

## FTdx400 SSB Transceiver, the History of Yaesu "400"

adopted from the original website of **Yasuhiro Yoshida**, JR3XUH, Japan  
[http://www.reocities.com/Heartland/3641/FTdx400\\_english.html](http://www.reocities.com/Heartland/3641/FTdx400_english.html)

The FTdx400 is the very initial model of the Yaesu famous series of "401", which is roughly divided into three types.

- (1) Initial model FTdx400
- (3) Finish model FTdx401 / dx570 / 401B
- (2) FTdx560.

The FTdx400 was all the starts, FTdx401/dx570/401B were a finish edition of the series, and I would say FTdx560 was a product at a transition period. From late 60's to 70's, all of them made their own period as one of the most typical SSB transceivers. There were a lot of editions as the 400 series, but in common, all of them were tube-based equipment and had powerful 200 watt output.

It's easy to wrap up their features under just two or three lines, but who knows the features and differences clear as old timers. For such English readers who wish to know a positioning of the 400 series and difference of each editions, I will provide this page from their mother country. Please take a look at below, so that you may have a knowledge of 400 series as oldtimers ! Here is a complete list of all related models:

Model	Sale on	Price in Japan [Yen]	Price in US [USD]
<a href="#">FTdx400</a>	October, 1967	118,000	
<a href="#">FLdx2000</a>	October, 1967	46,500	
<a href="#">FLdx400</a>	November, 1967	79,000	
<a href="#">FRdx400</a>	November, 1967	62,800	
<a href="#">SPdx400</a>	November, 1967	2,950	
<a href="#">FTV650</a>	June, 1968	29,500	\$194 (1975 catalog price)
<a href="#">FVdx400</a>	April, 1969	18,500	
<a href="#">FT400S</a>	May, 1969	89,000	
<a href="#">FL2000B</a>	September, 1969	79,800	\$359 (1975 catalog price)
<a href="#">FV400S</a>	January, 1970	19,500	
<a href="#">SP400</a>	January, 1970	4,300	
<a href="#">FTdx560</a>	January, 1970		\$450 (1971. Q3 sale price)
<a href="#">FL2500</a>	February, 1971	63,000	
<a href="#">FTdx401</a>	May, 1971	128,500	
<a href="#">FV401</a>	June, 1971	19,500	\$99 (1975 catalog price)
<a href="#">SP401P</a>	August, 1971		\$59 (1975 catalog price)
<a href="#">FT401S</a>	September, 1971	95,500	
<a href="#">FT401D</a>	September, 1971	99,800	
<a href="#">FTdx570</a>	Unknown		\$550 (1972. Q3 sale price)
<a href="#">FT401B</a>	Unknown		\$599 (1975 catalog price)

First of all, let me introduce two entry models of the 400 series named FT-400S and FT-401S, that were only available in Japan. Probably you may know the name of them, but what is the difference of these models and FTdx400/401/560/570....?

FT-400S was a 10 watts version of the FTdx560. Though she was often misunderstood as a low power model of FTdx400, it was completely a different model. Other than the power, I would say FTdx560 and FT-400S were completely the same gears.

On the other hand, FT-401S is(was) a 10 watts model of FTdx401 and FTdx570, with single 6JS6 tube for final power amplifier instead of two of 6KD6s. As FTdx560 was improved to equip a fan and a noise blanker to be the FTdx570, FT-401S had also been improved by adding such new features to FT-400S.

One more model was a FT-401D, that had 100 watt output with two of 6JS6 tubes; say mid brother of the FT-401S and FTdx401. There was a modification kit for FT-401S available at Japanese market to make the 401S 100 watts output possible, same as FT-401D, that contained one 6JS6 and its socket, that makes parallel 6JS6s possible, and capacitor for rectifier circuit for 600V Ep.

There was another model named FT-401B which looks similar to the FT-401S and FT-401D. But FT-401B was a 200 watts model, an improved model of FTdx401/570 to be equipped with an AM mode and a CB band, and had brushed up face, that was only available in US. FT-401B was the very finish model of 400 series as well.

There were some related models of FTdx400, "[The YAESU twins \(translation\)](#)", FLdx400 for the transmitter and FRdx400 for the receiver. I believe [this](#) would be a good hint for twins owners who wish to repair her performance better, though Japanese subscription ([translation](#)). In addition, there were some [linear amplifiers \(translation\)](#) as FLdx2000, FL2000B, and FL2500, as well as [matching VFO's \(translation\)](#), [speakers](#) and a [transverter FTV650](#), etc.

Also there were some related models in Europe under SOMMERKAMP brand, such as FTdx500, FTdx505 and FTdx575. I'm not sure at present but FTdx500 was a sister model of FTdx400, FTdx747 was of FTdx560, and FTdx505 seems to have been a sister model of FTdx401/570. Related information from any European readers would be appreciated.

## What's FTdx400

The FTdx400 was one of the flagship models of YAESU MUSEN Co., that was designed to provide the best performance for variety of user demands by means of tube that was the most stable electronic device at that era.

