

Product News

DUAL-BAND FM HAND-HELD
PAGING TRANSCEIVER

FT-51R



YAESU
Performance without compromise.



The First Dual Band HT with **WINDOWS!**

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PAGING TRANSCEIVER**

FT-51R

Since 1986, when Yaesu introduced the FT-727R, the world's first Dual Band Amateur handie, it has been our objective to remain one step ahead of the competition in product enhancement and evolution.

Each successor to the FT-727R has been much more than a mere enhancement," though. The FT-470 and FT-530 models both reflected the dramatic improvements in microprocessor and manufacturing process technology which were sweeping the electronics industry in the late 1980s and early 1990s. Each became an instant "Best Seller" because the software features, comprehensive accessory lines, and ease of operation could not be matched elsewhere in the market.

Now, Yaesu's engineers have broken through new barriers in microprocessor design, battery voltage utilization, and RF power generation in introducing the FT-51R. An intensive design effort brought together user suggestions and revolutionary technologies to yield the ultra-compact FT-51R: smaller than yesterday's single-band handies, yet more powerful than a showroom full of other manufacturers' current models.

Here is the story of the FT-51R in an easy-to-follow question-and-answer format.

FT-51R Q&A

Design Philosophy

Q What was the guiding philosophy of the FT-51R design project?

A

Basically, Yaesu wanted to do the impossible! That is, to take our industry-leading FT-530 feature package, significantly enhance its operating capability, and then reduce the physical size in the process.

Q How did Yaesu go about putting this theory into practice?

A

In evaluating our design work, we constantly viewed the FT-51R through the eyes of its potential users ("How can we make it better?") and through the eyes of our competitors ("What would it take to beat this?"). We then made it better, and put in the features that someone else might have thought of in attempt to beat us in the marketplace.

Q But didn't all the new features cause this design to cause the FT-51R to get larger, not smaller?

A

No! In fact, the total volume occupied by the FT-51R is approximately 30% smaller than the FT-530, and smaller than many competitors' single-band handies. Only 26.5 mm deep, and weighing about a pound and a half, the FT-51R truly is a "go-anywhere" communications tool without compromise.



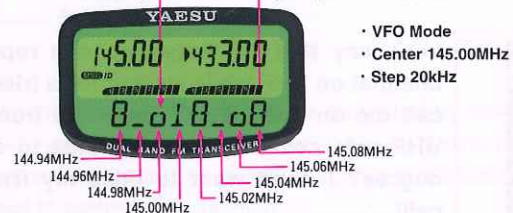
New Features

Q What is the "Spectrum Scope," and how does it help in daily operation?

A

The Spectrum Scope provides visual indication of activity on the band near your current operating frequency. The Spectrum Scope shows activity and relative signal strength on three channels below and four channels above your current operating frequency; the total frequency spread depends on what channel steps--5 kHz, 10 kHz, etc.--have been selected. It's perfect for emergency or public service work, or situations like Space Shuttle communications (where you are searching for the best among several potential uplink frequencies).

Spectrum-Scope Display Indication 1
Weak Signal Stronger Signal

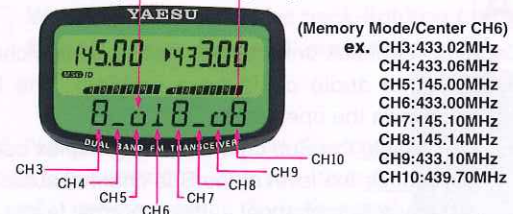


Q How does the Spectrum Scope work on memory channels?

A

It's smart! In the memory mode, it shows activity on the current memory channel plus the three memories below and four memories above (*in numerical order*) the current memory channel. It doesn't matter if these are VHF, UHF, or combined VHF and UHF channels, so it is useful for keeping abreast of activity on your favorite repeaters.

Spectrum-Scope Display Indication 2
Weak Signal Stronger Signal



Q How is the Spectrum Scope activated?

