

**HF/VHF/UHF Portable Operation
Just Got a Lot More Powerful!
Meet the YAESU FT-897D**

Portable/Base Station

FT-897D

All-Mode 1.8-430 MHz Transceiver

**60 m
Band**
(USA Version)

TCXO

DSP

Turn your next weekend getaway into an HF DX-pedition,
and leave the power supply at home!



Portable/Base Station
FT-897D
All-Mode 1.8-430 MHz Transceiver

Shown with optional FC-30 Automatic Antenna Tuner and
FP-30 AC Power Supply.

FT-897D: THE WORLD'S FIRST HF/VHF/UHF MULTIMODE PORTABLE/BASE STATION!

Now you can own a fully self-contained, high-power HF/VHF/UHF multimode transceiver that can be operated without an external power supply! With the exciting new FT-897D, you can operate fully portable at the 20-Watt power level, using the optional FNB-78 13.2V/4500 mAh Ni-MH Battery Pack (two may be installed simultaneously). Use an external 13.8 Volt power supply for 100 Watts of power on HF/50 MHz, 50 Watts on 144 MHz, and 20 Watts on 430 MHz. Or install the optional FP-30 Internal Power Supply in place of the internal batteries. . . however you configure the FT-897D, there will be no limit to the DX action you'll enjoy!

FIELD STATION

FT-897D+FNB-78(optional)

For an afternoon at the park, a day at the beach, or an emergency exercise, power your FT-897D using the optional FNB-78 Ni-MH Battery Pack, and you're on the air—completely portable!

Battery-powered Field Operation

The bottom side of the FT-897D contains a "power source tray" which can accommodate up to two of the optional 13.2 Volt, 4500 mAh FNB-78 Ni-MH Battery Packs, for completely portable operation without any external power source. Maximum power output is 20 Watts (70 cm: 10 W) during battery operation, and with two FNB-78s you may expect up to eight hours of operating time (TX 5%, RX 5%, standby 90%). What's more, you can charge one of the FNB-78 Battery Packs while operating the FT-897D off the other pack—ideal for situations where solar or other power sources are available. The CD-24 Charge Adapter provides the necessary voltage for charging, and it may be used in conjunction with an external 13.8 Volt source, or the PA-26 AC Adapter may be used to power the CD-24.



MOBILE STATION

FT-897D+ATAS-120(optional)

Mobile operation, using the FT-897D as the cornerstone, is pure joy! The combination of the FT-897D and the ATAS-120 Active-Tuning Antenna System provides automated operation from HF through the UHF spectrum!

DC 13.8 V Mobile Operation

Using an external 13.8 Volt power source, you get a full 100 Watts of power output on HF and six meters (144 MHz: 50 W, 430 MHz: 20 W).



ATAS-120 Active-Tuning Antenna System

BASE STATION

FT-897D+FP-30+FC-30(optional)

The FT-897D's outstanding fundamental performance invites expansion into a full-featured base station. The optional FP-30 Internal Power Supply provides operation from AC sources, and the clamp-on FC-30 Automatic Antenna Tuner option expands the impedance range of the transceiver. Round out your station with the optional MD-200asX Deluxe Desk Microphone and the optional VL-1000 Quadra System Linear Amplifier for world-class performance at home!

Top-quality Base Station

The power source tray of the FT-897D is designed to accommodate the optional FP-30 Internal Power Supply, allowing full-power operation from 100-120 V or 200-240 V AC power sources. The quiet switching-regulator design of the FP-30 is tolerant of AC input voltage variations, making it ideal for DX-pedition use! And to extend the impedance bandwidth of your antenna system, the innovative FC-30 Automatic Antenna Tuner option clamps onto the left side of the FT-897D in seconds.

FP-30 (optional) Internal Switching Power Supply

Limited-space Antenna Ideas

If you're living in an apartment, townhouse, or other location where you don't have a lot of space to install an antenna, ask your dealer for a suitable balcony mount for the ATAS-120! When using the ATAS-120 with the optional ATBK-100 Antenna Base Kit (VHF/UHF Counterpoise), you'll be able to get on the air with an efficient, automatically-tuned antenna system that will put DX contacts into your log.



