

**YAESU**  
The radio

HF/50MHz Transceiver

**FTDX 1200 Series**



**The radio... YAESU**



Reliable and Exciting, Superior Transceiver - the Real Deal  
Indisputably, Best in Class Performance and Supreme Operability

# FT DX 1200

This medium-price HF Transceiver Excels on all fronts. The High Frequency Design Technology it has inherited, ensures “Best-in Class Performance”.  
The Outstanding Operability is Perfect for the DX Scene.

Superior triple conversion receiver, and optimum gain distribution at each IF stage will eliminate out of band unwanted signals.

The 1st IF frequency is set at 40 MHz and is protected by selectable 3 kHz, 6 kHz and 15 kHz roofing filters, which effectively attenuate interfering signals.

Similar to the high end series Yaesu transceivers, it uses the 32-bit high speed floating point DSP, TMS320C6727B by Texas Instruments, for its IF DSP. The acclaimed superior Yaesu DSP algorithm is highly effective in weak signal processing and enhancement.

The Full Color, 4.3 inch TFT display on the left side of the front panel, has a wide viewing angle and provides excellent visibility. It beautifully displays the various functions unique to this high class HF transceiver.

An optional built-in FFT-1 supports advanced functionality, including the AF-FFT Scope, RTTY/PSK31 Encode/Decode, CW Decode and CW Auto Zero-in.



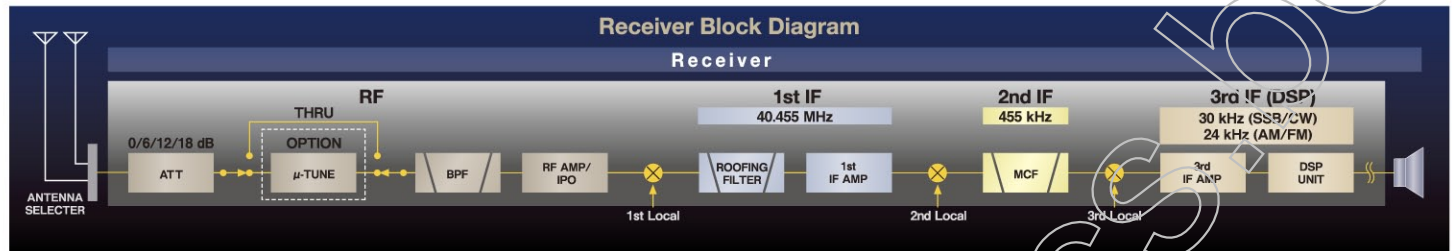
Actual Size



# A highly balanced receiver circuit inheriting the design concepts of the Yaesu FT DX series

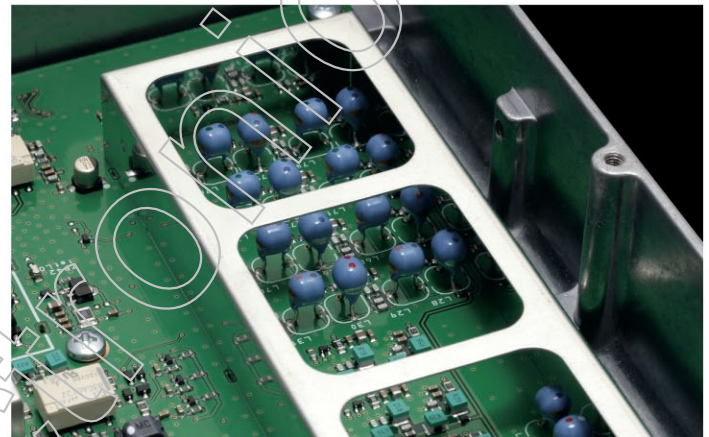
## Triple conversion circuit configuration implements optimized gain distribution

The triple conversion circuit structure allows highly flexible gain distribution at each stage. This enables elimination of unwanted signals through filters at each stage as well as optimized gain distribution. By following the FT DX series design concepts and through careful research in repeated field tests, the FT DX 1200 delivers a state of the art highly balanced receiver circuit configuration.



## Receiver front end blocks powerful signals

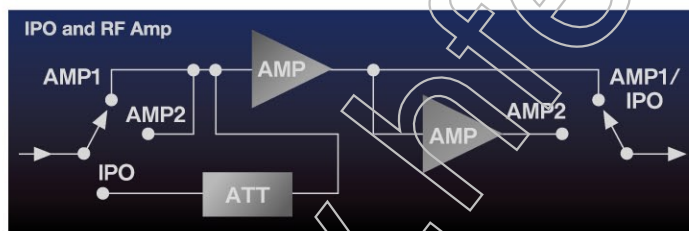
The receiver front end is exposed to strong signals directly from the antenna. Yaesu engineers selected and tested not only active elements like the RF amplifier, but also passive elements like the signal switching circuit components and the coils, so that no spurious or unwanted signals are created. By pressing the ATT key on the front panel, attenuation circuits can be selected from four stages, namely 0, 6, 12 and 18 dB. Distortion at a later stage can be effectively suppressed by attenuating interfering signals when the signal levels are quite strong. The effect of strong out of band interfering signals on the RF amplifier is reduced by significant attenuation through the 8 band pass filters (BPF). The band pass filter is automatically selected to coincide with the receiving frequency. The two stage negative feedback type bipolar transistor RF amplifier provides ample gain so that the gain of each individual stage is reduced and ideal NF is achieved.



8 Band Pass Filters (BPF)

## IPO function allows selection of the optimum RF amplifier circuit configuration for each noise and signal circumstance

The RF amplifier uses two proven negative feedback type 2SC3356 bipolar transistors. We thoroughly tested the surrounding circuit constants, which determine the circuit characteristics, and also the board layout to achieve optimum results. As the two transistors are connected in series, the working point with the optimum NF can be selected without focusing on the gain. Excellent multi signal characteristics, with a low NF are achieved.



The optimum working point of the RF amplifier circuit is not always fixed; it may be configured according to the receiving band, the connected antenna, the signal and the noise conditions. The IPO (Intercept Point Optimization) can be switched using the IPO switch on the front panel. The RF amplifier operation can be changed with the IPO to send the optimum signal levels to the mixer.

### IPO

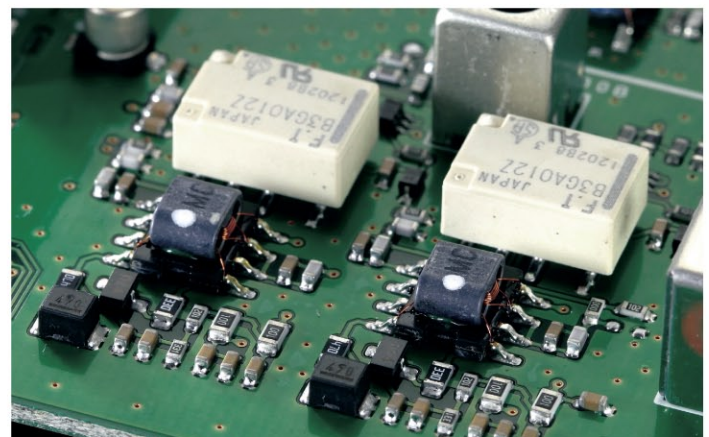
The RF characteristics are substantially improved by feeding a signal level to the mixer for the best possible IP performance

### AMP1

The most used setting connects only one RF amplifier stage and considers both sensitivity and characteristics

