

The radio... **YAESU**

FTX-1 series

HF/50/144/430MHz ALL MODE TRANSCEIVER

FTX-1 Field

10W Version for Field Operation

FTX-1 optima

10W Field Operation and 100W Base Station



The Image is showing "FTX-1 optima" using a third-party stand for the Field Head.

*Stand is not included

HF Enthusiasm

No Future without the Past
Dawning of a new era for Wide-Coverage Transceivers
with Epoch-making features from the pioneer of
Single-Side Band radios for over 70 years

FTX-1 series

HF/50/144/430MHz ALL MODE TRANSCEIVER

FTX-1 Field

10W Version for Field Operation



Included items: • Field Head
• SBR-52LI Li-ion Battery
• SSM-75E Hand microphone

FTX-1 optima

10W Field Operation and 100W Base Station

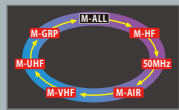


Included items: • Field Head
• SBR-52LI Li-ion Battery
• RF Power Amplifier
• SSM-75E Hand microphone

True All-Rounder

All mode Wide-Coverage SDR Transceiver from HF through UHF bands including C4FM Digital

- 1 HF/VHF/UHF** | **MAG(Memory Auto Grouping)** : Memory Channels are automatically grouped and can be recalled by Band Groups – HF, VHF, UHF and others.
- 2 HF/VHF/UHF** | **QMB(Quick Memory Bank)**: Frequency, mode and all settings and parameters of the current receiving signal can be quickly stored and recalled.
- 3 VHF/UHF** | **PMG(Primary Memory Group)**: PMG channels can always be scanned and heard – which is useful when watching the channels Club members use to communicate.
- 4 VHF/UHF** | **AMS (Automatic Mode Select)**: AMS automatically determines whether the receiving signal is C4FM Digital or FM and sets the receiver to the appropriate mode.



MAG (Memory Auto Grouping)



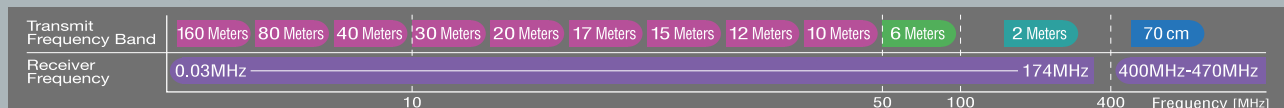
QMB (Quick Memory Bank)



PMG (Primary Memory Group)



AMS (Automatic Mode Select)



* Guaranteed within Amateur band only

True Dual-Band Operation including C4FM/C4FM Simultaneous Receive

Two independent receiver circuits provide true simultaneous dual-band operation, whether in the same band or in different bands. For example, SSB communication on HF bands simultaneously with C4FM digital communication with local Club stations on V/UHF bands.

*HF/HF is not available.

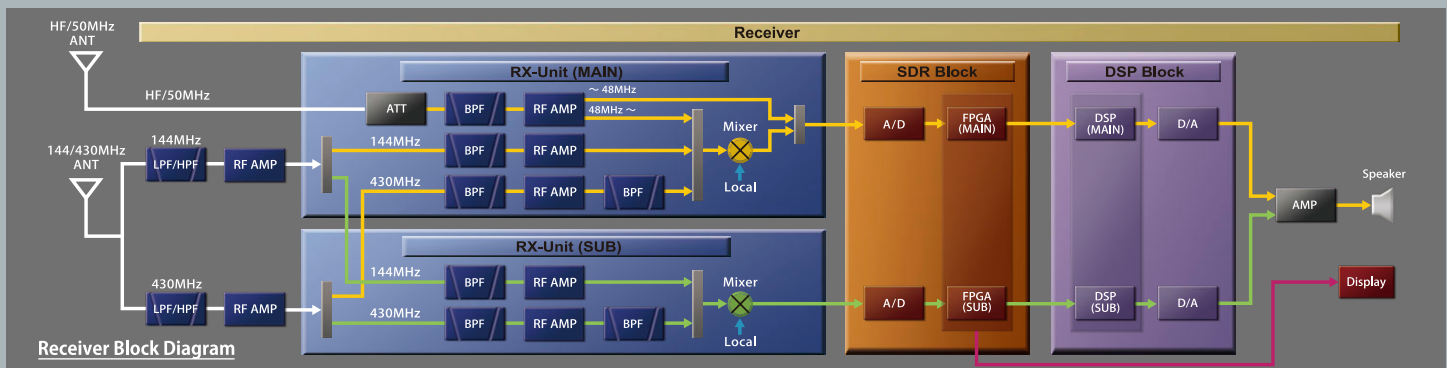


Display Image - SUB: 430MHz C4FM Digital/ MAIN: 14MHz USB Mode

Uncompromising Circuit Design Ensures Excellent Receiver Performance from HF through V/UHF

