

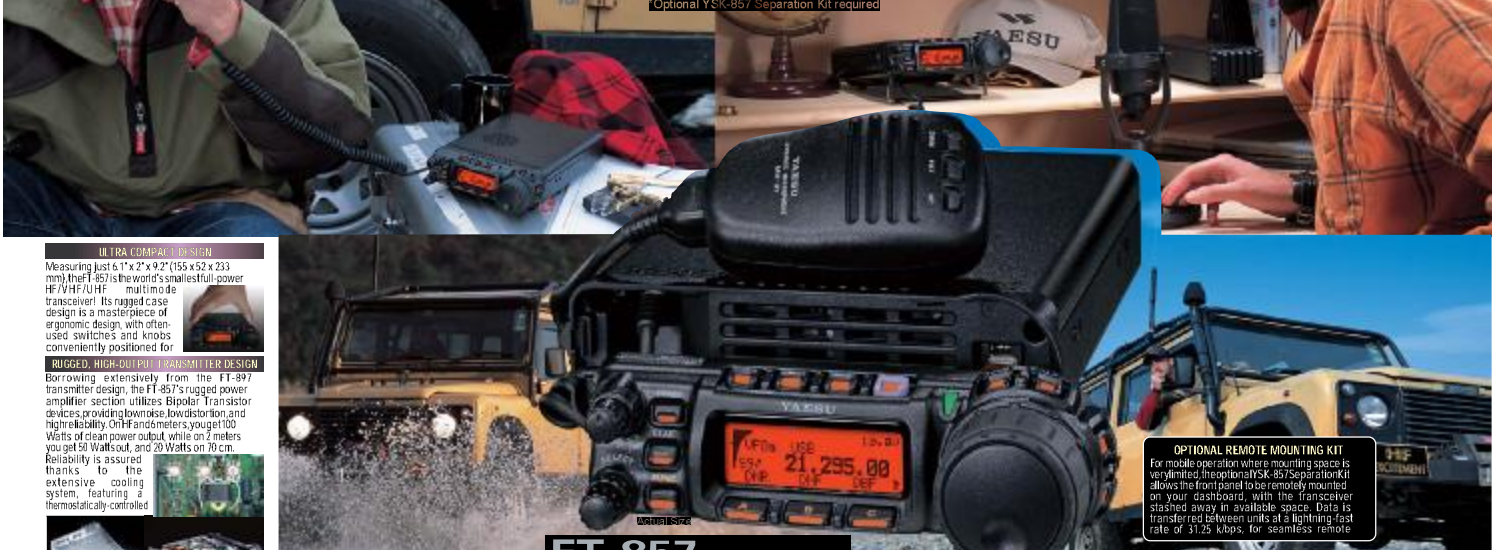
# HF EXCITEMENT

# FT-857



# REVEAL

The world's smallest HF/VHF/UHF Mobile transceiver, provides base station performance from an ultra-compact package that's ideal for mobile or portable work. Wide frequency coverage, outstanding receiver performance and the convenience of remote-head operation\* make the FT-857 the high-performance mobile operation!



**ULTRA-COMPACT DESIGN**  
Measuring just 6.1" x 2.4" x 2.2" (155.5 x 233 mm), the FT-857 is the smallest full-power HF/VHF/UHF multimode transceiver. Its rugged case design is a masterpiece of ergonomic design, with often-used switches and knobs conveniently positioned for

**RUGGED HIGH-POWER BIPOLAR DESIGN**  
Borrowing extensively from the FT-997 transmitter design, the FT-857's rugged power amplifier section utilizes Bipolar Transistor devices providing low noise, low distortion, and high reliability. On an average, you get 100 Watts of clean power output, while on 2 meters you get 50 Watts out, and 20 Watts on 70 cm. Reliability is assured thanks to the extensive cooling system, featuring a thermostatically controlled