A

There are two methods: manual and automatic. In the AUTO mode, it will activate any time you rotate the main tuning dial. For MANUAL operation, push F-5. To disable the Spectrum Scope, just push the PTT switch.

Dual Receive

Q What combinations of VHF and UHF receive channels are possible on the FT-51R?

A

Following in the tradition of the FT-530, three chief modes are available: mixed mode, in which one channel is on VHF and one channel is on UHF; VHF/VHF (both channels on VHF); and UHF/UHF (both channels on UHF).



Q Isn't it difficult and clumsy to program the VHF/VHF or UHF/UHF modes?

A

Certainly not! Just select the left or right channel for programming (by pushing the BAND button), then key in the frequency directly from the keypad. No complicated band-changing keystroke procedure is required.

Q Let's say that I'm listening to a repeater channel on UHF while waiting for a friend to call me on VHF. Won't the audio from the UHF side cover up the VHF side to some degree? I don't want to miss my friend's call!

A

The FT-51R includes an "Auto Mute" feature, which gives the "Main" channel priority. If a call comes in (in your example) on the (VHF) "Main" channel, the (UHF) "Sub" channel is instantly muted. So you can, for example, keep a weather channel active full time, while waiting for an incoming call, without fear of missing that call.

Q I've heard that there is a cross-band full-duplex (telephone style) operating mode on the FT-51R. How do I keep feedback from happening?

A

Certainly feedback or cross-talk from the Main channel or Sub channel audio could be a problem. The FT-51R, though, allows the operator to

- (A) disable the Sub channel during duplex operation,
- (B) reduce the level of the Sub channel audio, or
- (C) leave Sub channel audio at normal levels.

The optimum configuration will very much depend on the precise operating conditions encountered, and it's nice to have the flexibility afforded by the FT-51R.

The microphone for the FT-51R is located at the very bottom of the transceiver front panel, in a position specially selected so as to minimize the possibility of cross-talk from speaker to microphone.

Scanning

Q Is scanning on the FT-51R still easy to activate, as on my previous Yaesu handies?

A

Absolutely! Just push the ▲ (Up) or ▼ (Down) arrow key to activate scanning. By holding the key down for more than half a second, automatic scanning will take over, and scanning will then be hands-free.

Q What are the primary scanning modes available on the FT-51R?

A

The scanner can be programmed to stop on a busy channel in three different modes:

- (1) Pause - where scanning resumes only after the other station's carrier drops out;
- (2) 5 Second Delay - where scanning resumes five seconds after halting on a busy channel, whether or not the other station has finished talking; and
- (3) Halt - where scanning stops on a busy channel and does not resume.

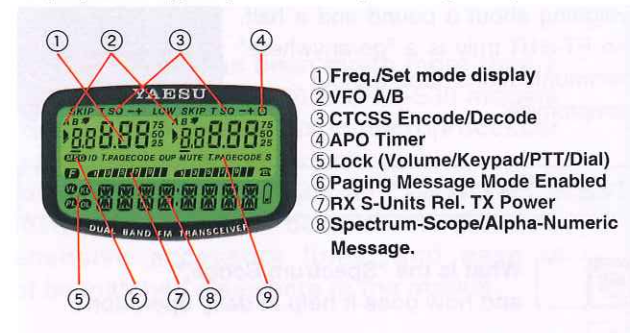
The scanner can also be directed to Skip memory channels (does yours?), scan within programmed band limits ("PMS"), and/or to turn on the transceiver's lamp when the scanner stops on a busy channel. You can also scan through CTCSS tones to match your FT-51R to the tone used on an unfamiliar repeater (when you're traveling, for example).

Operating Features

Q How do I keep track of the operating status of my FT-51R, with all the features it has on board?

A

The all-new custom LCD display is specially designed with the operator in mind. The Main and Sub display areas contain complete, independent information about each side's operating status (tone status, operating frequency, paging, repeater shift, etc.), so you're *never* forced to *guess* about which bit of information pertains to which channel. The effective back-lighting provided on the display and keypad provides easy viewing at night, too.



