

AMATEUR RADIO EQUIPMENT

YAESU
60th Anniversary

| C4FM Digital Transceivers

| FM Transceivers

| Wide Band Receivers



System Fusion

The best solution for the Future

The YAESU System Fusion leads the way for the future of Ham Radio digital systems; it provides total integration and compatibility of both digital and conventional FM communications.

Fusion of Conventional FM and Digital

System Fusion joins digital and conventional FM communication into a single, multi-function system.

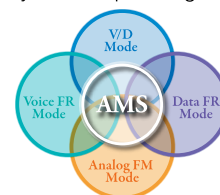
With the revolutionary System Fusion, the user no longer needs to choose between digital or conventional FM; we can use the system best suited for our operations. Also, users can communicate freely between digital and conventional FM stations.

C4FM provides Excellent Audio Quality and Reliable Communication

C4FM modulation has better BER (Bit Error Rate) characteristics when compared to other Digital modulation systems, and guarantees reliable long distance communication. The YAESU C4FM digital clear voice technology uses a 12.5 kHz bandwidth which permits high quality voice communication.

AMS (Automatic Mode Select)

Thanks to AMS, a received signal is instantly recognized as C4FM digital or conventional FM. The transceiver switches operating modes to match the received signal. Even if you are operating in digital mode, the transceiver automatically switches so you can communicate instantly with a received FM station. This unique function enables hassle-free operation by removing the need to manually switch between the communication modes.

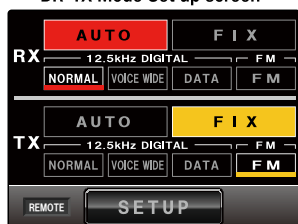


Repeater Set-up for conventional-FM Transmit only

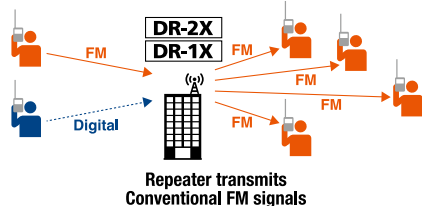
When replacing an existing conventional FM repeater, AMS on the receiver side is set to AUTO mode and AMS on the transmitter side is set to FM FIX mode. If the DR-2X/DR-1X repeater receives C4FM Digital signals, it converts them in conventional FM automatically.*1

*1 C4FM digital signals are converted to FM signals in the repeater. Therefore, digital information such as GPS data included in the C4FM digital signals is not transmitted.

DR-1X Mode Set up screen



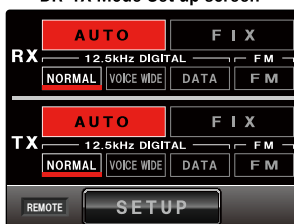
FM receive → FM transmit
C4FM receive → FM transmit



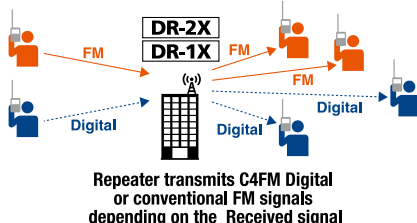
Repeater Set-up for C4FM Digital and conventional FM Transmit

AMS is set to AUTO mode on both the receiver and transmitter sides. DR-2X/DR-1X transmits received conventional FM signals unchanged as conventional-FM signals, and transmits received C4FM digital signals unchanged as C4FM digital signals.

DR-1X Mode Set up screen



FM receive → FM transmit
C4FM receive → C4FM transmit



FM Friendly Digital

Until now, FM repeaters were only used for conventional FM communication; and digital repeaters were only used for digital communication. There has been no option for cross-communication in a single repeater. Now, System Fusion can be used in multiple ways: for digital message and data, for conventional FM communication and even internet linking. Most importantly, System Fusion enables intercommunication between all users of the different modes. This is made possible in System Fusion by the AMS (Automatic Mode Select) function. With AMS, the modulation mode of your station is automatically selected according to the received signal. If a member transmits in conventional FM, the other radios in System Fusion AMS automatically select their modulation to conventional FM and permit communication between all members.

C4FM Digital Products Lineup

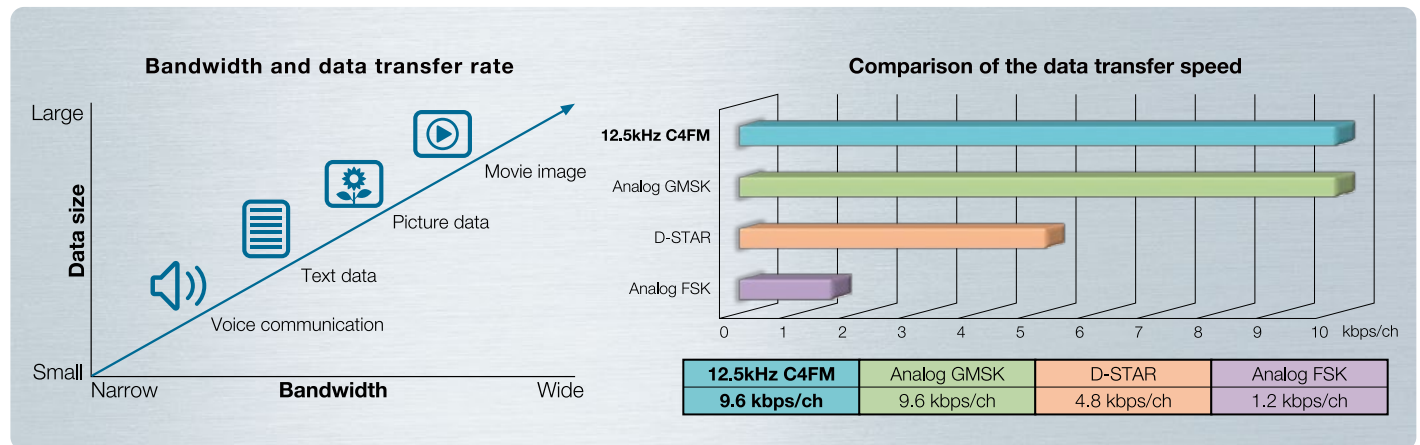


The advantages of C4FM digital

9600 bps high speed data using 12.5 kHz bandwidth

The big advantage of digital communication methods is the ability to convey large amounts of data. C4FM digital attains 9600 bps data transmission speeds by using a 12.5 kHz frequency bandwidth.

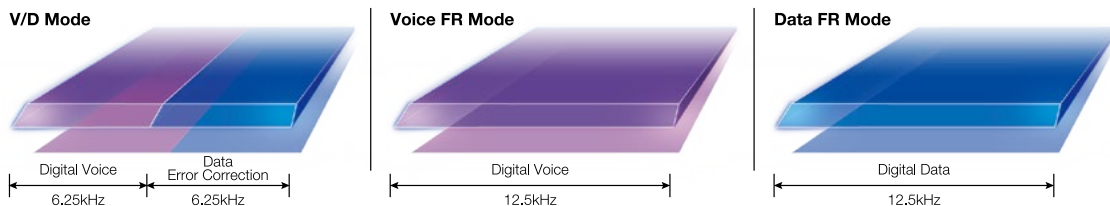
It achieves digital advantages, such as the data transmission of a snapshot, or high quality voice communication etc. 12.5 kHz C4FM modulation is excellent for digital communications, and provides for the expansion of amateur-radio communication without sacrificing other valued features.



Three C4FM digital modes and the conventional FM mode

In System Fusion, you can choose between three C4FM digital modes and the conventional FM mode to suit your needs.

12.5kHz C4FM Digital Communication



V/D mode (Voice/Data Simultaneous Communication Mode)

The digital voice signal is transmitted using one half of the bandwidth. Simultaneously the other half of the 12.5 kHz bandwidth channel is used for error correction of the voice signal and for other data. The standard C4FM Digital mode provides the ideal balance of error correction and sound quality with the Digital Clear Voice technology developed for C4FM digital.

Voice FR mode (Voice Full Rate Mode)

This mode uses the full 12.5 kHz bandwidth to transmit digital voice data. The increased amount of voice data permits high quality voice communication, providing superb sound quality for a "rag chew" with friends.

Data FR mode (High Speed Data Communication Mode)

This high-speed data communication mode uses the full 12.5 kHz bandwidth for data communication. The transceiver automatically switches to Data FR mode when transmitting Snapshot pictures, and can be used to transmit large quantities of data at high speed.

Conventional FM mode

Analog FM is effective when weak signal strength causes audio drop out in the digital mode. The FM mode enables communication up to the borderline of the noise level. Also the use of established Yaesu low power circuit designs provides far less battery consumption than the digital mode.



Advanced C4FM Technology Opens up New Vistas for Amateur Radio The New Style Handheld Transceiver

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

FT2DR

US, Asian and Australian versions

FT2DE

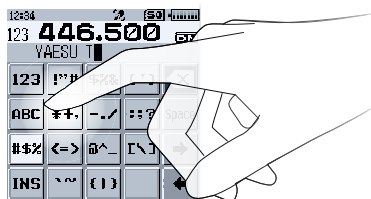
European version



(2200 mAh Lithium Ion Battery SBR-14LI, Battery charger PA-48 /
SAD-14B(US version) / SAD-16H(Australian version), USB Cable and Belt clip SHB-13 included)

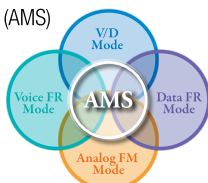
Easy Operation with Large Touch Panel Display

A major highlight of the transceiver's sleek design is the large display measuring 1.7 × 1.7 inch (43.2 × 43.2mm). With 160 × 160 dots and a bright white LED backlight, it presents a wealth of information in superb high resolution. Function keys, numeric keys, and setup menu items appear on the display as needed, allowing direct operation without guesswork. Additional functions may be operated with the knobs and keys on the front and side of the transceiver.



FM friendly digital realized by AMS (Automatic Mode Select)

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



Support for Sophisticated Functions of C4FM Digital

Digital GM Function (Digital Group Monitor)

The GM function automatically alerts the user when group members are within communication range. The distance, direction and call signs of the received GM stations are displayed on the screen.

Snapshot function

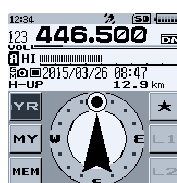
When the optional speaker microphone camera MH-85A11U is connected, you can easily take a snapshot. Captured images as well as received images can be viewed on the screen.



Smart Navigation Function

Real-time navigation

Digital V/D Mode communicates the position and station information simultaneously with the digitized audio. You can view the distance and direction of the other station in real time while communicating.



Backtrack

This function allows navigation back to the departure point, or a point previously added to the GPS memory.

Simultaneous C4FM/C4FM standby

The FT2DR/DE supports simultaneous C4FM Digital monitoring for both the A Band and B Band. A digital signal received on either band takes priority of the transceiver operation. You can respond smoothly and swiftly to the digital communication. What's more, call sign and position information as well as other data can be received simultaneously on both bands.

Loud 700 mW audio output

Built-in High Sensitivity 66ch GPS Antenna

1200/9600 bps APRS® Data communication

Micro SD card slot

High-resolution band scope with fast display of up to 71 channels

Standard configuration includes high-capacity Lithium-Ion battery good for 12 hours of continuous operation

Battery Operating Time (Approximately)

Band-Mode	FNB-101LI	SBR-14LI	Battery Tray FBA-39(0.8W)
144MHz	Analog Mode 6 hours	12 hours	14 hours
	Digital Mode 5 hours	10 hours	12 hours
430MHz	Analog Mode 5.5 hours	11 hours	13 hours
	Digital Mode 4.5 hours	9 hours	11 hours

* Duty Cycle based on Tx 6 sec., Rx 6 sec., Standby 48 sec.
(Tx Power 5 Watts, Rx audio output 10%THD, Battery save 1:5, Monoband receive, and GPS function off.)

* Operating times may vary depending on operating conditions.

OPTIONS									
Speaker Microphone with Snapshot camera MH-85A11U	Speaker / Microphone MH-34B4B	Earpiece Microphone SSM-57A	VOX Headset SSM-63A	Microphone Adapter CT-44	Lithium Ion Battery Pack (1100 mAh) FNB-101LI	Lithium Ion Battery Pack (2200 mAh) SBR-14LI	AC Adapter SAD-14B*1 PA-48B/C/F/U*2 SAD-16H*2	Rapid Charger CD-41	3x"AA"Cell Battery Tray FBA-39
PC Connection Cable (USB) SCU-19	PC Connection Cable (Dsub9) CT-169	Data Cable CT-170	Data Cable (2.5φ) CT-176	Cloning Cable CT-168	DC Cable E-DC-6	DC Cable with Cigarette-Lighter Plug SDD-13	BNC-to-SMA Adapter CN-3	Soft Case SHC-24	Belt Clip SHB-13

*1 US version only *2 "B": for 120 VAC, "C": for 220-240 VAC, "F": for 220 VAC, "U": for 220-240 VAC w/UK plug, "H": for 220-240 VAC w/Australian plug.



C4FM Digital / FM Exciting Amateur Digital Transceiver

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

FT1XDR

US version

FT1XDE

European version

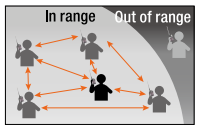
(2200 mAh Lithium Ion Battery SBR-14LI, Battery charger PA-48 / SAD-11B(US version) and PC connection Cable included)



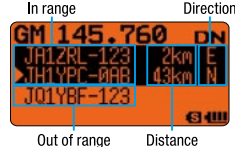
Digital Group Monitor (GM) Function

The digital GM function automatically monitors the frequency for stations registered to a GM group that are operating within communication range, and displays their distance and direction on the screen. This useful function enables you to know which group members are within communication range, and enables you to see at a glance where all group members are located.

Group Monitor Function



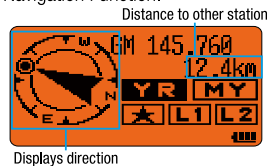
Group Monitor screen



Smart Navigation Function

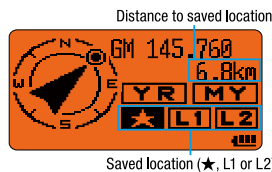
Real Time Navigation

Check station location relationships at any time with the Real Time Navigation Function.



Backtrack Function

With the simple touch of a button you can start navigating to your departure point or any location previously saved in the memory.



Tough waterproof design equivalent to IPX5 (water-jet-resistant)

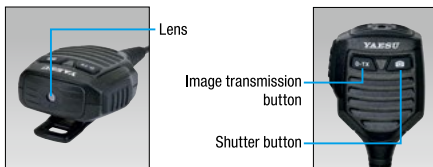
You will be safe using this transceiver in the field when sudden changes in weather may cause it to become wet with rain or splashed with water.

Built-in Improved 66ch GPS with antenna in the top section of the unit



Snapshot Function (Image Data Transmission)

Simply connect an MH-85A11U (option) speaker microphone with camera. Press the microphone shutter button to easily take snapshots, and then send them to other C4FM digital transceivers.



