CHIRP - Bug # 8321

Status:	Closed	**Priority:**	Normal
Author:	Dan Allongo	**Category:**	
Created:	10/12/2020	**Assignee:**	Jim Unroe
Updated:	11/20/2020	**Due date:**	
Chirp Version:	daily		
Model affected:	UV-5R		
Platform:	All		
Subject:	Incorrect tone values for ANI/PTT-ID		

Description

The DTMF tones for ANI and PTT-ID are incorrect for my Baofeng UV-5R (recently purchased from Amazon in Sep. 2020).
The values programmed in CHIRP were sending the wrong tones (but I can produce all tones correctly pressing the keypad manually during transmit).
Entering the following values into the ANI and PTT-ID fields produced the following:

- programmed "*", output DTMF B
- programmed "#", output DTMF C
- programmed "A", output DTMF D
- programmed "B", output DTMF *
- programmed "C", output DTMF #
- programmed "D", output 800Hz tone

Using the Developer Functions (View->Developer->Show raw memories) I was able to figure out the correct values and tones for my radio:

- 0x0A = DTMF A (Menu)
- 0x0B = DTMF B (Up)
- 0x0C = DTMF C (Down)
- 0x0D = DTMF D (Exit)
- 0x0E = DTMF *
- 0x0F = DTMF #
- 0x10 = 800Hz (PTT + MONI)
- 0x11 = 1000Hz (PTT + CALL)
- 0x12 = 1450Hz (PTT + VFO/MR)
- 0x13 = 1750Hz (PTT + A/B)
- 0x14 = 2100Hz (PTT + BAND)

Build: CHIRP daily-20200909
OS: Windows 10 Home 1909 (64-bit)
Programming Cable: Baofeng-branded, identifies as CH340 (VID: 1A86, PID: 7523, REV: 0263)

Radio: Baofeng UV-5R (no special branding or model designation, just the standard dual-band, dual-power model)
Firmware: HN5RV011 (151123H)
Power+6: 190831M
Power+3: Ver BFB298

Related issues:

related to Bug # 3351: BUG IN CHIRP FOR BAOFENG UV-5R AND UV-5R2+ HT'S	**Closed**	**02/18/2016**

Associated revisions

Revision 3409:fdf3c9d0165b - 10/21/2020 06:40 pm - Jim Unroe

[UV-5R] Incorrect Tone Values for ANI/PTT-ID

This patch addresses the changes to the "dtmfchars" brought about by the HN5RV01 firmware.

While making these changes it was also discovered that the ANI code for these radios is limited to only numeric DTMF characters. This patch also makes this correction.

Fixes #8321

History

#1 - 10/12/2020 11:11 am - Dan Allongo

I should mention that all 8 units that I've purchased over the past month exhibit this behavior. They are all standard Baofeng UV-5R with the same Firmware, Power+6, and Power+3 messages. Two of them have serial numbers beginning with "19U" and shipped with the A-V85 antenna (about 7" long) and the remaining 6 radios have serial numbers beginning with "13U" and shipped with the standard "rubber duck" antenna (about 6" long). So it would appear that this is a behavior quirk of the 190831M firmware.

#2 - 10/16/2020 10:58 am - Jim Unroe

- Status changed from New to Feedback

- Platform changed from Windows to All

Dan,

I've good news and I've got bad news.

The good news - I have confirmed what you are seeing with my Radioddity UV-5RX3.

The bad news - All but one Baofeng UV-5R programming software I have tested with matches CHIRP exactly (it should, CHIRP was programmed from the factory programming software). The exception is the factory programming software for the UV-5RX3. It crashes during the upload when you try to program a PTT-ID with a non-numeric DTMF character (*, #, A, B, C and/or D). I need to test it to see what happens if *, #, A, B, C and D are set to your discovered values.

So far every Baofeng UV-5R like and UV-82 like radio I have programmed the DTMF A, B, C and D digits has worked as expected. The question is, when did Baofeng (un)intentionally make this change? I wonder it if coincides with the introduction of the (my least favorite) HN5RV01 firmware? I've got other radios that I can test when I get a chance.

Jim KC9HI

#3 - 10/16/2020 01:43 pm - Dan Allongo

Jim,

I suspect that they never expected or tested anything other than digits 0-9 for ANI. Looking at the ANI in the Menu on the radio, the following is displayed on the screen for each value:

- 0x0A = ":" (should be "A")
- 0x0B = ";" (should be "B")
- 0x0C = "<" (should be "C")
- 0x0D = "=" (should be "D")

- 0x0E = ">" (should be "*")
- 0x0F = "?" (should be "#")

They're seemingly just displaying chr(val + 0x30) instead of doing any sort of lookup.

#4 - 10/16/2020 02:34 pm - Jim Unroe

I have confirmed that my UV-82T (a tri-band version of the UV-82) also has this issue. The factory software fails in exactly the same way as the UV-5RX3 factory software. If there are any non-numerical DTMF digits (*#ABCD) programmed, the upload will crash crashes the programming software.

CHIRP indicates that it too has N5RV01 firmware. I'm going to dig out some radios from a few years ago that have HN5RV01 firmware and see if they also have this issue.

Something I have learned from all of this, the factory software has never allowed the use of non-numeric DTMF digits for the ANI-ID! And the radio won't accept them either. The radio rejects the the first non-numeric digit and everything after that is stored for the ANI-ID.

Jim KC9HI

#5 - 10/16/2020 05:27 pm - Jim Unroe

Yep the Retevis RT-5RV with HN5RV01 firmware from 2016 has the same issue. But the factory programming software matches CHIRP (or CHIRP matches the factory programming software depending on your point of view) and not the radio.

Jim KC9HI

#6 - 10/16/2020 07:11 pm - Jim Unroe

- File uv5r_fix_for_hn5rv_firmware.py added

Dan,

Please give this custom driver module a try. It should adjust "dtmfchars" selection based on whether the image is from a UV-5R/UV-82 like radio with HN5RV01 firmware or not. It also only allows the ANI Code to use DTMF 0-9 characters.

Save the attached custom driver module (left-click the link and choose the "download" link on the page that loads - you cannot right-click to download this file). Then use File -> Load Module to temporarily load this test module. This module is only temporary. It does not permanently change your CHIRP installation in any way. Once you close CHIRP, you must load this module again to use it.

I have to do some more testing on radios that do not have HN5RV01 firmware to make sure they still work. Let me know how this works for you.

Jim KC9HI

#7 - 10/17/2020 08:20 am - Dan Allongo

Jim,

I've tested the module and confirmed that I was only able to set digits 0-9 for ANI and that the DTMF tones for *#ABCD are correctly set and transmitted for PTT-ID. The patch looks good to me.

#8 - 10/21/2020 04:46 pm - Jim Unroe

- Status changed from Feedback to In Progress

- Assignee set to Jim Unroe

Patch to be submitted soon.

Jim KC9HI

#9 - 10/21/2020 04:47 pm - Jim Unroe

- Status changed from In Progress to Resolved

- % Done changed from 0 to 100

Patch submitted.

Jim KC9HI

#10 - 11/19/2020 01:14 pm - Anonymous

- Status changed from Resolved to Closed

Applied in changeset commit:fdf3c9d0165b.

#11 - 11/20/2020 05:00 am - Jim Unroe

Fix available in the latest CHIRP daily build.

Jim KC9HI

Files

uv5r_fix_for_hn5rv_firmware.py	63.6 kB	10/16/2020	Jim Unroe