

Product Catalog

# HF&V/UHF ALL MODE TRANSCEIVERS



# Inherent Passion and Inspiration

Creating the Future of HF communications

FT DX 101

## True Performance

Hybrid SDRs (Narrow Band SDR & Direct Sampling SDR)

- 2kHz RMDR 123dB+
- 2kHz BDR 150dB+
- 2kHz 3rd IMDR 110dB+

400MHz HRDDS (High Resolution Direct Digital Synthesizer)

2kHz Phase Noise -150dBc/Hz

VC-TUNE (Variable Capacitor Tune) signal peaking

3DSS (3-Dimensional Spectrum Stream) visual display



# The Conclusive Choice

Offering True RF Performance & Exciting New Features



HF/50 MHz Transceiver

**FTDX 101MP** 200 W

- External Power Supply with 100mm (3.94") Front Facing Speaker: FPS-101 included
- VC-Tune unit x 2 (MAIN and SUB bands) included
- 300 Hz Crystal Roofing Filter (MAIN band) included
- 600 Hz Crystal Roofing Filter (MAIN and SUB bands) included
- 3 kHz Crystal Roofing Filter (MAIN and SUB bands) included



HF/50 MHz Transceiver

**FTDX 101D** 100 W

- VC-Tune unit (MAIN band) included \*For VC-Tune SUB band unit installation, please contact YAESU
- 600Hz Crystal Roofing Filter (MAIN and SUB bands) included
- 3kHz Crystal Roofing Filter (MAIN and SUB bands) included

### Supplied Accessories

- FTDX101MP:**
- External Power Supply with Speaker: FPS-101
  - Hand Microphone SSM-75G

- FTDX101D:**
- DC Power cable
  - Hand Microphone SSM-75G

### Optional Accessories

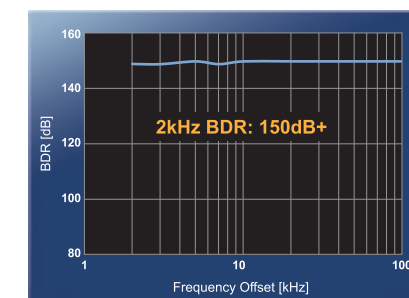
- 
  - SP-101 External Speaker
  - Maximum input: 7 Watts
  - Impedance: 8 ohms
  - Speaker diameter: 100 mm
  - Size (WxHxD): 6.30" x 5.12" x 12.68" (160 x 130 x 322 mm)
  - Weight (approx.): 4.41 lbs (2 kg)
- 
  - M-1 Reference Microphone
  - Revolutionary dual microphone configuration
  - Nine-band graphic equalizer
  - Treble Boost Cowling produces a unique tonal texture to the transmitted audio

### Narrow Band SDR

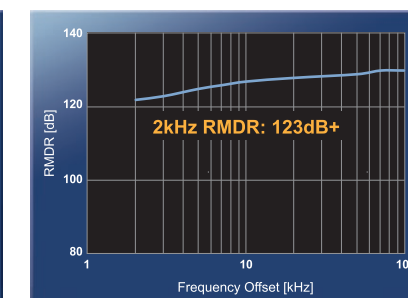
Crystal Roofing Filters Enable Phenomenal Multi-signal receiving characteristics

The Down Conversion type receiver configuration is similar to the FTDX5000. With a low noise figure dual gate MOS FET, D-quad DBM (Double Balanced Mixer) with excellent intermodulation characteristics. Narrow band SDR configuration with the first IF at 9MHz makes it possible to have excellent narrow bandwidth

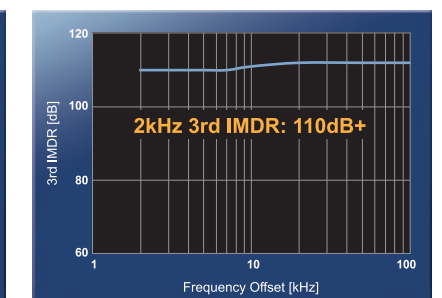
crystal roofing filters that have the desired sharp cliff edge shape factor. These high quality roofing filters enable the amazing multi-signal receiving performance demanded when faced with the most challenging on-the-air interference situations.



■ 14MHz Band Blocking Dynamic Range (BDR)



■ 14MHz Band Reciprocal Mixing Dynamic Range (RMDR)



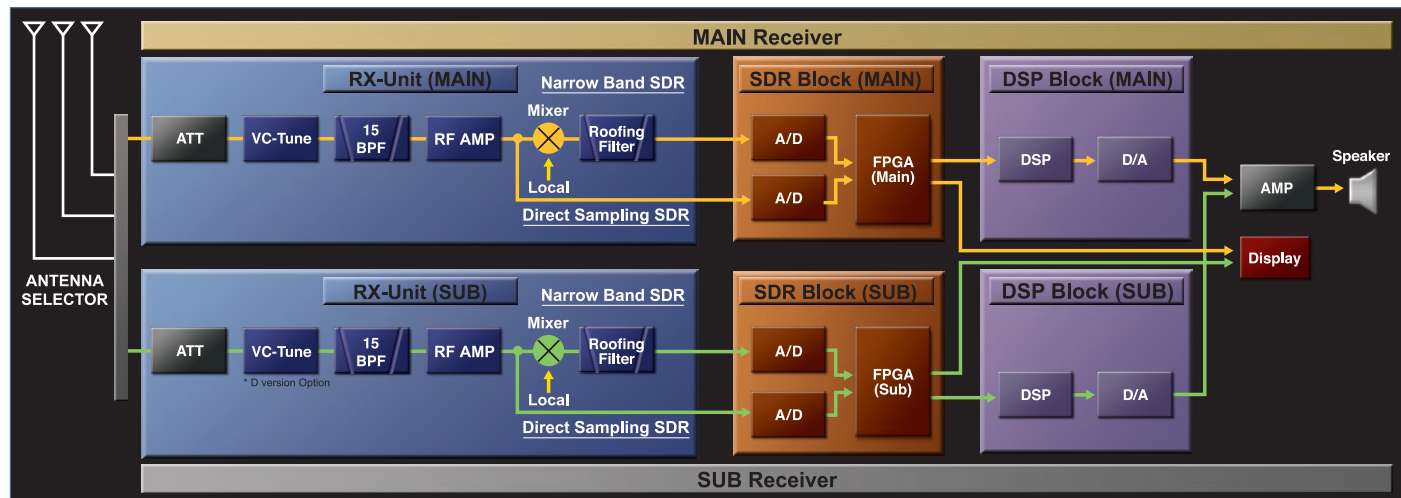
■ 3rd IM Dynamic Range (IMDR)

Dual Hybrid SDR Receivers (Narrow band SDR & Direct Sampling SDR)

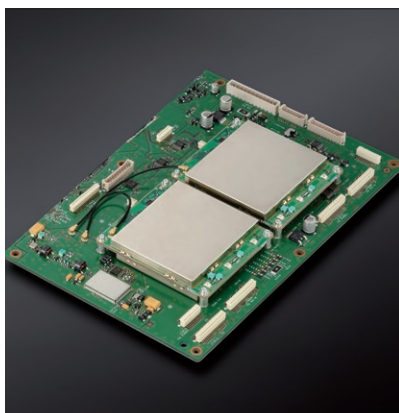
◎ Emphasizes Excellent Receiver Performance and Hybrid SDR Functionality Digital Processing Generated Real-Time Spectrum Scope

The FT DX 101 series uses a hybrid SDR configuration that integrates a direct sampling SDR receiver in order to view the entire band status in real time, with the excellent dynamic receiver performance achieved by the narrow band SDR receiver circuit. The Direct Sampling SDR driving the real time Spectrum display with its large dynamic range enables the weakest signal to be observed on the display when it appears and the Narrow Band SDR enables that signal to be selected,

filtered and then decoded. If there is powerful AM station near your location or in challenging operating situations where there are a lot of strong signals in the band from Contests, DX-pedition activities, those signals outside the passband are attenuated by the very effective roofing filter at the front stage of the A/D converter. Therefore, interference is reduced making it is possible to continue to operate even under such difficult conditions.



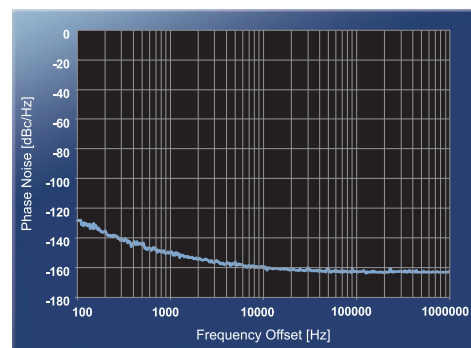
■ Completely Independent Dual Hybrid SDR



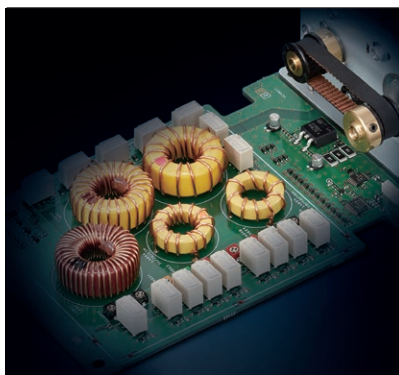
■ 400MHz HRDDS Unit

Ultra Low-Noise Local Oscillator System; 400MHz HRDDS (High Resolution Direct Digital Synthesizer)

The local circuit of the FT DX 101 uses the 400 MHz HRDDS method. This circuit configuration generates a local signal by directly dividing from a high frequency of 400 MHz, the theoretical PLL lockup time becomes zero, and C/N deterioration by the lockup time does not occur. The significantly improvement of the C/N characteristic by directly dividing the frequency down contributes dramatically to reducing the noise in the entire receiver stage, and so improves the BDR (Blocking Dynamic Range) close-in performance. In the FTDX 101 series, the 400 MHz HRDDS latest design characteristics and the careful selection of the components used in the design results in the phase noise characteristic of the local signal that achieves an excellent value of -150dBc/Hz at 2kHz separation.



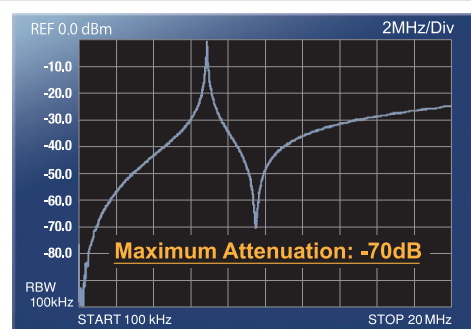
■ 1st Local OSC Phase Noise (14.2 MHz)



■ VC-Tune RF Preselector

Automatic RF Preselector VC-Tune with a high precision stepping motor

In the FT DX 101 series, a next-generation RF preselector VC-Tune design further improves the high performance RF  $\mu$  Tuning system, by using a remarkable miniaturization design while producing an unparalleled attenuation characteristic of maximum attenuation -70 dB. A high precision stepping motor drives a variable capacitor (VC) to continuously cover the band as it follows the tuning by the operator. Fine-tuning for optimum improvement point is also available by using the MPVD (Multi-Purpose VFO Outer Dial) placed outside the main VFO dial knob.