Equipped with micro SD card slot

(micro SD card not included)



Battery Operating Time (Approximately)

Band+Mode	FNB-101LI	SBR-14LI	Battery Tray FBA-39(0.8W)
144MHz			
Analog Mode	5 hours	10 hours	15.5 hours
Digital Mode	4 hours	8 hours	11 hours
430MHz			
Analog Mode	4.5 hours	9 hours	15 hours
Digital Mode	3.6 hours	7.2 hours	10.5 hours

* Duty Cycle based on Tx 6 sec., Rx 6 sec., Standby 48 sec.
(Tx Power 5 Watts, Rx audio output 10%THD, Battery save 1:5, Monoband receive, and GPS function off.)

* Operating times may vary depending on operating conditions.

OPTIONS

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PC Connection Cable (USB) SCU-19	PC Connection Cable (Dsub9) CT-169	Data Cable CT-170	Data Cable (2.5φ) CT-176	Cloning Cable CT-168	DC Cable E-DC-6	DC Cable with Cigarette-Lighter Plug SDD-13	BNC-to-SMA Adapter CN-3	Soft Case CSC-97	Belt Clip SHB-13

*1 US version only *2 "B": for 120 VAC, "C": for 220-240 VAC, "F": for 220 VAC, "U": for 220-240 VAC w/UK plug,



Equipped with advanced touch panel operation and full-color TFT large-scale display

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

FTM-400XDR

US, Asian and Australian versions

FTM-400XDE

European version

C4FM
Digital Transceiver
Clear and Crisp Voice Technology

AMS
Automatic Mode Select

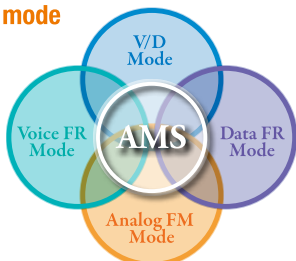
WIRES-X

(DTMF Microphone MH-48A6JA, Mounting Bracket, Bracket for Controller, Control Cable 10 ft (3m), PC connection Cable SCU-20, Stereo Monaural Plug and DC Power Cable included)

AMS (Automatic Mode Select)

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

- **V/D mode**
(Voice/Data Simultaneous Communication Mode)
- **Voice FR mode**
(Voice Full Rate Mode)
- **Data FR mode**
(High Speed Data Communication Mode)
- **Analog FM mode**



3.5-inch full color touch panel operation

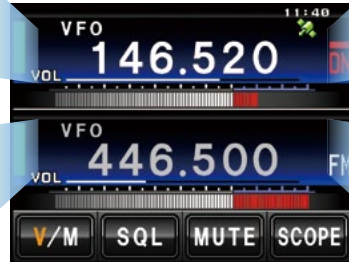
Icon symbols, multi-function key display and pop-up messages are all displayed in high-resolution color thanks to the full-color, high luminance TFT liquid crystal screen. The settings and status of the wireless devices are displayed in an easy-to-read format. You can perform various function operations simply and easily by gently touching the screen.



Band Scope Screen



Digital Group Monitor Screen



Screen



Smart Navigation Screen



APRS Screen

Snapshot Function (Image Data Transmission)

Simply connect the optional MH-85A11U microphone with camera. Press the microphone shutter button to take snapshots, and easily send them to other C4FM digital transceivers.

* micro SD card is required by the snapshot function.



Equipped with micro SD Card Slot Built-in Improved 66ch GPS with Antenna

(micro SD card not included)

Built-in GPS with antenna



Front side of the Radio Unit



Rear side of the Controller

OPTIONS

Microphone with Snapshot camera MH-85A11U	DTMF Microphone MH-48A6JA	Normal Microphone MH-42C6J	Bluetooth® Adapter Unit BU-2	High-Power External Speaker MLS-200-M10	Voice Guide Unit FVS-2	Vacuum Cup Mount Bracket for Controller MMB-98	PC Connection Cable SCU-20	Separation Cable 20 ft (6m) CT-162
							Data Cable CT-163 MDIN10 pin to MDIN6 pin + Dsub9 CT-164 MDIN10 pin to MDIN6 pin CT-165 MDIN10 pin to Dsub9 CT-167 MDIN10 pin to Open	
Mic Extension Kit MEK-2	Mic Extension Cable for MH-85A11U SCU-23	Cloning Cable CT-166	AC Power Supply (25 A) FP-1030A*2	AC Power Supply (23 A) FP-1023*3	Desktop Cooling Fan SMB-201	AC Adapter for SMB-201 SAD-118/C/U/H*1		

*1 "B": for 120 VAC, "C": for 220-240 VAC, "U": for 220-240 VAC w/UK plug, "H": for 220-240 VAC w/Australian plug. *2 US and Asian versions only *3 US version only



A digital mobile transceiver for a new age, with a wide variety of mobile operations made possible through advanced C4FM technology

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

FTM-100DR

US, Asian and Australian versions

FTM-100DE

European version

C4FM
Clear and Crisp Voice Technology

AMS
Automatic Mode Select

WIRES-X

(DTMF Microphone MH-48A6JA, Mounting Bracket, Bracket for Front panel, Control Cable 10 ft (3m), PC connection Cable SCU-20, Stereo Monaural Plug and DC Power Cable included)

An easy-to-read graphical interface via a full dot-matrix display

The full 160 x 40 dot-matrix display reveals dedicated screens and icons so that you can quickly recognize each of a variety of features. Also, the white-LED backlight provides ample brightness and contrast for improving visibility.



Memory Tag Screen



GPS Screen



Voice Memory Screen

A large BUSY/TX indicator that provides communication modes in different colors



Support for Sophisticated Functions of C4FM Digital

Digital GM Function (Digital Group Monitor Function)

The GM function automatically alerts the user when group members are within communication range. The distance, direction and call signs of the received GM stations are displayed on the screen.



Digital Group Monitor Screen



Digital Group Monitor Message Screen

Image Data Transmission*

Snapshots received from other stations, or images downloaded from the WIRES-X News Station, are stored on a high-capacity microSD card. Image data stored on a microSD can be viewed and edited using a personal computer.

* The optional MH-85A11U Camera Speaker Microphone cannot be connected.

Smart Navigation Function

Real-time navigation

Digital mode transmits the location and station information data simultaneously with the digitized audio signal. You can view the distance, direction and call sign of received signals in real time while communicating in the Yaesu C4FM digital mode.

The FTM-100DR/DE supports WIRES-X

You can connect the FTM-100DR/DE to WIRES-X node stations and easily enjoy long-distance communications over VHF/UHF bands via the Internet. Furthermore, you can connect the FTM-100DR/DE to the optional HRI-200 WIRES-X Internet Linking Kit to quickly establish a WIRES-X node station. The FTM-100DR/DE is ideally suited for use in node stations, and the display backlight can be completely turned off.



WIRES-X Connection Screen

A variety of features that ensures ease of use

- 50 W of power output sufficient for communication on the VHF/UHF bands
- 1200/9600bps APRS® Data communication
- microSD card slot
- Built in high sensitivity 66 channel GPS antenna .
- GPS logging capability
- High sensitivity and full-fledged wideband reception
- Dual Watch Function
- Powerful 3W speaker output. 8W output for optional MLS-200-M10 External Speaker.

*Simultaneous reception on A band and B band is not supported.

OPTIONS							
DTMF Microphone MH-48A6JA	Normal Microphone MH-42C6J	Bluetooth® Adapter Unit BU-2	High-Power External Speaker MLS-200-M10	Voice Guide Unit FVS-2	Vacuum Cup Mount Bracket for Controller MMB-98	PC Connection Cable SCU-20	Separation Cable 20 ft (6m) CT-162
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Mic Extension Kit MEK-2	Cloning Cable CT-166	AC Power Supply (25 A) FP-1030A*2	AC Power Supply (23 A) FP-1023*3	Desktop Cooling Fan SMB-201	AC Adapter for SMB-201 SAD-11B/C/U/H*1		

*1 "B": for 120 VAC, "C": for 220-240 VAC, "U": for 220-240 VAC w/UK plug, "H": for 220-240 VAC w/Australian plug. *2 US and Asian versions only *3 US version only

65 W VHF High power Mobile



C4FM/FM 144 MHz SINGLE BAND 65 W DIGITAL TRANSCEIVER

FTM-3200DR

US, Asian and Australian versions

FTM-3200DE

European version



WIRES-X

(DTMF Microphone MH-48A6JA, USB Cable, Mounting Bracket and DC Power Cable included)

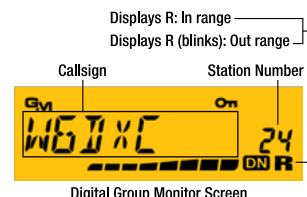
- **Genuine 65 W Output Power with FACC: Funnel Air-Convection Conductor (Wind Tunnel)**
- **Loud Audio output with 3 Watts 35 x 58 mm front speaker**
- **Advanced Digital C4FM operation***
- **FM friendly operation with AMS (Automatic Mode Select) and large LED Mode indicator for easy operation***
- **System Fusion Compatible***

The FTM-3200D operates C4FM Digital and Conventional FM modes

C4FM Digital mode is available for FTM-3200D. The C4FM digital modulation provides exceptional audio quality.

Digital Group Monitor*

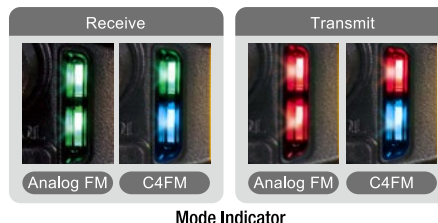
When communicating in C4FM digital mode, the digital GM function automatically alerts users when group members are within communication range, and their ID or Call Signs are shown on the display.



AMS with Multi-colored LED Mode-Indicator for Easy Operation

FM friendly digital operation is made possible by AMS (Automatic Mode Select)*

AMS automatically recognizes the received signal as C4FM Digital or conventional FM, and switches the receiver to the appropriate mode. The AMS function enables hassle-free operation by removing the need to manually switch between modes. The MODE indicator shows the Transmit/Receive mode at a glance.



FM 144 MHz SINGLE BAND 65 W TRANSCEIVER

FTM-3100R

US, Asian and Australian versions

FTM-3100E

European version

(DTMF Microphone MH-48A6JA, USB Cable, Mounting Bracket and DC Power Cable included)

- **Genuine 65 W Output Power with FACC: Funnel Air-Convection Conductor (Wind Tunnel)**
- **Loud Audio output with 3 Watts 35 x 58 mm front speaker**

65 Watts High Power Output

The FACC (Funnel Air-Convection Conductor) Wind Tunnel gathers cool air through the wide open front air intake and directs it to the final amplifier area and out the rear cooling fan. This efficient cooling system ensures stable output power for continuous long-distance communications.



FACC: Funnel Air-Convection Conductor

Loud Audio with 3W Front Speaker

The front facing speaker provides 3 watts of loud audio, The FTM-3200D, FTM-3100 speaker audio has been tuned for even better sound quality.



3 W 35x58mm Front Speaker

OPTIONS				
Hand Microphone MH-42	DTMF Microphone MH-48A6JA	High-Power External Speaker MLS-100	AC Power Supply (25 A) FP-1030A*1	AC Power Supply (23 A) FP-1023*2

*1 US and Asian versions only *2 US version only

Features

- 220 Memory channels with 8 alpha-numeric characters
- User-Programmable Microphone Keys (4 keys)
- 126 DSQ (Digital Squelch Code) signaling feature *
- Memory-Only Mode

* FTM-3200D only

WIRES-X



HRI-200 Features

- **Available C4FM digital communication**
- **High quality voice communication by using C4FM digital**
- **Advanced features enabled by C4FM digital functions**

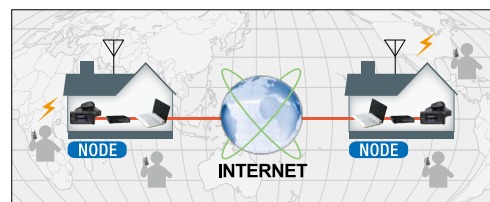
Convenient and easy-to-use digital functions, advanced VoIP wireless WIRES-X

AMATEUR RADIO INTERNET LINKING KIT

HRI-200



USB Cable CT-174 (MDIN 10 pin to MDIN 10 pin), and Data Cable CT-175 (MDIN 10 pin to MDIN 6 pin) included





144/430 MHz Dual Band C4FM/FM Digital Repeater

C4FM
Clear and Crisp Voice Technology

AMS
Automatic Mode Select

DR-1X

US and Asian versions

DR-1XE

European and Australian versions

Supplied Accessories: AC cable (US, Asia only),
DC cable, PC connection cable SCU-20, Rubber Feet (4)

YAESU DR-1X is a C4FM digital/Conventional FM dual mode repeater covers the VHF and UHF amateur radio bands. Replacing your conventional FM repeater with the DR-1X will provide continued use of FM communication and enables intercommunication between members using the different modes through the unique AMS feature.

DR-1X Features

- **Modulation Modes: Conventional FM, C4FM Digital**
- **AMS (Automatic Mode Select) function automatically recognizes the received signal as a C4FM digital or a conventional FM signal**
- **3.5-inch Full Color Touch panel Operation**
- **Extremely reliable, high RF Output Power: 50 W/20 W/5 W**
- **Emergency Operation: Supports auto-switched backup battery power operation (US and Asian versions)**
- **Front panel microphone connector is provided for repeater transmitter testing and to enable base station operation**
- **Advanced Operation: The rear panel Control I/O port permits connecting with the "S-COM 7330" repeater controller (Control up to three (3) DR-1X units)**

C4FM provides Excellent Audio Quality and Reliable Communication

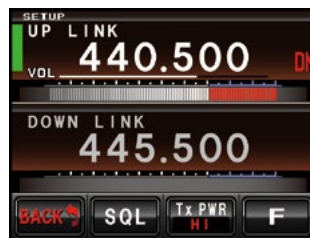
C4FM modulation has better BER (Bit Error Rate) characteristics when compared to other Digital modulation systems, and guarantees reliable Communication. The YAESU C4FM digital clear voice technology uses a 12.5 kHz bandwidth which permits high quality voice communication.

FM friendly Digital with AMS (Automatic Mode Select)

System Fusion enables interconnection between all users with different modes. This is made possible in System Fusion by AMS. The AMS function automatically recognizes the signal as a C4FM digital or a conventional FM signal, then the DR-1X retransmits the signal in the preset communication mode.

User Friendly Set-up 3.5-inch Full Color Touch Panel Display

Settings and adjustments are all displayed in High-resolution on the full-color TFT liquid crystal screen. The settings and status are displayed in an easy-to-understand format. You can perform various operations simply and easily by touching on the screen.



Setup screen



Frequency setting screen



CTCSS setting screen

Other Features

- Internal AC power supply (US, Asia)
- 19" Rack Mount capable
- High Stability ± 2.5 ppm TCXO
- DSQ (Digital Squelch Code) Signaling
- CTCSS and DCS Signaling
- ID announcement (Voice Mode: Requires FVS-2)
- Base Station Operation
- TOT (Time Out Timer)
- Firmware Updates

OPTIONS		
		
DTMF Microphone MH-48A6JA	Normal Microphone MH-42C6J	Voice Guide Unit FVS-2



YAESU DR-2X is a C4FM digital/Conventional FM dual mode and dual-Receive capable repeater that covers the VHF and UHF amateur radio bands. DR-2X incorporates the use of conventional FM communication integrated with the C4FM digital communication through its unique AMS capability.

