

FT-1000D 250 Hz Filter Modification

Author: Barry Williams KD5VC

Note: this modification was posted by Barry Williams KD5VC to the Yaesu reflector

The FT1000D comes equipped with additions including I.F. Filters for the 455khz. c.f. The narrowest of these has a 500hz. bandwidth, but no matching filter for the 250hz. bandwidth for the 455khz. I.F. This means that if you select the 250hz. bandwidth filter in the second I.F., it is paired with the 2.4khz. filter in the third I.F. It is a simple modification to have the control section select the 500hz. filter in the third I.F. instead.

This modification requires the addition of a switching diode (1N4148, 1N918 etc.) between the select line on the 250hz filter spot and the 500hz. filter.

First access the filters on the I.F. board, and clip the diode as indicated for the installation of the 250hz. filter in the manual. Then remove the 500hz. filter, note that the I.F. filter position for the 500hz. filter is the second from the front of the radio.

Then solder the diode between the cathode end of the 250hz. select diode, and the cathode end of the diode under the 500hz. filter. This diode should be oriented with the cathode toward the 250hz. select diode's cathode end.

Now when the 250hz. third I.F. control pulls the select line low, the new diode will pull the 500hz. filter select line low, selecting that filter in place of the 2.4khz. filter.

When you finish this modification you will note that the 500hz. filter reduces the wideband noise, and the "Width" control works when the 250hz. filter is selected.

Because of the mismatch in the filter bandwidths, the first few detents on the width control act as an I.F. shift, when the 500hz. filter is offset enough to "catch up" with the bandwidth of the 250hz. filter, the action changes to a bandwidth control.

On my radio, the first three detents act as an I.F. shift, and the next three reduce the bandwidth to under 100hz.

Important Addendum to KD5VC 250Hz Filter Mod

In KD5VC's mod, the references to connecting a new diode between the cathodes of the 250Hz and 500Hz select diodes means to connect to the PCB solder pads that the cut diodes' cathodes were formerly connected to, not to the cut flying leads on the actual diodes themselves! The 250Hz select diode is D2045 and the 500Hz select diode is D2046. Both are clearly marked on the PCB.

This mod also appeared in QST, Jun 96, p.70 (with the same ambiguous narrative). I have installed it and it works very well. An FT-1000D does not ship with the 250Hz 3rd IF filter- it is an option. This circuit trick can save you the cost of a crystal filter- with a 5 cent diode- while still greatly improving CW performance at 250Hz BW over the factory stock configuration. For FT-1000 owners: note that the mod assumes that the 250Hz 2nd IF filter is already installed. The purpose here is to cascade the 500Hz 3rd If filter with the 250Hz 2nd IF filter.

Thanks to KD5VC for an excellent mod!

Audible hum when transmitting on FT-1000D

Contact author: John - ZS5J

I bought a FT-1000 D a few weeks ago that developed a problem. When I transmitted, there was a loud hum - I could hear it coming from the transformer inside the rig, and was also transmitted with my signal - all modes. This is a common problem, as a poor DC connector is used on the output of the transformer - as discussed below.

I removed the top cover, powered on the radio, and transmitted. Noting the hum that was present, I fiddled with the wires coming from the output of the transformer - at the point where they enter the 4 pin connector. The hum disappeared when I fiddled with this plug. On close inspection of this connector, I noticed that it had been arcing due to poor contact.

If you have the same problem, do the following...

1. Remove top cover
2. Look at the transformer, and find the 4 wires coming from the output of the transformer - they are thick wires, two white, and two grey.
3. Follow them to the point where they terminate in a 4 pin connector (the wires are about 4 inches long)
4. Pull the plug out of the connector that they are connected to
5. With a pair of needle nose pliers, gently crimp each of the terminals, so that they will fit more snug when the connector is re-inserted.
6. Plug the connector back into position, and replace the top cover

If the terminals are properly crimped, then the hum should not return. If the hum returns after some time, or if you would like to do a better job, then replace that 4 pin DC connector for a better one that you can find. The one that is used in this rig, is not very good.

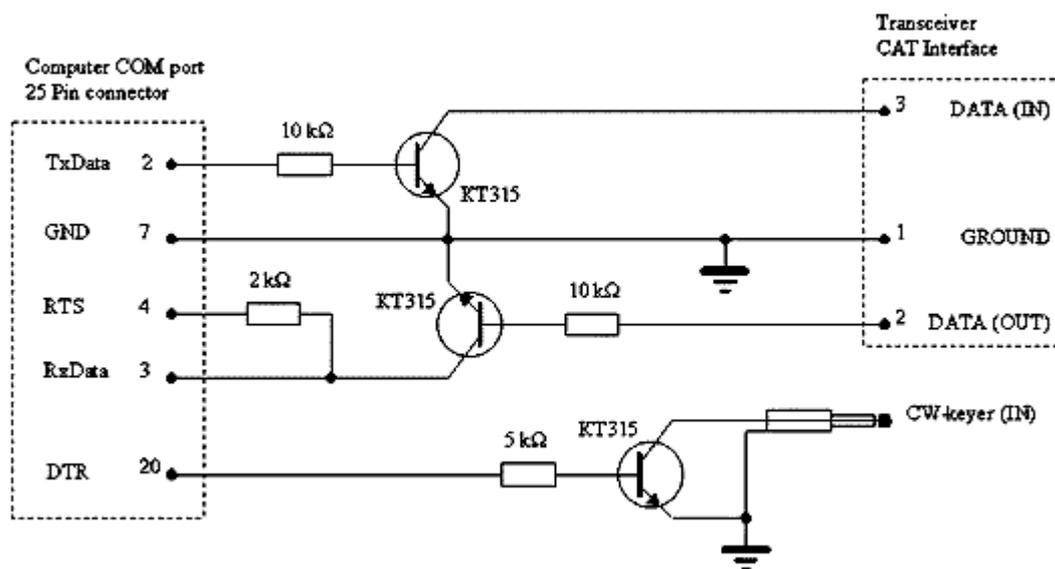
This solved my problem with very loud transformer hum. My FT-1000 D is now quite, and puts out a nice clean signal.

