

The *CHIPSWITCH*™

**Enhanced Microcomputer
for the
UNIDEN
HR2510, HR2600 & Lincoln
Radios**

Operator's Manual

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1.0 INTRODUCTION

The **HR2510/HR2600/LINCOLN** 10 METER Amateur Radio manufactured by UNIDEN Corporation of America does not encompass many of the useful and desirable features of the modern day Amateur radio. The **CHIPSWITCH** is a custom microcomputer chip (integrated circuit) designed to replace the existing UNIDEN microcomputer chip in these radios, thus providing many new features.

2.0 FEATURES

30 MEMORY CHANNELS WITH TEMPORARY CHANNEL LOCKOUT AND REPEATER OFFSETS

The original **HR2510/HR2600/LINCOLN** has basically one memory available to it in the sense that it remembers the frequency you were last on during a power interruption. The **CHIPSWITCH** supplies you with three groups of **MEMORY BANDS**. There are now ten (10) user programmable frequency channels available for each **MEMORY BAND**. You can elect to have repeater offsets to any of the stored memory channels. You are also provided with the ability to **lockout** any memory channel(s) temporarily during **SCAN/SEEK** functions.

EXTENDED FREQUENCY COVERAGE (Requires optional hardware)

Along with the installation of the optional **12 Meter Modification Kit**, the **CHIPSWITCH** allows full coverage from **24.800 to 29.999 Mhz.** (12 - 10 Meters) **Note: A 12 Meter Modification Kit can be installed by an independent source. This source (Derrell) can be reached at (801) 269-0130 .**

PROGRAMMABLE SCAN/SEEK FUNCTION

The original **HR2510/HR2600/LINCOLN** allows you to scan on an arbitrary "*band-basis*." This new feature allows you to select a range of frequencies for **SCAN** and **SEEK** while in band 0, or **SCAN/SEEK** by memory channels in bands 1, 2, and 3. The **SCAN** feature allows you to set the "**hold-time**" (the amount of time the radio waits to resume its scan function after that particular frequency quiets down). The **SEEK** feature is identical to the **SCAN** except for when the radio is scanning and detects activity on a frequency, the radio will receive on that particular frequency for a user-programmed length of time before it continues the scan. **SCAN** and **SEEK** are completely user programmable in 5 or 10 Khz steps.

PROGRAMMABLE CHANNEL UP/DN BUTTONS

This provides you with the ability to program the radio's channel up and down buttons to change channels/frequencies in any one of five (5) different ways.

PROGRAMMABLE MICROPHONE CHANNEL UP/DN BUTTONS

This provides you with the ability to program the microphone channel up and down buttons to change channels/frequencies in any one of eight (8) different ways.

PROGRAMMABLE TRANSMITTER TIMEOUT

This feature provides the radio with a built-in QSO timer. This feature, when enabled, triggers a programmable timer the moment the radio starts transmitting. When the user programmed length has been achieved, the radio will stop transmitting. To continue transmitting, just release and press the microphone **PTT** (Push-To-Talk) Button.

PROGRAMMABLE TRANSMIT FREQUENCY RANGE

This provides you with the ability to program a range of frequencies to operationally transmit on. In this mode of operation, you still have the ability to receive frequencies out of the user-programmed range but can not transmit on them.

SPLIT FREQUENCY OPERATION

When enabled, this allows you to transmit on one frequency and receive on another.

PRIORITY CHANNEL (Requires optional hardware)

Priority channel operations allow you to program any frequency (i.e., home frequency) and have the **HR2510/HR2600/LINCOLN** check this frequency while you are on another, at a user-programmed rate.

MISCELLANEOUS

- * The "SPAN UNDERLINE CURSOR" now has a "*phantom*" 4th position (3 underline bars) cursor. This enables you to go through the band in 100 KHz increments. This "*phantom*" 4th position is indicated by 3 cursers.
- * The "SPAN UNDERLINE CURSOR" can be moved by pressing both microphone buttons at the same time.
- * The button repeat rate is now programmable.
- * The internal "*button beep*" duration is now programmable from 0 to 0.5 seconds.
- * The "RPTR" button on the **HR2600**, when depressed, will transmit the CTCSS tone to open up a repeater station. Repeater offset selection is required when programming memory frequencies.
- * The **HR2510/HR2600/LINCOLN** now has two functional modes:

OPERATE MODE

This mode is the radio's normal mode.

