

**The New Flagship Mobile**  
**FTM-500D**

**Front Speaker with AESS Dual Speaker System**

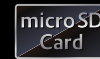
**Dual-band Mobile**  
**with Innovative Smart Operating System**

# The BIGHEAD



« Actual Size »

**C4FM Digital/FM 144/430MHz Dual Band 50W Transceiver**  
FTM-500DR: US, Asia and Australia, FTM-500DE: Europe



# The Latest Operating System «E2O-IV» with Search & Go and Touch & Go Functions

High-Resolution Full-color Touch-panel Display,  
Advanced Functions  
enable Comfortable Dual Mobile Operation

C4FM DIGITAL/FM 144/430MHz  
DUAL BAND 50W TRANSCEIVER

## FTM-500D

《FTM-500DR: US, Asia and Australia, FTM-500DE: Europe》



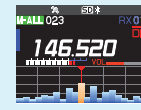
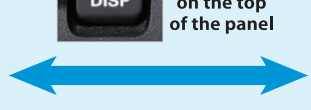
## Intuitive & Effortless Smart Operating System (E2O: Easy to Operate-IV)

### [Dual Receive]



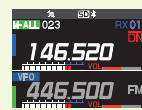
『DISP』key  
on the top  
of the panel

### [Scope Operation]



Instantly switch between the Scope operation  
and the Dual receive operation

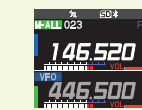
### [Quick Back function] Easily Return to the Previous Operating Frequency



Change  
the frequency



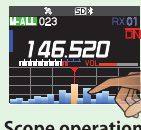
Change the frequency



Within 5 seconds, press the 『BACK』 key  
to return to the previous operating frequency

### [Search & Go]

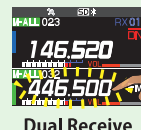
Search & Go  
(Touch the desired  
channel bar)



Dual Receive at the frequency  
touched on the Bar



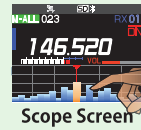
Return to  
the Scope operation



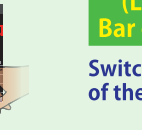
Dual Receive  
on the scope screen

### [Touch & Go]

Touch & Go  
(Long Touch the  
Bar or Blinking area)



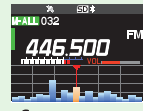
Scope Screen



Switch to the frequency  
of the long-touched Bar



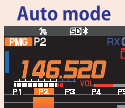
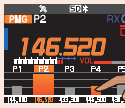
Switch to the frequency  
of the long-touched Blinking area



Scope screen

### [PMG: Primary Memory Group] Frequently used frequencies (up to 5ch) can be registered and then easily monitored

Manual mode



When the signal  
disappears,  
returns to  
PMG monitor

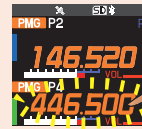


Dual Receive

New signal  
on another channel

Touch the desired  
Channel bar

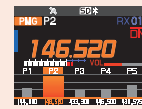
Dual Receive at the  
frequency touched  
on the bar



Dual Receive

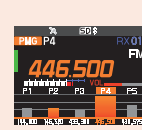
Touch  
the blinking area

Return to the previous  
PMG monitor



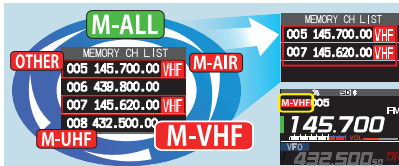
Long Touch  
the blinking area

Switch to the frequency  
of the long-touched Blinking area



### Memory Auto Grouping (MAG)

The Memory Auto Grouping (MAG) function automatically enables Memory Channels to be categorized in each band, and then the Memory Channels can be quickly recalled by Band groups. By pressing the [BAND] key while operating on a Memory Channel, the bands will switch in the order of each band. In ALL, the MAG function is turned OFF and all memory channels are recalled.



MAG Function VHF selection image

### CFL (Customized Function List) Register up to 8 Functions Ensures Easy and Smooth Operation

A single-press of the [FUNC] knob reveals the list of priority functions and their setting statuses at a glance. The functions may be directly executed, or the settings changed on the same screen.