**TX POWER OUTPUT (SSB, CW, FM)**

HF - 160m	5W	20W	70 cm
5W - 100W	5W	20W	2W - 20W

**HIGH-PERFORMANCE TUNING DESIGN**  
Building on the acclaimed performance of the FT-1000D, Mark-VI-1000m, and FT-897, Yaesu's engineers have crafted the FT-857's front end for a very low noise floor, along with wide dynamic range. Utilizing an up-conversion architecture for HF with an offset of 68.3 MHz, the FT-857 features a double-conversion superheterodyne system (single conversion on VHF), with the 2nd IF at 455 kHz. Extensive bandpass filtering in the front end, along with careful device selection and gain drift faulting, yield a receiver system ready for the strong-signal challenges of today's crowded bands. On VHF and UHF, the very low noise MOS FET pre-amplifier is followed by an active DEM mixer, yielding the low noise figure required for weak

**WIDE BANDWIDTH COVERAGE**  
Providing transmitter coverage of the HF, 50 MHz, 144 MHz, and 430 MHz Amateur bands, the FT-857 also includes receive coverage on 100kHz to 54 MHz, 7.6 to 100 MHz, 119.16 MHz, and 420-430 MHz. Enjoy the excitement of public safety monitoring, along with weather broadcasts, AM and FM broadcasts, aviation communications, as well as the action on the ham bands!

**ENHANCED TRANSMIT PERFORMANCE THROUGH DIGITAL SIGNAL PROCESSING**  
For superior interference rejection and transmitter "talk power," the FT-857's DSP circuitry enhances both sides of the communications circuit. The FT-857's DSP Unit features a 24-bit high-tech DSP signal processing

**DSP BANDPASS FILTER** - Separate DSP Filters for Voice and CW augment the analog filters for enhanced interference rejection. For Voice modes, you get 16 High-Pass Filter cutoff frequency selections, and 32 Low-Pass Filter selections for a total of 48 combinations. 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 in the voice band, the DSP Auto-Notch provides a significant reduction in the interference level. If multiple carriers are present, the DSP will detect and notch the carrier present.

**DSP NOISE REDUCTION** - The very effective Noise Reduction filter of the FT-857 utilizes as many as 16 noise-reduction algorithms, for use in a wide variety of noise environments, without introducing appreciable distortion on the desired signal. Operator fatigue is reduced, and signal-to-noise ratio is significantly enhanced.

**DSP MICROPHONE EQUALIZER** - To match the FT-857's TX audio response to the waveform responses by your voice and the microphone in the system, the system includes a four-position microphone equalizer. The four positions are: **Normal** (for most microphones), **High** (for high impedance microphones), **Low** (for low impedance microphones), and **Auto** (for automatic adjustment).

**Supply Voltage** - Normal: 13.8 VDC ± 0.5%, Negative Ground  
Current Consumption: Squelch: 600 mA (approx.)  
Receiver: 1.1 A  
Transmit: 2.2 A  
On a 12V 10A 1.1" x 2.0" x 2.2" (155 x 52 x 233 mm) Weight (Approx.): 4.4 lb. (2.0 kg)

## HIGH-PERFORMANCE PPT DESIGN

The quiet, fast-acting local oscillator system of the FT-857 borrows extensively from the FT-847 and FT-897, using a Direct Digital Synthesizer (DDS) to achieve fast lock times and silky-smooth tuning in steps as fine as 10 Hz. The excellent carrier-to-noise ratio helps preserve spurious-free dynamic range in a crowded band, and the smooth tuning leaves you with

## UNMATCHED EASE OF ACCESS TO FEATURES

Despite its compact size, the FT-857 is without peer in ease of access to the features and functions you need them.

**BIG-RADIO TUNING DIAL AND OUTSTANDING ERGONOMICS** - Ease of operation of the FT-857 is emphasized by the large diameter 1.7" (43 mm) Main Tuning Dial (10 Hz steps minimum), similar in size to the tuning knob of many base station rigs. What's more, the SELECT knob allows "channeled" tuning in minimum steps of 1 kHz on SSB/CW or 5 kHz on FM, for quick and easy tuning around the band. All important keys are strategically placed around the front panel for quick and easy access.