■ VC-Tune (7MHz, Span 20MHz)



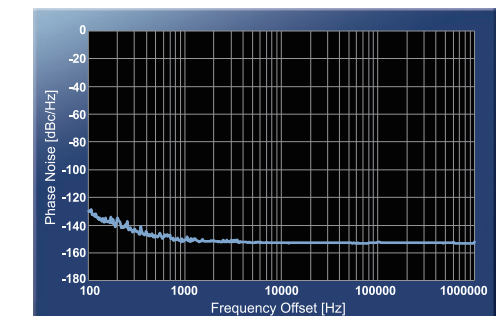
■ Transmit Final Stage

Signal Purity

■ High-Quality Transmission with Outstanding Phase noise Characteristics

The excellent C/N characteristics provided by the 400MHz HRDDS (High Resolution Direct Digital Synthesizer) used in the local oscillator circuit also contributes significantly to the transmitter section performance. In the FTDX101, a thorough examination of each element up to the final TX stage was made. The clock-distributor that divides and distributes the local signal from the 400MHz HRDDS circuit to each block, as well as the FPGA, D/A converter, the final power amplifier etc., and carefully selecting the latest circuit configurations to improve the C/N characteristics of the entire transmitter block. The transmit signal is directly generated from a 16-bit D/A converter without passing through a mixer circuit, therefore distortion and noise are significantly suppressed. As a result,

high-quality local signal characteristics are maintained without degradation to the final stage, and the transmission phase noise characteristics achieve -150 dBc/Hz at 2kHz separation.



■ TX Phase Noise (14 MHz band, Mode: CW)

New Generation Scope Display 3DSS

■ Intuitively grasp changes in the Strength of the Signals

The 3DSS display is a remarkable completely new system that displays the constantly changing band conditions in three dimensions (3-D) with the frequency as the horizontal axis (X axis), the signal strength as the vertical axis (Y axis), and the time axis as the Z axis. The operator can intuitively view the constant changes in a signal's strength as the signal flows to the back of the screen giving you a sensation of traveling in Time space. The operator can effectively see the close-in QRM situation from the Narrow band SDR output while at the same

time easily observe activity across the whole band from the Direct sampling SDR output.



■ 3DSS Display ■ DUAL/Vertical Display ■ MULTI Display

Front Panel Design Emphasizes Solid Superior Response and Operability

■ ABI (Active Band Indicator)

ABI indicators are arranged as the band select keys in a horizontal row above the VFO dial. When the MAIN Band is selected, the LED indicates in white, and when the SUB Band is selected, the LED indicates in blue. When transmit is keyed, the LED turns red and you can instantly confirm which VFO is transmitting.



■ ABI (Active Band Indicator)

■ MPVD (Multi-Purpose VFO Outer Dial)

The MPVD is a large high-grade aluminum multifunctional ring around the outside of the VFO dial. The ring allows control of SUB VFO frequency dial, VC-TUNE, Clarifier and C/S (custom select function). The MPVD is a handy dial that allows you to adjust important functions in ever-changing HF communications without taking your hand off the VFO.



■ MPVD (Multi-Purpose VFO Outer Dial)

**OPTIONS**

<ul style="list-style-type: none"> <li>● M-1 Reference Microphone</li> <li>● M-100 Dual-Element Microphone</li> <li>● M-90D Desktop Dynamic Microphone</li> <li>● M-90MS Kit Dynamic Microphone Kit</li> <li>● SSM-75G Hand Microphone</li> </ul>	<ul style="list-style-type: none"> <li>● SCU-53 Cable for M-90MS Kit (8-pin modular to Round 8-pin)</li> <li>● M-70 Desktop Microphone</li> <li>● YH-77STA Lightweight Stereo Headphone</li> <li>● SP-101 External Speaker</li> </ul>	<ul style="list-style-type: none"> <li>● FC-40 Automatic Antenna Tuner (for Long wire antenna)</li> <li>● SCU-LAN10 Network Remote Control System LAN Unit</li> <li>● FH-2 Remote Control Keypad</li> </ul>	<ul style="list-style-type: none"> <li>● VC-T-101 VC-Tune unit FTDX101D (for SUB Band) *VC-Tune unit option Please contact Yaesu about installation.</li> <li>● CW Narrow Filter                     <ul style="list-style-type: none"> <li>● XF-128CN (MAIN) 9.005 MHz / CW 300 Hz</li> <li>● XF-129CN (SUB) 8.900 MHz / CW 300 Hz</li> </ul> </li> <li>● SSB Narrow Filter                     <ul style="list-style-type: none"> <li>● XF-128SN (MAIN) 9.005 MHz / SSB 1.2 kHz</li> <li>● XF-129SN (SUB) 8.900 MHz / SSB 1.2 kHz</li> </ul> </li> </ul>
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# Birth of a New Standard in HF Transceivers

Inheriting the Performance of the World Leading FTDX101 HF Hybrid SDR radio

Hybrid SDR Receiver (Narrow Band SDR & Direct Sampling SDR)

9 MHz Down Conversion Receiver Configuration

IF Roofing Filters produce Excellent Shape Factor

IF DSP enables Superb Interference Rejection

5-inch TFT Color Touch Panel with 3DSS Visual Display

Superior Operating Performance supported by the MPVD



\* External Speaker SP-30: Optional

# A New Legend Begins...




HF/50 MHz Transceiver

**FTDX 10** 100 W

- 500Hz Crystal Roofing Filter included
- 3kHz Crystal Roofing Filter included
- 12kHz Crystal Roofing Filter included

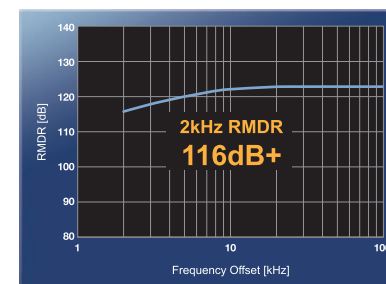
\* 300Hz Crystal Roofing Filter (Optional)

Supplied Accessories	
• Hand Microphone SSM-75E	• DC Power cable
Optional Accessories	
 <ul style="list-style-type: none"> <li>■ SP-30 External Speaker</li> <li>• Maximum input: 12 Watts</li> <li>• Impedance: 4 ohms</li> <li>• Speaker diameter: 77 mm</li> <li>• Size (WxHxD): 4.5" x 3.6" x 10.4" (115 x 91 x 263 mm)</li> <li>• Weight (approx.): 3.3 lbs (1.5 kg)</li> </ul>	 <ul style="list-style-type: none"> <li>■ M-70 Desktop Microphone</li> <li>• Long stroke Smooth Operating PTT Key</li> <li>• Built-in Low-cut Active Filter</li> </ul>

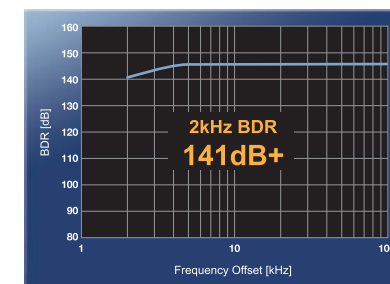
## Hybrid SDR with Ultimate Receiver Performance

The FTDX10 uses a Hybrid SDR receiver configuration with Narrow band SDR and a first IF at 9MHz. The narrow bandwidth crystal roofing filters have the desired sharp "cliff-edge" shape factor. The roofing filters enable the amazing multi-signal receiving performance demanded by operators faced with the most challenging on-the-air interference situations. The Direct Sampling SDR receiver, with its great dynamic range, drives the real time spectrum scope, enabling the weakest signals to be observed on the display.

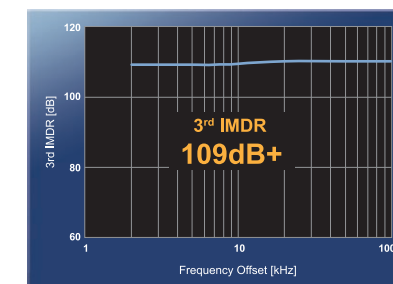
In combination with the down-conversion configuration, the FTDX10 has implemented an outstanding low-noise Local Oscillator and the latest circuit configuration where all circuit elements are carefully selected. As a result, the close-in RMDR (Reciprocal Mixing Dynamic range) in the 14 MHz band is 116 dB or better, BDR (Blocking Dynamic Range) is 141 dB or better, and the 3rd IMDR (third-order Intermodulation Dynamic Range) is 109 dB or better.



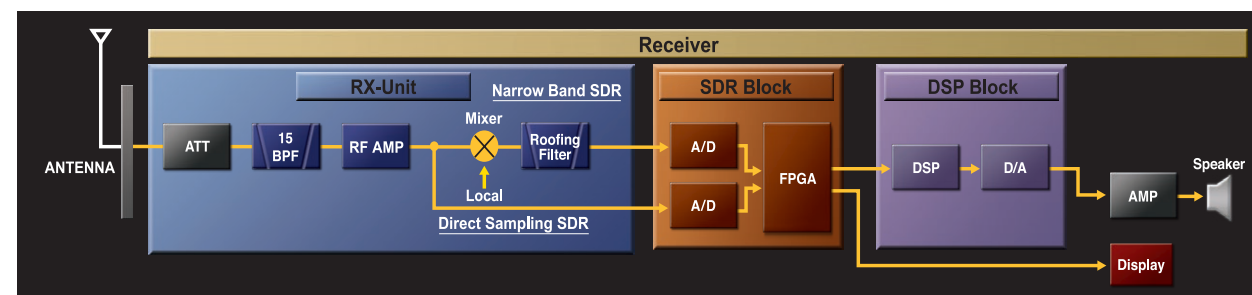
■ 14MHz Band Reciprocal Mixing Dynamic Range (RMDR)



■ 14MHz Band Blocking Dynamic Range (BDR)



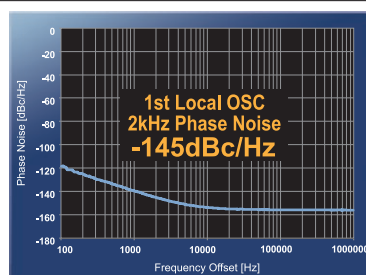
■ 14MHz Band 3rd Intermodulation Dynamic Range (IMDR)



■ Receiver Block Diagram

**Ultra-Low-Noise Local Signal Generated by the 250MHz HRDDS (High Resolution Direct Digital Synthesizer)**

The C/N ratio (carrier-to-noise ratio) of the local oscillator signal injected into the 1st mixer, is an important factor in improving the close-in multi-signal receiver characteristics. The local signal of the FTDX10 is produced by directly dividing the high frequency of the 250MHz HRDDS (High Resolution Direct Digital Synthesizer). In this circuit configuration of the SDR module, the theoretical PLL lockup time becomes zero, and C/N deterioration caused by the lockup time does not occur. The significant improvement of the C/N characteristic by directly dividing the frequency, contributes dramatically to reduction of noise in the entire receiver stage. The FTDX10 latest circuit design with the 250MHz HRDDS and the careful selection of components, results in the phase noise characteristic of the local signal achieving an excellent value of -145dBc/Hz or better at 2kHz separation (14MHz band).