ATBK-100 Antenna Base Kit (VHF/UHF Counterpoise)

Active-Tuning Antenna System: The ATAS Series! (optional)

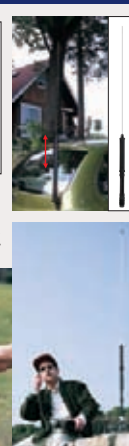
ATAS-120 High Speed Active-Tuning Antenna System
Yaesu's patented ATAS™ (Active-Tuning Antenna System) provides HF/VHF/UHF coverage with automatic motorized tuning. Utilizing control signals from the transceiver's microprocessor

received via the coaxial cable, the ATAS internal motor adjusts the radiator length for best SWR. The ATAS covers the 7/14/21/28/50/144/430 MHz bands, and is compatible with the FT-857, FT-847, and FT-897 Series.



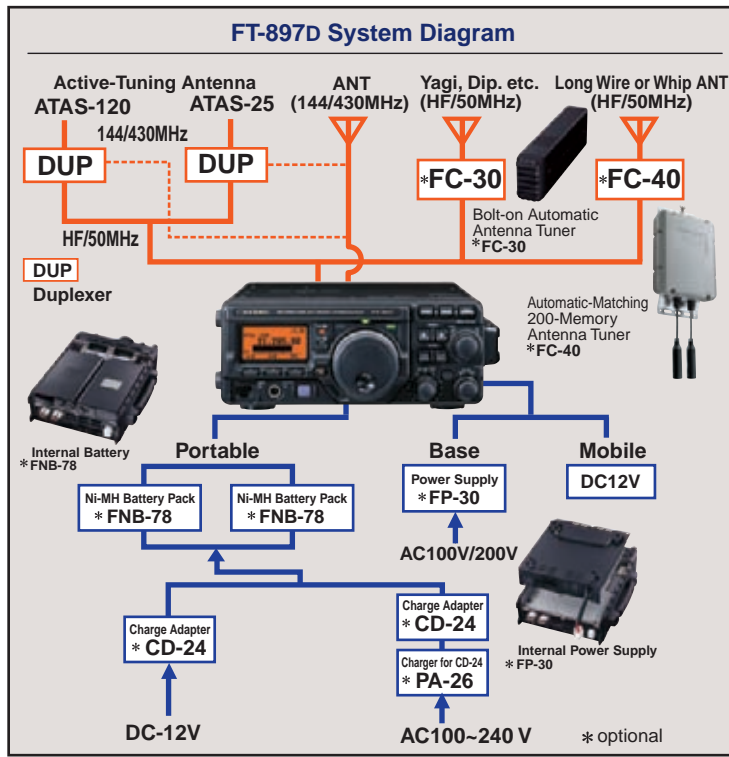
ATAS-25 Manually-Tuned Portable Antenna

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 ring of the loading coil up or down and selecting the appropriate number of top sections. Counterpoise wires are supplied. The ATAS-25 is constructed of high-grade materials for maximum efficiency, and it's the perfect traveling companion for your HF Transceivers!



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 FT-897/857 Series of transceivers, when used with an end-fed random wire or long whip antenna. The FC-40 makes use of the control circuitry built into the transceiver, which allows the operator to control and monitor automatic operation of the FC-40, which mounts near the antenna feedpoint.



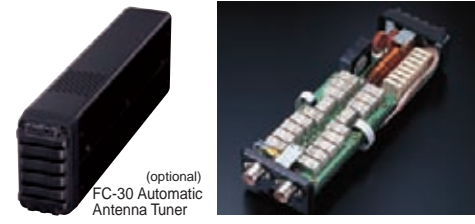
Compact, All-In-One Transportable HF/VHF/UHF Communications Station

Measuring just 7.9" x 3.2" x 9.1" (without knobs), the FT-897D is unmatched in performance versus size. With the optional FC-30 Automatic Antenna Tuner installed, the convenient carrying handle of the FT-897D lets you easily transport your HF/VHF/UHF station to a portable location and get on the air instantly.



Innovative FC-30 (optional) Automatic Antenna Tuner

Adding less than 2" to the total width of the FT-897D assembly, the optional FC-30 is a high-speed, relay-controlled Automatic Antenna Tuner utilizing a combination of sixteen capacitors and nine loss coils to reduce SWR as presented to the FT-897 feedpoint. Impedances of 17 to 150 Ohms may be tuned by the FC-30 on HF (25 to 100 Ohms on 50 MHz), and the lightning-fast tuning ensures that you won't miss out on the DX.



Unmatched Ease of Access to Features!

Big-Radio Tuning Dial and Ergonomics in Ultra-Compact Transceiver

Ease of operation of the FT-897D is enhanced by the large-diameter (1.8") Main Tuning Dial, similar in size to the tuning knob of a large base-station transceiver. Selectable tuning steps of 2 kHz/4 kHz per revolution ensure that fine tuning is always available, while allowing easy navigation around your favorite bands.

