

## Radio Firmware V2030+ Improved RX Performance & End-User adjustable Squelch

Entel has released V2030+ firmware (versions 2030 to 3001) providing the following benefits:

- Improved squelch tail performance when used with a repeater
- Improved range performance
- Improved audio output
- Improved monitor function (resets on channel change)
- Simple Flash Access Mode (needs latest FlashWriter v2.2.0.0)
- End user adjustable squelch
- Improved CTCSS decode performance

## Upgrade Option A – Early release .dll's

To gain all the above benefits the following steps must be performed:

Please use dll Version 2030 - 2034 (non 5-Tone models) or Version 2030 - 3004 (5-Tone models).

- 1. Flash update the radio
- 2. Read the radio with Entel Programmer
- 3. Write programming data to the radio (even if no changes made)
- 4. Re-Calibrate RX sensitivity & squelch and write back to the radio\*\* (see instructions on page 2)
- \*\* If upgrading from v2030 or above this step will not be required.

### Upgrade Option B

### If you do not wish to re-calibrate your radios:

Please install dll Version at or above version 2035 (non 5-Tone models) or 3005 (5-Tone models).

- 1. Flash update the radio
- 2. Read the radio with Entel Programmer
- 3. Write programming data to the radio (even if no changes made)

This will set the squelch opening point at approximately -121 to -117.4 dBm and will maintain the radio's existing range performance.

# Please note: you may perform step 4 of Upgrade Option A at any time to improve the radios range performance



## Radio Firmware V2030+ Improved RX Performance & End-User adjustable Squelch

The latest version of radio Entel radio firmware provides improved receiver performance and the optional ability to adjust squelch from the radio.

Following upgrade a significantly improved edge of range performance will be gained. If required the radio may also be programmed to include and end-user adjustable squelch control (please see section 2).

## SECTION 1 – Improved RX Performance

Following firmware upgrade please re-calibrate the radios receiver by following this simple method:

- 1. Ensure the radio is in programming mode and read the data from the radio.
- 2. In Entel programmer, click on the <u>'radio performance</u>' folder in the menu tree:



3. Click on TRx Tuning, and press 'proceed':





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4. Select the "RX tuning" tab and then the first RX filter and set the test set to send a signal at -120 dBm on the correct frequency (in this example 399.9250MHz).

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Rx filter1 tur	ning				
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STOP!	p Read	u   w	rite Apply	Exit	
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5. Adjust the "Rx filter1 tuning" slider for best SINAD (clearest receive).



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Once you have adjusted for best SINAD, press 'set squelch' to re-calibrate the squelch at this frequency.

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7. Repeat this for the following 3 RX Filters.

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**Custom squelch level** – Allows a pre-defined squelch level setting to be used. This must be set after the RX filters have been adjusted.

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		<u></u>					<b>U</b>
8.	Set custom radio to oper to save the s	squelch lev at when the etting.	rel - Adjust the e "custom" sque	test-set F Ich level i	RF output level is selected. The	to the level n press 'Set	you require the t Master Squelch'
9.	Select defa level. This ca	<b>ult squelch</b> n either be o	level - Use the ne of the prese	drop dov t values c	vn box to select or the custom le	t the radios evel.	default squelch

(<u>Note</u> the preset levels indicated in dBm are approximate and may vary from radio to radio. Please use your test-set to confirm the squelch level.)

To complete calibration click on	Apply	and then	Write	l
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## The radio can now be disconnected from the Entel Programmer



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## SECTION 2 – End-User Adjustable Squelch

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The radio can now optionally be programmed to provide end-user adjustable squelch control.

1. In the menu, select 'General & Buttons' and go to the buttons tab. You can then select 'Squelch Level' on the button of your choice.

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2. Program the radio with this new setting.

### To use this feature:

- 1. On the radio press the "<u>squelch level</u>" button (the channel encoder will now become the squelch control)
- 2. On <u>16 channel</u> radios:
  - Channel 1 will be the lowest squelch level (open squelch)
  - Channel 15 will be the highest squelch level
  - Channel 16 will use the preset 'custom' squelch setting
- 3. On 255 channel radios the squelch levels will be displayed in the radios LCD
- 4. Once you have selected the desired setting, press PTT to save the squelch setting

These steps can be repeated to change the squelch setting again