PROGRAM MODE

The front panel controls are used to program information the radio will use during **OPERATE MODE** (i.e., memory channel frequencies, split channel, scan functions, etc.). The radio will not transmit while in the **PROGRAM MODE**.

3.0 INSTALLATION

!! WARNING !!

The **CHIPSWITCH** Central Processing Unit (CPU) is a **STATIC SENSITIVE DEVICE** and should NOT be removed from its black anti-static shipping box until you are told to do so in the **HARDWARE INSTALLATION GUIDE**.

3.1 HARDWARE INSTALLATION

PLEASE REFER TO THE HARDWARE INSTALLATION GUIDE.

3.2 FIRST TIME INSTALL / POWER UP

The first time the **HR2510/HR2600/LINCOLN** is powered up, after the **CHIPSWITCH** has been installed, you will be required to enter the type of radio you are using. The radio will display "**HR2510**" as the first choice, "**HR2600**" as the second choice and "**LINCOLN**" as the third. Press the **Span** button until the type of radio you have is displayed on the readout. Then press the **Band** button to enter that selection into the microcomputer's memory. You are only required to do this when the **CHIPSWITCH** is installed into your radio for the first time or if you issue a **MASTER RESET** command.

Note:

If your radio is turned off for an extended period of time, or if a severe electrical disturbance (sparking wires, shorts, etc) is caused on the power supply to the radio, the internal memory inside the microcomputer chip may "forget" what you have programmed into it. If this should happen, your radio will display "**HR2510**" and you will need to re-program it just as you did when the chip was first installed. Also, a severe electrical disturbance may cause your radio's memory to become "confused", causing improper frequencies or strange characters to be displayed on the readout. If this should happen, invoke a **MASTER RESET** function and then re-program the radio.

4.0 OPERATIONS

4.1 ENABLE/DISABLE FUNCTIONS

While the **HR2510/HR2600/LINCOLN** is in **OPERATE MODE**, you can enable or disable any of the radio's major functions from the front panel. Some of these functions are not operational in specific "**BANDS**." The display segments to the left of the frequency readout, and the band indicator are used to indicate which function(s) are enabled. (see below)

<u>FUNCTION</u>	<u>BAND</u>	<u>INDICATION</u>	<u>KEYS PRESSED</u>
Program Mode En/Disable	0,1,2,3	P (Band pos)	F.lock/Meter ⁽¹⁾ /Chan Up
Memory Chan Temp. Lockout	1,2,3	Top Bar	F.lock/Scan/Chan DN
Scan Limits ON/OFF	0	Bottom Bar	F.lock/Band/Scan
Split Freq. OPNS. ON/OFF	0	H/L	F.lock/Band/Chan DN
Split Freq OFFSET change ⁽¹⁾	0	H/L	F.lock/Scan/Chan UP
Priority Channel ON/OFF ⁽²⁾	0,1,2,3	Flashing Band	F.lock/Scan/Chan UP
Go to PRIORITY CHANNEL ⁽²⁾		P	F.lock/Scan/Meter ⁽²⁾
MASTER RESET	0,1,2,3	Hr2510	F.lock/Scan/Meter ⁽²⁾ /PwrON

NOTE: (1) This function will only work if **PRIORITY CHANNEL** frequency is not programmed.

(2) This function will only work if **PRIORITY CHANNEL** frequency is programmed.

(3) On the **LINCOLN** radio, use **INDICATOR** instead of **METER**.

4.1.0 PROGRAM MODE

This function enables you to program the new **CHIPSWITCH** features on the **HR2510/HR2600/LINCOLN**.

- Step 1. Press the **F.lock** button in
- Step 2. Press the **Meter** (**INDICATOR** for the **LINCOLN**) and **CHAN UP** buttons simultaneously

The radio notifies you that you are in **PROGRAM MODE** with "**4 beeps.**" and a "**P**" displayed in the **Band** indicator. At this point, you are able to program any of the **46 FEATURES** outlined in the **PROGRAMMING** section of this manual.

