

# VX-1R

**ULTRA-COMPACT DUAL BAND HT**

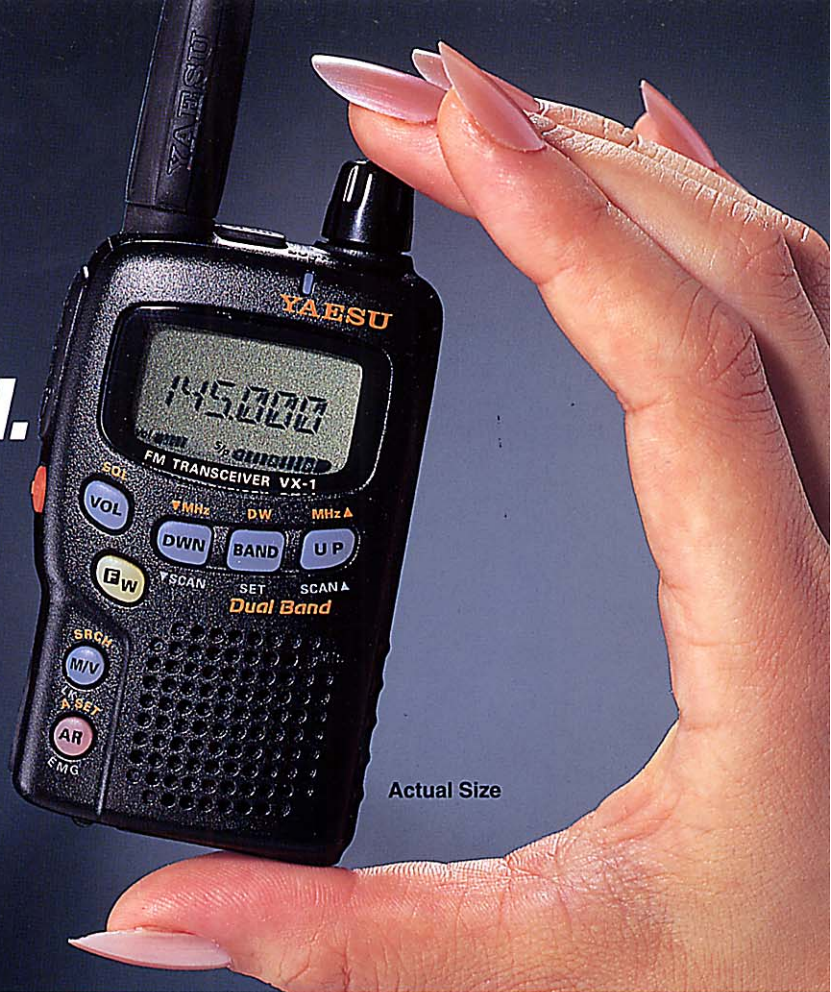
**YAESU**  
*...leading the way.<sup>SM</sup>*



World's smallest Dual Band Handheld Transceiver  
Power output: 500 mW (3.6 V DC) / 1 W (6 V EXT DC IN)  
Wideband receive capability  
291 memory channels  
Large, high-quality internal speaker  
Automatic in-range transponder (ARTS™)  
Smart Search™ automatic memory channel storage

**Wide Receiver Coverage,  
Leading Edge Features,  
Lithium Ion Technology...**

***Dick Tracy, we're  
waiting for your call.***



**THE WORLD HAS NEVER SEEN A DUAL-BAND AMATEUR HAND-HELD TRANSCEIVER WHICH PROVIDES SUCH AN INCREDIBLE SMALL SIZE COMBINED WITH ULTRA-WIDE FREQUENCY COVERAGE UNTIL NOW...**

Sporting dimensions of 81H x 47W x 25D mm (3.2" x 1.9" x 1"), weighing just over 4 ounces. The VX-1R provides superb local communications at a power level of 500 mW or 1 Watt, while including impressive memory and scanning capabilities in addition to wideband receive capability which includes VHF and UHF TV audio, AM broadcast, FM broadcast, AM aircraft band, and public safety channels. The wide world of Dual Band performance has just got smaller...much smaller!

