C4FM FDMA
144/430 MHz DUAL BAND DIGITAL TRANSCEIVER

FT1DR/FT1DE

http://www.yaesu.com/
Digital C4FM
Exciting new amateur digital transceiver

144/430 MHz DUAL BAND DIGITAL TRANSCEIVER FT1DR/FT1DE

Digital Group Monitor (GM) Function

The digital GM function automatically checks whether members registered in a group are within communication range, and displays information such as distance and direction for each call sign on the screen. This convenient function makes it possible not only to see whether any friends are in communication range, but also to instantaneously determine the location and relationship between all members of the group.

This function can also be used to send messages and data such as images between members of a group, permitting convenient and fun communication between friends when out for a drive or hike. Sent and received messages and images can be checked on the LOG List screen, with icons making them easy to distinguish.

Snapshot Function

When using the handy speaker microphone camera (optional MH-85A1U), press the shutter button to capture a snapshot, then press the image transmit button to easily transmit the image data.

The snapshot image or received data is stored in a high capacity micro SD card that is installed in the radio. You can recall and send that image data from the SD card anytime. The image data size is 320 x 240 dots or 160 x 120 dots. Image quality can be set from 3 types, and you can choose a format that is suitable for the image and purpose.

This image data also retains a time record and the GPS location data of the snapshot. It is easy to view and edit the data file after taking the pictures by using a personal computer.

A snapshot aids in navigating and returning to the Pictures location, other various uses are possible.

C4FM FDMA 144/430 MHz DUAL BAND 5W DIGITAL TRANSCEIVER

FT1DR FT1DE

American and Asian versions

European version

(7.4V 1100 mAh Lithium Ion Battery FN8-10/1U and Battery charger PA-48 / SAD-T19(USA version) included)
4 Communication Modes

The FT1DR/FT1DE operates in three digital modes and an analog mode. Enjoy communication in the mode that suits each purpose.

1. V/D Mode (Simultaneous Voice/Data Communication Mode)
   Half of the bandwidth is used for voice signal with error correction. The transceiver uses powerful error correction technology developed for professional communication devices. The very effective error correction code provides benefits such as minimal interruption of communication. The basic digital C4FM FM mode provides a good balance between sound quality and error correction.

2. Voice FR Mode (Voice Full Rate Mode)
   This mode uses the entire 12.5 kHz bandwidth to transmit digital voice data. The larger voice data size allows voice communication with high quality. Use this mode for pleasing sound quality communication between amateur radio friends.

3. Data FR Mode (High-speed Data Communication Mode)
   This mode uses the entire 12.5 kHz bandwidth for data communication. The transceiver automatically switches to this mode when sending and receiving images, allowing a large amount of data to be transmitted quickly.

4. Analog FM Mode
   Analog FM is effective for communication with a weak signal that causes voices to break up in the digital modes. The analog mode allows communication even at distances where noise and weak signals make communication almost impossible. The tried-and-trusted low-power circuit design uses less battery power than the digital modes.

The Automatic Mode Select (AMS) function detects the received signal mode.

The transceiver automatically selects one of the four communication modes according to the signal received. This is extremely convenient when listening for communications, as you do not need to be aware of the other party’s communication mode. The transceiver can also be operated in a fixed communication mode.

Smart Navigation Function

A real-time navigation function that records the location and direction of Group Monitor (GM) stations.

Digital V/D Mode communicates information such as position data at the same time as the voice signal, allowing you to view the distance and direction of the other party in real time while communicating. This makes it possible to confirm your position and the other party’s position in situations such as hiking and driving where your positions are constantly changing, providing an easy way to meet up or join routes.

Backtrack Function to Return to Departure Point

This function allows navigation back to the departure point, or a point previously added to the memory. When hiking or camping, just register the starting point or the position of your tent and then you can check the direction and distance from your current position. The arrow of the compass display constantly shows the direction to the registered point, making it extremely convenient in finding your way back to the registered place – just move in the direction so that the arrow in the heading-up display points straight upward.

Abundant functions for easy operation

- Extremely user-friendly with intuitive and easy-to-master operations

The FT1DR/FT1DE is extremely user-friendly, with a wide range of functions that can be called up directly. An easy-to-understand hierarchical menu is also used for the setting modes that allows customization of the FT1DR/FT1DE and makes it convenient to use. Press the ENT key to move to a lower level of the hierarchy, press the DISP key to return to a higher level, and turn the dial to select items or set values. These simple operations can be used to adapt the FT1DR/FT1DE to many communication situations.

- Wideband Receive capability

Covers 504 kHz – 999.900 MHz (A Band), 108 MHz – 580 MHz (B Band), continuous reception for short-wave, FM/AM broadcasts, aircraft, public service channels, etc.

- Real Dual Band Operation (V+V/U+U/V+)

With two independent receivers, you may listen to either the same or a different band simultaneously.

- Preset Receiver Function with an Extensive Range of Major Broadcasting Stations and Various Wireless Information Services

The FT1DR/FT1DE has a preset receiver function with various frequencies in memories, making it easy to call up stations in the various communication services. The frequencies include short-wave broadcasts, international (marine) VHF and NOAA Weather channels. The display tags are shown in easy-to-read letters.

