

If you're in the market for a feature-filled top-of-the-line transceiver for DXing and contesting, K5FUV says Yaesu's FTdx101MP may be just what you need.

CQ Reviews:

Yaesu FTdx101MP HF Transceiver

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In my 40+ years of contest operating, there has been a slow progression of radio equipment passing through the shack. In the '70s, it was the Collins S-Line, with a 75A4 as a second receiver. In 1981, after deciding a no-tune radio would make for more effective band changes and improved selectivity features would also help, the Yaesu FT107M appeared upon the desk, still coupled with the 75A4. Having two receivers has always been a necessity for me. This arrangement continued for the next 15 years, until early 1996, when I decided that computer-controlled logging was now a necessity, so I acquired the FT1000MP. Finally, the space on the desk was free of the 75A4, as the 'MP had the necessary dual receivers, as well as many more interference-fighting features. For the last 23 years, I've been happy, but over the last year, I have noticed more of the new radios have panadaptors built in. This seemed to be an advantage, especially on large, quiet bands. So, it was time to make another change.

When Yaesu announced the FTdx101 series a couple of years back, I was interested, but had to wait until it was available. Seeing the radio in operation at the Tokyo Ham Fair last year convinced me that it was time to move on once again. After spending a few months with this radio, I'm glad I did.

There are two versions of this radio, the FTdx101D and the FTdx101MP. I decided on the MP. This version (*Photo A*) comes with a separate speaker and power supply, optional 300-Hz roofing filter, VC (variable capacitor) tuning for both

main and subreceiver, and 200 watts maximum output. The cost of the MP version with the added features over the D version is a good value, especially since the filter and subreceiver VCT are not user-installable options. This also gives me full power on the 30-meter band and a power increase on 6 meters.

One Radio, Two Boxes

The radio comes in two boxes, one for the transceiver and the second holding the combined power supply and external speaker. The power supply / speaker is an attractive unit, but what I found interesting is that the power supply is capable of 100- to 240-volts AC input, 50/60-cycle current. In the transceiver box are two power cords, one for U.S. receptacles, one for Euro style. The cable between power supply and radio is fairly short, with intention that the speaker and transceiver sit side by side.

It was easy to make the changeover from the FT1000MP, as all the station interconnecting cables fit. There were some preliminary things I wanted to set up before I really got into learning the radio. One of the important things (to me) was to set the receive antenna. In the menu, antenna 3 can be set for receive only. It is also possible to set for receive on antenna 3 and transmit on 1 or 2. Also, if one is planning for computer control (*and who isn't these days? -BK*), it is necessary to download the virtual port drivers from the Yaesu website. Follow the instructions and use the enhanced port for most features. When initially putting the radio into service, it's best to have the manual in hand. This radio does a

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Photo A. The Yaesu FTdx101MP transceiver offers 200 watts out on 160 to 6 meters, a second receiver with its own full set of controls and much more. (Courtesy of Yaesu USA)



Photo B. The 3DSS screen on the FTdx101. It shows not only activity, but signal strength and time as it fades into the distance. (Photos B-E by the author)

lot of things, and the manual will help in learning the many features.

Starting With the Screen

When first turned on, the 7-inch TFT (thin film transistor) “touch screen” comes up with the 3DSS (3 dimensional spectrum stream). This display shows signals in frequency, signal strength, and time. It’s an interesting multi-color display (Photo B). There are other displays available, including the waterfall (which I use most of the time –BK), split display (with both main and subreceiver activity displayed), and multimode, which displays an oscilloscope and the AF-FFT (audio frequency fast Fourier transform) display, as well as the waterfall or 3DSS. The sweep speed of the oscilloscope may be set after touching the screen to bring up the menu (see manual). Display size can be changed by using the “Expand” button, and can be narrowed to one receiver only by using the “Mono” button. The span of the frequency displayed in the waterfall or 3DSS may be set from 1 kHz to 1 MHz. This is useful for monitoring activity only on the frequencies of interest in a particular contest, such as 7.0 to 7.1 MHz during a CW contest on 40 meters. The metering for both receivers and the transmitter are on the main display as well, and the different meter functions may be changed by touching the meter area and selecting the proper meter function. There are three display settings, “Fix,” “Cursor” and “Center.” Each has a purpose, but I usually prefer leaving it set on “Fix.” Best to look at the manual to see what works best for your individual preference.