1st Local OSC Phase Noise (14.2MHz)

**15 separate (HAM 10+GEN 5) Powerful Band Pass Filters**

There are 15 band pass filters (BPF) between the attenuators and the RF amplifier stages. These are divided into 10 Band Pass Filters dedicated to the amateur bands and 5 Filters dedicated to the General coverage receiver (GEN). Band Pass filters are automatically selected according to the frequency band to eliminate out-of-band unwanted signals and send the desired signal to the RF amplifier.



15 Separate Band Pass Filters



32-bit High Speed Floating Decimal Point DSP

**Effective QRM rejection afforded by IF DSP**

The 32-bit high-speed floating decimal point DSP, TMS320C6746 (maximum 2949 MIPS/ 2220 MFLOPS) produced by Texas Instruments, is used for the IF section of the FTDX10. The signal processor operates at 368.64 MHz clock frequency.

The Yaesu Renowned Interference Reduction Systems: SHIFT / WIDTH / NOTCH / CONTOUR / APF (Audio Peak Filter) / DNR (Digital Noise Reduction) / NB (Noise Blanker) controls are all accessed from the front panel.



IF DSP Operating Status Display

**Excellent visibility & Touch Panel Operation with 3DSS visual display**

**5-inch TFT Color Touch Panel Display**

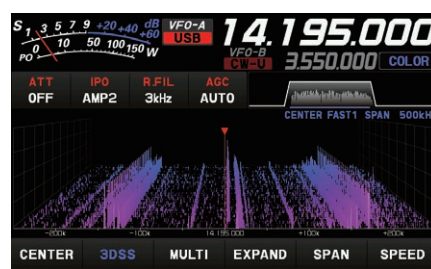
The large wide full-color touch panel display, affords intuitive management of operating frequency, meters and main function settings.

Size : 5-inch Wide  
Resolution : 800 × 480 pixels

[Scope Specifications]  
Sweep speed: 30 FPS (Approx.)  
Display Range: 100dB  
Span width: 1 - 1000kHz

**3DSS (3-Dimensional Spectrum Stream)**

The 3DSS presents the constantly changing band conditions in three dimensions (3-D) with the frequency as the horizontal axis (X axis), the signal strength as the vertical axis (Y axis), and the time as the Z axis. The signal strength flows in time to the rear of the screen. The operator can intuitively view the constant changes in signal strength.



3DSS(3-Dimensional Spectrum Stream)

**MULTI Display**

In addition to the RF Spectrum Scope display, the MULTI Display mode allows both the oscilloscope and the AF-FFT audio scope to be shown on the screen simultaneously. Even in the contest fray, the receive band MULTI display view allows monitoring of the contact station's transmit signal audio characteristics with the AF-FFT function.

At the same time the IF filter and interference reduction functions can be observed on the MULTI display for their influence on the receive signal, etc.



MULTI Display: 3DSS



MULTI Display: Waterfall

**Versatile Touch Panel Operation**

**Frequency Direct Entry**

In addition to frequency changes performed by the VFO dial, the FTDX10 supports ten key frequency input using a keypad that is displayed by touching the TFT Panel frequency display.

**Instant Frequency Setting by Scope screen**

The transceiver frequency can be instantly changed to match a signal shown on the scope screen display by touching the peak of the desired signal.

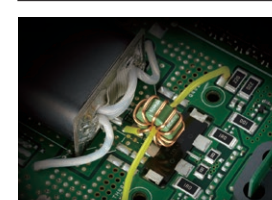


Frequency Direct Entry



Frequency Setting by Scope Screen

**High-Purity Transmission Signal**



TX Final Stage

Based on the high-quality local signal generated by the 250MHz HRDDS, the FTDX10 transmit signal is directly generated by a 16-bit D/A converter, therefore distortion and noise are significantly suppressed and C/N of the entire TX block is improved. As a result, the transmission phase noise characteristics achieve -145dBc/Hz at 2kHz separation.

**Important primary operating functions are arranged near the VFO dial**

**MPVD (Multi-Purpose VFO Outer Dial)**



The large MPVD multi-purpose dial on the outside rim of the VFO dial can be used for comfortable frequency fast-tuning in combination with the VFO dial. The MPVD dial may also be assigned to adjust other functions that may be important in the ever-changing HF communications operations, without taking your hand off the VFO.

**High Speed Automatic Antenna Tuner**



Automatic Antenna Tuner

The FTDX10 internal antenna tuner uses microprocessor-controlled LC relay switching. Tuning data is automatically retained in a large capacity 100 channel memory. When changing frequency, the optimized antenna tuning data is immediately recalled to reduce tuning time, and realize the best matching point.

**FUNC (Function) knob**



Rotate the FUNC knob to select an item in the setting menu, or change setting values, etc. The FUNC knob can be pressed to quickly select an item and then adjust the setting values or levels with the same knob. A frequently used function or setting menu may be assigned, so it can be accessed quickly and the setting changed by simply turning the knob.

**Extensive External input/output connections**

**External Display Connection**

An external digital video output terminal (DVI-D) is furnished on the rear panel. Directly connect to an external display using a commercially available DVI-D digital cable without need of the LAN connection or LAN unit. It enables video operation and communication such as projecting the detailed band conditions or filter settings by a High-resolution large screen monitor.



**Compatible Long wire Auto Antenna Tuner (FC-40)**

A tuner terminal on the rear panel supports the FC-40 auto antenna tuner that can match a wire 20m or more in length to amateur bands 1.8MHz to 30MHz, 50MHz to 54MHz. Matched frequencies are stored in 200 matching memories making tune-up much quicker when returning to a previously used operating frequency.

**Equipped with Three USB Ports**

Two USB ports (A type) on the rear panel are available to use for operating the transceiver and inputting text with a connected mouse and keyboard. And a USB connection terminal (B type) that supports CAT operation, audio input/output and TX control.

**Remote Operation with Network Remote Control System**

**Supports Spectrum scope and various functions Enables comfortable operation even from a remote location**

The LAN/Internet Network Remote Control System permits transceiver operation from a remote location (Requires optional LAN Unit). In remote operation the transceiver basic operations, the spectrum scope and the versatile displays enable sophisticated station control. Also, there are diverse exciting uses such as monitoring the band status on a large display at a location away from the "ham shack", by connecting to a home LAN network



**Essential Features in Remote Operation**

- Flexible Operating Panel Layout
- Basic Transmit/Receive operation
- Spectrum scope Function (3DSS, Waterfall Display)
- MULTI Screen Display (Band Scope / Oscilloscope / AF-FFT)
- Roofing Filters & Interference Reduction functions
- Memory Channel Function
- Shortcut Operations from the PC keyboard
- Others

**OPTIONS**

<ul style="list-style-type: none"> <li>● M-1 Reference Microphone</li> <li>● M-100 Dual-Element Microphone</li> <li>● M-90D Desktop Dynamic Microphone</li> <li>● M-90MS Kit Dynamic Microphone Kit</li> <li>● M-70 Desktop Microphone</li> <li>● SSM-75E Hand Microphone</li> <li>● YH-77STA Lightweight Stereo Headphone</li> </ul>	<ul style="list-style-type: none"> <li>● ATBK-100 Antenna Base Kit for ATAS-120A*1</li> <li>● ATAS-120A Active Tuning Antenna*1 (Automatic Type)</li> <li>● ATAS-25 Active Tuning Antenna (Manual Type)</li> </ul>
<ul style="list-style-type: none"> <li>● SP-30 High-Quality External Speaker</li> <li>● FC-40 Automatic Antenna Tuner*1 (for Long wire Antenna)</li> <li>● SCU-LAN10 Network Remote Control System LAN Unit</li> <li>● FH-2 Remote Control Keypad</li> <li>● XF-130CN CW Narrow Filter 9,005 MHz / CW 300 Hz</li> <li>● MHG-1 Side Carry Handle</li> </ul>	<ul style="list-style-type: none"> <li>● CT-39A Packet Interface Cable</li> </ul>

\*1 FC-40 and ATAS-120A cannot be used simultaneously

# High Reliability and Durability are Assured for Long-lasting Enjoyable Operations on the HF Bands FT-891

HF/50MHz 100W All Mode Exciting Field Gear Transceiver  
In keeping with Yaesu's uncompromising receiver design, The 3kHz Roofing Filter is included as standard equipment



HF/50 MHz 100 W All Mode Mobile Transceiver

## FT-891

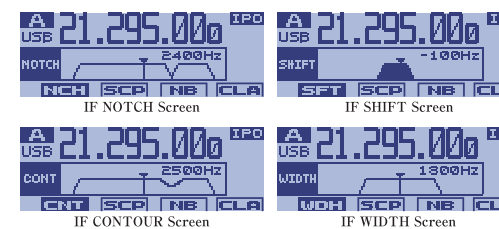
Supplied Accessories: MH-31A8J Hand Microphone, Mobile Mounting Bracket, DC Cable



32-bit High Speed Floating Point DSP

### IF DSP Provides Effective and Optimized QRM Rejection

The 32-bit high speed floating Point DSP (max 3000 MIPS) provides effective cancellation/reduction (DNR) of the random noise that is frequently frustrating in the HF frequencies. Also: the AUTO NOTCH (DNF) automatically eliminates the dominant beat tone. The CONTOUR and the APF are very effective receiver noise reduction tools in the HF bands operations. The YAESU original DSP QRM and noise reduction functions are provided.



The Large Diameter Main Tuning Dial

### Large Diameter Main Tuning Dial (1.6"/41mm) with Torque Adjustment

The FT-891 operation is enhanced by the large diameter (1.6"/41mm) Main Tuning Dial, which is similar in size to the tuning knob of the larger-sized HF base station. The Torque of the Main Tuning Dial can be adjusted easily for your operating preferences.



### Detachable Front Panel for Convenient Mounting and Operation

Convenient mobile operation by remotely mounting the Control Panel with the optional front panel separation kit (YSK-891)



### Automatic-Matching 100 Memory Antenna Tuner (Optional)

The FC-50 is an optional microprocessor-controlled antenna tuner that is designed specifically for use with the FT-891. The FC-50 can be easily attached to the FT-891.

### Front Panel Design Achieves Optimal Operability

- Three Programmable Front Panel Function Keys may be set to the user's personal preferences
- Multi-Function knob allows quickly changing the operating band, and adjusting other settings.
- Large Transmit/Receive indicator LEDs clearly inform the operator about the current state of the transceiver



### Useful and Convenient Functions

- Large dot matrix LCD display with Quick Spectrum Scope
- USB port allows connection to a PC with a single cable (CAT control, PTT/RTTY control)
- TUN/LIN connector allows connection of optional FC-50 or linear amplifier
- Advanced electronic keying (4 to 60 WPM) with FULL BK-IN support
- Supports Active-Tuning Antenna system (ATAS-120A, ATAS-25 :Option)

### Rugged construction in an Ultra Compact body

#### ULTRA COMPACT Design

Measuring 6.1" x 2.0" x 8.6" (155 x 52 x 218 mm), the FT-891 is an innovative Multi-band, Multi-mode Mobile/Portable transceiver with Ultra Compact and rugged case design.