4.1.1 MEMORY CHANNEL TEMPORARY LOCKOUT

This enables you to temporarily lockout any user-programmed frequency(s) for **SCAN** and **SEEK** functions. To enable or disable this toggle function:

- Step 1. Assuming frequencies were programmed into any **memory group**, go to any **MEMORY BAND** (**Band 1, 2 or 3**) where you wish to scan or seek
- Step 2. Choose the frequency(s) you wish to lockout temporarily using the **CHAN UP** or **CHAN DN** buttons
- Step 3. Press the **F.lock** button in
- Step 4. Press **Span** and **CHAN DN** buttons simultaneously (Top bar indicator comes on)
- Step 5. Release the **F.lock** button
- Step 6. Start the **SCAN** or **SEEK** function

At this point the frequency(s) that were "**locked-out**" will not be included when you perform the **SCAN** or **SEEK** function on that particular **MEMORY GROUP**.

4.1.2 SCAN LIMITS ON/OFF

This toggle function allows you to enable or disable the **SCAN** and **SEEK** frequency limits for **Band 0**. If this toggle function is enabled, and a **lower** and an **upper** frequency limit is programmed in **FEATURE 3 and 4**, the radio will scan or seek only between these frequencies. To enable and use this feature:

- Step 1. You must be in **Band 0**, and have **FEATURE 3 and 4** programmed with the limits
- Step 2. Press the **F.lock** button in
- Step 3. Press the **Band** and **Span** buttons simultaneously (Bottom bar indicator comes on)
- Step 4. Release the **F.lock**
- Step 5. Press the **Scan** button

At this point the radio will either **SCAN** or **SEEK** depending on the value programmed in **FEATURE 5**. If a **scan** value (0-3) is programmed in **FEATURE 5**, the scan hold time rate will be determined by **FEATURE 6**. Squelch has to be closed for the **SCAN** function to work properly. If a **seek** value (4-7) is programmed in **FEATURE 5**, the seek hold time will be determined by **FEATURE 7**.

SCAN and **SEEK** also functions in **BAND 1, 2 and 3**. The difference being that in these **memory bands**, you either scan or seek through the **MEMORY CHANNELS** previously programmed in these **MEMORY BANDS**.

4.1.3 SPLIT FREQUENCY OPERATIONS ON/OFF

This toggle function allows you to transmit on one frequency while receiving on another. **Split Frequency** is only available in Band 0. To enable and use this function:

- Step 1. Go into **PROGRAM MODE**
- Step 2. Go to **FEATURE 1** and enter a value for your TX/RX offset (000.1 - 999.9)
- Step 3. Go to **FEATURE 2** and choose whether the offset will be **positive (1)** or **negative (0)**
- Step 4. Exit **PROGRAM MODE** (Now you must be in Band 0)
- Step 5. Press the **F.lock** button in
- Step 6. Press **BAND** and **CHAN DN** buttons simultaneously. Either an "**H**" or "**L**" indicator will come up depending on the value programmed in **FEATURE 2**.
- Step 7. Release the **F.lock** button
- Step 8. Choose a *receive frequency*

At this point you are ready to communicate in **SPLIT FREQUENCY** mode.

OPERATING IN SPLIT FREQUENCY MODE

To use this function reliably, the two parties involved in the QSO must be versed on operating split channels. Two users are mentioned in the explanation below, **OPERATOR A** and **OPERATOR B**, to better understand the procedures.

- Step 1. **OP A** and **OP B** must have the **SAME** offset programmed in **Feature 1**
- Step 2. **OP A** and **OP B** must have **OPPOSITE** polarity programmed in **Feature 2**
- Step 3. **OP A** chooses his **receive frequency** using the **VFO**, **CHAN UP/DN** or **MIC UP/DN** buttons
- Step 4. **OP B** moves to his **receive frequency**, which is **OP A's** transmit frequency, using the **VFO**, **CHAN UP/DN** or **MIC UP/DN** buttons

Note:

OP B's receive frequency = (**OP A's** receive frequency) + or -(offset in **Feature 1**) The + or - is determined by **OP A's** polarity in **Feature 2**.

