

144/430 MHz FM DUAL BAND TRANSCEIVER

# FT-7100M

Simultaneous Reception

V<sub>HF</sub>/V<sub>HF</sub>

U<sub>HF</sub>/U<sub>HF</sub>

V<sub>HF</sub>/U<sub>HF</sub>



ACTUAL SIZE

Simultaneous Reception

V<sub>HF</sub>/V<sub>HF</sub>

U<sub>HF</sub>/U<sub>HF</sub>

V<sub>HF</sub>/U<sub>HF</sub>

# A New Dual-Band Engineering Milestone.

Introducing the Dual Band Mobile for the 21st Century's Active Ham!

**Huge Illuminated Display, Heavy-Duty Construction,  
and Ease of Operation!**



ACTUAL SIZE

144/430 MHz  
FM DUAL BAND TRANSCEIVER

# FT-7100M

## True Dual Band Design\* and Performance!

The FT-7100M features true Dual Band operation, with simultaneous reception on VHF/VHF, UHF/UHF, or VHF/UHF. And the extended receiver coverage provides for monitoring of both public safety and (AM) aircraft communications!



\*Simultaneous reception on two different Frequencies, in-band or Cross-Band. Cross-band Repeater Function not available.

●Despite its very compact size, the FT-7100M's front panel sports a large 2.3" x 0.9" (60 x 23 mm) Liquid Crystal Display (LCD), with plenty of space for dual frequency displays. The illumination of the display may be adjusted, if desired.

●Separate Volume and Squelch controls are provided for each band (VHF/UHF).

●When using an external speaker, you may use the Set (Menu) mode to route the Main and Sub band audio to the internal and external speakers, per the chart below.



Selection	External Speaker	Internal Speaker
BAND A	144 MHz Audio	430 MHz Audio
BAND B	430 MHz Audio	144 MHz Audio
BOTH(Default)	Combined Audio	None
OFF	None	Combined Audio

●A handy Mute feature prevents "competition" between the two receivers by automatically muting the sub-receiver's audio when a signal is received on the main receiver.

## Convenient Remote-Head Mounting Capability (Optional YSK-7100 required)

Having trouble mounting your mobile radio in your compact car? With the FT-7100M and its optional YSK-7100 Separation Kit, mounting is a breeze even in the tightest locations. The YSK-7100 includes a 19.7' (6 m) remote cable and a mounting bracket for the front panel, and the microphone jack is located on the side of the front panel, eliminating the need to run a separate cable.



## High-Power, Heavy-Duty Design

The compact size of the FT-7100M is possible thanks to the efficient heat sinking system. The frame of the FT-7100M is an aluminum die-cast chassis, which contributes mechanical ruggedness and a large metal surface which dissipates heat. And the rear panel includes a thermostatically-controlled cooling fan, which conducts warm air out of the transceiver's cabinet during high-power operation.



■ Aluminum die-cast heat sink



■ Large Capacity Cooling Fan

## ●New-Technology Power Amplifier Design

The FT-7100M utilizes an all-new, single-transistor 2SK3478 power MOS FET final amplifier for both 2 meters and 70 cm, yielding an impressive 50 Watts of power output on the 144 MHz band (35 Watts on 430 MHz). Four power levels are provided, as shown in the chart below:

HIGH	MID1	MID2	LOW
50 W(144 MHz)/35 W(430 MHz)	20 W	10 W	5 W

## Unmatched Ease of Operation!

For quick access to operating features, the eight keys on the front panel of the FT-7100M are single-action buttons, without a confusing second "function" capability. Combined with the four command control keys on the microphone, this means you have one-touch access to all the important features of the transceiver. And for effortless frequency programming, you have Direct Frequency Entry and Memory Recall from the microphone's keypad!

## ●User-Programmable Microphone Keys

Four programmable keys on the microphone allow you one-touch access to your favorite command functions. The commands available from the microphone replicate the corresponding front panel key functions, and include Band Change, VFO/Memory switching, Home Channel access, 1 MHz frequency steps, Power Output selection, Repeater Reverse, and CTCSS/DCS setup. Customize your microphone for your personal operating style!

Default settings for programmable keys:

- P1: BAND Key (band selection; press and hold in for 1/2 second to enter Menu mode).
- P2: V/M Key (VFO/Memory switching).
- P3: TONE Key (repeater access tone setup).
- P4: LOW Key (transmitter output power selection).

## Superb Memory and Scanning Capability!

### ●Huge 262-channel Memory Capacity!

The main memory of the FT-7100M includes 240 channels, 120 channels per band. What's more, you get five pairs of Programmable Band Limits and a one-touch Home channel on each band, yielding a grand total of 262 memory channels. Each memory is capable of retaining frequency data, plus CTCSS or DCS frequency and operating status, and repeater shift is also memorized. A six-character Alpha-Numeric label may be appended to each memory (upper display field: 5 characters), for quick identification of memory channels. You may freely tune off of a memorized frequency, and you may also copy a memory's contents to the VFO, if you like.