73
John

YaesuFT-1000 D CAT Interface

Author: Andrew RK3BT

**CAT Interface for YAESU HF-transceivers.
And CW-keyer control with Log-EQF software.**



All transistor is N-P-Ntype.

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Thanks also to Jim W6YA, who built this circuit, and reported good results:
"I used 2N2222s instead of those Russian devices. In WriteLog just select the same COM port for both radio and CW, and be sure the box next to all mode PTT on CW port RTS is not checked."

Andrew RK3BT

CW pitch or side tone with 551Hz for Yaesu FT-1000

Contact author: JA0PX Saitoh

500Hz or 600Hz of CW pitch or a side tone can be set with dip switches. But 600Hz is too high, 500Hz is too low for me.

500Hz can be set with dip switches HHLHLH and 600Hz can be set with dip switches HLHHHL.

I found 551Hz can be set with dip switches HLLLHL.

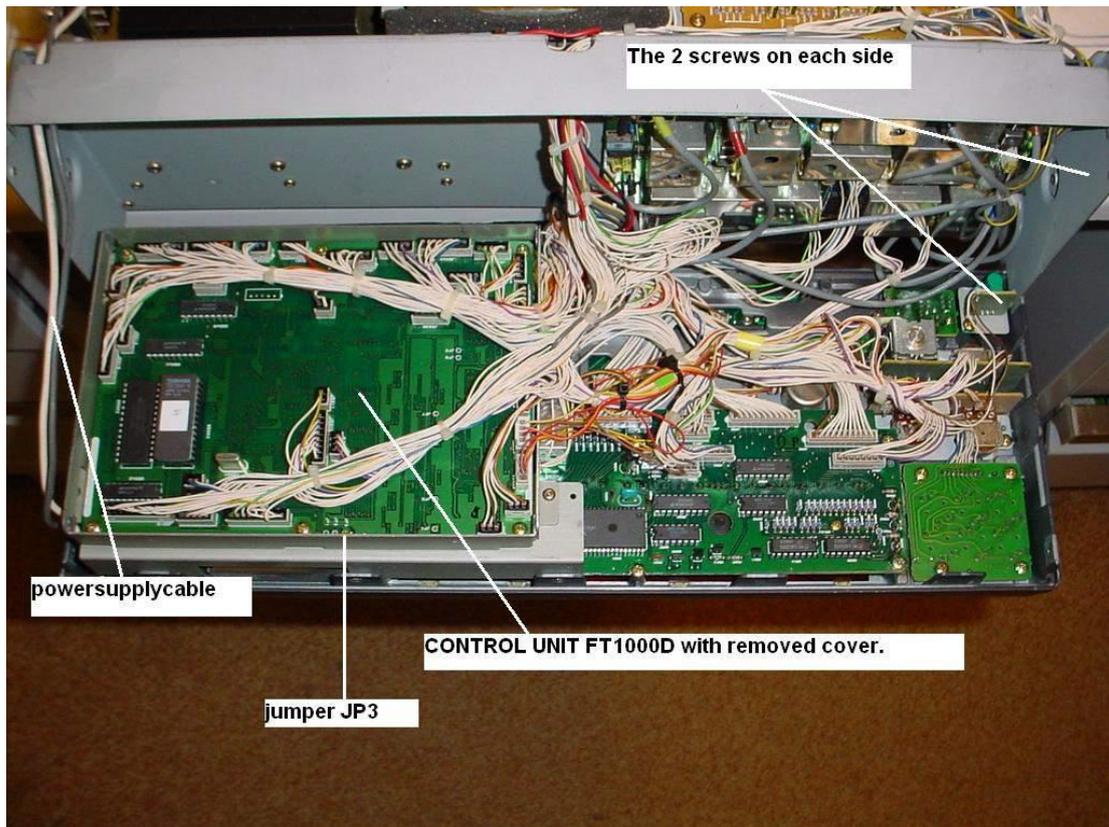
This tone is perfect for my preference.

