

ZHC618F-5000W FM Transmitter

Overview

This 5KW FM stereo transmitter (4 pieces hot-plugin modules) is a high-performance broadcast grade stereo FM radio transmitter used for wireless coverage of professional radio stations. In order to improve the reliability of the transmitter, in terms of design concept, the transmitter adopts redundant design in key parts to achieve long-term stable operation of the transmitter. Due to the use of hot-plugin structure, the components of the transmitter can be repaired and restored without stopping the machine.



Features

1. **Large output power surplus:** efficiently synthesized from 4 pieces 1.5KW hot-plugin modules, with a maximum output of 5.5KW.
 2. **High work efficiency:** Using the latest high-efficiency LDMOS amplifier tubes, the maximum RF efficiency at full power can reach over 70%.
 3. **Stable output power:** Intelligent automatic power control technology (AGC) is adopted to ensure that the output power does not change with the start-up time and environmental temperature, and the power stability is controlled within 10W.
 4. **Low useless transmission:** Equipped with high-performance cavity output filters to minimize useless transmission to the greatest extent possible.
 5. **High power reliability:** 4 pieces 3.6KW hot-plugin switch power supplies are used in parallel with N+2 current sharing power supply, providing a large amount of power capacity surplus.
 6. **Dual exciter configuration:** Adopting dual exciter intelligent automatic switching (spare exciter and switch are optional), which can further improve the reliability of the entire machine.
 7. **Digital FM exciter:** Optional with our latest technology of fully digital ultra CD grade 5G FM exciter, dual channel digital audio signal (AES/EBU), FPGA+DDS software radio coding modulation, the listening effect has reached CD grade. Other high-quality exciters can also be selected for use.
 8. **Friendly user interface:** adopting an 8-inch true color touch LCD display screen, real-time display of various working parameters of the transmitter (including the
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current of each amplifier transistor); No training is required, it can be operated under the on-screen prompts.

9. Complete protection functions: with over power protection, excessive reflected power protection, over temperature protection, over-voltage protection, and over-current protection; And it can intelligently adjust the output power when some power amplifier modules fail, maintaining maximum safe power broadcasting while ensuring that the fault does not escalate.

10. Good dustproof performance: All air inlets are equipped with high-quality filters that can filter out dust in the air to extend the average time between failures of the transmitter.

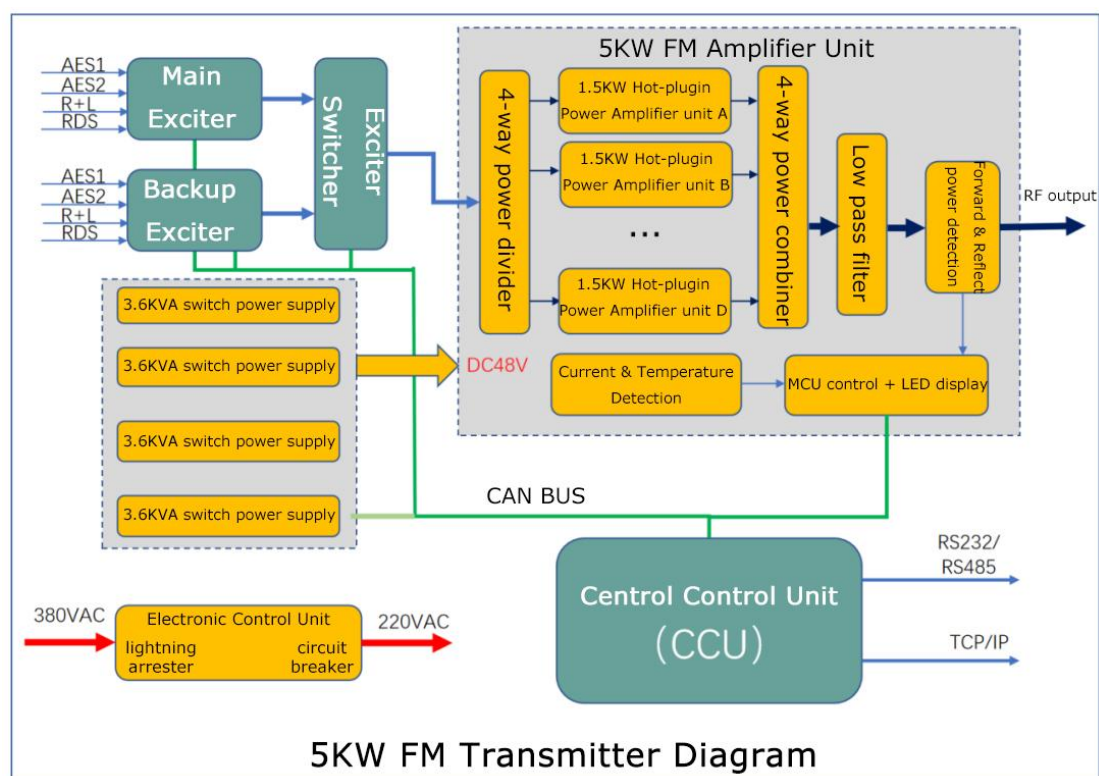
11. Excellent lightning protection performance: Adopting internationally renowned brand lightning arresters to provide lightning protection for AC power input.

