

FT-90R

VHF/UHF FM DUAL BAND TRANSCEIVER

MICRO COMMANDER

WORLD'S SMALLEST HIGH-POWER DUAL-BAND MOBILE!



ACTUAL SIZE



YAESU
Choice of the World's top DX'ersSM

Another Engineering Breakthrough from Yaesu.

**The FT-90R MICRO COMMANDER!
Big Power, Big Performance,
Micro-Miniature Size!**



HOW YAESU DID IT . . .

Yaesu's mechanical and metallurgical engineers have achieved a technological breakthrough in the development of the FT-90R, providing 50 Watts of 144 MHz power output (430 MHz: 35W) from a package measuring just 100 mm x 30 mm x 138 mm (3.9" x 1.2" x 5.4"), and weighing just 644g (1.42 lb.). The FT-90R's diecast aluminum chassis doubles as the heat sink for the M67781L (144 MHz) and M57788MR (430 MHz) power modules, with a microprocessor-controlled cooling fan providing extra ventilation when needed. The result is a high-power dual-band transceiver with high reliability. . . that can fit into your coat pocket!

● Fan Control Selections

Use the Menu system to customize the cooling fan for your operating requirements!

| FAN MODE | Fan Speed Performance Characteristics |
|----------|--|
| AUTO/TX | High Speed engaged during transmission, or thermostatically. |
| AUTO | High Speed engaged when heat sink temperature rises. |
| TX | High Speed during transmission, and for 30 seconds thereafter. |
| OFF | Low Speed (for battery-powered QRP work). |

● Selectable Power Output

Four levels of power output are available on the FT-90R: HIGH (50W), MID1 (20W), MID2 (10W), and LOW (5W).

FT-90R

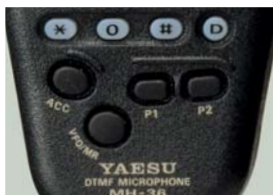
VHF/UHF Dual Band FM Transceiver

HIGH-PERFORMANCE RECEIVER

Sporting wide dynamic range for today's crowded bands, the MICRO COMMANDER's receiver front end utilizes a GaAs MES FET device (SGM-2016) for excellent sensitivity, allowing you greater simplex range and access to distant repeaters.

USER-PROGRAMMABLE FUNCTION KEYS

Now you can configure your radio's control keys for the way you want them to operate! Using the FT-90R's Menu system, the functions assigned to the front panel's [◀] and [▶] keys, as well as the microphone's [P1], [P2], and [ACC] keys, can be customized by the user for a number of operating tasks, such as TX Power, Repeater Shift, CTCSS / DCS Tones, Priority Channel monitoring, VFO / Memory selection, and (European) 1750-Hz Tone Calling.



HIGH-CAPACITY MEMORY SYSTEM

The MICRO COMMANDER's Memory system includes 180 "Regular" memories, plus two pairs of "Band Limit" memories, and a one-touch Home channel on each band, for a total of 186 memories. The memory channels store frequency, repeater shift, power level, CTCSS / DCS Tone information, and an Alpha / Numeric label with as many as 7 characters-including both upper and lower case characters! You can even store the Packet baud rate, if operating on a data channel.



ULTRA-COMPACT REMOTE-HEAD CAPABILITY

Using the optional YSK-90 Separation Kit, you can mount the MICRO COMMANDER's front panel on the vehicle's dash board, then stow the radio's body in a convenient place. Measuring just 100 x 30 x 20 mm (3.9" x 1.2" x 0.8"), and weighing 70 g (less than 2½ oz.), the FT-90R's front panel can be mounted just about anywhere!



VERSATILE SCANNING SYSTEM FOR TODAY'S ACTIVE DUAL-BAND OPERATOR!

- **VFO Scan** : Scan the entire band, stopping on busy channels.
- **Memory Scan** : Scan the memory channels, with the option to "skip" constantly-active channels like Weather beacons, etc.
- **Programmable Memory Scan** : Scan (or tune manually) within band limits established by two different pairs of special memories. For example, this allows you to scan just the FM portion of each band, avoiding encroachment on SSB/CW sub-bands.
- **Priority Channel Watch** : Periodically check Channel 001 activity while on a different memory channel (or the VFO).
- **Smart Search™** : When visiting a city for the first time, Smart Search™ will sweep the band, automatically loading busy channels into a special 50-channel memory bank.

DIRECT KEYPAD FREQUENCY ENTRY

When using the MH-36B6J DTMF Microphone (supplied in the U.S. version), you may enter VFO frequencies directly from the microphone's keypad. You can also key in memory channel numbers for instant recall! On transmit, the MH-36B6J serves as a DTMF encoding keypad, and the FT-90R also provides an 8-channel 16-digit DTMF Autodialer!