de JA0PX Saitoh

Extended RX/TX FT1000D with photo's Print this message

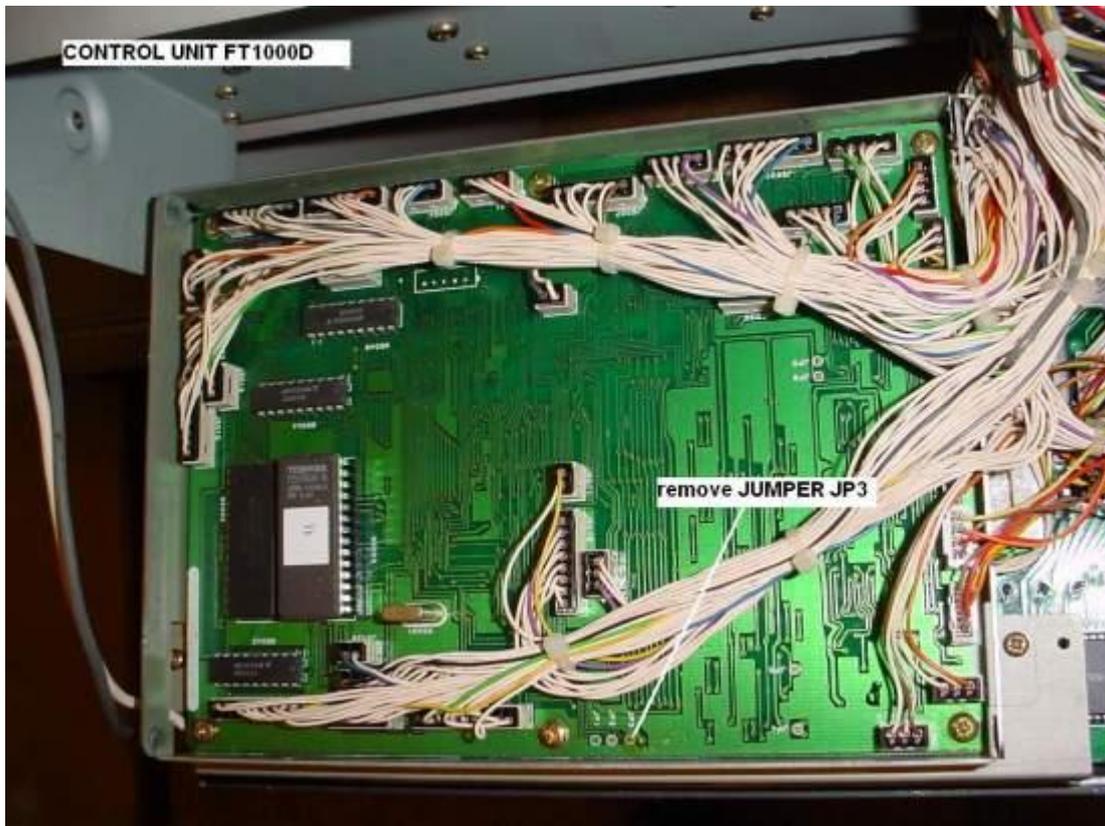
Contact author: PA3HGT, Hans

- Remove top and bottom cover of your FT1000D
- Disconnect powersupply cable with grey and white wire from the powersupply that you can see on the left side.
- Locate the 4 screws which attaching the front panel.(2 screws on each side). First loosen (not remove) the 2 lower screws on both sides of the front panel. Remove the 2 upper screws on the each side. Now you can "flip" the frontpanel with secure.
- When you see the backside of the frontpanel : look at the left side and you will see a shiny cover,that's the controlunit.
- Remove that cover and locate JP3.
JP3 is normally closed when you've TX-RX amateurrange only and you have to remove the jumper with a little solderiron to get extended rx/tx.
In the schematic diagram of the controlboard is JP3 open so the schematic diagram has a fault in it.
- re-assemble the FT1000D and reset the transceiver.



CONTROL UNIT FT1000D

remove JUMPER JP3



FT-1000D Key Click Modification

Author: Tom W8JI

Note: this modification was developed by W8JI for his FT-1000D and originally posted to the Topband reflector.

The problem:

Good engineering dictates never running a square rise and fall waveform into a crystal filter. The square rise-and-fall waveform will cause filter ringing.

The FT-1000(D) runs an essentially unshaped CW waveform into the filters, generating unnecessary keyclicks that are strongest from almost 1 kHz below to 2kHz above the transmit frequency.

The cure:

Locate the seven pin connector J3024 at the middle front of the AF board. The AF board has audio, PTT, ALC, and key jacks as well as other connectors.

Cut the wire going to pin 2 (T CNTL). This is the second terminal from the right (front view). This is NOT the lead with 9 volts (nine volts is pin 6)!

Connect the collector of a 2N3904 to the flying harness lead, and the emitter towards the jack. Connect a 1.5 k resistor between the base and collector, and a 10 uF 25 capacitor from base to ground.

I forgot to say the resistor goes between the collector and the base of the transistor.

The transistor turns on slowly because the 10uF capacitor charges through the 1.5k resistor. The stage turns off slowly because the capacitor discharges through the base to the emitter.

The Results:

This slows the waveform rise and fall times at Q3030 and D3009. The result is a normally sloped CW waveshape hitting the SSB filter.

This reduces clicks beyond 1 kHz above and below the transmitting frequency into the composite noise of the transmitter, about 50 dB reduction in clicks on my radio above my TX frequency.

Clicks 500 Hz away are reduced about 35 dB.

There is almost no change in "keying sound" on the transmitting frequency. Very little change in envelope shape, yet bandwidth changes are profound.