**EASY-TO-USE "SCROLLING FRONT PANEL" KEYS** - The compactness of the FT-857 is made possible by the easy-to-use "multi-function" keys, which allow adjustment of a number of transmitter operating functions during operation. Pressing the [FUNC] key allows selection of the operating function, you, using the Selector knob, and you may then press the [A], [B], or [C] key, as needed, to change the

**Multi Function Keys**

Function	A Key	B Key	C Key
MFB	Auto A/B	Auto A/B	SPL
MFA	MEM	MEM	MEM
MFC	STO	RCL	PROC
MFD	QRM	QRM	QRM
MFE	QRM	QRM	QRM
MFF	QRM	QRM	QRM
MFG	QRM	QRM	QRM
MFH	QRM	QRM	QRM
MFI	QRM	QRM	QRM
MFK	QRM	QRM	QRM
MFL	QRM	QRM	QRM
MFM	QRM	QRM	QRM
MFN	QRM	QRM	QRM
MFO	QRM	QRM	QRM
MFP	QRM	QRM	QRM
MFQ	QRM	QRM	QRM

## ADVANCED FEATURES FOR ACTIVE DXers

**•IF Shift** - Use the IF SHIFT feature to vary the center frequency of the IF passband, so as to eliminate interference above or below the current operating frequency.

**•Noise Blanker** - Optimized for use in the mobile environment, the FT-857 includes a highly-effective Noise Blanker specifically designed for suppression of ignition and other pulse-type noises. The Noise Blanker's threshold is adjustable via the VFO.

**•Intercept Point Optimization (IPO)** - For reception in the lower HF bands, where low Noise Figure is not required, the IPO feature causes the RF pre-amplifier to be bypassed, allowing direct signal input to the first mixer. An input attenuator is also provided, for very noisy conditions.

**•Adjustable AGC** - The Automatic Gain Control (AGC) circuitry of the FT-857 receiver may be adjusted, by the operator, for Slow or Fast response times. A convenient "Auto" Feature programs the AGC for CW and "Slow" for voice modes. And the AGC may also be turned off, if desired, allowing manual gain control from the front panel.

**•Clarifier (RT)** - For split-frequency pile-ups or for following drifting signals, the Clarifier control provides up to 99 kHz of adjustment of the receiver's frequency without changing the transmit frequency. For wide-band signals, the "Split" mode allows you to use VFO-A and VFO-B separately.

**•Gain Control** - For noise reduction and/or variation of the AGC system threshold, the Menu allows the front panel's "Squelch" control to be used as a gain control.

**•VOX** - for hands-free Voice operation, the VOX

## CW OPERATING MODES

The FT-857 is without peer in its array of most-advanced features for the CW operator.

**•Built-in Electronic Keyer** - The FT-857's built-in Electronic Keyer provides a weight control, as well as Menu capability to reverse the "dot" and "dash" control for your connector.

**•CW Message Memory with Beacon Mode** - For repetitive "CQ" and contest exchange messages, the FT-857 includes a three-message memory capability. The Beacon mode may be used to send a repetitive message out continuously for up to four hours, ideal for 6-meter sunrise and sunset operations.

**•CW Pitch/Sideline Control** - The CW Pitch control allows the transmitted signal to be offset 400 Hz to 2000 Hz from zero offset with the receive frequency. The Sideline feature serves as a Spot signal indicating.

**•CW Trainer** - A popular feature of the FT-857 is the CW Trainer, which will send five-character **FASV-DIA-100-3-11-11-11**

For operation on a wide variety of digital modes, including 1200/9600bps M-POCKET, RTTY, SSTV or PSK-31, the real-time 6-pin mini-DIN connector is easy to use for 10 lines, plus FTI and Ground. For PSK-31 and other ASK modes, the injection sideband (USB, LSB) is selectable, along with BFO and Display Shift and

## ADVANCED COMMUNICATOR FEATURES FOR VHF/UHF OPERATION

The FT-857 is a VHF/UHF operator's dream come true. The FT-857 is a VHF/UHF operator's dream come true. The FT-857 is a VHF/UHF operator's dream come true.

**•Versatile Tone Control Selections** - Both CTCSS and DCS Encoder/Decoders are built into FT-857 for easy access to repeaters, a 50-tone CTCSS system works along with a 104-code Digital Code Squelch (DCS) in the FT-857. For applications requiring CTCSS/DCS access, a convenient "Split" Tone feature is also provided, along with the ability to encode (only) CTCSS or DCS, if desired.

**•Automatic Repeater Shift** - On the 144 MHz and 430 MHz bands, the FT-857 will automatically activate the repeater shift appropriate for the particular band and memory group.

