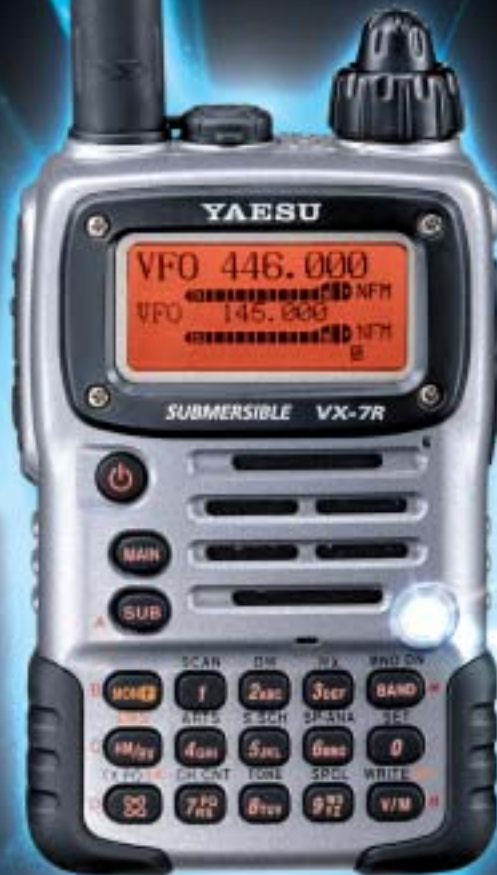


50/144/430 MHz 5W FM Transceiver

# VX-7R

## ULTRA-RUGGED, SUBMERSIBLE TRI-BAND MAGNESIUM HANDIE



The Brightest Star in the Ham Radio Galaxy

 **YAESU**  
Choice of the World's top DX'ers<sup>SM</sup>

Actual Size

## And Much, Much More...

- 16-digit, 9-memory DTMF
- Auto-dialer
- Automatic



Repeater Shift (ARS) ●Battery-saving Auto Power Off feature (APO) ●Transmit Time-Out Timer (TOT) ●TX Battery Saver to reduce power during local QSOs ●Two-channel Dual Watch with 5-second polling ●Keypad/Dial Lockout capability ●Easy-to-use Menu customization of many functions ●Battery Voltage Meter ●Vox operation (Required VC-27) ●Cloning capability between VX-7Rs ●Easy interface to Packet TNCs (using optional CT-91 Mic Adapter)



### Innovative Multi-section Antenna!

When operating on 144 and 430 MHz, use the bottom section of the supplied antenna. For operation on 50 MHz, simply screw on the antenna extension element and you're ready for DX action!

Antenna Jack

LCD (Display)