### AMP2

Operates by connecting two RF amplifiers in series when sensitivity and gain in the higher bands is considered important

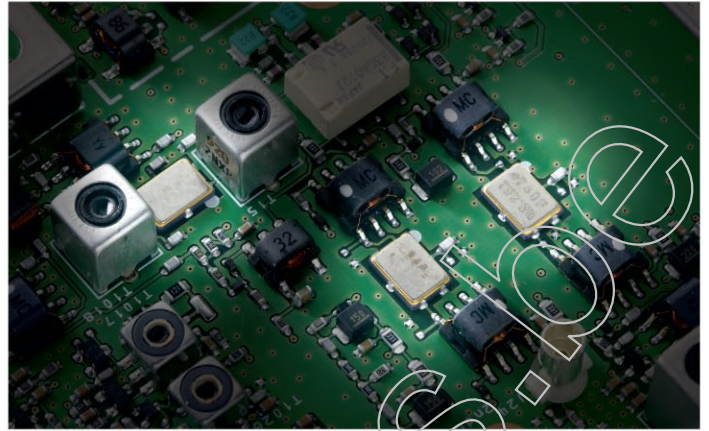
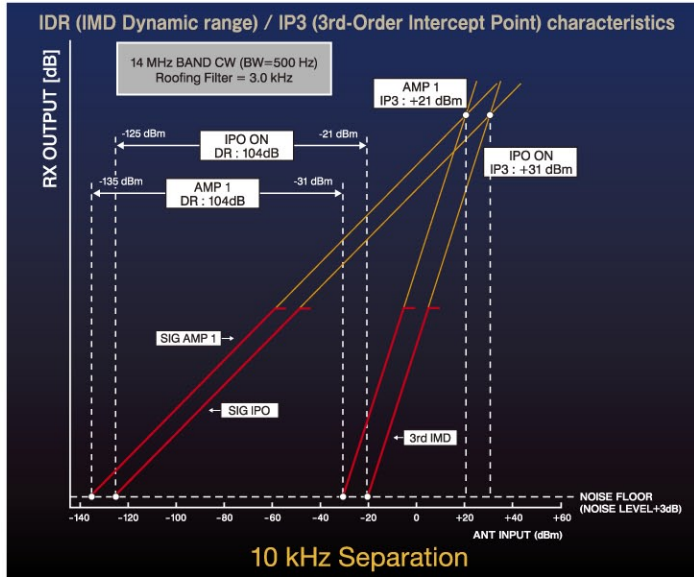


RF Amplifier

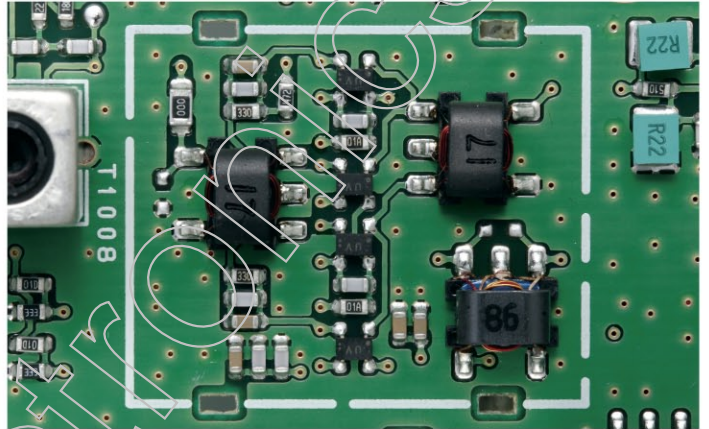


### The 3 kHz Roofing Filter is very effective in attenuating interfering signals

Roofing filters of 3 kHz, 6 kHz and 15 kHz filters, are fitted before the 40.455 MHz 1st IF. Sharp four element MCFs that filter by means of the fundamental oscillation mode, with excellent distortion characteristics, are utilized. By incorporating a 3 kHz narrow band roofing filter, (which is hard to realize in the higher frequencies) before the 1st IF stage, strong out of band interfering signals have been sufficiently attenuated. This, reduces the later burden on the mixer, and improves the adjacent multi signal characteristics.



3kHz, 6kHz, 15kHz Roofing Filter

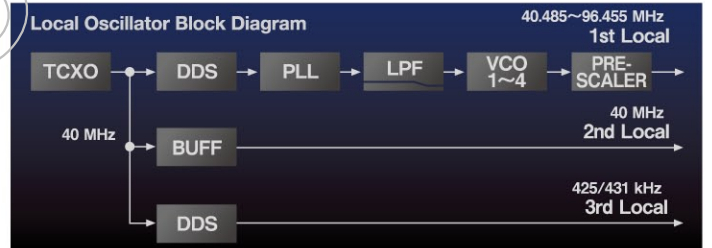


1st IF Mixer

## Highly stable, high quality local signal injected into the 1st IF mixer

### High quality LO signals from a high accuracy TCXO and high resolution DDS and PLL local oscillator circuit configuration

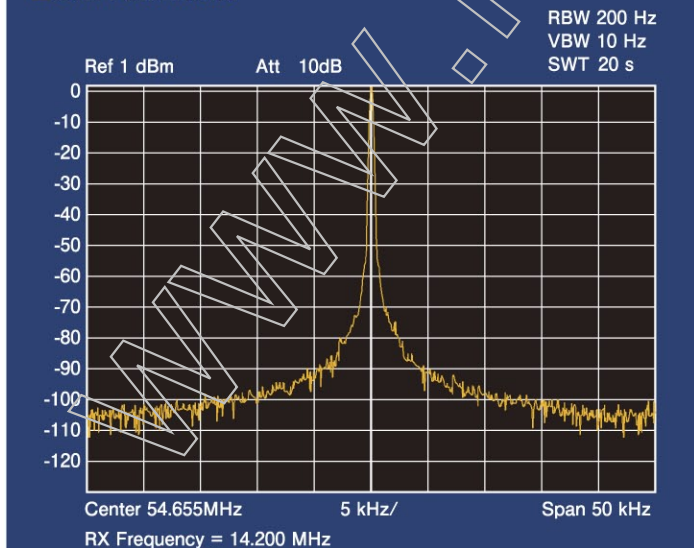
All receiver circuit characteristics must excel and be well balanced to improve adjacent multi signal characteristics. The purity of the local signal injected into the 1st mixer greatly affects this. By combining a high accuracy, highly stable  $\pm 0.5$  ppm ( $-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$ ) 40 MHz TCXO and a high resolution DDS in the fundamental oscillator, and directly locking PLL-IC and VCO, a first LO signal is created with superior S/N performance. As a result, the receiver noise floor is kept low and the blocking dynamic range (BDR) characteristics for adjacent frequencies are improved.



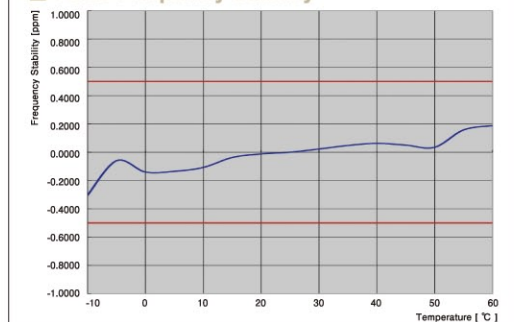
### Standard Fundamental oscillator is fitted with a $\pm 0.5$ ppm TCXO Excellent frequency stability across wide temperature range

By compensating for the temperature characteristics unique to the quartz resonator in the 40 MHz fundamental oscillator, a high accuracy  $\pm 0.5$  ppm TCXO with exceptionally stable characteristics over a wide temperature range of  $-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$  is fitted as standard. This TCXO exhibits superiority in the PSK31 and EME communications that require the highest stability. Also in the harsh environment of DXpeditions, this TCXO provides great performance and high frequency stability.