144/430 MHz Dual Band Dual Receive Heavy Duty C4FM/FM Digital Repeater

C4FM
Digital Mode Select
Clear and Crisp Voice Technology

AMS
Automatic Mode Select

DR-2X

US and Asian versions

DR-2XE

European and Australian versions

Supplied Accessories: AC cable (US, Asia only),
DC cable, PC connection cable SCU-20, Rubber Feet (4)

DR-2X Features

- **Modulation Modes: Conventional FM, C4FM Digital**
- **AMS (Automatic Mode Select) function** automatically recognizes the received signal as C4FM digital or conventional FM signal
- **3.5-inch Full Color Touch panel Operation**
- **Extremely reliable, high RF Output Power: 50 W/20 W/5 W**
- **Emergency Operation: Supported by auto-switched backup battery power operation (US and Asian versions)**
- **Front panel microphone connector is provided for repeater transmitter testing and enables base station operation**
- **Advanced Operation: The rear panel Control I/O port permits connecting with the "S-COM 7330" repeater controller (Control up to three (3) DR-2X units)**

DR-2X Exclusive Features:

- **Dual Receive Operation**
- **Improved "News Station" Feature** permits sharing the voice and text messages to members
- **Group Monitor Feature** supports easy Groupings Set-up
- **Stable High Power Output with Large Heat sink**
- **Commercial grade components for long-term reliable operation**
- **IMRS (Internet-linked Multi-site Repeater System) function** for simple expanded area coverage via the Internet (Option)

C4FM provides Excellent Audio Quality and Reliable Communication

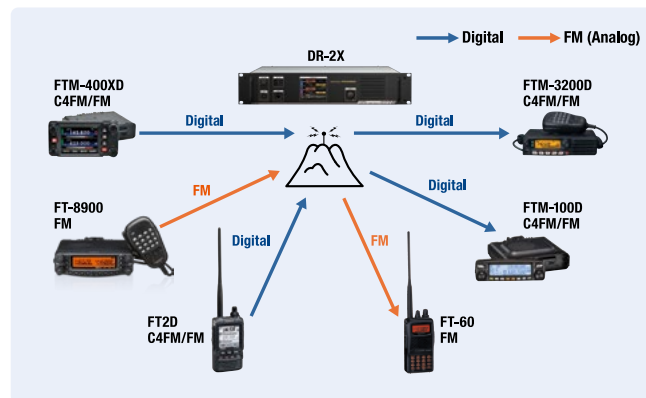
C4FM modulation has better BER (Bit Error Rate) characteristics when compared to other Digital modulation systems, and guarantees reliable Communication. The YAESU C4FM digital clear voice technology uses a 12.5 kHz bandwidth which permits high quality voice communication.

FM friendly Digital with AMS (Automatic Mode Select)

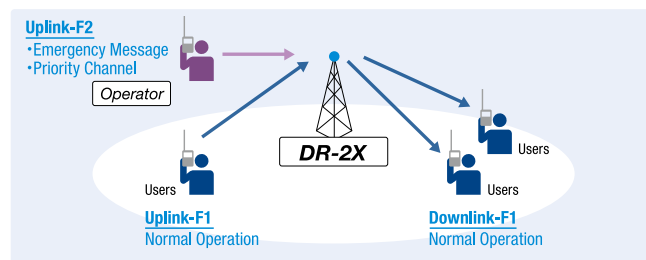
System Fusion enables interconnection between all users with different modes. This is made possible in System Fusion by AMS. The AMS function automatically recognizes the signal as a C4FM digital or a conventional FM signal, then the DR-2X retransmits the signal in the preset communication mode.

Dual Receive Feature provides Flexible Operation

The unique simultaneous Dual Receive Repeater DR-2X allows the control operator to assign an additional frequency for controlling the repeater, transmitting emergency messages, or simply a second up-link frequency. The control operator may also assign separate Downlink frequencies according to the Up-link frequencies.



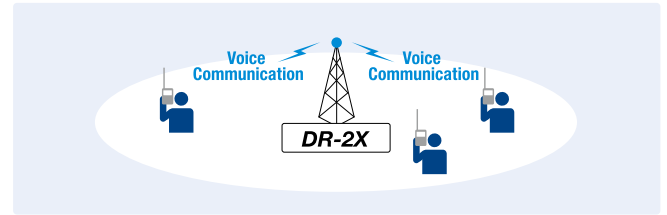
AMS Digital Repeater



Dual Receive image

Group Monitor Feature

Yaesu's revolutionary Group Monitor feature allows tracking multiple resources quickly and efficiently by displaying the telemetry and signal strength information of the members that share the same Digital Group Identification number.



Group Monitor Image

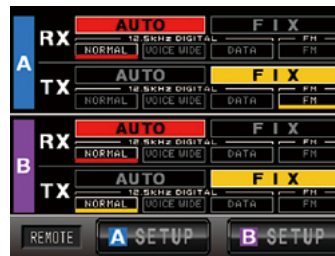
Improved "News Station" Feature

Groups or individuals can quickly store and retrieve digital audio and text messages. The users can then access the messages on demand, any time of the day.



News Station Image

User Friendly Set-up (3.5-inch Full Color Touch Panel Display)



Setup screen



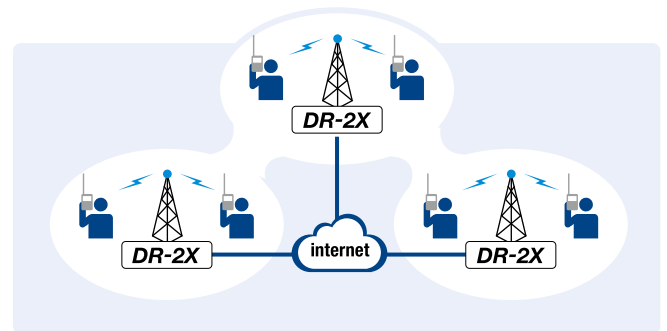
Frequency setting screen



CTCSS setting screen

IMRS (Internet-linked Multi-site Repeater System) for Wide Coverage Operation (Option)

The IMRS (Internet-linked Multi-site Repeater System) allows the repeater operator to link multiple repeaters over a Wide-Area-Network (WAN) or a Local-area-network (LAN). Because of the reliability shortcomings inherent with WAN (Wide Area Network) connections, such as the internet, the DR-2X incorporates direct connectivity between repeaters, permitting a variety of networking environments, and providing high quality Digital and Analog communications, even when "All Else Fails"



IMRS (Internet-linked Multi-site Repeater System) Image

Advanced Operation

The rear panel Control I/O port is connectable to the "S-COM 7330" repeater controller. This controller can manage up to three (3) DR-2X units, providing control of the programmable beep, the timer, access mode, and other features.

OPTIONS		
 DTMF Microphone MH-48A6JA	 Normal Microphone MH-42C6J	 Voice Guide Unit FVS-2

Other Features

- Internal AC power supply (US, Asia)
- 19" Rack Mount Capable
- High Stability ± 2.5 ppm TCXO
- DSQ (Digital Squelch Code) Signaling
- CTCSS and DCS Signaling
- ID announcement (Voice Mode: Requires FVS-2)
- Base Station Operation
- TOT (Time Out Timer)
- Firmware Updates



GPS/APRS® Handheld Triple Band Transceiver

50/144/430 MHz (220 MHz) TRIPLE BAND 5W FM TRANSCEIVER
(50 MHz AM: 1 W, 220 MHz FM: 1.5 W (US version only))

VX-8DR

US, Asian and Australian versions

VX-8DE

European version

(7.4 V 1100 mAh Lithium Ion battery FNB-101LI and battery charger PA-48 /
PA-44(European version) / SAD-11B(US version) / SAD-16H(Australian version) included)

Heavy Duty, Tough and
Rugged, ready for outdoors
field operation!

Waterproof/Submersible IPX 7 rated-3 ft (1m) for 30 minutes

Ultra-Rugged Polycarbonate
Resin Front panel with
Aluminum die-cast chassis

The tough compact case combines a rugged die-cast chassis with the clean and tough polycarbonate resin front panel. Its high shock proof versatility will allow you to operate the radio in the toughest environments!



Wide Band Receive* Capability

504 kHz-999.9 MHz (A Band) Continuous reception for short-wave, FM/AM broadcasts, analog TV station audio, aircraft, public service channels, etc.

*(US Cellular blocked)

The large LCD display
provides clear and
easy-to-read indication

The large LCD Display shows everything needed for advanced operations, including the main and sub band frequencies, operating modes and S-meters. A high resolution Spectrum Analyzer with ± 50 channels indication. The received signal modulation wave may also be monitored with the Audio Scope!



• Audio Scope



• Spectrum Analyzer

Optional GPS Operation

The optional 12 channel GPS Receiver Antenna Unit (FGPS-2) provides GPS data. Your exact current position, moving speed, altitude, etc. may be displayed and transmitted on APRS. The FGPS-2 GPS antenna can be attached directly to the radio microphone input jack; or alternately it can be attached to the optional MH-74 A7A speaker/microphone.



APRS® 1200/9600 bps data
communication [B band only]
using the worldwide standard
AX25 Data TNC Modem

The built-in AX25 Data TNC Modem permits uncomplicated APRS® (Automatic Packet/Position Reporting System) operation. You may communicate your location to other APRS stations with the position, speed and heading displayed on your radio!

Additional Features

- Real dual Ham Band Operation (V+V / U+U / V+U)
- Bluetooth® Capabilities [Optional Bluetooth unit required]
- Huge 1,830 memory channel management capability
- Emergency Automatic ID system (EAI)
- Yaesu's original "Auto-Range Transponder System"(ARTS)

Battery Operating Time (Approximately)
(VX-8DR/VX-8DE on one band with no optional items)

Operating Band	Battery Life (Approx.)		
	FNB-101LI	SBR-14LI*4	FBA-39
50 MHz	5.5 hours	11 hours	20 hours
144 MHz	5.0 hours	10 hours	17 hours
222 MHz (USA version)	6.0 hours	12 hours	20 hours
430 MHz	5.0 hours	10 hours	16 hours
Broadcast Band	13 hours	26 hours	20 hours

* Reference only. May vary depending on environmental temperature, humidity, etc.
*TX (5 W) 6 sec./RX 6 sec., and squelched 48 sec.

OPTIONS								

*1 "B": for 120 VAC, "C": for 220-240 VAC, "F": for 220 VAC, "U": for 220-240 VAC w/UK plug, "H": for 220-240 VAC w/Australian plug. *2 US version only *3 European version only



Ultra-rugged, Submersible Dual Band Transceiver

144/430 MHz (220 MHz)
DUAL BAND 5W FM TRANSCEIVER
(220 MHz FM: 1.5 W (US version Only))

VX-6R

US, Asian and Australian versions

VX-6E

European version

(7.4 V 1250 mAh* Lithium Ion battery FNB-80LI and battery charger PA-48 / SAD-11B(US version) / SAD-16H(Australian version) included)

* Indicated Battery capacity based on EU DIRECTIVE 2006/66/EC

Outdoor-ready Features including Waterproof Rating!

Compact Polycarbonate Resin and Aluminum Die-Cast Case with Solid Waterproofing Seal

The VX-6R/VX-6E is rated to IPX7 specifications for submersion (up to 30 minutes at a depth of up to three feet).

Direct Memory Recall feature provides One-Touch Stored Frequencies Access

The VX-6R/VX-6E adopts a one-touch DMR (Direct Memory Recall) system that operates just like your car stereo memory.

Wide Band Receiver Coverage for Catching All the Action!

In addition to full operation on the 144 and 430 MHz Amateur bands, the VX-6R/VX-6E provides a wide range of monitoring excitement, thanks to the incredible receiver frequency coverage of 504 kHz to 998.99 MHz.

Additional Features

- Emergency Automatic ID system (EAI)
- Channel counter function
- Smart Search
- RF Squelch
- Automatic Repeater Shift (ARS)















Power Output/Power Source Chart (Approximately)

	HIGH	LOW3	LOW2	LOW1
FNB-80LI or EXT DC (220 MHz/USA Version)	5W (1.5W)	2.5 W (1.0 W)	1.0 W (0.5 W)	0.05 W (0.2 W)
FBA-23 2 "AA" Alkalines	0.3W	0.05W		

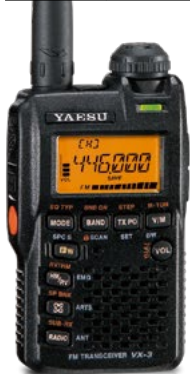
Battery Operating Time (Approximately)

Band	FNB-80LI	Battery Case
144 MHz	7 hours	6.5 hours
430 MHz	6 hours	
Receive Only	15 hours	

Note: Operating times may vary depending on operating conditions, and are based on a duty cycle of 6 seconds of transmission at 5 Watts, 6 seconds of reception at 50% audio level, and 48 seconds of standby operation.

OPTIONS													
													
Waterproof Speaker / Microphone MH-73A4B	Compact Speaker / Microphone MH-57A4B	Lightweight VOX Headset SSM-64A	Earpiece / Microphone SSM-55A	Barometric Pressure Sensor SU-1	Rapid Charger CD-15A	AC Adapter PA-48B/C/F/U* SAD-11B*2 SAD-16H*1	Lithium-ion Battery Pack (7.4 V, 1250 mAh) FNB-80LI	2x*AA*Cell Battery Tray FBA-23	DC Cable with Cigarette-Lighter Plug SDD-13	DC Cable (Plug and Wire Only) E-DC-6	Microphone Adapter CT-91	Adapter for use with BNC Connector CN-3	Soft Vinyl Case CSC-91

*1 "B": for 120 VAC, "C": for 220-240 VAC, "F": for 220 VAC, "U": for 220-240 VAC w/UK plug, "H": for 220-240 VAC w/Australian plug. *2 US version only



Ultra-compact Handheld FM Transceiver

144/430 MHz DUAL BAND
FM TRANSCEIVER

VX-3R

US, Asian and Australian versions

VX-3E

European version

(3.7 V 1100 mAh Lithium Ion battery FNB-82LI and battery charger PA-46 included)

Ultra-Compact and Light Weight !!

Only 1.9" x 3.2" x 0.9". The high capacity FNB-82LI Lithium-Ion battery provides 1.5 watts (70cm: 1 W) output power! Use convenient replaceable AA batteries with the optional FBA-37 Battery Tray.

Wide Band Receiver Coverage

The VX-3R/VX-3E has incredible frequency coverage of 504 kHz-999.9 MHz*, in addition, it has a totally separate and independent AM / FM Stereo Broadcast receiver inside.

(*Cellular coverage is blocked and not restorable)

Separate Earphone Jack for FM Stereo Broadcast Reception

The connected headset/ earphone cable works as an antenna to receive FM broadcast signals.

Internal Bar Antenna for AM Broadcast Band

The VX-3R/VX-3E has an internal bar antenna to provide good reception on the AM broadcast band.



