

## CHIRP - New Model # 3363

<b>Status:</b>	In Progress	<b>Priority:</b>	Normal									
<b>Author:</b>	Pavel Milanes	<b>Category:</b>										
<b>Created:</b>	02/20/2016	<b>Assignee:</b>	Pavel Milanes									
<b>Updated:</b>	04/24/2020	<b>Due date:</b>										
<b>Chirp Version:</b>	daily											
<b>Equipment Loan Offered:</b>	No											
<b>Subject:</b>	Kenwood TK-790 Single Head											
<b>Description</b>	<p>I got a Kenwood TK-790 with a single head borrowed from a friend for a week or more, with a homebrew interface that has it's tricks... more on this later</p> <p>I'm tainting it and found it use a single wire bus at TTL levels and the interface talks DIRECTLY to this "TRD" bus.</p> <p>It has Three blocks of memory, corresponding (as per my assumptions) to the main three IC that connect to the bus:</p> <ul style="list-style-type: none"><li>- The main CPU</li><li>- The Head CPU</li><li>- Other undetermined now.</li></ul> <p>I see a checksum on just one of the three blocks, I will check if it's a classic checksum, more on this later.</p> <p>73</p>											
<b>Related issues:</b>	<table><tr><td>related to New Model # 2835: Kenwood TK Commercial series</td><td><b>Closed</b></td><td><b>08/26/2015</b></td></tr><tr><td>duplicated by New Model # 2345: SGC SC-2020</td><td><b>New</b></td><td><b>02/23/2015</b></td></tr><tr><td>duplicated by New Model # 3307: Would like to pay to have models added to CHIRP</td><td><b>Feedback</b></td><td><b>02/10/2016</b></td></tr></table>			related to New Model # 2835: Kenwood TK Commercial series	<b>Closed</b>	<b>08/26/2015</b>	duplicated by New Model # 2345: SGC SC-2020	<b>New</b>	<b>02/23/2015</b>	duplicated by New Model # 3307: Would like to pay to have models added to CHIRP	<b>Feedback</b>	<b>02/10/2016</b>
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duplicated by New Model # 2345: SGC SC-2020	<b>New</b>	<b>02/23/2015</b>										
duplicated by New Model # 3307: Would like to pay to have models added to CHIRP	<b>Feedback</b>	<b>02/10/2016</b>										

### History

#### #1 - 02/20/2016 01:02 pm - Pavel Milanes

- Assignee set to Pavel Milanes
- Chirp Version changed from 0.4.0 to daily

#### #2 - 02/20/2016 02:21 pm - Pavel Milanes

- File o.img added
- Status changed from New to In Progress
- % Done changed from 0 to 10

Progress people !!!

I have now a working download/upload helper script, I have figured out the mem layout and Checksum. I will be now get busy creating the skeleton of the driver and starting to map the mem.

Attached is the first memory image

Happy weekend.

#### #3 - 02/20/2016 02:28 pm - Mike Maynard

Awesome!! Keep me posted on this

I have not been able to get anywhere with the TK-780 but maybe the more you get going, I may be able to make more sense of it!

**#4 - 02/20/2016 02:48 pm - Pavel Milanes**

The radio has 3 main block of memory that get read independently by different algorithms, for Chirps engine I will concatenate it as follows:

**Low memory** (Apparently Main CPU data & settings)

*0x0000 to 0x4000*

**Mid memory** (Unknown yet)

*0x4000 to 0x4090*

**High memory** (Apparently Head memory with channel data)

*0x4090 to 0x6090*

Data in the mem is at a glance, 73 I get back to work on it.

**#5 - 02/20/2016 07:58 pm - Tom Hayward**

*- File tk790.py added*

I started on the TK-790H a few years ago. I'm not sure how useful it will be, but here is my work-in-progress. I don't recall how much of this is complete vs copied from another driver and unmodified (for instance, I know I never tried an upload, so the upload code is probably wrong). Hopefully it will save you a little time.

**#6 - 02/20/2016 08:51 pm - Pavel Milanes**

Interesting, I will review it a few minutes.