### C/N Performance

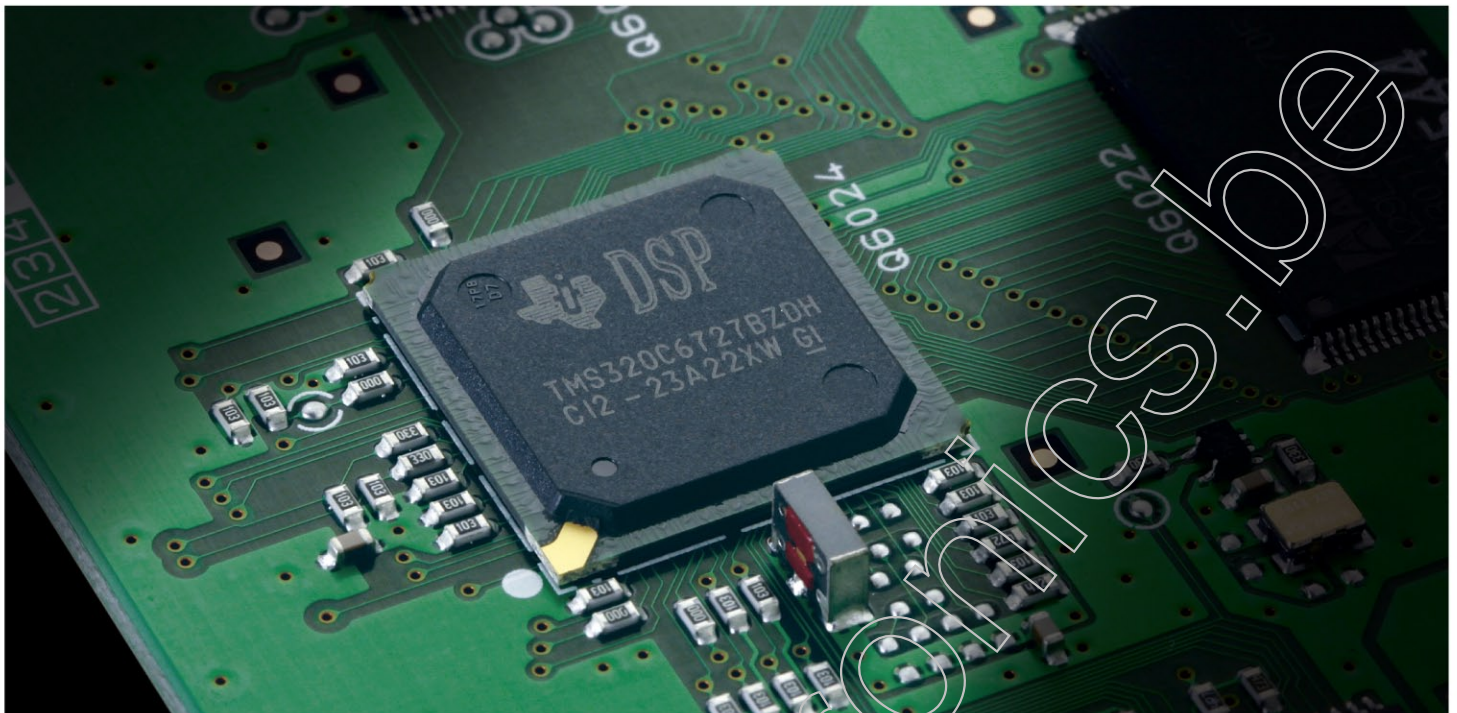


### TCXO Frequency Stability





## The acclaimed IF DSP is powerful, versatile and effective in actual operation



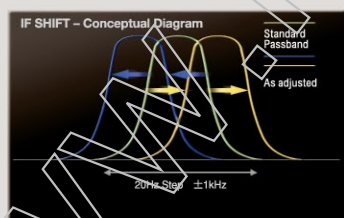
### The beneficial effect of the YAESU IF DSP

Using the 32-bit high speed floating point DSP, TMS320C6727B by Texas Instruments, similar to the high end FT DX 5000 and FT DX 3000 series. The processor runs at a clock speed of 300 MHz. The high speed digital processing power of the 30 kHz 3rd IF signal provides high QRM rejection performance for the actual signal through the acclaimed superior YAESU algorithm.

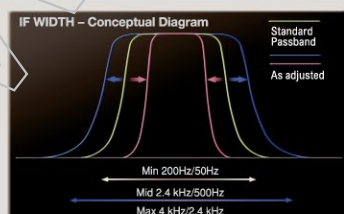
### Well proven IF WIDTH and IF SHIFT functions provide great QRM rejection performance

You can adjust the IF WIDTH and IF SHIFT, and eliminate the QRM, by rotating the SHIFT/WIDTH knob located on the front panel. The YAESU original IF width function can make the pass band narrower with one-touch. This function is effective in a pile-up or contest, when the undesired signals are located just above or below the target signal. When the IF SHIFT and IF WIDTH functions are used together, more effective undesired signal rejection may be achieved.

**IF SHIFT:** With the normal bandwidth, the pass band area can be moved relatively, so that harmful signals are rejected from the pass band

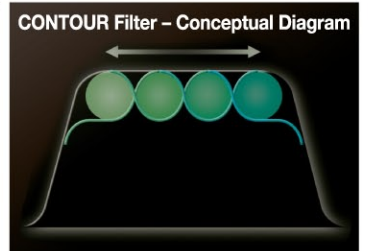


**IF WIDTH:** By adjusting the band width, Interfering signals can be removed from both sides of the pass band, without changing the pass band position



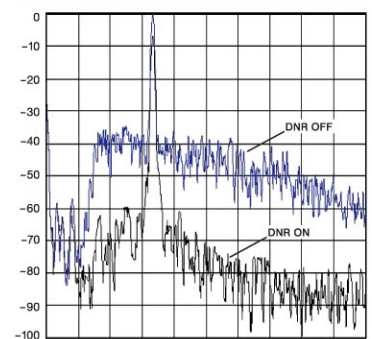
### CONTOUR function ideally tailors the received audio signal without changing the bandwidth

The CONTOUR function varies the outline of the IF DSP filter pass band characteristics, and the in-band signal construction can be partially altered. Differing from the IF SHIFT or IF WIDTH, the special CONTOUR pass band, can reduce or peak the desired signal, partially and continuously across the pass band. This feature is effective especially when the undesired signal is close to the center frequency.



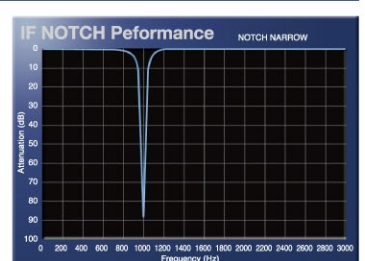
### Digital Noise Reduction (DNR) by DSP

The installed digital noise reduction circuit provides 15 separate parameters. The noise reduction constants may be set to the optimal working point by varying the 15 step parameters according to the actual noise within the HF band. The desired signal components are peaked and the random noise components are effectively cancelled.