The YAESU RF-Front End with Superb Interference Rejection

While the FTX-1 is compact, it boasts excellent proximity two-signal characteristics thanks to a powerful RF Front-End design with 10-divided BPF (Band Pass Filter) in amateur bands from HF through UHF and RF amplifier with a low NF (Noise Figure) which is excellent in intermodulation characteristics. In addition, a high-purity 110.592MHz oscillator circuit configuration supplies a high-quality sampling clock signal with excellent C/N characteristics to the A/D converter.



Uncompromising SDR Circuit Configuration to Ensure High Receiving Performance

Up to 48MHz, Direct Sampling is adopted for the upper frequencies, Single Conversion IF Sampling is used for the SDR receiver circuit configuration. For the MAIN and SUB, two independent receiver circuits are equipped with the same high-resolution A/D converter and FPGA used in Yaesu FTD10.

RF amplifier design is optimized for each band. For the HF/50MHz bands, IPO/AMP1/AMP2 is separately selectable to match the settings to the current band and conditions. For the V/UHF bands, the RF amplifier uses GaAs MMIC (Gallium arsenide monolithic microwave integrated circuit) NJG1152KA1 device which achieves high-gain and a low NF (Noise Figure) suitable for V/UHF bands.

14bit High-resolution A/D Converter



28nm Process FPGA



Effective QRM Rejection afforded by High-Speed DSP

A Dual Core 32-bit high-speed floating decimal point DSP (Clock frequency: 594MHz/ 198MHz) is utilized. Yaesu's effective Interference Reduction System: SHIFT/ WIDTH/ NOTCH/ CONTOUR/ APF (Audio Peak Filter)/ DNR (Digital Noise Reduction)/ NB (Noise Blanker) are performed by high-speed digital processing. The filter display shows pass-band AF spectrum information as well as the operation status of the interference reduction functions, which enable users to check the pass-band status at a glance. The interference functions are all accessed from the independent DSP dial for MAIN/SUB which allows smooth operation even in a harsh environment such as a contest day.

Dual Core 32bit High speed floating decimal point DSP



Front Panel Layout achieves Intuitive Operation

Compact Field Head, has a large 4.3-inch full-color touch panel display that affords intuitive operation and outstanding visibility. Primary operating functions are placed around the MAIN VFO Dial. Dual LED indicators above the MAIN VFO dial shows the current receiver status of MAIN/SUB bands at a glance. VMI LED (VFO mode indicator) arranged on the left and right sides of the MAIN VFO dial presents the current operating modes such as MAIN, SUB, Memory mode, and clarifier/split operation. Furthermore, the display and dials for MAIN/SUB bands are placed independently on the right and left sides of the front panel which provides excellent functionality.

High-Quality Sound and Loud Volume from 2-Way Front Speakers

The Field Head is equipped with two large speakers. Audio output delivered from the bottom of the front panel is clear and powerful which ensures reliable communication even in noisy field operating environments.



Equipped with 3DSS (3-Dimensional Spectrum Stream) High-Resolution 4.3-inch TFT Color Touch Panel Display

The large 4.3-inch wide full-color touch panel display, affords intuitive management of operating frequency, meters, and main function settings. The real-time spectrum scope display adopts the FTD series SDR 3D scope (3DSS) to visualize changes in signal strength within the bands.

【Scope Specification】

Sweep speed : 30 FPS (Approximately), Display Range : 100 dB, Span width : 5 kHz - 1000 kHz

3DSS (3-Dimensional Spectrum Stream)

YAESU 3DSS(3-Dimensional Spectrum Stream) presents the constantly changing band conditions in three dimensions (3-D). The signal strength flows over time to the rear of the screen, and an operator can intuitively view the constant changes in a signal's strength. The frequency can also be instantly changed on the scope screen by touching the peak of desired signal. The Multi-Color display changes color depending on the signal strength, and is also selectable.