Q But with all the new features, I'm afraid I'll forget how to program the FT-51R in five minutes. Do I have to carry the instruction manual with me?

A

No! Thanks to the new User Help menu at the bottom of the display, you can *ask* the FT-51R which button(s) to push to activate a particular function or functions.

The User Help message displays the setting, name, a brief description, and instructions on how to exit. It's a tremendous help if you get lost.



Q Is the User Help function automatic?

A

Yes, but you can turn it off, if you like. Function #23 in the "Set" mode (F-0) toggles your radio's User Help menu system on and off.

Q What happens if I *really* get lost?

A

Good question! Fortunately, it's an easy matter to return all the "Alternate" functions from their current states to their factory defaults; just hold in the VFO key while turning the radio on, and you'll be cleared to the original factory setup. You can then start over.

Q Does the MH-29^{A2B} Remote Control Speaker/Microphone work with the FT-51R?

A

Absolutely! With the MH-29^{A2B}, you can change VFOs, change memories, scan, control volume, and view the frequency display while the transceiver is strapped to your belt. A lamp switch activates the back-light illumination for nighttime use.



Q One problem with dual banders is that I have to make too many keystrokes to change things on different bands, especially during dual receive. Is the FT-51R any better in this regard?

A

Much, much better! The FT-51R includes a "SUB OP" key, which allows you to make changes on the Sub band without moving primary TX/RX command control from the Main band. So you can keep chatting on a VHF repeater while making minor changes on UHF, without constantly flipping band to band when you want to transmit.



Q I sometimes hit the wrong key and get lost in the process. Will this be a problem on the FT-51R?

A

The FT-51R includes a versatile "Lock" function, which allows you to lock out control of PTT, Volume control, the Tuning Dial, or the Keyboard. This should minimize confusing accidents!

Q

Does the FT-51R have a cross-band repeat function?

A

Yes. For emergency linking, where permitted by law, the FT-51R may be set up either for one-way or bi-directional cross-band operation as a repeater. No modification is required to perform this function.

Q

I have a simple question: why is there no Volume control knob?

A

Many customers prefer the simplicity of using Up and Down push buttons for volume control--it avoids confusion with the top panel's tuning dial. However, if you just can't live without a Volume knob, function #1 in the "Set" mode allows you to transfer volume and squelch control to the main tuning dial on top of the transceiver.



Q

We were discussing the back-lighting on the FT-51R earlier. How well does it work?

A

Very well indeed. Both the main display and the keypad are illuminated, and you have a choice of momentary (five-second) illumination or locked-on back-lighting.

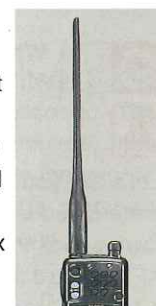


Q

My last dual-band handie's antenna did not work very well. Is the FT-51R's antenna any better?

A

Much better! Yaesu's engineers put special emphasis on impedance matching, including the counterpoise effect of the transceiver's body, and the supplied rubber flex antenna is very efficient as a result. Better repeater or simplex coverage is yours!



Messages/Paging

Q

What are the message transmission and reception capabilities of the FT-51R?

A

The FT-51R uses DTMF tones to send as many as ten messages of up to twelve characters in length, plus a

■ **TX Messages** (Factory-programmed/There of course can be overwritten)

QSY V	QSY U	QSY
SIMPLX	GO2RPT	IN CAR
AT HOME	CALL ME	EMERG
YAESU(ID CHANNEL)		

separate nine-slot memory bank for receive. So you can send a brief message to a friend (example: "GO 2 SIMPLEX") so long as the other operator is equipped with a compatible transceiver (like an FT-11R, FT-41R, or FT-51R). You do not have to be in a "Paging" mode to send messages.

Q So if I receive more than one message, the earlier ones aren't lost?

A Precisely! Just push the "MSG" key for a half second, then scroll through received messages using the Up or Down arrow keys. To erase messages after they are read, push and hold in the MSG key while turning the radio on.

