

FT-102

HF ALL MODE TRANSCEIVER



YAESU

WIDE CLEAN

- * Unique recessible controls for VOX GAIN, DELAY, MIC GAIN, processor COMP, NB LEVEL and FM SQL are normally flush with the front panel. Just touch the knob and it pops out for adjustment, and press it back in out of the way when set.
- * The NB LEVEL control actually adjusts the width of the noise blanking pulse, giving incredible versatility to remove a wide variety of noise.
- * The NAR button conveniently selects the optional narrow filters for the mode (SSB or CW) selected by the MODE selector.
- * The RF AMP button can be pressed when band noise is high or strong signals are being worked, bypassing the RF amplifier and pushing the dynamic range over 100dB.
- * Press the MONI button to monitor the IF of the transmitter when tuning up or adjusting microphone audio response. You can precisely adjust the RF processor while listening to the actual processor output.
- * While speaking into the microphone, press a button to activate the ALC Peak Hold system, causing the ALC meter needle to stop right at peak ALC automatically and allowing truly accurate transmit level setting.
- * Dual meters allow much more all round operating convenience, and become indispensable for truly precise adjustment and monitoring of the RF speech processor.
- * An IF Notch system and a Audio Peak Filter are selected and tuned independently. Both can be used at the same time, if desired.
- * Friction-ganged IF Shift/Width controls allow the operator to select the optimum bandwidth for band conditions and mode, and then to tune this "window" across the incoming signal. Say goodbye to QRM.
- * Novel chassis design and rugged cabinet constructed so that the FT-102 is more compact than any other transceiver/power supply combination in its class (only 310 mm deep).

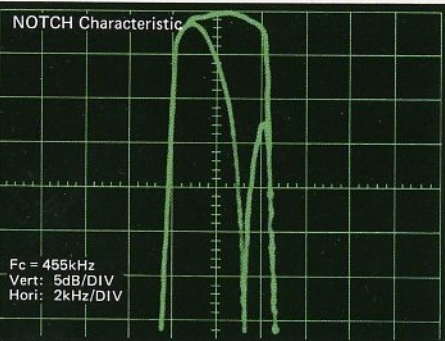
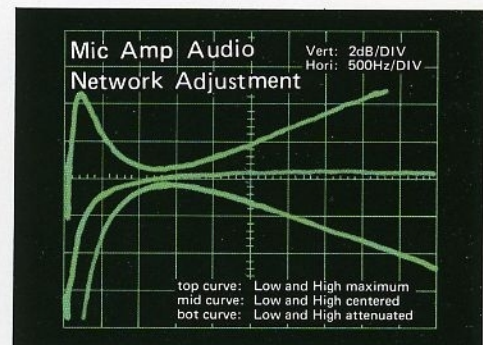
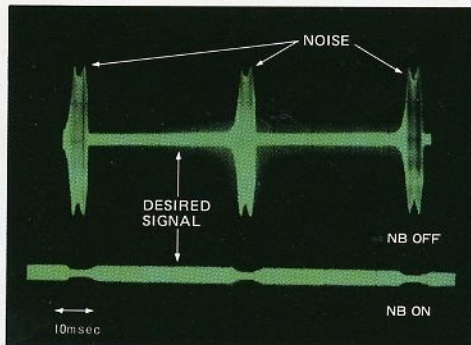
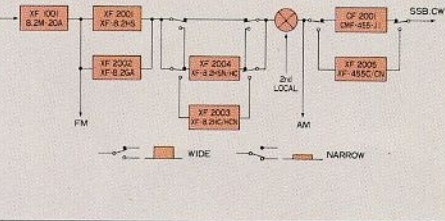


DYNAMIC RANGE TRANSMITTER OUTPUT





IF Filter Configurations (with options)



Commercial Quality Transmitter

The FT-102 represents significant strides in the advancement of amateur transmitter signal quality, introducing to amateur radio design concepts that have previously been restricted to top-of-the-line commercial transmitters; far above and beyond government standards in both freedom from distortion and purity of emissions.

Transmitter Audio Tailoring

The microphone amplifier circuit incorporates a tunable audio network which can be adjusted by the operator to tailor the transmitter response to his individual voice characteristic before the signal is applied to the superb internal RF speech processor.

New Standard of Purity

Three 6146B final tubes in a specially configured circuit provide a freedom from IMD products and an overall purity of emission unattainable in two-tube and transistor designs, while a new DC fan motor gives whisper-quiet cooling as a standard feature. For the amateur who wants a truly professional quality signal, the answer is the Yaesu FT-102.



New Noise Blanker

The new noise blanker design in the FT-102 enables front panel control of the blanking pulse width, substantially increasing the number of types of noise interference that can be blanked, and vastly improving the utility of the noise blanker for all types of operation, including woopecker blanking.



feedlines. Contained within the diecast weatherproof housing of the FAS-1-4R are four independent relays to ensure low loss and excellent isolation.