Easy Receiver Offset Tuning (Clarifier)

The convenient "Clarifier" (R.I.T.) knob, located at the bottom right-hand corner of the front panel, allows offset of the receiver frequency from the transmitter frequency, to follow a drifting station or to tune around a DX pile-up. But if you want a larger knob for offset tuning, you may use the Menu system to assign the Clarifier function either to the Selector knob, or the Main Tuning Dial.

Easy-to-Use "Scrolling Front Panel" Keys

The compactness of the FT-897D is made possible by the easy-to-use "multi-function keys," which allow

adjustment of a number of transceiver operating functions during operation. Pressing the [F] key allows selection of the operating function row, using the Selector knob, and you may then press the [A], [B], or [C] switch, as needed, to change the setting. What's more, a number of these keys provide instant "hot key" switching to a related Menu item, for "set and forget" configuration adjustment.

Rugged, High-Output Power Amplifier with Efficient Heat Sink

Achieving 100 Watts of power output from such a compact package is a difficult mechanical and electrical engineering task. On HF, push-pull 2SC2782A bipolar driven by push-pull RD07MVS1 provide the 100-Watt maximum capability, while on VHF maximum efficiency during battery operation is yielded by RD70HV1 MOSFET PA transistors. The rugged aluminum die-cast chassis provides a solid foundation for the heat sink for the power amplifier, with a total of almost 40 cubic inches of heat sink surface area available. With its quiet, thermostatically-controlled twin cooling fans, the FT-897D will stand up to the rigors of DX-pedition or home contest use, with dissipation capability to spare.



TX POWER OUTPUT

	HF	50 MHz	144 MHz	430 MHz
FT-897D	100 (20W)	100 (20W)	50 (20W)	20 (10W)

() Indicates Power Output during operation using internal batteries.

Take the QRP Challenge

Ideal for low-power operation under battery power, the FT-897D is easily adjusted down to the 5-Watt limit for "QRP" operation, and you'll enjoy the thrill of having those rare DX stations come back to your "flea power" portable station.

Nice Ears!! Legendary YAESU Receiver Design

When you've traveled a great distance to find that ultimate quiet operating location, you want a great receiver so as to take advantage of it! Yaesu's top receiver design team crafted the front end of the FT-897D, accounting for the dramatic differences between low bands like 160 meters and the 430 MHz microwave band. Wide dynamic range and

low noise low noise figure are the product of the advanced preamplifier stage with negative feedback for stability, and the GaAs balanced mixer design, with careful gain distribution from the RF through the audio stages. Flexibility in strong-signal operation is also provided by the RF Gain control, input attenuator, input preamplifier bypass capability (IPO), and Slow/Fast/Off AGC selections.

High-Performance PLL Design

The quiet, fast-acting local oscillator system of the FT-897D borrows extensively from the renowned FT-847, using a Direct Digital Synthesizer (DDS) to achieve fast lock times and silky-smooth tuning in 10 Hz steps. The excellent carrier-to-noise ratio helps preserve spurious-free dynamic range in a crowded band, and the smooth tuning leaves you with the feeling you're using an analog VFO.

Digital and Analog Interference/Noise Reduction

The FT-897D includes a wide array of analog and DSP filters to help you dig out those weak DX signals on a crowded band! One-touch activation of the DSP filters, plus a convenient "DSP" LED on the front panel, enhance the ease of using the DSP.

DSP BANDPASS FILTER

Separate DSP Bandpass Filters for Voice and CW augment the analog filters, yielding a dramatic improvement in signal-to-noise ratio and interference reduction. For Voice modes, both the low- and high-side cutoff frequencies are independently adjustable, and for CW you may choose bandwidths of 240 Hz, 120 Hz, or a razor-sharp 60 Hz.

DSP AUTO-NOTCH FILTER

To reduce interference caused by annoying carriers within the receiver passband, the DSP Auto-Notch provides a significant reduction in the interference level. If multiple carriers are present, the DSP will detect and notch all the carriers present.

DSP NOISE REDUCTION

The very effective DSP Noise Reduction filter of the FT-897 is a tremendous operating aid, greatly reducing background noise without introducing annoying distortion of the desired signal. Operator fatigue is reduced, while signal-to-noise ratio is significantly enhanced.

