

FMUSER Releases Multilingual Four-Part Video Guide on 10kW AM Transmitter Construction

FMUSER shares a technical blueprint for AM station construction, covering precise module assembly, VNA impedance matching, and advanced troubleshooting.

GUANGZHOU, CHINA, April 22, 2026 /EINPresswire.com/ -- FMUSER Broadcast, a global provider of broadcast and television infrastructure solutions, announced today the successful delivery of its 10kW AM broadcast transmitter station project in Cabanatuan, Philippines. To share this engineering milestone with the global broadcasting industry, FMUSER has officially released a comprehensive four-part video series titled "The Ultimate Guide to 10kW AM Transmitter Construction and Maintenance."

This multi-hour recorded tutorial provides a panoramic view of the entire process of installing, commissioning, analyzing the internal architecture, and troubleshooting high-power transmitters, offering valuable technical insights for broadcast engineers worldwide.

Part 1: On-Site Core Construction

The first segment documents the on-site work of FMUSER engineers following their arrival in Luzon in September 2023. The video details the precise process of inserting 48 power amplifier boards into the cabinet and handling the 1-5/8" feeder cable via IF70 EIA flange connectors. It



Video thumbnail for Part 1 of FMUSER's comprehensive tutorial series, titled "How to Build a 10kW AM Station." It highlights the initial on-site core construction and transmitter installation.

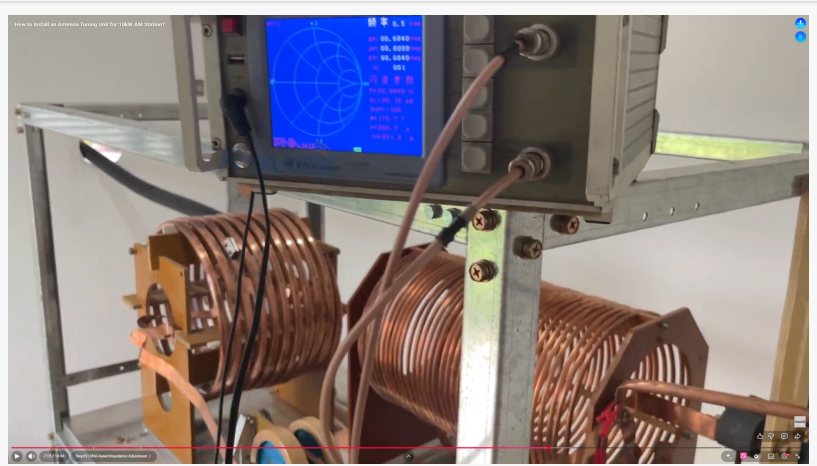


An FMUSER engineer ensuring secure and insulated connections on the modular rack of a 10kW AM transmitter while interacting with front panel controls.

also emphasizes the importance of the grounding system, demonstrating strict grounding techniques designed to protect equipment from lightning strikes and eliminate static electricity.

Part 2: Precise Antenna Tuning Unit (ATU) Matching

Addressing the highly technical phase of connecting the transmitter to the antenna tower, the second part illustrates the use of customized copper tube connections to establish a low-loss transmission link through the equipment room's insulation board. A key focus is the use of a Vector Network Analyzer (VNA) for impedance matching. By fine-tuning the coil turns, the system impedance is locked at 50Ω , minimizing the Voltage Standing Wave Ratio (VSWR) to ensure efficient transmission at a full 10kW power load.



Using a Vector Network Analyzer (VNA) to perform precise impedance matching on the Antenna Tuning Unit (ATU) copper coils, minimizing VSWR for efficient 10kW transmission.

Part 3: Transparent Modular Architecture

Moving away from the traditional "black box" approach to high-power equipment, the third video delves into the transmitter's interior, analyzing the 10 core components that sustain system operation. From heavy-duty high-voltage switches handling thousands of volts to modulators ensuring signal linearity, and physically separated high- and low-voltage transformer designs, this segment highlights the equipment's built-in redundancy and safety features.



An operator adjusting the power settings on the 10kW AM transmitter's front control panel while closely monitoring the analog voltage, current, and power meters.

