YXHT-2

Generic YXHT-2 1000W FM Broadcast Transmitter User Manual

Model: YXHT-2

1. Introduction

This manual provides essential information for the safe and efficient operation of your Generic YXHT-2 1000W FM Broadcast Transmitter. Please read this manual thoroughly before installation and use to ensure optimal performance and longevity of the equipment. This transmitter is designed for professional broadcasting applications, including community radio stations, LPFM stations, city radio stations, and church broadcasts.

2. Safety Information

Always observe the following safety precautions to prevent electric shock, injury, or damage to the equipment:

- Ensure proper grounding of the transmitter.
- Do not operate the transmitter in wet or damp conditions.
- Disconnect power before performing any maintenance or making connections.
- Ensure adequate ventilation to prevent overheating.
- Only qualified personnel should perform installation and service.
- Avoid direct contact with the antenna during operation, as high RF power can cause burns.

3. Package Contents

Verify that all items are present in the package:

- FM Transmitter 1000W (YXHT-2) × 1
- Power line × 1
- Audio line × 1
- Instruction Manual × 1

4. Product Overview

The YXHT-2 FM Broadcast Transmitter features advanced digital processing for high-quality audio and a user-

friendly touch screen interface. It supports multiple audio input sources and offers robust protection mechanisms.

4.1 Front Panel

This image provides a comprehensive view of the transmitter's front and rear panels, detailing the location of the touch screen, power input, RF output, audio inputs (AES/EBU, Left, Right), RS232, TCP/IP, RF Test, and SCA/RDS ports.

The front panel includes the main display and control interface. The large touch LCD screen allows for easy monitoring and adjustment of all operating parameters.

4.2 Rear Panel Connections

The rear panel provides all necessary input and output connections:

- **POWER (AC 110V-260V):** Main power input.
- **GND:** Grounding terminal.
- **RF OUTPUT:** N-type connector for antenna connection.
- **RF TEST:** Test point for RF signal.
- **AES/EBU:** Digital audio input (XLR connectors).

- **Left/Right:** Analog stereo audio inputs (XLR connectors).
- **SCA/RDS:** Input for SCA or RDS subcarrier signals.
- **MAX:** MPX stereo composite signal input.
- **RS232:** Serial communication interface.
- **TCP/IP:** Network communication interface.

4.3 Key Features

- Full process digital processing for CD-like sound quality.
- Direct Digital Frequency Synthesis (DDS) technology.
- High reliability microprocessor (ARM) control.
- Multiple audio source inputs with priority selection (AES/EBU, Analog, MPX).
- Support for RDS or SCA subcarrier input.
- Electronically controlled AGC for stable output power.
- Comprehensive protection: over-current, over-voltage, over-temperature, over-power, standing wave ratio alarm.
- Real-time display of operating parameters via OLED.
- TCP/IP and RS232 communication interfaces.
- 19-inch standard chassis, 2U height.

This image highlights the DSP technology integrated into the YXHT-FM transmitter, ensuring high-quality audio output comparable to CD sound. The front panel of the transmitter is visible below the graphic.

5. Setup

5.1 Power Connection

1. Ensure the power switch on the rear panel is in the OFF position.
2. Connect the provided power line to the AC 110V-260V input on the rear panel.
3. Connect the other end of the power line to a grounded electrical outlet.
4. Connect the GND terminal to a reliable earth ground.

5.2 Antenna Connection

Connect your FM broadcast antenna to the RF OUTPUT N-type connector on the rear panel. Ensure the antenna cable is of appropriate impedance (50Ω) and securely fastened. **Never operate the transmitter without a properly connected antenna or dummy load to prevent damage.**

5.3 Audio Input Connection

The transmitter supports multiple audio input types. Select the appropriate connection based on your audio source:

- **AES/EBU:** For digital audio signals, connect to the AES/EBU XLR inputs. This input has the highest priority.
- **Analog Stereo:** For analog audio signals, connect your left and right audio channels to the 'Left' and 'Right' XLR inputs. This input has the second priority.
- **MPX:** For composite MPX signals, connect to the 'MAX' BNC input. This input has the third priority.
- **SCA/RDS:** For subcarrier inputs, connect to the 'SCA/RDS' BNC input.

An illustration demonstrating the transmitter's compatibility with multiple audio sources such as MP3 players, DVD players, computers, and smartphones, including a wireless Bluetooth connection option.

6. Operation

6.1 Powering On/Off

1. To power on, flip the power switch on the rear panel to the ON position. The front panel display will illuminate.
2. To power off, flip the power switch on the rear panel to the OFF position.

6.2 Using the Touch Screen Interface

The transmitter is controlled via its touch-sensitive LCD screen. Navigate through menus and adjust settings by tapping the corresponding icons or values.

The touch screen display of the YXHT-FM transmitter, illustrating its intuitive interface for easy and quick adjustments of broadcast parameters like frequency, power, and audio source.