**•Smart Search™** - When visiting a new city, use the Smart Search system to scan the F/M/A/M Mode for activity. When busy channels are found, they will be automatically loaded into a special Smart Search™ memory bank, for easy recall.

**•Spectrum Scope** - If you have to be away from your radio for a few minutes, turn on the Spectrum Scope to keep watch on band activity. The Spectrum Scope will create a graph of play activity on channels above and below your current operating frequency.

**•ARTS™ (Auto-Range Transponder System)** - During Search-and-Rescue operations, the ARTS™

## ACTIVE TUNING ANTENNA SYSTEM

Yaesu's patented ATAS-120 Active-Tuning Antenna System provides a compact, yet efficient, automatically-adjusting antenna for mobile, portable, or apartment-balcony use. Utilizing DC voltages fed from the FT-857, the ATAS-120 automatically adjusts length longer or shorter, with the FT-857 feeding a tiny amount of power for VSWR detection by its internal directional coupler. When the best impedance match is found, tuning automatically stops, and operation can begin.

Specified for operation on the 7.142/128 MHz Amateur bands, the ATAS-120 contracts fully for use

## HIGH-RESOLUTION DIGI-MATRIX DISPLAY

The large 2.1" x 0.69" (53.4 x 17.2 mm) multi-color display provides easy-to-read information on many operating functions. The color may be chosen from among 32 different color selections, and may be programmed to reflect color on each band, mode, Memory Group, or even to track signal strength and power output by

**•Large Easy-to-See TX/RX Status LED** - Optional High-Stability Reference Oscillator (HRSO) - provides 50 ppm stability at 7.142 MHz for applications requiring very high frequency accuracy. Versatile Scanning Features - VFO Scan, Memory Scan, Band-Limited Scanning (BWS), Priority Scan and Dual Watch. Auto Power-Off (APO) and Time-Out Timer (TOT) - CAT System Computer Programing capability

**•Upgrade with optional MECHANICAL FILTERS FOR SSB AND CW (OPTION)**

To enhance performance on both receive and transmit, high-performance Colpitts Mechanical Filter options are available for both SSB and CW. For SSB, the 2.4 MHz, 10 pole YF-1225 option provides a very flat passband response, for natural-sounding transmit audio, along with excellent skirt selectivity. And for CW, the 500 Hz, 10 pole YF-1226 and 300 Hz, 7 pole YF-1227C options help separate signals in a crowded

**•Front Panel** - Includes: VFO Knob, Home Key, Mode/Memory/Scan Key, TX/RX Indicator, Bandwidth Selector, VHF Key, VFO Knob, Home Key, Mode/Memory/Scan Key, TX/RX Indicator, Bandwidth Selector, VHF Key, VFO Knob, Home Key, Mode/Memory/Scan Key, TX/RX Indicator, Bandwidth Selector, VHF Key

**•Rear Panel** - Includes: External AC Power Supply (25A), 100V, External Antenna, CAT Interface Cable, Digital Display, External Antenna, CAT Interface Cable, Digital Display, External Antenna, CAT Interface Cable, Digital Display

**•New Remote Control DTMF Microphone MH-5084 (Option)**

The optional MH-5084 Remote Microphone provides the most advanced remote control for the FT-857, with the microphone's control knob for adjusting the operating frequency and the push-to-talk button.

**•Accessories & Options**

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## OPTIONAL REMOTE MOUNTING KIT

For mobile operation where mounting space is at a premium, the optional FT-857 Separation Kit allows the front panel to be remotely mounted on your dashboard, with the transceiver stashed away in available space. Data is transferred between units at a lightning-fast rate of 31.25 kbps, for seamless remote

**•Battery Voltage Meter** - 1X Meter Selection Modulation Level, AC, Power Output, or SWR. **•Two Antenna Connectors** - Separate jacks for HF/50 MHz and 144/430 MHz, affixed to the rear panel.

**•Large Easy-to-See TX/RX Status LED** - Optional High-Stability Reference Oscillator (HRSO) - provides 50 ppm stability at 7.142 MHz for applications requiring very high frequency accuracy. Versatile Scanning Features - VFO Scan, Memory Scan, Band-Limited Scanning (BWS), Priority Scan and Dual Watch. Auto Power-Off (APO) and Time-Out Timer (TOT) - CAT System Computer Programing capability

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