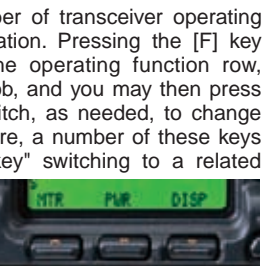
SSB DSP Bandpass Filter

DSP Auto-Notch Filter

DSP Noise Reduction Filter

FT-897D PORTABLE BASE STATION

Whether at home, in the car, or on a DX-pedition, the FT-897D brings you home-station performance in a compact, transportable package. Features like Digital Signal Processing, Collins® Mechanical filter options, Built-in 0.5 ppm TCXO, and easy Digital mode interfacing give you leading-edge performance, wherever you create your Hamshack!



IF SHIFT
To roll off interference using the analog IF filters, the IF Shift feature varies the frequency of the IF passband across the filter, removing interference from either the high-frequency or low-frequency side without varying the pitch of the incoming signal.

IF NOISE BLANKER
Another noise reduction circuit, in addition to the DSP Noise Reduction, is the IF Noise Blanker. Noise pulses are detected early in the receiver, then amplified and used to drive a carefully-timed gate in the receiver IF that blanks out impulse-type noise from automotive ignition systems.

Upgrade with Collins® Mechanical Filters for SSB and CW!

To enhance performance on both receive and transmit, high-performance Collins® Mechanical Filter options are available for both SSB and CW. For SSB, the 2.3 kHz, 10-pole model YF-122S (optional) provides a very flat passband response, for natural-sounding transmit audio, along with excellent skirt selectivity. And for CW, the 500 Hz, 7-pole YF-122C (option) helps separate signals on a crowded band in a contest.



Outstanding Features for the CW Aficionado!

A wide array of features are tailored to the CW enthusiast operating from home or on an expedition!

Included are a CW Tuning indicator, CW Pitch control, Electronic Keyer with three memories and Weight Control, and selection of Full QSK or "Semi-break-in" operation. For DX-pedition use, a unique "Beacon" mode allows you to send a repetitive message on, for example, six meters, to help others spot propagation to your location. And if you're looking to upgrade your license class, the CW Trainer feature

will send five-character letters and/or numbers via the speaker, so you can practice CW reception when the bands are dead.

Advanced Convenience Features for VHF/UHF Operation!

Both CTCSS and DCS Encoder/Decoders are built in! For easy access to repeaters, a 50-tone CTCSS system works along with a 104-code Digital Code Squelch (DCS) in the FT-897D. For applications requiring split CTCSS/DCS access, a convenient "Split Tone" feature is also provided!

High-Stability Reference Oscillator Included:

The TCXO-9 provides ±0.5 ppm stability at 77°F/25°C for applications requiring very high frequency accuracy.

Versatile Memory System!

The FT-897D provides up to 200 "Main" memory channels, each of which may be named with an Alpha-Numeric label of up to eight characters. These 200 Memories may be separated in as many as 10 Memory Groups of 20 Memories each.

For added convenience, you also get a "Quick Memory" and a "Home Channel" on each band, plus ten pairs of band-limit memories, to let you restrict operation to a sub-band, if you like.

And Much, Much More...

Large, Multi-Color Display: You can even program the display to show different colors on each band, mode, Memory Group, or even to track signal strength by color!

Battery Voltage Meter

TX Meter Selection: Modulation Level, ALC, Power Output, or SWR.

Easy Data Mode Interfacing:

Configure for 1200/9600 bps Packet, RTTY, or PSK31 in minutes. Transmit Data Level is adjustable via the Menu.

DSP Microphone Equalizer:

Focus the available power to match your voice characteristics.

Two Antenna Connectors:

Separate jacks for HF/50 MHz and 144/430 MHz.

Large, Easy-to-See TX/RX Status LED.

Versatile Scanning Features:

VFO Scan, Memory Scan, Band-Limited Scanning (PMS), and Dual Watch.

Smart Search™:

Automatic "Soft" Memory Channel loading system.

ARTS™: Auto-Range Transponder system

tells you if another ARTS-equipped station goes out of communications range.

Spectrum Scope:

Watch activity ±9 or ±63 channels from your current frequency.

VOX: With separate adjustments for voice delay and CW receiver recovery time.

Auto Power Off (APO), Time-Out timer (TOT) and Automatic Repeater Shift

CAT System: Computer programming capability for DX/contest logging software, etc.

ACCESSORIES & OPTIONS



About this brochure: To receive 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. 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.

YAESU VERTEX STANDARD CO., LTD.

4-8-8 Nakameguro, Meguro-ku, Tokyo 153-8644, Japan

For the latest Yaesu news, visit us on the Internet: <http://www.vxstd.com>

US Headquarters

10900 Walker Street, Cypress, CA 90630, U.S.A.

YAESU EUROPE B.V.

