

ART checks out the...

CIRCLE 64 ON READER SERVICE COUPON



Yaesu FT-7

A nice, neat signal from this neat little package

adjust a slide control for an audible zerobeat.

Tuneup is simple. A single knob peaks all circuits, replacing preselector, plate, and loading controls. With the transmitter keyed, the multipurpose S-meter doubles as a final transistor collector-current meter.

Other front panel features include a microphone and earphone jack, a switch to select the internal VFO, an optional external VFO, or an optional crystal for a frequency of your choosing.

Also, there is a microphone gain control to prevent overdriving the transmitter, a clarifier which allows ± 2

kHz receiver offset tuning without changing the transmitter setting, and a switchable impulse noise blander.

The rear panel connections include the power plug, an input jack for the remote VFO, a standard SO-239 female coaxial antenna connector, a miniature key jack, an external speaker jack, and a binding post for the ground strap.

Getting on the air. Hooking up the FT-7 is quick and easy. Although the manual calls for a power supply capable of 13.5 volts at 6 amps, a 3-amp fuse is supplied. In the receive mode, the FT-7 draws just 400 ma.

The antenna should present a 50 ohm load to the FT-7. The SWR protection circuit will reduce the power output to as low as 20 percent of the full rated 12 watt output at 3.0:1 SWR.

Putting the FT-7 on the air from the base station, into a miniature beam, my first QSO was with VE2DC/KP4 (Puerto Rico) on 15 meters. Mel gave me a 5 x 7, and said I was doing quite well compared to a VE3 also on frequency.

Contacts on 10 meters were easy to come by later in the evening. W4OUI near Mobile, Alabama, was quite surprised at the low power I was running; his installation was a conventional transceiver (180 watts DC input) into a Hustler mobile antenna on his travel home.

A 10-THROUGH 80-METER mobile transceiver in an 11-pound package? Single knob tuneup? The Yaesu FT-7 is a nifty little package marketed for mobile use, but I hear a lot of Europeans using them as base stations. But I am getting ahead of myself.

When my editor asked me to review the transceiver, I really didn't know what to expect. A couple of days later UPS delivered a box to my door.

Wrapped in plastic, the FT-7 was protected by huge styrofoam blocks and two inner cartons. Included was a manual (with a complete schematic, parts list, and alignment instructions) and a bag of parts (a microphone, 12 VDC power cord, a plug for an external speaker, an extra fuse, and a 1/4-inch-to-miniature plug adaptor).

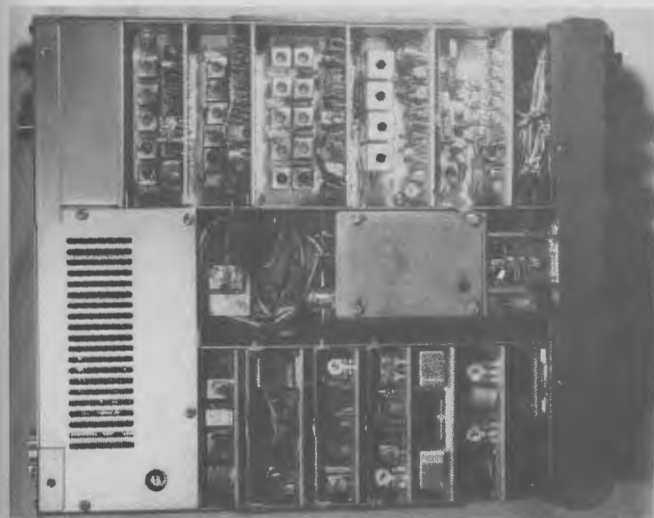
Specifications. The FT-7 is a totally solid state transceiver covering all of 80- through 15-meters, and the 28.5-29.0 MHz segment of 10 meters. Modes of operation include upper and lower sideband (USB, LSB), and CW.

The input power is rated at 20 watts DC. On CW, the measured output power was a nominal 12 watts into a dummy load.