#### 100 Watts Reliable High Power Output

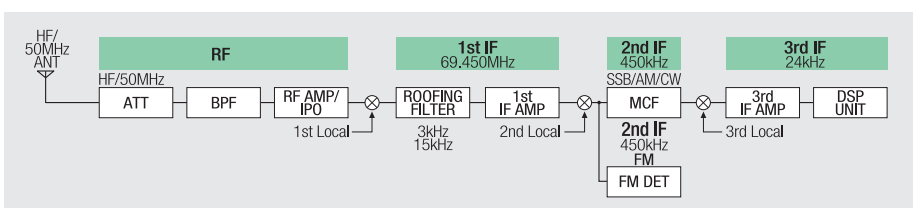
The FT-891 provides stable 100W high power output. High reliability is assured by the careful transmitter circuit design with efficient thermostatically-controlled Dual internal fans and the diecast chassis.



Thermostatically-controlled Dual Internal fans

### Yaesu Uncompromising Receiver Circuit Design Ensures Excellent Performance

- Triple conversion with 1st IF frequency of 69.450 MHz (SSB/CW/AM)
- 3 kHz roofing filter equipped as standard
- TCXO provides ±0.5 ppm High frequency stability (-10°C to +50°C)



● M-1 Reference Microphone

● M-100 Dual-Element Microphone

● M-90D Desktop Dynamic Microphone

● M-90MS Kit Dynamic Microphone Kit

● M-70 Desktop Microphone

● MH-31 A8J Hand Microphone

● MH-36 E8J DTMF Hand Microphone

● YH-77STA Lightweight Stereo Headphone

● FC-40 Automatic Antenna Tuner\*1 (for Long wire antenna)

● FC-50 Automatic Antenna Tuner\*1

● FH-2 Remote Control Keypad

● YSK-891 Front Panel Separation Kit

● CT-39A Packet Interface Cable

● ATBK-100 Antenna Base Kit\*1 (for Base operation on 6 m Band)

● ATAS-120A Active Tuning Antenna\*1 (Automatic Type)

● ATAS-25 Active Tuning Antenna (Manual Type)

\*1 FC-40 / FC-50 and ATAS-120A cannot be used simultaneously

A Superb All-Around Amateur Radio Transceiver with a built-in real-time spectrum scope and superior basic operating performance covering the HF/50/144/430 MHz bands

# FT-991A



HF/50/144/430 MHz 100 W All Mode Transceiver

## FT-991A (144 MHz 50 W/430 MHz 50 W)

Supplied Accessories: MH-31A8J Hand Microphone, T9025225 DC Cable

\*Microphone M-1 / External Speaker SP-10 : Optional Accessories

**Optional Accessories**

- SP-10 External Speaker
  - Audio Output: 3 watts
  - Impedance: 8 ohms
  - Size (WHD): 4.33" x 3.15" x 9.96" (110x80x253mm)

### Supports Real-Time Spectrum Scope with Multi-Color Waterfall Display

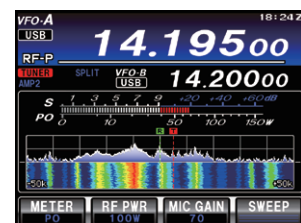
Instantly evaluate band conditions with the built-in real-time spectrum scope

Listen to the received audio while tuning with the built-in high resolution real-time spectrum scope. Instantly evaluate ever-changing band conditions and easily find the desired signals. TX and RX markers are displayed on the scope for immediate grasp of the relationship between the TX and RX frequencies. The display color of the scope screen can be selected as preferred.



Supports multi-color waterfall display

The waterfall display function presents the strength of the RX signals using color variations flowing with time. This allows for visual recognition of even the faint signals which rarely appear as peaks, offering a more detailed view of the band. The color of the waterfall screen can be selected from seven colors, or the multicolor array.



Latest Touch Panel Operation, combined with traditional Front panel layout, achieves optimal operating convenience

- Full color TFT LCD display provides useful information about function status and settings at a glance
- Highly responsive panel, with functional design and intuitive layout, makes touch operation a pleasure
- Four user-customizable function keys offer quick access to mode-dependent assignments
- Traditional layout of the Main Dial knob and related controls makes experienced users feel right at home



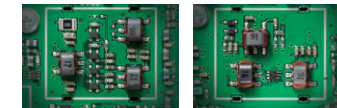
### Uncompromising Receiver Circuit Design Ensures Excellent Basic Performance from HF to VHF/UHF

© Sophisticated receiver front end performance on a par with FTD Series Transceivers

- Triple conversion with a 1st IF frequency of 69.450MHz for all bands
- 1st IF stage implements a narrow bandwidth 3 kHz roofing filter as standard equipment
- The 1st IF mixer for HF/50 MHz features a quad mixer that assures extremely low noise, excellent intermodulation characteristics, and high dynamic range.
- A dedicated VHF/UHF mixer, is separate from the HF bands, and permits design optimization for targeted frequencies.



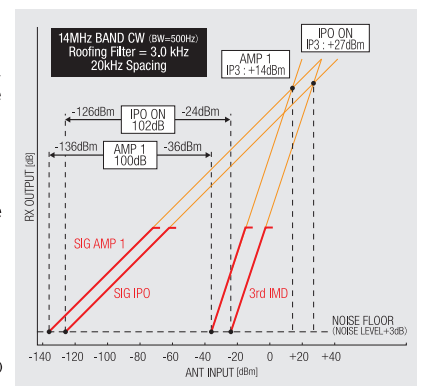
■ 3 kHz and 15 kHz Roofing Filters



■ HF/50MHz Quad Mixer ■ VHF/UHF Mixer

© RF amplifier design is optimized for each band

- Selectable IPO/AMP1/AMP2 settings for HF and 50MHz, optimize the receiver RF amplification
- Separate RF amplifiers provide the best characteristics for each band and signal conditions



■ IDR (IMD Dynamic range) / IP3 (3rd-Order Intercept Point) characteristics



■ 32-bit High Speed Floating Point DSP

### IF DSP from YAESU is Famous for Superb Interference Rejection

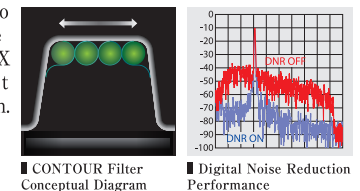
Same high-speed floating point DSP as used in FTD Series

The high speed floating point DSP chip TMS320C6746 (3000 MIPS /2250 MFLOPS) makes possible excellent interference rejection with actual signals under real-world conditions.

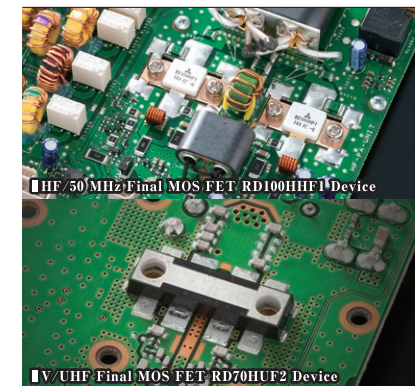
Highly effective interference rejection

The IF WIDTH and IF SHIFT functions form the basis to effectively remove interfering signals. The DNF (AUTO NOTCH) filter rapidly tracks and removes even multiple heterodyne signals.

The CONTOUR function can emphasize the desired audio components for the most distinguishable communications sound. The selectable bandwidth NOTCH is combined with the other noise reducing functions to provide convenient DX and Contest QSO operation.



■ CONTOUR Filter Conceptual Diagram ■ Digital Noise Reduction Performance



■ HF/50 MHz Final MOS FET RD100HHF1 Device

■ V/UHF Final MOS FET RD70HUF2 Device

Final Stages Provide Ample Power Reserves: 100 W for HF/50 MHz Band and 50 W for VHF/UHF Band

High quality push-pull amplifier with 100 watts for HF and 50 MHz

Using a push-pull arrangement of RD100HHF1 MOS-FET devices that are renowned for excellent performance in the HF and 50 MHz frequencies.

High speed 1.8 to 54 MHz antenna tuner included as standard equipment

50 W amplifier for VHF/UHF assures plenty of power for high frequency bands

The final amplifier for the VHF and UHF bands uses the high-output MOS-FET RD70HUF2 device, providing ample output power of 50 watts.

### Support for Advanced C4FM Digital Functions

- V/D mode for simultaneous transmission of voice and data with powerful error correction is optimal for mobile use, and for Voice FR (Full Rate) mode high quality audio transmission
- AMS function instantly recognizes digital mode or FM mode, and enables automatic communication with stations using either mode.
- GM (Group Monitor) function allows handy on-screen display of group members that are within communication range
- 126 types of DSQ (Digital Squelch) enable specific selection of communicating stations
- Supports high-definition Amateur Radio WIRES-X internet connection, utilizing C4FM digital technology

\*Does not support operation of WIRES-X digital node stations.  
\*Does not support sending and receiving of images via C4FM digital.

### OPTIONS

<ul style="list-style-type: none"> <li>● M-1 Reference Microphone</li> <li>● M-100 Dual-Element Microphone</li> <li>● M-90D Desktop Dynamic Microphone</li> <li>● M-90MS Kit Dynamic Microphone Kit</li> <li>● M-70 Desktop Microphone</li> <li>● MH-36 E8J DTMF Hand Microphone</li> <li>● MH-31 A8J Hand Microphone</li> </ul>	<ul style="list-style-type: none"> <li>● ATBK-100 Antenna Base Kit*2 (for Base operation on 6 m Band)</li> <li>● ATAS-120A Active Tuning Antenna*2 (Automatic Type)</li> <li>● ATAS-25 Active Tuning Antenna (Manual Type)</li> </ul>
<ul style="list-style-type: none"> <li>● YH-77STA Lightweight Stereo Headphone</li> <li>● FH-2 Remote Control Keypad</li> <li>● FP-1023A (USA Only) External Power Supply (13.8 VDC 23 A)</li> <li>● FP-1030A External Power Supply*1 (13.8 VDC 25 A)</li> <li>● FC-40 Automatic Antenna Tuner*2 (for Long wire antenna)</li> <li>● SP-10 External Speaker</li> <li>● MMB-90 Mobile Bracket</li> </ul>	<ul style="list-style-type: none"> <li>● CT-39A Packet Interface Cable</li> </ul>

\*1 USA and Asian versions only \*2 FC-40 and ATAS-120A cannot be used simultaneously.

# HF-UHF

# FT-818ND



HF/50/144/430MHz 6W All Mode Portable Transceiver

## FT-818ND

Supplied Accessories: SBR-32 Ni-MH Battery Pack (9.6 V, 1900mAh), SAD-24 Battery Charger, MH-31A8J Hand Microphone, FBA-28 Battery Case (holds 8 "AA" Alkaline cells [not included]), YHA-63 Whip Antenna for (50/144/430 MHz), DC Cable, Shoulder Strap

### Best Performance for Outdoor Amateur Radio Operation

#### Ultimate Compact Transceiver with 6 Watts TX Power Output

Measures 5.31" (W) x 1.5" (H) x 6.5" (D) (135 x 38 x 165mm) and Light weight (under 2 pounds / 900g), the FT-818ND is an innovative, Multi-mode, wide-band, portable transceiver, within an ultra-compact body, providing up to 6W of stable and reliable output power. TX power level can be selected from four levels, 6W/5W/2.5W/1W. Outdoor operation can be enjoyed with the same convenience as a handheld transceiver. \*6W(SSB/CW/FM), 2W(AM): 13.8VDC input \*C4FM Digital mode is not supported

#### High Stability TCXO Built-In

Built-in TCXO provides ±0.5ppm high frequency stability (-10°C to +60°C) and maintains stable high-quality communication for SSB operation in the VHF/UHF band, and CW operation within a narrow band.