The filter bandwidth, contour, notch, and shift control effects may be seen in

the filter area of the display as well. This display for each receiver is to the right-hand side of the S-meter display. This is a great way to visualize the effect the various controls have on the received signal. For example, I can see the received signal in the filter display, but there is some interference I’d like to eliminate. I can use the shift control to put the interference in a different part of the filter passband. I can use the width control to narrow the passband. I can use the contour or notch control (or both) for additional tuning within the passband. It is possible to eliminate interference by using a combination of controls while monitoring the effects of each by watching the filter display (see Photos C and D).

Taking Control

As far as controls go, there are separate ones for each of the receivers, not only for volume and RF gain, but also for the interference-fighting features. This would have been high on my wish list, as the FT1000MP had few controls for the second receiver, and they were mostly accessible by punching several buttons.

Tuning the frequency of the FTdx101 second receiver may be done in several ways, depending upon one’s preference. The large silver ring on the outside of the main tuning knob (see below) may be used; the main tuning knob will do the job if the large “Sub” button is pushed, or the tuning may be synced to the main VFO. All have their uses (see Photo E).

A large silver ring (called the MFVD, or multi-purpose VFO outer dial) surrounds the main tuning knob. This is a multi-function control that can be used for tuning the second receiver, for RIT tuning, for VCT tuning, and for a user-

designated function. The buttons surrounding it determine how it will be used. I use my custom function (CS) to control the power output.

Winning the QRM Battle

There are many choices for interference-fighting. First, there are roofing filter choices. You may choose from several, depending upon the optional choices made at purchase. The MP version comes with the 300-Hz, 600-Hz, 3-kHz, and 12-kHz standard for the main RX, and the same, except 300-Hz, for the sub RX. The “Width” control then narrows or widens further. It is possible to hear the difference with each step of the control. The passband can be moved with the “Shift” control. More importantly, the location of the desired signal in the passband with respect to the interference can be seen visually in the filter window, and the passband can be moved away from the interfering signal in most cases. The “Contour” control can also be used to help with extreme interference.

There is also a “Notch” control. The depth and width of the notch may be set with the menu. For SSB, there is a digital automatic notch filter (DNF button) for taking care of those pesky heterodynes. I keep this on at all times for SSB. One feature that I really like is the ability to use both the DNF and the tunable notch at the same time.

At my QTH, even though I’m out in the country, the power company has still not been able to clean up my line noise problem. In the last few weeks, it had gotten worse, almost to the point of all bands being unusable with a conventional transceiver. The FTdx101MP changed that. The noise blanker actually works, and does so without overload. I usually set it on “5” with the menu. Then the digital noise reduction (DNR) takes care of any other noise. This is impressive. I find there is too much echo at the default level 1, but by using the menu and setting the DNR between 10 and 12, the noise is largely gone. On 80 meters, I have generally found this combination to be more effective than the receive antennas I’ve been using. I was able to hear VP6R quite clearly on 80 meters during last year’s CQWW DX SSB contest.

One other interference reduction device is the VCT tuning. This is a variation on the old preselector from the middle of the last century, but improved. It will track with the receiver as the band is tuned. Although the desired signal is attenuated, interference is attenuated a lot more. Again, you can watch this in the filter window. I generally use it only in extreme conditions, and mostly for



Photo C. While listening to A71FJ, a nearby SSB signal appeared within the receiver passband. The interfering signal is shown under the small arrow.

DXing, as the signals I need it for are often too weak for contesting. However, I have also found it to be effective when left on all the time. By using the topmost VCT button to the right of the MFVD ring, the MFVD becomes the tuning dial. By holding in the lower VCT button, the VCT may be centered.

The Second Receiver

While not mentioning the subreceiver much so far, suffice it to say that I have found it to be as effective as the main receiver, something I did not expect. Most of the same features are available on the subreceiver too, as well as the same selectivity. The buttons for the main receiver are, for the most part, duplicated for the subreceiver. When the “Sub” button is pressed, the function menu controls the subreceiver. DNR, noise blanker and other functions are set separately from the main receiver. DNF, contour, and notch have their separate controls. This allows the subreceiver to become the run receiver when operating SO2V (single-operator, 2 VFOs; a one-box version of SO2R, single-operator, 2 radios).

