YAESU
Choice of the World's top DX'ers℠

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.

YAESU
Choice of the World's top DX'ers℠

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

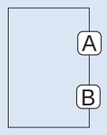
Now you can own a fully self-contained, high-power HF/VHF/UHF multimode transceiver that can be operated without an external po wer supply! With the exciting new FT-897 D, you can operate fully portable at the 20-Watt power level, using the optional FNB-78 13.2V/4500 mAh Ni-MH Battery Pack (two may be 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. . .ho wever you configure the FT-897 D, there will be no limit to the DX action you'll enjoy!

FIELD STATION
FT-897 D+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.



Internal Ni-MH Battery Pack
FNB-78 (optional)

MOBILE STATION
FT-897 D+ATAS-120 (optional)

Mobile operation, using the FT-897 D as the cornerstone, is pure joy! The combination of the FT-897 D 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-897 D+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-200 A8X 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.

ATBK100
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.

See your Yaesu dealer for details regarding suitable mounts for the ATAS-120.

Antenna Base Kit
ATBK-100

ATAS-25 Manually-Tuned Portable Antenna

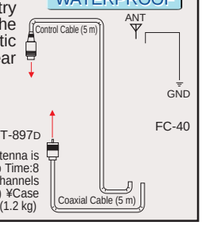
The ATAS-25 is a manually-adjusted portable antanna ideal for field use with the HF Transceivers. Designed for mounting on a standard camera tripod (1/4" stud), the ATAS-25 is tuned by sliding the shorting ring of the loading coil up or down and selecting the appropriate number of top sections. Counterpoise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

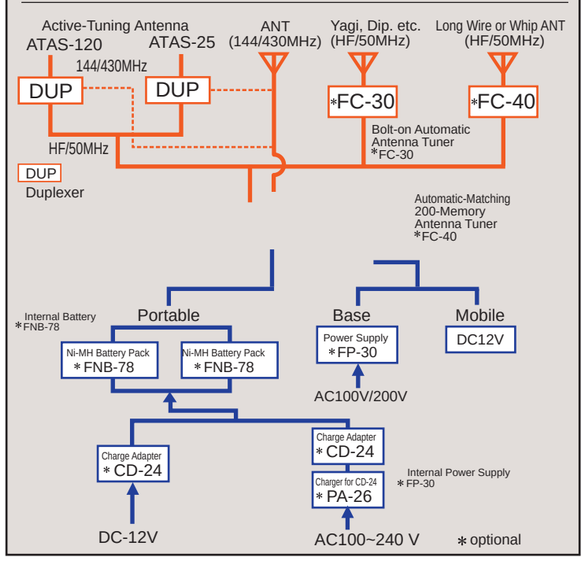
The FC-40 makes use of the control circuitry built into the transceiver, which allows the operator to control and monitor automatic operation of the FC-40, which mounts near the antenna feedpoint.

WATERPROOF



Specifications
¥Operating 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-Ohms ¥Maximum 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:4 W ~ 60 W ¥Tune-up Time:8 seconds maximum ¥Impedance Matching Memories: 200 channels ¥Power supply:13.8 V DC ±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)

FT-897D System Diagram



Actual Size

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 low-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.

(optional)
FC-30 Automatic
Antenna Tuner

FT-897 D PORTABLE BASE STATION

Whether at home, in the car, or on a DX-pedition, the FT-897 D 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!

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 power capability, while on VHF maximum efficiency during battery operation is yielded by RD70HVF1 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

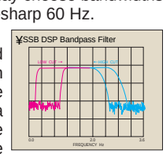
The quiet, fast-acting local oscillator system of the FT-897D borrows extensively from the renowned FT-847, using a Direct Digital Synthesizer (DDS) to achieve fast lock times and silky-smooth tuning in 10 Hz steps. The excellent carrier-to-noise ratio helps preserve spurious-free dynamic range in a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

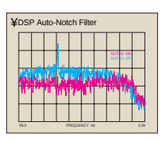
Digital and Analog Interference/Noise Reduction

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.

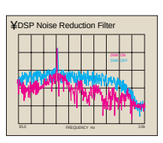
■ DSP BANDPASS FILTER
Separate DSP Bandpass Filters for Voice and CW augment the analog filters, yielding a dramatic improvement in signal-to-noise ratio and interference reduction. For Voice modes, both the low- and high-side cutoff frequencies are independently adjustable, and for CW you may choose 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.



■ 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-

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 77ºF/25ºC for applications requiring very high frequency accuracy.

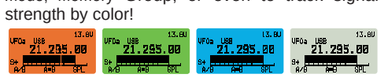
Versatile Memory System!

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. . .

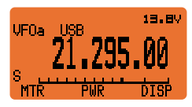
■ Large, Multi-Color Display: You can even program the display to show different colors on each band, mode, Memory Group, or even to track signal strength by color!