73, Tom W8JI

FT-1000 Noise Blanker Mod via

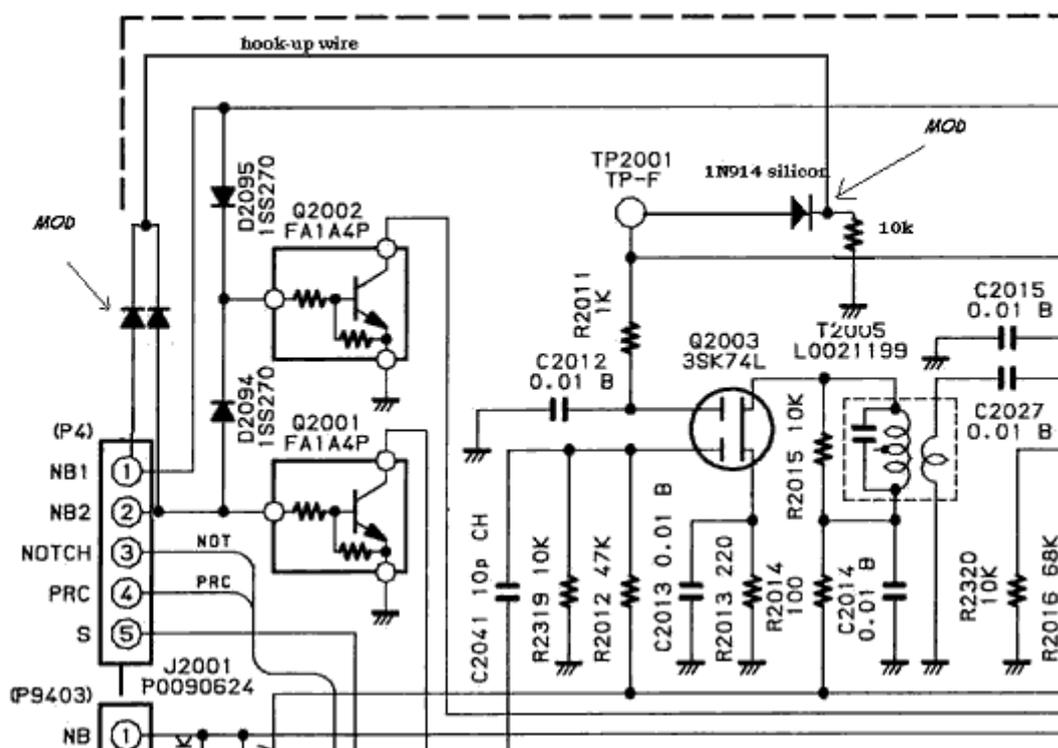
Author: Tom, W8JI

This mod greatly improves strong signal IMD in the FT-1000. I used a 2 kHz test spacing in the measurements, so the 12 kHz wide 70 MHz first IF filter did not make results look artificially better. I ran two HP generators through a combiner into the front end, and measured IMD with a selective level meter with 50 Hz BW and also with the 1000's internal meter (which is about 2 dB per S unit below S6, not six dB as claimed).

This was the primary source of IMD in my brand new FT-1000, and the difference was dramatic. Remember this is a sample of one unit.

I carefully looked but I never found anything wrong other than the fact the receiver forward biases the first FET in the noise blanker fully-on when the blanker was shut off, and that IMD feeds directly back into the 8 MHz IF stages. The result was a few volts of peak RF voltage on the FET drain, and considerable amounts of that voltage feeding back to the IF stage through stray coupling.

I am working on better mods to the front end, but this is a substantial change. Be sure to use common sense and turn off power when soldering, etc.



1. Remove the bottom cover, locate the noise blanker on the left rear corner of the IF board near the first group of 8 MHz filters.
2. Locate TP -2001. Connect a 1N914 or any other silicon switching diode through a 10k ohm resistor to ground from that point, cathode towards the resistor and ground, anode towards TP-2001. DO NOT use a high leakage diode like a germanium diode.

(Note: from N6BV: the FT-1000MP uses the same designation, as I recall, for the TP-2001 on its main board schematic.)

(Note from N1EU: I put a solder lug under the adjacent pcb screw for a ground connection.)

3. Connect a pair of common cathode connected diodes (same type) with one anode to pin 1 (brown wire) and the other to pin 2 of J2001. I just pushed the wires down in the pin of the plug and tacked them in place with a tiny bit of solder. You can verify these are the correct pins by measuring the voltage when switching the NB and wide NB buttons. Either or both NB switches "on" applies about 8 volts to either or both pins.

(Note from N1EU: I think it's much easier to tack solder the diodes directly to D2094 and D2095 per the schematic below.)

4. Connect the common to the diode cathode and 10k resistor junction through a short hook-up wire.

This mod removes forward AGC bias from Q2003 and 2004 when the noise blanker is off, and prevents IMD distortion fed back via C2041 and foil traces from impacting the receiver when the noise blanker is off. It does not affect NB performance when installed.

Note: this modification was developed by W8JI for his FT-1000D. Earlier production FT-1000MP's may benefit from implementing this mod as well, since similar circuitry was used.

FT1000D and FT1000 Receiver Noise Reduction Modification

Contact author: Kirby, K7EC

Many years ago, I did a modification to my FT1000D to reduce the internally generated diode noise as well as to reduce the radios' susceptibility to strong broadcast band mixing products. I have previously published the modification for the FT1000MP and have had a lot of positive feedback from that modification, so in response to a number of queries about whether the MP mod would work on the FT1000D, I have decided to publish my mod for the FT1000D and FT1000 as well. The replacement diodes that I have used are the HP 5082-3081 Pin Diodes. This type of PIN diode was carefully chosen and provides the best performance. I DO NOT recommend substitution of any other kind of PIN diode as the 5082-3081 provides the lowest distortion by a significant margin!!! The HP 5082-3081 can be obtained from Allied Electronics and Newark Electronics as well as several other companies.

The diodes are not cheap, but their improved performance more than justifies the cost!

The diodes on the RF unit to replace are:

Main Receiver BandPass Diodes:

D1007, D1008, D1009, D1010, D1011, D1012, D1013, D1014, D1015, D1016, D1017, D1018, D1019, D1020, D1021, D1022, D1023, D1024, D1025, D1026, D1027, D1028, D1029, D1030, D1031, D1032, D1033, D1034, D1035, D1036, D1037, D1038, D1039, D1040, D1041, D1042,

Main Receiver Preamp Bypass:

D1044, D1047

Main Receiver Preamp Switching:

D1045, D1046

Sub Receiver BandPass (BPF1):

D9801, D9802, D9803, D9804, D9805, D9806, D9807, D9808, D9809, D9810, D9811, D9812, D9813, D9814, D9815, D9816, D9817, D9818, D9819, D9820, D9821, D9822, D9823, D9824, D9825, D9826, D9827, D9828, D9845

The theory of operation of this mod is discussed in my [FT1000MP Receiver Noise Reduction](#).

Enjoy!