SP-102 External Speaker/Audio Filter

The SP-102 features a large (120 mm) high-fidelity speaker with selectable low- and high-cut audio filters allowing twelve possible response curves. Headphones may also be connected to the SP-102 to take advantage of the filtering feature, which allows audio tailoring for each bandwidth and mode of operation to obtain optimum readability under a variety of conditions. Two input jacks are provided, selectable from the front panel.

SP-102P External Speaker/Phone Patch

The attractive styling of the SP-102P matches the FT-102, providing a combination shaped response speaker and hybrid phone patch for simple interfacing of the FT-102 with telephone systems. Gain controls and an audio level meter are included on the SP-102P, while interconnections are designed specifically to mate easily with the FT-102.



SPECIFICATIONS

GENERAL

Frequency coverage:

Band	Range
1.8	1.8 – 2.0 MHz
3.5	3.5 – 4.0 MHz
7	7.0 – 7.5 MHz
10	10.0 – 10.5 MHz*
14	14.0 – 14.5 MHz
18	18.0 – 18.5 MHz
21	21.0 – 21.5 MHz
24.5	24.5 – 25.0 MHz
28, 29	28.0 – 29.9 MHz

Operating Modes:

LSB, USB (A3J/J3E); CW (A1/A1A); AM (A3/A3E) and FM (F3/F3E)**

Power requirements:

100, 117, 200, or 234 VAC, 50/60 Hz

Power consumption:

Receive; 95 VA (73 VA with heaters off)
Transmit; 350 VA (for 100W output)

Dimensions (WHD):

368 x 129 x 310 mm

Weight:

Approx. 15 kg.

TRANSMITTER

Power Input:

(1.8 – 25 MHz) (28 – 29.9 MHz)

SSB, CW	240W DC	160W DC
AM**	80W DC	80W DC
FM**		160W DC

Carrier suppression:

Better than -40 dB at 14 MHz

Sideband suppression:

Better than -60 dB (14 MHz, 1 kHz tone)

Spurious Radiation:

Better than -40 dB

Transmitter audio frequency response:

300 – 2900 Hz (-6 dB) adjustable

Third order intermodulation products:

Better than -40 dB (14 MHz, 100W PEP)

Negative feedback level:

Approx. -8 dB at 14 MHz

Frequency stability:

Less than 300 Hz drift during the first 30 minutes after 10 minutes warm-up; less than 100 Hz every 30 minutes thereafter

Modulation types:

A3J/J3E: balanced modulator
A3/A3E: low level amplitude modulator
F3/F3E: variable reactance modulator

Microphone input impedance:

Low, 200 to 600 ohms

RECEIVER

Image rejection:

Better than 70dB from 1.8 – 21.5MHz
Better than 50dB from 24.5 – 29.9MHz

IF rejection:

Better than 70 dB

AF Output:

1.5 W minimum (8 ohms, 10% THD)

AF Output impedance:

4 – 16 ohms

Selectivity (-6 dB/-60 dB):

SSB, CW, AM; 2.7/4.8 kHz (with no optional filters)
Width adjusts continuously from 2.7 kHz to 500 Hz (-6 dB)

Options:

SSB nar., CW wide; 1.8/3.1 kHz with XF-8.2 HSN filter

CW nar.; 600/1300 Hz with XF-8.2HC filter

CW nar.; 300/800 Hz with XF-8.2HCN filter

CW nar.; 500/1100 Hz with XF-455C filter

CW nar.; 270/600 Hz with XF-455CN filter

AM; 6/12.4 kHz with XF-8.2GA filter

IF Notch depth:

Better than 40 dB

Sensitivity (worst case, in μV for 10 dB (S+N)/N, except FM):

	(RF AMP ON)	(RF AMP OFF)
SSB (no optional filters)	0.25	1.0
CW (no optional filters)	0.18	0.7
AM (no optional filters)	1.0	4.0
FM** (for 20 dB quieting)	0.4	3.0
CW (with APF on)	0.05	0.2
SSB (with XF-8.2HSN filter installed)	0.2	0.8
CW (with XF-8.2HC filter installed)	0.12	0.5

Dynamic range (with Shift/Width Control set for maximum IF width, 14 MHz):

	(RF AMP ON)	(RF AMP OFF)
With no optional filters	90 dB minimum	95 dB minimum
With XF-8.2HC installed	95 dB minimum	100 dB minimum
With XF-8.2HCN installed	97 dB minimum	102 dB minimum

* No reception at 10.33 MHz ($f_{L01} - f_{L02}$)

** Optional AM/FM Unit required for AM transmission and FM operation.



New Yaesu FT-102 Series Transceiver of Champions!