In terms of SSB transceiver that consisted of tubes, FTdx400 was similar to the Heathkit SB-401 and Collins KWM-1/KWM-2 in general. However, because Yaesu had very challenging models of FT-100/ FTdx100, the positioning of another FTdx400 at Yaesu had been a bit different from Heath and Collins. Since FT100/FTdx100 consisted of transistors mostly (except for power amplifier), kind of mother model of well known FT-101, and therefore that can be used comfortably at field operation with built-in DC-DC converter, FTdx400 was mainly focusing on its performance and usage as base station.

If only FTdx400 was set upon an operation desk, running 400W high power operation had easily been possible. Not only the high power operation, but also the FTdx400 had all the power supply installed as well as many accessory circuits such as frequency calibrator, VOX, high accurate and stable VFO, clarifier and break-in for CW operation; one of the highest cost performance equipments for radio amateur.

It was on the market on Oct.,1967, catalog price was 118,000YEN in Japan. Since freshman's salary of that time was 30,000YEN to 40,000YEN in Japan, the FTdx400 was just coincide to FT100MP MarkV now.

Also difference was in exchange rate between USD and Japanese Yen, which was greatly different from now (USD\$1 = 360 Yen at that time. Currently USD\$1 = 100 Yen ), trade situation might be very much advantageous to Japan.

Here is a picture from ad. on May 1967's ham radio magazine, which I guess was a prototype of the FTdx400. It looks very much similar to FTdx100.



Many thanks to JA7UQ

As all of old timers know well, the FTdx400 had many versions in its model. According to my investigation, there were five or six versions of model in FTdx400.

I have ever seen from second to fifth version of the Ftdx400 at US eBay auction, but never saw first version in US. On the contrary, there are so many auctioned items of the first through fourth version in Japan, but not for fifth version.

### 1. Very first model of the FTdx400



When the FTdx400 was on the market on October,1967, it was:

- with beautiful silver face, gray cabinet and silver metal legs.
- 2x 6KD6 for final tube that allow to run 400 watts operation.
- Hybrid stable VFO allows us to read out 1 KC(not KHz !) correctly.
- AM operation possible
- There are no four slide switches at front face.

Some switches at an outside of a double axis knob were allocated for switches of substitution of the slide switches of FTdx560 etc. Also the features of this very first model of the FTdx400, that were fairly big differences from well known FT401/570(the latest model), were as follows:

--Use **big power transformer**: muuuuch more lager than FTdx560/570's.

The transformer had a copper band for magnetic flax shield.

- All rheostats were placed at a **side panell of the final cage**.
- VFO was oscillated from 8.4M to 8.9M usinng 2SC372 bipolar transistor.
- 50K/turn dial** with adjustable knob for rotation smoothness
- Simple VFO finction selection was only provided. EXT VFO was working for only transmission.
- Driver tube using was 5763
- No CW filter was applied.
- No Fan (did not adhere)
- Frequency verniar for the transmission was installed as well as clarifier for receiving.
- Even low voltage surply for transistors was from VR105MT.
- First IF transformer was NOT a BPF but tuned with variable capacitor at VFO section.

Also please take a look at [this page](#). This is a page for my restoring memory when I got this first version of FTdx400 on June 2002. You will find a lot of pictures inside a cabinet.

2. **SECOND EDITION --First big change of the face (around December 1968)**



- Driver tube was improved to 6GK6
- Tuning dial was changed to [double rate coaxial style knob](#) in order to make it same looks as the FVdx400.
- ACC connector was changed from 9 pin to 11 pin. That makes it easy to hook up the FTV650(June 1968) onto FTdx400.
- VFO selector switch was changed by which cross operation using EXT VFO had been possible.

3. **THIRD EDITON**



- Transformer was changed to smaller one; same size one as FTdx560/570's.
  - All rheostats were moved to back panel.
  - Power surply for VFO was from Cathode of the 6BM8.
- Since the face was completely the same as previous one, this modification might be for rather cost down issues than improvement.

4. **FOURS EDITION --Modification towards the third face and fundamental circuit improvement**



- (later than serial number of 9062241(on the market after June 20th 1969 in JA))
- Main tuning knob was changed from double rate coaxial dial to 25KHz/turn dial.
  - Also VFO circuite had been chaged to FET circite instead bipolar transister.
  - Silicon diode for high voltage rectifire had been chaged to 10D10.
  - First IF transformer was changed to BPF.
  - Crystal filter was changed from XF3 to XF3A. CW filter (XF3C) can be installed as option. [See](#) internal structure of XF-3 (bottom) and XF31A(upper). Both filter was using 6x HC6U X'tal unit.
  - Power output for CW mode had been able to be adjustable by a rheostat placed at main PWB.
- There was a miner change edition of this version that was around June 1970 that changed a VFO frequency to 8.9M - 9.4M, using FET. This range of the VFO frequency had been the basis of later all items of Yaesu equipment including FT101.

5. **FINAL EDITION of the FTdx400**



--Changed to 100KHz/turn dial; same as FTdx560/570's.  
This fifth version was a base model to be the FTdx560. Basically, there were no change circuitry other than a rejection of AM mode and change in their view.