PTT Switch

Monitor/Burst Switch

Power Switch

MAIN, SUB Switches

MON, Function

Internet Key

MIC/SP Jack

Volume Control

Dial

External DC Jack

Microphone

Speaker

Strobe

Band Switch

V/M Switch

## General

### Frequency Ranges:

MAIN Rx: 0.5-1.8 MHz (BC Band)  
1.8-30 MHz (SVB Band)  
30-59 MHz (50 MHz HAM: USA version)  
30-76 MHz (50 MHz HAM: EXP version)  
59-108 MHz (FM: USA version)  
76-108 MHz (FM: EXP version)  
108-137 MHz (Air Band)  
137-174 MHz (144 MHz HAM)  
174-222 MHz (VHF-TV)  
222-225 MHz (222 MHz HAM: USA version)  
222-420 MHz (ACT1: Action Band 1: USA version)  
222-420 MHz (ACT1: Action Band 1: EXP version)  
420-470 MHz (430 MHz HAM)  
470-729 MHz (UHF-TV: USA version)  
470-800 MHz (UHF-TV: EXP version)  
800-999 MHz (ACT2: Action Band 2: cellular Blocked)  
SUB Rx: 50-54 MHz, 137-174 MHz, 420-470 MHz  
Tx: 50-54 MHz (MAIN & SUB)  
144-146 MHz or 144-148 MHz (MAIN & SUB)  
222-225 MHz (MAIN, USA version)  
430-440 MHz or 430-450 MHz (MAIN & SUB)  
Channel Steps: 5/9/10/12.5/15/20/25/50/100 kHz  
Frequency Stability:  $\pm 5$  ppm ( $-10^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ ;  $-14^{\circ}\text{F}$  to  $+122^{\circ}\text{F}$ )  
Repeater Shift:  $\pm 600$  kHz (144 MHz),  $\pm 1.6$  MHz (222 MHz USA version),  $\pm 1.6/5.0/7.6$  MHz (430 MHz)  
Emission Type: AS2F2F3  
Antenna Impedance: 50 Ohms  
Supply Voltage: Nominal: 7.4 VDC, Negative Ground  
Operating: 6-16 VDC, Negative Ground (EXT DC Jack)  
Current Consumption: 200 mA (Mono Band Receive, Standby, Saver Off)  
67 mA (Mono Band Receive, Standby, Saver Off)  
100 mA (Dual Band Receive, Standby, Saver Off)

## Specifications

28 mA (Mono Band Receive, Standby, Saver On (Saver Ratio 1:5))  
34 mA (Dual Band Receive, Standby, Saver On (Saver Ratio 1:5))  
200  $\mu\text{A}$  (Auto Power Off)  
1.6 A (50 MHz, 5 WTX)  
1.7 A (144 MHz, 5 WTX)  
1.0 A (220 MHz, 0.3 WTX/USA version)  
1.9 A (430 MHz, 5 WTX)  
Operating Temperature:  $-4^{\circ}\text{F}$  to  $+140^{\circ}\text{F}$  ( $-20^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$ )  
Case Size (W x H x D): 2.4 x 3.5 x 1.1 inch (60 x 80 x 26.5 mm) w/ knob & antenna  
Weight (Approx.): 9.2 oz (260 g) with FNB-80LI & antenna  
Transmitter  
RF Power Output: 5.0 W (@7.4 V & 13.8 V EXT DC IN)  
0.3 W (@7.4 V & 13.8 V EXT DC IN, 222 MHz USA version)  
1.0 W (@7.4 V & 13.8 V EXT DC IN, 50 MHz AM)  
Modulation Type: F2, F3: Variable Reactance (MAIN & SUB)  
A3: Low Level Amplitude Modulation (MAIN, 50 MHz)  
Maximum Deviation:  $\pm 5$  kHz F2/F3  
Spurious Emission: At least 60 dB down (@ Tx HI/L3)  
At least 50 dB down (@ Tx L2/L1)  
Microphone Impedance: 2K Ohms  
Receiver  
Circuit Type: N-FM, AM: Double-Conversion Superheterodyne  
W-FM: Triple-Conversion Superheterodyne  
IF: MAIN Rx  
1st: 47.25 MHz (N-FM, AM), 45.8 MHz (W-FM)  
2nd: 450 kHz (N-FM, AM), 10.7 MHz (W-FM)  
3rd: 1 MHz (W-FM)  
SUB Rx  
1st: 46.35 MHz  
2nd: 450 kHz