Kirby, K7EC

QRM from the CW TUNE LED for FT-1000D

Contact author: Victor ik4cie

The problem:

on my FT-1000D, the green LED "CW TUNE" on the display, flash also with normal noise, and in the earphone you can hear unwanted QRM caused by this (when you turn the volume knob to minimum, this QRM still remain and you can listen him).

Solution:

Unfortunately, there is no trimmer, no regulations of the level of the circuit Q3044-Q3045 led driver. Very fast solution is to disable this circuit, simply turning to the OFF position all the first 4 dip-switches in the top of the radio, named "CW-PITCH". Effectively, only the last two work on the BFO, the first 4 only serves to determine the frequency at which the led flashes.

For example, to pitch at 600Hz without QRM of the CW-TUNE led, only the dip n. 6 go to the ON position.

Obviously, the led CW-TUNE circuit lose his functionality, the led never goes ON, but the QRM disappear.

Victor ik4cie

QSK with FT-990 and FT-1000

Steve Ellington (n4lq@iglou.com)

Fri, 26 Jul 1996

Here is the way I do QSK with my FT-1000MP which is basically the same set up as the 990 as far as qsk is concerned.

I have an Ameritron AL-80b which has an output of up to 900 watts.

In 1974, I built an Electronic TR switch from plans in the ARRL handbook. It consists of nothing more than a 12AU7 tube, a coil, switch, variable capacitor and a simple dc power supply. There are 3 coax jacks on the back.

To connect this, you run the transceiver's main antenna input into the amplifier's antenna input as you normally would. Run the amplifiers output into and back out of the TR switch. Inside the tr switch, we simply tap off the center conductor of the coax, run this through the tube then to the 3rd coax jack on the tr switch which goes to the receiver input of your transceiver.

As you can see, there is NO switching of the RF involved here at all. No worries of hot switching or dot clipping. The TR switch provides another stage of RF for the receiver too. Keep all leads as short as possible.

When the amplifier is turned off, simply hit the antenna switch on the transceiver to change the rx back to the main antenna input.

In the past, TR switches were known to cause TVI but with cable tv, there is little to be concerned with. It's a great system. E-mail me if you have any questions.

Steve Ellington

FT-1000D Random CW Filter for RX2

Contact author: Harry, OE6GC

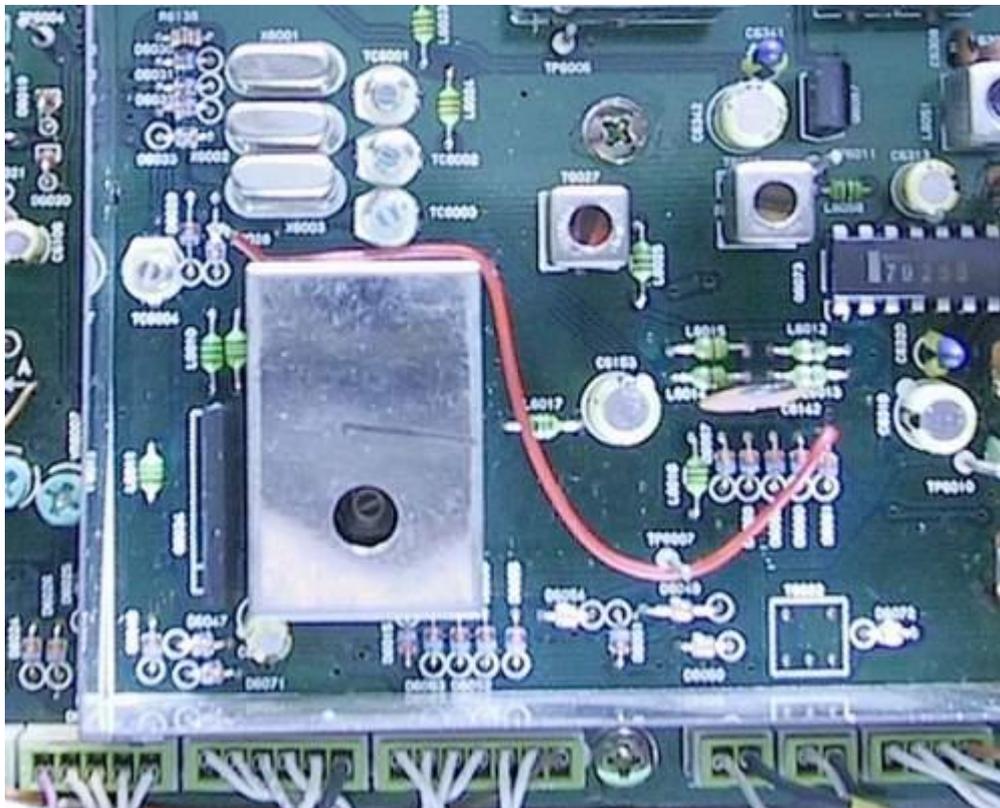
The FT-1000D, still a very nice radio, is delivered without the narrow CW filter for the second receiver. By operation of the main receiver with the narrow CW filter it is required for dual/Split operation to switch the second receiver to a broad filter so that reception is made possible on the second receiver.

It has to be taken care at installation of a narrow 455 kHz filter that the centre of pass band is actually approx. 455.7 kHz as in the case of the original filter XF 455 MC. If for example a cheap 455 kHz filter CFJ455k is installed with passband of 1 kHz, then the unwanted CW sideband is not suppressed.

In this case the following simple adaption is necessary:

The anode wire of the diode D6028 has to be clipped where it is soldered to the board with a small side cutting pliers. Connect this anode with a wire (in the picture red) to the anode of diode DS6060.