There are several advantages I have found when using this transceiver in everyday DXing. First, by pressing and holding the “Sync” button, the second receiver / VFO changes bands if necessary, matching and tracking the main VFO. If the receivers remain in sync, diversity reception is possible by having the subreceiver on antenna 2 or 3 while the main receiver is on antenna 1. I did this while testing a new 80-meter receive antenna that was separated by a few hundred feet from the transmit antenna. It was amazing to hear the signal’s volume vary from one ear to the other.

Another thing that can be done is using sync and split together. First, the receivers are synced. Then, by pressing and holding the “Split” button, the subreceiver / VFO is moved up 5 kHz (the amount of split is menu adjustable; 5 kHz is the default). Pressing and holding again will move it up an additional 5 kHz. This is nice for setting up quickly to work SSB DX (where it’s common for the DX operator to listen “up 5” from his / her transmit frequency). The amount of the split can be set in the menu, so it could be adjusted to 1 kHz for CW.

As with other recent Yaesu transceivers, the use of the two receivers and associated transmit functions are very intuitive. You simply press the buttons above the main dial. There is



Photo D. By using the contour (small u-shaped image) and notch (long v-shaped image) controls, the interference is gone. The interfering station is still transmitting, as can be seen by turning the contour and notch controls on and off.

a transmit and receive button for each VFO, so you can go split merely by pressing the desired button, or activate the subreceiver by pressing the appropriate button. Since the lights show which is active, it’s easy to know where you’re transmitting or receiving. Pressing the larger “Sub” button transfers the main tuning knob and the function menu to the subreceiver. The main receiver can then be tuned with the outer concentric ring.

A Flurry of Functions

Pressing the “Func” button brings up the menu on the TFT screen. There are many adjustments that may be made to the radio, so many that it is best to keep the manual close by (*this is definitely an RTM radio – read the manual –BK*). Options include voice memory, CW keyer controls, parametric filter adjustments for both receive and transmit audio, and setup menus for PSK and RTTY. Power levels may be set for HF and VHF. I set mine for max out 100 watts on HF for the amplifier and contesting, while setting it for 200 watts for 10 MHz. It can then be adjusted downward and back upward to the set max with the concentric ring.

I don’t normally use the internal keyer for CW in contests (using a Winkeyer instead) because I let my logging program do the keying. However, it’s a good keyer, and can be used for making casual CW contacts when you don’t want to change from your everyday logging program. The keyer has memories and will do serial numbers. Using the function menu will bring up a keypad on the TFT screen for use in controlling the memories, but use of the keyer is enhanced by using the optional FH-2 keypad. Also, there are both rear and front panel key jacks. I leave my contest keyer plugged into the rear, and occasionally plug a different paddle into the front panel to use the internal keyer.

The voice keyer is also useful. It has five memory channels available and the FH-2 keypad is useful here as well. Since my voice has been overused in past contests, I look forward to increased use of this feature. On my initial try with the voice keyer, I found that the “SSB Mod Source” must be set to “Mic.” I had mine set on “rear” for use on WSJT, and ended up resetting the radio before I finally found this out. Trial-and-error is sometimes the best teacher.

For use with digital modes, it is possible to bypass the usual

external soundcard. Although for the most part, digital is not my cup of tea, I do use FT-8 and JT-65 occasionally. You can do this with only the computer using WSJT-X and the radio. PSK and RTTY can be decoded without any external software. CW can be decoded as well. For WSJT, I set the mode to SSB, then in the Radio setting menu, I set “SSB Mod Source” to “Rear” and “Rear Select” to “USB.” There are two USB ports on the front panel for use with an external mouse and keyboard. A wireless mouse may be used, but not all will work. I use a Logitech M310. The mouse is handy for a quick QSY up and down the band.

There are two pre-amps as well as the IPO, or Intercept Point Optimization, function (*which really just turns the pre-amps off –BK*), as well as an attenuator adjustable in 6-, 12-, and 18-dB steps. As a general rule, I operate the lower bands with 6-dB attenuation in the IPO position. The amp1 pre-amp isn’t needed until I get to 17 meters, and amp2 is sometimes used for a weak one on 10 meters. There is enough gain on 80 and 160 meters with the pre-amps that I haven’t felt the need to use my external pre-amp for the low-noise antennas.