KEYPAD	HOME CH
SCAN	TXPWR HIGH
SQL	ARS AUTO
RPT-R	TSN 88.5
DTMF	APRS OFF
HIGH	

- VFO Band Skip Function
- Memory Data Transfer to the VFO Register

## Front Speaker, with AESS Dual Speaker System

### Loud 6W Front Speaker

The 6W high audio output front speaker inside the control-head, ensures clear and powerful audio output. The front speaker is positioned downward inside the head. The wide tapered grille at the bottom of the head is designed so the audio output is efficiently emitted to the front. Even in separate operation where the main-unit is installed under the seat, comfortable operation is possible without adding an external speaker.

### AESS Dual Speaker System produces High-fidelity Audio

The phase modification speaker system AESS is generated jointly by the main-unit speaker and the front speaker. By varying the phase, output balance, and frequency characteristics of the front and main-unit speaker output, AESS achieves clear, high-fidelity audio. The total output of 9W (Front: 6W + Internal: 3W) ensures reliable communications even in outdoor or noisy environments.



\*AESS: Acoustic Enhanced Speaker System

AESS Dual Speaker System Image

## Angle variable Swing-head ensures Excellent visibility

The angle of the control-head can be adjusted upward by 20 degrees with respect to the main-unit, visibility of the display is ensured, even when installed under the dashboard of the vehicle. Additionally, by attaching the optional Swing-head kit (SJKM-500) to the control-head, flexible angle adjustment is possible. Even when the installation space is limited, operation can be from the best angle.

\*Optional control-head extension cable "CT-132" is not required.



Swing-head kit: SJKM-500 (Optional) Installation Image

## Advanced Functions that Ensure Ease of Operation

### Wide-band Reception

The FTM-500D provides continuous wide-range receive coverage from 108MHz to 999.995MHz. The communication mode supports C4FM digital with excellent audio quality, analog FM modes, and AM (Air band receive).

### True Dual Band Operation with C4FM/C4FM simultaneous Receive

Two independent receiver circuits provide true dual-band operation, whether in the same band or in different bands (V+V/U+U/V+U/U+V). Additionally, the FTM-500D supports C4FM/C4FM simultaneous digital receive (digital D/D). Call signs and location data of C4FM digital can also be received simultaneously on both bands.

### High-resolution Full-color Touch Panel Display

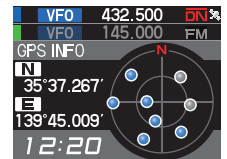
2.4-inch full-color touch panel display provides intuitive and smooth operation with high brightness and wide viewing angle. Operating frequency, communication mode, the monitor screen that displays the signal status, and the compass screen that shows position information are all presented in full color for outstanding visibility.

### Control-head with Microphone jack

The FTM-500D provides microphone connections to either the control-head or the front of the transceiver unit. Comfortable mobile operation is provided with a variety of installation options.

### High Precision GPS Receiver

The FTM-500D comes standard with a high-sensitivity 66 channel GPS receiver in the Control-head. With the C4FM digital mode, the position and direction of the contact stations can be displayed in real time. In addition, the control-head has a connection to attach an external GPS device.



### 1200/9600bps APRS® Data communication

An APRS® received station information list is displayed. Message exchange as well as SmartBeaconing™ are supported. Communicate the location information between this station and other stations, and view the positional relationship of the other stations on the compass display. Also, this station's APRS® movement trajectory can be confirmed on the internet websites.



## C4FM Digital Technologies: Outstanding Audio Quality / Automatic Selection of Analog or C4FM digital Communications

### Excellent C4FM Digital Audio Quality

C4FM Digital is a standard method for professional use, it has excellent audio quality (BER: Bit Error Rate characteristics). Adding YAESU's original error correction technology has achieved comprehensive high-grade communications, with uninterrupted, clear-crisp audio, and a wide communication range.

### DG-ID (Digital Group ID) / Group Monitor (GM)

The Digital Group ID (00 to 99) can be configured by each group member to facilitate communications only between the specific group participants. When the DG-ID number is set to "00", the audio of all stations can be received. The Digital Group Monitor (GM) function automatically confirms whether up to 24 stations are operating within communication range, and displays the distance and direction for each call sign. Selected specific stations can be displayed in real time on the compass screen.



Group Monitor Display



Compass Display

### FM Friendly Digital Communications using AMS (Automatic Mode Select)

AMS automatically determines if the received signal is C4FM Digital or conventional FM, and sets the receiver to the appropriate mode. The AMS function enables FM compatible digital operation by removing the need for users to manually switch between modes.

