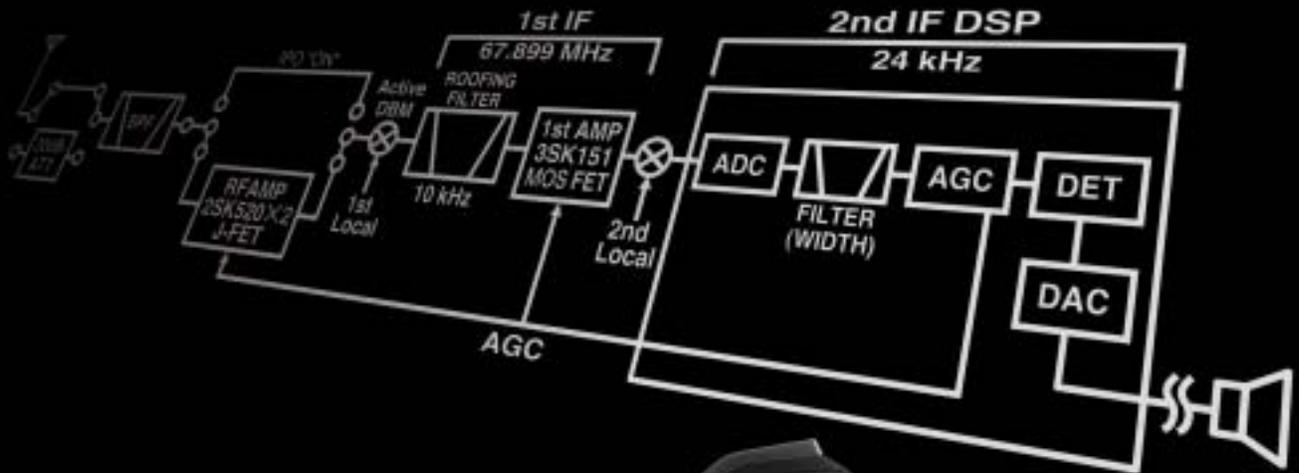


HF/50 MHz All Mode Transceiver

FT-450

NEW COMPACT HF/50 MHz TRANSCEIVER WITH IF DSP



 **YAESU**
Choice of the World's top DX'ersSM

Proven performance and technology

The ultimate compact HF/50 MHz

HF/50 MHz 100 W All Mode Transceiver

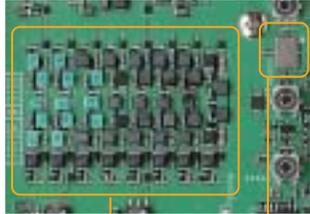
FT-450 Automatic Antenna Tuner ATU-450 optional

■ **FT-450AT** With Built-in ATU-450 Automatic Antenna Tuner

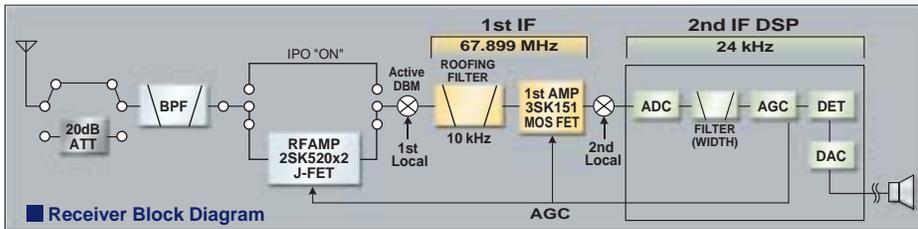
The Real DX Receiver!

The 67.899 MHz 4 pole roofing filter (MCF) and 8 band-pass filters at the RF state provide excellent suppressions of out-of-band interference.

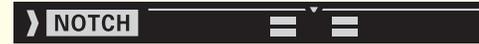
The interference-filtering begins in the "RF" stages, with a double conversion superhetrodyne (1st IF 67.899 MHz / 2nd IF 24 kHz) system. And the 8 band-pass filters at the RF input that help eliminate out-of-band interference, followed by the RF AMP (2SK520 x 2) to led into the active DBM (1st local) will promise its excellent dynamic range. At its 1st IF stage, a powerful and excellent shape factor 4 pole roofing filter with a bandwidth of 10 kHz substantially reduces adjacent signal interference. Then, YAESU's high performance DSP at the 2nd IF stage / 24 kHz permits easy management of AGC, interference rejection, audio tone control, and noise reduction, for clear and quiet reception. The 20 dB ATT (Attenuator) and IPO (Intercept Point Optimization) feature allow the operator to optimize the characteristics of the receiver front end to improve its dynamic range.