#### Ready to Operate from Various Sources of Power

Simple and convenient outdoor operation in any environment, the FT-818ND is ready to operate from multiple power sources:  
 • Supplied 1900mAh high-capacity Ni-MH battery pack (and battery charger)  
 • Supplied Alkaline Battery case, (8 alkaline "AA" cells not included).  
 • External 13.8VDC power source (External DC cable supplied)

### Full featured CW Operation from a Portable

- CW "Semi Break-in": Receiver recovery Time (10ms to 2500ms in 10ms step)
- CW Reverse: Provides BFO injection LSB, instead of the default USB side.
- CW Pitch Control: CW side tone pitch adjustment (300Hz to 1000Hz in 50Hz steps)
- Built-in Electronic Keyer with speed adjustment (4WPM to 60WPM / 20CPM to 300CPM)

### High Performance Collins® Mechanical Filter for SSB (Optional)

To enhance performance on receiver, Collins® Mechanical Filter option is available.

### Multi-Function Keys for Easy Feature Access

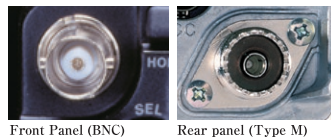
The "SELECT" knob, together with the "[A] [B] [C]" keys, provides ease of operation and quick efficient access to the many high-performance features.



Select Knob Multi-Function Keys

### Two Antenna Connectors for Ease of Installation and Operation

The FT-818ND has two antenna terminals, a BNC and an M type. The desired antenna connection for each band may be selected in Menu Mode.



Front Panel (BNC) Rear panel (Type M)

### Multi-Functional Display for Easy Operation

A wealth of information is available on the Multi-color display.



Spectrum Scope Monitor Double Size Frequency Display

### Valuable Features

- 208 Memory Channels
- Versatile Scan Features
- Equipped with dedicated Data Connector
- CAT System control interface

# DESKTOP MICROPHONE



〈Supplied Accessories〉  
AC adapter /  
Microphone cable /  
Treble Boost Cowling

### REFERENCE MICROPHONE

## M-1

- Dual microphone configuration features both dynamic and condenser elements
- Nine-band graphic equalizer for each microphone element
- TBC (Treble Boost Cowling) produces a unique tonal texture
- Long stroke Smooth operating PTT key
- Solid aluminum die cast mic stand
- High visibility ON AIR LED
- One-touch PTT keylock
- Large Display with anti-reflective AR coating
- Built-in record and playback feature
- Headphone output
- Built-in one-click Low-Cut filter
- Cannon-type(XLR) output



〈Supplied Accessories〉  
Microphone cable /  
Treble Boost Cowling

### DUAL-ELEMENT MICROPHONE

## M-100

- Dual microphone configuration features both dynamic and condenser elements
- TBC (Treble Boost Cowling) produces a unique tonal texture
- Long stroke Smooth operating PTT key
- High visibility ON AIR LED
- Built-in one-click Low-Cut and High-Cut filters
- One-touch PTT keylock

### DESKTOP DYNAMIC MICROPHONE

## M-90D



〈Supplied Accessories〉  
Microphone cable

- Utilizes a Dynamic microphone element which is specially tuned to produce a rich voice with depth and warmth
- Long stroke Smooth operating PTT key
- PTT keylock
- Built-in Low-Cut filter
- Implements an isolation transformer that reduces hum noise
- Stable Large base stand

## M-70 Desktop Microphone



〈Supplied Accessories〉  
Microphone cable

- Utilizes a directional condenser microphone element with specially tuned frequency response
- Long stroke Smooth Operating PTT key
- Built-in Low-Cut filter
- An isolation transformer is integrated in the circuit board to enhance the audio quality
- One-touch PTT keylock

### DYNAMIC MICROPHONE STAND KIT

## M-90MS kit



〈Supplied Accessories〉  
PTT Hand controller/  
W3/8 Nut

- Compatible with commercially available microphone-arm or floor type microphone stand mounting (Compatible with W3/8 screw)
- \*Microphone-arm/microphone stand are not included.
- Includes a hand controller with a PTT key
- Utilizes a Dynamic microphone element which is specially tuned to produce a rich voice with depth and warmth
- Built-in Low-Cut filter
- Implements an isolation transformer that reduces hum noise



Microphone stand  
Installation image

#### Applicable Models (M-1 / M-100 / M-90D / M-90MS kit / M-70)

FTDX101 Series*2	FTDX10	FTDX9000 Series*2
FTDX5000 Series*2	FTDX3000D*2	FTDX1200*2
FT-891	FT-450/D	FT-991/FT-991A
FT-857/D	FT-817/ND, FT-818ND	FT-2000/D*2
FT-950*2	FT-897/D	FT-920*2
FT-900	FT-847*2	FT-1000MP*2
FT-1000MP-MKV*2	FT-1000*1*2	FT-990*1*2
FT-850*1*2	FT-840*1*2	FT-747*1*2

\*1 Requires Optional "Power Supply Kit" for connection to the M-100 / M-90D / M-90MS kit / M-70  
 \*2 Requires Optional cable "SCU-53" for connecting of the M-90MS kit.

Specifications	M-1	M-100	M-90D	M-90MS kit	M-70
Microphone elements	Dynamic and Condenser microphones	Dynamic and Condenser microphones	Dynamic microphone	Dynamic microphone	Condenser microphone
Supply Voltage	DC 5 V ± 5%	DC 5 V ± 10 %	DC 5 V ± 10 %	DC 5 V ± 10 %	DC 5 V ± 10 %
Frequency Response	30 - 17000 Hz	30 - 17000 Hz	30 - 17000 Hz	30 - 17000 Hz	30 - 17000 Hz
Sensitivity	-60 dB(1kHz 0 dB = 1V/1Pa)	-60 dB(1kHz 0 dB = 1V/1Pa)	-60 dB(1kHz 0 dB = 1V/1Pa)	-60 dB(1kHz 0 dB = 1V/1Pa)	-60 dB(1kHz 0 dB = 1V/1Pa)
Mic Impedance	600 Ohms	600 Ohms	600 Ohms	600 Ohms	600 Ohms
Headphone Output Impedance	16 Ohms(TYP)	-	-	-	-
Headphone Output Level	15 mW(TYP)	-	-	-	-
RX AUDIO IN(Input Level)	100 mVrms(TYP)	-	-	-	-
Dimensions(WxHxD)	5.5" x 11.0" x 6.0(140 x 280 x 152 mm)*3	5.0" x 11.0" x 5.4(126 x 280 x 137 mm)*3	4.17" x 7.56" x 4.98" (106 x 192 x 126.5mm)*3	φ2.45" (62 mm), Length 6.38" (162 mm)	4.2" x 6.7" x 5.0 (106 x 170 x 126.5mm)*3
Weight(approx)	2.11 lbs (960g) w/o Cable	2.00 lbs (910g) w/o Cable	18.70 oz (530 g) w/o Cable	7.05 oz (200 g)*4	15.87 oz (450 g) w/o Cable

\*3 Dimensions (H): Maximum with microphone flat \*4 w/ bracket, w/o Hand controller

# ANTENNAS & TUNERS

### Auto Active-Tuning Antenna

## ATAS-120A



Yaesu patented ATAS™ (Active-Tuning Antenna System) provides HF/VHF/UHF coverage with automatic motorized tuning. Utilizing control signals from the transceiver microprocessor conducted via the coaxial cable, the ATAS internal motor adjusts the antenna length for best SWR. The ATAS covers the 7/14/21/28/50/144/430MHz bands.

### Specifications

- Frequency Range: 7/14/21/28/50/144/430 MHz Amateur Bands
- Height (Approx.): 4.59~5.24 ft (1.4~1.6 m)
- Weight (Approx.): 1.98 lb (900 g)
- Input Impedance: 50Ω
- Max Input Power: 120W (SSB/CW, 50% Duty)
- Matched SWR: Less than 2.0 : 1 (with proper counterpoise)

### Active-Tuning Antenna

## ATAS-25



The ATAS-25 is a manually-adjusted portable antenna ideal for field use with the HF Transceivers. Designed for mounting on a standard camera tripod (1/4" stud), the ATAS-25 is tuned by sliding the shorting section of the loading coil assembly up or down and selecting the appropriate number of top sections. Counterpoise wires are supplied.

### Specifications

- Frequency Range: 7/14/21/28/50/144/430 MHz Amateur Bands
- Height (Approx.): Max. 7.2 ft (2.2 m) during Operation  
Min. 1.96 ft (0.6 m) for Transporting
- Weight (Approx.): 2.05 lb (930 g)
- Input Impedance: 50Ω
- Max Input Power: HF/50MHz : 100W (SSB/CW, 50% Duty)  
50W (AM/FM)  
144/430 MHz : 50W (ALL MODE)
- Matched SWR : Less than 2.0 : 1

### Supplied Items

- Radiating Elements
- Radial Element (for VHF band)
- Radial Element (for UHF band)
- Radial Wires (20 ft (6 m), 9.8 ft (3 m) & 6.6 ft (2 m) Length)
- Spare Radial Wire (32.8 ft (10 m) Length)
- Allen Wrench



## OPTIONS



● M-1 Reference Microphone  
 ● M-100 Dual-Element Microphone  
 ● M-90D Desktop Dynamic Microphone  
 ● M-90MS Kit Dynamic Microphone Kit  
 ● M-70 Desktop Microphone  
 ● MH-36 E8J DTMF Hand Microphone  
 ● MH-31 A8J Hand Microphone  
 ● YH-77STA Lightweight Stereo Headphone



● SSB YF-122S (2.3 kHz) Collins® Mechanical Filters  
 ● CT-62 CAT Computer Interface Cable  
 ● CT-39A Packet Interface Cable  
 ● SCU-17 USB Interface Unit (Requires CT-62)  
 ● CSC-83 Soft Case  
 ● SBR-32MH Ni-MH Battery Pack (9.6 V, 1900 mAh)  
 ● SAD-24B/C/UH\* Battery Charger  
 ● ATAS-25 Active-Tuning Antenna (Manual Type)

\* Depending on the version



◎ Innovative FC-30 (optional)  
Automatic Antenna Tuner

The FC-30 is a high-speed, relay-controlled Automatic Antenna Tuner utilizing a combination of sixteen capacitors and nine low-loss coils to reduce SWR as presented to the FT-857D feedpoint.



Automatic Antenna Tuner

FC-30

■ Specifications

Frequency Range	: 1.8 ~ 30 MHz, 50 ~ 54 MHz
Input Impedance	: 50 Ω
Maximum Power	: 100 Watts
Matched SWR	: 1.5 : 1 or less
Tune-up Power	: 4W ~ 60W
Tune-up Time	: 5 seconds or less
Impedance Matching Range	: 1.8 ~ 30 MHz, 50 ~ 54 MHz: 16.5 Ω ~ 150 Ω
Impedance Matching Memories	: 100 channels
Input Voltage Requirement	: 13.8 V ± 15% (supplied from transceiver)
Operating Temperature Range	: 14° F ~ 122° F (-10°C ~ +50°C)
Case Size (WHD)	: 3.1" x 1.8" x 10.2" (80 x 45 x 260 mm)
Weight	: 2.2 lb (1 kg)

◎ Automatic-Matching 200-Memory Antenna Tuner FC-40 (optional)

The FC-40 is a microprocessor-controlled antenna impedance matching network designed to provide all-amateur-band transmitting capability with the transceivers, when used with an end-fed random wire or long whip antenna.



