

Subject: R/S HTX-100 Modifications

copied from packet:

Msg# TSF Size #Rd Date Time From MsgID To
19802 BF 2860 3 15-Mar 2108 KB2JPD 13416_K2KJC MODS@ALLBBS ()
Sb: * Tandy HTX-100 Mods

The Modification Files for the Tandy HF HTX-100 USB/CW Transceiver

Topics Covered

- *Extended Frequency Coverage from 26.000 Mhz to 30.000 Mhz
- *Simple RF Wattage Enhancement to 35 Watts
- *Enhancement of Microphone Frequency Response

Fair Warning and Friendly Advice To Very Anxious and Excited People

We are not responsible for any damage on your part. If you don't know don't do it. Let someone with more experience do it.

Thank you for your interest. The Tandy HTX-100 Amateur Radio Transceiver is a close cousin of the Uniden HR-2510 (Listed as the Amateur Radio Mode HR- 2510 (UT-550B). HTX for Ham Transceiver, HR for Ham Radio, UT for Uniden Transceiver. We can assume the A suffix for the HTX-100.)

My first HF radio as a Novice was a HTX-100, so there was always a lingering question as if the Tandy model was capable of similar capabilities. I had spent many hours examining the mini-schematic diagram at the end of the manual.

This information was derived from the buying of a HR-2510 service manual at the local hamfest. When I examined the PLL schematic, I realized that I was looking at a prior generation of the same PLL circuit. It helped to complete the purchase.

The Uniden HR-2510 microcontroller u1201 is a 46 pin Dual Inline Package. On the diagnostic voltage table for the microcontroller, there are two pins labeled (34)AMATEUR and (35)GND aside of each other. They are pulled to GROUND.

#34 will open TX/RX from 26.000 Mhz to 28.000 Mhz, #35 will open 29.7 to 30 Mhz.

On the schematic for the HTX-100, there are similar pins 28 and 29 on U1208 pulled up by a resistor pack to Vcc.

The Tandy model microcontroller is a surface-mount device and the pins on the chips don't bend: they SNAP. The steel used on the pins are quite different. Do not attempt to physically pull on the pins of the package.

Percy KF2AT wrote the mods for the HTX-100.
Use common sense, a grounded soldering iron, and enjoy the mods.

Adam Kb2Jpd

*Extended Frequency Coverage from 26.000 Mhz to 30.000 Mhz

Thanks Percy for being the first one.

Remove bottom cover. With the radio upside down and display facing you remove the synthesizer board with the four screws, this is near the front of the radio.

This gives access to the small board underneath with the surface mount components on it. Locate the processor chip IC401 (UC-1208). Locate pins 28 and 29 which are on the right hand side of the chip and are 4th and 5th from the top. Note they are bridged with solder.

CAREFULLY cut the copper track NEXT to the pins. DO NOT attempt to unsolder the two pins from the board. Use a GROUNDED soldering iron. Locate the two rows of connector pins above the chip.

On the bottom row locate the last pin on the right. Verify with a VOM that this pin has + five volts. Solder a 10k (1/4 w) resistor between this pin and pins 28 and 29 on IC401. The synthesizer will now tune from 26.00 Mhz to 30 Mhz.

*Simple RF Wattage Enhancement to 35 Watts

With the radio in the same position as before, locate VR5 in the top left hand corner. This is the RF high power preset.

Lift and bend the wiper so that it is permanently disconnected from the track. Solder a 47k resistor (1/4 watt) between the wiper and the left hand side of the track.

This should increase the RF power output to around 35 watts but you will now not be able to trim the power output. The Low power trim will function as before.

Enhancement of Microphone Frequency Response

1) To increase average depth of modulation

Remove top cover of the radio and with the display facing you and the radio upright locate IC3 (MJM45585) near the bottom right hand corner of the main large board.

Just to the right of this IC locate c75 (56 pf) and remove it. This will increase the gain of the microphone Preamp considerably but without overmodulation. If you find the compression excessive (i.e. background noise) open the microphone and insert a 470 ohm resistor between the hot side of the mic insert and the input (white lead).

This will reduce the gain somewhat but will still give you much increased "talk power" (percy's words, not mine. Adam).

2) To increase audio response in the high mids

This simple mod will recrease the audio response in TX in the 2 to 2.7 khz region giving higher articulation and move intelligibility under weak signal conditions.

Locate IC3 as before on the large main board and the radio positioned as before.

Locate a 5.6k and a 4.7k resistor just below IC3.
Solder a 0.015 mf (16v) capacitor between the left side of the 4.7k to the right side of the 5.6k resistor.

These two mods work together to give improved readability on SSB under DX conditions.

Percy, KF2AT, for taking the chance on his own radio, and wildly succeeding.
Jeff, N2LJA, for selling the radio to Percy and writing it off as a loss.
Tony, Kb2JYN, for being the test rabbit. May the rabbit rest in peace.
73 de Percy KF2AT and Adam Kb2Jpd @K2KJC.NY or @Kb2itr.NY.

(C) Copyright Adam Vazquez and Percy Jones. This documentation is for informational use. This information may be not published in modification manuals printed with the purpose of generating revenue without the prior consent of the authors. This information is released from hams to hams. It is free.

The authors are not responsible for any damages on your part.
Don't do this unless you have:
prior electronics background & knowledge of cutting up SMT circuitry.

=====

Note: I haven't tried or verified this, proceed at your own risk. And do not transmit outside of legal bands! WA2ISE

The phone company knows your phone number! :-)