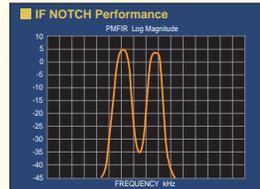
BPF MCF



MANUAL NOTCH



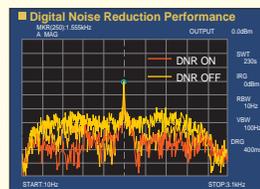
Highly effective system that can remove an interfering beat tone or signal.



Digital Noise Reduction (DNR)



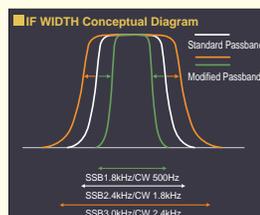
The DNR system analyzes the profile of the noise found on the HF and 50 MHz bands. Random noise is reduced and the sound and readability of the object signal is enhanced.



IF WIDTH



DSP IF WIDTH Tuning provides selectable IF passband widths to fight QRM. (SSB -1.8 / 2.4 / 3.0 kHz) (CW - 0.5 / 1.8 / 2.4 kHz)



World-Class Performance in an easy-to-operate HF/50 MHz transceiver package with Yaesu's unique IF DSP.

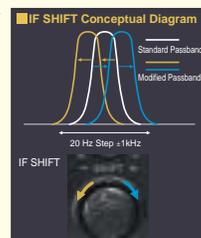
The legendary YAESU IF DSP system, well reputed among top and world class DX operators, is now available in an easy to operate package. The new IF DSP system uses an ADSP-BF531/SBST IC, ANALOG DEVICE, with high speed 16-bit floating point architecture. Designed and programmed with unique objective of "Enhanced Transmit Signal Quality" and "Advanced Receiving Interference Suppression". These futures now come in one easy to operate HF/50 MHz Transceiver, ideal for everyone, new licensee or serious DX operator.



Independent Fast IF SHIFT Control



Vary the IF SHIFT higher or lower for effective interference elimination.



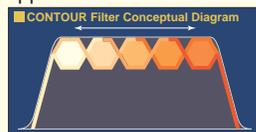
Functions for eliminating interference together with IF SHIFT

Choose one of the functions by the DSP button and operate to adjust by the DSP/SEL knob.

CONTOUR Control Operation



Yaesu's unique CONTOUR filter provides a gentle shaping of the passband. Specific frequency components may be suppressed or enhances to improve the sound and readability of the received signal with the DSP system.



Y of YAESU - state-of-the art IF DSP Hz transceiver - YAESU FT-450



Actual Size / 9" x 3.3" x 8.5" (229 x 84 x 217 mm) (w/o knob)

Outstanding CW Features

- Built-in Electronic Keyer
- Speed adjustable between 4 WPM and 60 WPM
- Weight (Dot:Dash Ratio) adjustable
- CW T/R Recovery Delay programmable from 30 ms to 3000 ms
- CW Beacon - Up to 118 characters using CW message keyer's 3 memory banks
- CW Pitch Adjustment (between 400 to 800 Hz, in 100 Hz steps)
- CW Spotting (Zero-Beating) function
- CW Reverse - provides BFO injection from LSB-side instead of default USB-side
- CW Sidetone Generator
- CW Keying on SSB modes
- CW Keying using Up/Down keys on the optional microphones (MH-31A8J or MH-36E8J)
- CW Training feature sends random Morse Code via the built-in sidetone generator

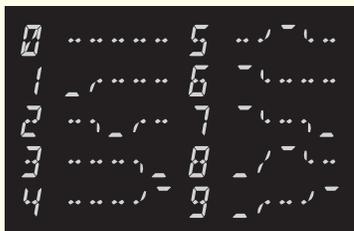
Operate anywhere using optional internal or external antenna tuning systems!
(The ATU-450 Antenna Tuner is included in the FT-450AT)

The FT-450's ATU (Automatic Antenna Tuner) includes 100 memories for quick tuning during field operation when using a folded dipole, etc. YAESU's original and unique Antenna Tuning systems, such as External Automatic Antenna Tuner FC-40 or Active Tuning Antenna System ATAS-120 for mobiles, are ready to be automatically operated with the FT-450 front panel controls.