12. True hot-plugin function: Under any circumstances, the power amplifier module and power module can be plugged in and out without stopping the machine, making it easy to repair and restore the transmitter.

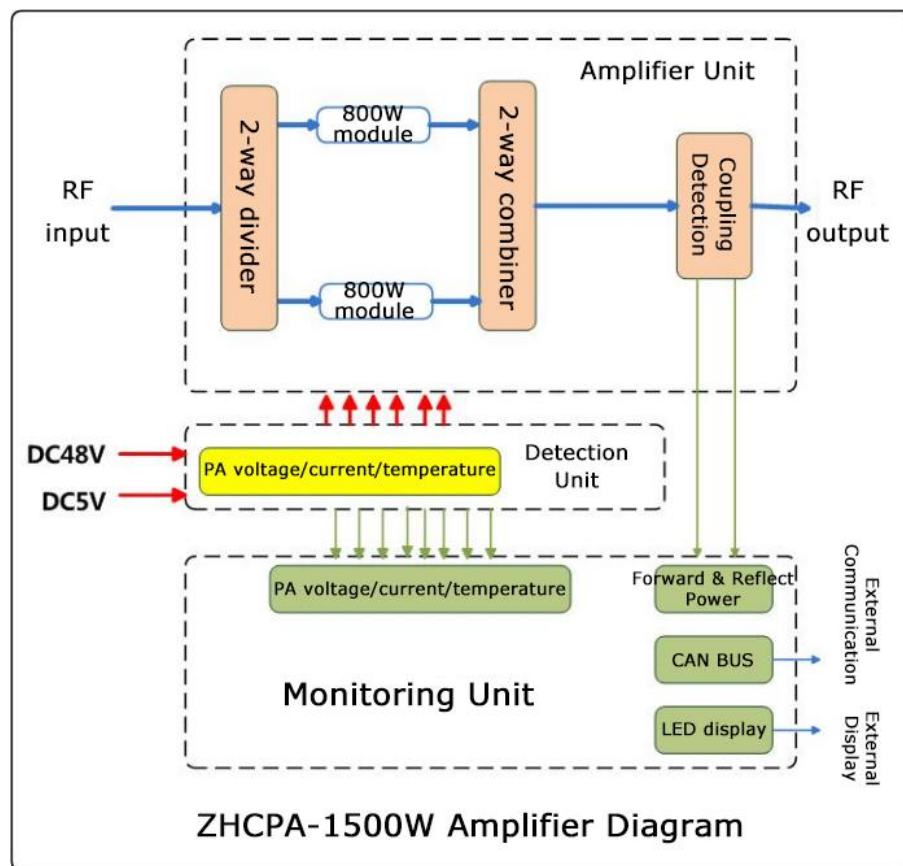
13. Timed automatic adjustment of output power: The transmitter can be set to automatically adjust the output power at different times of the day, bringing convenience to the economic operation of the radio station.

14. Advanced remote control and telemetry interface: Access any parameters inside the transmitter through **RS232/RS485 or TCP/IP network interface**.

5KW Hot-plugin FM Transmitter Diagram



Hot-plugin Amplifier Diagram



Technical Specifications

1. RF frequency range: 87MHz~108MHz
with a step frequency of 10kHz (other frequencies can be customized)
2. Output power 0-5KW continuously adjustable
3. Allowable deviation of output power $< \pm 10\%$
4. Output power stability $< \pm 3\%$
5. Output impedance 50 Ω
6. RF output connector EIA 1-5/8" flange or $\phi 40$ direct feed
7. Residual wave radiation $< -80\text{dB}$
8. Parasitic amplitude modulation $< -55\text{dB}$
9. Allowable deviation of carrier frequency $\pm 200\text{Hz}$
10. Analog audio input -12dBm~+8dBm
11. Audio level gain -15dB to +15dB, step by 0.1dB
12. Analog audio input impedance 600 Ω balanced Canon
13. Digital audio input impedance 110 Ω balanced Canon
14. AES/EBU input level 0.2-10Vpp
15. AES/EBU sampling rate 30kHz~96kHz
16. SCA/RDS input BNC type connector
17. Audio pre-emphasis 0 μs , 50 μs , 75 μs
18. Frequency response $\pm 0.05\text{dB}$ 30Hz~15000Hz
19. Level difference between left and right channels $\leq 0.01\text{dB}$ (100% modulation)

20. Stereo separation	$\geq 70\text{dB}$ 30Hz~15000Hz
21. Stereo signal-to-noise ratio	$\geq 90\text{dB}$ 1KHz, 100% modulation
22. Distortion	$\leq 0.01\%$ 30Hz~15000Hz
23. Heat dissipation method	forced convection
24. Temperature range	-5°C to +45°C
25. Altitude	$\leq 4500\text{m}$
26. Chassis standard 19 inches	wide (570mm) x high (1565mm) x deep (1050mm)
27. Total weight	270Kg

Other technical indicators meet the requirements and measurement methods of GY/T

169-2001 "Technical Requirements and Measurement Methods for Meter Wave FM

Broadcast Transmitters"