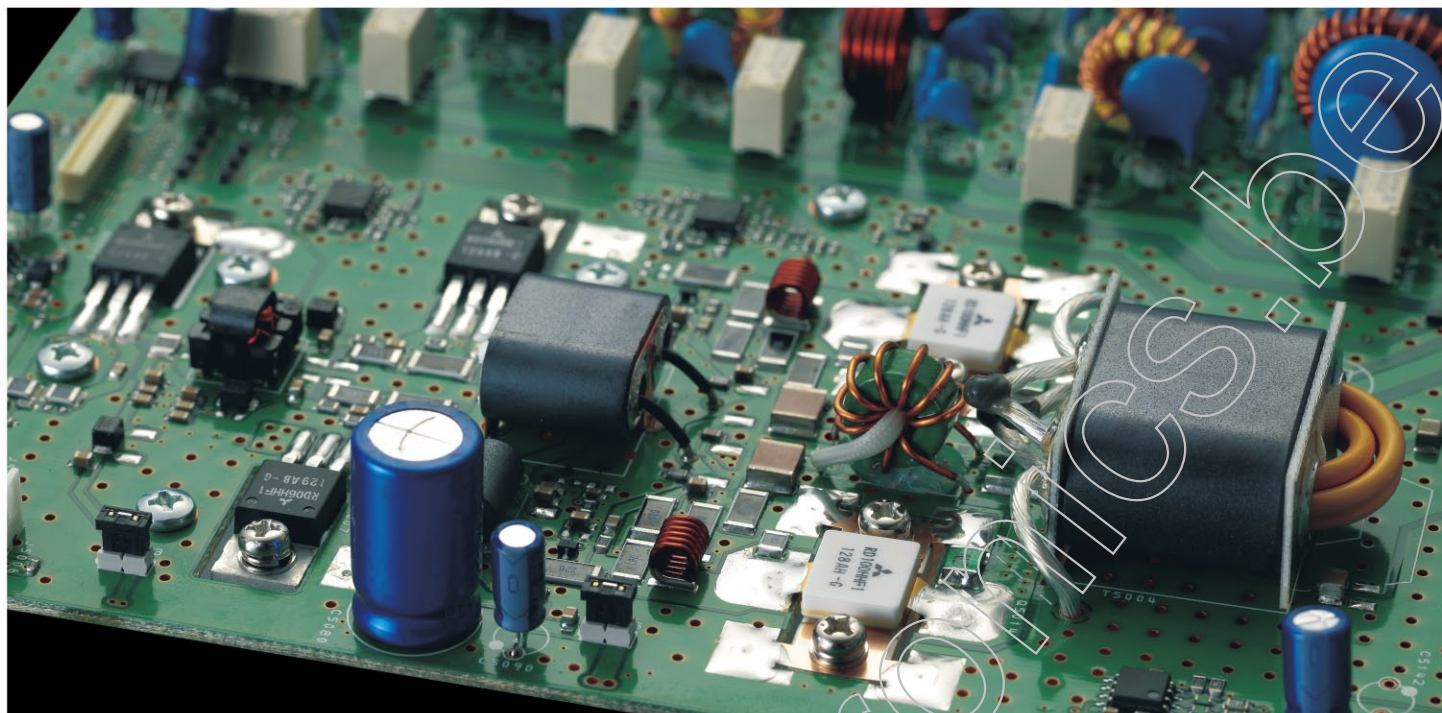
### IF NOTCH

This high Q circuit has steep attenuation characteristics of 70dB or more. Effective removal of a strong beat signal is obtained. The damping characteristics can be switched to wide or narrow band width, and the attenuation level may be adjusted in the Setting Mode Menu. Interfering signals may be attenuated, while minimizing the impact on the received signal.





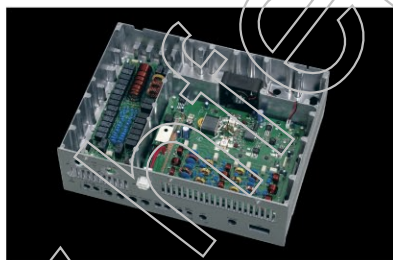
## Final amplifier supplies high quality stable high output



### Highly reliable high output final amplifier

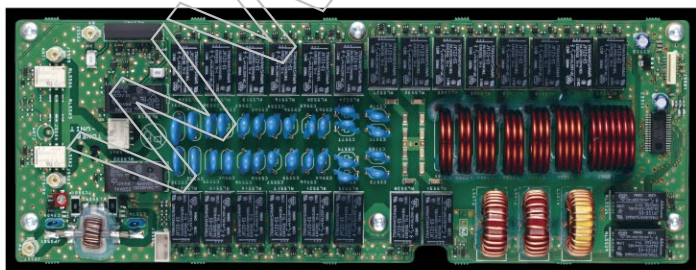
The final amplifier, which has two RD100HHF1 MOS FETs and amplifies in a push-pull construction with high power levels of 100 W, can transmit superb high quality emissions with little distortion and fewer spurious and other unwanted signals. A structure is used that combined with the die cast chassis dissipates the generated heat in the final amplifier section, providing ample capacity as a 1200 cc heat sink. The aluminum used for the die cast has high thermal conductivity and lowers the heat resistance. By dissipating the heat throughout the entire chassis, temperature increase is avoided even during continuous transmission, thus providing high reliability.

Furthermore, the placement of the cooling fan inside allows the final amplifier and the transmission low pass filter, which generate the most heat, to be cooled directly, and any generated heat is effectively removed to the outside. The large 60 mm diameter axial flow fan is mechanically isolated from the chassis to reduce vibration and noise. The speed of the fan is seamlessly controlled by the temperature of the PA amplifier, starting at approx. 40 degree C.



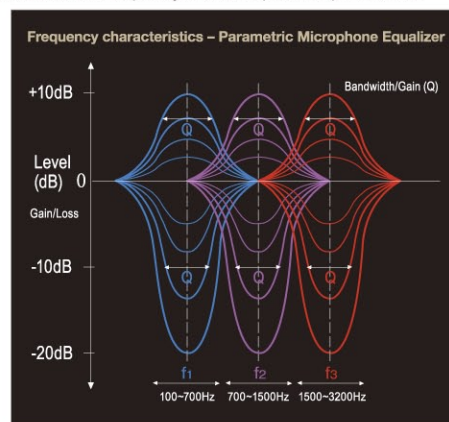
### High Speed Automatic Antenna Tuner includes 100 Memory Channels

The FT DX 1200 antenna tuner is the digital type that uses LC switching. It has a large capacity memory, and the tuning data is automatically memorized in the 100 channel memory. The optimized antenna tuning data is immediately recalled to reduce tuning time when changing frequency, and the best matching point is realized.



### Microphone Amplifier that includes Parametric Equalizer

The modulation circuit utilizes digital variable modulation through DSP, thus realizing ideal superior transmission audio quality. An incorporated parametric equalizer function allows for transmission signal bandwidth adjustment and various adjustments relating to transmission audio quality. The parametric equalizer can alter the Low, Mid and High part of the audio separately. This three stage parametric equalizer can generate the high quality TX audio sound, because it can be tuned in detail without sacrificing the audio dignity.



### IF DSP Speech Processor Punch is Contest Proven

The SSB Speech Processor uses IF digital signal processing to increase the intelligibility of the transmitted signal during weak signal crowded conditions. The DSP increases the average power of the important speech spectrum components, and reduces the TX power of the less significant components. Adjust the compression level in the Menu Mode to adapt the transmitted SSB signal to best suite the situation, propagation conditions and pile-up.