- Step 5. **OP A** and **OP B** enables **SPLIT FREQUENCY OPERATIONS**
- Step 6. **START COMMUNICATION**

4.1.4 SPLIT FREQUENCY POLARITY CHANGE

The **SPLIT FREQUENCY POLARITY** is initially programmed in the **PROGRAM MODE**. In some instances, you may wish to change polarity without having to go into Program mode. To use this feature:

- Step 1. Press **F.lock** button in
- Step 2. Press **Scan** and **CHAN UP** buttons simultaneously
- Step 3. Release the **F.lock** button

Note:

This toggle function will only work if **PRIORITY CHANNEL** frequency is not programmed. (Because the same buttons are used for both, and **PRIORITY CHANNEL ON/OFF** function has precedence)

4.1.5 PRIORITY CHANNEL ON/OFF (Requires optional Priority Board)

This function, when enabled, allows you to continuously monitor one frequency while operating on another. To enable this function:

- Step 1. Go into **PROGRAM MODE**
- Step 2. Enter a frequency in **FEATURE 44**
- Step 3. Exit **PROGRAM MODE**
- Step 4. Press the **F.lock** button in
- Step 5. Press the **Scan** and **CHAN UP** buttons simultaneously
- Step 6. Release the **F.lock** button

4.1.6 PRIORITY CHANNEL CHECK & LOCK

FEATURE 45 allows you to select **PRIORITY CHANNEL** functionality. If you choose a value between 0 and 3, the priority channel selected in **FEATURE 44** will be checked and the radio "beeps" you of any activity on that channel. This feature only notifies you of activity on the priority channel. To lock on to the priority channel, you will have to:

- Step 1. Press the **F.lock** button in
- Step 2. Press **Scan** and **METER (INDICATOR for the LINCOLN)**
- Step 3. Release the **F.lock** button

If you choose a value between 4 and 7, the priority channel will be checked for activity. If the squelch is broken, the radio will "lock" on to the priority channel and remain there until the activity ceases. To keep the radio from returning to the original operating frequency when activity ceases on the priority channel, press the **F.lock** button in.

4.1.7 MASTER RESET

- Step 1. Power off the radio
- Step 2. Press the **F.lock** button in
- Step 3. Press and hold the **SCAN** and **METER (INDICATOR for the LINCOLN)** and turn the radio on all at the same time

This FUNCTION erases all user programmed values and installs the factory default values. This FUNCTION also brings the radio to a "First-Time Install" state.

4.1.8 USING SPLIT CHANNEL with PRIORITY CHANNEL FUNCTION

If both the **SPLIT FREQUENCY OPERATIONS** and **PRIORITY CHANNEL** functions are enabled, the **SPLIT FREQUENCY OFFSET CHANGE** function is disabled because, the same set of keys is used to enable the **PRIORITY CHANNEL** function. With the squelch closed, the **SPLIT FREQUENCY OPERATIONS** will function as it should. As soon as the priority channel squelch is broken, the radio will switch to the priority channel. If you lock on to the priority channel and transmit at this time, both the **SPLIT FREQUENCY OPERATIONS** and **PRIORITY CHANNEL** functions will be disabled and you will be transmitting on the priority channel.

5.0 OPERATE MODE

While in the **OPERATE MODE**, all original radio functions and buttons work as they did before **EXCEPT** for the following:

BANDS: (Selected by pushing the **BAND** Button)

<u>BAND</u>	<u>NAME</u>
0	Frequency Band
1	Memory Group 1
2	Memory Group 2
3	Memory Group 3
4	Citizens' Band

FREQUENCY BAND (0)

This is the entire tuning range of the **HR2510/HR2600/LINCOLN**. Some user defined functions in **PROGRAM MODE** are available only on this band (i.e., **SCAN/SEEK LIMITS**, **SPLIT FREQUENCY OPERATION**). The radio's **Channel UP/DN** and the **Microphone UP/DN** buttons control any frequency change as selected in the **PROGRAM MODE** features 8 and 9. The radio's **VFO** knob works as before.