Multi Function Display

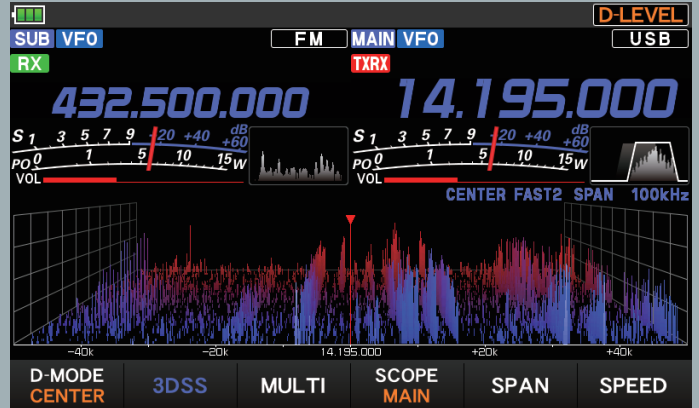
MULTI function display mode allows the oscilloscope and the AF-FFT audio scope to be shown on the screen, in addition to the 3DSS. While monitoring the receive band, a contact station's transmit signal audio characteristics can be viewed with the AF-FFT function. Simultaneously, the RX filter and interference reduction functions can be observed on the MULTI display for their influence on the received signal.

Waterfall Display

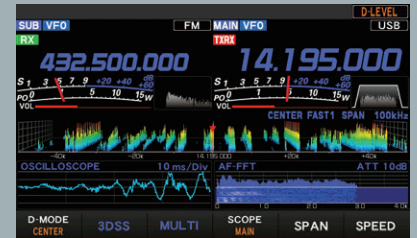
The 3DSS display and the waterfall display are selectable alternately by touching "3DSS" on the screen.

Display Color of the Scope Screen and Font Color of the Frequency

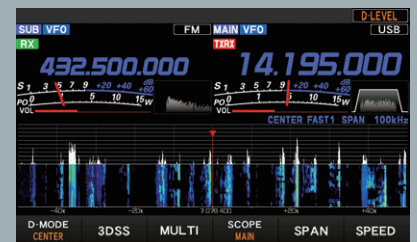
The scope screen display color can be selected from 12 options. The font color of the frequency is selectable from 3 options according to the user's preference.



3DSS Display



MULTI Function Display



Waterfall Display

Excellent Operability afforded by touch-panel functionality

By touching the desired function to set on the display, changing of various settings and tuning are available.

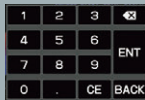
● Transmission Meter Selection

When the meter display screen is touched, the transmit selection screen is shown and selectable.



● Frequency Direct Entry

By touching the frequency display section (below 100Hz), ten key frequency input using a keypad that is displayed on the screen is possible.



● Tuning in 1MHz or 1kHz steps

Temporarily set on the MAIN/SUB dial knob when the "MHz" or "kHz" area of frequency display is touched.



3 Display Modes are switchable according to the User's preference and usage

With one-touch of the Display(DISP) key, 3 display modes are switchable to suit operation usage and preferences. By pressing and holding the DISP key, the screen is turned off. The screen will reappear if the screen is touched or other operation is performed.

Display (DISP) Key



Dual-Band Display (Right/Left)

Horizontal Dual-Band Display showing MAIN on right side/ SUB on left side



Dual-Band Display (Up/Down)

Vertical Dual-Band Display showing MAIN on upper side/ SUB on lower side



Single-Band Display

Single-Band Display showing only the receiving signal status of the operating band



Various Functions support Comfortable Operation

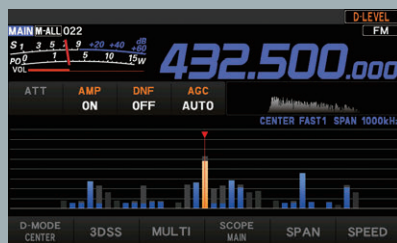
Super DX function expands the possibilities of long-distance communication

With a single touch, you can increase the RF amplifier gain to improve reception sensitivity, and DSP digital signal processing enhances the audio and improves the S/N ratio. Even with a weak received signal, you can hear a clear, audible sound, expanding the possibilities for long-distance communication.

*Super DX function works in all modes except C4FM digital.

Memory Channel Scope

The scope displays up to 43 memory channels. Check the strength of the received signal on the bar graph, and simply touch the bar graph where you want to receive. This will change the transmit/receive channel, so you can start communicating immediately.



"PRESET" mode for easy setup for FT8 operation

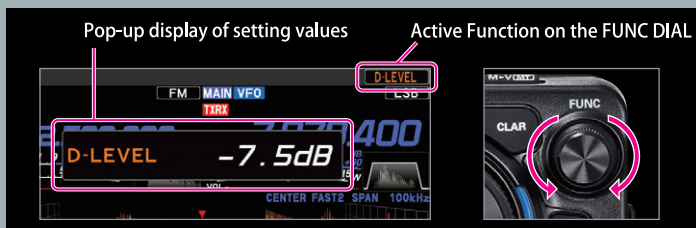
Simply touch "PRESET" on the MODE screen and each setting item will be optimally configured for "FT8" mode, allowing you to enjoy smooth and comfortable "FT8" mode communications.