The long-awaited new generation of Yaesu HF technology has arrived! New research in improved receiver filtering and spectral purity is brought to bear in the competition-bred FT-102, the HF transceiver designed for active Amateurs on today's intensely active bands!

Unique Cascaded Filter System

The FT-102 utilizes an advanced 8.2 MHz and 455 kHz IF system, capable of accepting as many as three filters in cascade. Optional filters of 2.9 kHz, 1.8 kHz, 600 Hz, and 300 Hz may be combined with the two stock 2.9 kHz filters for operating flexibility you've never seen in an HF transceiver before now!

All New Receiver Front End

Utilizing husky junction field-effect transistors in a 24 volt, high-current design, the FT-102 front end features a low-distortion RF preamplifier that may be bypassed via a front panel switch when not needed.

IF Notch and Audio Peak Filter

A highly effective 455 kHz IF Notch Filter provides superb rejection of heterodynes, carriers, and other annoying interference appearing within the IF passband. On CW, the Audio Peak Filter may be switched in during extremely tight pile-up conditions for post-detection signal enhancement.

Variable IF Bandwidth with IF Shift

The FT-102's double conversion receiver features Yaesu's time-proven Variable Bandwidth System, which utilizes the cascaded IF filters to provide intermediate bandwidths such as 2.1 kHz, 1.5 kHz, or 800 Hz simply by twisting a dial. The Variable Bandwidth System is used in conjunction with the IF Shift control, which allows the operator to center the IF passband frequency response without varying the incoming signal pitch.

Wide/Narrow Filter Selection

Depending on the exact combination of optional filters you choose, a variety of wide/narrow operating modes may be selected. For example, you may set up 2.9 kHz in SSB/WIDE, 1.8 kHz in SSB/NARROW, then select 1.8 kHz for CW/WIDE, and 600 Hz or 300 Hz for CW/NARROW. Or use the Variable Bandwidth to set your SSB bandwidth, and use 600 Hz for CW/WIDE and 300 Hz for CW/NARROW! No other manufacturer gives you so much flexibility in selecting filter responses!

Variable Pulse Width Noise Blanker

Ignition noise, the "Woodpecker," and power line noise are modern-day enemies of effective Amateur operation. The FT-102 Noise Blanker offers improved blanking action on today's man-made noise sources (though no blanker can eliminate all forms of band noise) for more solid copy under adverse conditions.

Low Distortion Audio/IF Stage Design

Now that dynamic range, stability, and AGC problems have been largely eliminated thanks to improved technology, Yaesu's engineers have put particular attention on maximizing intelligence recovery in the receiver. While elementary filter cascading schemes often degrade performance, the FT-102's unique blend of crystal and ceramic IF filters plus audio tone control provides very low phase delay, reduced passband ripple, and hence increased recovery of information.

Heavy Duty Three-Tube Final Amplifier

The FT-102 final amplifier uses three 6146B tubes for more consistent power output and improved reliability. Using up to 10 dB of RF negative feedback, the FT-102 transmitter third-order distortion products are typically 40 dB down, giving you a studio quality output signal.

Dual Metering System

Adopted from the new FT-ONE transceiver, the Dual Metering System provides simultaneous display of ALC voltage on one meter along with metering of plate voltage, cathode current, relative power output, or clipping level on the other. This system greatly simplifies proper adjustment of the transmitter.

Microphone Amplifier Tone Control

Recognizing the differences in voice characteristics of Amateur operators, Yaesu's engineers have incorporated an ingenious microphone amplifier tone control circuit, which allows you to tailor the treble and bass response of the FT-102 transmitter for best fidelity on your speech pattern.

RF Speech Processor

The built-in RF Speech Processor uses true RF clipping, for improved talk power under difficult conditions. The clipping type speech processor provides cleaner, more effective "punch" for your signal than simpler circuits used in other transmitters.

VOX with Front Panel Controls

The FT-102 standard package includes VOX for hands-free operation. Both the VOX Gain and VOX Delay controls are located on the front panel, for maximum operator convenience.

IF Monitor Circuit

For easy adjustment of the RF Speech Processor or for recording both sides of a conversation, an IF monitor circuit is provided in the transmitter section. When the optional AM/FM unit is installed, the IF monitor may be used for proper setting of the FM deviation and AM mic gain.

WARC Bands Factory Installed

The FT-102 is factory equipped for operation on all present and proposed Amateur bands, so you won't have to worry about retrofitting capability on your transceiver. An extra AUX band position is available on the bandswitch for special applications.

Full Line Of Accessories

For maximum operating flexibility, see your Authorized Dealer for details of the complete line of FT-102 accessories. Coming soon are the FV-102DM Synthesized VFO, SP-102 Speaker/Audio Filter, a full line of optional filters and microphones, and the AM/FM Unit.

Price And Specifications Subject To
Change Without Notice Or Obligation

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