### Sensitivity:

MAIN Rx: 3.0  $\mu\text{V}$  for 10 dB S/N (0.5-30 MHz, AM)  
0.5  $\mu\text{V}$  (TYP) for 12 dB SINAD (30-50, N-FM)  
0.16  $\mu\text{V}$  for 12 dB SINAD (50-54, N-FM)  
1.0  $\mu\text{V}$  (TYP) for 12 dB SINAD (57-76, N-FM)  
0.2  $\mu\text{V}$  for 12 dB SINAD (137-140, N-FM)  
1.5  $\mu\text{V}$  (TYP) for 10 dB S/N (108-137, AM)  
0.2  $\mu\text{V}$  for 12 dB SINAD (140-150, N-FM)  
0.16  $\mu\text{V}$  for 12 dB SINAD (150-174, N-FM)  
0.2  $\mu\text{V}$  for 12 dB SINAD (174-225, N-FM)  
0.5  $\mu\text{V}$  for 12 dB SINAD (300-350, N-FM)  
0.2  $\mu\text{V}$  for 12 dB SINAD (350-400, N-FM)  
0.18  $\mu\text{V}$  for 12 dB SINAD (400-470, N-FM)  
0.35  $\mu\text{V}$  for 12 dB SINAD (470-540, W-FM)  
3.0  $\mu\text{V}$  (TYP) for 12 dB SINAD (540-800, W-FM)  
1.0  $\mu\text{V}$  (TYP) for 12 dB SINAD (800-999, N-FM) (Cellular Blocked/USA version)  
SUB Rx: 0.18  $\mu\text{V}$  for 12 dB SINAD (50-54, N-FM)  
0.18  $\mu\text{V}$  for 12 dB SINAD (137-174, N-FM)  
0.2  $\mu\text{V}$  for 12 dB SINAD (420-470, N-FM)  
Selectivity: 12 kHz/25 kHz (-60dB-60dB, N-FM, AM)  
200 kHz/300 kHz (-60dB-20dB, W-FM)  
AF Output: 200 mW @ 8 Ohms for 10% THD (@ 7.4 V DC)  
400 mW @ 8 Ohms for 10% THD (@ 13.8 V DC)

Specifications are subject to change without notice, and are guaranteed within the amateur bands only.

●Supplied Accessories: AC Adapter NC-72B/C\*, Lithium-ion Battery Pack FNB-80LI, Antenna, Belt Clip

## AC Adapter

NC-72B/C\*



The NC-72B/C\* may be plugged directly into the VX-7R for charging of the FNB-80LI Battery Pack. When used with the optional CD-15A Quick Charger, charge time is only about 2.5 hours!

## Options

 <b>CMP460A</b> Waterproof Speaker / Microphone	 <b>MH-57A4B</b> Speaker / Microphone	 <b>VC-27</b> Earpiece / Microphone (Vox operation available)
 <b>CN-3</b> BNC-to-SMA Adapter	 <b>SU-1</b> Barometric Pressure Sensor Unit	 <b>E-DC-5B</b> DC Cable w/Noise Filter
 <b>CT-91</b> Microphone Adapter	 <b>FBA-23</b> 2 x "AA" Cell Battery Case (batteries not supplied)	 <b>CSC-88</b> Soft Case
 <b>CD-15A</b> Rapid Charger (Requires NC-72B/C*)	 <b>E-DC-6</b> DC Cable; plug and wire only	 <b>FNB-80LI (spare)</b> Lithium-ion Battery Pack (7.4 V/1,300 mAh)

\*B for 120 VAC / C for 240 VAC

About this brochure: we have made this brochure as comprehensive and factual as possible. We reserve the right, however, to make changes at any time in equipment, optional accessories, specifications, model numbers, and availability. Some accessories shown herein may not be available in some countries. Some information may have been updated since the time of printing; please check with your Authorized Yaesu Dealer for complete details.



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# YAESU'S VX-7R: THE WORLD'S FIRST SUBMERSIBLE AMATEUR HAND-HELD

Protected against water ingress by a wide array of rubber gaskets and other weatherproofing techniques, the VX-7R is rated for 30 minutes of submersion at a depth of 3 feet (JIS-7), a tough magnesium body with rubber bumper pads, making it ideal for outdoor use. Plus you get Dual Receive, 50/144/430 MHz operation, wide-band receive coverage, a full color status indicator Strobe, and an "Internet" key for quick access to the exciting new WIRES™ repeater-Internet linking system!