- 1200/9600bps APRS® Data communication

The built-in worldwide standard AX2S Data TNC Modem permits uncomplicated APRS® (Automatic Packet Reporting System) operation. You will be able to display the information, station list, and use the message. SmartBeaoning™ function. You will be able to track your APRS® movement on the Internet websites.

- APRS® Display

FT1DR/FT1DE displays the positions, heading direction of the station, distance, time (45-135s), weather information, object, etc.

- APRS® List

The station List function stores up to 60 stations with the individual APRS® data.

- AF Dual

Listen to AM or FM radio stations while monitoring two frequency channels! Two independent receivers will allow you to listen to your favorite AM or FM broadcast station, and monitor two different bands (“Band A” and “Band B”) at the same time.

- Micro SD card slot

The micro SD card slot is provided on the side of the radio. Memory backup, the picture image data and other useful information is stored on the high capacity micro SD card (Maximum 32GB). The GPS logger records the location and track information of your moving station, which may be shown later by using Map software on your personal computer. By using the SD card, it is also possible to clone the radio data to the other compatible radios.

- Built-in GPS Antenna on the top

Integral GPS receiver and antenna provides location, time, direction and APRS® information.

- Water protection IPX5 Rating

Fully ruggedized and water protected (IPX5) design. Perfect for extreme environments, field and outdoor use.

- Data Terminal for data communication

A Data terminal is located on the side of the radio. The optional camera equipped microphone (MH-BAT11U) may be connected to this terminal. Your Personal Computer may also be connected to this terminal to transfer the data or update the firmware of the radio.

- High Power and long life operation

Up to 5 watts of power output and rugged compact body, 4 steps of power output, 5 watts, 2.5 watts, 1 watt and 0.1 watt. There are two types of Li-ion battery. The optional FNB-102LI battery will provide up to 8 hours of typical 5 watt operation.

- Battery Operating time (Approximately)

<table>
<thead>
<tr>
<th>Battery Type</th>
<th>Operating Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>FNB-102LI</td>
<td>10.5 hours</td>
</tr>
<tr>
<td>FNB-102LI</td>
<td>15.6 hours</td>
</tr>
<tr>
<td>Digital Mode</td>
<td>6.75 hours</td>
</tr>
<tr>
<td>Digital Mode</td>
<td>7.25 hours</td>
</tr>
<tr>
<td>Digital Mode</td>
<td>8.0 hours</td>
</tr>
</tbody>
</table>

* During standby (10 minutes interval between broadcast) and operations based on this schedule. 3G connected (4G) battery performance may be lower than estimated due to usage conditions.
Many additional features

- Large-capacity 1268 ch memory and twenty-four 100ch memory banks
- Fully illuminated keyboard that will permit easy operation in dark environments
- High resolution band-scape with 550 channels
- Three types of Vibrate Alert function
- High-intensity White LED and Illumination function
- Internal Bar Antenna for AM broadcast band reception
- Memory TAG up to 15 characters
- Built-in CTCSS, DCS, new Pager function encode/decode enables Selective call features
- DTME Encode
- DTME Memory
- Built-in highly accurate 24-hour Clock by GPS receiver
- Built-in On/Off Timer, Automatic Power Off (APO) and Time-out Timer (TOT)
- Versatile Scanning for the Monitoring Enthusiasts
- Built-in Temperature Sensor
- GPS data transmission feature
- External DC input
- Useful Battery saving features
- Password Lock function

FT1DR/FT1DE SPECIFICATIONS

**General**

- **Frequency Range:** A (Main) Band RX: 0.5 - 1.8 MHz (AM Radio)
- **Frequency Stability:** ±0.25 ppm at 25°C

**Receiver**

- **Current Consumption:**
  - 150 mA (Main band Receive)
  - 300 mA (Dual band Receive)
  - 50 mA (Main band Receive, Standby)
  - 150 mA (Dual band Receive, Standby)

- **Operating Temperature:**
  - -10°C to +40°C

- **Transmission Power Output:**
  - 2000 mW

- ** analogous Output:**
  - 7.2 V DC

- **Battery:**
  - Lithium Ion Battery Pack (7.4V 1100 mAh)

**Transmitter**

- **Modulation Type:** FM, AM, RTTY

**Circuit Type:**

- AM, FM: Double-Conversion Super heterodyne
- Intermediate Frequencies: 1st 47.25 MHz (AM, FM/PA Band)
- 2nd 450 kHz (AM, FM/PA Band)

- **Sensitivity:**
  - 3 µV for 10 dB SNR (0.5 - 30 MHz, AM)

- **Input Impedance:**
  - 75 ohms

** OPTIONS **

- **Speaker Microphone with Snapshot Camera**
- **Microphone Adapter**
- **VOX Headset**
- **Data Cable**
- **Microphone**
- **Earpiece Microphone**
- **Speaker / Microphone**
- **Battery Charger**
- **Battery Pack**
- **Rapid Charger**
- **Data Cable**
- **Lithium Ion Battery Pack**

**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 MUSEN Co., Ltd.**

- http://www.yaesu.com/jp

**Yaesu USA**

- http://www.yaesu.com

**Yaesu UK**

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

**Yaesu HK**


---

*©2005 is a registered trademark of Bell Bronco, W.BARR, Smartdesign™™ from Ham/K&H Industries, Inc.*