You can also easily customize preset information by pressing and holding "PRESET" on the screen to call up each setting item. Up to five preset settings can be saved.



FUNC (Function) DIAL

Given its multifunctionality, settings can be easily adjusted with the dedicated FUNC DIAL. Simply press and hold the dial to select and adjust items on the touch screen, allowing for quick changes even during operation. The last function used is memorized, allowing immediate setting modification by simply rotating the FUNC DIAL for subsequent use.



Compatible with WIRES-X and APRS communications

Compatible with WIRES-X, an internet communication system that allows communication with WIRES stations around the world, the FTX-1 alone allows node operation/room operation (digital/analog compatible). APRS communication is also supported.

micro SD Card Slot

Equipped with a microSD card slot, the unit supports commercially available microSD memory cards for recording and playback of communication audio, voice memory (recorded messages for transmission), various settings, memory storage, screen capture (saving display screens), and firmware updates.

Convenient Features Supporting FM Mode in the VHF/UHF Bands

- 104 types of DCS (Digital Code Squelch)
- 50 types of CTCSS tone encoder/tone squelch function
- ARS (Auto Repeater Shift) function for easy repeater access
- Repeater reverse function
- DTMF transmission function

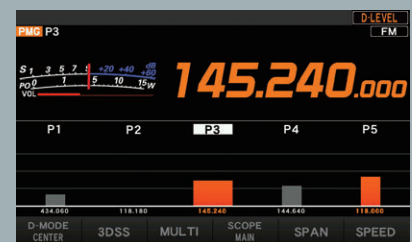
Extensive functionality for CW operation

- 3.5Φ CW Key Jack
- Built-in electronic keyer (4 to 60 wpm)
- CW memory keyer
- CW zero-in
- CW auto-zero-in
- Tuning offset indicator
- CW reverse function
- APF (audio peak filter)
- CW auto mode
- CW keying waveform shaping

PMG (Primary Memory Group)

New operation feel with PMG function for VHF and UHF

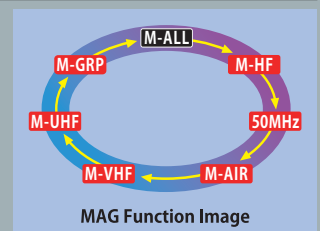
The reception status of frequently used frequencies (up to 5 channels) is displayed in real time on a bar graph for registered PMG channels. Two channels with signals are automatically received simultaneously, allowing for efficient operation. The PMG function can be used from 108 to 470 MHz.



P3 and P5 can be simultaneously monitored and heard.

MAG (Memory Auto Grouping)

By pressing the [MAG] key during memory mode, memory channels are automatically grouped by band (HF, 50MHz, AIR, VHF, UHF) for convenient access. The "M-GRP" (My Group) function allows frequently used memory channels to be registered and recalled as a group. "M-ALL" recalls all memory channels.



QMB (Quick Memory Bank) Function

Equipped with a dedicated QMB (Quick Memory Bank) key, the current operating state can be stored at the touch of a button and easily recalled. The QMB stores not only frequency and mode, but also transmission/reception settings, filters, and other configurations, allowing users to quickly restore optimal settings and begin operation. (Up to 10 channels can be stored.)

QRP Mode for Setting Transmission Power to 5W

The QRP mode allows the transmission output of all bands to be set to a maximum of 5W without modifying the configured output settings. This enables immediate enjoyment of QRP operation during contests or portable operations.

VFO Mode Indicator

VFO mode indicators, located to the left and right of the MAIN dial, allow users to instantly recognize operational states such as VFO mode, memory mode, and the clarifier function. The indicator colors can be selected based on preference: BLUE, GREEN, WHITE, or OFF for VFO and memory modes, and RED or OFF for the clarifier function.



Advanced Features unique to C4FM Digital

- V/D mode delivers optimal mobile communication with high error-correction capability, while Voice FR mode enables premium-quality voice transmission.
- AMS function automatically detects digital or FM modes to allow seamless intercommunication.
- GM (Group Monitor) function offers clear on-screen indication of member presence within communication range.
- DG-ID (Digital Squelch) function enables selection of the intended communication partner station.