(Not actual : Cut-out image photo)

Mechanical Dial Lock function

The Mechanical Dial Lock makes it very easy, and secure, to lock or unlock the main dial.

AF Dual function

Sub RX (AF-Dual) Function allows you to listen to your favorite AM / FM stereo broadcast stations and monitor the Amateur Band at the same time

Note : Sub RX (AF Dual) function works only on the AM and FM broadcast bands.












Power Output/Power Source Chart (Approximately)

	HIGH	LOW
FNB-82LI	1.5 W (UHF 1 W)	0.1 W
FBA-37 3 "AA" Alkalines	1.5 W (UHF 1 W)	0.1 W
External DC (6 V)	3 W (UHF 2 W)	0.1 W

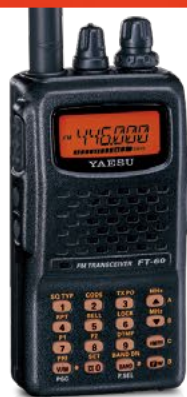
Battery Operating Time (Approximately)

Band	FNB-82LI	"AA" Battery operation
Amateur Band	144 MHz 6.0 hours	7.0 hours
	430 MHz 6.5 hours	7.5 hours
AM Broadcast/Short-wave Broadcast/ FM Stereo Broadcast reception (Receive Only)	20 hours	25 hours

Note: Operating times may vary depending on operating conditions, and are based on a duty cycle of 6 seconds of transmission at 1.5 watts, 6 seconds of reception at 50% audio level, and 48 sec of stand by operation.

OPTIONS										
										
Compact Speaker / Microphone MH-34A4B	Lightweight VOX Headset SSM-63A	Compact Lapel Mic with Earpiece SSM-57A	Lithium-ion Battery Pack (3.7 V, 1100 mAh) FNB-82LI	3x AA Cell Battery Tray FBA-37	AC Adapter PA-46B/C/U/H*	DC Cable with Voltage Regulator and Cigarette-Lighter Plug E-DC-21	Cloning Cable CT-27	Microphone Adapter CT-44	Adapter for use with BNC Connector CN-3	Soft Vinyl Case CSC-92

*1 "B": for 120 VAC, "C": for 220-240 VAC, "U": for 220-240 VAC w/UK plug, "H": for 220-240 VAC w/Australian plug.



Reliable Basic Dual Band Handheld

144/430 MHz DUAL BAND
5W FM TRANSCEIVER

FT-60R

US, Asian and Australian versions

FT-60E

European version

(7.2 V 1400 mAh Ni-MH battery FNB-83, Desktop Rapid Charger SBH-13(US version) and battery charger PA-48 / PA-44(European version) / SAD-16H(Australian version) included)

Wide Band Receiver Coverage

144 / 430 MHz Dual Band Handheld with wide band reception 108-520 MHz / 700-999,990 MHz (Cellular Blocked*)
US Version(*Cellular coverage is blocked and not restorable)

High Power Output: 5 W

The powerful transmitter puts out a full five Watts of power on both the 144 and 430 MHz bands. For longer battery life, Reduced power settings of 2 Watts and 0.5 Watt are provided.

Emergency Automatic ID System

The Emergency Automatic ID (EAI) Feature can be used to search for persons who are incapacitated in disasters, especially search-and-rescue personnel who may need assistance.

Note : This EAI function shall only be used in case of emergency or accident to support performing direction finding and rescue. YAESU shall not be responsible for any direct or indirect results caused by using the EAI function.

One-Touch NOAA WX Band Access *US Version

The FT-60R/FT-60E provides a dedicated memory bank for reception of NOAA Weather broadcasts. Pressing the PTT switch activates scanning of the Weather memories, and another press of PTT will halt the scan.

Additional features

- Over 1000 Memory Channels
- Single-Band and Memory-only Operating Modes
- Smart Search Automatic Memory Loading

Battery Operating Time (Approximately)

Band	Battery	FNB-83 / FBA-25A
144 MHz		9 hours*1
430 MHz		8 hours*1
Receiving		15 hours*2

Note: *1 Duty Cycle based on 5W P0, 6 sec. TX, 6 sec. RX w/audio, and 48 sec. RX squelched.

*2 Using FNB-83, Audio Volume set to 50%.

OPTIONS

Compact Speaker / Microphone MH-34B4B	Lightweight VOX Headset SSM-63A	Compact Lapel Mic with Earpiece SSM-57A	Ni-MH Battery Pack (7.2 V, 1400 mAh) FNB-83	6x AA Cell Battery Tray FBA-25A	Rapid Charger (1.5 hours) VAC-370B/C*3	Desktop Rapid Charger (4 hours) Requires PA-48 SBH-13	AC Adapter PA-48B/C/F/U*3 SAD-16H*3	AC Adapter PA-44B/C/U*3*4	DC Cable with Cigarette-Lighter Plug SDD-13	DC Cable (Plug and Wire Only) E-DC-6	Cloning Cable CT-27	Microphone Adapter CT-44	Adapter for use with BNC Connector CN-3

*3 "B": for 120 VAC, "C": for 220-240 VAC, "F": for 220 VAC, "U": for 220-240 VAC w/UK plug, "H": for 220-240 VAC w/Australian plug. *4 European version only



Commercial Grade Field Radio Submersible Construction

144 MHz SINGLE BAND 5W FM TRANSCEIVER

FT-270R

US, Asian and Australian versions

FT-270E

European version

(7.2 V 1400 mAh Ni-MH battery FNB-83, Desktop Rapid Charger SBH-13(US version) and battery charger PA-48/PA-44 (European version)/ SAD-16H(Australian version) included)

- Large Backlit LCD Display for easy operation
- 5 Watts of Stable RF Power
- 800 mW of Loud Audio for noisy field operations
- 200 Memory Channels for serious users
- Commercial Grade Performance
- Submersible Construction IPX7 (3 ft./1 meter for 30 min)
- Yaesu's Exclusive Power Saving Circuit Design Guarantees Longer Operating time
- Hands Free Operation with Optional SSM-64A VOX Headset

Features

- Ten Memory banks for Channel allocation
- High Power Output: 5 Watts (FNB-83 or FBA-25A with dry batteries)
- Long life FNB-83 (7.2 V/ 1400 mAh) and Overnight Charger included
- Emergency Automatic ID (EAI) function
- Enhanced Paging and Code Squelch (EPCS)
- Password Protection
- CTCSS and DCS Encode/Decode, with split Tone and DCS Encode-only capability
- Scanning Mode: VFO / Memory / PMS / Dual Watch
- Nine DTMF Auto-dialer memories
- Two front panel programmable keys
- RF squelch
- Memory-only operating mode available for easy operation
- Smart Search to easily select active channels
- Battery Voltage Display
- ARTS (Auto-range Transponding System)

OPTIONS

Waterproof Speaker / Microphone MH-73A4B	Compact Speaker / Microphone MH-57A4B	Lightweight VOX Headset SSM-64A	Earpiece / Microphone SSM-55A	DTFM Paging Unit FTD-7	Ni-MH Battery Pack (7.2 V, 1400 mAh) FNB-83	6x AA Cell Battery Tray FBA-25A	Desktop Rapid Charger (4 hours) Requires PA-48 SBH-13	AC Adapter PA-48B/C/F/U*1 SAD-16H*1	AC Adapter PA-44B/C/U*1*2	Charger Cradle CD-26	DC Cable with Cigarette-Lighter Plug SDD-13	DC Cable (Plug and Wire Only) E-DC-6	Microphone Adapter CT-91	Adapter for use with BNC Connector CN-3

*1 "B": for 120 VAC, "C": for 220-240 VAC, "F": for 220 VAC, "U": for 220-240 VAC w/UK plug, "H": for 220-240 VAC w/Australian plug. *2 European version only



Miniature Communications Receiver

AM/FM/WFM 100 kHz-1299.99 MHz
WIDE BAND RECEIVER

VR-160

European and Asian versions only

(3.7 V 1100 mAh Lithium Ion battery FNB-82LI and battery charger PA-46 included)

Features

- Wide frequency coverage 100 kHz to 1299.99 MHz
- The Sub RX function (AF-Dual) allows you to listen to your favorite FM/AM broadcast and monitor other communications simultaneously.
- Huge 1821 Memory Channels Capacity. Also 10 weather broadcast frequencies, 57 VHF Marine frequencies and 89 popular shortwave broadcast stations are pre-programmed at factory.
- Internal ferrite bar antenna provides good reception on the AM broadcast band
- The earphone connector allows you to enjoy FM broadcasts in stereo. Also your connected headset/earphone cable works as an FM aerial.
- New mechanical Dial lock makes it very easy and secure to lock or unlock the main dial. Just pull up to use, and push down to lock the dial; no more accidental frequency change.



Battery Operating Time (Approximately)

Band	FNB-82LI	"AA" Battery Operation
Amateur Band	23 hours	28 hours
AM/FM Broadcast, short-wave TV	20 hours	25 hours

Note: Operating times may vary depending on operating conditions, and are based on a duty cycle of
[Amateur Band] 1:3 (Receive: Standby)
[Other Band] Continuous reception at VOL 10 position (factory default position)

OPTIONS

Lithium-ion Battery Pack (3.7 V, 1100 mAh) FNB-82LI	AC Adapter PA-46B/C/U*	DC Cable with Voltage Regulator and Cigarette-Lighter Plug E-DC-21	Adapter for use with BNC Connector CN-3	3x AA Cell Battery Tray FBA-37	Soft Vinyl Case CSC-92

*1 "B": for 120 VAC, "C": for 220-240 VAC, "U": for 220-240 VAC w/UK plug.



Rugged Professional Communications Receiver

AM/FM/WFM 100 kHz-1299.99 MHz
WIDE BAND RECEIVER

VR-120D

European and Asian versions only

Features

• WIDEBAND FREQUENCY COVERAGE WITH EASY ACCESS

The VR-120D provides continuous coverage in the frequency range 100 kHz to 1299.99 MHz (cellular frequencies are blocked and non-restorable).

• ULTRA-LONG BATTERY LIFE AND EXT.DC INPUT

When you're out in the field, and can't afford to miss the weather information, long battery life in your receiver is essential. The VR-120D is especially designed for low current consumption, it can provide up to 20 hours of operation on a pair of "AA" alkaline cells (at 40 mW audio output), and the Battery Saver feature cuts battery consumption dramatically when no signals are being received.

• VERSATILE 640-CHANNEL MEMORY SYSTEM

The VR-120D includes a versatile 640-channel Memory system, which allows partitioning of the channels into ten "Banks" of 64 channels each.

• STRAIGHTFORWARD 4-BUTTON OPERATION

The no-nonsense front panel of the VR-120D contains four large keys which are used for command of the receiver's many operating functions.

• WIDE SELECTION OF SCANNING MODES

Efficient scanning is the key to receiver performance, and the VR-120D is a champion when it comes to scanning! The Memory Scan features are: Full Memory Scan, Memory Bank Scan, Selected Memory Channel ("Preferential") Scan, Programmable Band-Limit Memory Scan (PMS), Smart Search (Automatic Memory Loading), Priority Channel Watch and Dual Watch.



OPTIONS

Ni-MH Battery Pack (2.4 V, 1200 mAh) FNB-79MH	Charger Stand for CA-34 NC-82	Charger Sleeve for NC-82 CA-34	AC Adapter PA-46B/C/U*	DC Cable with Voltage Regulator and Cigarette-Lighter Plug E-DC-21	Cloning Cable CT-35	Soft Vinyl Case CSC-76

*1 "B": for 120 VAC, "C": for 220-240 VAC, "U": for 220-240 VAC w/UK plug.

Ruggedly-built, High quality 29/50/144/430 MHz Quad Band FM Transceiver

29/50/144/430 MHz 50 W/35 W (430 MHz)
FM QUAD BAND TRANSCEIVER

FT-8900R

US, Asian, Australian and European versions

(DTMF Microphone MH-48A6JA, Mounting Bracket,
Separation Kit YSK-8900 and DC Power Cable included)



Independent Two-Channel, Dual Receive and Full Duplex Operation

Basically operating as two radios in one, the FT-8900R may be configured in a number of ways. For example, you can set up the "left" side of the rig for operation on 29, 50, 144, or 430 MHz operation, while setting the "right" side to 430 MHz. Or set up the left side on 29/50/144/430 MHz, and the right side on 144 MHz. And, if you like, you can configure your FT-8900R for 144-144 MHz or 430-430 MHz dual receive operation—so you never miss out on the action! The left and right sides have their own Volume and Squelch controls, as well as S-meters, so your operating preferences are never compromised.



Quad Band Operation

The FT-8900R combines the "traditional" 144/430 MHz local-communications concept with the exciting capability of Sporadic-E or F2 DX on the 29 MHz and 50 MHz bands, for nationwide or worldwide FM communications from your car! The first Amateur Radio FM mobile transceiver providing this capability, the FT-8900R will make you wonder how you got by with a two-band transceiver until now.

High Power Output

The FT-8900R puts out a full 50 Watts of power on the 29/50/144 MHz bands, and 35 Watts on the 430 MHz band.

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

Over 800 Memory Channels

The FT-8900R provides a wide variety of memory resources, including 799 "regular" memories, six "Home" channels for favorite frequencies, five sets of band-edge memories, and six "Hyper Memory" memories, which store complete transceiver operating status, for maximum operating efficiency and convenience.

One-Touch Band-Pattern "HYPER MEMORY" Feature

To save valuable time while operating a transceiver with the versatility of the FT-8900R, the "Hyper Memory" feature allows you to store a complete set of configuration data for the two bands on which you're operating. Besides the usual storage of frequency and tone data, Hyper Memory will store such setup parameters as Automatic Repeater Shift status, Packet parameters, Scanning mode, and VFO tracking, avoiding the need to change each of these functions manually on a regular basis.



Built-In Duplexer

Utilizing a single antenna jack, the FT-8900R's leading-edge design includes a high-performance duplexing system, with extensive filtering to allow cross-band full duplex operation.

Cross-Band Repeat Capability

For emergency work, or to extend the range of a hand-held unit, the FT-8900R includes Cross-Band Repeat capability.

Additional Features

- Convenient Remote-Head Mounting Capability (YSK-8900 : Supplied Accessory)
- 50-Tone CTCSS/104-Tone DCS (Digital Code Squelch) Tone Systems
- User-Programmable Microphone Keys
- Easy Setup for FM Satellite Operation
- 1200/9600 bps Packet Capability: Connect your TNC using the optional CT-39A Packet Cable.
- RF Squelch: Opens the squelch at a user-defined S-Meter level.
- Battery Voltage Meter
- 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.

OPTIONS

Hand Microphone MH-42C6J	DTMF Microphone MH-48A6JA	High-Power External Speaker MLS-100	Quick Release Mobile Mounting Bracket MMB-60	Separation Kit YSK-8900	Mic Extension Kit MEK-2	Packet Interface Cable CT-39A	AC Power Supply (25 A) FP-1030A*1	AC Power Supply (23 A) FP-1023*2	Desktop Cooling Fan SMB-201	AC Adapter for SMB-201 SAD-11B/C/U/H*3

*1 US and Asian versions only *2 US version only *3 "B": for 120 VAC, "C": for 220-240 VAC, "U": for 220-240 VAC w/UK plug, "H": for 220-240 VAC w/Australian plug.