P.O. Box 75525, 1118 2N Schiphol, The Netherlands

YAESU UK LTD.

Unit 12, Sun Valley Business Park, Winnall Close, Winchester, Hampshire, SO23 0LB, U.K.

VERTEX STANDARD HK LTD.

Unit 5, 20/F., Seaview Centre, 139-141 Hoi Bun Road, Kwun Tong, Kowloon, Hong Kong

SPECIFICATIONS		Transmitter		Sensitivity		
General	Frequency Range: Receive: 0.1-56 MHz, 76-108 MHz, 118-164 MHz, 420-470 MHz Transmit: 160-6 Meters (60 Meter Band/USA Version), 2 Meters, 70 Centimeters (Amateur bands only) 5.1675 MHz (Alaska Emergency Frequency: USA only)	RF Power Output (at 13.8 V DC): SSB/CW/FM AM Carrier 160-6 Meter: 100 W 25 W 2 Meter: 50 W 12.5 W 70 Centimeter: 20 W 5 W	100 kHz-1.8 MHz — 32 µV — 1.8 MHz-28 MHz 0.2 µV — 28 MHz-30 MHz 0.2 µV — 50 MHz-54 MHz 0.125 µV — 144/430 MHz 0.125 µV — (SSB/CW/AM = 10 dB S/N, FM = 12 dB SINAD)	SB/CW AM FM — 32 µV — 2 µV — 2 µV 0.5 µV 0.2 µV 0.2 µV	AM FM — — — — 0.5 µV 0.2 µV	—
Emission Modes: A1 (CW), A3 (AM), A3J (LS/USB), F3 (FM), F1 (9600 bps packet), F2 (1200 bps packet)	Modulation Types: SSB: Balanced Modulator, AM: Early Stage (Low Level), FM: Variable Reactance	FM Maximum Deviation: ±5 kHz (FM-N: ±2.5 kHz)	Squelch Sensitivity: SSB/CW/AM FM 100 kHz-1.8 MHz — 2.5 µV — 1.8 MHz-28 MHz 0.2 µV — 28 MHz-30 MHz 0.2 µV — 50 MHz-54 MHz 0.1 µV — 144/430 MHz 0.5 µV — 0.16 µV	Image Rejection: HF/50 MHz: 70 dB, 144/430 MHz: 60 dB IF Rejection: 60 dB	—	—
Antenna Impedance: 50 Ohms, Unbalanced (M)	Carrier Suppression: >40 dB	Spurious Radiation: >50 dB (1.8-29.7 MHz) >60 dB (50/144/430 MHz)	Opp. Sideband Suppression: >50 dB	Selectivity (–40 dB): SSB/CW: 2.2 kHz/4.5 kHz AM: 6 kHz/20 kHz FM: 15 kHz/30 kHz FM-N: 9 kHz/25 kHz SSB (optional YF-122S installed): 2.3 kHz/4.7 kHz (–66 dB) CW (option YF-122C installed): 500 Hz/2.0 kHz	—	—
Operating Temp. Range: +14° F to +140° F (–10° C to +60° C)	Carrier Suppression: Normal: 13.8 VDC ±15%, Negative Ground FNB-78 (Ni-MH Battery Pack): 13.2 V (Option)	Supply Voltage: Normal: 13.8 VDC ±15%, Negative Ground FNB-78 (Ni-MH Battery Pack): 13.2 V (Option)	Microphone Impedance: 200-10k Ohms (Nominal: 600 Ohms)	AF Output: 2.5 W (at 4 Ohms, 10% THD or less) AF Output Impedance: 4-16 Ohms	—	—
Frequency Stability: ±0.5 ppm/1 hour @25° C, after warmup	Current Consumption: Squelched: 600 mA (Approx.)	Receive: 1 A Transmit: 22 A	Receiver Circuit Type: Double-Conversion Superhetrodyne (SSB/CW/AM/FM) Superhetrodyne (WFM)	Intermediate Frequencies: 1st: 68.33 kHz (SSB/CW/AM/FM), 10.7 MHz (WFM) 2nd: 455 kHz	—	—
Case Size (W x H x D): 7.87" x 3.15" x 10.31" (200 x 80 x 262 mm)	Weight (Approx.): 8.6 lbs (3.9 kg) (w/o Ni-MH battery, antenna, Microphone)					

Specifications are subject to change without notice, and are guaranteed within the amateur bands only.

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