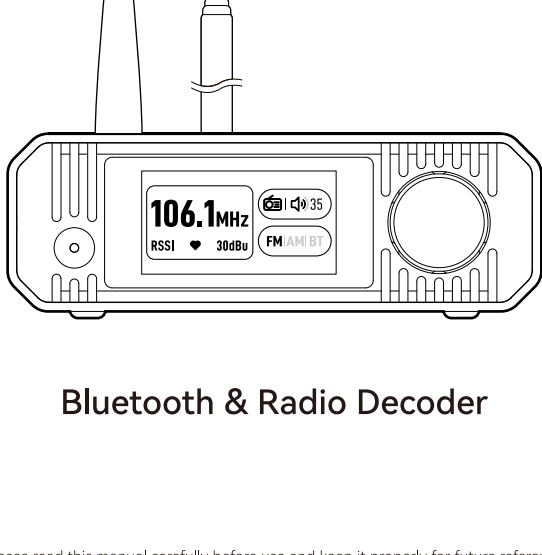




Bluetooth & Radio Decoder

Please read this manual carefully before use and keep it properly for future reference

Product Introduction

The XQ-60 is an all-in-one decoder integrating radio tuner and Bluetooth audio receiver. It converts FM/AM radio and wireless Bluetooth audio into high-fidelity coaxial, optical and analog audio output signals, delivering premium sound sources for digital decoders, power amplifiers, active speakers and other audio gear to faithfully reproduce delicate sound details.

Its Bluetooth module adopts Qualcomm's premium QCC3084 chip, natively supporting the full lineup of high-definition audio codecs: LDAC, aptX Lossless, aptX Adaptive, aptX HD and LC3. For radio reception, it features the professional Si4731 RF chip from Silicon Labs paired with a new-generation DSP digital demodulation architecture. It outperforms traditional analog radio solutions across all metrics including reception sensitivity, channel selectivity, output signal-to-noise ratio and anti-interference capability.

The unit's core decoding component is a high-performance CS43198 DAC chip with ultra-low noise floor and exceptional resolution. It outputs pure, detail-rich high-fidelity audio to power amplifiers and active speakers.

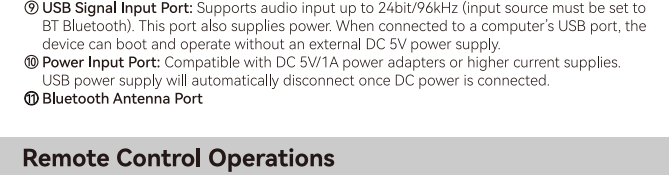
Product Features

- Equipped with a 1.9-inch color screen to display all playback statuses in real time;
- User-friendly interactive interface for simple and intuitive operation;
- Built-in Qualcomm QCC3084 Bluetooth chip supporting Bluetooth 6.0;
- Compatible with multiple HD audio codecs including LDAC, aptX Lossless, aptX Adaptive, aptX HD and LC3;
- Adopts professional Silicon Labs Si4731 radio chip with DSP digital demodulation technology, delivering stable radio signals and clear sound quality;
- Customizable FM/AM parameters to match broadcast standards of regions worldwide;
- Supports reception of FM and AM radio stations;
- FM receiving frequency band: 64–108 MHz, covering mainstream FM broadcasts globally;
- Dedicated favorite station folder for quick access to preferred radio channels;
- Built with high-performance CS8406 digital signal conversion chip;
- Built with high-performance CS43198 audio DAC decoding chip;
- Functions as a USB computer sound card with plug-and-play design;
- High-spec optical and coaxial digital audio outputs available;
- High-fidelity RCA analog audio output equipped;
- External high-gain Bluetooth antenna and FM/AM radio antennas ensure lossless and stable signal transmission;
- Comes with an infrared remote control for convenient long-distance operation;
- The entire unit housing is constructed from high-strength aluminum alloy.

Quick Start Guide

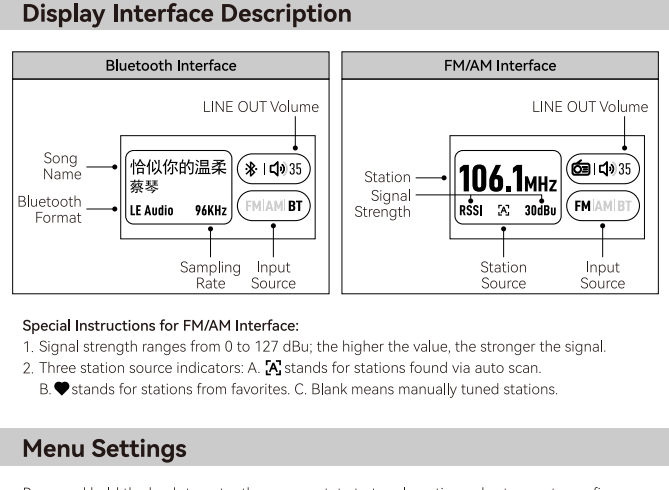
1. Connect a DC 5V power supply, then long-press the power button to power on the unit.
2. Complete the initial startup setup (refer to the Initial Setup section for full details).
3. On the main interface, long-press the knob to open the menu. Navigate to the [Input] option to switch between Bluetooth, FM or AM playback.
4. Bluetooth In: Search for "XQ-60" on your audio device, pair it and play music.
5. FM/AM In: Rotate the knob to manually tune radio stations. Alternatively, long-press the knob to open the menu and select auto-scan for stations.
6. Connect the unit to your DAC or power amplifier via coaxial, optical or analog audio cable.
7. Volume adjustment is available for LINE OUT. Coaxial and optical outputs operate at a fixed maximum volume level.
8. Long-press the knob to access the menu and adjust other parameters as needed.