BATTERY VOLTAGE METER

When the FT-90R is first switched on, the display momentarily will show you the DC supply voltage. During operation, you can check the DC input voltage at any time by pressing the "DISP" key on the front panel.



EXTENDED RECEIVE COVERAGE WITH AM DETECTOR

Besides full coverage of the 2-meter and 70-cm Amateur bands, the FT-90R's receiver provides extended coverage of 100-230 MHz, 300-530 MHz, and 810-999.975 MHz*. And the built-in AM detector allows monitoring of aircraft communications while tuning the aeronautical bands!



*Cellular and Digital Telephone frequencies are blocked/non-restorable on North American version.

BUILT-IN CTCSS AND DCS ENCODER/DECODERS

For repeater access, quiet monitoring of busy channels, or selective calling, the FT-90R includes both CTCSS and DCS (Digital Code Squelch) Encoder and Decoder circuits. The Encoder/Decoder status and Tone Frequency or Code Number may be stored in memory. For European repeaters requiring a 1750-Hz calling tone, this may be activated from one of the Programmable keys.

AUTO-RANGE TRANSPONDER SYSTEM (ARTS™)

The ARTS™ feature provides an audible confirmation of "in-range" or "out-of-range" status with other ARTS™-equipped stations. For Search-And-Rescue operations, ARTS™ will send out a periodic transponder signal (including DCS code) to a field hand-held unit, and if the other station moves out of simplex communication range, you can use the FT-90R's higher power to advise the other station to move to a better location. ARTS™ will also send a CW identification of your call sign, if desired.

RF SQUELCH MUTING SYSTEM

The MICRO COMMANDER's Menu system allows you to set the Squelch (receiver muting) system to open at a user-defined signal level (S-3, S-5, or Full Scale), helping to keep your receiver quiet when you're working strong, local stations.

AUTOMATIC POWER-OFF (APO) BATTERY SAVER

To prevent depletion of your vehicle's battery if you forget to turn off the radio, the FT-90R includes an Automatic Power-Off (APO) feature, which will automatically turn the radio off after an operator-defined period of 1 ~ 12 hours.

TIME-OUT TIMER (TOT)

The Time-Out timer prevents an accidental "stuck microphone" condition from causing interference to other users. If the transmitter is keyed beyond the TOT cutoff time, the transmitter will be disengaged automatically. The TOT feature's cutoff interval is adjustable, in one-minute increments, up to a maximum of one hour.

AND SO MUCH MORE...

- Designed for 1200 and 9600 bps Packet
- Selectable VFO steps : 5/10/12.5/15/20/25/50 kHz
- Automatic Repeater Shift (ARS)
- Menu adjustment of display brightness and contrast
- PTT Lock and Key/Button Lock feature options
- DCS Code # Search
- Key Beep On/Off selection
- Memory Cloning to other FT-90R transceivers
- ADMS-2E computer programming capability.

SPECIFICATIONS

GENERAL

Frequency Ranges : RX : 100-230 MHz, 300-530 MHz, 810-999.975 MHz*
 TX : 144-146 MHz or 144-148 MHz (2 M)
 430-440 MHz or 430-450 MHz (70 CM)
 Channel Steps : 5/10/12.5/15/20/25/50 kHz
 Emission Type : F3, F2, F1
 Antenna Impedance : 50 Ω, Unbalanced (Antenna Diplexer built-in)
 Frequency Stability : ±5 ppm (-5° C to +60° C)
 Operating Temp. Range : -20° C to +60° C
 Supply Voltage : DC 13.8 V ±15 %, Negative Ground

Current Consumption : 300 mA (Receive, Squelched)
 9.5 A (Tx, 144 MHz)
 8.5 A (Tx, 430 MHz)
 Case Size : 100(W) x 30(H) x 138(D) mm
 3.9"x1.2" x 5.4" (w/o knobs)
 Weight : 644 g (1.42 lb.)

TRANSMITTER

RF Power Output : 50/20/10/5 W (144 MHz), 35/20/10/5 W (430 MHz)
 Modulation Type : Variable Reactance
 Maximum Deviation : ±5 kHz
 Spurious Emissions : At least 60 dB below fundamental

RECEIVER

Circuit Type : Double-Conversion Superheterodyne
 Intermediate Frequencies : 45.05 MHz and 455 kHz
 Sensitivity : 0.16 μV @12 dB SINAD
 Selectivity : 12 kHz/24 kHz (-6 dB/-60 dB)
 AF Output : 2 W @ 8 Ω for 10 % THD
 AF Output Impedance : 4 Ω - 16 Ω

* Cellular and digital telephone frequencies are blocked and cannot be restored.

CONTROLS AND SWITCHES



OPTIONS



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 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. Specifications guaranteed only within amateur bands.



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