You reach with that that the random narrow 455.0 kHz filter is selected at CW-N but the BFO remains same as in the CW/USB position. The second receiver is now immediately available without further measures after a A > B frequency transfer for Dual/Split mode.



Der FT-1000D wird ohne CW-Filter für den zweiten Empfänger ausgeliefert. Bei Betrieb des Hauptempfängers mit dem schmalen CW-Filter ist es erforderlich für Dual/Split-Betrieb noch den zweiten Empfänger auf ein breites Filter zu schalten, damit Empfang auf dem zweiten Empfänger ermöglicht wird.

Bei Einbau eines schmalen 455 kHz Filters ist darauf zu achten, dass der Durchlassbereich tatsächlich bei ca. 455,7 kHz liegt, wie beim Originalfilter XF-455MC. Wird beispielsweise

ein preiswertes 455 kHz Filter CFJ455k mit Durchlassbreite von 1kHz eingebaut, so wird das unerwünschte CW-Seitenband nicht unterdrückt.

Abhilfe schafft folgende einfache Maßnahme:

Die Anode der Diode D6028 wird dort wo sie in die Printplatte gelötet ist mit einem Seitenschneider von ihrer Verbindung mit der Printplatte getrennt und die Anode mit einem Draht (im Bild rot) mit der Anode der Diode DS6060 verbunden.

Damit wird erreicht, dass bei CW-N das schmale 455 kHz Filter ausgewählt wird, aber die Lage des BFO gleich wie bei CW/USB bleibt und der zweite Empfänger ohne weitere Maßnahmen sofort nach A>B Frequenztransfer zur Verfügung steht.

73, Harry, OE6GC

FT-1000D Rx Ant Mod

Author: Geo, K0FF

The goal>>>To modify the FT-1000D (or FT-1000 w/ BPF option) for independent operation of both receivers on unrelated bands and/or modes using the main antenna and retain the ability to use a Beverage antenna on the RX ANT jack.

Of course, the 1000D already has the BPF option, it's just not hooked up right.

A little history:

The FT-1000D has 2 receivers, 2 audio channels, a common squelch and an S-meter on the main receiver only. When an internal switch (S1001) is in the RX ANT position, the main receiver can pick up it's signal from the antenna hooked up to the Transmit antenna jack (SO-239) or a separate receive only jack (RCA pin-type), and can be switched between the two via a front panel switch marked "RX ANT". The Sub receiver listens in on whichever antenna the Main one is hooked to, and also must use the Main receivers BandPassFilter (MainBPF). This limits frequency excursions to the same band.

The sub-receiver has it's own Band Pass Filter section, which has it's own antenna input jack (SO-239), but can only use those when you take the radio apart, and operate a slide switch "S-1001" to the "F BPF" position. Of course this means you must ALWAYS use a different antenna to receive on or you can still operate the RX ANT switch, and it will listen on the Beverage hooked to the RCA jack. You lose the ability to listen on the transmit antenna. Also you lose the ability for the Main Receiver to pick up the Beverage!

The mod moves the control of relay RL1004 the front panel, brings the TX antenna >> on the receive side of the TR switch<< out the back, and ties that back into the BPF via a small jumper. This way tou can listen to 2 separate bands on the transmit antenna (say 10 and 20 on a triband beam), and not lose the RX Ant (BEV) function.

Fortunately these functions are all controlled by relays, and they can be split, and operated independently. In the old days we would get out the soldering iron (gun, actually) and an electric drill, and just do it. Today we have to preserve resale value, so no extra holes please!

Mod consists of adding 2 Jumpers, remove one plug, and remove one resistor. You will also need a 6" coax cable with PL-259 one end, RCA plug opposite.

You lose the DIM (display dim) button function on the front panel , and also the Monitorscope 73Mc IF output jack function on the rear apron. (do they even make a monitor scope??) No functional loss to the radio at all, and you gain the ability to:

- A. Use the sub-receiver with a separate antenna connected to the BPF option's SO-239 on any band. (great for "Antenna Diversity Reception" - I use this approach on 6M with transverters).
- B. Use the sub-receiver on any band/mode using the main TX-RX antenna, independent of main receiver's band/mode.
- C. Connect a different receiver to the FT-1000D, outboard style, using the main TX-RX antenna. (an adaptation to the mod would allow the outboard RX to share the RX antenna too, if desired)
- D. Use the main receiver on either the TX antenna, or RX antenna while doing any of the above.

The reason I did it was to listen to the 28.885-6 meter liaison frequency concurrent with the

14.345 EME circuit. You may want to run a VHF/UHF receiving converter into the sub-receiver as a 14 Mc i.f. to monitor some important calling frequency, or propagation indicator, while chasing DX on 2M EME via a transverter with a 28 Mc i.f.....the possibilities are endless.

WHAT you are doing is freeing the wiring from the DIM button, rewiring the DIM button so as it will operate relay RL1004 on the "RF UNIT" board, effectively panel remoting switch "S-1001", and providing a connection to the outside world for the main antenna from the receive side of the TR relay, via the abandoned IF jack on the rear apron.

HOW:

- First lets get at the DIM switch on the front panel....
- Remove both top and bottom covers.
- Remove all the screws holding the front panel/display in place.
- Remove the small circuit board that contains the MOX-VOX-DIM switches. There is a socket and plug going there for the switch marked DIM (has 2-pins 1-red wire, 1-white wire).
- Remove the plug, and tape it back out of the way. We won't use it for anything, just save it there for retro. This leaves the switch free, and it already has one side going to ground through the pcb wiring.
- Leave all that alone, and solder a long lead to the other terminal. The one that switches to ground when you toggle the button. This wire gets routed all the way to the bottom rear of the radio to the corner near the grounding lug.