Heavy-Duty FM Dual Band Mobile with Exceptionally Wide Receiver Coverage

144/430 MHz 50 W/ 45 W (430 MHz)
FM DUAL BAND TRANSCEIVER

FT-7900R

US, Asian and Australian versions

FT-7900E

European version

(DTMF Microphone MH-48A6JA, Mounting Bracket, Separation Kit YSK-7800 and DC Power Cable included)

- Large Backlit LCD Display for easy operation
- Stable RF Power (50 Watts VHF / 45 Watts UHF)
- Reliable performance in harsh environments
- 5 ppm Frequency Stability (+14° F to +140° F / -10° C to +60° C)
- 1000 Memory Channels with 20 Memory Groups
- Yaesu Unique Power Saving Circuit Design Minimizes Vehicle Battery Drain

Features

- One-Touch Hyper Memories Feature
- 4 power output levels: HIGH (50/45 watts), MID2 (20 watts), MID1 (10 watts), LOW (5 watts).
- Wide Frequency Coverage
TX: 144-148 (146) MHz and 430-450 (440) MHz
RX: 108-520 MHz, 700-999.990 MHz (Cellular Blocked)
- Convenient Remote-Head Mounting Capability (YSK-7800 : Supplied Accessory)
- 50-Tone CTCSS/ 104-Tone DCS Tone System
- 16 DTMF memories can store 16 digits each for quick playback of commonly used numbers.
- Scanning Function, VFO Scan, Memory Channel Scan, Programmable Memory Scan and Priority Scan.
- Smart Search Operation
- 1200 or 9600 bps Packet Operation
- ARTS (Auto-Range Transponder System)
- Radio to Radio Cloning

OPTIONS										
Hand Microphone MH-42C6J	DTMF Microphone MH-48A6JA	High-Power External Speaker MLS-100	Quick Release Mobile Mounting Bracket MMB-60	Separation Kit YSK-7800	Mic Extension Kit MEK-2	Packet Interface Cable CT-39A	AC Power Supply (25 A) FP-1030A*1	AC Power Supply (23 A) FP-1023*2	Desktop Cooling Fan SMB-201	AC Adapter for SMB-201 SAD-11B/C/U/H*3

*1 US and Asian versions only *2 US version only *3 "B": for 120 VAC, "C": for 220-240 VAC, "U": for 220-240 VAC w/UK plug, "H": for 220-240 VAC w/Australian plug.



The King of Mobile

144 MHz 75 W FM SINGLE BAND TRANSCEIVER

FT-2900R

US, Asian and Australian versions

FT-2900E

European version

(DTMF Microphone MH-48A6JA, Mounting Bracket and DC Power Cable included)

- Massive Heatsink guarantees 75 Watts of Solid RF Power with No Cooling Fan Needed
- Loud 3 Watts of Audio Output for noisy environments
- Large 6 Digit Backlit LCD for excellent visibility
- Alpha-Numeric Channel Display
- 200 Memory Channels for serious users

Features

- CTCSS and DCS Encode/Decode Built In
- Versatile Scanning Capability
- WX Channels with "Severe Weather" Alert (US Version)
- Smart Search Operation
- Excellent Receiver Performance
- Wide/Narrow Deviation Selection
- RF Squelch
- Interactive Programming Menu
- Supply Voltage Display
- 4-level Display Dimmer
- Dual Watch

OPTIONS				
Hand Microphone MH-42C6J	DTMF Microphone MH-48A6JA	High-Power External Speaker MLS-100	AC Power Supply (25 A) FP-1030A*1	AC Power Supply (23 A) FP-1023*2

*1 US and Asian versions only *2 US version only

Handheld Transceivers & Receivers

		FT2DR FT2DE	FT1XDR FT1XDE	VX-8DR VX-8DE	VX-6R VX-6E	VX-3R VX-3E	FT-60R FT-60E	VR-160	VR-120D
PROGRAMMING KIT									
ADMS	Windows™ PC Programming Kit	ADMS-8	ADMS-6	ADMS-VX8	ADMS-VX6	ADMS-VX3	ADMS-1J	ADMS-5	
SOFT CASE & BELT CLIP									
CSC	Soft Vinyl Case	SHC-24	CSC-97	CSC-93	CSC-91	CSC-92		CSC-92	CSC-76
SHB-13	Belt Clip	●	●	●					
CLIP-17D	Swivel Belt Clip				●				
MICROPHONE/HEADSET									
MH-34B4B	Compact Speaker / Microphone	●	●			●	●		
SSM-57A	Compact Lapel Mic with Earpiece	●	●			●	●		
MH-57A4B	Compact Speaker / Microphone				●				
MH-73A4B	Waterproof Speaker / Microphone				●				
MH-74A7A	Waterproof Speaker / Microphone			●					
MH-85A11U	Speaker Microphone with Snapshot camera	●	●						
SSM-64A	Lightweight VOX (Voice-Operated) Headset				●				
SSM-63A	Lightweight VOX (Voice-Operated) Headset	●	●			●	●		
SSM-55A	Earpiece / Microphone				●				
Bluetooth® OPTIONS									
BU-2	Bluetooth® Adapter Unit			●					
GPS OPTIONS									
FGPS-2	GPS Antenna Unit			●					
CT-136	GPS Antenna Adapter for FGPS-2			●					
CABLES & ADAPTERS									
E-DC-21	DC Cable with Voltage Regulator and Cigarette-Lighter Plug					●		●	●
E-DC-6	DC Cable (Plug and Wire Only)	●	●	●	●		●		
SDD-13	DC Cable with Cigarette-Lighter Plug	●	●	●	●		●		
CN-3	Adapter for use with BNC Connector	●	●	●	●	●	●	●	
CT-27	Cloning Cable					●	●		
CT-35	Cloning Cable								●
CT-44	Microphone Adapter	●	●			●	●		
CT-91	Microphone Adapter				●				
CT-134	Cloning Cable			●					
CT-131	Microphone Adapter			●					
CT-168	Cloning Cable	●	●						
CT-169	PC Connection Cable (Dsub9)	●	●						
CT-170	Data Cable	●	●						
CT-176	Data Cable(2.5φ)	●	●						
SCU-19	PC Connection Cable (USB)	●	●						
BATTERY PACK & BATTERY TRAY									
Battery TRAY	Alkaline Cells Battery Tray	FBA-39(3xAA)	FBA-39(3xAA)	FBA-39(3xAA)	FBA-23(2xAA)	FBA-37(3xAA)	FBA-25A(6xAA)	FBA-37(3xAA)	
FNB-79MH	Ni-MH Battery Pack (2.4 V, 1200 mAh)								●
FNB-83	Ni-MH Battery Pack (7.2 V, 1400 mAh)						●		
FNB-80LI	Lithium-ion Battery Pack (7.4 V, 1250 mAh)*1				●				
FNB-82LI	Lithium-ion Battery Pack (3.7 V, 1100 mAh)					●		●	
FNB-101LI	Lithium-ion Battery Pack (7.4 V, 1100 mAh)	●	●	●					
SBR-14LI	Lithium-ion Battery Pack (7.2 V, 2200 mAh)	●	●	●					
BATTERY CHARGERS									
CD-15A	Rapid Charger (2.5 hours)				●				
CD-41	Rapid Charger	●	●	●					
SBH-13	Desktop Rapid Charger (4 hours) Requires PA-48						●		
NC-82	Charger Stand for CA-34								●
CA-34	Charger Sleeve for NC-82								●
VAC-370B/C*2	Rapid Charger (1.5 hours)						●		
PA-44B/C/U*2*3	AC Adapter			●			●		
PA-46B/C/U/H*2	AC Adapter					●		●	●
PA-48B/C/F/U*2	AC Adapter	●	●	●	●		●		
SAD-16H*2	AC Adapter	●	●	●	●		●		
SAD-11B*4	AC Adapter		●	●	●				
SAD-14B*4	AC Adapter	●							
OTHERS									
SU-1	Barometric Pressure Sensor				●				

*1 Indicated Battery Capacity based on EU DIRECTIVE 2006/66/EC. *2 "B": for 120 VAC, "C": for 220-240 VAC, "F": for 220 VAC, "U": for 220-240 VAC w/UK plug, "H": for 220-240 VAC w/Australian plug.

*3 European version only *4 US version only

Mobile Transceivers

		FTM-400DR FTM-400DE	FTM-100DR FTM-100DE	FTM-3200DR FTM-3200DE	FTM-3100R FTM-3100E	FT-8900R	FT-7900R FT-7900E	FT-2900R FT-2900E
MICROPHONES/SPEAKER								
MH-42C6J	Hand Microphone	●	●	●	●	●	●	●
MH-48A6JA	DTMF Microphone	●	●	●	●	●	●	●
MH-85A11U	Microphone with Snapshot camera	●						
MLS-100	High-Power External Speaker			●	●	●	●	●
MLS-200-M10	High-Power External Speaker	●	●					
BRACKET								
MMB-60	Quick Release Mobile Mounting Bracket					●	●	
MMB-98	Vacuum Cup Mount Bracket for Controller / Front panel	●	●					
CABLES								
YSK-8900	Separation Kit					●		
YSK-7800	Separation Kit						●	
MEK-2	Mic Extension Kit	●	●			●	●	
CT-39A	Packet Interface Cable					●	●	
CT-162	Separation Cable 20ft (6m)	●	●					
CT-163	Data Cable (MDIN10 pin to MDIN6 pin + Dsub9)	●	●					
CT-164	Data Cable (MDIN10 pin to MDIN6 pin)	●	●					
CT-165	Data Cable (MDIN10 pin to Dsub9)	●	●					
CT-166	Cloning Cable	●	●					
CT-167	Data Cable (MDIN10 pin to Open)	●	●					
SCU-20	PC Connection Cable	●	●					
SCU-23	Microphone Extension Cable for MH-85A11U	●						
PROGRAMMING KIT								
ADMS	Windows™ PC Programming Kit	ADMS-7	ADMS-9			ADMS-2H	ADMS-7900	ADMS-2900
OTHERS								
FP-1030A*1	AC Power Supply (25 A)	●	●	●	●	●	●	●
FP-1023*2	AC Power Supply (23 A)	●	●	●	●	●	●	●
SMB-201	Desktop Cooling Fan	●	●			●	●	
SAD-11B/C/U/H*3	AC Adapter for SMB-201	●	●			●	●	
BU-2	Bluetooth® Adapter Unit	●	●					
FVS-2	Voice Guide Unit	●	●					

*1 US and Asian versions only *2 US version only *3 "B": for 120 VAC, "C": for 220-240 VAC, "U": for 220-240 VAC w/UK plug, "H": for 220-240 VAC w/Australian plug.