Automatic-Matching 200-Memory Antenna Tuner

FC-40

■ Specifications

Frequency Range	: 1.8 - 54 MHz with 20+ m end-fed wire, 7 - 54 MHz with YA-007 HF 2.5 m Mobile Whip Antenna
Input Impedance	: 50 Ω
Max Power	: 100 Watts (3 minutes Maximum Continuous TX)
Matched SWR	: 2.0:1 or less (if antenna is not a multiple of λ/2)
Tune-up Power	: 4W ~ 60W
Tune-up Time	: 8 seconds maximum
Impedance Matching Memories	: 200 channels
Power Supply	: 13.8 V ± 15% (supplied from transceiver)
Case Size (WHD)	: 9" x 7" x 2.1" (228 x 175 x 55 mm)
Weight	: 2.6 lb (1.2 kg)

◎ Automatic-Matching 100-Memory Antenna Tuner (optional)

The FC-50 is a microprocessor-controlled antenna tuner that is designed specifically for the FT-891. The FC-50 can be easily attached to the FT-891.



Automatic-Matching 100-Memory Antenna Tuner

FC-50

■ Specifications

Frequency Range	: 1.8 - 29.7MHz, 50 - 54MHz
Input Impedance	: 50 Ω
Maximum Power	: 100 Watts
Matched SWR	: 1.5 : 1 or less
Tune-up Power	: 4W - 60W
Tune-up Time	: 5 seconds or less
Impedance Matching Range	: 1.8 - 29.7MHz = 16Ω - 150Ω 50 - 54MHz = 25Ω - 100Ω
Impedance Matching Memories	: 100 channels
Input Voltage Requirement	: 13.8V ± 15% (supplied from transceiver)
Case Size (WHD)	: 6.1" x 1.8" x 8.3" (155 x 45 x 210.5 mm)
Weight	: 3lb (1.35kg)

ROTATORS



G-2800DXA/DXC

Extra Heavy Duty  
Supplied Accessories:  
40 m Control cable with Connector\*



G-1000DXA/DXC

Medium / Heavy Duty



G-800DXA  
G-800SA

Medium Duty



G-450ADC/CDC

Light Duty

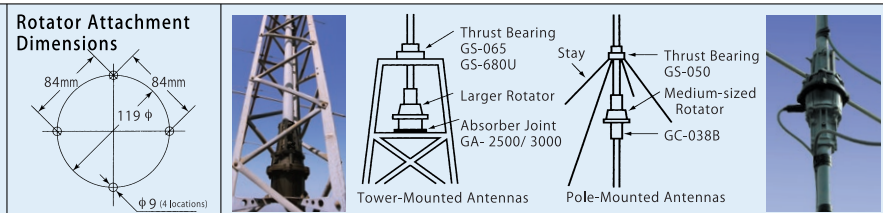
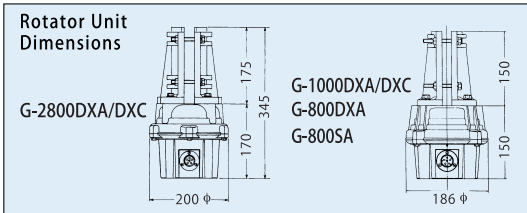
G-5500DC

Azimuth-Elevation Rotator

Models	G-2800DXA* G-2800DXC*2	G-1000DXA*2 G-1000DXC*2	G-800DXA*2	G-800SA	G-450ADC G-450CDC	G-5500DC
<b>Recommended Application</b>	Heavy-duty applications. Recommended for in-lower mounting.	Medium/heavy-duty for large HF arrays.	Medium-duty, for medium/large HF/VHF arrays.		Light to medium duty. Low price, perfect entry level rotator.	Azimuth-Elevation Combination for space communication.
Wind Load	3 m <sup>2</sup>	2.2 m <sup>2</sup>	2 m <sup>2</sup>	2 m <sup>2</sup>	1 m <sup>2</sup>	AZ: 2 m <sup>2</sup> EL: 1 m <sup>2</sup>
K-Factor*3	950	230	180	180	100	AZ: 200 EL: 80
Stationary Torque	25,000 kg/cm	6,000 kg/cm	4,000 kg/cm	4,000 kg/cm	3,000 kg/cm	AZ: 4,000 kg/cm EL: 4,000 kg/cm
Rotation Torque	2,500-800 kg/cm	1,100-600 kg/cm	1,100-600 kg/cm	800 kg/cm	600 kg/cm	AZ: 600 kg/cm EL: 1,200 kg/cm
Max. Vert. Load	300 kg	200 kg	200 kg	200 kg	100 kg	AZ: 200 kg EL: 30 kg
Max. Vert. Intermittent Load	1,200 kg	800 kg	800 kg	800 kg	300 kg	AZ: 800 kg EL: 100 kg
Backlash	0.2°	1°	1°	1°	0.5°	AZ: 1° EL: 1°
Mast Size	48-63 φ	38-63 φ	38-63 φ	38-63 φ	32-63 φ	AZ: 38-63 φ EL: 32-43 φ
360° Rotation Time	50-120 sec	40-100 sec	40-100 sec	55 sec	56 sec	60 sec
180° Elevation Time	N/A	N/A	N/A	N/A	N/A	65 sec
Boom Diameter	N/A	N/A	N/A	N/A	N/A	EL 32-43 φ
Direct control from YAESU HF radio*4	○	○	○	N/A	N/A	○
PC control*5	○	○	○	N/A	N/A	N/A
Rotator Diameter x Height	200 φ x 345	186 φ x 300	186 φ x 300	186 φ x 300	186 φ x 263	186 φ x 254(W) x 500(H)
Rotator Weight	6.5 kg	3.5 kg	3.5 kg	3.5 kg	3.2 kg	9 kg
Cable Requirement	6	5	5	5	4	5 x 2
Supply AC Voltage	DXA: 117/220 V DXC: 220 V (CE)	DXA: 117/220 V DXC: 220 V (CE)	117/220 V	117/220 V	ADC: 117/220 V CDC: 220 V (CE)	117/220 V

\*1: USA version only  
\*2: On models with "DXA/DXC" suffix, rotation speed and torque will vary with the speed control setting.  
\*3: K-Factor: Multiply turning radius times weight; add K-Factor for each antenna in "Christmas Tree" installations.

\*4: Depending on HF radios, please refer to catalog of YAESU HF radio.  
\*5: Requires optional GS-232B.





OPTIONS



<p>● GS-232B Computer Controller for all DXA/DXC Series and G-5500DC Rotators</p>	<p>● GS-680U Universal Bearing</p>	<p>● GS-065 Thrust Bearing</p>	<p>● GS-050 Thrust Bearing</p>	<p>● GA-3000 Absorber Joint for G-2800DXA/DXC Rotators</p>
	<p>● GC-038B/G Mast Clamp (Brown/Green) for G-1000DXA/DXC, G-800DXA, G-800SA, and G-450ADC/CDC Rotators</p>	<p>● GC-048 Mast Clamp for G-2800DXA/DXC Rotators</p>	<p>● GL-33 Mast Adjustment Plate</p>	<p>● GA-2500 Absorber Joint for G-1000DXA/DXC, G-800DXA, G-800SA, and G-450ADC/CDC Rotators</p>