Q How do I know if a message has been received?

A When an incoming DTMF message is received by the FT-51R, a ringer sounds to alert the operator. But there's more; you can have the FT-51R read out the message in Morse Code over the speaker!



Q Why would that be useful?

A Let's say you are out in the yard doing antenna work. Six meters suddenly opens to Africa, and your friend across town sends you a DTMF message that says "6M OPEN AFR." You'd likely want to hear this news immediately via a Morse Code announcement, instead of just hearing a "beep" you might ignore for a while. The possibilities, of course, are endless!

Q Do I have any protection against unwanted dumping of messages from memory?

A Yes. You can have the tenth incoming message halt further storage (the display says "FULL"), or have the FT-

51R continue to accept messages on a first-in, first-out basis. In the latter case, the earliest message received will be the first one dumped when message #10 arrives. In practice, of course, it's doubtful that this will ever be a problem you encounter.

Memory

Q I've had several radios previously which didn't alert me to the fact that I was about to over-write a memory. Does the FT-51R have any protection against this nuisance?

A Yes! While scrolling through memory storage locations (by rotating the tuning dial after holding in the "F" key for 1/2 second), the FT-51R's Menu space will indicate, for example, "CH35USED" on channels that are already occupied by information you saved previously. The word "USED" does not appear on open channel slots.



Q Tell me about the Alpha-Numeric labeling capability of the FT-51R memory system.

A The FT-51R allows you to label your memories with identifying names, like "W1XYZ/R" or "NOAA WX" and so forth. It is a much more pleasing way to identify a memory channel than the rather antiseptic "CH 1" that is the default labeling style.



Q Do I lose memory capability if I choose Alpha-Numeric labeling?

A Not really. You still have the default 40 memories per band. However, the memory expansion to 60 channels per band is disabled if you do Alpha-Numeric labeling. Most of us, though, never come close to using even the basic 70 memories!

Q My club performs a number of public-service duties during the year. Sometimes, we have to load a large number of special memory channels just for the weekend. Does the FT-51R have a Clone feature to reduce our programming workload?

A

Yes! You can clone from one FT-51R to another by connecting a two-conductor cable between the EARphone jacks of the two radios. The connectors must be 3.5 mm stereo types, with just the "ring" and the "sleeve" being utilized. This is a simple way to configure a large number of transceivers identically.



Q

How long does the memory backup battery last?

A

There isn't one! The memories are loaded into a dedicated EEPROM, which does not require any voltage to maintain its memory contents. It just stays as it is until *you* change it.



Accessories

Q

On many hand-held products, it seems as though the cost of the accessories can exceed the cost of the transceiver itself. How does the FT-51R stack up in this regard?

A

The FT-51R includes, as built-in features, a CTCSS encoder/decoder, a DTMF decoder, and DTMF pager, all of which may well be extra-cost options on competing transceivers. The FT-51R's cost-performance is second to none!

Q

Is there an indication of battery voltage on the FT-51R?

A

Yes, and additionally the Menu display can be set to display the battery model type in use ("FNB-31 NI-CD PACK INSTALLED" for example).



Q

Why are there no twelve Volt batteries available for the FT-51R?

A

The power MOS FET PA modules used in the FT-51R deliver five watts of output with only 9.6 Volts of input voltage. With the standard FNB-31 (4.8V) NiCd battery pack, the FT-51R puts out two watts on VHF and 1.5 watts on UHF, plenty for working through most repeaters. The FT-51R's batteries, the same as those used on the

FT-11R and FT-41R, are new-technology long-life Ni-Cd packs specially designed to fit the slim-line design of this transceiver series.