Digital Microphone Equalizer

FT-450 has a unique Digital Microphone Equalizer with 10 preset functions. The custom settings match your voice characteristics for maximum power and punch, designed for optimal DX operation.



DSP VOX Operation

VOX operation is controlled by the DSP system! Enjoy smooth and seamless Voice Operated TX/RX control with this latest technology!

Two Voice Memories (SSB/AM/FM)

Store up to 10 seconds of audio in each memory, for contesting and portable field operation. The DSP system now makes this feature easy to operate.

Digital Voice Announcement function

FT-450 Voice Announcement Feature will announce the Frequency, Mode and S-meter readings.

Large informative Front Panel Display with convenient Control knobs and Switches

Even though it is a convenient compact size (9"x3.3"x8.5" / 229 x 84 x 217 mm), the FT-450 has a large and bright display, almost 25 % of the front panel. The original LCD negative type display shows the Frequency, S-meter, a Graphical indication of RF to IF settings, and the DSP Interference Elimination settings (Contour, Notch, DNR, Width and Shift). The icons and large character key buttons are easy to identify and operate. KEY, MIC and PHONE jacks are provided on the front panel for handy access.

The Rugged aluminum die-cast chassis with large cooling fan is made for your heavy-duty, long and high power operation.

The newly designed push-pull power MOSFET (RDF100HHF1) amplifiers guarantee powerful and reliable 100 W output operation. The FT-450's rugged 490 cc aluminum die-cast chassis, with a large 2.8" x 2.8" (70 x 70 mm) quiet thermostatically controlled cooling fan, is a solid foundation of the power amplifier during long hours of field use or home contesting operation.



Additional features to support the FT-450's operation

- Large, Easy-to-read digital S-meter with peak hold capability
- QMB (Quick Memory Bank)
- Versatile Memory System, up to 500 memory channels that may be separated into as many as 12 Memory Groups
- TXW to monitor the transmit frequency when split frequency operation is engaged
- Clarifier
- Built-in TCXO for incredible ± 1 ppm/hour (@+77deg F / 25° C, after warm up)
- 20 second Digital Voice Recorder
- Dedicated Data Jack for DATA operation (FSK RTTY available)
- CTCSS Operation (FM)
- My Band/My Mode functions - to recall your favorite operating environments
- Lock function
- CS Switch to recall a favorite Menu Selection directly
- TOT (Transmitter Time Out Timer)
- Various Scan functions
- CAT System (D-sub 9 pin) for Computer Programming
- Cloning capability
- Hand microphone MH-67A8J included



Specifications

General

Rx Frequency Range: 30 kHz - 56 MHz (operating)
160 - 6 m (specified performance, Amateur bands only)

Tx Frequency Ranges: 160 - 6 m (Amateur bands only)

Frequency Stability: ± 1 ppm/hour (@77° F / +25° C, after warmup)

Operating Temperature Range: 14° F ~ 122° F (-10° C ~ +50° C)

Emission Modes: A1A (CW), A3E (AM), J3E (LSB, USB), F3E (FM)

Frequency Steps: 10 Hz (SSB & CW), 100 Hz (AM & FM)

Antenna Impedance: 50 Ohms, unbalanced

Power Consumption: RX (signal present) 1.5 A
TX (100 W) 22 A

Supply Voltage: DC 13.8 V - 10%

Dimensions (WxHxD): 9" x 3.3" x 8.5" (229 x 84 x 217 mm)

Weight (approx.): 7.9 lb (3.6 kg) w/o ATU-450

Receiver

Circuit Type: Double-conversion superheterodyne

Intermediate Frequencies: 1st IF 67.899 MHz / 2nd IF 24 kHz

Sensitivity (IPO "OFF", ATT: OFF): SSB (2.4 kHz, 10 dB S+N/N)
0.25 μ V (1.8 - 2.0 MHz)
0.25 μ V (3.5 - 30 MHz)
0.20 μ V (50 - 54 MHz)

AM (6 kHz, 10 dB S+N/N, 30 % modulation @400 Hz)
2.00 μ V (1.8 - 2.0 MHz)
2.00 μ V (3.5 - 30 MHz)
1.00 μ V (50 - 54 MHz)

FM (BW: 15 kHz, 12 dB SINAD)
0.50 μ V (28 - 30 MHz)
0.30 μ V (50 - 54 MHz)

There is no specification in frequency ranges not listed.