SPECIFICATIONS

Series	HF-50MHz																															
	FTDX 101 Series																															
Model number	FTDX 101MP	FTDX 101D																														
RX Frequency Range	30 kHz - 75 MHz (operating) 1.8 MHz - 54 MHz (Specified performance, Amateur bands only) 70 MHz - 70.5 MHz (Specified performance, UK Amateur bands only)	30 kHz - 75 MHz (operating) 1.8 MHz - 54 MHz (Specified performance, Amateur bands only) 70 MHz - 70.5 MHz (Specified performance, UK Amateur bands only)																														
TX Frequency Ranges	1.8 MHz - 54 MHz (Amateur bands only) 70 MHz - 70.5 MHz (UK Amateur bands only)	1.8 MHz - 54 MHz (Amateur bands only) 70 MHz - 70.5 MHz (UK Amateur bands only)																														
Emission Modes	A1A (CW), A3E (AM), J3E (LSB,USB), F3E (FM), F1B (RTTY), G1B (PSK)	A1A (CW), A3E (AM), J3E (LSB,USB), F3E (FM), F1B (RTTY), G1B (PSK)																														
Frequency Steps	1/5/10 Hz (SSB, CW), 10/100 Hz (AM, FM)	1/5/10 Hz (SSB, CW), 10/100 Hz (AM, FM)																														
Antenna Impedance	50 ohms, unbalanced (Antenna Tuner OFF) 16.7-150 Ohms, unbalanced (Tuner ON, 1.8-29.7 MHz Amateur bands) 25-100 Ohms, unbalanced (Tuner ON, 50 MHz Amateur band)	50 ohms, unbalanced (Antenna Tuner OFF) 16.7-150 Ohms, unbalanced (Tuner ON, 1.8-29.7 MHz Amateur bands) 25-100 Ohms, unbalanced (Tuner ON, 50 MHz Amateur band)																														
Operating Temperature Range	+32 ° F - +122 ° F (0 ° C - +50 ° C)	+32 ° F - +122 ° F (0 ° C - +50 ° C)																														
Frequency Stability	±0.1 ppm (+14 ° F to +140 ° F / -10 ° C to +60 ° C after 1 minute )	±0.1 ppm (+14 ° F to +140 ° F / -10 ° C to +60 ° C after 1 minute )																														
Supply Voltage	100 VAC / 200 VAC	DC 13.8V ± 10%																														
Power Consumption (Approx.) (@ 117 VAC) (@ 13.8VDC: FTDX101D)	RX (no signal) 100 VA RX (signal present) 120 VA TX (200 W) 720 VA	RX (no signal) 3.5 A RX (signal present) 4.0 A TX (100 W) 23 A																														
Dimensions (WxHxD)	16.6" x 5.1" x 12.7" (420 x 130 x 322 mm) w/o Knob	16.6" x 5.1" x 12.7" (420 x 130 x 322 mm) w/o Knob																														
Weight (Approx.)	31.5 lbs (14.3 kg)	26.5 lbs (12 kg)																														
Power Output	5W - 200W (CW, SSB, FM, RTTY, PKT) 5W - 50W (AM)	5W - 100W (CW, SSB, FM, RTTY, PKT) 5W - 25W (AM)																														
Modulation Types	J3E (SSB) : Balanced A3E (AM) : Low-Level (Early Stage) F3E (FM) : Variable Reactance	J3E (SSB) : Balanced A3E (AM) : Low-Level (Early Stage) F3E (FM) : Variable Reactance																														
Maximum FM Deviation	± 5.0 kHz / ± 2.5 kHz	± 5.0 kHz / ± 2.5 kHz																														
Harmonic Radiation	Better than -50dB (1.8 MHz - 29.7 MHz Amateur bands) Better than -63 dB (50 MHz Amateur Band)	Better than -50dB (1.8 MHz - 29.7 MHz Amateur bands) Better than -63 dB (50 MHz Amateur Band)																														
SSB Carrier Suppression	At least 60 dB below peak output	At least 60 dB below peak output																														
Undesired Sideband Suppression	At least 60 dB below peak output	At least 60 dB below peak output																														
3rd-order IMD (14 MHz) ※ PEP	-31 dB (200 W)	-31 dB (100 W)																														
Bandwidth	3.0 kHz (LSB, USB) , 500 Hz (CW) 6.0 kHz (AM), 16 kHz (FM)	3.0 kHz (LSB, USB) , 500 Hz (CW) 6.0 kHz (AM), 16 kHz (FM)																														
Audio Response (SSB)	Not more than -6 dB from 300 to 2700 Hz	Not more than -6 dB from 300 to 2700 Hz																														
Microphone Impedance	600 Ohms (200 to 10 k Ohms)	600 Ohms (200 to 10 k Ohms)																														
Circuit Type	Double-conversion Superheterodyne	Double-conversion Superheterodyne																														
Intermediate Frequencies	<table border="1"> <tr><th></th><th>MAIN</th><th>SUB</th></tr> <tr><td>1st. Frequencies</td><td>9.005 MHz</td><td>8.900 MHz</td></tr> <tr><td>2nd. Frequencies</td><td>24 kHz</td><td>24 kHz</td></tr> <tr><td>3rd. Frequencies</td><td>—</td><td>—</td></tr> </table>		MAIN	SUB	1st. Frequencies	9.005 MHz	8.900 MHz	2nd. Frequencies	24 kHz	24 kHz	3rd. Frequencies	—	—	<table border="1"> <tr><th></th><th>MAIN</th><th>SUB</th></tr> <tr><td>1st. Frequencies</td><td>9.005 MHz</td><td>8.900 MHz</td></tr> <tr><td>2nd. Frequencies</td><td>24 kHz</td><td>24 kHz</td></tr> <tr><td>3rd. Frequencies</td><td>—</td><td>—</td></tr> </table>		MAIN	SUB	1st. Frequencies	9.005 MHz	8.900 MHz	2nd. Frequencies	24 kHz	24 kHz	3rd. Frequencies	—	—						
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3rd. Frequencies	—	—																														
Sensitivity	SSB/CW (2.4 kHz, 10 dB S+N/N) 0.16 μV (1.8 - 30 MHz, AMP2) 0.125 μV (50 MHz - 54MHz, AMP2) 0.16 μV (70 - 70.5 MHz, AMP2) AM (6kHz, 10 dB S+N/N, 30% modulation @400 Hz) 6.3 μV (0.5 MHz - 1.8 MHz) 2 μV (1.8 MHz - 30 MHz, AMP2) 1 μV (50 MHz - 54 MHz, AMP2) 2 μV (70 MHz - 70.5 MHz, AMP2) FM (12 kHz, 12 dB SINAD, 1 kHz, 3.5 kHz DEV) 0.25 μV (28 MHz-30 MHz, AMP2) 0.2 μV (50 MHz - 54 MHz, AMP2) 0.25 μV (70 MHz - 70.5 MHz, AMP2)	SSB/CW (2.4 kHz, 10 dB S+N/N) 0.16 μV (1.8 - 30 MHz, AMP2) 0.125 μV (50 MHz - 54 MHz, AMP2) 0.16 μV (70 - 70.5 MHz, AMP2) AM (6kHz, 10 dB S+N/N, 30% modulation @400 Hz) 6.3 μV (0.5 MHz - 1.8 MHz) 2 μV (1.8 MHz - 30 MHz, AMP2) 1 μV (50 MHz - 54 MHz, AMP2) 2 μV (70 MHz - 70.5 MHz, AMP2) FM (12 kHz, 12 dB SINAD, 1 kHz, 3.5 kHz DEV) 0.25 μV (28 MHz - 30 MHz, AMP2) 0.2 μV (50 MHz - 54 MHz, AMP2) 0.25 μV (70 MHz - 70.5 MHz, AMP2)																														
Selectivity	<table border="1"> <tr><th>Mode</th><th>-6 dB</th><th>-60 dB</th></tr> <tr><td>CW (BW=0.5kHz)</td><td>0.5 kHz or better</td><td>0.75 kHz or less</td></tr> <tr><td>SSB (BW=2.4kHz)</td><td>2.4 kHz or better</td><td>3.6 kHz or less</td></tr> <tr><td>AM (BW=6kHz)</td><td>6 kHz or better</td><td>15 kHz or less</td></tr> <tr><td>FM (BW=12kHz)</td><td>12 kHz or better</td><td>25 kHz or less</td></tr> </table>	Mode	-6 dB	-60 dB	CW (BW=0.5kHz)	0.5 kHz or better	0.75 kHz or less	SSB (BW=2.4kHz)	2.4 kHz or better	3.6 kHz or less	AM (BW=6kHz)	6 kHz or better	15 kHz or less	FM (BW=12kHz)	12 kHz or better	25 kHz or less	<table border="1"> <tr><th>Mode</th><th>-6 dB</th><th>-60 dB</th></tr> <tr><td>CW (BW=0.5kHz)</td><td>0.5 kHz or better</td><td>0.75 kHz or less</td></tr> <tr><td>SSB (BW=2.4kHz)</td><td>2.4 kHz or better</td><td>3.6 kHz or less</td></tr> <tr><td>AM (BW=6kHz)</td><td>6 kHz or better</td><td>15 kHz or less</td></tr> <tr><td>FM (BW=12kHz)</td><td>12 kHz or better</td><td>25 kHz or less</td></tr> </table>	Mode	-6 dB	-60 dB	CW (BW=0.5kHz)	0.5 kHz or better	0.75 kHz or less	SSB (BW=2.4kHz)	2.4 kHz or better	3.6 kHz or less	AM (BW=6kHz)	6 kHz or better	15 kHz or less	FM (BW=12kHz)	12 kHz or better	25 kHz or less
Mode	-6 dB	-60 dB																														
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Image Rejection	70 dB or better (1.8 - 28 MHz Amateur bands) 60 dB or better (50 MHz Amateur band)	70 dB or better (1.8 - 28 MHz Amateur bands) 60 dB or better (50 MHz Amateur band)																														
Maximum Audio Output	2.5 W into 4 Ohms with 10% THD	2.5 W into 4 Ohms with 10% THD																														
Audio Output Impedance	4 to 16 Ohms (4 Ohms: nominal)	4 to 16 Ohms (4 Ohms: nominal)																														
Conducted Radiation	Less than 4 nW	Less than 4 nW																														

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Series	HF-50MHz	
	FTDX10	FT-891
		
<b>Model number</b>	<b>FTDX 10</b>	<b>FT-891</b>
<b>RX Frequency Range</b>	30 kHz - 75 MHz (operating) 1.8 MHz - 54 MHz (Specified performance, Amateur bands only) 70 MHz - 70.5 MHz (Specified performance, UK Amateur bands only)	30 kHz - 55.999995 MHz (Amateur bands only)
<b>TX Frequency Ranges</b>	1.8 MHz - 54 MHz (Amateur bands only) 70 MHz - 70.5 MHz (UK Amateur bands only)	1.8 - 54 MHz (Amateur bands only)
<b>Emission Modes</b>	A1A (CW), A3E (AM), J3E (LSB, USB), F3E (FM), F1B (RTTY), G1B (PSK)	A1A (CW), A3E (AM), J3E (LSB, USB), F2D, F3E (FM)
<b>Frequency Steps</b>	1/5/10 Hz (SSB, CW), 10/100 Hz (AM, FM)	2/5/10 Hz (SSB, CW), 10/100 Hz (AM, FM)
<b>Antenna Impedance</b>	50 ohms, unbalanced (Antenna Tuner OFF) 16.7-150 Ohms, unbalanced (Tuner ON, 1.8-29.7 MHz Amateur bands) 25-100 Ohms, unbalanced (Tuner ON, 50 MHz Amateur band)	50 Ohms, unbalanced
<b>Operating Temperature Range</b>	+32 °F - +122 °F (0 °C - +50 °C)	+14 °F - +122 °F (-10 °C - +50 °C)
<b>Frequency Stability</b>	±0.5ppm (+32°F to +122°F / 0°C to +50°C after 1 minute)	±0.5 ppm (@14°F - +122°F / -10°C - +50°C, after 1 min)
<b>Supply Voltage</b>	DC13.8V ± 15%	DC 13.8 V ± 15 % (Negative Ground)
<b>Power Consumption</b>	RX (no signal) 2.5A RX (signal present) 3.0A TX (100 W) 23 A	Receive: 2.0 A (signal present) Transmit: 23 A
<b>Dimensions (WxHxD)</b>	10.5" x 3.6" x 10.4" (266 x 91 x 263mm) w/o Knob	6.1" x 2.0" x 8.6" (155 x 52 x 218 mm) w/o knobs
<b>Weight (Approx.)</b>	13 lbs (5.9 kg)	4.18 lbs (1.9 kg)
<b>Power Output</b>	5W - 100W (CW, SSB, FM, RTTY, PKT) 5W - 25W (AM)	100 W (SSB/CW/FM) 40 W (AM)
<b>Modulation Types</b>	J3E (SSB) : Balanced A3E (AM) : Low-Level (Early Stage) F3E (FM) : Variable Reactance	J3E (SSB) : Balanced A3E (AM) : Low-Level (Early Stage) F3E (FM) : Variable Reactance
<b>Maximum FM Deviation</b>	± 5.0 kHz / ± 2.5 kHz	± 5.0 kHz / ± 2.5 kHz
<b>Harmonic Radiation</b>	Better than -50dB (1.8 MHz - 29.7 MHz Amateur bands) Better than -63 dB (50 MHz Amateur Band)	Better than -50 dB (1.8 MHz - 30 MHz Amateur bands) Better than -63 dB (50 MHz Amateur bands)
<b>SSB Carrier Suppression</b>	At least 60 dB below peak output	At least 50 dB below peak output
<b>Undesired Sideband Suppression</b>	At least 60 dB below peak output	At least 50 dB below peak output
<b>3rd-order IMD (14 MHz) ※PEP</b>	-31 dB (100 W)	—
<b>Bandwidth</b>	3.0 kHz (LSB, USB) , 500 Hz (CW) 6.0 kHz (AM), 16 kHz (FM)	3.0 kHz (LSB, USB), 500 Hz (CW) 6.0 kHz (AM), 16 kHz (FM)
<b>Audio Response (SSB)</b>	Not more than -6 dB from 300 to 2700 Hz	Not more than -6 dB from 300 to 2700 Hz
<b>Microphone Impedance</b>	600 Ohms (200 to 10 k Ohms)	600 Ohms (200 to 10 k Ohms)
<b>Circuit Type</b>	Double-conversion Superheterodyne	Triple-conversion Superheterodyne (SSB/CW/AM) Double Conversion Superheterodyne (FM)
<b>Intermediate Frequencies</b>		
	1st. Frequencies 9.005 MHz 2nd. Frequencies 24 kHz 3rd. Frequencies —	1st. 69.450 MHz 2nd. 450 kHz 3rd. 24 kHz (SSB/CW/AM)
<b>Sensitivity</b>	SSB/CW (2.4 kHz, 10 dB S+N/N) 0.16 μV (1.8 - 30 MHz, AMP2) 0.125 μV (50 MHz - 54 MHz, AMP2) 0.16 μV (70 - 70.5 MHz, AMP2) AM (6kHz, 10 dB S+N/N, 30% modulation @400 Hz) 7.9 μV (0.5 MHz - 1.8 MHz) 2 μV (1.8 MHz - 30 MHz, AMP2) 1 μV (50 MHz - 54 MHz, AMP2) 2 μV (70 MHz - 70.5 MHz, AMP2) FM (12 kHz, 12 dB SINAD, 1 kHz, 3.5 kHz DEV) 0.25 μV (28 MHz - 30 MHz, AMP2) 0.2 μV (50 MHz - 54 MHz, AMP2) 0.25 μV (70 MHz - 70.5 MHz, AMP2)	SSB/CW (S/N 10 dB) 0.16 μV (1.8 - 30 MHz) 0.16 μV (50 - 54 MHz) (S/N 10 dB) AM (S/N 10 dB) 5 μV (0.5 - 1.8 MHz) 1.6 μV (1.8 - 30 MHz) 1.6 μV (50 - 54 MHz) FM (12 dB SINAD) 0.35 μV (29 MHz, 50 - 54 MHz)
<b>Selectivity</b>	Mode -6 dB -60 dB CW (BW=0.5kHz) 0.5 kHz or better 0.75 kHz or less SSB (BW=2.4kHz) 2.4 kHz or better 3.6 kHz or less AM (BW=6kHz) 6 kHz or better 15 kHz or less FM (BW=12kHz) 12 kHz or better 25 kHz or less	Mode -6 dB -60 dB SSB/CW 2.4 kHz or better 3.6 kHz or less CW-N 500 Hz or better 750 Hz or less AM 6 kHz or better 15 kHz or less FM 12 kHz or better 30 kHz or less(-50dB) FM-N 9 kHz or better 25 kHz or less(-50dB)
<b>Image Rejection</b>	70 dB or better (1.8 - 28 MHz Amateur bands) 60 dB or better (50 MHz Amateur band)	70 dB or better (HF/50 MHz Amateur bands)
<b>Maximum Audio Output</b>	2.5 W into 4 Ohms with 10% THD	2.5 W into 4 Ohms with 10% THD
<b>Audio Output Impedance</b>	4 to 16 Ohms (4 Ohms: nominal)	4 to 16 Ohms (8 Ohms: nominal)
<b>Conducted Radiation</b>	Less than 4 nW	Less than 4 nW