### Two receiver compatible antenna connectors

The antenna switching circuit allows complex antenna configurations for contests where separate receiving and transmitting antennas are used. The antennas can be configured and switched with one touch. The antenna settings are clearly displayed in the block diagram view on the TFT display.

For example: it is possible to use ANT 1 for TX and ANT 2 for RX only. During a contest, antennas may be switched with the touch of a button. The antenna connection information is automatically stored for each band, and conveniently displayed in the TFT Block diagram area, making it possible to easily see your antenna configuration, helping to avoid making an accidental incorrect connection.



# True feel of superior intuitive operability and an attractive appearance

## Huge TFT full-color display

The superior panel layout is characteristic of YAESU transceivers. The efficient display has been designed with more than just appearance in mind. This transceiver has a natural operability that, despite its wide variety of functions, allows for an immediate sense of familiarity with its operation and display. The display layout has also been meticulously considered. The most important meters during communication and frequency examination, are displayed in central view, with the various transmission and receiving function displays arranged around that. Everything is in direct view and the effects of an operation can be visually confirmed straightaway, thus allowing stress-free full concentration when operating over long periods of time.

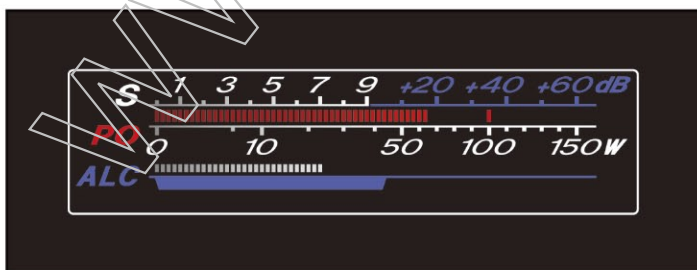


## Graphic display enabling intuitive QRM rejection

In tense DX or contest situations every moment counts and excellent operability is demanded. The operator has many QRM rejection tools at his instant disposal. Switches and buttons for the frequently used functions, namely SHIFT, WIDTH, NOTCH and CONTOUR (APF) are located beneath the TFT display for improved operability. The QRM rejection settings are graphically displayed in the TFT screen so that the status of filters etc. can be checked in one glance; furthermore, the brightness of the function displays indicates whether they are enabled or disabled. This provides the user with an intuitive and exceedingly easy to monitor operation interface.

## Choose between a time-honored analogue meter display, or a multifunctional bar graph display

Both, a display closely resembling a traditional analogue meter, and a bar graph meter presentation offering a variety of display options are available. The bar graph presentation, as you would expect, always includes the S meter and PO (transmit power) in a simple visual way, but at the same time it can also display one of the following: ALC level, SWR, ID (drain current), VDD (DC supply voltage) or speech processor compression level. This is of enormous benefit when monitoring the microphone gain adjustment or power amplifier status, as is required when transmitting.



Bar graph display(PO & ALC)

## Main dial with torque adjustment

We have also had a comprehensive look at the operational feel of the main dial on the FT DX 1200. The main dial, using machined aluminum parts has the solid feeling of a large flywheel, while being nimble and smooth in operation.

The rotation torque is easily adjusted with one hand by turning the main dial skirt, thus giving operators the option of instant adjustment to match their personal preference.



## Display of transmitting and receiving status and basic VFO-A, VFO-B settings

The transmit and receive status, and the basic VFO-A, VFO-B settings are displayed in the high contrast display above the main dial, enabling instantaneous confirmation of VFO, FAST or LOCK settings used in transmitting and receiving.

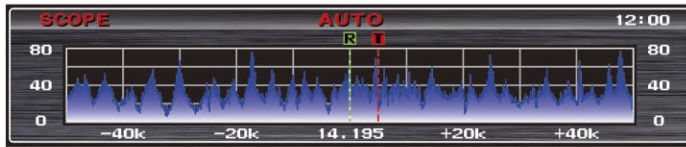




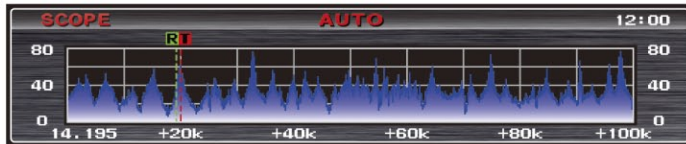
## ASC (Automatic Scope Control)

Standard automatic sweeping high speed spectrum scope in line with dial operations

A spectrum scope function that allows for an instant view of the signals, their strengths and distribution within a band is supplied as standard. The spectrum scope sweep function has two modes available: the normal mode, where the band is swept once when the SELECT button is pressed, and the AUTO mode where the band is automatically swept at preset intervals. No receive audio is generated during sweeping, but as sweeping is done at an extremely high speed this is a brief instant of approximately 300 msec. If the operator quickly operates the main dial to make a big frequency change in AUTO mode, an automatic sweep is performed and the display is refreshed. This enables frequency tuning while checking the spectrum in real time. The moment tuning is halted the receive frequency audio is resumed; as no sweeping is performed during slow frequency changes to tune in to another station, there is no interruption to the receive audio. Operation therefore feels natural and is without stress. The spectrum scope bandwidth can be set to six different options: 20 kHz, 50 kHz, 100 kHz, 200 kHz, 500 kHz and 1 MHz. Furthermore, TX and RX markers are displayed in the spectrum scope, enabling the user to confirm the relationship between the receive and transmit frequencies at a glance. This is particularly useful in the case of split operation.

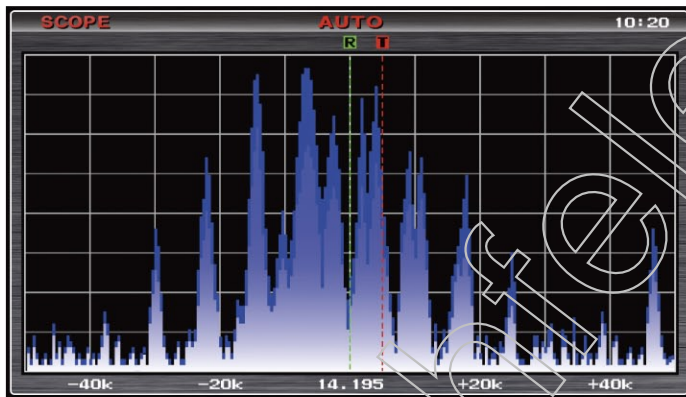


Display Center (CTR)



Display Fix (FIX)

The Band Scope can be switched to a full-screen display by simply pressing the SCOPE key, and a signal spectrum can be viewed in detail on the Full TFT screen.



## The Cursor Keys make operation selection easy

Six keys that are used frequently in normal operation are located at the left side of the TFT display. Other functions can be operated with these keys by pressing the "SCOPE" key which changes the "Spectrum Scope screen" to "Function Key Display screen". In the Function Key Display, the currently selected function is highlighted. Another Function may be selected and highlighted, by using the up, down, left, and right cursor keys, and then pressing the SELECT key to operate the desired function. Even if the radio is turned off, the last operated Key Function is memorized and restored, so that a frequently used Function may be easily operated.



