

RADCOM USER REVIEW

YAESU FT-840 HF Transceiver

A user review by the *RadCom* team



HF TRANSCEIVERS don't seem to be getting any larger, but the number of features and extras inside shows no sign of slowing down. The new Yaesu FT-840 HF transceiver is an excellent example of the latest trends in amateur equipment. It runs 100W SSB or CW on all nine HF bands, as well as 25W AM and (optionally) FM.

In common with most 'black box' HF radios, receiver coverage extends over the complete MF and HF spectrum. Yaesu have built a large number of operating facilities into the FT-840, and most of them are genuinely useful to the amateur rather than just 'gimmicks'. So let's take a look and see just what makes this new rig 'tick'.

FASCINATING FEATURES

FRONT PANEL controls are neatly laid out, and for the most part self-explanatory. On the extreme left, above the headphone and mic connectors is the main power on/off switch. For certain functions to become operative (eg BFO offset), another button must be pressed

at the same time as the on/off, but once selected these modes remain in memory when the transceiver is powered down. Above the on/off switch is a button which switches the analogue meter to show either power output or ALC level on transmit. At the top is a manual transmit (MOX) switch.

Above the rotary controls for mic gain/RF power and AF gain/squelch are four push buttons. From left to right they control the 12dB receive attenuator, built-in transmitter speech compressor, slow/fast AGC selection and noise blanker on/off. Four switches to the left of the tuning knob control the transceiver's operating mode. Each of these controls needs an additional push to change from USB to LSB or to enable the narrow CW filter, but their operation is very user-friendly.

The amber LCD display gives a bright, clear indication of true transmit frequency in all modes. It also shows which of the two VFOs is selected (A or B) and data such as memory channel (where applicable) and mode selection. Programmable features such as split frequency operation and fast tuning are displayed on the LCD panel but, unusually

these days, received signal strength uses a conventional analogue meter.

One of the impressive features of the FT-840 is the tuning dial which operates smoothly in minimum steps of 10Hz. Yaesu deserve credit for having made the torque adjustable – a simple operation using an Allen key. Some operators will always like a lighter 'feel' than others, and a stiffer dial is more suited to mobile use. Tuning rate is selectable, and on SSB/CW can be set to approx 5, 10, 50 or 100kHz per revolution. The selected frequency can be also be locked, if required, using the appropriate push button.

THANKS FOR THE MEMORY

FUNCTION SELECTORS to the right of the main tuning knob enable selection of one of the two VFOs or recall of a frequency from memory. There are 100 memories on the FT-840, and the one currently available is shown. This group of buttons is also used for split-frequency working. If you haven't used this mode before, a little experimentation will pay dividends – it's easy to press the wrong one

YAESU FT-840 HF TRANSCEIVER

in the heat of a DX pile up! With Yaesu's FT-747, it is practically essential to program each amateur band into a memory position, but the new FT-840 has up and down buttons with the amateur bands already programmed. Another nice touch is that should you change bands for a quick 'tune around', you'll always return to the same frequency on the original band. In the receivers 'general coverage' mode, the band switch operates 100kHz or 1MHz increments.

The clarifier knob on the right of the front panel is better known as the Incremental Receiver Tuning or IRT. However, it's the control below this which provided a pleasant surprise. This is the IF passband shift adjustment, which is invaluable for eliminating QRM. This was found to be especially effective on 40m CW in conjunction with the narrow CW filter (YF-112C) fitted in the review rig.

At the rear of the radio, are connectors for functions such as computer control (using the Yaesu CAT system), optional auto antenna tuner and linear amplifier interface. Also present are DC power input and a 0.25in jack for the Morse key or keyer. The antenna connector is the familiar SO-239 type.

FT-840 IN ACTION

TESTING WAS CARRIED OUT with the optional FP-800 power supply/speaker and FC-10 automatic antenna tuner. Both performed well, and the large forward-facing speaker in the FP-800 is a considerable improvement on the FT-840's internal unit. Performance was more than adequate, with excellent speech quality reports. Both SSB and CW operators should find many features to their liking, not all of which are available on budget rigs. For example it is possible to change the CW offset frequency in 100Hz steps and the sidetone note at the same time.