Handheld Transceivers & Receivers Specifications

	FT2DR	FT2DE	FT1XDR	FT1XDE	VX-8DR	VX-8DE	VX-6R	VX-6E
General								
Frequency Ranges	<p>A (Main) Band RX: 0.5-1.8 MHz (AM Radio) 1.8-30 MHz (SW Radio) 30-76 MHz (50 MHz HAM) 76-108 MHz (FM Radio) 108-137 MHz (Air Band) 137-174 MHz (144 MHz HAM) 174-222 MHz (VHF) 222-420 MHz (General 1) 420-470 MHz (430 MHz HAM) 470-800 MHz (UHF) 800-999.99 MHz (General 2, US version Cellular Blocked)</p> <p>B (Sub) Band RX: 108-137 MHz (Air Band) 137-174 MHz (144 MHz HAM) 174-222 MHz (VHF) 222-420 MHz (General 1) 420-470 MHz (430 MHz HAM) 470-800 MHz (UHF)</p> <p>TX: 144-148 MHz 430-450 MHz</p>	<p>A (Main) Band RX: 0.5-1.8 MHz (AM Radio) 1.8-30 MHz (SW Radio) 30-88 MHz (50 MHz HAM) 88-108 MHz (FM Radio) 108-137 MHz (Air Band) 137-174 MHz (144 MHz HAM) 174-222 MHz (VHF) 222-420 MHz (General 1) 420-470 MHz (430 MHz HAM) 470-800 MHz (UHF) 800-999.99 MHz (General 2)</p> <p>B (Sub) Band RX: 108-137 MHz (Air Band) 137-174 MHz (144 MHz HAM) 174-222 MHz (VHF) 222-420 MHz (General 1) 420-470 MHz (430 MHz HAM) 470-579.99 MHz (UHF)</p> <p>TX: 144-146 MHz 430-440 MHz</p>	<p>A (Main) Band RX: 0.5-1.8 MHz (AM Radio) 1.8-30 MHz (SW Radio) 30-76 MHz (50 MHz HAM) 76-108 MHz (FM Radio) 108-137 MHz (Air Band) 137-174 MHz (144 MHz HAM) 174-222 MHz (VHF) 222-420 MHz (General 1) 420-470 MHz (430 MHz HAM) 470-800 MHz (UHF) 800-999.99 MHz (General 2, US version Cellular Blocked)</p> <p>B (Sub) Band RX: 108-137 MHz (Air Band) 137-174 MHz (144 MHz HAM) 174-222 MHz (VHF) 222-420 MHz (General 1) 420-470 MHz (430 MHz HAM) 470-579.99 MHz (UHF)</p> <p>TX: 144-148 MHz 430-450 MHz</p>	<p>A (Main) Band RX: 0.5-1.8 MHz (AM Radio) 1.8-30 MHz (SW Radio) 30-88 MHz (50 MHz HAM) 88-108 MHz (FM Radio) 108-137 MHz (Air Band) 137-174 MHz (144 MHz HAM) 174-222 MHz (VHF) 222-420 MHz (General 1) 420-470 MHz (430 MHz HAM) 470-800 MHz (UHF) 800-999.99 MHz (General 2)</p> <p>B (Sub) Band RX: 108-137 MHz (Air Band) 137-174 MHz (144 MHz HAM) 174-222 MHz (VHF) 222-420 MHz (General 1) 420-470 MHz (430 MHz HAM) 470-579.99 MHz (UHF)</p> <p>TX: 144-146 MHz 430-440 MHz</p>	<p>A (Main) Band RX: 0.5-1.8 MHz (AM Radio) 1.8-30 MHz (SW Radio) 30-59 MHz 60-150 MHz (AM, US version) 60-150 MHz (FM Radio) 30-76 MHz (50 MHz HAM) 59-108 MHz (FM Radio: US Version) 76-108 MHz (FM Radio) 108-137 MHz (Air Band) 137-174 MHz (144 MHz HAM) 174-222 MHz (VHF) 222-420 MHz (General 1) 420-470 MHz (430 MHz HAM) 470-774 MHz (UHF) 774-999.90 MHz (General 2) 222-420 MHz (General 1) 420-470 MHz (430 MHz HAM) 470-774 MHz (UHF) 774-999.90 MHz (General 2, US version Cellular Blocked)</p> <p>B (Sub) Band RX: 30-76 MHz (50 MHz HAM) 108-137 MHz (Air Band) 137-174 MHz (144 MHz HAM) 174-222 MHz (VHF) 222-420 MHz (General 1) 420-470 MHz (430 MHz HAM) 470-579.99 MHz (UHF)</p> <p>TX: 50-54 MHz 144-148 MHz 222-225 MHz (US version only) 430-450 MHz</p>	<p>A (Main) Band RX: 0.5-1.8 MHz (AM Radio) 1.8-30 MHz (SW Radio) 30-88 MHz (50 MHz HAM) 88-108 MHz (FM Radio) 108-137 MHz (Air Band) 137-174 MHz (144 MHz HAM) 174-222 MHz (VHF) 222-420 MHz (General 1) 420-470 MHz (430 MHz HAM) 470-774 MHz (UHF) 774-999.90 MHz (General 2)</p> <p>B (Sub) Band RX: 30-88 MHz (50 MHz HAM) 108-137 MHz (Air Band) 137-174 MHz (144 MHz HAM) 174-222 MHz (VHF) 222-420 MHz (General 1) 420-470 MHz (430 MHz HAM) 470-579.99 MHz (UHF)</p> <p>TX: 50-52 MHz 144-146 MHz 430-440 MHz</p>	<p>RX: 0.5-1.8 MHz (AM Radio) 1.8-30 MHz (SW Radio) 30-59 MHz (50 MHz HAM: US version) 30-76 MHz (50 MHz HAM) 59-108 MHz (FM Radio: US Version) 76-108 MHz (FM Radio) 108-137 MHz (Air Band) 137-174 MHz (144 MHz HAM) 174-222 MHz (VHF) 222-420 MHz (ACT1) 420-470 MHz (430 MHz HAM) 470-729 MHz (UHF-TV: US version) 470-800 MHz (UHF) 800-998.990 MHz (ACT2, US version Cellular Blocked)</p> <p>TX: 144-148 MHz 222-225 MHz (US version only) 430-450 MHz</p>	<p>RX: 0.5-1.8 MHz (AM Radio) 1.8-30 MHz (SW Radio) 30-76 MHz (50 MHz HAM) 76-108 MHz (FM Radio) 108-137 MHz (Air Band) 137-174 MHz (144 MHz HAM) 174-222 MHz (VHF) 222-420 MHz (ACT1) 420-470 MHz (430 MHz HAM) 470-800 MHz (UHF) 800-998.990 MHz (ACT2)</p> <p>TX: 144-146 MHz 430-440 MHz</p>
Channel Steps	5, 6.25, 8.33, 9, 10, 12.5, 15, 20, 25, 50, 100 kHz		5, 6.25, 8.33, 9, 10, 12.5, 15, 20, 25, 50, 100 kHz		5, 6.25, 8.33, 9, 10, 12.5, 15, 20, 25, 50, 100 kHz		5, 9, 10, 12.5, 15, 20, 25, 50, 100 kHz	
Frequency Stability	±2.5 ppm (-4°F to +140°F, -20°C to +60°C)		±2.5 ppm (-4°F to +140°F, -20°C to +60°C)		±5 ppm (+14°F to +122°F, -10°C to +50°C)		±5 ppm (+14°F to +122°F, -10°C to +50°C)	
Emission Type	F1D, F2D, F3E, F7W		F1D, F2D, F3E, F7W		F1D, F2A, F2D, F3E, A3E		F2D, F3E	
Supply Voltage	<p>Nominal 7.2 V DC (Negative Ground SBR-14L)</p> <p>Nominal 7.4 V DC (Negative Ground FNB-101L)</p> <p>Operating 4-14 V DC (Negative Ground EXT DC jack)</p> <p>11-16 V DC (Negative Ground EXT DC jack with SDD-13)</p>		<p>Nominal 7.4 V DC (Negative Ground FNB-101L)</p> <p>Nominal 7.2 V DC (Negative Ground SBR-14L)</p> <p>Operating 4-14 V DC (Negative Ground EXT DC jack)</p> <p>11-16 V DC (Negative Ground EXT DC jack with SDD-13)</p>		<p>Nominal 7.4 V DC (Negative Ground FNB-101L)</p> <p>Nominal 7.2 V DC (Negative Ground SBR-14L)</p> <p>Operating 4-14 V DC (Negative Ground EXT DC jack)</p>		<p>Nominal 7.4 V DC (Negative Ground)</p> <p>Operating 5-16 V DC (EXT DC jack)</p> <p>11.0-16.0 V DC (EXT DC jack while Charging)</p>	
Current Consumption	<p>120 mA (Single Band Receive)</p> <p>180 mA (Dual Band Receive)</p> <p>80 mA (Single Band, Standby, Saver Off)</p> <p>110 mA (Dual Band, Standby, Saver Off)</p> <p>50 mA (Single Band, Standby, Saver On "Save Ratio 1:5")</p> <p>50 mA (Dual Band, Standby, Saver On "Save Ratio 1:5")</p> <p>+20 mA (GPS On)</p> <p>+20 mA (Digital)</p> <p>400 µA (Auto Power Off)</p> <p>1.6 A (TX, 144 MHz 5 W)</p> <p>1.8 A (TX, 430 MHz 5 W)</p>		<p>150 mA (Single Band Receive)</p> <p>220 mA (Dual Band Receive)</p> <p>100 mA (Single Band, Standby, Saver Off)</p> <p>150 mA (Dual Band, Standby, Saver Off)</p> <p>45 mA (Single Band, Standby, Saver On "Save Ratio 1:5")</p> <p>45 mA (Dual Band, Standby, Saver On "Save Ratio 1:5")</p> <p>+30 mA (GPS On)</p> <p>+65 mA (Digital)</p> <p>600 µA (Auto Power Off)</p> <p>1.7 A (TX, 144 MHz 5 W)</p> <p>2.0 A (TX, 430 MHz 5 W)</p>		<p>200 mA (Single Band Receive)</p> <p>240 mA (Dual Band Receive)</p> <p>85 mA (Single Band, Standby, Saver Off)</p> <p>120 mA (Dual Band, Standby, Saver Off)</p> <p>35 mA (Single Band, Standby, Saver On "Save Ratio 1:5")</p> <p>42 mA (Dual Band, Standby, Saver On "Save Ratio 1:5")</p> <p>300 µA (Auto Power off)</p> <p>1.6 A (TX, 50 MHz 5 W)</p> <p>1.7 A (TX, 144 MHz 5 W)</p> <p>1.2 A (TX, 222 MHz 1.5 W)</p> <p>1.9 A (TX, 430 MHz 5 W)</p>		<p>150 mA (Receive)</p> <p>60 mA (Standby, Saver Off)</p> <p>20 mA (Standby, Saver On)</p> <p>1 mA (ON Timer Activated)</p> <p>200 µA (Auto Power Off)</p> <p>1.6 A (TX, 144 MHz 5 W)</p> <p>1.5 A (TX, 222 MHz 1.5 W US version)</p> <p>1.8 A (TX, 222 MHz 5 W)</p>	
Operating Temperature	-4°F to +140°F, -20°C to +60°C		-4°F to +140°F, -20°C to +60°C		-4°F to +140°F, -20°C to +60°C		-4°F to +140°F, -20°C to +60°C	
Case Size (WxHxD)	2.4" x 4.3" x 1.3" (62 x 110 x 32.5 mm)		2.4" x 3.7" x 1.3" (60 x 95 x 32.5 mm)		2.4" x 3.7" x 0.9" (60 x 95 x 24.2 mm)		2.3" x 3.5" x 1.1" (58 x 89 x 28.5 mm)	
Weight	10.93 oz (310 g) with SBR-14LI & antenna		10.23 oz (290 g) with SBR-14LI & antenna		8.5 oz (240 g) with FNB-101LI & antenna		9.5 oz (270 g) with FNB-80LI & antenna	
Transmitter								
RF Power Output	0.8 W @4.5 V: AA x 3 5.0 W @Battery Pack or EXT DC L3: 2.5W, L2: 1W, L1: 0.1W @7.2 V		0.8 W @4.5 V: AA x 3 5.0 W @Battery Pack or EXT DC L3: 2.5W, L2: 1W, L1: 0.1W @7.4 V		1.0 W (50/144/430 MHz) @4.5 V: AA x 3 5.0 W (50/144/430 MHz) @7.4 V or EXT DC 1.0 W (50 MHz AM) Fixed 0.5 W (222 MHz : US only) @4.5 V: AA x 3 1.5 W (222 MHz : US only) @7.4 V or EXT DC L3: 2.5W, L2: 1W, L1: 0.05W (50/144/430 MHz) @7.4 V L3: 1W, L2: 0.5W, L1: 0.05W (222 MHz) @7.4 V		5.0 W (144/430 MHz) 2.5 W (L3: 144/430 MHz) 1.0 W (L2: 144/430 MHz) 0.3 W (L1: 144/430 MHz) 1.5 W (222 MHz: US version) 1.0 W (L3: 222 MHz: US version) 0.5 W (L2: 222 MHz: US version) 0.2 W (L1: 222 MHz: US version)	
Spurious Emission	At least 60 dB below (@ TX power HI/L3) At least 50 dB below (@ TX power L2/L1)		At least 60 dB below (@ TX power HI/L3/L2) At least 50 dB below (@ TX power L1)		At least 60 dB below (@ TX power HI/L3) At least 50 dB below (@ TX power L2/L1)		At least 60 dB below (@ TX power HI/L3) At least 50 dB below (@ TX power L2/L1)	
Microphone Impedance	2 kΩ		2 kΩ		2 kΩ		2 kΩ	
Receiver								
Circuit Type	NFM / AM: Double-Conversion FM / AM Radio: Direct-Conversion		NFM / AM: Double-Conversion FM / AM Radio: Single-Conversion		NFM / AM: Double-Conversion WFM: Triple-Conversion FM / AM Radio: Single-Conversion		NFM / AM: Double-Conversion WFM: Triple-Conversion	
Intermediate Frequencies	1st: 47.25 MHz (NFM, AM, A Band), 46.35 MHz (NFM, AM, B Band), 2nd: 450 kHz (NFM, AM)		1st: 47.25 MHz (NFM, AM, A Band), 46.35 MHz (NFM, AM, B Band), 2nd: 450 kHz (NFM, AM) 1st: 130 kHz (AM/FM Radio)		NFM AM 1st: 47.25 MHz (A Band), 46.35 MHz (B Band) 2nd: 450 kHz (A Band), 450 kHz (B Band) WFM 1st: 45.8 MHz 2nd: 10.7 MHz 3rd: 1 MHz AM/FM Radio: 130 kHz		1st: 47.25 MHz (NFM, AM, WFM) 2nd: 450 kHz (NFM, AM), 10.7 MHz (WFM) 3rd: 1 MHz (WFM)	
Sensitivity	<p>3.0 µV (0.5-30 MHz, AM)</p> <p>0.35 µV TYP (30-54 MHz, NFM)</p> <p>1.0 µV TYP (54-76 (88) MHz, NFM)</p> <p>1.5 µV TYP (76 (88)-108 MHz, WFM)</p> <p>1.5 µV TYP (108-137 MHz, AM)</p> <p>0.2 µV (137-140 MHz, NFM)</p> <p>0.16 µV (140-150 MHz, NFM)</p> <p>0.2 µV (150-174 MHz, NFM)</p> <p>1.0 µV (174-222 MHz, NFM)</p> <p>0.5 µV (300-350 MHz, NFM)</p> <p>0.2 µV (350-400 MHz, NFM)</p> <p>0.18 µV (400-470 MHz, NFM)</p> <p>1.5 µV (470-540 MHz, NFM)</p> <p>3.0 µV TYP (540-800 MHz, NFM)</p> <p>1.5 µV TYP (800-999.99 MHz, NFM)</p> <p>US version Cellular Blocked</p> <p>0.19 µV TYP (Digital Mode)</p>		<p>3.0 µV (0.5-30 MHz, AM)</p> <p>0.35 µV TYP (30-54 MHz, NFM)</p> <p>1.0 µV TYP (54-76 (88) MHz, NFM)</p> <p>1.5 µV TYP (76 (88)-108 MHz, WFM)</p> <p>1.5 µV TYP (108-137 MHz, AM)</p> <p>0.2 µV (137-140 MHz, NFM)</p> <p>0.16 µV (140-150 MHz, NFM)</p> <p>0.2 µV (150-174 MHz, NFM)</p> <p>1.0 µV (174-222 MHz, NFM)</p> <p>0.5 µV (300-350 MHz, NFM)</p> <p>0.2 µV (350-400 MHz, NFM)</p> <p>0.16 µV (400-470 MHz, NFM)</p> <p>1.5 µV (470-540 MHz, NFM)</p> <p>3.0 µV TYP (540-800 MHz, NFM)</p> <p>1.5 µV TYP (800-999.99 MHz, NFM)</p> <p>US version Cellular Blocked</p> <p>0.19 µV TYP (Digital Mode)</p>		<p>A (Main) Band</p> <p>3.0 µV (0.5-30 MHz, AM)</p> <p>0.35 µV TYP (30-54 MHz, NFM)</p> <p>1.0 µV TYP (54-76 (88) MHz, NFM)</p> <p>1.0 µV TYP (54-59 MHz, NFM, US Version)</p> <p>1.5 µV TYP (76 (88)-108 MHz, WFM)</p> <p>1.5 µV TYP (59-108 MHz, WFM)</p> <p>1.5 µV TYP (108-137 MHz, AM)</p> <p>0.2 µV (137-140 MHz, NFM)</p> <p>0.16 µV (140-150 MHz, NFM)</p> <p>0.2 µV (150-174 MHz, NFM)</p> <p>0.16 µV (174-222 MHz, WFM)</p> <p>1.0 µV (174-222 MHz, WFM)</p> <p>0.5 µV (300-350 MHz, NFM)</p> <p>0.2 µV (350-400 MHz, NFM)</p> <p>0.18 µV (420-470 MHz, NFM)</p> <p>1.0 µV (470-540 MHz, WFM)</p> <p>1.0 µV TYP (580-800 MHz, WFM)</p> <p>0.5 µV TYP (800-999.990 MHz, NFM)</p> <p>US version Cellular Blocked</p> <p>B (Sub) Band</p> <p>0.18 µV TYP (50-54 MHz, NFM)</p> <p>0.18 µV (144-148 MHz, NFM)</p> <p>0.2 µV (430-450 MHz, NFM)</p>		<p>1.0 µV TYP (1.8-30 MHz, AM)</p> <p>0.35 µV TYP (30-54 MHz, NFM)</p> <p>0.5 µV TYP (54-76 MHz, NFM)</p> <p>0.5 µV TYP (54-59 MHz, NFM, US version)</p> <p>1.0 µV TYP (76-108 MHz, WFM)</p> <p>1.0 µV TYP (59-108 MHz, WFM, US version)</p> <p>1.5 µV TYP (108-137 MHz, AM)</p> <p>0.2 µV (137-140 MHz, NFM)</p> <p>0.16 µV (140-150 MHz, NFM)</p> <p>0.2 µV (150-174 MHz, NFM)</p> <p>0.5 µV TYP (174-250 MHz, WFM)</p> <p>0.5 µV (300-350 MHz, NFM)</p> <p>0.2 µV (350-420 MHz, NFM)</p> <p>0.18 µV (420-470 MHz, NFM)</p> <p>1.0 µV (470-540 MHz, WFM)</p> <p>1.0 µV TYP (580-800 MHz, WFM)</p> <p>0.5 µV TYP (800-999.990 MHz, NFM)</p> <p>US version Cellular Blocked</p>	
Selectivity	NFM, AM 12 kHz / 35 kHz (-6 dB / -60 dB)		NFM, AM 12 kHz / 35 kHz (-6 dB / -60 dB)		NFM, AM 12 kHz / 35 kHz (-6 dB / -60 dB)		NFM, AM 12 kHz / 35 kHz (-6 dB / -60 dB) WFM 200 kHz / 300 kHz (-6 dB / -20 dB)	
AF Output	700 mW @ 10 % THD Internal SP 300 mW @ 10 % THD EXT SP jack		200 mW @ 10 % THD (@ 7.4 V) 400 mW @ 10 % THD (@ 13.8V)		200 mW @ 10 % THD (@ 7.4 V) 400 mW @ 10 % THD (@ 13.8V)		200 mW @ 10 % THD (@ 7.4 V) 400 mW @ 10 % THD (@ 13.8V)	
AF Output Impedance	8 Ω		8 Ω		8 Ω		8 Ω	