## Block diagram displaying the receiving signal flow without change

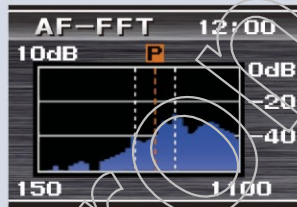
The popular block diagram is used to display the receiver status in a comprehensible manner. Making use of the flexible power of the TFT display, the path of the signal passing through each receiver circuit from the antenna terminal to the speaker is represented in a straight line. The settings can be confirmed in just one quick look, the user can operate with assurance.



## Optional unit FFT-1

### AF-FFT Scope Function demonstrates the AF characteristics of the TX/RX signal

The FT DX 1200 also has an AF-FFT (Audio Frequency Fast Fourier Transform) scope built in. This AF-FFT function was first demonstrated in the FT DX 9000 series. With this Scope, the audio characteristics of the received signals; the effect of adjusting the RX IF filter performance; and utilizing the QRM rejection features, may be visually observed. It is also possible to observe the TX audio characteristics of your own signal while using the Monitor function. This is very effective for tuning the parametric equalizer for voice characteristics and the microphone audio.



AF-FFT scope (normal display)



AF-FFT scope (waterfall display)

### RTTY/PSK31 Encode Decode function

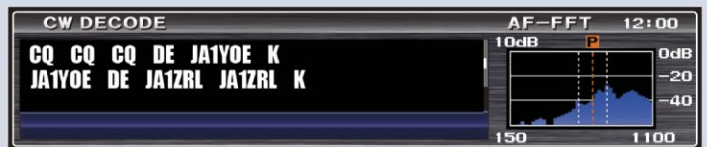
With the optional FFT-1, the FT DX 1200 has a practical RTTY and PSK31 encoder and decoder. In the RTTY mode, when pressing and holding the SCOPE key, the RTTY encode and decode screen is shown. On the AF-FFT screen, the programmed mark and space frequencies are displayed, making it possible to easily match the peak of the received signal. The Mark frequency can be selected from 1275 Hz and 2125 Hz, and the Shift width can be selected from 170/200/425/850 Hz. The baudot code meets both US and CCITT standards. Pressing and holding the SCOPE key in the DATA mode, will show the PSK31 screen. The PSK31 decode and encode functions correspond to both BPSK and QPSK that use common error correction functions.



### CW decode feature

The FT DX 1200 has a Morse code, decode function (requires optional FFT-1) that can decipher and show the CW characters on the TFT screen. This function helps the CW beginner and supports the actual CW communications by showing the decoded message on the display.

Note: The decoding rate may be decreased by signal fading, interference, or the operator's keying peculiarity, even though the message may be audibly copied.

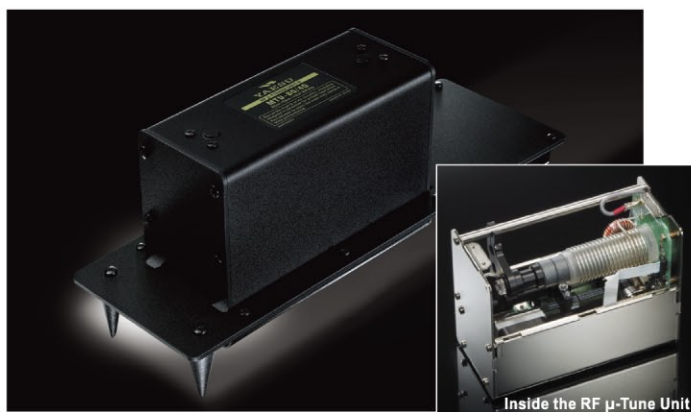


### CW Auto Zero-in

The received CW signal frequency may be detected (requires optional FFT-1) and the VFO automatically tuned to match the frequency and programmed pitch (auto-zero-in). Even for the experienced operator, it is difficult to zero-in only by listening. This function accomplishes the zero-in operation with one-touch, and the QSO can start immediately.

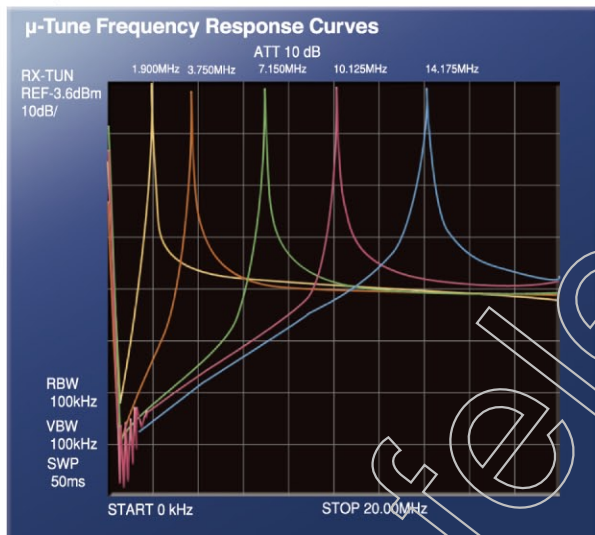


## Fully-Automatic $\mu$ -Tuning Kit

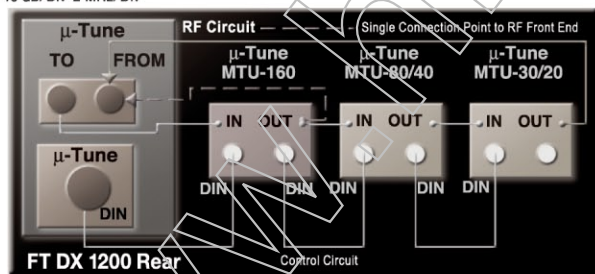


### Optional FT DX 9000 Series $\mu$ -Tuning Kit

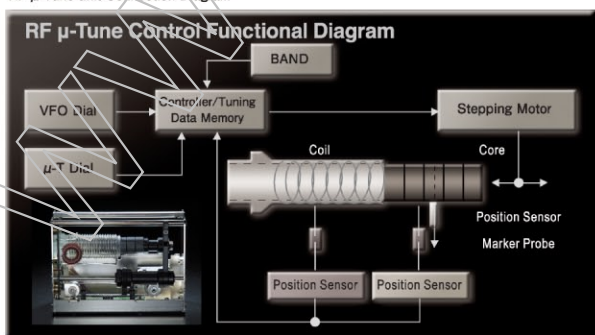
The  $\mu$ -Tuning Kit that was developed for the FT DX 9000 is optionally available for use with the FT DX 1200 series. A large diameter 28 mm inductor, with an adjustable ferrite magnetic material (Ni-Zn ferrite) core, is combined, with a high resolution and high torque stepping motor to automatically find the resonance point. By inserting these tuning units prior to the RF front end of the receiver, the IP3 points are improved by around 4 dB. Three tuning units cover frequencies from 1.8 MHz through 14 MHz, they are especially recommended for use in Low-Band operation.



10 dB/Div: 2 MHz/Div



RF  $\mu$ -Tune unit Connection Diagram



## For the CW Enthusiast

### CW Zero-in Display

The TX CW side tone pitch frequency can be adjusted in the MENU. The setting range is 300 Hz to 1050 Hz. This tone pitch is used as the reference in transmission. This means that the point, at which the TX pitch is equal to the RX pitch, becomes the zero-in point. In addition, the FT DX 1200 has a CW tuning display feature. By using this function, as the pitch of the sound that is heard when receiving the CW signal becomes closer to the programmed pitch, the lighted mark moves closer to the center of the display. When the center mark light turns RED, the signal is at the zero-in point.