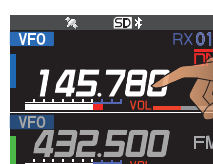
### Smart Navigation with Color Compass Display

#### •Real Time Navigation Function

Touching the operating display while communicating in C4FM digital V/D mode, to easily display the direction, distance, and the position of the received station on the compass screen.

#### •Backtrack Function

The Backtrack function allows viewing the direction and distance to a pre-registered point from the current position, in real time. Navigation back to the departure point, or to a previously registered point is made possible. Up to three locations can be pre-registered.



C4FM digital Operating Display



Compass Display

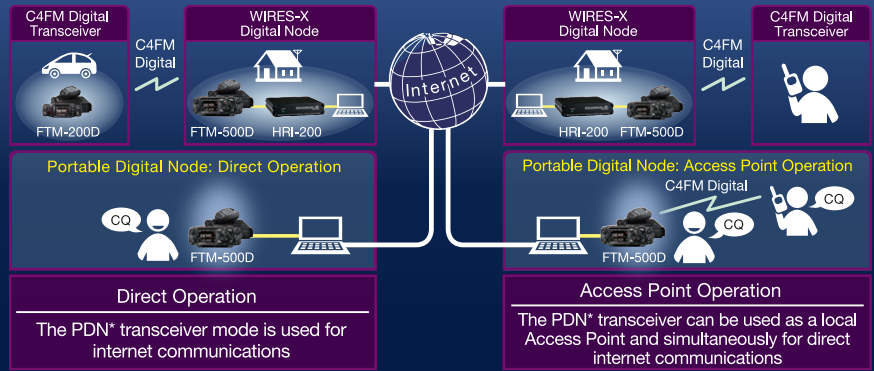


### Portable Digital Node Function

Worldwide communications are enabled with this Digital node station connected to the internet. With the Wires-X Portable Digital Node function, the FTM-500D can connect to the Wires-X network through an internet connected PC, from any location.

Operate digital node stations even when you are away from home using the Internet online

Easily enjoy Internet communications using the FTM-500D and a PC, no need to connect to a Wires-X node station



### Simpler and Highly-mobile, Portable Digital Node Function

\*PDN: Portable Digital Node station

### Other Practical Features

- FACC\* cooling system, ensures Stable 50W High-Power Output  
\* FACC: Funnel Air-Convection Conductor
- Large 1104 Memory channels
- Recording function
- DTMF Memory
- Hands-free Bluetooth® Operation
- microSD Card Slot
- Split Memory function
- ARS (Automatic Repeater Shift)
- VOX (Voice Activated Transmit) Operation
- GPS Logger function
- DTMF Encode
- DTMF Memory
- Versatile Rear panel DATA terminal (GPS data output; Waypoint data output; Packet; HRI-200 or WIRES-X Portable digital Node connection)
- Built-in: CTCSS; DCS; and Pager (EPCS) encode/decode functions, enable the Selective Call features
- Illuminated keyboard to assist operation in dark or poor lighting
- Automatic Power Off (APO)
- Time-out Timer (TOT)
- Clock, Lap/Countdown timer
- NOAA Weather alert: when available in-service area\*

\* Check local regulations for availability in your region.

### SSM-85D multifunctional microphone with a DTMF provides the user with quick access to major functions (Supplied accessory)



- [ MUTE ] Audio Mute
- [ 1 ] to [ 0 ] Enters the numbers and letters
- [ \* ] Changes the VFO/Memory operating modes of the operating band
- [ # ] Changes the operating band
- [ A ] No function assigned
- [ B ] Switches between Main-band and Sub-band
- [ C ] Adjusts the squelch level
- [ D ] Switches to the scope display
- [ P1 ] Second PTT function (Default setting)\*
- [ P1 ] to [ P4 ] Assignable from 16 functions\*

\*Functions to be assigned to [P1] through [P4] can be selected from among 16 functions. (e.g.: Change the transmit power; Switch WIRES-X mode; Change the Mode Digital/Analog)