■ 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.

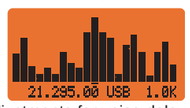
■ Large, Easy-to-See TX/RX Status LED.

■ Versatile Scanning Features: VFO Scan, Memory Scan, Band-Limited Scanning (PMS), and Dual Watch.

■ Smart Search [a] : Automatic "Soft" Memory Channel loading system.

■ ARTS[a] : 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

Deluxe, Ultra-High-Quality Desktop Microphone MD-200A8X	Deluxe Desk Microphone MD-100A8X	DTMF Microphone MH-36E8J	Remote Control DTMF Microphone MH-59A8J	Lightweight Stereo Headphones YH-77STA	Collins Mechanical Filters SSB YF-122S (2.3 kHz) CW YF-122C (500 Hz) CW YF-122CN (300 Hz)	Internal Power Supply 100-120/200-240 VAC FP-30	Internal Ni-MH Battery Pack FNB-78 (Two may be installed)	Antenna Base Kit for ATAS-120 ATBK-100	Automatic-Matching 200-Memory Antenna Tuner FC-40		
4-Hour Charge Adapter for FNB-78 CD-24 (Requires 13.8 VDC or optional PA-26)	Charger for CD-24 PA-26 (Requires optional CD-24)	Bolt-on Automatic Antenna Tuner FC-30	CAT Computer Interface Cable CT-62	Packet Cable CT-39A	Mounting Bracket MMB-80	Band Data Cable for VL-1000 CT-58	HF/50 MHz 1kW Linear Amplifier Quadra System VL-1000 + VP-1000			Active-Tuning Antenna (Automatic Type) ATAS-120	Active-Tuning Antenna (Manual Type) ATAS-25

SPECIFICATIONS

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)
Emission Modes : A1 (CW), A3 (AM), A3J (LSB/USB), F3 (FM), F1 (9600 bps packet), F2 (1200 bps packet)
Synthesizer Steps (Min.): 10 Hz (CW/SSB), 100 Hz (AM/FM/WFM)
Antenna Impedance: 50 Ohms, Unbalanced (M)
Operating Temp. Range: +14ºF to +140ºF (-10ºC to +60ºC)
Frequency Stability: 0.5 ppm/1 hour @ 25ºC, after warmup
Supply Voltage: Normal: 13.8 V DC ±15 %, Negative Ground
FNB-78 (Ni-MH Battery Pack): 13.2 V (Optional)
Current Consumption: Squelched: 600 mA (Approx.)
Receive: 1 A
Transmit: 22 A
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 lb (3.9 kg)
(w/o Ni-MH battery, antenna, Microphone)

Transmitter

RF Power Output (@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

Modulation Types: SSB: Balanced Modulator, AM: Early Stage (Low Level), FM: Variable Reactance
FM Maximum Deviation: ±5 kHz (FM-N: ±2.5 kHz)
Spurious Radiation: -50 dB (1.8-29.7 MHz)
-60 dB (50/144/430 MHz)
Carrier Suppression: >40 dB
Opp. Sideband Suppression: >50 dB
SSB Frequency Response: 300 Hz-2600 Hz (-6 dB)
Microphone Impedance: 200-10k Ohms (Nominal: 600 Ohms)

Receiver

Circuit Type: Double-Conversion Superheterodyne (SSB/CW/AM/FM)
Superheterodyne (WFM)
Intermediate Frequencies: 1st: 68.33 MHz (SSB/CW/AM/FM); 10.7 MHz (WFM)
2nd: 455 kHz

Sensitivity:	SB/CW	AM	FM
100 kHz-1.8 MHz	No spec	32 µV	No spec
1.8 MHz-28 MHz	0.12 µV	2 µV	No spec
28 MHz-30 MHz	0.12 µV	2 µV	0.5 µV
50 MHz-54 MHz	0.125 µV	1 µV	0.2 µV
144/430 MHz	0.125 µV	No spec	0.2 µV

(SSB/CW/AM = 10 dB S/N, FM = 12 dB SINAD)

Squelch Sensitivity:	SSB/CW/AM	FM
100 kHz-1.8 MHz	No spec	No spec
1.8 MHz-28 MHz	0.25 µV	No spec
28 MHz-30 MHz	0.25 µV	0.32 µV
50 MHz-54 MHz	0.25 µV	0.16 µV
144/430 MHz	0.25 µV	0.16 µV

Image Rejection: HF/50 MHz: 70 dB, 144/430 MHz: 60 dB
IF Rejection: 60 dB
Selectivity (-6/-60 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
AF Output: 2.5 W (@4 Ohms, 10% THD or less)
AF Output Impedance: 4-16 Ohms

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

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. 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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