### CW APF (Audio Peak Filter)

In the CW mode, the included APF (Audio Peak Filter) function has an audio peak at the signal frequency; this improves the S/N and increases the readability of the CW signal. The APF peak frequency can be finely aligned. APF bands can be selected from three steps according to preference, whereas peak frequencies can be fine-tuned with the APF switch located on the front panel.

### Other CW features

- Separate KEY Jacks on the front and rear panels
- Electronic Keyer Weight control (2.5 – 4.5)
- Keyer paddle Dot-Dash reversal
- ELEKEY MODE (IAMBIC) A/B selection
- "Bug" keying emulation
- CW Full Break-in
- Four-channel Message Memory (50 characters each); five memories available with FH-2 Keypad (optional)
- Automatic insertion of incrementing contest number into stored messages
- Automatic "Beacon" keyer mode
- CW "VOX" Delay is adjustable: 20 ms – 3000 ms
- CW Mode reversal (USB or LSB injection)
- CW Keying available during SSB operation
- Dial step setting (for the CW mode only)
- CW SPOT Feature

## Advanced functions that are useful for actual and practical operation

### Two antenna selections that are especially effective for DX and Contest operation

Two antenna connectors are available on the rear panel.

The antenna connection selections are memorized for each operating band, so the appropriate antenna is automatically selected when changing bands.

The ANT 2 can be set for the RX only antenna.

### TX monitor function

The IF DSP output in the TX mode is monitored, and it is possible to conveniently monitor the signal condition that is similar to the actual TX signal. When changing the microphone, adjust the compression level of the speech processor and / or adjust the TX audio quality control by using the parametric equalizer.

### CS key

The Custom Selection (CS key) is placed at the left side of the main dial. It is a very useful feature that can activate a previously selected MENU function at the touch of a button.



## Other practical features

- Four-position receiver front-end attenuator (0/6/12/18 dB) for operation in noisy or strong signal reception environment
- Quick Memory Bank (QMB) for instant storage and recall of frequency/mode information.
- Five-channel digital voice message memory function for repetitive voice message. Each memory channel is capable of storing up to 20 seconds of audio using the optional DVS-6.
- The optional FH-2 Keypad provides message storage and recall of voice and CW messages together with remote control functions.
- VOX (Voice-operated TX/RX control)
- MOX (Manual TX/RX control)
- All mode Squelch function
- 50-tone CTCSS Encoder/Decoder for FM operation
- Automatic Repeater Shift function with CTCSS Tone Encoder for 29MHz FM
- Wide/Narrow modes for AM and FM
- LOCK Function
- Flexible, easy-to-use VFO/Memory command selections:  
VFO A→VFO B, VFO A←→VFO B, VFO/Memory, Memory→VFO A, VFO A→Memory
- Memory Channel Offset Tuning function (MT)
- Versatile Menu Mode for customization of setup features
- Rear panel, constant-level audio output jack (transmit + receive)
- External control (CAT) is possible using the USB (Requires SCU-17) or serial port. This makes remote control from a distant location available.
- Various easy connection availability for RTTY, SSTV, PSK31, JT65 (EME) and other digital modes
- Optional VL-1000 Quadra System HF – 50 MHz Linear Amplifier for automatic operation
- General coverage reception: 30 kHz – 56 MHz (specifications guaranteed only in Amateur bands)
- Mode-optimized Automatic AGC decay selection (OFF/SLOW/MID/FAST)
- 99 channel memory that can be managed in the memory channel list view (supports memory group view, 18 alphanumeric characters)
- Can be connected to a PC with a USB cable, and supports CAT, USB AUDIO IN/OUT, TX control (PTT, KEY, SHIFT), firmware updates. (Requires SCU-17)

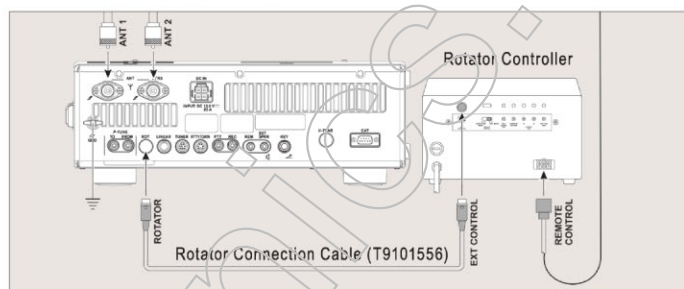
- Rotator Control function which enables you to control the speed and direction of YAESU G-800DXA, G-1000DXA/C, or G-2800DXA/C rotator using the 10 key keypad.

Rotation speed control 0 – 100%

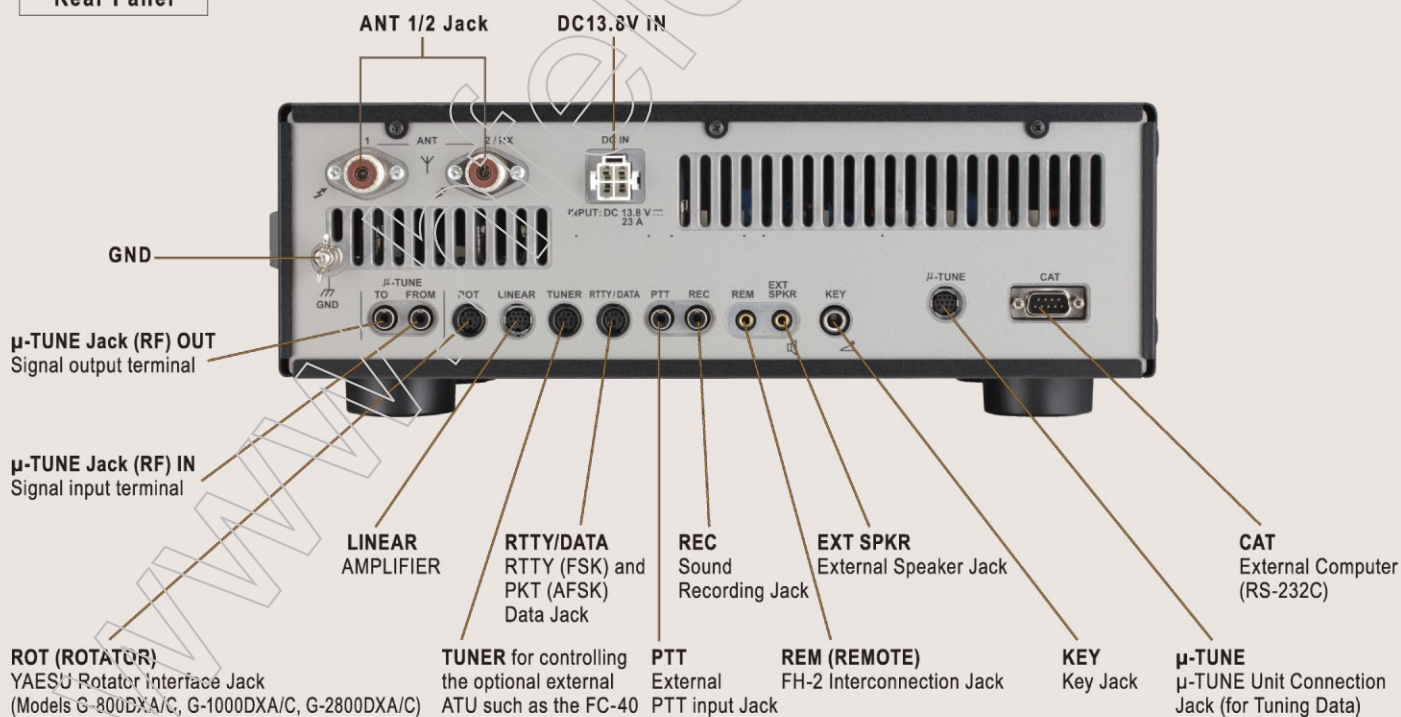
**SPEED 100%**

**DIRECTION +90°**

"Overlap" indication  
Direction (0 – 360 (+ 90) deg)