The board we are working on is the one in that corner, and has a large flat, silver box on it. That's the "RF UNIT".

In the far back corner on the top of the board are some relays. The one we want is marked RL1004 and there is a diode across the coil, D1050. Solder our wire to the anode end (the end opposite the line). Be careful here.

The other side goes to +13, so check this out carefully beforehand. Simply pushing the DIM switch in will now activate the relay, and releasing the switch will deactivate the relay. Not Rocket Science but be careful.

At this time make certain that "S1001" is in the R ANT position where it will always remain. Next we have to loosen the "RF UNIT" board and turn it over to do the jumpers. You will have to remove some screws, and take a few plugs loose.

Label everything or make a chart so it gets back in the right place. Not everything needs to come loose to do this. Turn the board over and examine the area around J1013-1, the IF jack, in the cluster of four RCA pin jacks on the rear of the board.

On the solder side of the board it series connects to a chip capacitor, and then a zero ohm chip resistor. Remove the chip cap and store it for retro. This effectively frees the jack up so we can run a short jumper wire from the center pin of it, to the center pin of the little coax jack J 1005, which is next to RL1001.

That's how we bring the main antenna out of the set and send it to the outboard receiver, or in our case to the sub BPF filter unit.

That's all, very carefully put it all back together again. Install coax cable jumper between the (old) IF jack and the SO-239 on the BPF filter.

Now you can experiment with the functions.

The panel switch RX ANT continues to take the main receiver between the T-R antenna and

the RX (Beverage) antenna as before.

The DIM switch now puts the sub receive between being slaved to the main BPF or it's own BPF. The coax jumper on the back brings T-R antenna back out for the sub BPF if desired (and it will be most of the time).

Note that you can still use the sub-receiver on the Beverage also, but only when the main is too (stock condition). This is the place where you could add the adaptation I mentioned in step (C) above, but I see no scenario where you would want the sub on Bev without the main on Bev also. If you have an individual need for this, contact me.

This effectively puts the 2 receivers in parallel across one, antenna, and though some loss might be introduced by double loading, signal generator tests show that they are negligible. I have tried this and it works but make no recommendations as to the suitability of this mod. I have tried to be precise but it is up to you to check for errors in application or omission..

Throughout this and other tech notes that I write, I use the unit Mc/s or Mc. If you can only deal in MHz, multiply by 10 to the minus 1, or I will be glad to provide a free conversion chart for an SASE to my callbook address.

This simple change should unlock the full potential of this fine radio., which was arguably already the finest I.F. for VHF/UHF transverting.

Geo, K0FF

Note: A version of this mod was also posted by Barry Williams to the Yaesu reflector

One other change you may want to make to your FT-1000 is to add an external antenna switch as suggested in the QST review of this radio.

This will be useful if you have the BPF-1 option. With this modification you will be able to select the either the main antenna or the BPF-1 antenna for the second receiver by using the front panel switch.

The switch added in this mod will allow you to select either the main antenna or the antenna connected to the phono jack for the main receiver, this is useful when using receive loops or converters.

I connect a Butternut HF-6V to the BPF-1 and my KLM LPDA to the main receiver. I also plan to add a receiving loop for 80 and 160 connected to the phono jack. This allows diversity reception by polarity, frequency or mode. In order to do this you must select the "E BPF" position on switch S1001 on the R.F. unit and add a switch between one end of S1001 and a pad on J-1007.

Remove the covers from the radio and access the R.F. Board as in the manual for setting switch S1001.

Remove the three screws holding the connectors for the R.F. board to the rear panel, the six screws holding the R.F. Board down, and unplug the three coaxial cables which go to the R.F. Board.

Remember where these cables were connected. Put S1001 in the E-BPF (Enable BPF-1?) position. Lift the board so you can access the bottom. Cut two twenty inch lengths of number 24 wire (or smaller) and solder one end of one wire to the pad under S1001 opposite the switch handle when it is in the E BPF position. Solder one end of the other wire to the pad under J1007 which is near S1001, and is not connected to the center of S1001. Route these two wires through the hole near the center of the rear of the radio. These can then be brought out through the grill on the rear of the radio.

I mounted a miniature SPDT switch in the grill, and connected the wires to it. When these wires are shorted the main receiver is switched to the antenna on the phono jack. Replace the screws and connectors, and try everything out. You can then replace the covers.

FT-1000D sub receiver mod

[Contact author: Victor ik4cie](#)

This mod involves the subreceiver of the FT1000D device in CW mode.

The problem:

When in the sub-receiver the optional CW filter is absent, the sub receiver only receive in CW wide mode, using the SSB filter. But, if in the main receiver the filter selected is the 500Hz or the 250Hz, pressing the A>B button to transfer data to sub receiver causes the sub receiver is mute because the optional filter is selected, but is absent.

This mod select the SSB filter in the sub-receiver regardless the filter selected in the main receiver, in CW mode.

Open both covers of the FT1000D and locate the connector marked J6007, near the screw in the bottom part of the board. Note the violet wire in position n.1. Cut this wire, and also the white wire in position n.3, about 1cm away from the connector.

Solder the anode of 1 diode 1N4148 at the violet wire, (not the part of the wire attached to the connector, the other).

Do the same (use another diode) with the white wire.

Connect both cathodes to the pin 3 of the connector (solder the diodes to the 1cm length of wire remaining in the connector).

Insulate all with tape and this is all.

Note that the 1cm violet wire attached to the connector remain unconnected.

NOTE: IF you, in future, install the optional filter, obviously you must remove this mod and put all as before.

NOTE: to make this mod, may be someone think to connect one diode between L6006 and L6005: this system dont work fine, i tried and exclude this possibility.