Other Useful Functions

- 1,104 high-capacity memory channels with 12-character alphanumeric Tag
- Proven digital speech processor with DSP (LSB/USB only)
- 3-stage parametric microphone equalizer
- RF ATT (HF/50MHz only)
- AGC (Automatic Gain Control)
- 3-band stacking function
- VOX function
- APO (Auto Power Off)
- TOT (Time-Out Timer)
- CAT compatible (3 channels, USB Type-C connection)
- FM broadcast reception (76-108MHz)
- External speaker jack
- Headphone jack

FTX-1 Field

6W Field Operation with Included Lithium-Ion Battery, 10W with external DC power supply



The included high-capacity 6,400mAh lithium-ion battery achieves approximately 9 hours*1 of operation at 6W transmission output (HF band SSB)

Various operation methods

① 6W transmission output with lithium-ion battery

By attaching the SBR-52LI high-capacity 10.8V 6,400mAh lithium-ion battery to the field head, you can enjoy long periods of mobile operation with peace of mind.

BATTERY OPERATING TIME*1 (Approximately)

	HF/50MHz	144MHz	430MHz
SSB/CW	9 hours	8.5 hours	8 hours
FM/C4FM	8.5 hours	8 hours	7.5 hours

② Connect an external DC13.8V power supply and operate with a transmission output of 10W

By connecting an external DC power supply to the field head, operation is possible with a transmit output of 10W using the external DC power supply. With the SBR-52LI installed, the SBR-52LI can be fully charged in approximately 7 hours if the field head power is turned off. Charging is possible while the field head is turned on and in operation, but the charging time is approximately 27 hours. Charging automatically stops during transmission.

③ Connect to a power source etc.*2 using USB Type-C for operation

By attaching the SBR-52LI to the field head and connecting a commercially available USB Type-C power supply to the field head, power is supplied via the USB Type-C when receiving, and when transmitting, the power automatically switches to the SBR-52LI, operating at a transmit output of 6W. If the field head is turned off, the SBR-52LI can be fully charged in approximately 7 hours. The field head can be turned on and charged while in operation, but it takes approximately 27 hours to fully charge.

• Connect the removed battery to a USB Type-C charger*2 and charge it in approximately 7 hours

With the SBR-52LI detached, you can connect a commercially available USB Type-C charger*2 and charge it in approximately 7 hours. This allows for flexible operation, such as charging a spare SBR-52LI while in operation. However, you cannot connect a USB Type-C cable directly to the SBR-52LI while it is attached to the field head.

Supports USB Type-C charging with a standalone SBR-52LI



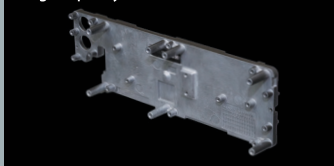
*1 Duty Cycle based on TX 6 seconds (6W) : RX 6 seconds : Standby 48 seconds.

*2 A commercially available USB PD (Power Delivery) compatible USB Type-C charger with 45W or more (DC15V output compatible) or a battery and a USB PD compatible Type-C cable are required.

Highly reliable final power amplifier with ample capacity

Heat generated by the final amplifier is quickly dissipated into the large-capacity die-cast aluminum chassis, and by effectively dissipating the heat to the outside, stable transmission output is ensured.

Large capacity aluminum die-cast chassis



The large-capacity battery and optional antenna tuner FC-80 can be installed together, making it convenient to carry to the field.

The included 10.8V 6,400mAh high-capacity lithium-ion battery SBR-52LI can be attached to the back of the field head to achieve an all-band transmit output of 6W (5W in QRP mode, 10W with external DC power connection). The optional auto antenna tuner FC-80 and lithium-ion battery SBR-52LI can also be attached at the same time to integrate the unit, making it easy to take to the field.

Simultaneous installation of SBR-52LI and FC-80



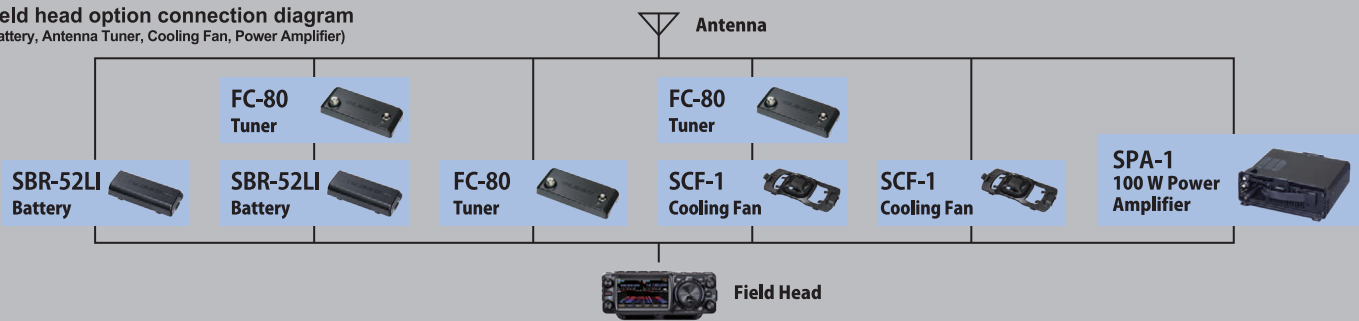
Connect the 100W power amplifier SPA-1 (optional) to the field head to realize full-scale mobile operation and fixed station operation