Button & Interface Description

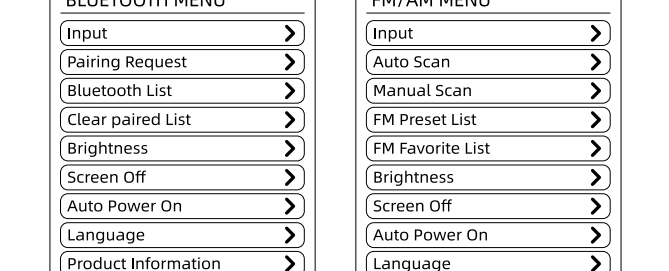


- ① **Power Button:** Long press to power the unit on or off.
- ② **Display Screen**
- ③ **Multi-function Knob:**
 - A. Bluetooth interface: Rotate the knob to increase or decrease volume.
 - B. FM/AM radio interface: Rotate to switch to the previous/next station. Short-press to bring up the volume panel, then rotate to adjust volume.
 - C. Long-press knob for settings menu: rotate to select, short-press to confirm. Long-press to exit or auto-exit after 5s idle.
- ④ **LINE OUT:** Analog audio output from the DAC, volume adjustable via the knob.
- ⑤ **Coaxial Out:** Fixed maximum output volume; volume adjustment unavailable.
- ⑥ **Optical Out:** Fixed maximum output volume; volume adjustment unavailable.
- ⑦ **FM Antenna Port**
- ⑧ **AM Antenna Port**
- ⑨ **USB Signal Input Port:** Supports audio input up to 24bit/96kHz (input source must be set to BT Bluetooth). This port also supplies power. When connected to a computer's USB port, the device can boot and operate without an external DC 5V power supply.
- ⑩ **Power Input Port:** Compatible with DC 5V/1A power adapters or higher current supplies. USB power supply will automatically disconnect once DC power is connected.
- ⑪ **Bluetooth Antenna Port**

Remote Control Operations



Display Interface Description



Special Instructions for FM/AM Interface:

1. Signal strength ranges from 0 to 127 dBu; the higher the value, the stronger the signal.
2. Three station source indicators: A. stands for stations found via auto scan. B. stands for stations from favorites. C. Blank means manually tuned stations.

Menu Settings

Press and hold the knob to enter the menu, rotate to toggle options, short press to confirm.

Complete menu list as follows:

Bluetooth Menu	FM/AM Menu
BLUETOOTH MENU	FM/AM MENU
Input	Input
Pairing Request	Auto Scan
Bluetooth List	Manual Scan
Clear paired List	FM Preset List
Brightness	FM Favorite List
Screen Off	Brightness
Auto Power On	Screen Off
Language	Auto Power On
Product Information	Language
Factory Reset	Product Information
	Factory Reset

Menu Item Description

I. Bluetooth Settings

1. **Pairing Request:** After entering and confirming, the unit will disconnect all existing Bluetooth connections and enter pairing mode for new devices to search and pair.
2. **Bluetooth List:** View previously paired devices and select one to reconnect. The list stores a maximum of 8 device entries; the oldest record will be automatically removed once the limit is exceeded.
3. **Clear Paired List:** Erase all historical paired device records. If you encounter issues such as stuttering audio, low volume or unstable Bluetooth connection, clear the list and re-pair your device for troubleshooting.

II. FM/AM Settings

1. **Auto Scan:** Once activated, the unit automatically scans all available radio stations and saves them. Only stations saved via auto scan will be playable on the main interface afterward.
2. **Manual Scan:** When enabled, rotate the knob to scan the full radio frequency band step by step from start to finish.
3. **Preset List:** All valid stations found by auto scan are saved here. This list can store up to 64 stations maximum.
4. **Favorite List:**
 - A. Add to Favorites: Navigate to the Preset List, select your target station, double-press the knob, then confirm favorite in the pop-up window to save it to the Favorite List.
 - B. Remove from Favorites: Go to the Favorite List, select the station, double-press the knob, and confirm deletion in the pop-up to remove it.
 - C. Play Favorite Stations: Select a station within the Favorite List to play. The main interface will only load stations from the Favorite List.
 - D. The Favorite List supports a maximum storage of 64 stations.