Victor ik4cie

FT-1000D Subreceiver BPF antenna modification

Contact author:
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1. Problem. The main receiver may receive signals from either the main antenna jack, or the RX ANT jack. A switch can be used to make this choice. Also, the subreceiver may receive signals from either the main receiver front-end (and whichever signal source the main receiver has chosen) or from the SUB RX ANT jack at the back of the BPF unit. A switch can be used to make this choice.

The problem is that there is only one switch on the front panel for these two independent choices. A little switch, S1001, on the RF board selects which function the front panel switch will control. The function for the other antenna choice is then completely lost.

Most operators choose the setting which allows the front panel switch to control the main receiver antenna. Then the subreceiver is permanently connected to the main receiver front-end; this leaves the BPF out of the circuit, and limits the frequency range of the subreceiver, as in the MP. In this common situation, the BPF has no function, and the subreceiver is unable to use a separate antenna.

2. Solution. Add another switch. This switch will work exactly as if it were the front panel RX ANT switch, and as if S1001 were set for the subreceiver.

The modification is electrically extremely simple and quite obvious; the only effort is in mounting the switch and connecting the wires. The new switch is added on the back of the BPF unit, between the attenuator switch and the subreceiver antenna jack. The modification requires no circuit board mods, no surface-mount work, and only a few parts.

Is it a good idea to drill holes in the radio? I never worry about resale value, and would never sell this fine radio.

Anyway, a knowledgeable buyer would appreciate the modification. The switch is quite inconspicuous. In any event, the holes are not in the radio proper, only in the hidden BPF chassis, and in the little black replaceable cover.

3. Operation.

- a. The front panel switch controls only the main receiver.
- b. The rear switch controls the subreceiver. No labels are needed on the switch. DOWN towards the antenna jack selects that jack, and what is usually the lower antenna, such as a Beverage. UP selects the main receiver antenna source, and what is usually the upper antenna, up on a tower.
- c. In most cases, the RX ANT and SUB RX ANT jacks can be tied together with adapters and short jumpers, and then connected to one auxiliary antenna. This will allow the auxiliary antenna to be used with either receiver, or both at once.



4. Materials.

- a. One miniature switch, SPST, 1/4 inch bushing. Single pole; double pole would be too wide. A sub-miniature switch, 3/16 inch bushing, might be even better.
- b. Two pieces hook-up wire; 24 inches and 2 inches. Not too heavy or thick. #24 stranded, 0.010 inch insulation. Alpha #1854 is okay. Best is Alpha #7054, irradiated, soldering iron resistant, Mouser #602-7054-100-01, <http://www.mouser.com/>.
- c. Two small cable ties.
- d. Five small glass jars to hold the different types of screws.

5. Installation. This procedure is not specified in great detail here, but hams with experience working on the FT-1000D (this does not include me) will find the modification very easy. Radios from different production runs may have differences in layout; they might not correspond to the steps below, and require slight changes in the procedure.

5A. RF board.

- Remove covers from radio.
- RF board is to be lifted sideways.
- Remove three coax cables near outer rear corner; sketch positions, cut off cable tie.
- Cut off cable tie from large wire bundle at outer front.
- Remove cardboard shield.
- Switch S1001 to R ANT.
- Remove three screws from rear, which hold connectors. Note that one screw is machine, two are tapping; these should not be interchanged.
- Remove board screws and lift board sideways.
- Strip and tin one end of long wire only 1 mm; tack onto outer terminal of S1001; this is the E BPF terminal.
- Run wire up to board top through the unused corner hole.
- Replace board; shield, 6 board screws, 3 rear screws.
- Replace cables.
- Replace two cable ties.

- Feed wire up along corner, and over above BPF.

5B. BPF.

- Remove BPF unit.
- Remove black mounting plate.
- Remove shield.
- Remove BPF board from BPF chassis. Lead unsolders from coax connector, which stays on chassis.
- Drill hole for switch in BPF chassis lip between attenuator switch and coax connector.
- Removing the BPF circuit board ensures that all drilling fragments can be removed from the chassis - one fragment can kill a radio.
- Drill matching hole in black cover plate.
- Attach switch to chassis; body close to lip, no spacer nut inside chassis. Orient switch according to convention noted above.
- Install BPF board. Attach black plate.
- Connect one side of the switch to +13. There is a convenient fairly large +13 pad on the relay sub-board; it is easy to locate because there are only four leads to the sub-board: two antenna leads, a ground lead, and the +13 lead. Early versions of the BPF might not have a subboard.

5C. Final installation.

- The wire is fairly long for two reasons. One is installation convenience. The other is to allow slack in case the RF board is to be lifted in the same manner at a later date.
- Position the BPF unit on the workbench behind the BPF opening.
- Run wire up in corner, over and above BPF area, out through opening, and into the BPF chassis through the cutout for the two connectors.
- Attach wire to switch. ON should be with the switch toggle towards the coax connector.
- Attach BPF shield.
- Install BPF unit.
- Look for left-over hardware and things that I forgot to mention.

6. Note. The setting of switch S1001 on the RF board should not be changed to E BPF after this modification is installed. There is no reason to do so. However, if the switch is set to E BPF, and the new subreceiver antenna switch is set for the subreceiver antenna jack, and the front panel RX ANT button is pressed, then Q1026 will receive 13 volts from two different sources, connecting these sources together. These are probably ultimately the same source (I didn't bother to check), so it would be okay, but it's not a good idea. (The schematic on page 29 of the operating manual is only a simplified version, and is totally misleading.) Removing S1001 would eliminate any hazard (and eliminate the most unfortunate component in the radio). A drop of epoxy cement, or red nail polish, on the switch to freeze it would be the easiest solution.

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