**UP TO 1 WATT PO!**

**Power output of 500 mW with the standard battery, and up to 1 Watt with external DC power!**

The VX-1R's power amplifiers are new technology MOSFET devices which allow for high power output while using low input voltage. When using the standard 3.6 volt lithium ion battery, the VX-1R transmits at 500 mW. When the optional E-DC-15 cable is attached, the power output is increased to 1 watt. And for short duration operation the optional FBA-20 alkaline battery adapter allows for a power output of 100 mW using a single "AA" alkaline cell.

| Power Source                           | HI     | LOW    |
|--|--------|--------|
| Lithium-Ion Battery (FNB-52LI)         | 500 mW | 50 mW  |
| Alkaline AA Cell (w/optional FBA-20)   | 100 mW | 50 mW  |
| External DC (DC-6V w/optional E-DC-15) | 1 W    | 200 mW |

**10+ HOURS OF OPERATION...**

**11 hours of operation. Use the VX-1R for more than eleven hours on a single battery charge.**

The high capacity (700 mAh) lithium ion battery yields operating times in excess of 11 hours per charge. What's more, the NC-66B/C/U Charger/AC Adapter provides re-charge time of two hours or less, so you can be back on the air quickly. And if your battery is already charged, you can receive using the NC-66B/C/U from your AC outlet to bypass the battery and conserve the charge!

| Power Source        | Operating Band | Opr. Time (Hr.) |
|---------------------|----------------|-----------------|
| Lithium-Ion Battery | 144 MHz Ham    | 14              |
|                     | 430 MHz Ham    | 12              |
|                     | AM BC          | 21              |
|                     | FM BC, TV      | 11              |
| "AA" Cell           | 144 MHz Ham    | 3               |
|                     | 430 MHz Ham    | 3 1/2           |
|                     | AM BC          | 11              |
|                     | FM BC, TV      | 6               |

Duty Cycle per Hour: TX 6 minutes, RX (full audio) 6 minutes, RX (sq.) 48 minutes  
BC/TV: Continuous, unscanned RX

**WIDE BAND RECEIVE!**

**The VX-1R provides continuous receive coverage from 76 MHz to 999 MHz!**

Besides being a full-featured Dual-Band amateur transceiver, the VX-1R provides extraordinarily wide frequency coverage which includes AM BC, FM BC, public safety, and audio from most TV channels. The operating mode (AM, FM-Narrow, FM-Wide) is automatically preset on each band (with easy mode change via Menu), and you'll marvel at the great audio on the FM broadcast band!

| Operating Band | Frequency Coverage                 |
|----------------|------------------------------------|
| AM Broadcast   | 500 - 1700 kHz (Bar graph display) |
| FM Broadcast   | 76 - 108 MHz                       |
| Aircraft       | 108 - 137 MHz                      |
| VHF Ham        | 137 - 170 MHz                      |
| VHF TV         | 170 - 222 MHz                      |
| VHF Misc.      | 222 - 420 MHz                      |
| UHF Ham        | 420 - 470 MHz                      |
| UHF TV         | 470 - 800 MHz                      |
| UHF Misc.*     | 800 - 999 MHz                      |

\* Cellular/digital telephone frequencies are blocked. Frequency coverage may vary in different countries, due to local regulations.

**LITHIUM-ION BATTERY!**

**High capacity Lithium-Ion Battery provides long life without charging "memory" problems!**

The supplied FNB-52LI Lithium ion battery is a breakthrough in DC power technology in the amateur radio industry. While occupying the same space as a standard "AA" alkaline cell, the FNB-52LI provides 3.6 volts at an incredible 700 mAh of current capacity! This voltage is approximately the same as that provided by three "AA" size Ni-Cd cells and allows the VX-1R to transmit at a full 500 mW. Longer battery life and immunity from charge capacity memory is yours with the VX-1R!



**BATTERY CONSERVATION!**

**Extensive battery-saving features promote long operating times!**

The VX-1R's microprocessor includes several important battery-saving features which may be enabled by the operator. These include:

- Receive Battery Saver which puts the transceiver into a "sleep" mode, checking the receive frequency periodically (0.2/0.3/0.5/1/2 seconds) for activity.
- Automatic Power Off (APO) feature, which will turn the VX-1R off after a programmable interval of non-use (0.5/1/3/5/8 hours).
- TX/Busy lamp off feature allows the operator to disable the TX/Busy LED, thus conserving battery life. The VX-1R's LCD includes a convenient low battery warning indicator, which alerts the operator of a low battery condition.

## AUTO MEMORY!

For quick setup of TV and FM station memory channels, use the VX-1R's Auto Memory!

The VX-1R includes a handy operating feature whereby all local FM Broadcast and TV stations can be automatically loaded into memory via an automatic search. With Auto-Search, you don't have to try to remember what the actual frequencies are for all the TV channels—the VX-1R will load them for you automatically!

## 291 MEMORY CHANNELS!

The VX-1R's extensive memory system provides as many as 291 memory channels with 6-digit alpha-numeric label capability!

