

FT-857D

**ULTRA-COMPACT HF/VHF/UHF
100 W* ALL-MODE TRANSCEIVER**
(HF/6 m 100 W, 2 m 50 W, 70 cm 20 W)

**60 m
Band**
(USA Version)



ACTUAL SIZE

double-conversion superheterodyne system (single conversion on VFM), with the 2nd IF at 455 kHz. Extensive bandpass filtering in the front end, along with careful device selection and gain distribution, 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 preamplifier is followed by an active DBM mixer, yielding the low noise figure required for weak-signal work, along with excellent intermodulation rejection.



WIDE FREQUENCY COVERAGE

Providing transmitter coverage of the HF, 50 MHz, 144 MHz, and 430 MHz Amateur bands, the FT-857D also includes receive coverage on 100 kHz to 56 MHz, 76 to 108 MHz, 118-164 MHz, and 420-470 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 new U.S. 60-meter band!

ENHANCED TRANSCIVER PERFORMANCE THROUGH BUILT-IN DSP

For superior interference rejection and transmitter "talk power," the FT-857D's DSP circuitry enhances both sides of the communications circuit. The FT-857D's DSP Unit features a 24-bit high-tech D/A chip for signal processing.

•**DSP BANDPASS FILTER** : Separate DSP Bandpass 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 512 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 within the audio 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 Noise Reduction filter of the FT-857D 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-857D's TX audio response to the waveform produced by your voice and the microphone in use, the DSP system includes a four-position Mic Equalizer circuit. The result is increased "talk power" as extraneous frequencies are suppressed, allowing all available power to be concentrated into your voice's pattern.

•**BIG-RADIO TUNING DIAL AND OUTSTANDING ERGONOMICS** : Ease of operation of the FT-857D is enhanced by the large diameter 1.7" (Ø43 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 "channelized" access to the features and functions you need the most.



•**EASY-TO-USE "SCROLLING FRONT PANEL" KEYS** : The compactness of the FT-857D 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 [FUNC] key allows selection of the operating function row, using the Selector knob, and you may then press the [A], [B], or [C] key, as needed, to change the setting. One row of keys may also be custom-programmed by the operator, allowing you quick access to a particularly important set of functions or Menu items.



Multi Function Keys

	A key	B key	C key
MFa	A/B (VFO A/B Selection)	A=B (Equalize VFOs A/B)	SPL (Split Operation)
MFb	MW (Write to Memory)	SKIP (Skip during Scan)	TAG (Memory Name Tag)
MFc	STO (Quick Memory Store)	RCL (Quick Memory Recall)	PROC (Speech Processor On/Off)
MFd	RPT (Repeater On/Off)	REV (RPT Shift Reverse)	VOX (VOX On/Off)
MFe*	TON (CTCSS/DCS On/Off)	-	TDCH (Tone/Code Selection)
MFf	ENC (Split Tone Encode)	DEC (Split Tone Decode)	TDCH (Tone/Code Search)
MFg	ARTS (ARTS™ On/Off)	SRCH (Smart Search™ On/Off)	PMS (Band-Limit Scan)
MFh	SCN (Scan Start)	PRI (Priority Ch. Watch)	DW (Dual Watch)
MFi	SCOP (Spectrum Scope)	WID (Scope Bandwidth)	STEP (Scope Steps)
MFj	MTR (Meter Mode)	PWR (Meter Mode)	DISP (Display Size)
MFk	SPOT (CW Spot)	BK (Break-in On/Off)	KYR (CW Keyer On/Off)
MFl	TUNE (ATU/ATAS On/Off)	DOWN (ATAS Down)	UP (ATAS Up)
MFm	NB (Noise Blanker On/Off)	AGC (AGC On/Off)	AUTO (AGC Mode)
MFn	IPO (RX Preamp On/Off)	ATT (RX Attenuator On/Off)	NAR (Narrow Dev.)
MFo	CFIL (RX Normal Filt.)	N/A (Optional Filt. 1)	N/A (Optional Filt. 2)
MFp	PLY1 (Keyer Mem. 1)	PLY2 (Keyer Mem. 2)	PLY3 (Keyer Mem. 3)
MFq	DNR (DSP Noise Filt.)	DNF (DSP Notch Filt.)	DBF (DSP BPF)
MFr	MONI* (SQL Disable)	QSPL* (Quick Split)	ATC* (1750 Hz Tone)

*This row of functions is user-programmable (defaults shown).

the lower HF bands, where low Noise Figure is not required, the IPO feature causes the RF preamplifier 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-857D's receiver may be adjusted, by the operator, for Slow or Fast recovery times. A convenient "Auto" feature programs "Fast" 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 (R.I.T.)** : For split-frequency pile-ups or to follow drifting signals, the Clarifier control provides up to ±9.99 kHz of adjustment of the receiver's frequency, without changing the transmit frequency. For wider-split pileups, the "Split" mode allows you to use VFO-A and VFO-B separately, too.

•**RF Gain Control** : For noise reduction and/or variation of the AGC system threshold, the Menu allows the front panel's "Squelch" control to operate as an "RF Gain" control.

•**VOX** : For hands-free Voice operation, the VOX system includes easy adjustments for both VOX Gain and Delay. A separate setting is also provided for receiver recovery time in the CW mode, as well.