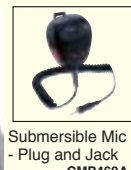
50/144/430 MHz 5 Watt FM Transceiver  
(50 MHz AM: 1W; 222 MHz FM: 300 mW (USA version Only) )

## VX-7R

## THE BEST OUTDOOR HANDIE EVER

### Unmatched Weatherproofing

The VX-7R case, keypad, speaker, and connectors are carefully sealed to protect the internal circuitry against water damage. And the optional CMP460A Speaker/Mic, like the transceiver itself, is rated for 30 minutes of submersion at a depth of up to three feet!



Submersible Mic - Plug and Jack  
CMP460A



Rugged Magnesium case with rubber bumpers and gaskets.

## THE BEST VERSATILITY EVER

### 50/144/430 MHz: 5 W Power

Utilizing a reliable FET power amplifier circuit, the VX-7R provides a full 5 Watts of power output on the 50, 144, and 430 MHz Amateur bands, with bonus coverage of the 222 MHz band at 300 mW (USA version Only) of power output. And for 6-meter AM enthusiasts, you also get 1 Watt of carrier power on the 50 MHz band! Four power levels may be selected, for optimum battery life.

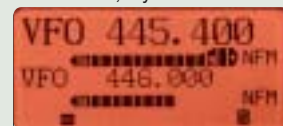
Power Source	High Power	L3	L2	L1
Battery Pack	5 W	2.5 W	1 W	0.05 W
External DC (13.8 V)				
AA Batteries	0.3 W			0.05 W

### Dual Receive: V-V/U-U/V-U/GEN-HAM

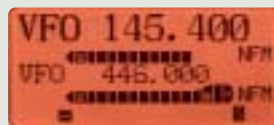
The VX-7R is capable of four modes of Dual Receive, including simultaneous reception on (1) two VHF frequencies; (2) two UHF frequencies; (3) one VHF and one UHF frequency; or (4) one "General Coverage" frequency and one "Ham" frequency. And when a call is received on the "Main" band, you can set up the VX-7R to reduce the audio level on the "Sub" band, if you like!



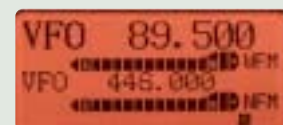
V+V



U+U



V+U



GEN+HAM

### Wide Frequency Coverage

With continuous AM/FM reception coverage of 500 kHz to 999 MHz (cellular frequencies are blocked and non-restorable), the VX-7R is ideal for monitoring HF shortwave broadcasts, the AM and FM Broadcast bands, plus a wide variety of Marine, Public Safety, and Government bands. And special memory banks for the Weather, Marine, and Shortwave bands make station selection effortless!

### Long Battery Life and Multiple Power Sources

The VX-7R is supplied with a super-long-life 7.4 V, 1300 mAh Lithium-Ion Battery Pack (FNB-80LI), providing many hours of operation and reliable charging without the "memory" effects that can plague other battery types. With the optional CD-15A Charging stand and NC-72B/C AC Adapter, the FNB-80LI may be charged in as little as 2.5 hours, so you'll quickly be ready for more operating action! And the optional FBA-23 Alkaline Battery Case will accept two "AA" batteries (not supplied) for low-power emergency operation. The VX-7R's EXT DC jack will also accept 12 Volts from the NC-72B/C directly (RX only), or from an external power supply.



Operating Band	Battery Life (Approx.)	
	FNB-80LI	FBA-23
50 MHz *1	6.5 hours	7.0 hours
144 MHz *1	6.0 hours	6.5 hours
430 MHz *1	5.5 hours	6.0 hours
Other Band *2	15 hours	15 hours

\*1 TX 6 sec.,  
RX 6 sec. and  
Squelched 48 sec.