### Rear Panel





## Specifications

| General                        |   |
|--------------------------------|---|
| RX Frequency Range             | 30 kHz - 56 MHz (operating)<br>160 - 6 m (specified performance, Amateur bands only)  |
| TX Frequency Ranges            | 160 - 6 m (Amateur bands only)  |
| Frequency Stability            | ±0.5 ppm (after 1 minute @14°F - +122°F)  |
| Operating Temperature Range    | 14°F - +122°F (-10°C - +50°C)   |
| Emission Modes                 | A1A (CW), A3E (AM), J3E (LSB, USB), F3E (FM),<br>F1B (RTTY), G1B (PSK)  |
| Frequency Steps                | 1/5/10 Hz (SSB, CW, & AM), 100 Hz (FM)  |
| Antenna Impedance              | 50 Ohms, unbalanced<br>16.7 - 150 Ohms, unbalanced (Tuner ON, 1.8 - 29.7 MHz Amateur bands)<br>25 - 100 Ohms, unbalanced (Tuner ON, 50 MHz Amateur bands) |
| Power Consumption (Approx.)    | RX (no signal) 1.8 A<br>RX (signal present) 2.1 A<br>TX (100 W) 23 A  |
| Supply Voltage                 | DC 13.8 V ±10% (Negative Ground)  |
| Dimensions (W x H x D)         | 14.4" x 4.5" x 12.3" (365 x 115 x 312 mm)   |
| Weight (Approx.)               | 20.9 lbs (9.5 kg)   |
| Transmitter                    |   |
| Power Output                   | 5 - 100 watts (2 - 25 watts AM carrier)   |
| Modulation Types               | J3E (SSB): Balanced,<br>A3E (AM): Low-Level (Early Stage),<br>F3E (FM): Variable Reactance  |
| Maximum FM Deviation           | ±5.0 kHz / ±2.5 kHz   |
| Harmonic Radiation             | Better than -60 dB (160 - 10m Amateur bands: Harmonics)<br>Better than -50 dB (160 - 10m Amateur bands: Others)<br>Better than -63 dB (6m Amateur band)   |
| SSB Carrier Suppression        | At least 60 dB below peak output  |
| Undesired Sideband Suppression | At least 60 dB below peak output  |
| 3rd-order IMD (Typical)        | -31 dB @14 MHz 100 watts PEP  |
| Bandwidth                      | 3 kHz (LSB/USB), 500 Hz (CW),<br>6 kHz (AM), 16 kHz (FM)  |
| Audio Response (SSB)           | Not more than -6 dB from 300 to 2700 Hz   |
| Microphone Impedance           | 600 Ohms (200 to 10 kOhms)  |

| Receiver                            |   |
|-------------------------------------|---|
| Circuit Type                        | Triple-conversion Super heterodyne  |
| Intermediate Frequencies            | 40.455 MHz / 455 kHz / 30 kHz (24 kHz for AM/FM)  |
| Sensitivity                         | SSB (BW: 2.4 kHz, 10 dB S+N/N)<br>0.16 µV (1.8 - 30 MHz) (AMP 2)<br>0.125 µV (50 - 54 MHz) (AMP 2)<br>AM (BW: 6 kHz, 10 dB S+N/N, 30% modulation @400 Hz)<br>2 µV (0.5 - 1.8 MHz) (AMP 2)<br>2 µV (1.8 - 30 MHz) (AMP 2)<br>1 µV (50 - 54 MHz) (AMP 2)<br>FM (BW: 15 kHz, 12 dB SINAD)<br>0.5 µV (28 - 30 MHz) (AMP 2)<br>0.35 µV (50 - 54 MHz) (AMP 2)<br>There is no specification for frequency ranges not listed. |
| Squelch Sensitivity (RF AMP 2 "ON") | SSB/CW/AM<br>2 µV (0.1 - 1.8 MHz)<br>2 µV (50 - 54 MHz)<br>FM<br>1 µV (28 - 30 MHz)<br>1 µV (50 - 54 MHz)<br>There is no specification for frequency ranges not listed.   |
| Selectivity                         | Mode -6 dB -60 dB<br>CW/RTTY/PKT 0.5 kHz or better 0.75 kHz or less<br>SSB 2.4 kHz or better 3.6 kHz or less<br>AM 6 kHz or better 15 kHz or less<br>FM 12 kHz or better 30 kHz or less   |
| Image Rejection                     | 70 dB or better (160 - 10m Amateur bands)<br>60 dB or better (6m Amateur band)  |
| Maximum Audio Output                | 2.5 W into 4 Ohms with 10% THD  |
| Audio Output Impedance              | 4 to 8 Ohms (4 Ohms: nominal)   |
| Conducted Radiation                 | Less than 4 nW  |

Specifications are subject to change, in the interest of technical improvement, without notice or obligation, and are guaranteed only with in the amateur bands.

## Options

|  |  |   |  |  |   |   |  |  |
|--|--|---|--|--|---|---|--|--|
| <br><b>FFT-1</b><br>FFT Unit | <br><b>DVS-6</b><br>Voice Memory Unit | <br><b>FH-2</b><br>Remote Control Keypad   | <br><b>SCU-17</b><br>USB Interface Unit | <br><b>MD-200A8X</b><br>Ultra High fidelity Desktop Microphone | <br><b>MD-100A8X</b><br>Desktop Microphone                             | <br><b>YH-77STA</b><br>Stereo Headphones   | <b>CT-118</b><br>VL-1000 Linear Amplifier Connection Cable<br><b>CT-39A</b><br>Packet Interface Cable<br><b>T9101556</b><br>Antenna Rotator Connection Cable<br><b>T9207451</b><br>Linear Amplifier Connection Cable |  |
| <b>RF µ-Tune Kits</b><br>Wt. abt. 5.7 Lbs (2.6 kg) / 5 W x 4.7 H x 13 D in (127 x 120 x 328mm)                 |  | <br><b>160m Band RF µ-Tune Kits A</b><br><br><b>80/40m Band RF µ-Tune Kits B</b><br><br><b>30/20m Band RF µ-Tune Kits C</b> |  | <br><b>FP-1030A</b><br>External Power Supply (13.8 VDC 25 A)    | <br><b>FP-1023A</b> (USA Only)<br>External Power Supply (13.8 VDC 23 A) | <br><b>QUADRA SYSTEM</b><br><b>HF-50 MHz 1 kW Linear Amplifier (500 W/USA Version) VL-1000</b><br>Automatic Antenna Tuner Built In<br><br><b>VL-1000 Power Supply VP-1000</b> |  | <br><b>FC-40</b><br>"Automatic Antenna Tuner (for Long wire antenna)" |

\* Up to three/3 µ-Tune Kits may be installed. Aµ and any µ-Tune Kits shall be installed by the users.

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. Precise frequency range may be different in some countries. 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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