MEMORY GROUP 1 (1)

A maximum of **10 frequencies** can be stored in this memory group. In this band, channel numbers (**0 - 9**) appear on the display with the user-programmed frequencies. A minus (-) **100 KHz REPEATER OFFSET** can be selected on a channel-by-channel basis in the **PROGRAM MODE**. This is indicated by the blinking **10MHz** digit of the front panel display. Frequencies/channels previously programmed can be temporarily **locked-out** from the **SCAN/SEEK** function using the **MEMORY LOCKOUT FUNCTION**.

MEMORY GROUP 2 (2)

This is the second group of memory channels and is operationally identical to **MEMORY GROUP 1 (1)**.

MEMORY GROUP 3 (3)

This is the third group of memory channels and is operationally identical to **MEMORY GROUP 1 (1)** and **MEMORY GROUP 2 (2)** **EXCEPT** this band operates on a **PLUS (+) 100 KHz REPEATER OFFSET** if this option is chosen in the **PROGRAM MODE**.

SCAN, CHANNEL UP/DN, AND MIC UP/DN

These functions are user-programmable in the **PROGRAM MODE**.

LOCAL BEEP TONE

The local beep tone can now be disabled or programmed from 1/20th second "click" to a 1/2 second long tone.

6.0 PROGRAM MODE

Most of the features have been pre-programmed from the factory and will have default values stored in memory. You will have to determine which features (detailed in the next section) you wish to change.

To enter **PROGRAM MODE**:

- Step 1. Press the F.lock button in
- Step 2. Press the **CHANNEL UP** and **METER** buttons simultaneously

When the **HR2510/HR2600/LINCOLN** goes into **PROGRAM MODE** you are notified by "4 - beeps" and the **BAND** indicator will display a "P" indicating the radio is in **PROGRAM MODE**. In this mode, the **METER** display (RF, MOD, ^, SWR) will be blank. The **CHANNEL NUMBER** display will show "0" indicating the first enhanced **FEATURE (BEEP ON-TIME)** programmable by you. The **FREQUENCY** display will have the right-most digit (100Hz) illuminated with the default value for this **FEATURE**.

You can review/change the values of any of the **46 FEATURES** using the **CHANNEL UP/DN** buttons and **VFO** knob of the radio. The **Channel Up/Dn** buttons select which **FEATURE**, and the **VFO KNOB** changes the **VALUE** of that feature.

CAUTION: Leave the F.lock button depressed to prevent accidental programming if you are just going to view the programmable features. If you plan to change the value for a particular **FEATURE**, the F.lock button must be in the "out" position for the **VFO** knob to work.

To exit the **PROGRAM MODE**:

- Step 1. Press the F.lock button in
- Step 2. Press the **CHANNEL UP** and **METER** buttons simultaneously

The radio will "beep" once and return to the **OPERATE MODE**.

ENABLE/DISABLE FUNCTIONS (Repeated from page 3)

While the **HR2510/HR2600/LINCOLN** is in **OPERATE MODE**, you can enable or disable any of the radio's major functions from the front panel. Some of these functions are not operational in specific "BANDS." The display segments to the left of the frequency readout, and the band indicator are used to indicate which function(s) are enabled. (see below)

<u>FUNCTION</u>	<u>BAND</u>	<u>INDICATION</u>	<u>KEYS PRESSED</u>
Program Mode En/Disable	0,1,2,3	F (Band pos)	F.lock/Meter ⁽¹⁾ /Chan Up
Memory Chan Temp. Lockout	1,2,3	Top Bar	F.lock/Scan/Chan DN
Scan Limits ON/OFF	0	Bottom Bar	F.lock/Band/Scan
Split Freq. OPNS. ON/OFF	0	H/L	F.lock/Band/Chan DN
Split Freq OFFSET change ⁽¹⁾	0	H/L	F.lock/Scan/Chan UP
Priority Channel ON/OFF ⁽²⁾	0,1,2,3	Flashing Band	F.lock/Scan/Chan UP
Go to PRIORITY CHANNEL ⁽³⁾	0,1,2,3	P	F.lock/Scan/Meter ⁽³⁾
MASTER RESET	0,1,2,3	Hr2510	F.lock/Scan/Meter ⁽³⁾ /PwrON

- NOTE: (1) This function will only work if **PRIORITY CHANNEL** frequency is not programmed.
 (2) This function will only work if **PRIORITY CHANNEL** frequency is programmed.
 (3) On the **LINCOLN** radio, use **INDICATOR** instead of **METER**.