Series	HF-UHF CW/SSB/AM/FM/C4FM	HF-UHF CW/SSB/AM/FM
	FT-991A	FT-818ND
		
<b>Model number</b>	<b>FT-991A</b>	<b>FT-818ND</b>
<b>RX Frequency Range</b>	30 kHz - 56 MHz, 118 - 164 MHz, 420 - 470 MHz (operating) 1.8 - 54 MHz, 144 - 148MHz, 430 - 450 MHz (specified performance, Amateur bands only)	100kHz - 56MHz 76MHz - 154MHz, 420MHz - 470MHz
<b>TX Frequency Ranges</b>	1.8 - 54 MHz, 144 - 148MHz, 430 - 450 MHz (Amateur bands only)	1.8 - 54 MHz, 144 - 148 MHz, 430 - 450 MHz (Amateur bands only) 5.1675MHz Alaska Emergency Frequency (Depending on the version)
<b>Emission Modes</b>	A1A (CW), A3E (AM), J3E (LSB, USB), F2D, F3E (FM) F7W (C4FM)	A1A (CW), A3E (AM), J3E (LSB/USB), F3E (FM), F1D (9600 bps packet), F2D (1200 bps packet)
<b>Frequency Steps</b>	5 / 10 Hz (SSB, CW, AM), 100 Hz (FM, C4FM)	10Hz (CW/SSB), 100Hz (AM/FM)
<b>Antenna Impedance</b>	50 Ohms, unbalanced 16.7 - 150 Ohms, unbalanced (Tuner ON, 1.8 - 30 MHz Amateur bands) 25 - 100 Ohms, unbalanced (Tuner ON, 50 MHz Amateur band)	50 Ohms, unbalanced (Front: Type BNC, Rear: Type M)
<b>Operating Temperature Range</b>	+14 °F - +122 °F (-10 °C - +50 °C)	+14 °F to +140 °F (-10 °C to +60 °C)
<b>Frequency Stability</b>	±0.5 ppm (@14°F - +122°F / -10°C - +50°C, after 1 min)	±0.5ppm (CW/SSB/AM), ±1 kHz ±0.5ppm (FM)
<b>Supply Voltage</b>	DC 13.8 V ± 15 % (Negative Ground)	Nominal: 13.8VDC ± 15 %, Negative Ground Operating: 8.0 - 16.0V, Negative Ground FBA-28 (w/8 "AA" Alkaline Cells): 12.0V SBR-32MH (Ni-MH Battery Pack): 9.6V
<b>Power Consumption</b>	RX (no signal) : 1.8 A RX (signal present) : 2.2 A TX : 2.3 A (HF/50MHz 100 W), 15 A (144/430MHz 50 W)	Squelched: 300mA (Approx.) Receive: 450mA Transmit: 2.4A (HF/50MHz/144MHz), 2.7A (430MHz)
<b>Dimensions (WxHxD)</b>	9" x 3.2" x 10" (229 x 80 x 253 mm)	5.31" x 1.5" x 6.50" (135 x 38 x 165mm)
<b>Weight (Approx.)</b>	9.5 lbs (4.3 kg)	1.98 lbs (900g) w/o battery, antenna, and Microphone
<b>Power Output</b>	SSB/CW/FM AM Carrier 1.8 - 54 MHz : 100 W 25 W 144/430 MHz : 50 W 12.5 W (Amateur bands only)	6 W (SSB/CW/FM), 2 W (AM Carrier) @13.8 V
<b>Modulation Types</b>	J3E (SSB) : Balanced A3E (AM) : Low-Level (Early Stage) F3E (FM) : Variable Reactance F7W (C4FM) : 4-Level FSK	J3E (SSB) : Balanced Modulator A3E (AM) : Early Stage (Low Level) F3E (FM) : Variable Reactance
<b>Maximum FM Deviation</b>	±5.0 kHz / ±2.5 kHz	±5kHz (FM-N: ±2.5kHz)
<b>Harmonic Radiation</b>	Better than -50 dB (1.8 - 30 MHz Amateur bands) Better than -63 dB (1.8 - 30 MHz Amateur bands, above 30MHz*) Better than -63 dB (50 MHz Amateur band) Better than -60 dB (144 MHz, 430 MHz Amateur bands)	-50dB (1.8-29.7MHz Amateur bands) -60dB (50/144/430MHz Amateur bands)
<b>SSB Carrier Suppression</b>	At least 50 dB below peak output	At least 40dB below peak output
<b>Undesired Sideband Suppression</b>	At least 50 dB below peak output	At least 50dB below peak output
<b>3rd-order IMD (14 MHz) ※PEP</b>	—	—
<b>Bandwidth</b>	3.0 kHz (LSB, USB), 500 Hz (CW) 6.0 kHz (AM), 16 kHz (FM, C4FM)	3.0kHz (LSB, USB) , 500Hz (CW) 6.0kHz (AM), 16kHz (FM)
<b>Audio Response (SSB)</b>	Not more than -6 dB from 300 to 2700 Hz	400Hz-2600Hz (-6dB)
<b>Microphone Impedance</b>	600 Ohms (200 to 10 k Ohms)	600 Ohms (200 to 10k Ohms)
<b>Circuit Type</b>	Triple-conversion superheterodyne (SSB/CW/AM) Double-conversion superheterodyne (FM/C4FM)	Double-Conversion Superheterodyne (SSB/CW/AM/FM) Single-Conversion Superheterodyne (WFM)
<b>Intermediate Frequencies</b>		
	1st. Frequencies 1st. 69.450 MHz 2nd. Frequencies 2nd. 9.000 MHz (SSB/CW/AM); 450 kHz (FM/C4FM) 3rd. Frequencies 3rd. 24 kHz (SSB/CW/AM)	1st. 68.33MHz (SSB/CW/AM/FM); 10.7MHz (WFM) 2nd. 455kHz
<b>Sensitivity</b>	SSB/CW (BW: 2.4 kHz, 10 dB S+N/N) 0.158 μV (1.8 - 30 MHz, AMP 2) 0.125 μV (50 - 54 MHz, AMP 2) 0.11 μV (144 - 148 MHz) 0.11 μV (430 - 450 MHz) AM (BW: 6 kHz, 10 dB S+N/N, 30% modulation @400 Hz) 5 μV (0.5 - 1.8 MHz, AMP2) 1.6 μV (1.8 - 30 MHz, AMP 2) 1.25 μV (50 - 54 MHz, AMP 2) FM (BW: 15 kHz, 12 dB SINAD) 0.35 μV (28 - 30 MHz, AMP 2) 0.35 μV (50 - 54 MHz, AMP 2) 0.18 μV (144 - 148 MHz) 0.18 μV (430 - 440 MHz) There is no specification for frequency ranges not listed.	SSB/CW 0.25 μV (1.8 - 28 MHz) 0.25 μV (28 - 30 MHz) 0.2 μV (50 - 54 MHz) 0.125 μV (144/430 MHz bands) AM 32 μV (0.5 - 1.8 MHz) 2 μV (1.8 - 28 MHz) 2 μV (28 - 30 MHz) 2 μV (50 - 54 MHz) FM 0.5 μV (28 - 30 MHz) 0.32 μV (50 - 54 MHz) 0.2 μV (144/430 MHz bands) (IPO, ATT off, SSB/CW/AM = 10dB S/N, FM = 12dB SINAD)
<b>Selectivity</b>	Mode -6 dB -60 dB CW 0.5 kHz or better 0.75 kHz or less SSB 2.4 kHz or better 3.6 kHz or less AM 6 kHz or better 15 kHz or less FM 12 kHz or better 30 kHz or less(-50dB)	Mode -6dB -60dB SSB/CW 2.2kHz 4.5kHz AM 6kHz 20kHz FM 15kHz 30kHz FM-N 9kHz 25kHz SSB 2.3kHz 4.7kHz (-66dB) *optional YF-122S installed
<b>Image Rejection</b>	70 dB or better (HF / 50 MHz Amateur bands) 60 dB or better (144 / 430 MHz Amateur bands)	70dB or better (HF / 50MHz Amateur bands) 60dB or better (144 / 430MHz Amateur bands)
<b>Maximum Audio Output</b>	2.5 W into 4 Ohms with 10% THD	1.0W (8 Ohms, 10% THD or less)
<b>Audio Output Impedance</b>	4 to 8 Ohms (4 Ohms: nominal)	4 - 16 ohms
<b>Conducted Radiation</b>	Less than 4 nW	less than 4 nW

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About this brochure: We have made this brochure as comprehensive and factual as possible. We reserve the right, however, to make changes at any time in equipment, optional accessories, specifications, model numbers, and availability. Precise frequency range may be different in some countries. Some accessories shown herein may not be available in some countries. Some information may have been updated since the time of printing; please check with your Authorized Yaesu Dealer for complete details.

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