By connecting the optional 100W power amplifier SPA-1 to the field head, you can create an all-in-one, all-band, all-mode transceiver with a transmit output of 100W (50W in the 144MHz/430MHz bands) covering the HF to UHF bands. Connecting an external DC power supply makes it ideal for full-scale mobile operation in convenient locations like campsites, parks, and riverbanks. Mounting it in your car as a high-power mobile transceiver covering the HF to UHF bands also expands the enjoyment of amateur radio, from DX communications with overseas stations to ragchewing with local stations.

Optional SPA-1 (100W Power Amplifier)



• Field head option connection diagram (Battery, Antenna Tuner, Cooling Fan, Power Amplifier)



FTX-1optima

All-in-One Transceiver Offering 100W High Output (144/430 MHz: 50W) Suitable for Mobile and Base Station Operation

Provides complete mobile and base station operation for all bands and modes

High-Reliability and Highly Stable Final Amplifier with Large-Capacity Aluminum Die-cast Chassis and 60mm High-Performance Cooling Fan

The FTX-1 optima is an all-band, all-mode transceiver with a transmission output of 100W (144/430MHz band: 50W), enabling full-scale mobile operation including DX communication with overseas HF bands, digital communication such as FT8 communication, and long-distance communication in the VHF/UHF bands.

Final amplifier that guarantees stable, high output

The HF/50MHz band final amplifier uses a push-pull MOS FET RD100HHF1, while the 144/430MHz band final amplifier uses a circuit configuration with independent MOS FET RD70HUP2 for each band, providing stable, high output even during long-term operation. Heat generated by the final amplifier is quickly dissipated within the large-capacity aluminum die-cast chassis. The airflow design ensures high cooling efficiency by efficiently flowing air taken in from the front through the internal heat dissipation fins and releasing heat to the outside. The large 60mm cooling fan mounted on the rear panel has its rotation speed controlled when the temperature inside the chassis rises, minimizing annoying fan noise during nighttime operation.

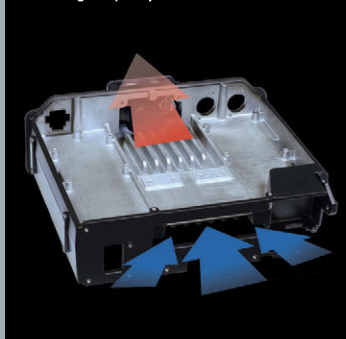
HF/50MHz 100W Final Amplifier



144/430MHz 50W Final Amplifier



SPA-1 Large Capacity Aluminum Die-cast Chassis



*Stand is not included

HF/50MHz High-speed Automatic Antenna Tuner

The SPA-1 has a built-in digital antenna tuner that uses high-speed relays and high-voltage LC switching. The tuned frequency and its matching data are automatically stored in the 100-channel large-capacity matching data memory, allowing you to instantly operate in the best matching condition.

HF/50MHz Automatic Antenna Tuner



Two HF/50MHz band antenna connectors for various antenna connections

The SPA-1 is equipped with two antenna connectors for the HF and 50MHz bands. It supports a variety of antenna connections, such as setting the antenna to be used for each band or using the ANT 2 connector exclusively for receiving.

SPA-1 Rear Panel



Built-in 2.5W speaker with a total output of 4W for high-quality sound and loud volume

A large 66mm diameter 2.5W speaker is built into the top of the case, and together with the front speaker of the field head, it produces a total output of 4W of high quality sound and loud volume, making the received sound easy to hear even in noisy places.

Compatible with long wire auto antenna tuner (FC-40)

The tuner jack on the rear panel of the SPA-1 can be used to connect a 100W automatic antenna tuner (FC-40) that can match wire antennas on the HF/50MHz amateur bands.

Removable field head for field operation

The included battery is a high-capacity lithium-ion battery SBR-52LI. Simply press the release knob to unlock the battery and unplug the connecting cable to remove the field head. Simply attach the high-capacity lithium-ion battery with a single touch and easily take the field head outdoors for mobile operation.