Squelch Sensitivity: SSB/CW/AM
(IPO "OFF", ATT: OFF) 2.50 μ V (1.8 - 30 MHz)
1.00 μ V (50 - 54 MHz)

FM 0.32 μ V (28 - 30 MHz)
0.16 μ V (50 - 54 MHz)

There is no specification in frequency ranges not listed.

Selectivity (-6/-60 dB): Mode -6 dB -60 dB

CW	0.5 kHz or better	2.0 kHz or less
SSB	2.2 kHz or better	4.5 kHz or less
AM	6 kHz or better	20 kHz or less
FM	15 kHz or better	30 kHz or less
FM-N	9 kHz or better	25 kHz or less

Image Rejection: 80 dB or better (160 - 10m Amateur bands)
65 dB or better (6m Amateur band)

Maximum Audio Output: 2.2 W into 4 Ohms with 10% THD

Audio Output Impedance: 4 to 16 Ohms (8 Ohms: nominal)

Conducted Radiation: Less than 4000 μ W

Specifications are subject to change without notice, and are guaranteed within the amateur band only. Frequency range will vary according to transceiver version; check with your dealer.

Transmitter

Power Output: 100 watts (25 watts AM carrier)

Modulation Types: J3E (SSB): Balanced,
A3E (AM): Low-Level (Early Stage),
F3E (FM): Variable Reactance

Maximum FM Deviation: ± 5.0 kHz / ± 2.5 kHz

Harmonic Radiation: Better than -60 dB (160 - 10m Amateur bands)
Better than -70 dB (6m Amateur band)

SSB Carrier Suppression: At least 60 dB below peak output

Undesired Sideband Suppression: At least 60 dB below peak output

Audio Response (SSB): Not more than -6 dB from 400 to 2600 Hz

Microphone Impedance: 600 Ohms (200 to 10 kOhms)

Option

 MD-200A8x Desk-Top Dynamic Microphone	 MD-100A8x Desk-Top Microphone	 MH-31A8J Hand Microphone	 MH-36E8J DTMF Hand Microphone
 YH-77STA Open-Air Stereo Headphone	 FP-1023 (USA Only) External Power Supply (13.8 VDC 23 A)	 FP-1030 External Power Supply (13.8 VDC 25 A)	 ATU-450 Built in Automatic Antenna Tuner (Included in FT-450AT Version)
 MMB-90 Mobile Bracket	 MHG-1 Side Carry Handle	 VL-1000 Linear Amplifier 1 kW Power output (6 m: 500 W/USA version) CT-118 Band Data Cable	

FC-40
Automatic Antenna Tuner (for Long wire antenna)

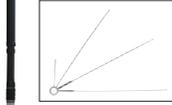
The FC-40 is a microprocessor-controlled antenna impedance matching network designed to provide all-amateur-band transmitting capability with the FT-450 Series of transceivers, when used with an end-fed random wire or long whip antenna.

Specifications

- Operating Frequency Range: 1.8 - 54 MHz with 66 ft (20+ m) end-fed wire, 7 - 54 MHz with 8 ft (2.5 m) Mobile Whip Antenna
- Input Impedance: 50-Ohms
- Maximum Power: 100 Watts (3 minutes Maximum Continuous TX)
- Matched SWR: 2.0:1 or less (if antenna is not a multiple of $\lambda/2$)
- Tune-up Power: 4 W ~ 60 W
- Tune-up Time: 8 seconds maximum
- Impedance Matching Memories: 200 channels
- Power supply: 13.8 V DC $\pm 15\%$ (supplied from transceiver)
- Case Size (WHD): 9" x 7" x 2.1" (228 x 175 x 55 mm)
- Weight: 2.6 lbs. (1.2 kg)

ATAS-120A
Active Tuning Antenna System

Yaesu's patented ATAS[®] (Active-Tuning Antenna System) provides 7/14/21/28/50 MHz bands coverage with automatic motorized tuning on FT-450. Utilizing control signals from the transceiver's microprocessor received via the coaxial cable, the ATAS internal motor adjusts the radiator length for best SWR.



ATBK-100
Antenna Base Kit
(for Base operation on 6 m Band)



• Packet Cable **CT-39A** • External Automatic Antenna Tuner **FC-30**

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 to 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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