RF POWER OUTPUT

VHF Battery	RF Power Output (approx.)				
	High	Low3	Low2	Low1	EL
FBA-14 (4 x 'AA' Dry cells)	2.0W	2.0W	1.5W	0.5W	20mW
FNB-31 (4.8V, 600mAh Ni-Cd)	2.0W	2.0W	1.5W	0.5W	20mW
FNB-33 (4.8V, 1200mAh Ni-Cd)	2.0W	2.0W	1.5W	0.5W	20mW
FNB-35 (7.2V, 900mAh Ni-Cd)	4.0W	3.0W	1.5W	0.5W	20mW
FNB-38 (9.6V, 600mAh Ni-Cd)	5.0W	3.0W	1.5W	0.5W	20mW
External DC (@ 11V)	5.0W	3.0W	1.5W	0.5W	20mW

UHF Battery	RF Power Output (approx.)				
	High	Low3	Low2	Low1	EL
FBA-14 (4 x 'AA' Dry cells)	1.5W	1.5W	1.5W	0.5W	20mW
FNB-31 (4.8V, 600mAh Ni-Cd)	1.5W	1.5W	1.5W	0.5W	20mW
FNB-33 (4.8V, 1200mAh Ni-Cd)	1.5W	1.5W	1.5W	0.5W	20mW
FNB-35 (7.2V, 900mAh Ni-Cd)	3.5W	2.5W	1.5W	0.5W	20mW
FNB-38 (9.6V, 600mAh Ni-Cd)	5.0W	2.5W	1.5W	0.5W	20mW
External DC (@ 11V)	5.0W	2.5W	1.5W	0.5W	20mW

Q

My FT-530 has a TX Battery Saver feature. Is this in the FT-51R, as well?

A

Yes, indeed! This very popular feature monitors the incoming repeater's signal strength, and lowers the power output if you are very close to the repeater (and thus require less power). Of course, you can disable this feature, if you like.

Q

What about battery conservation on the receive side?

A

Yaesu's renowned ABS (Automatic Battery Saver) reduces current drain during squelched monitoring. The ABS activates the receiver for 300 milliseconds, then powers down for a "sleep" duration based on the degree of recent channel activity. The owner can also manually select "sleep" durations of 300 ms to one second.

Q

What if I forget to turn the radio off when I go to work?

A

The APO (Automatic Power Off) feature will turn the transceiver off after 10, 20, or 30 minutes of keypad inactivity. The radio will beep just before it turns itself off, in case you're still nearby and wish to continue monitoring. Just press any key to reset the timer.

OPTIONS

Rechargeable Ni-Cd Battery Packs



FNB-31 4.8V, 600mAh
FNB-33 4.8V, 1200mAh

FNB-35 7.5V, 900mAh
FNB-38 9.6V, 600mAh

Dry Cell Case



FBA-14 Battery for
4xAA-size cells

Compact 15-Hour Chargers



CA-9 Base Charging Stand for
NC-34, -38 & -55(B/C)
NC-55B/C * for FNB-31 (requires CA-9)
NC-34B/C * for FNB-33/35 (requires
CA-9)
NC-38C * for FNB-38 (requires CA-9)
* "B" suffix for use with 117 VAC, or
"C" for use with 220-234 VAC

Mobile Rapid Charger



CD-2 Mobile Rapid Charger
(for charging use only)

Mobile DC Power Adapter



PA-10A Mobile DC Power Adapter
(DC power adapter w/trickle charge)

Desktop Rapid Charger



NC-50 for FNB-31, -33, -35 & -38
(requires 2 pcs. CA-10)
CA-10 Charger Sleeve

VOX Headset



VC-22 VOX Headset

Soft Case



CSC-66 Soft Case for FBA-14, FNB-
33, -35 & -38
CSC-67 Soft Case for FNB-31

Microphone



MH-29A2B
Remote Control
Microphone
w/Display

Microphone



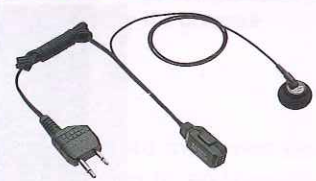
MH-32A2B
Miniature
Speaker/
Microphone

Microphone



MH-35A2B
Hand
Speaker/
Microphone

Microphone



MH-19A2B
Earpiece/
In-Line Miniature
Microphone

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