III. System Settings

1. **Input:**

Three input modes are available: Bluetooth, FM and AM.

When Bluetooth mode is selected, both Bluetooth and USB audio inputs are supported, with Bluetooth having higher connection priority. To use USB audio input, disconnect Bluetooth first before plugging in the USB drive; the interface will automatically switch to USB mode.
2. **Brightness:**

Adjust the backlight brightness of the display. Lower brightness settings help extend the display service life.
3. **Screen Off:**

Set the idle auto screen-off duration. The screen will turn off automatically if no operation is performed after the set time to prolong its lifespan. Select "Off" to keep the screen lit permanently.
4. **Auto Power On:**

ON: The unit powers on automatically once connected to power supply.

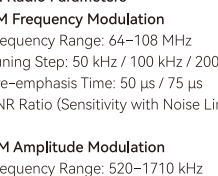
OFF: You must long-press the power knob to turn on the unit after power is supplied.
5. **Language:** Switching between Simplified Chinese and English.
6. **Product Info:** View the current firmware version of the device.
7. **Factory Reset:**

The unit will power off automatically after this operation. Upon reboot, you will need to reconfigure initial settings including language and regional FM/AM parameters.

Troubleshooting

1. Incorrect System Language Setting:

Press and hold the knob to enter the menu. Rotate the knob to locate the [语言] option, short press to enter and switch back to English.



2. No Sound via Bluetooth Connection:

Check if the volume of your source device (phone, computer, etc.) is set to a normal level. Mute or extremely low volume on the source device may result in no audio output.

3. Poor Radio Reception:

Adjust the angle and position of the FM/AM antenna. It is recommended to place the antenna near windows or open unobstructed spaces to improve signal reception.

4. Abnormal Playback & Audio Quality Issues:

Perform a factory reset first. Reconfigure the device after resetting all parameters; this resolves most malfunctions caused by abnormal parameter settings.

5. Failed USB Audio Connection:

Bluetooth mode has higher priority over USB mode on this unit. If the USB connection fails to respond, disconnect the paired Bluetooth device first, then reconnect the USB cable for normal operation.

Product Specifications

I. Basic Parameters

Power Input: DC 5V/1A
Power Consumption: 5V/0.1A
Display: 1.9-inch color screen, resolution 170 × 320
Dimensions: 12.0 × 10.2 × 4.2 cm
Net Weight: 0.34 kg

II. Bluetooth Specifications

Bluetooth Version: 6.0
Supported Audio Codecs:
1. Classic Bluetooth (A2DP): SBC, AAC, aptX, aptX HD, aptX Adaptive (including aptX Low Latency, aptX High Quality, aptX Lossless) and LDAC
2. LE Audio: LC3, aptX Lite
Bluetooth Antenna: External magnetic bar antenna
Effective Communication Range: Approx. 10 meters

III. Radio Parameters

FM Frequency Modulation

Frequency Range: 64–108 MHz
Tuning Step: 50 kHz / 100 kHz / 200 kHz
Pre-emphasis Time: 50 μs / 75 μs
SNR Ratio (Sensitivity with Noise Limiter): ≥ 55 Db

AM Amplitude Modulation

Frequency Range: 520–1710 kHz
Tuning Step: 1 kHz / 9 kHz / 10 kHz
SNR Ratio (Sensitivity with Noise Limiter): ≥ 45 dB

General Radio Functions

Scan Modes: Manual Scan, Auto Scan, Preset Station Storage
Preset Capacity: Up to 64 FM stations, up to 64 AM stations
Signal Strength Display Range: 0–127 dBu
Antenna Configuration: Telescopic Antenna for FM, Loop Antenna for AM

IV. USB Audio Input Parameters

Compatible Devices: USB ports of computers and tablets
Audio Specifications: 16–24 Bit/44.1–96 kHz

V. Output Parameters

Output Interfaces

1 × Coaxial Output, 1 × Optical Output, 1 × LINE OUT

Electrical Specifications

1. THD+N

Coaxial Output: 0.00087%
Optical Output: 0.00087%
LINE OUT: 0.002%

2. Maximum Output Amplitude

Coaxial Output: 0.5 Vp-p
Optical Output: 0.5 Vp-p
LINE OUT: 2 V

Packing List

XQ-60	×1	USB Cable	×1
Bluetooth Antenna	×1	Remote Control	×1
FM Telescopic Antenna	×1	User Manual	×1
AM Loop Antenna	×1	Warranty Card	×1

Warranty Information

Our product is provided with a **12-month free warranty service** starting from the date of sale. If the product is used beyond the 12-month warranty period from the date of sale, we will charge a reasonable cost for parts based on the actual fault condition of the product.

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