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# Dude's Quick Reference Manual for Yaesu FTX-1

## Getting Started

### Powering On/Off

- To turn the FTX-1 on, press and hold the [POWER] button for one full second.
- To power off, hold the same button again for one second.
- A quick press of the [POWER] button engages or disengages the DIAL lock.

### Battery Installation & Charging

- Install the SBR-52LI battery by aligning it with the rear connector and clicking it into place.
- Charging via USB PD requires a 45W, 15V adapter and a compatible USB-C cable.
- When charging, the indicator will show:
  - Solid Red: Charging
  - Blinking Red: Charging Error
  - Off: Charging Complete
- Avoid charging via USB PD while the battery is mounted—use direct DC 13.8V input instead.

### Field vs. Optima Configurations

- **FTX-1 Field:** Uses battery, portable, supports up to 10W TX (6W typical), includes smaller form factor and BNC connectors.
- **FTX-1 Optima:** Base station variant with 100W output (50W on 144/430 MHz), larger cooling, detachable panel.

### Front & Rear Panel Overview

- **Field Front:** Features DIALS, FUNC knob, QMB, CLAR, DISP, and BAND controls.
- **Rear Field:** Includes BNC connectors for HF/VHF/UHF, EXT SPKR, DC IN, GND, and TUNER ports.
- **Rear Optima:** Adds M-type connectors and FC-40 tuner support, higher current power input.

## Display & Interface

### 4.3" Touchscreen Navigation

- Use the [DISP] button to toggle between Dual (L/R or Up/Down) and Single band screens.
- Tap frequency digits to enter values directly with on-screen keypad.

### Dual-Band Display Modes

- Left/Right: MAIN and SUB on opposing sides.
- Up/Down: MAIN on top, SUB on bottom.
- Single Band: Only MAIN or SUB visible; switch via [SUB DIAL] press.

### Function Knob Operations

- Press [FUNC] to bring up last-used quick menu.
  - Turn to scroll, press again to select: AGC, RF POWER, VOX, PROC LEVEL, ATT, etc.
  - Press and hold [FUNC] for full list including DNR, SCOPE controls, CONTRAST, and DIMMER.
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## Band & Mode Selection

### Band Switching (HF/50/144/430 MHz)

- Tap BAND button or hold for menu of all amateur bands.
- Tap to switch instantly to selected band.

### Operating Modes

- Tap [N/W] to cycle: SSB, CW, AM, FM, C4FM.
- Hold [N/W] to access full mode list.
- C4FM and FM-N modes use AUTO squelch by default.

### PRESET Mode for FT8 Operations

- Tap [PRESET] for factory FT8 settings: DATA-U, 3 kHz bandwidth, USB, VOX off, narrow filter, etc.
  - Customizable via menu.
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## VFO & Memory Operations

### VFO A/B Switching

- Toggle MAIN/SUB via SUB DIAL press.
- Independent tuning, split support.

### Memory Channel Programming

- Tune to desired frequency in VFO.
- Press and hold [M▶V] to store.
- Label, edit, and group via [MEMORY] menu.

### MAG (Memory Auto Grouping)

- Auto sorts memory channels by band.
- In MEM mode, tap [MAG] to cycle grouped bands.

### QMB (Quick Memory Bank)

- Press and hold [QMB] to save current VFO into quick memory.
- 5–10 channels supported; FIFO overwrite.

### PMG (Primary Memory Group)

- Press [PMG] to view real-time bar graph of 5 favorite VHF/UHF channels.
- Auto and Manual modes allow dual-channel monitoring.

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## Transmitting & Audio Settings

### Microphone Gain & AMC Adjustment

- Set MIC GAIN and AMC LEVEL via FUNC menu.
- Adjust compression to suit speech tone.

### Speech Processor Activation

- Enable PROC in FUNC menu to boost clarity.
- Adjust PROC LEVEL to balance signal.

### Parametric Microphone Equalizer

- 3-band EQ with low, mid, high control.
- Set via FUNC > MIC EQ.

## VOX Operation

- Enable VOX in FUNC menu.
  - Adjust gain and delay separately.
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## CW Operations

### Keyer Setup: Paddle & Straight Key

- Use 3.5mm jack.
- Menu > CW SETTING > KEYER MODE: Paddle or Straight.

### BK-IN & QSK Settings

- Enable BK-IN for full break-in.
- Adjust delay via FUNC menu.

### CW Speed & Weight Adjustments

- Set WPM in FUNC menu or CW SETTING.
- Adjust dot/dash ratio (Weight).

### CW Memory Keyer Programming

- Record via FUNC > MESSAGE.
- Playback via PTT or PLAY.