CW OPERATING FLEXIBILITY

The FT-857D is without peer in its array of most-asked-for features for the CW expert!

•**Built-In Electronic Keyer** : The FT-857D's built-in Electronic Keyer includes a weight control, as well as Menu capability to reverse the "Dot" and "Dash" contacts on your connector.

•**CW Message Memory with Beacon Mode** : For repetitive "CQ TEST" and contest exchange messages, the FT-857D 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 use during DX-peditions.

•**CW Pitch/Sidetone Control** : The CW Pitch control allows the transmitted signal to be offset 400/500/600/700/800 Hz from "zero beat" with the receive frequency. This adjustment simultaneously varies the center frequency of the RX passband (including the DSP BPF), as well as the CW Sidetone pitch. The Sidetone therefore serves as a "Spot" signal during tuning.

•**CW Trainer** : A popular feature of the FT-857D is the CW Trainer, which will send five-character letters and/or numbers via the speaker, so you can practice your CW reception even when the bands are dead!

EASY DATA-MODE SETUP

For operation on a wide variety of digital modes, including 1200/9600 bps FM packet, RTTY, SSTV, or PSK31, the rear-panel 6-pin mini-DIN connector provides easy to Data I/O lines, plus PTT and Ground. For PSK-31 and other AFSK modes, the injection sideband (USB/LSB) is selectable, along with BFO and Display Shift and Digital "VOX" Gain level.

SPECIFICATIONS

General	Transmitter	Sensitivity:	SB/CW	AM	FM
Frequency Range:	RF Power Output (@13.8 V DC):	100 kHz-1.8 MHz	—	32 µV	—
Receive: 0.1-56 MHz, 76-108 MHz, 118-164 MHz, 420-470 MHz	160- 6 Meters: 100 W	1.8 MHz-28 MHz	0.2 µV	2 µV	—
Transmit: 160 - 6 Meters (60 Meter Band/USA Version), 2 Meters, 70 Centimeters (Amateur bands only)	2 Meters: 50 W	28 MHz-30 MHz	0.2 µV	2 µV	0.5 µV
5167.5 kHz (Alaska Emergency Frequency/USA Version)	70 Centimeters: 20 W	50 MHz-54 MHz	0.125 µV	1 µV	0.2 µV
Emission Modes : A1 (CW), A3 (AM), A3J (LSB/USB), F3 (FM), F1 (9600 bps packet), F2 (1200 bps packet)	Modulation Types:	144/430 MHz	0.125 µV	—	0.2 µV
Synthesizer Steps (Min.): 10 Hz (CW/SSB), 100 Hz (AM/FM/WFM)	SSB: Balanced Modulator, AM: Early Stage (Low Level), FM: Variable Reactance	(SSB/CW/AM = 10 dB S/N, FM = 12 dB SINAD)	Squelch Sensitivity:	SSB/CW/AM	FM
Antenna Impedance: 50 Ohms, Unbalanced	FM Maximum Deviation: ±5 kHz (FM-N: ±2.5 kHz)	100 kHz-1.8 MHz	—	—	—
Operating Temp. Range: +14° F to +140° F (-10° C to +60° C)	Spurious Radiation: -50 dB (1.8-29.7 MHz)	1.8 MHz-28 MHz	2.5 µV	—	—
Frequency Stability: ±4 ppm from 1 min. to 60 min after power on. @25° C: 1 ppm/hour	Carrier Suppression: >40 dB	28 MHz-30 MHz	2.5 µV	0.32 µV	0.16 µV
±0.5 ppm/1 hour @25° C, after warmup (with optional TCXO-9)	Opp. Sideband Suppression: >50 dB	50 MHz-54 MHz	1 µV	0.16 µV	0.16 µV
Supply Voltage: Normal: 13.8 VDC ±15 %, Negative Ground	SSB Frequency Response: 400 Hz-2600 Hz (-6 dB)	144/430 MHz	0.5 µV	0.16 µV	0.16 µV
Current Consumption: Squelched: 600 mA (Approx.)	Microphone Impedance: 200-10k Ohms (Nominal: 600 Ohms)	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
Receive: 1 A	Receiver	SSB (optional YF-122C installed): 2.3 kHz/4.7 kHz (-66 dB)	FM: 15 kHz/30 kHz	FM-N: 9 kHz/25 kHz	—
Transmit: 22 A	Circuit Type:	CW (option YF-122C installed): 500 Hz/2.0 kHz	AF Output:	2.5 W (@4 Ohms, 10% THD or less)	—
Case Size (W x H x D): 6.1" x 2.0" x 9.2" (155 x 52 x 233 mm)	Double-Conversion Superheterodyne (SSB/CW/AM/FM)	AF Output Impedance: 4-16 Ohms	AF Output Impedance: 4-16 Ohms	Specifications are subject to change without notice, and are guaranteed within the amateur bands only.	—
Weight (Approx.): 4.6 lb. (2.1 kg)	Superheterodyne (WFM)	Intermediate Frequencies: 1st: 68.33 MHz (SSB/CW/AM/FM); 10.7 MHz (WFM)	2nd: 455 kHz		