### ●Versatile Scanning Selections

With the FT-7100M, you get VFO Scan, Memory Scan, Programmable Memory Scan (PMS) within user-defined band limits, and you may designate channels to be skipped during Memory Scanning. What's more, you get Yaesu's exclusive Smart Search™ automatic memory loading system, which sweeps a portion of the band, automatically loading active frequencies into a special 50-channel Smart Search™ memory bank.

## ●Three Priority Channel Modes

For keeping tabs on the action on important frequencies, the FT-7100M includes three Priority Channel modes of operation. These include:

**VFO Priority:** This mode lets you operate on the VFO, while checking a designated memory channel every five seconds.

**Memory Priority:** This mode provides operation on a memory channel, while checking a designated memory channel every five seconds.

**Home Priority:** Similar to Memory Priority, Home Priority lets you operate on the Home channel, while checking a designated memory channel every five seconds.

## Updated CTCSS and DCS Operating Features!

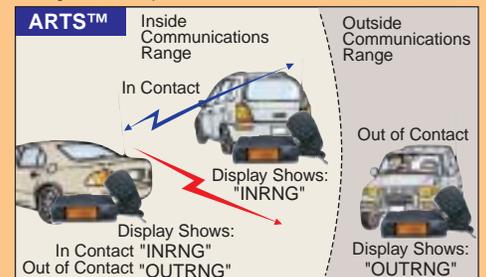
The FT-7100M provides the most up-to-date CTCSS and DCS tone/code list available! Both CTCSS and DCS Encoder/Decoder circuits are built-in.

### ●50-Tone CTCSS/104-Code DCS (Digital Code Squelch) Tone Systems

Providing excellent performance even under difficult link conditions, Yaesu's 50-tone sub-audible CTCSS and 104-tone DCS signaling systems ensure that you have full access to repeater and remote-base inputs, and the built-in CTCSS/DCS decoders allow silent listening on busy channels.

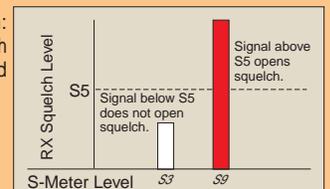
### ●ARTS™ (Auto-Range Transponder System)

Included in the FT-7100M is Yaesu's exclusive ARTS™ feature, which can be critically important in search-and-rescue applications. ARTS™ provides a "hand-shake" with other ARTS™-equipped transceivers, and the display indicates if an "Out of Range" conditions exists. The base station (typically a mobile unit like the FT-7100M) can then alert the field unit to move to a better location. A 6-character CW ID memory also is provided, for Morse Code identification of your station every ten minutes during ARTS™ operation.



## AND MUCH, MUCH MORE...

●RF Squelch: Opens the squelch at a user-defined S-Meter level.



●Automatic Repeater Shift (ARS): Automatically sets the repeater shift within the designated repeater sub-bands.

●Ready for 1200/9600 bps Packet Operation: Connect to your TNC using the optional CT-39A Packet Cable.



●Automatic Power-Off (APO): Turns radio off after long periods of inactivity.

●Time-Out Timer: Prevents "Stuck Microphone" from causing lengthy QRM to others.

●Battery Voltage Meter: Lets you know if your battery is getting low.

●DTMF Auto-Dial Memory: 16 Memories of up to 16 tones each.

●Lock Feature for Front Panel Keys & PTT Switch: Prevents accidental transmission or frequency change.

## SPECIFICATIONS

### General

Frequency Range: RX 108-137 MHz (AM) TX 144-148 MHz  
 137-180 MHz 430-450 MHz  
 320-480 MHz  
 810- 999.99 MHz  
 (Cellular blocked, non-restorable)

Frequency Steps: 5/10/12.5/15/20/25/50 kHz/step

Operating Modes: F1, F2, F3

Antenna Impedance: 50 Ohms nominal;

UHF ("SO-239") connector provided  
 (Type "N" provided in Europe)

Frequency Stability: ±5 ppm (+14° F to +140° F, -10° C to +60° C)

Operating Temperature Range: -4° F to +140° F (-20° C to +60° C)

Supply Voltage: 13.8 V DC (±15%), Negative Ground

Current Drain: TX (VHF) 11.5 A

TX (UHF) 10 A

RX (Signal present) < 500 mA

Size (WHD): 5.8" x 1.9" x 6.9" (140 x 38 x 166 mm)

Weight: 2.2 lbs. (1 kg)

### Transmitter

Power Output: 144 MHz 50/20/10/5 Watts  
 430 MHz 35/20/10/5 Watts

Modulation Type: Variable Reactance

Maximum Deviation: ±5 kHz

Spurious Emissions: -60 dB or better

Hum & Noise: Less than 3%

Microphone Impedance: 2 kΩ

DATA Jack Impedance: 10 kΩ

### Receiver

Circuit Type: Double Conversion Super-heterodyne

Intermediate Frequencies: 144 MHz 21.7 MHz/450 kHz

430 MHz 45.05 MHz/455 kHz

Sensitivity: Better than 0.16 μV for 12 dB SINAD

Squelch Sensitivity: 0.1 μV

Image Rejection: 70 dB or better

Selectivity: 12/24 kHz (-6/-60 dB)