The FTdx101 series is compatible with many computer programs featuring CAT control. However, as mentioned above, you must first go to the Yaesu website and download the Silicon Labs virtual port driver. Find the Silicon Labs enhanced com port in Device Manager and you can quickly be up and running. I use the rear USB port for the computer connection, although there is an RS232 port on the back of the transceiver as well. Both DXLabSuite (DX Commander) and N1MM Logger+ accommodate the FTdx101 series with no problem, and I use DX Commander as my radio choice in WSJT-X. Using DX Commander solves many of the problems with radio control in any program that will use it (as WSJT-X does) as a radio choice. It works with all three.

On-Air Impressions

I have been more than pleased with the radio in contest use. I’m using it in the N1MM Logger+ SO2V mode, with one receiver on one band most of the time, and the other receiver on another. I put the bandscope in a dual mode so that I could watch both while operating on one band. This way I could see more activity than I would find by tuning alone. This worked well with one receiver on 20 meters and the second on 10 or 15 meters. I believe I was able to find more contacts on 10 meters than I would otherwise have found. Certainly, it was worthwhile to be able to look for band activity before actually moving to that band. Selectivity was more than adequate, with more adjustability for any QRM encountered. I did find that the auto AGC setting was not to my liking, and changed it to the Mid position for SSB. This suits my preference better, as the slow setting has too much decay time (although that can be adjusted). Hitting the rotor control sometimes also captured the AGC, although that’s not a major problem, as the rotor control isn’t turned that often. In fact, changing to an aftermarket control box eliminated that problem.

Since I use the FTdx101MP mostly outside of contests, I use the speakers and the M-1 reference mic. The M-1 mic has both condenser and dynamic elements available, and both may be used at the same time. There are presets for the built-in equalizer, and well as a graph showing how the audio is shaped. There are also several adjustable pots that allow the tailoring of the audio profile of the individual voice. I prefer this mic when setting up the voice recorder memories. There’s also a provision for recording and playback in the mic itself. I did initially find that the mic wouldn’t power on, but learned that there is a little white switch under the bottom cover that must be switched on. Later manuals for the



Photo E. The front panel shows the buttons around the MPVD ring (see text for details). Notice also the two identical sets of controls to the right of the MPVD. The top one controls the sub-receiver while the main receiver controls are on the bottom.

mic now show this, and there is a revised manual for download on the Yaesu website.

The speakers are adequate for casual operating. There are several ways they can be set up, but I like having the power supply speaker for the main receiver, and the transceiver speaker for the subreceiver. This works well for split operation.

Using the width and shift controls could take care of the QRM problems that you find on 20 meters when there is really only one band open. On one or two occasions, I found the VCT to be effective. Mostly I have found the Shift and Width controls to be adequate most of the time, with the Notch control added in as necessary. The Auto Notch stays on at all times on SSB.

There are three band stacking registers available. Each push of the band button changes to a different register, so I leave one set on the CW portion of the band, with all of the setups I use on CW; one on SSB, again with all of the settings I use on SSB; and one for digital. Pushing the button gives instant band or mode change. Each receiver is independent, so by choosing “Main” or “Sub,” the band can be changed on that particular receiver. Pressing “Sync” will bring both to the same band and frequency.

The antenna tuner works well, but it is noisy in operation. It’s designed to tune within a range of 16-150 ohms impedance on HF. This is enough to match the transceiver to an antenna that may have a higher than desirable SWR. However, it shouldn’t be expected to match a coax-fed 20-meter dipole to 160 meters.

There is a slot below the front panel for an SD card. This may be used to store your personal settings so that in the event a complete reset must be done, settings can quickly be restored. Also, as new versions of firmware are made available, they may be uploaded through the SD card.

While lab testing of radios is far beyond the capabilities of my equipment and technical abilities, others have done technical testing of this radio, notably Rob Sherwood, NCØB, and the ARRL Lab. In fact, Sherwood’s testing was a determining factor in my purchase after seeing the radio in use in Tokyo. Check out Sherwood’s full report at <www.sherweng.com>.

I have now used the FTdx101MP through five contests. While I can’t say that my scores have significantly improved, I can say that my operating pleasure has been greater, and that I have found advantages with the increased features. I still haven’t learned everything that is possible with this radio, but for my activities in amateur radio, it is the best I’ve found.