### Spotting & Zero-Beating Techniques

- Press [SPOT] to align tone with target station.
  - Use [ZIN] for auto zero-beat.
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## Digital Features

### C4FM Digital Mode Operations

- Use FM mode > [N/W] to toggle D-FM/C4FM.
- AMS auto-switches to digital/analog.

### AMS (Automatic Mode Select)

- Auto-detects C4FM vs. analog FM.
- Can be fixed to disable auto-switch.

## DG-ID & DP-ID Configurations

- Assign Group and Personal IDs for C4FM.
- Access via RADIO SETTING > DG-ID.

## WiRES-X Connectivity

- Use optional HRI-200 or direct internet via PC.
- Setup instructions via Yaesu online guide.

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## Receiver Enhancements

### DSP Functions: SHIFT, WIDTH, NOTCH, CONTOUR, APF

- Access via long-press MAIN/SUB DIAL.
- SHIFT: Move passband to dodge interference.
- WIDTH: Narrow or widen filter.
- NOTCH: Cancel tones/beats.
- CONTOUR: Shape signal tone.
- APF: Peak filter for CW.

### DNR & NB

- FUNC > DNR to reduce background noise.
- FUNC > NB removes pulse noise.

### Adjustable Receiver Audio Filters

- Use FUNCTION menu for AGC and audio shaping.
- Tailor to SSB/CW/Digital needs.

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## Antenna & Tuner Settings

### Internal ATU Operations

- Optima only: Press ANT TUNE in FUNC menu.

### External Antenna Connections

- BNC (Field) or SO-239 (Optima) HF/VHF/UHF jacks.
- Match 50-ohm impedance.

### ATAS-120A Integration & Tuning

- Connect to TUNER port.
  - Use FUNC > ANT TUNE to initiate tuning.
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## Advanced Functions

### Split Frequency Operation

- Press and hold VFO A/B to split.
- TX/RX shown independently.

### Clarifier Usage

- [CLAR] cycles RX → TX → RXTX.
- MAIN/SUB DIAL to offset frequency.

### Super-DX Mode Activation

- Press [S-DX] to boost weak signal reception.

### 3DSS Spectrum Scope

- 3D waterfall with frequency, intensity, and time axes.
  - Tap SPAN, SPEED, LEVEL, COLOR for display tweaks.
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## Connectivity & Expansion

### Bluetooth Unit BU-6 Installation

- Insert into dedicated terminal on back.
- Enable via menu.

### microSD Card Usage

- Insert card to record, backup, and restore.
- Format via EXTENSION SETTING.

### USB Port Functions

- CAT control, Audio I/O, Charging (USB PD).
- Requires Yaesu USB driver.

### GPS Antenna Connection

- Connect optional FGPS-5 to GPS port.
  - Enables location stamping and APRS.
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## Maintenance & Reset

### Firmware Updates

- Via microSD card or USB cable from PC.
- Follow official update guide.

### Resetting the Microprocessor

- EXTENSION SETTING > RESET for full or partial reset.

### Backup & Restore Settings

- Use microSD > READ/WRITE options in EXTENSION SETTING.
  - Backup memories, settings, and messages.
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*Note: This is a field-style quick reference manual and does not replace the full operation manual. Always consult the official Yaesu documentation for detailed procedures and safety notices.*

## Glossary of Common Terms

**AGC (Automatic Gain Control)** – Automatically adjusts receiver gain to maintain a steady audio level despite signal fading.