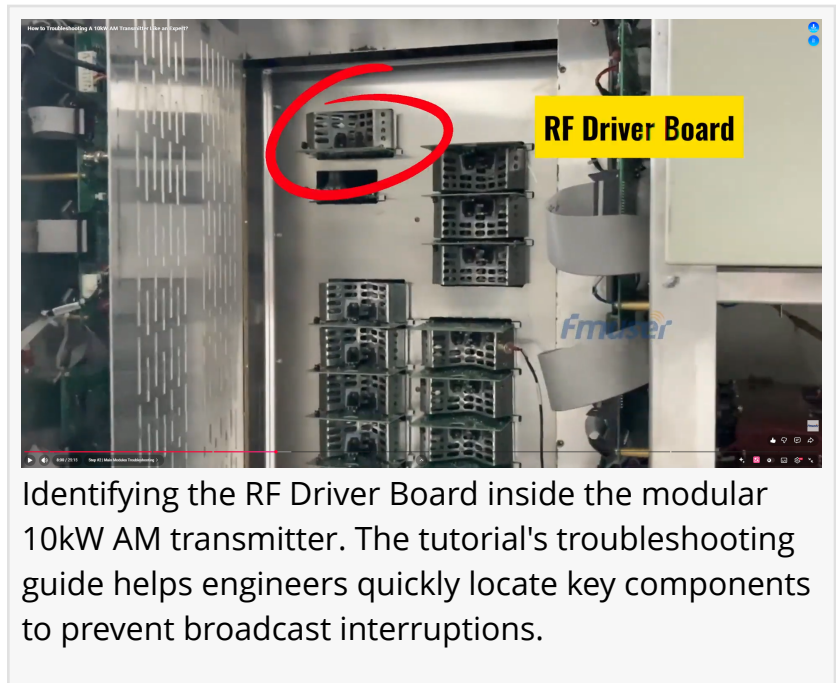
Part 4: Comprehensive Troubleshooting Guide

The final chapter serves as a practical manual for operations and maintenance personnel, standardizing complex maintenance into eight troubleshooting steps. Whether diagnosing "no power output" faults via the $\pm 15V$ fuses on the Audio Input board or verifying voltage status through PA VOLT and RF DRIVE readings on the front panel, this guide equips station engineers to quickly identify issues and prevent broadcast interruptions.

"In the Cabanatuan project, we delivered more than just hardware; we delivered a complete

knowledge system," said Ray, Project Manager at FMUSER. "By publicly releasing this four-part series, we aim to demonstrate to our global clients that FMUSER provides turnkey support, extending from initial groundbreaking to long-term operation and maintenance."

FMUSER has compiled the four-part tutorial series into comprehensive playlists with multilingual support to assist global operators. Viewers can access the content via the following YouTube links:



Identifying the RF Driver Board inside the modular 10kW AM transmitter. The tutorial's troubleshooting guide helps engineers quickly locate key components to prevent broadcast interruptions.

English: https://www.youtube.com/playlist?list=PLUf4BFHA0_Xv_Oqel-OoepOp2QqeFuWii

Arabic: https://www.youtube.com/playlist?list=PLUf4BFHA0_Xvge5_ac8sU7mLSKV4wc4c9

Russian: https://www.youtube.com/playlist?list=PLUf4BFHA0_Xv4UVB3Ee3TN4RcNEjB81u0

French: https://www.youtube.com/playlist?list=PLUf4BFHA0_XvmVAMkb1ihc3MnG9ma-wRS

Portuguese: https://www.youtube.com/playlist?list=PLUf4BFHA0_Xs50I91GM4-hGR8DYPFTqBP

Spanish: https://www.youtube.com/playlist?list=PLUf4BFHA0_XsejxlsEo3ESfxgL4kl9uvP

Italian: https://www.youtube.com/playlist?list=PLUf4BFHA0_XuoWYwNyKrqvL4TIF-uE1Nj

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FMUSER Broadcast is a global innovator dedicated to advancing accessible broadcasting technology. From cost-effective hardware encoders to a comprehensive [hotel IPTV solution](#), FMUSER simplifies technical processes to help customers worldwide seamlessly achieve digital upgrades for their audiovisual systems. With flexible and easily integrated designs, FMUSER's specialized [iptv system for hotels](#) is widely utilized across the hospitality sector, including resorts and motels. Furthermore, its diverse product lines extend to healthcare (hospitals and nursing homes), education (schools and university campuses), maritime (cruise ships and merchant vessels), residential communities, corporate environments, sports bars, and correctional facilities.

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