6.3 Setting Broadcast Frequency

1. From the main screen, navigate to the 'System Set' or 'Mod Info' menu.
2. Locate the 'FREQ' parameter.

3. Tap the frequency value to enter the desired broadcast frequency in 10KHz steps.
4. Confirm your selection.

The YXHT-FM transmitter's front panel, emphasizing its adjustable frequency feature, which allows users to select a clear channel for broadcasting and avoid interference.

6.4 Adjusting Output Power

1. Access the 'Mod Info' or 'System Set' menu.
2. Find the 'Power' setting.
3. Adjust the output power from 0W to 1000W as required.
4. Monitor the 'FWD' (Forward Power) and 'REF' (Reflected Power) indicators on the main screen to ensure stable operation.

6.5 Audio Source Selection and Pre-emphasis

1. In the 'Mod Info' menu, select 'Audio Source' to choose between AES/EBU, Analog, or MPX inputs. The transmitter automatically prioritizes inputs if multiple are connected.
2. Adjust 'Pre-emphasis' settings (0μS, 50μS, 75μS) to match your broadcast standards.

6.6 Monitoring Operating Parameters

The touch screen provides real-time monitoring of various parameters:

- **Mod Info:** Displays frequency, power, pre-emphasis, audio gain, and other modulation-related settings.
- **AMP Info:** Shows amplifier status, including forward power, reflected power, DC voltage, current, and temperature for each amplifier module.
- **Alarm Info:** Logs any system alarms such as over-power, high SWR, or over-temperature.

Your browser does not support the video tag.

This video provides a visual walkthrough of the YXHT-FM transmitter, showcasing its physical design, front panel display, and various settings accessible through the touch screen interface, including modulation info, amplifier info, and alarm logs. It also highlights the rear panel connections.

7. Maintenance

7.1 Heat Dissipation

The YXHT-2 transmitter is equipped with a fan heat sink and high-quality aluminum alloy material for efficient heat dissipation. Ensure that the ventilation grilles on the front and rear panels are not obstructed to maintain proper airflow. Regular cleaning of dust from the grilles is recommended.

7.2 Cleaning

Use a soft, dry cloth to clean the exterior of the transmitter. Do not use liquid cleaners or solvents, as they may damage the finish or internal components.

8. Troubleshooting

This section addresses common issues you might encounter. For problems not listed here, please contact technical support.

8.1 Common Alarms and Solutions

- **POWERFWD Alarm:** Indicates an issue with forward power. Check power supply, RF output connection, and antenna.
- **SWR Alarm:** High Standing Wave Ratio. This usually means there is a mismatch or fault in the antenna system. Inspect the antenna, cable, and connectors for damage or improper installation.
- **Over-Temperature Alarm:** The internal temperature exceeds safe limits. Check for obstructed ventilation, ensure fans are operating, and verify ambient temperature is within operating range.
- **Over-Current/Over-Voltage Alarm:** Indicates an electrical anomaly. Power off the unit immediately and consult technical support.

Always refer to the 'Alarm Info' screen on the transmitter for specific alarm messages and timestamps.

9. Specifications

Parameter	Value
Model Number	YXHT-2
Output Power	0-1000W
Frequency Setting Step	10KHz
Carrier Frequency Precision	±200Hz
Residual Wave Radiation	≥65dBc
Audio Input Impedance	600Ω, Balance
Separation	60dB
Pilot Signal Modulation	8%~10%
Audio Input Level	±10dBm, step 0.01dB
S/N Ratio	≥75dB (30Hz~15kHz, 100%)
Audio Harmonic Distortion	<0.05%
Audio Response	±0.05dB (30Hz~15KHz)
Output Load Impedance	50Ω
Pre-emphasis	0μS, 50μS, 75μS
Deviation	±75kHz
Product Dimensions (L x W x H)	19" x 18.5" x 3.5"
Connectivity Technology	Wi-Fi (for remote control via TCP/IP)
Display Type	LCD Touch Screen
Power Source	Corded Electric
Compatible Devices	Computer, MP3 Player, Smartphone

5W ~15W FM Transmitter	1KM ~ 3KM（0.62-1.86 miles）
15W ~ 80W FM Transmitter	3KM ~10KM（1.86-6.21 miles）
80W ~500W FM Transmitter	10KM ~30KM（6-18.6 miles）
500W ~1000W FM Transmitter	30KM ~ 50KM（18.6-31 miles）
1000W ~2000W FM Transmitter	50KM ~ 100KM（31-62.1 miles）

Factor affecting transmission distance: antenna height, antenna gain, transmitter power building density, other signal interface

A visual representation of how FM transmission works, accompanied by a table that correlates transmitter power (5W to 2000W) with estimated coverage radius (1KM to 100KM), indicating factors like antenna height and gain affect distance.

10. Warranty Information

The Generic YXHT-2 1000W FM Broadcast Transmitter comes with a**6-year warranty**. This warranty covers defects in materials and workmanship under normal use. Please retain your proof of purchase for warranty claims. The warranty does not cover damage caused by improper installation, misuse, accidents, unauthorized modifications, or natural disasters.

11. Support

For technical assistance, troubleshooting, or warranty inquiries, please contact your retailer or the manufacturer directly. Have your model number (YXHT-2) and proof of purchase ready when contacting support.