Receiver selectivity was stated at 2.4 kHz at -6 dB, 4 kHz at -60 dB. Image rejection is better than -50 dB, and the sensitivity is rated at 0.25-uV for a signal-to-noise ratio of 10 dB.

Controls. All controls and switches are out front. The knobs are easy to grip and the multi-function switches are a pleasure to use—detents are positive.

The big VFO knob has a finger depression to spin the dial quickly. One revolution covers 16 kHz. The calibrator is exceptionally easy to use in a one handed operation. The only visual task required is setting the dial to the nearest 100 kHz, and the rest can be done by touch. Select the mode (USB, LSB, or CW), flip the marker on, and



Up close and personal, the FT-7 shows its innards to be compact and neatly assembled. With all the coils and transformers easily accessible, alignment should be much less of a chore than on many transceivers.

Yaesu FT-7

Perhaps the most telling were QSOs on 75 and 40 meters. On a Friday evening, on 3787 kHz, a roundtable gave me signal reports from Missouri and Arkansas to Maine; only one station, in Tennessee, could not hear me (and I couldn't hear him). The next morning, despite splatter from a 20 dB/9 signal just 1½ kHz lower than I, VE3DDK (in Hamilton, Ontario) and I had a 30 minute QSO. VE3DDK was averaging an S3 to S5.

Code operations were not too successful. I caught a few stations on 40 CW easily enough, and had good reports, but the limiting factor is that there is no CW filter. The SSB filter is too broad for effective CW work. As the FT-7 was intended for mobile operations, there is no provision for adding a CW filter to the circuit board.

In a mobile installation, on 10 meters, the first contacts included a VK7 in Australia and an OK2 in Czechoslovakia. The antenna was a body-mounted Hustler whip. Motor noise in a foreign compact car was non-existent. Obviously, the signal strength reports were not strong, but the audio was



The rear apron is as uncluttered as possible, a great feature in a mobile rig, where lock mounts are likely to be used. The polarized power cable allows you to connect and disconnect without having to get behind the unit to see. The lack of an external heat sink allows much more flexibility in mounting, so long as the vent slots (top) are left clear.

quite readable above the background noise levels.

It should be noted that all contacts reported clean, clear audio. There is no audio clipper or compression circuit, as that would be disadvantageous in a noisy mobile environment.

Summing up. The Yaesu FT-7 is a winner. The compact package is functional in the mobile installation, the

current requirements are minimal, and you could run this transceiver in a temporary setup with a cigarette lighter plug.

The only limiting factor is the power. Although you cannot expect to play with the "big guns" on the phone bands, the FT-7 does very nicely anyway. For more information, circle No. 64 on the Readers Service Card.

Two-Dollar Signal Source

□ The average service shop has so much sophisticated test equipment it's easy to get the impression nothing can be fixed without a bench full of test gear. Yet much *sound* equipment—amplifiers, radios, receivers—can be serviced with a two-dollar signal injector like this one. Using ordinary general purpose transistors in a multivibrator circuit this signal

injector produces a square waveform output of approximately 700 Hz. Since the output is a square waveform, harmonics of the fundamental frequency are produced well into the RF spectrum, actually higher than 28 MHz. If you touch the output lead to a receiver's antenna input, RF amplifier, IF amplifier or audio amplifier (the ground lead will be

needed for audio injection) you'll hear the tone in the speaker. If you work backwards from the speaker the trouble is in the circuit at the point where you lose the tone.

Correct troubleshooting procedure using a signal injector calls for starting at the working end of a set and progressing, stage-by-stage, toward the other, non-working end.

PARTS LIST FOR TWO-DOLLAR SIGNAL SOURCE

Resistors ½- or ¼-watt, 10%

R1, R4—10,000-ohms

R2, R3—100,000-ohms

C1, C2—0.01-μF, 6-VDC or higher

C3—0.01-μF, 500-VDC or higher (ceramic disc suggested)

Q1, Q2—NPN transistor, 2N2222 (Radio Shack 276-2009 or equiv.)

B1—1.5-volt battery

S1—Switch SPST

