.

1. Hold the **Tune** pad and switch on, as above
2. Using any of the or pads, select the desired cut-out time (**OFF** = disabled)
3. Switch the transceiver off.



## 6.4 Antenna Select output - Band or Frequency

The antenna select output from the transceiver can provide either frequency band or channel information. When channel mode is selected, a number from 0 to 15 is output in binary format indicating the channel number. This number 'wraps around' so that channel 16, for example will produce 0, channel 17 will produce 1, etc. In the band mode, a number is output indicating the transmit frequency band as per the table below:

<b>BAND</b>	<b>Frequency (kHz)</b>
1	< 2000
2	2000 - 2999
3	3000 - 4999
4	5000 - 7999
5	8000 - 12999
6	13000 - 19999
7	> 20000

1. Hold the **Channel** pad and switch on, as above
2. Use the **Channel** pad to select either **CHAN** or **bANd** output.
3. Switch the transceiver off.

## 6.5 Deletion of all P-channels.

All P-channels and programmable settings may be deleted as below:

1. Hold the **Recall** pad and switch on, as above
2. The display will show

**PUSH CLEAR**  
**Entr P-CHLs**

3. To delete all the P-channels and setting, the **Enter** pad must be pressed within 2 seconds. The deletion process will take approximately 15 seconds. An indication of the progress of the deletion and a completion message will be given.
4. Turn the transceiver off.

## 7. Option Programming using the 8525 Front Panel.

Some of the programmable options described above can also be programmed from 8525B front panel. The options that may be programmed in this way are:

- a) Antenna Select output - Band or Frequency
- b) Deletion of all P-channels.

The general procedure is the same to enter all set-up modes. Initially the transceiver must be off and Link 2 on the Microprocessor Controller PCB fitted. Then push and hold the required pad to enter the desired mode. Next, switch the transceiver on (do not hold

the Power On/Off pad down). The transceiver is now in the set-up mode.

## 7.1 Antenna Select output - Band or Frequency

The effect of the antenna select output from the transceiver is described above.

1. Hold the **Channel** pad and switch on as above
2. Use the **Channel** pad to select either **CH** (channel) or **bA** (band) output.
3. Switch the transceiver off.

## 7.2 Deletion of all P-channels.

All P-channels and programmable settings may be deleted as below:

1. Hold the **Mute Off** pad and switch on as above
2. The deletion process will take approximately 15 seconds. The **Called Led** will illuminate, and the display will slowly trace out two zeroes (**00**) to give an indication of the progress of the deletion. When the deletion is complete, the display will show two dashes (--).
3. Switch the transceiver off.