Included in the VX-1R's memory system are two main channel groups with different levels of capability, depending on your operating needs. Group 1 (52 channels) can store simplex or semi-duplex frequencies ("odd splits"), CTCSS/DCS tone mode and frequency, power output level, and alpha-numeric labels. Group 2 (142 channels) stores frequency plus standard repeater offsets, CTCSS/DCS tone mode, power output level, and alpha-numeric labels. Additionally, 31 Smart Search™ memory channels, ten pairs of band-limit memories, and ten dedicated AM broadcast memories bring the total memory capability to 291 channels (including 31 Smart Search™ memories).

### Six-digit Alpha-numeric Memory Labels

Use the alpha-numeric labels for quick and easy recognition of memory channels as you recall them. Memory labels are easy to program using the Menu system.



## DUAL WATCH!

Dual Watch enables you to check sub-band activity while receiving on another frequency!

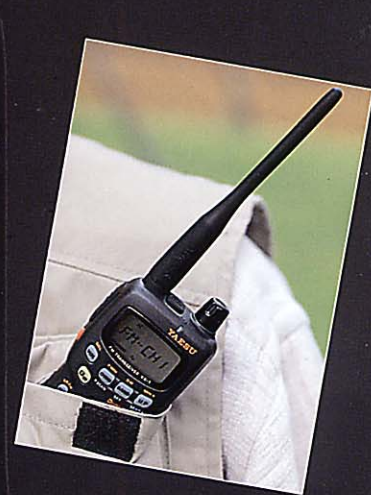
The VX-1R's Dual Watch feature lets you monitor a main operating frequency while periodically checking a second frequency for activity. If a station appears on the "Dual Watch" frequency the transceiver will lock onto that frequency so that you can respond to the calling station.

## VERSATILE TONE SYSTEMS!

CTCSS and DCS Encoder/Decoder Built In!

The VX-1R incorporates a wide variety of tone encoding and decoding systems for today's active Ham!

- 39-tone subaudible CTCSS encoder/decoder for easy repeater access and/or silent monitoring.
- 104-code Digital Code Squelch (DCS) for advanced repeater systems or simplex operations where maximum immunity from "falsing" is required.
- Menu-driven 1750-Hz Tone Burst system for repeater access.
- Bell Alarm to alert the operator that a call is being received.
- Tone Search, in both the CTCSS or DCS modes, for emergency situations where you need to know the tone code required for access to an unfamiliar repeater.
- DTMF Autodialer with eight memories, for autopatch use.

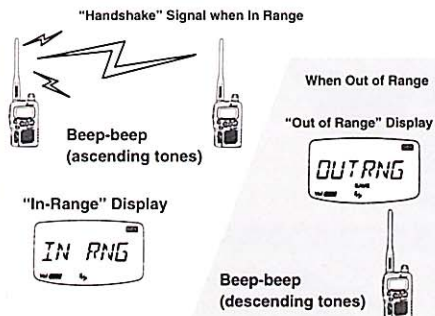


## AUTOMATIC RANGE FINDER!

The Automatic Range Transponder System (ARTS™) provides one-touch "in-range" confirmation!

The ARTS system provides an audible confirmation of your communication range. When activated, the ARTS system send out a periodic transponder tone (including DCS code) so that you and one other ARTS equipped station will always know that you are within simplex communication range. The ARTS system will also send a CW identification of your call sign if desired.

### ARTS Operation

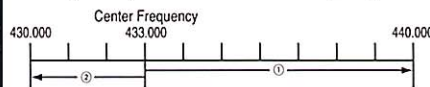


## SMART SEARCH™!

Automatically load active frequencies into Smart Search™ memories!

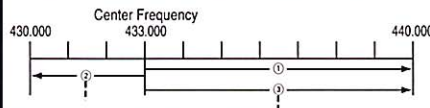
When traveling to a city for the first time, loading of memories can be a time-consuming task. With the VX-1R, just use the Smart Search™ feature, which automatically scans a portion of the band that you define, loading frequencies on which there is activity into special Smart Search™ memories. A total of 31 Smart Search™ memories are provided, and you can instruct the VX-1R to make either \*1 a single sweep of the defined frequency sub-band, or \*2 a continuous sweep of the sub-band until all 31 memories are filled.

\*1 Single Sweep : 433.000 MHz Center Frequency



- ① First sweep : 433.000~440.000MHz
- ② Second sweep : 433.000~430.000MHz

\*2 Continuous Sweep : 433.000 MHz Center Frequency



- ① First sweep : 433.000~440.000MHz
- ② Second sweep : 433.000~430.000MHz
- ③ Repeat sweeps ①&② to fill up Smart Search™ memories

## EMERGENCY FEATURE!

One touch Emergency button can be used for quick access to your home channel!

The emergency button automatically changes the VX-1R's operating frequency to your selected home channel, increases the Volume to a very high level, and causes the transceiver to emit a loud "Alarm" beeping tone. Press the PTT switch, and this alarm sound will be transmitted on the UHF Home channel, alerting family or friends to an emergency condition.