Tests were carried out with longwire and 20 metre dipole antennas, and the test period included the CQ WW CW Contest. Receiver front end performance was quite acceptable and it was only found necessary to use the attenuator on 1.8MHz, to cope with cross-modulation from a very local medium wave broadcast station. Sensitivity is good right up to the 10 metre band, and operating was a delight with all controls conveniently to hand.

The 40-page manual is comprehensive and well illustrated and even the beginner should have no problems. Fitting instructions

MANUFACTURER'S SPECIFICATION

GENERAL

Receive frequency range	100kHz to 30MHz
Transmit frequency range	10m to 160m Amateur Bands
Frequency stability	+/- 10ppm (or +/- 500Hz FM), from 0°C, and +/- 2ppm (or 300Hz FM) from 0°C to 50°C with TCXO-4 option
Emission modes	USB, LSB (J3E), CW (A1A), AM (A3E), FM (F3E) with optional FM Unit-747
Antenna Impedance	50Ω nominal
Operating temp. range	-10°C to +50°C
Supply voltage	13.5VDC +/- 10% negative ground
Power consumption (approx)	1.2A Rx (no signal), 20A Tx (100 watts)
Dimensions and weight	238 x 93 x 243mm (WHD). 4.5kg (approx)

TRANSMITTER

Power output	Adjustable up to 100W (25W AM carrier)
Modulation types	SSB: Balanced, filtered carrier AM: Low level (early stage) FM: Variable reactance
Maximum FM deviation	+/- 2.5kHz
Harmonic radiation	>50dB below peak output, 45dB (10 and 18MHz)
Spurious radiation	>40dB below peak output
SSB carrier suppression	>40dB below peak output
Undesired sideband suppression	>50dB below peak output, at 1.5kHz modulation
Audio response (SSB)	Not more than -6dB from 400-2600Hz
3rd Order IMD	-25dB at 100W PEP, 14.2MHz
Microphone impedance	500 to 600Ω

RECEIVER

Circuit type	Dual conversion superheterodyne.
Intermediate frequencies	1st: 47.055MHz 2nd: 8.215MHz 3rd: 455kHz (additional FM IF)
Sensitivity	10dB S/N, 1.8-30MHz: SSB/CW: Better than 0.25μV AM: Better than 1.0μV
FM sensitivity	Better than 0.5μV at 28-30MHz, 8kHz bandwidth
Selectivity	SSB, CW: 6dB >2.2kHz, 60dB <5.0kHz Narrow CW: 6dB >500Hz, 60dB <1.8kHz (optional filter)
IF rejection	60dB or better (1.8-30MHz)
Image rejection	70dB or better (1.8-30MHz)
IF shift range	+/- 1.2kHz
Clarifier tuning range	+/- 1.25kHz or +/- 2.50kHz selectable
Max. audio power output	At least 1.5W into 4Ω at <10% THD
Audio output impedance	4 to 8Ω

for the various accessories leave nothing to the imagination and full programming details for the computer interface are given. Full circuit and interconnection diagrams are supplied with the radio.

FINAL THOUGHTS

A GREAT DEAL of care has obviously gone into the design of the FT-840, and it would be

nice to think that Yaesu are responding to the needs and ideas of the amateur fraternity. For newly licensed operators and old timers alike, the FT-840 has a great deal to offer.

The Yaesu FT-840 is distributed in the UK through local Yaesu dealers. Price is £879, plus £299 for the optional FC-10 auto antenna tuner and £299 for the FP-800 PSU inclusive of VAT. Our thanks to Yaesu Europe for the loan of the review model.



FT840

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(& A CUT PRICE OFFER!)

SPECIAL
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We now buy from YAESU UK direct — (only XYL and self to pay, so low overheads). Just taken home FT840 and most impressed. Looks good, silky smooth tuning, sounds T9X on CW (not T8½ like most synth. rigs) and it really is nice to use. We are so impressed that we have bought a load (raided our Building Society account!) at pre-

Christmas offer price and rushed off this ad to meet February deadline. It's now or never, only a few, call in for demo, or s.a.e. for leaflet, but hurry if you want to buy at special introductory price. (Next batch will be £879 less a bit of cash discount.)

Note we normally open Tues, Weds, Fri & Sat. Lunch 12-1.30pm. Closed Jan 26th-Feb 3rd.

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