### Specifications

General	Transmitter	Receiver
<b>Frequency Range:</b> RX: 108 - 137MHz (AIR Band) 137 - 174MHz (144MHz HAM / VHF Band) 174 - 400MHz 400 - 480MHz (430MHz HAM / UHF Band) 480 - 999.995MHz *1 TX: 144 - 148MHz or 144 - 146MHz 430 - 450MHz or 430 - 440MHz (Depends on the transceiver version) <b>Channel Steps:</b> 5, 6.25, (8.33), 10, 12.5, 15, 20, 25, 50, 100kHz (8.33kHz: Only for Air band) <b>Frequency Stability:</b> ±2.5ppm -4°F to +140°F (-20°C to +60°C) <b>Emission Type:</b> F1D, F2D, F3E, F7W <b>Supply Voltage:</b> Nominal 13.8V DC, Negative Ground <b>Current Consumption:</b> 0.5A (Receive) 10A (50W TX, 144MHz) 10A (50W TX, 430MHz) <b>Operating Temperature:</b> -4°F to +140°F (-20°C to +60°C) <b>Case Size:</b> Radio Unit 5.47"(W) x 1.66"(H) x 5.2"(D) (139 x 42 x 132mm) w/o Fan Controller 6.14"(W) x 2.52"(H) x 2.31"(D) (156 x 64 x 58.6mm) w/o Knobs <b>Weight (Approx.):</b> 3.09 lbs. (1.4kg) Transceiver Unit with Control-head	<b>RF Power Output:</b> 50W/25W/5W <b>Modulation Type:</b> F1D, F2D, F3E: Variable Reactance Modulation F7W: 4FSK (C4FM) <b>Maximum Deviation:</b> ±5kHz <b>Spurious Emission:</b> At least 60dB below <b>Microphone Impedance:</b> 2kΩ <b>Data Jack Impedance:</b> 10kΩ	<b>Circuit Type:</b> Double-Conversion Superheterodyne <b>Intermediate Frequencies:</b> 1st: MAIN 56.75MHz SUB 55.85MHz 2nd: 450kHz <b>Sensitivity:</b> 0.8µV TYP for 10dB SN (108 - 137MHz, AM) 0.2µV for 12dB SINAD (137 - 150MHz, FM) 0.25µV for 12dB SINAD (150 - 174MHz, FM) 0.3µV TYP for 12dB SINAD (174 - 222MHz, FM) 0.25µV TYP for 12dB SINAD (222 - 300MHz, FM) 0.8µV TYP for 10dB SN (300 - 336MHz, AM) 0.25µV for 12dB SINAD (336 - 420 MHz, FM) 0.2µV for 12dB SINAD (420 - 470 MHz, FM) 0.2µV for 12dB SINAD (470 - 540MHz, FM) 0.8µV for 12dB SINAD (540 - 800MHz, FM) 0.4µV TYP for 12dB SINAD (800 - 900MHz, FM) 0.8µV TYP for 12dB SINAD (900 - 999.99MHz, FM)*1 0.19µV TYP for BER 1% (Digital Mode) <b>Selectivity:</b> NFM, AM 12kHz / 30kHz (-6dB / -60dB) <b>AF Output:</b> 6W (8Ω, THD 10%, 13.8V) Front Speaker 3W (8Ω, THD 10%, 13.8V) Internal Speaker 3W (8Ω, THD 10%, 13.8V) External Speaker <b>AF Output Impedance:</b> 8Ω <b>Strength of secondary radio waves:</b> 4nW and below

■ Specifications are subject to change without notice, and are guaranteed within the amateur bands only. Frequency ranges and functions will vary according to transceiver version; check with your dealer.

### Options

*Optional extension cable "CT-132" is not required. <b>SJMK-500</b> Swing-head Kit					
<b>FP-1030A</b> *2 AC Power Supply (25A)					

(Supplied Accessories) ● DTMF Microphone SSM-85D ● Mounting Bracket ● DC Power Cable \*2 US and Asian versions only \*3 US version only \*4 The same as the supplied accessory

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Omori Bellport Building D-3F  
6-26-3 Minami Oi, Shinagawa-ku, Tokyo, 140-0013, Japan

**YAESU USA** <http://www.yaesu.com>

**US Headquarters** 6125 Phyllis Drive, Cypress, CA 90630, U.S.A.

**YAESU UK** <http://www.yaesu.co.uk>

Unit 12, Sun Valley Business Park, Winnall Close  
Winchester, Hampshire, SO23 0LB, U.K.



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