## High-Performance Features for Everyday Operation!

- Automatic Repeater Shift
- Cloning from one VX-1R to another via optional CT-27 Cloning Cable
- Computer programming via optional ADMS-1D Programming Kit
- Back-lighting of LCD
- TOT (Time-Out Timer) to prevent interference due to "locked mic" condition
- BCLO (Busy Channel Lock Out) to prevent interference to others during Tone Squelch operation
- Quick Check for repeater uplink frequency
- Selectable channel steps: 5/10/12.5/15/20/25/50/100 kHz per step
- Optional Speaker/Microphone (MH-34B4B) and VOX Headset (VC-25) available

(Actual Size)  
Dimensions: 47 (W) x 81 (H) x 25 (D) mm



144/430 MHz  
FM Handheld Transceiver  
**VX-1R**

# SPECIFICATIONS

## General

**Frequency Ranges:** Rx: 0.5~1.7 MHz  
76~300 MHz  
300~580 MHz  
580~999 MHz  
Tx: 144~146 MHz  
430~440 MHz

**Channel Steps:** 5/10/12.5/15/20/25/50/100 kHz

**Frequency Stability:** ±5 ppm (−10°C~+60°C)

**Repeater Shifts (default):** ±600 kHz (VHF)  
±1.6/5.0/7.6 MHz (UHF)

**Emission Types:** F3 (G3E), F2

**Antenna Impedance:** 50 Ω, unbalanced

**Supply Voltage:** Nominal: 3.6 V DC, negative ground  
Operating: 3.2~7.0 V, negative ground  
(EXT DC jack)

**Current Consumption:** 150 mA (Receive)  
50 mA (Standby, Saver Off)  
16 mA (Standby, Saver On)  
200 μA (Auto Power Off)  
0.4 A (500 mW Tx, VHF/UHF)

**Operating Temperature:** −20°C~+60°C

**Case Size:** 47×81×25 mm (w/o knob, ant.)

**Weight:** 125 g. (Approx., w/ ant. & battery)

## Transmitter

**RF Power Output:** 1 W (@ 6 V EXT DC IN)  
500 mW (@ 3.6 V DC)

**Modulation Type:** Variable Reactance

**Maximum Deviation:** ±5 kHz

**Spurious Emissions:** At least 50 dB below carrier

**Microphone Impedance:** 2 kΩ

## Receiver

**Circuit Type:** Double-Conversion Superheterodyne (VHF/UHF)  
Superheterodyne (0.5~1.7 kHz)

**Intermediate Frequencies:**

1st: 41.45 MHz (VHF/UHF), 455 kHz (0.5~1.7 MHz)

2nd: 450 kHz (Narrow FM), 10.7 MHz (Wide FM)

**Sensitivity:** 0.16 μV for 12 dB SINAD(144~146 MHz)

0.18 μV for 12 dB SINAD (430~440 MHz)

**Selectivity (−6/−60 dB):** 15 kHz/35 kHz (Narrow FM)

**AF Output:** 50 mW @ 8 Ω for 10% THD (@ 3.6 V DC)

**AF Output Impedance:** 8 Ω

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

Frequency ranges and repeater shift vary according to transceiver version; check with your dealer.

## CONTROLS AND COMMAND KEYS



## OPTIONS

| Earpiece/Mic  | Speaker/Mic  | VOX Headset   |
|---|--|---|
|  <p>MH-37A4B<br/>Compact Lapel Mic with Earpiece</p>                        |  <p>MH-34B4B<br/>Compact Speaker/Microphone</p>                                 |  <p>VC-25<br/>Lightweight VOX (Voice-Operated) Headset</p>                         |
| Antenna Connector Adapter   | DC Adapter Cable   | Microphone Adapter  |
|  <p>CN-3<br/>Adapter for use with BNC connector</p>                        |  <p>E-DC-15<br/>DC Cable with voltage regulator and cigarette-lighter plug</p> |  <p>CT-44<br/>For use with earlier 2-pin Yaesu microphones</p>                    |
| Alkaline Battery Case   | Battery Pack   | AC Adapter  |
|  <p>FBA-20<br/>Case for AA Alkaline Battery; includes voltage doubler</p> |  <p>FNB-52LI<br/>Lithium-Ion Battery, 3.6V @ 700mAh</p>                       |  <p>NC-66B/C/U *<br/>Two-Hour Charger for Lithium-Ion Battery; RX AC Adapter</p> |

\* "B" suffix for use with 117 VAC, "C" for use with 220-234 VAC and "U" for use with 234 VAC/U.K.plug.

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