7.0 PROGRAMMING

Following is a detailed explanation of all the **PROGRAMMABLE FEATURES** and how you can program each individual **FEATURE**:

FEATURE	NAME	DESCRIPTION	VALUE
0	BEEP ON-TIME	duration of the "beep" tone whenever certain buttons are pressed.	0 = OFF 1 = 1/20 th sec 2 = 1/10 th sec (DEFAULT) 3 = 1/5 th sec 4 = 1/2 sec
1	SPLIT FREQUENCY OFFSET	transmit offset	OFFSET (000.1 - 999.9KHz)
2	SPLIT FREQUENCY OFFSET POLARITY	transmit offset polarity (positive/negative)	0 = Neg. (L) (DEF.) 1 = Pos. (H)
3	SCAN/SEEK LOWER FREQUENCY LIMIT	lower limit used during scan/seek operations in Band 0	FREQUENCY
4	SCAN/SEEK UPPER FREQUENCY LIMIT	upper limit used during scan/seek operations in Band 0	FREQUENCY

NOTE: SCAN/SEEK by these limits is only functional in **Band 0**. If no values are entered in **feature 3** and **feature 4**, the radio's lowest and highest operational limits are used as defaults during SCAN/SEEK.

- 5 SCAN/SEEK FUNCTION SELECT
- SEEK is identical to SCAN except SEEK will resume after [seek hold time] delay, regardless of activity on frequency.

ZLD = Zero Lower Digit(s)
SLD = Skip Lower Digit(s)

VALUE	BAND 0	BANDS 1, 2, 3
<u>SCAN</u>		
0	10 KHz ZLD	SCAN MEMORY CHANNELS
1	10 KHz SLD	
2	5 KHz ZLD	
3	5 KHz SLD	
<u>SEEK</u>		
4	10 KHz ZLD	SEEK MEMORY CHANNELS
5	10 KHz SLD	
6	5 KHz ZLD	
7	5 KHz SLD	

- 6 SCAN HOLD TIME
- the delay from when a remote station quits transmitting and the scan sequence continues on your **HR2510/HR2600/LINCOLN**
- 0 = .5 sec
1 = 1 sec
2 = 2 sec
3 = 3 sec (DEF.)
4 = 4 sec
5 = 5 sec
6 = 6 sec
7 = 7 sec

7	SEEK HOLD TIME	When in seek mode, the delay from when the radio begins receiving a signal and the seek sequence continues	0 = .5 sec 1 = 1 sec 2 = 2 sec 3 = 3 sec 4 = 4 sec (DEF.) 5 = 5 sec 6 = 6 sec 7 = 7 sec
8	CHANNEL UP/DN BUTTON FUNCTION	defines what the CHANNEL UP and CHANNEL DOWN buttons will do in BAND 0	0 = 10KHz,ZLD (DEF.) 1 = 10KHz,SLD 2 = 5KHz,ZLD 3 = 5KHz,SLD 4 = 100Hz 5 = Underlined digit
9	MICROPHONE UP/DN BUTTON FUNCTION	defines what the CHANNEL UP and CHANNEL DOWN buttons on the microphone will do	0 = 10KHz,ZLD (DEF.) 1 = 10KHz,SLD 2 = 5KHz,ZLD 3 = 5KHz,SLD 4 = 100Hz 5 = Underlined Digit 6 = In BAND 0 do as FEATURE 8 . In BAND 1, 2, 3 or 4 , change CH. NO. 7 = In BAND 0-3 do as FEATURE 8 . In BAND 4 change CHAN. NO.
10-19	MEMORY GROUP 1 (CHANNEL 0 - 9)	10 channels can be defined under this memory group	FREQUENCY
20-29	MEMORY GROUP 2 (CHANNEL 0 - 9)	10 channels can be defined under this memory group	FREQUENCY

NOTE: To use the automatic **minus (-) 100KHz repeater offset** under **MEMORY GROUP 1 and 2**, press the **SCAN** button after entering the frequency. The **10MHz** digit will blink to indicate that this channel has been programmed to use the **OFFSET** option. To disable, press the **SCAN** button again.