I'm giving the final touch to the set\_channel now, and the download/upload is working well.

The channel management by it self is working fine, but I need so analyze more closely the other areas in which banks vs. channels are arranged, it's at a glance much similar to the TK-760G one.

I will end the set\_channel and give a look to you code, I will call it a good night.

Thanks for sharing it.

73

**#7 - 02/23/2016 06:14 am - Pavel Milanes**

Just an update, I have completed the download/upload, channel management and bank management.

I have a few kirks to resolve with the offset=off and some banks layouts from real radios not working, this is interesting...

This radio has a bank limit and bank belongings section in the memmap, if you start with a clean program with the KPG44D software my driver works fine, but I have found that the former programming from the radio as it get borrowed to me is a kind of corrupted.

It has 9 channels in 3 banks, banks 1, 2 and 160, hum 160... this is weird...

When you look to the banks limits you see that only 5 channels are covered and in the bank belonging area there are 9 channels; then the radio display the 5 correct channels in banks 1 & 2 where you expect and the other 4 channels are assigned to banks 160...

I have tried to replicate this from a clean KPG44D software layout and it has been impossible to end with a layout like the described (broken) one...

I think it's the result of mixing a radio body with other radio head, as this radio store data in this two places separately...

We are close... 73

**#8 - 02/23/2016 06:55 am - Pavel Milanec**

Ha !!!

The driver is capable of recognize the band segment of the radio (K 148-174, K2 136-156) automatically and will refuse to program a radio that is not in the same sub band.

Also I need users of this radios with the complex front (a lot of buttons and no front speaker) to contact me, I need an image of this exact model to compare and mod the driver as needed (if needed).

**#9 - 02/23/2016 10:51 pm - Pavel Milanec**

Good news, with the Help of Tom Hayward we tested the two possible front heads for this radio, and I can tell that at a first look they are the same in the memory business.

That's a good news because I don't have to program separate functions to manage two kinds of front heads and that's saved time & efforts.

The first driver is almost done, I have to polish some issues and validate it against Chirp's test bed... I think that for the weekend we will have a patch for it on the "to release" queue.

This first driver will have only channel & banks management, no settings and no buttons; that will be in a second round.

73.

**#10 - 02/24/2016 02:56 pm - Pavel Milanec**

A pre-release version with full channel support and basic banks management is available for who wants to try it; if you like to try please click on my to see my email and drop me an email for driver + instructions.

73

**#11 - 02/25/2016 12:27 pm - Pavel Milanec**

- % Done changed from 10 to 90

**#12 - 10/17/2016 01:28 pm - Pavel Milanec**

Hi people, I'm dropping the development for this kind of radio.

I don't have access to any of this radios anymore, I have made a few attempts with the new fleet owner to borrow one of them again and no joy. The other in possession of a ham friend of mine was QRT (actually fried beyond repair) by a lightning stroke.

The partially working driver is available on request to a willing developer to finish the job. Tom Hayward was the leading person on this radios and I know he can follow the development if he have the spare time required.

73 Pavel CO7WT.

**#13 - 10/17/2016 01:40 pm - Tom Hayward**

What work is remaining? I thought it was complete.

By the way, I tried opening the Kenwood .dat file with this driver and a header offset provided by my FileWrapper patch. It mostly works! The only problem is that your upper memory block starts 16 bytes earlier than in the .dat.

**#14 - 10/17/2016 02:33 pm - Pavel Milanes**

Hi Tom,

You have in your inbox the latest version from my side (past emails), feel free to update it with your patch and publish at your will, I can't get one of these on my hands any more to test/play/fix/etc (at least in the foreseeable future).

All the basic features are in the driver I sent you in the past, so after your tweaks/test it can go public.

73 Pavel CO7WT.

**#15 - 04/24/2020 05:34 pm - Bernhard Hailer**

Keeping open until somebody can walk it the final mile.

**Files**

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o.img	24.1 kB	02/20/2016	Pavel Milanes
tk790.py	16.5 kB	02/20/2016	Tom Hayward