VX-3R	VX-3E	FT-60R	FT-60E	FT-270R	FT-270E	VR-160	VR-120D
General							
RX: 0.5-1.8 MHz (AM Radio) 1.8 - 30 MHz (SW Radio) 30 - 59 MHz 50 MHz HAMt US version 30 - 76 MHz (50 MHz HAM) 59 - 108 MHz (FM Radio: US Version) 76 - 108 MHz (FM Radio) 108 - 137 MHz (Air Band) 137 - 174 MHz (144 MHz HAM) 174 - 222 MHz (VHF) 222 - 420 MHz (ACT1) 420 - 470 MHz (430 MHz HAM) 470 - 774 MHz (UHF-TV: US version) 470 - 800 MHz (UHF) 800 - 999 MHz (GEN2: US version Cellular Blocked) TX: 144 - 148 MHz 430 - 450 MHz	RX: 0.5-1.8 MHz (AM Radio) 1.8 - 30 MHz (SW Radio) 30 - 76 MHz (50 MHz HAM) 76 - 108 MHz (FM Radio) 108 - 137 MHz (Air Band) 137 - 174 MHz (144 MHz HAM) 174 - 222 MHz (VHF) 222 - 420 MHz (ACT1) 420 - 470 MHz (430 MHz HAM) 470 - 800 MHz (UHF) 800 - 999 MHz (General 2) TX: 144 - 146 MHz 430 - 440 MHz	RX: 108 - 137 MHz (Air Band) 137 - 520 MHz (AM/FM) 700 - 999 MHz (FM, US version Cellular Blocked) TX: 144 - 148 MHz 430 - 450 MHz	RX: 108 - 137 MHz (Air Band) 137 - 520 MHz (AM/FM) 700 - 999 MHz (FM) TX: 144 - 146 MHz 430 - 440 MHz	RX: 136-174 MHz TX: 144 - 148 MHz	RX: 136-174 MHz TX: 144 - 146 MHz	Normal Band 100 kHz - 1.8 MHz (BC Band) 1.8 MHz - 30 MHz (SW Radio) 30 - 76 MHz (50 MHz HAM) 76 - 108 MHz (FM Radio) 108 - 137 MHz (Air Band) 137 - 174 MHz (144 MHz HAM) 174 - 222 MHz (VHF) 222 - 420 MHz (General 1) 420 - 470 MHz (430 MHz HAM) 470 - 800 MHz (UHF) 800 - 1000 MHz (General 2) 1000 - 1299.975 MHz (1.2 GHz HAM) Radio Band 504 kHz - 1.795 MHz (AM Broadcast) 76 - 107.95 MHz (WFM Broadcast)	100 kHz - 1299.99 MHz Cellular / Image / restricted frequencies Blocked
5, 8.33, 9, 10, 12.5, 15, 20, 25, 50, 100 kHz	5, 10, 12.5, 15, 20, 25, 50, 100 kHz	5, 10, 12.5, 15, 20, 25, 50, 100 kHz	5, 10, 12.5, 15, 20, 25, 50, 100 kHz	5, 10, 12.5, 15, 20, 25, 50, 100 kHz	5, 8.33, 9, 10, 12.5, 15, 20, 25, 50, 100 kHz	5, 6.25, 9, 10, 12.5, 15, 20, 25, 50, 100 kHz	5, 6.25, 9, 10, 12.5, 15, 20, 25, 50, 100 kHz
±5 ppm (+14°F to + 122°F, -10°C to + 50°C)	±5 ppm (+14°F to + 140°F, -10°C to + 60°C)	±5 ppm (+14°F to + 140°F, -10°C to + 60°C)	±5 ppm (+14°F to + 140°F, -10°C to + 60°C)	±5 ppm (+14°F to + 140°F, -10°C to + 60°C)	±5 ppm (+14°F to + 140°F, -10°C to + 60°C)	±5 ppm (+14°F to + 140°F, -10°C to + 60°C)	±5 ppm (+14°F to + 140°F, -10°C to + 60°C)
F2D, F3E, F2A	F2D, F3E	F2D, F3E	F2D, F3E	F2D, F3E	—	—	—
Nominal 3.7 V DC (Negative Ground) Operating 3.6 - 7 V DC (EXT DC jack) 5.0 - 7 V DC (EXT DC jack while Charging)	Nominal 7.2 V DC (Negative Ground) Operating 6.0 - 16 V DC (EXT DC jack) 11- 16 V DC (EXT DC jack while Charging)	Nominal 7.2 V DC (Negative Ground) Operating 6.0 - 16 V DC (EXT DC jack)	Nominal 7.2 V DC (Negative Ground) Operating 6.0 - 16 V DC (EXT DC jack)	Nominal 3.7 V DC, FNB-82LI Battery Operation 6.0 V DC, PA-46C/UAC Adapter Operation Operating 3.5 - 7.0 V, Negative Ground (EXT DC Jack)	Nominal 3.0 V DC 2.2 - 3.5 V DC: Internal Battery 5.5 - 10.0 V DC: EXT DC	Nominal 3.0 V DC 2.2 - 3.5 V DC: Internal Battery 5.5 - 10.0 V DC: EXT DC	Nominal 3.0 V DC 2.2 - 3.5 V DC: Internal Battery 5.5 - 10.0 V DC: EXT DC
120 mA (Receive) 60 mA (Standby, Saver Off) 30 mA (Standby, Saver On, Save Ratio 1:2) 50 mA (Radio Band Receive) 100 µA (Auto Power Off) 1.3 A (TX, 144 MHz 1.5 W) @3.7 V DC 1.6 A (TX, 144 MHz 3.0 W) @6 V DC 1.2 A (TX, 430 MHz 1.0 W) @3.7 V DC 1.8 A (TX, 430 MHz 2.0 W) @6 V DC	125 mA (Receive) 45 mA (Standby, Saver Off: 144MHz) 47 mA (Standby, Saver Off: 430MHz) 19 mA (Standby, Saver On) 0.8 mA (Auto Power Off) 1.5 A (TX, 144 MHz 5.0 W) @7.2 V DC 1.6 A (TX, 430 MHz 5.0 W) @7.2 V DC	165 mA (Receive) 200mW Output 45 mA (Standby, Saver Off) 20.5 mA (Standby, Saver On) 8 mA (Auto Power Off) 1.5 A (TX, 5.0 W) @7.2 V DC	Maximum Current: 800 mA (3.5 - 7 VDC) with Charging 140 mA (Receive, Normal Band, VOL level: 20) 100 mA (Receive, Radio Band, VOL level: 20) 58 mA (Standby, Saver Off) 20 mA (Standby, Saver On) 300 µA (Auto Power Off)	95 mA (Receive, 50mW Output) 55 mA (Standby, Saver Off) 15 mA (Standby, Saver On, Save Ratio 1:4)			
-4°F to + 140°F, -20°C to + 60°C	-4°F to + 140°F, -20°C to + 60°C	-4°F to + 140°F, -20°C to + 60°C	-4°F to + 140°F, -20°C to + 60°C	-4°F to + 140°F, -20°C to + 60°C	-4°F to + 140°F, -20°C to + 60°C	+14°F to + 122°F, -10°C to + 50°C	+14°F to + 122°F, -10°C to + 50°C
1.9" x 3.2" x 0.9" (47 x 81 x 23 mm)	2.3" x 4.3" x 1.2" (58 x 109 x 30 mm)	2.4" x 4.7" x 1.3" (60 x 120 x 32 mm)	2.4" x 4.7" x 1.3" (60 x 120 x 32 mm)	47 x 81 x 23 mm (w/ FNB-82LI) 47 x 81 x 31 mm (w/ FBA-37)	59 x 85 x 26 mm	195 g with Battery & antenna	195 g with Battery & antenna
4.6 oz (130 g) with FNB-82LI & antenna	13.05 oz (370 g) with FNB-83 & antenna	13.8 oz (390 g) with FNB-83 & antenna	13.8 oz (390 g) with FNB-83 & antenna	130 g (w/ FNB-82LI & antenna) 185 g (w/ FBA-37 & antenna)			
Transmitter							
1.5 W (144 MHz) @4.5 V: AA x 3 or 3.7 V FNB-82LI 3.0 W (144 MHz) @6 V or EXT DC 1.0 W (430 MHz) @4.5 V: AA x 3 or 3.7 V FNB-82LI 2.0 W (430 MHz) @6 V or EXT DC Low 0.1 W: @4.5 V: AA x 3 or 3.7 V FNB-82LI Low 0.3 W: @6 V or EXT DC	High 5.0 W @7.2 V: FNB-83 Mid 2.0 W @7.2 V: FNB-83 Low 0.5 W @7.2 V: FNB-83	High 5.0 W @7.2 V: FNB-83 Mid 2.0 W @7.2 V: FNB-83 Low 0.5 W @7.2 V: FNB-83	—	—	—	—	—
At least 60 dB below (@ TX power : HIGH) At least 50 dB below (@ TX power : LOW or less than 1 W)	At least 60 dB below (@ TX power : High/Mid) At least 40 dB below (@ TX power : Low)	At least 60 dB below (@ TX power : High/Mid) At least 40 dB below (@ TX power : Low)	At least 60 dB below (@ TX power : High/Mid) At least 40 dB below (@ TX power : Low)	—	—	—	—
2 kΩ	2 kΩ	2 kΩ	2 kΩ	—	—	—	—
Receiver							
NFM / AM: Double-Conversion WFM: Triple-Conversion AM / FM Radio: Single-Conversion	Double-Conversion	Double-Conversion	Double-Conversion	NFM / AM: Double-Conversion WFM: Triple-Conversion FM / AM Radio: Single-Conversion	Triple-Conversion		
1st: 47.25 MHz (NFM, AM), 45.80 MHz (WFM), 130 kHz (AM/FM Radio) 2nd: 450 kHz (NFM, AM), 10.7 MHz (WFM) 3rd: 1 MHz (WFM)	1st: 47.25 MHz 2nd: 450 kHz	1st: 21.7 MHz 2nd: 450 kHz	1st: 21.7 MHz 2nd: 450 kHz	NFM, AM 1st: 47.25 MHz 2nd: 450 kHz WFM 1st: 45.8 MHz 2nd: 10.7 MHz 3rd: 1 MHz AM/FM Radio 1st: 30 kHz	1st: 248.45 MHz 2nd: 15 MHz 3rd: 450 kHz		
3.0 µV (0.5 - 1.8 MHz, AM) 3.0 µV (0.5 - 30 MHz, AM) 0.35 µV TYP (30 - 54 MHz, NFM) 1.0 µV TYP (54 - 76 MHz, NFM) 3.0 µV TYP (76 - 108 MHz, WFM) 1.5 µV TYP (108 - 137 MHz, AM) 0.2 µV (137 - 140 MHz, NFM) 0.16 µV (140 - 150 MHz, NFM) 0.2 µV (150 - 174 MHz, NFM) 1.0 µV TYP (174 - 225 MHz, NFM) 0.5 µV (300 - 350 MHz, NFM) 0.2 µV (350 - 400 MHz, NFM) 0.18 µV (400 - 470 MHz, NFM) 1.5 µV (470 - 540 MHz, WFM) 3.0 µV TYP (540 - 800 MHz, WFM) 1.5 µV TYP (800 - 999 MHz, NFM) US version Cellular Blocked	0.8 µV (108 - 137 MHz, AM) 0.2 µV (137 - 140 MHz, NFM) 0.16 µV (140 - 150 MHz, NFM) 0.2 µV TYP (150 - 174 MHz, NFM) 0.3 µV TYP (174 - 300 MHz, NFM) 0.8 µV TYP (300 - 336 MHz, AM) 0.25 µV TYP (336 - 420 MHz, NFM) 0.2 µV (420 - 470 MHz, NFM) 0.25 µV (470 - 540 MHz, WFM) 0.5 µV TYP (800 - 900 MHz, NFM) 0.8 µV TYP (900 - 999.99 MHz, NFM) US version Cellular Blocked	0.2 µV (136 - 140 MHz, NFM) 0.16 µV (140 - 150 MHz, NFM) 0.2 µV TYP (150 - 174 MHz, NFM)	1.0 µV (0.1 - 0.5 MHz, NFM) 1.0 µV (0.5 - 1.8 MHz, AM Radio) 1.0 µV (1.8 - 30 MHz, AM) 0.35 µV TYP (30 - 54 MHz, NFM) 0.5 µV TYP (54 - 76 MHz, NFM) 1.0 µV TYP (76 - 108 MHz, WFM) 0.5 µV TYP (108 - 137 MHz, AM) 0.2 µV (137 - 140 MHz, NFM) 0.16 µV (140 - 150 MHz, NFM) 0.2 µV (150 - 174 MHz, NFM) 1.0 µV TYP (174 - 222 MHz, WFM) 1.0 µV TYP (222 - 250.4 MHz, AM) 0.35 µV TYP (250.4 - 300 MHz, NFM) 0.5 µV (300 - 350 MHz, NFM) 0.2 µV (350 - 400 MHz, NFM) 0.18 µV (400 - 470 MHz, NFM) 1.0 µV (470 - 540 MHz, WFM) 1.5 µV TYP (540 - 800 MHz, WFM) 0.5 µV TYP (800 - 1000 MHz, NFM) 0.7 µV TYP (1000 - 1300 MHz, NFM)	1.5 µV TYP (200 kHz - 5 MHz AM) 0.6 µV TYP (5 MHz - 160 MHz AM) 0.3 µV TYP (5 MHz - 160 MHz NFM) 0.9 µV TYP (5 MHz - 160 MHz WFM) 0.6 µV TYP (160 MHz - 370 MHz AM) 0.3 µV TYP (160 MHz - 370 MHz NFM) 0.6 µV TYP (160 MHz - 370 MHz WFM) 0.3 µV TYP (370 MHz - 520 MHz NFM) 1.0 µV TYP (370 MHz - 520 MHz WFM) 0.7 µV TYP (520 MHz - 1300 MHz NFM) 3.0 µV TYP (520 MHz - 1300 MHz WFM)			
NFM, AM 12 kHz / 35 kHz (-6 dB / -60 dB) WFM 200 kHz / 300 kHz (-6 dB / -20 dB)	NFM, AM 12 kHz / 35 kHz (-6 dB / -60 dB)	12 kHz / 35 kHz (-6 dB / -60 dB)	12 kHz / 35 kHz (-6 dB / -60 dB)	NFM, AM 12 kHz / 35 kHz (-6 dB / -60 dB) WFM 200 kHz / 300 kHz (-6 dB / -60 dB)	NFM, AM 16 kHz (-6 dB) WFM 200 kHz (-6 dB)		
50 mW @ 10 % THD (@ 3.7 V) 100 mW @ 10 % THD (@ 6.0V)	400 mW @ 10 % THD (@ 7.5 V)	800 mW @ 16 Ω 10 % THD (@ 7.4 V) Internal SP 450 mW @ 8 Ω 10 % THD (@ 7.4V) EXT SP jack	800 mW @ 16 Ω 10 % THD (@ 7.4 V) Internal SP 450 mW @ 8 Ω 10 % THD (@ 7.4V) EXT SP jack	50 mW @ 10 % THD (@ 4.5 V) 100 mW @ 10 % THD (@ 6 V)	80 mW @ 8 % THD		
8 Ω	8 Ω	8 Ω/16 Ω	8 Ω/16 Ω	8 Ω	8 Ω		