30-39	MEMORY GROUP 3 (CHANNEL 0 -9)	10 channels can be defined under this memory group	FREQUENCY
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NOTE: To use the automatic **plus (+) 100KHz repeater offset** under **MEMORY GROUP 3**, press the **SCAN** button after entering the frequency. The **10MHz** digit will blink to indicate that this channel has been programmed to use the **OFFSET** option. To disable, press the **SCAN** button again.

Any memory channel with a frequency of **00.000.0** is un-programmed and will be skipped during the **OPERATE MODE**. To erase a frequency from any **MEMORY GROUP**, ensure the **F.lock** button is out, then press the **BAND** button to set the frequency to **00.000.0**.

40	TX LOWER FREQUENCY LIMIT	defines the lowest operational transmit frequency for the HR2510/HR2600/LINCOLN	FREQUENCY
41	TX UPPER FREQUENCY LIMIT	defines the highest operational transmit frequency for the HR2510/HR2600/LINCOLN	FREQUENCY (must be a higher value than #40)
42	TX TIMEOUT	when enabled, timer starts as soon as the HR2510/HR2600/LINCOLN starts transmitting and counts up the user specified length of time. The radio will stop transmitting and display " <i>Err 0</i> " when the timer has expired.	0 = DISABLED (DEF.) 1 = 25 sec 2 = 42 sec 3 = 58 sec 4 = 75 sec 5 = 92 sec 6 = 109 sec 7 = 126 sec
43	REPEAT KEY SPEED	this allows you to change the repeat key rate of the CHAN UP/DN and MIC UP/DN buttons.	0 = fast 9 = slow 2 = DEFAULT
44	PRIORITY CHANNEL	user priority frequency (i.e., home frequency)	FREQUENCY

NOTE: REQUIRES ADDITIONAL HARDWARE TO FUNCTION PROPERLY

45	PRIORITY CHANNEL FUNCTION SELECT	allows you to select which type of priority channel checking will be used. The first four choices check the priority channel and " <i>beeps</i> " you for any activity The second four choices check priority channel and " <i>locks</i> " on the channel when there is activity	CHECK & BEEP 0 = 2 sec (DEF.) 1 = 4 sec 2 = 6 sec 3 = 8 sec CHECK & LOCK 4 = 2 sec 5 = 4 sec 6 = 6 sec 7 = 8 sec
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NOTES: (DEF) = The first time the **CHIPSWITCH** is installed on the **HR2510/HR2600/LINCOLN**, these are the values that will be displayed upon entering **PROGRAM MODE**.

Any frequency type feature may be erased in program mode by pressing the **BAND** button with the **F.Lock** button out.

8.0 SERIAL NUMBER DISPLAY

To display the **SERIAL NUMBER** of the **CHIPSWITCH** chip, perform the following:

- a. Prepare to enter **PROGRAM MODE**. Hold the microphone in one hand and prepare the other hand to press the buttons necessary to enter the **PROGRAM** mode.
- b. Press the buttons necessary to enter **PROGRAM MODE**. **AFTER** the first of the 4 "beeps" but **BEFORE** the end of the 4th "beep", press in the microphone's **PTT** (transmit) button.
- c. The chip's **serial number** will now be displayed for as long as you keep holding in the mike's **PTT** button.

Note: This is useful in case you ever need to know the chip's serial number but don't have it written down.

9.0 ERROR MESSAGES

If the **HR2510/HR2600/LINCOLN** detects an error with any of the programmed data, or during **OPERATE MODE**, an **ERROR CODE** will be displayed on the frequency display. The format of the **ERROR CODE** is as follows:

"Err X"

where X is:

- 0 = Transmitter Timeout timer has timed-out
- 1 = Transmit Frequency is lower than TX Lockout Lower Limit (programmed)
- 2 = Transmit Frequency is greater than TX Lockout Higher Limit
- 3 = Phase-locked-loop (PLL) won't lock at this transmit frequency
- 4 = PLL is intermittently coming out of lock during transmit

If your radio displays error 3 or 4, don't keep trying to transmit on this frequency. The cause of the problem could be low power supply voltage to the radio or the radio's **VCO** loop needs adjustment. Refer to a qualified technician for service. In the USA call Derrell at (801) 269-0130.