\*2 Continuous  
signal reception

## THE BEST TONE SIGNALING EVER

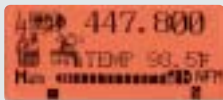
Ideal for operation on modern repeater systems, the VX-7R includes built-in Encoder/Decoder circuits providing 50 CTCSS (Subaudible) tones and 104 DCS (Digital Coded Squelch) codes. Adding to the versatility is provision for using "mixed" tone/code configurations (CTCSS for TX, DCS for RX, or vice-versa)

### ARTS™ (Auto-Range Transponding System)

Utilizing the DCS capability of the transceiver, the ARTS™ feature provides audio and/or visual confirmation that another ARTS-equipped station is within communication range. If you are in search-and-rescue operation, and get out of range of the base station, ARTS will warn the base operator to advise you to move to a better location.

## INTERNET KEY FOR INSTANT ACCESS TO WIRES™ (Wide-Coverage Internet Repeater Enhancement System)

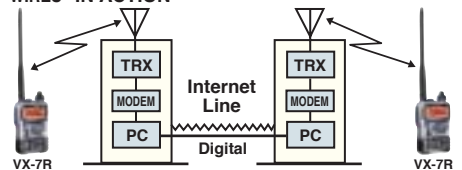
A unique feature of the VX-7R is the new "Internet" key, prominently located in the bottom right-hand corner of the keypad, providing easy access to the new WIRES™ Repeater-Internet-linking system. Pressing the Internet key activates a single-tone DTMF burst at the beginning of each transmission, as required for Internet linking access via a WIRES-configured repeater system.



WIRES™ is an easy-to-install method of linking repeaters via the Internet, for emergency networking, "sister city" repeater communication, or just plain fun. Requiring only a 56K dial-up service (not an expensive DSL or T1 line), WIRES™ can link up to 10 repeaters (by prior arrangement), with a single DTMF tone (at the start of each transmission) providing access to the WIRES network.

While WIRES™ networks may be accessed using any manufacturer's transceiver that is equipped with a DTMF keypad, the VX-7R's Internet key provides automatic transmission of the required DTMF burst, for easy access when seconds count.

### WIRES™ IN ACTION



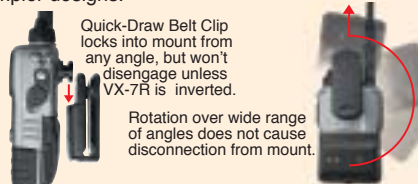
### On/Off Timers

If you need to be sure to be on the air at an appointed time, but don't want to waste battery power, use the VX-7R's On and Off timers. Utilizing the microprocessor-based 24-hour clock, the Timer will switch the radio on at the programmed time, and just before switching off it will emit an alert beep, so you'll be aware of the impending shut-down of the transceiver.



### "Quick-Draw" Swivel-Mount Belt Clip

Rugged, yet easy to use, the Quick-Draw Belt Clip locks in place from any angle, but the VX-7R can only be removed from an inverted position. It will swivel as you walk without slipping off your belt, so there's less chance of having your radio fall off your belt than with simpler designs.



## THE MOST DAZZLING DISPLAY EVER

No Amateur hand-held transceiver has a display that even compares to the VX-7R's 132 x 64 dot matrix display. Providing clear, easy-to-read indication of both the Main and Sub band frequencies, operating mode, and S-meters for both bands, the VX-7R's display includes an unparalleled array of graphical and pictorial tools that make operation a breeze.



### Full Color Strobe LED

Among the more innovative features introduced in the VX-7R is the full-color Strobe LED, which provides indication of a number of transceiver status items using different colors. The Menu allows you to custom-design a color that you will recognize for indication of "Busy Channel" for the Main, Sub, and "Both" receive channels, as well as "TX" indicators for the Main and Sub bands. Different colors may be selected for each of the above conditions, and a total of 256 color shades are available, for customizing the colors just the way you like them.