Mobile Transceivers

	FTM-400XDR	FTM-400XDE	FTM-100DR	FTM-100DE	FTM-3200DR FTM-3100R	FTM-3200DE FTM-3100E
General						
Frequency Ranges	RX: 108 - 137 MHz 137 - 174 MHz 174 - 400 MHz 400 - 480 MHz 480 - 999.99 MHz US Version Cellular Blocked TX: 144 - 148 MHz 430 - 450 MHz	RX: 108 - 137 MHz 137 - 174 MHz 174 - 400 MHz 400 - 480 MHz 480 - 999.99 MHz TX: 144 - 146 MHz 430 - 440 MHz	RX: 108 - 137 MHz 137 - 174 MHz 174 - 400 MHz 400 - 480 MHz 480 - 999.99 MHz US Version Cellular Blocked TX: 144 - 148 MHz 430 - 450 MHz	RX: 108 - 137 MHz 137 - 174 MHz 174 - 400 MHz 400 - 480 MHz 480 - 999.99 MHz TX: 144 - 146 MHz 430 - 440 MHz	RX: 136 - 174 MHz TX: 144 - 148 MHz	RX: 136 - 174 MHz TX: 144 - 146 MHz
Channel Steps	5, 6.25, 8.33, 10, 12.5, 15, 20, 25, 50, 100 kHz (8.33 kHz : Only for Air band)		5, 6.25, 8.33, 10, 12.5, 15, 20, 25, 50, 100 kHz (8.33 kHz : Only for Air band)		5, 6.25, 10, 12.5, 15, 20, 25, 50, 100 kHz	
Frequency Stability	±2.5 ppm (-4°F to + 140°F, -20°C to + 60°C)		±2.5 ppm (-4°F to + 140°F, -20°C to + 60°C)		±2.5 ppm (Digital), ±10 ppm (Analog) (-4°F to + 140°F, -20°C to + 60°C)	
Supply Voltage	Nominal 13.8 V DC, Negative Ground Operating 11.7 - 15.8 V DC, Negative Ground		Nominal 13.8 V DC, Negative Ground Operating 11.7 - 15.8 V DC, Negative Ground		Nominal 13.8 V DC, Negative Ground Operating 11.7 - 15.8 V DC, Negative Ground	
Current Consumption	0.5 A (Receive) 11 A (TX, 144 MHz 50 W), 12 A (TX, 430 MHz 50 W)		0.5 A (Receive) 11 A (TX, 144 MHz 50 W), 12 A (TX, 430 MHz 50 W)		0.5 A (Receive) 15 A (TX, 65 W), 10 A (30 W), 5 A (5 W)	
Operating Temperature	-4°F to + 140°F, -20°C to + 60°C		-4°F to + 140°F, -20°C to + 60°C		-4°F to + 140°F, -20°C to + 60°C	
Case Size (WxHxD)	Radio Unit / 5.5" x 1.6" x 4.9" (140 x 40 x 125 mm) (W/O Fan & connectors) Controller / 5.5" x 2.8" x 0.8" (140 x 72 x 20 mm) (W/O knob & connectors)		5.5" x 1.8" x 6.5" (140 x 45 x 164 mm) (with Front Panel, W/O Fan, knob & connectors) Front Panel / 5.5" x 1.8" x 1.2" (140 x 45 x 29 mm) (W/O knob)		Radio Unit / 6.1" x 1.7" x 6.1" (154 x 43 x 155 mm) (W/O Fan & knob)	
Weight	2.64 lbs (1.2 kg) with Radio Unit, Controller, Control Cable		2.43 lbs (1.1 kg) with Radio Unit, Front panel		2.86 lbs (1.3 kg)	
Transmitter						
RF Power Output	50 / 20 / 5 W		50 / 20 / 5 W		65 / 30 / 5 W	
Spurious Emission	At least 60 dB below		At least 60 dB below		At least 60 dB below	At least 60 dB below At least 61.1 dB below (65 W)
Microphone Impedance	2 kΩ		2 kΩ		2 kΩ	
Receiver						
Sensitivity	0.8 μV TYP (108 - 137 MHz, AM) 0.2 μV (137 - 140 MHz, FM) 0.2 μV (140 - 150 MHz, FM) 0.19 μV TYP (140 - 150 MHz, Digital Mode) 0.25 μV (150 - 174 MHz, FM) 0.3 μV TYP (174 - 222 MHz, FM) 0.25 μV TYP (222 - 300 MHz, FM) 0.8 μV TYP (300 - 336 MHz, AM) 0.25 μV (336 - 420 MHz, FM) 0.2 μV (420 - 470 MHz, FM) 0.19 μV TYP (420 - 470 MHz, Digital Mode) 0.2 μV (470 - 520 MHz, FM) 0.4 μV TYP (800 - 900 MHz, FM) 0.8 μV TYP (900 - 999.99 MHz, FM) US Version Cellular Blocked		0.8 μV TYP (108 - 137 MHz, AM) 0.2 μV (137 - 140 MHz, FM) 0.2 μV (140 - 150 MHz, FM) 0.19 μV TYP (140 - 150 MHz, Digital Mode) 0.25 μV (150 - 174 MHz, FM) 0.3 μV TYP (174 - 222 MHz, FM) 0.25 μV TYP (222 - 300 MHz, FM) 0.8 μV TYP (300 - 336 MHz, AM) 0.25 μV (336 - 420 MHz, FM) 0.2 μV (420 - 470 MHz, FM) 0.19 μV TYP (420 - 470 MHz, Digital Mode) 0.2 μV (470 - 520 MHz, FM) 0.4 μV TYP (800 - 900 MHz, FM) 0.8 μV TYP (900 - 999.99 MHz, FM) US Version Cellular Blocked		0.2 μV (FM Narrow) 0.22 μV (FM Wide) 0.22 μV (Digital : FTM-3200DR)	0.2 μV (FM Narrow) 0.22 μV (FM Wide) 0.22 μV (Digital : FTM-3200DE)
Selectivity	NFM, AM 12 kHz / 30 kHz (-6 dB / -60 dB)		NFM, AM 12 kHz / 30 kHz (-6 dB / -60 dB)		12 kHz / 28 kHz (-6 dB / -60 dB)	
AF Output	3 W @ 8 Ω for 10 % THD (@ 13.8 V) Internal Speaker 8 W @ 4 Ω for 10 % THD (@ 13.8 V) External Speaker		3 W @ 8 Ω for 10 % THD (@ 13.8 V) Internal Speaker 8 W @ 4 Ω for 10 % THD (@ 13.8 V) External Speaker		3 W @ 4 Ω for 10 % THD (@ 13.8 V)	

Mobile Transceivers

	FT-8900R	FT-7900R	FT-7900E	FT-2900R	FT-2900E
General					
Frequency Ranges	RX: 28 - 29.7 MHz 50 - 54 MHz 108 - 180 MHz 320 - 480 MHz 700 - 985 MHz US Version Cellular Blocked TX: 28 - 29.7 MHz 50 - 54 MHz 144 - 148 MHz or 144 - 146 MHz 430 - 450 MHz or 430 - 440 MHz	RX: 108 - 520 MHz 700 - 999 MHz US Version Cellular Blocked TX: 144 - 148 MHz 430 - 450 MHz	RX: 108 - 520 MHz 700 - 999 MHz TX: 144 - 146 MHz 430 - 440 MHz	RX: 136 - 174 MHz TX: 144 - 148 MHz	RX: 136 - 174 MHz TX: 144 - 146 MHz
Channel Steps	5, 10, 12.5, 15, 20, 25, 50 kHz	5, 10, 12.5, 15, 20, 25, 50, 100 kHz		5, 10, 12.5, 15, 20, 25, 50, 100 kHz	
Frequency Stability	±5 ppm (+14°F to +140°F, -10°C to +60°C)	±5 ppm (+14°F to +140°F, -10°C to +60°C)		±10 ppm (-4°F to +140°F, -20°C to +60°C)	
Supply Voltage	Nominal 13.8 V DC, Negative Ground Operating 11.7 - 15.8 V DC, Negative Ground	Nominal 13.8 V DC, Negative Ground Operating 11.7 - 15.8 V DC, Negative Ground		Nominal 13.8 V DC, Negative Ground Operating 11.7 - 15.8 V DC, Negative Ground	
Current Consumption	0.8 A (Receive) 8.5 A (TX, 29/144 MHz 50W) 8 A (TX, 50 MHz 50W/430 MHz 35W)	0.5 A (Receive) 8.5 A (TX, 144 MHz 50 W) 9 A (TX, 430 MHz 45 W)		0.7 A (Receive) 15 A (75W) / 9 A (30 W) / 5 A (10 W) / 4 A (5 W)	
Operating Temperature	-4°F to +140°F, -20°C to +60°C	-4°F to +140°F, -20°C to +60°C		-4°F to +140°F, -20°C to +60°C	
Case Size (WxHxD)	5.5" x 1.6" x 6.6" (140 x 41.5 x 168 mm) (W/O knob & connectors)	5.5" x 1.6" x 6.6" (140 x 41.5 x 168 mm) (W/O knob & connectors)		6.3" x 2.0" x 7.3" (160 x 50 x 185 mm) (W/O knob & connectors)	
Weight	2.2 lbs (1 kg)	2.2 lbs (1 kg)		4.2 lbs (1.9 kg)	
Transmitter					
RF Power Output	50 / 20 / 10 / 5 W (29/50/144 MHz) 35 / 20 / 10 / 5 W (430 MHz)	50 / 20 / 10 / 5 W (144 MHz) 45 / 20 / 10 / 5 W (430 MHz)		75 / 30 / 10 / 5 W	
Spurious Emission	At least 60 dB below (29MHz : At least 50 dB below)	At least 60 dB below		At least 60 dB below	
Microphone Impedance	2 kΩ	2 kΩ		2 kΩ	
Receiver					
Sensitivity <small>* Measurement Method AM Mode : 10 dB SN FM Mode : 12 dB SINAD Digital Mode : BER 1%</small>	0.2 μV (FM)	0.2 μV (FM)		0.4 μV (FM)	
Selectivity	12 kHz / 30 kHz (-6 dB / -60 dB)	12 kHz / 30 kHz (-6 dB / -60 dB)		12 kHz / 28 kHz (-6 dB / -60 dB)	
AF Output	2 W @ 8 Ω for 5 % THD (@ 13.8 V)	2 W @ 8 Ω for 5 % THD (@ 13.8 V)		3 W @ 4 Ω for 10 % THD (@ 13.8 V)	

Digital Repeaters

	DR-2X	DR-2XE	DR-1X	DR-1XE		DR-2X	DR-2XE	DR-1X	DR-1XE
General					Transmitter				
Frequency Ranges	144 - 148 MHz 430 - 450 MHz	144 - 146 MHz 430 - 440 MHz	144 - 148 MHz 430 - 450 MHz	144 - 146 MHz 430 - 440 MHz	RF Power Output	50/20/5 W		50/20/5 W	
Emission Type	F1D, F2D, F3E, F7W		F1D, F2D, F3E, F7W		Modulation Type	F1D, F2D, F3E: Variable Reactance Modulation F7W: 4FSK (C4FM)		F1D, F2D, F3E: Variable Reactance Modulation F7W: 4FSK (C4FM)	
Frequency Stability	±2.5 ppm (-4°F to +140°F, -20°C to +60°C)		±2.5 ppm (-4°F to +140°F, -20°C to +60°C)		Spurious Emission	At least 60 dB below		At least 60 dB below	
Antenna Impedance	50 Ω		50 Ω		Receiver				
Supply Voltage	AC 100 - 240 V DC 11.7 - 15.8 V, negative ground	DC 11.7 - 15.8 V, negative ground	AC 100 - 240 V DC 11.7 - 15.8 V, negative ground	DC 11.7 - 15.8 V, negative ground	Circuit Type	Double conversion super-heterodyne		Double conversion super-heterodyne	
Operating Temperature	-20 to +140°F (-20°C to +60°C)	-20 to +131°F (-20°C to +55°C)	-20 to +140°F (-20°C to +60°C)	-20 to +131°F (-20°C to +55°C)	Intermediate Frequencies	1st: 47.25 MHz, 2nd: 450 kHz		1st: 47.25 MHz, 2nd: 450 kHz	
Dimensions (WxHxD)	19" x 3.5" x 15" (482 x 88 x 380 mm)		19" x 3.5" x 15" (482 x 88 x 380 mm)		Receiver Sensitivity	0.3 μV (Digital 2 m/70 cm) BER 1% 0.2 μV (FM 2 m/70 cm) 12 dB SINAD		0.3 μV (Digital 2 m/70 cm) BER 1% 0.2 μV (FM 2 m/70 cm) 12 dB SINAD	
Weight (approx.)	21.12 lbs (9.6 kg)	19.14 lbs (8.7 kg)	22.05 lbs (10 kg)	19.40 lbs (8.8 kg)	Adjacent Channel Selectivity	Better than 65 dB TYP (20 kHz offset)		Better than 65 dB TYP (20 kHz offset)	
					Selectivity	FM 12 kHz/35 kHz (-6 dB / -60 dB)		FM 12 kHz/35 kHz (-6 dB / -60 dB)	
					Intermodulation	Better than 65 dB TYP (20/40 kHz offset)		Better than 65 dB TYP (20/40 kHz offset)	
					Audio Output	4 W @ 4 Ω for 10 % THD (@ 13.8 V) Internal Speaker		4 W @ 4 Ω for 10 % THD (@ 13.8 V) Internal Speaker	

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