Audio Output Power: Up to 2.0 Watts (@ 8 Ω, 5% THD)

Audio Output Impedance: 4 - 16 Ohms (Internal Speaker: 8 Ω)

## OPTIONS

**MH-48A6J**  
 DTMF Microphone  
 (supplied in U.S.A.  
 version)



**MH-42B6JS**  
 Hand Microphone with  
 1750 Hz Burst Button  
 (supplied w/European  
 and Asian versions)



**SP-7**  
 External Speaker



**MLS-100**  
 High-Power  
 External Speaker



**YSK-7100**  
 Separation Kit



**MEK-2**  
 Microphone  
 Extension Kit  
 (for use with Yaesu  
 8-pin Microphones)



**CT-39A**  
 Packet Interface Cable



**FP-1023** (U.S.A. only)  
 AC Power Supply (25 A)



**FP-1030A**  
 AC Power  
 Supply (30 A)



**MMB-60**  
 Quick Release  
 Mobile Mounting  
 Bracket



**MMB-62**  
 Remote Front Panel  
 Mounting Bracket



**AD-3**  
 VHF/UHF  
 Duplexer for  
 Two-antenna  
 Operation



**ADMS-2**  
 Windows™ PC  
 Programming  
 Software



### Available functions of Programmable Microphone Keys:

SQL Off	Opens squelch to allow reception of weak signals.
RPTR	Allows setting of repeater shift.
PRI	Activates Priority Channel operation.
LOW	Sets transmitter output power level.
MHz	Configures Main Dial for tuning in 1 MHz steps.
REV	Allows reversal of uplink/downlink frequencies.
HOME	Activates Home Channel operation.
BAND	Toggles Main and Sub bands on display.
VFO/MR	Toggles operation between VFO and Memory modes.

Main Band "RX" indicator.  
 (Glow Green when signal  
 is present on Main band)

**UP/DOWN** Keys:  
 Provide VFO channel stepping  
 or Memory Channel selection.

**Main Band**  
 Frequency display.

**POWER** Key:  
 Power On/Off  
 switch.

**BAND** Key:  
 Selects Main or Sub Band.  
 Press for one second to  
 enter Set (Menu) mode.

**PTT** Switch:  
 Press to Transmit.

**V/M** Key:  
 Allows selection of  
 VFO or Memory  
 Channels.

**LOW** Key:  
 Sets transmitter  
 output power  
 level.

Main Band **SQL**  
 (Squelch) control.

Main Band **VOL**  
 (Volume) control.

Sub Band **SQL**  
 (Squelch)  
 control.

Sub Band **VOL**  
 (Volume) control.

**Sub Band**  
 Frequency display.

**MHz**  
 Configures Main Dial for  
 tuning in 1 MHz steps.

Main Tuning Dial

Sub Band "RX" indicator.  
 (Glow Green when signal  
 is present on Sub band)

**HOME** Key  
 Toggles between VFO and  
 Home channel; Hold in for  
 1 second for V/V and U/U  
 operation.

**REV** (Reverse)  
 Key For reversal of  
 uplink and downlink  
 frequencies.

**TONE** Key  
 For setup of repeater  
 access tones.

**P4** Programmable Key:  
 Default function: same  
 as LOW key.

**P3** Programmable Key  
 Default function: same  
 as TONE key.

**P2** Programmable Key  
 Default function:  
 same as V/M Key

**P1** Programmable Key  
 Default function:  
 same as BAND Key.

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. Precise frequency range may be different in some countries. Some accessories shown herein 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.

**YAESU** VERTEX STANDARD CO., LTD.  
 4-8-8 Nakameguro, Meguro-ku, Tokyo 153-8644, Japan

**VERTEX STANDARD** Phone 562/404-2700; Fax 562/404-1210  
 Email: amateursales@vxstdusa.com

For the latest Yaesu news, visit us on the Internet:  
<http://www.vxstdusa.com>

**US Headquarters**  
 17210 Edwards Road, Cerritos, CA 90703, U.S.A.  
**International Division**  
 8350 N.W. 52nd Terrace, Suite 201, Miami, FL 33166, U.S.A.

**YAESU EUROPE B.V.**  
 P.O. Box 75525 1118 ZN, Schiphol, The Netherlands

**YAESU UK LTD.** Email: sales@yaesu.co.uk  
 Unit 12, Sun Valley Business Park, Winnall Close  
 Winchester, Hampshire, SO23 0LB, U.K.

**VERTEX STANDARD HK LTD.**  
 Unit 5, 20/F., Seaview Centre, 139-141 Hoi Bun Road,  
 Kwun Tong, Kowloon, Hong Kong