Connect the SPA-1 to the field head



Accessories for Field Head

SBR-52LI

Lithium Ion Battery Pack
10.8V 6,400mAh

(Supplied with FTX-1 Field/
FTX-1 optima)

6W stand-alone operation is possible by attaching
the SBR-52LI to rear of the Field Head (5W for QRP)
※ 10W with an external power supply

- The image is the rear of Field Head
attached with SBR-52LI



FC-80

HF/50MHz 10W
Automatic Antenna Tuner
• Supplied with spacer

FC-80 is light and thin automatic antenna tuner which
can be attached to rear of the Field Head. By using the
supplied spacer, FC-80 and SBR-52LI or SCF-1 can be
combined to attach to the rear of the Field Head.

- The image is the rear of the Field Head
attached with FC-80



*Cannot be attached with
SBR-52LI simultaneously
SCF-1
Cooling Fan

When operating with an external DC power supply, SCF-1
can be installed to rear of the Field Head for effective
cooling for a continuous transmission such as data
communication. No tools are necessary for installation,
and it can be quickly replaced by SBR-52LI as necessary.

- The image is rear of the Field Head attached
with SCF-1



FC-90

HF/50MHz 10W Long wire/ 50Ω
compatible Automatic Antenna Tuner

FC-90 is a compact automatic antenna tuner
compatible with both long wire and 50Ω
antenna. By connecting with a cable, it can be
installed close to the antenna.

- FC-90



SPG-1

Protection Guard



SSM-75E

Hand Microphone



YH-77STA

Lightweight
Stereo Headphone



FGPS-5

GPS Antenna Unit



BU-6

Bluetooth Unit



*BU-6 must be
installed in the
radio

Bluetooth
SSM-BT20
Bluetooth Headset



*not connectable
directly to the
Field Head

FC-40
Long wire compatible
External Auto Antenna Tuner



SPA-1

100W (144/430MHz: 50W) RF Power Amplifier
Option for FTX-1 Field (supplied with FTX-1 optima)
HF/50MHz Automatic Antenna Tuner, 2.5W High-Quality and
powerful speaker, HF/50MHz 2 ANT terminals are equipped.



MHG-1

Side Carry Handle
(for SPA-1 only)



Extension Cable for the
FTX-1 Series
SCU-66 5ft (1.5m)
SCU-66L 10ft (3m)



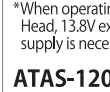
ATAS-25

Active Tuning Antenna
(Manual Type)
Max. Input Power: HF/50 MHz:
100 W (SSB/CW, 50% Duty),
50 W (AM/FM)
144/430 MHz 50 W (ALL MODE)



*When operating with the Field
Head, 13.8V external power
supply is necessary.

ATAS-120A
Active Tuning Antenna
(Automatic Type)
Max. Input Power:
120 W (SSB/CW, 50% Duty)



ATBK-100

Antenna Base Kit
for ATAS-120A
(For Base operation
on 6m, 2m or 70cm band)