## THE MOST MEMORIES EVER

Sporting the most memory capability of any Amateur transceiver, the VX-7R includes over 900 memory channels of one kind or another, yet access is simple and intuitive, thanks to 8-character Alpha-Numeric labeling capability, so you'll never miss any of the excitement stored inside! These memories include:

### ●450 "Main" Memories

Storing frequency, mode, and CTCSS/DCS data, the 450 Memory Channels may be assigned into any of 9 Memory Groups, for easy recall (up to 48 channels per group may be stored).

### ●10 One-Touch (OTM) memories

Store your most-used frequencies in the quick-access OTM bank!



### ●40 Programmable Memory Scan (PMS) Band-Limit Memories

Use the PMS memories for setting upper and lower scanning/operating limits in the Amateur bands.

### ●12 Home Channel Memories

The "Home" channels may be set to a "favorite" operating frequency, or a central operating frequency that may be used as a starting point for operation. The 430 MHz Home Channel is also used for the "Emergency" beacon.

### ●10 Weather Band Memories (U.S. Version)

Ideal for quick access to the Weather Band broadcasts, these memories may be scanned in search of the loudest Weather station in your area.

## THE BEST TRAVELING COMPANION EVER

Whether you're walking around town, or walking down a mountain, the VX-7R is equipped with the features and durability that you need.

### Emergency Strobe/Beep Feature

If you press and hold in the EMG(HM/RV) key for two seconds, the VX-7R will be placed in the Emergency mode, wherein (A) it will automatically be set to the 430 MHz Home Channel, (B) a loud Alarm beep will be put out from the speaker, and (C) the front panel Strobe will brightly flash in sequential colors. If you press the PTT switch during Emergency operation, the Alarm will be temporarily silenced, and you may now call a friend, family member, or a rescuer on the UHF Home Channel.



### Optional SU-1 Barometric Pressure Unit with Weather Forecast Feature

The optional SU-1 Barometric Pressure Sensor Unit provides indication of the current pressure, calibrated in either units of inches or mm of mercury, hpa, or millibars. On a hike, altitude (in feet or meters) can be deduced from a starting pressure calculation, and a basic weather trend forecast will also appear on the display! While the transceiver is turned off, it can be set up to monitor and display the temperature (in °F or °C), pressure, altitude, or any combination of these.

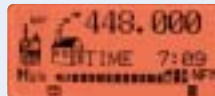


### 24 Hour Clock

The VX-7R includes a built-in 24-hour clock, with calendar, powered by a separate (rechargeable) Lithium-Ion battery that will maintain clock data for up to two months without use of the main transceiver battery power.

### Change Icons and Fonts

During monoband operation, the huge size of the dot matrix display allows the use of pictorial icons to depict a number of band and operational status notations. You can substitute icons, if you like, from a selection of alternative icons, or you can use the icon editor feature to create your own icon or font.



#### ICON List



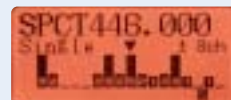
### Audio Wave Meter

During monoband operation, you can also choose to have the VX-7R display a depiction of the incoming audio waveform, just below the frequency display field.



### Spectrum Scope Display

When you engage the Spectrum Scope, the display will indicate relative signal strengths on adjacent channels (you may select either -5 or -8 channels from the current frequency), allowing you truly to keep an eye on the band.



### Battery-Saving Illumination Control

The Omni-Glow™ display/key illumination may be configured in a number of battery-saving ways. Both Brightness and Contrast are adjustable. You can set the illumination to appear continuously, or only for a few seconds after a key is pressed. You can even turn the "Busy" Strobe off, for additional battery conservation.



### ●89 Shortwave Broadcast Station Memories

The most popular HF Shortwave Broadcast stations are pre-stored at the factory, for instant selection of your favorite station and program.

### ●280 Marine Channels

The huge 280-channel Marine Bank allows full access to the excitement of monitoring the world of Marine operation.

### ●10 "Hyper" Memories

The Hyper memories may be used to store and recall a complete set of transceiver configuration data, such as Dual Receive status, Spectrum Scope configuration, scanning features, etc.