**AMC (Automatic Mic Control)** – Limits microphone gain to prevent audio distortion or clipping.

**AMS (Automatic Mode Select)** – Automatically detects whether an incoming signal is analog FM or digital C4FM.

**APF (Audio Peak Filter)** – Enhances CW signals by sharpening their audio tone for clearer decoding.

**ATU (Automatic Tuner Unit)** – Matches antenna impedance to the transceiver for efficient signal transfer.

**BK-IN (Break-In)** – In CW mode, allows automatic transmit/receive switching without using PTT.

**Clarifier (CLAR)** – Used to fine-tune the receive and/or transmit frequency without affecting the main VFO.

**C4FM** – Yaesu's digital voice mode providing clearer audio and enhanced features like DG-ID.

**CONTOUR** – A DSP filter that modifies the shape of the audio passband to enhance clarity or reduce noise.

**CW (Continuous Wave)** – Morse code mode used for high-efficiency, low-bandwidth communication.

**DG-ID/DP-ID** – Digital Group and Digital Personal IDs used in C4FM to organize digital voice networks.

**DIMMER** – Adjusts the brightness of the radio's display.

**DNR (Digital Noise Reduction)** – Reduces background noise for clearer voice reception.

**DSP (Digital Signal Processing)** – Enhances audio quality through advanced filtering and signal control.

**FINE/FAST Tuning** – Allows small (1Hz) or large (10x) frequency steps for precision or speed.

**FUNC Knob** – Multifunction knob that gives access to key settings like filters, audio, and display.

**IPO (Intercept Point Optimization)** – Bypasses RF amplification for better reception in strong signal environments.

**MAG (Memory Auto Grouping)** – Automatically organizes memory channels by band for easier access.

**Memory Tune (MT)** – Allows frequency adjustments while operating from a memory channel.

**NOTCH** – Removes unwanted tones or carriers from the received audio.

**PARAMETRIC EQ** – An equalizer allowing fine control over bass, mid, and treble mic audio response.

**PMG (Primary Memory Group)** – Displays a visual scope of 5 favorite VHF/UHF channels for rapid monitoring.

**PRESET** – A quick-start configuration optimized for digital modes like FT8.

**PROC (Speech Processor)** – Increases average transmitted audio power for better intelligibility.

**QMB (Quick Memory Bank)** – Temporarily stores frequently accessed VFO frequencies.

**QRP** – Operating with low power, typically 5 watts or less.

**SHIFT** – Moves the filter passband up or down to avoid interference.

**SPAN** – Sets the width of frequencies shown on the spectrum display.

**SPLIT** – Allows transmitting and receiving on two different frequencies, useful in DX pileups.

**SUB DIAL** – Tunes the SUB VFO; used for dual-receive or split operations.

**Super-DX Mode** – Boosts weak signal reception by enhancing RF gain sensitivity.

**USB PD (Power Delivery)** – A standard for fast charging using a USB-C port, required for battery charging.

**VFO (Variable Frequency Oscillator)** – Main tuning mode for adjusting frequencies manually.

**VOX (Voice Operated Transmission)** – Automatically keys the transmitter when you speak, eliminating need for PTT.

**WIDTH** – Controls the width of the filter to allow or reject more of the signal bandwidth.

**WiRES-X** – Yaesu's internet linking system for C4FM repeaters and nodes.

**ZIN (Zero-In)** – Automatically aligns your CW transmit tone to the received station's tone for precise matching.

## Real-World Usage Scenarios for FTX-1 Features

- When to Use QMB (Quick Memory Bank)

You're hunting Parks on the Air (POTA) activators and want to keep a few good frequencies handy. You find a station on 14.325 MHz and another on 7.188 MHz. Rather than writing them down, just press and hold [QMB] to save them for quick recall. Now you can jump back to those stations with a single button tap.

- How AMS Helps in the Field (Automatic Mode Select)

You're monitoring a local repeater while hiking. One user comes in using analog FM, and another is on C4FM digital. With AMS enabled, the radio automatically switches between analog and digital without you touching a thing — just listen and talk back using whatever mode they're in.

- When to Enable VOX (Voice Operated Transmission)

You're setting up your station in a cold tent and don't want to fumble with the PTT. VOX lets you talk hands-free — the radio will transmit when it hears your voice. Perfect for casual QSOs or operating while logging on a laptop.

- Using BK-IN (Break-In) for Seamless CW

You're working a CW contest. With BK-IN enabled, you can send Morse and immediately hear the reply between your own dits and dahs — no need to release PTT. This makes high-speed CW operation smoother and faster.

- Why Use the Parametric EQ

You're told your signal is muddy. Go into FUNC > MIC EQ and tweak the mid and high bands to brighten your voice. Unlike basic treble/bass, parametric EQ gives surgical control for clearer transmission.

- What Super-DX Mode Does in Practice

You're barely copying a DX station through the noise. Hit [S-DX] — it boosts the receiver's gain to pick up weak signals. You might pull in that rare station just enough to get a report through.

- When to Use SPLIT Operation

You're calling a rare DXpedition, and they say "Listening 5 up." That means they transmit on one frequency and listen 5 kHz higher. SPLIT lets you transmit on 14.210 MHz while listening on 14.205 MHz — without constantly retuning.

- How to Use PRESET Mode for FT8 Easily

You're setting up FT8 quickly and don't want to dig through menus. Press [PRESET], and the radio auto-configures USB-DATA, narrow filters, VOX off, and proper bandwidth. You're ready to connect to your laptop and get decoding.

- When MAG Helps Sort Memory Chaos

You've got memory channels saved from multiple bands. Tap [MAG] and it auto-groups them — HF, VHF, UHF — so you don't have to scroll through a list of mixed-up frequencies.

END

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