Desktop Microphones

M-1

Reference
microphone



M-100

Dual element
microphone



M-90D

Desktop
Dynamic
microphone



M-90MS Kit

Dynamic
microphone
Stand Kit
*Microphone stand
is not included



M-70

Desktop
microphone



Specifications

General	
Tx Frequency Range	1.8MHz - 450MHz (Specified performance, Amateur bands only) 70MHz - 70.5MHz (Specified performance, UK Amateur bands only)
Rx Frequency Ranges	30kHz - 174MHz, 400MHz - 470MHz (operating) 1.8MHz band - 430MHz band (specified performance, Amateur bands only)
Emission Modes	A1A (CW), A3E (AM), J3E (LSB, USB), F3E (FM), F7W (C4FM), F1D, F2D
Frequency Steps	1*/5/10/20Hz (CW/SSB/AM), 5/6.25/10/12.5/20/25kHz (FM) *FINE tuning "ON"
Antenna Impedance	50Ω, unbalanced
Operating Temperature Range	+14°F to +122°F (-10°C to +50°C)
Frequency Stability	±0.5ppm (after 1 minute @ +14°F to +122°F [-10°C to +50°C])
Supply Voltage	DC10.8V (SBR-52LI) DC13.8V ± 15% (EXT DC Jack)
Power Consumption (Approx.)	Rx (no signal) 0.6A, Rx (signal present) 0.9A Tx (Field, 6W) 2.5A, Tx (Field, 10W) 3A, Tx (optima, HF/50MHz 100W) 21A Tx (optima, 144MHz 50W) 9A, Tx (optima, 430MHz 50W) 12A
Dimensions (W x H x D)	FTX-1 Field: 8.4" x 3.5" x 2.2" (213 x 89 x 55mm) FTX-1 optima: 8.4" x 3.5" x 9.4" (213 x 89 x 240 mm)
Weight (Approx.)	FTX-1 Field: 2.75 lbs (1.25kg) FTX-1 optima: 8.6 lbs (3.9kg)
Transmitter	
Power Output	FTX-1 Field: 0.5 - 6W (0.5 - 2.5W AM Carrier) @SBR-52LI 0.5 - 10W (70MHz band: 0.5 - 6W) (0.5 - 2.5W AM Carrier) @EXT DC 13.8V FTX-1 optima: HF/50MHz band: 5 - 100W (5 - 25W AM Carrier) 144/430MHz band: 5 - 50W (5 - 13W AM Carrier)
Modulation Types	J3E (SSB): Balanced A3E (AM): Low-Level (Early Stage) F1D, F2D, F3E (FM): Variable Reactance F7W (C4FM): 4-level FSK
Maximum FM Deviation	±5.0kHz / ±2.5kHz (Narrow)
Harmonic Radiation	Better than -50dB (1.8MHz - 29.7MHz Amateur bands) Better than -60dB (50MHz Amateur band, FTX-1 Field 10W) Better than -63dB (50MHz Amateur band, FTX-1 optima 100W) Better than -51dB (70MHz Amateur band, FTX-1 Field 6W) Better than -60dB (70/144/430MHz Amateur band, FTX-1 optima 50W)

Transmitter	
SSB Carrier Suppression	At least 60dB below peak output
Undesired Sideband Suppression	At least 60dB below peak output
Bandwidth	3kHz (LSB/USB), 500Hz (CW), 6kHz (AM), 16kHz (FM/C4FM)
Audio Response (SSB)	Not more than -6dB from 300 to 2700Hz
Microphone Impedance	600Ω (200 to 10kΩ)
Receiver	
Circuit Type	Direct sampling Superheterodyne (below 48MHz) Single Conversion IF Sampling (48MHz and above)
Intermediate Frequencies	MAIN: 44.5 - 49.5MHz, SUB: 41.3 - 44.3MHz (48MHz and above)
Sensitivity (TYP)	SSB/CW (BW: 2.4kHz/10dB S+N/N) 1.8 - 30MHz: 0.16 μV (IPO: AMP2), 50 - 54MHz: 0.125 μV (IPO: AMP2) 70 - 70.5MHz: 0.16 μV (IPO: AMP2), 144 - 148MHz: 0.125 μV (AMP ON) 430 - 450MHz: 0.125 μV (AMP ON) AM (BW: 6kHz/10dB S+N/N, 30% modulation @400Hz) 0.5 - 1.8MHz: 7.9 μV, 1.8 - 30MHz: 2 μV (IPO: AMP2) 50 - 54MHz: 1 μV (IPO: AMP2), 70 - 70.5MHz: 2 μV (IPO: AMP2) 144 - 148MHz: 1 μV (AMP ON), 430 - 450MHz: 1 μV (AMP ON) FM (BW: 12kHz, 12dB SINAD, 3.5kHz DEV @1kHz) 28 - 30MHz: 0.25 μV (IPO: AMP2), 50 - 54MHz: 0.2 μV (IPO: AMP2) 70 - 70.5MHz: 0.25 μV (IPO: AMP2), 144 - 148MHz: 0.125 μV (AMP ON) 430 - 450MHz: 0.125 μV (AMP ON)
Selectivity (WIDTH: Center)	Mode -6dB -60dB CW (BW=0.5kHz) 0.5kHz or better 0.75kHz or less SSB (BW=2.4kHz) 2.4kHz or better 3.6kHz or less AM (BW=6kHz) 6kHz or better 15kHz or less FM (BW=12kHz) 12kHz or better 25kHz or less
Image Rejection	70dB or better (1.8MHz - 28MHz Amateur bands) 60dB or better (50MHz, 70MHz, 144MHz, 430MHz Amateur bands)
Maximum Audio Output	FTX-1 Field: 1.5W, FTX-1 optima: 4W (1.5 + 2.5 W) (4Ω with 10% THD)
Audio Output Impedance	4 to 16Ω (4Ω: nominal)
Conducted Radiation	Less than 4nW

■ Specifications are subject to change without notice, and are guaranteed within the amateur bands only.
Frequency ranges and functions will vary according to transceiver version; check with your dealer.

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