

ZHC518A-3000W/M2

Analog TV Transmitter



Overview:

This Transmitter is a high-standard, broadcast-grade **cabinet-type** all-solid-state analog TV transmitter with a modular structure, which is very convenient for maintenance. It uses a new software radio technology to achieve the TV modulation function; the use of international high-quality LDMOS high-power field effect tube to achieve RF amplification, the output power can be **3000W**.

The TV transmitter is mainly composed of a **TV modulation unit** and an **RF power amplification unit**. Among them, the TV modulation unit uses the new **FPGA + DDS** to realize the software **TV modulation function**, while obtaining superior technical indicators while ensuring reliability and performance consistency; the **RF power amplification unit** uses international high-quality LDMOS high-power field effect transistors, Analog/Digital Compatible, stable and reliable.

The whole Transmitter adopts 19 "standard stainless steel case, suitable for all levels of TV stations.

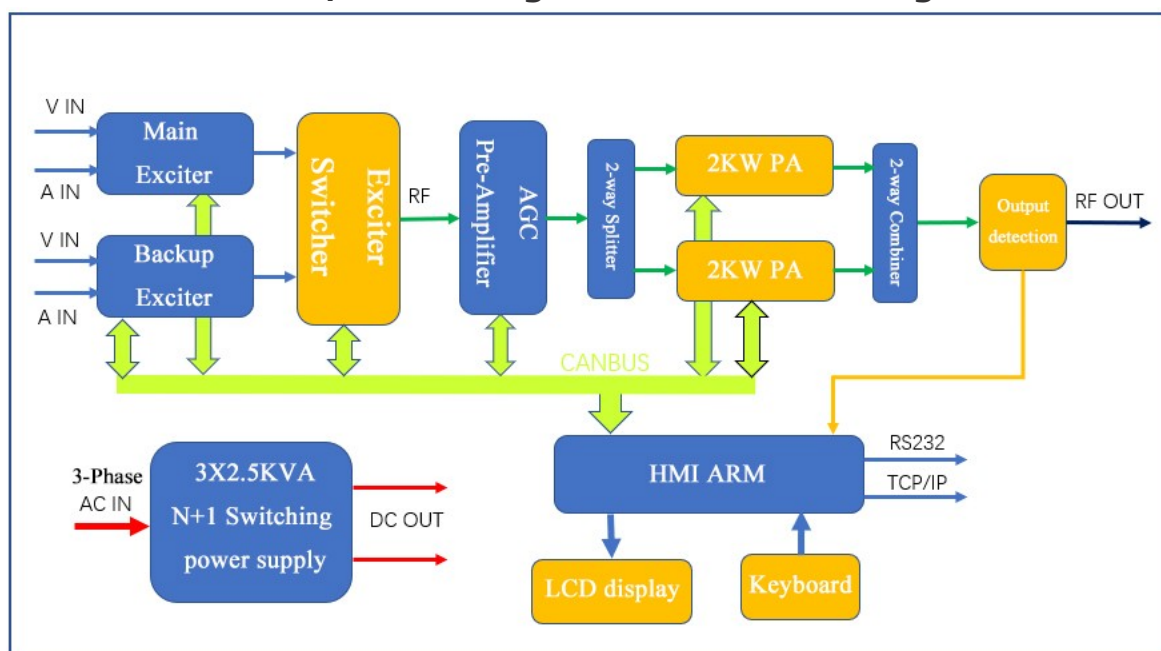
Features:

- Analog TV exciter with new digital technology, superior performance, high reliability and good consistency.
- The main and backup exciter configurations can be used to reduce the stop rate (spare exciter and automatic switch are optional).
- With no video, over standing wave ratio, over power, over voltage, over current, over temperature and other protection functions to reduce equipment damage.
- Power control adopts closed-loop automatic gain control to ensure stable output power without drift.
- The power amplifier unit is composed of two independent 2000W power amplifiers. Each power amplifier uses three original imported high-quality long-life and large-volume axial fans in parallel, with large redundant air volume and good heat dissipation effect, so that the transmitter is in a low temperature

state, which can extend the life of the transmitter.

- The 2000W power amplifier is installed in a 3U high 19-inch standard chassis, which is composed of four identical 500W power amplifier modules for low loss, high isolation and in-phase synthesis. The power redundancy design has a large margin and high reliability.
- The power amplifier module uses the latest high efficiency and high standing wave ratio LDMOS tube, adopts microstrip impedance conversion technology, simple and efficient, good consistency, easy maintenance and replacement.
- Using high-quality switching power supply, with over-voltage, over-current, under-voltage, over-temperature, short circuit, lightning protection and other protection measures, high efficiency, good voltage regulation range, strong ability to adapt to external power changes; and flexible N + 1 heat Plug-in configuration scheme, parallel current sharing centralized power supply. It can also be redundantly configured according to customer requirements.
- With intelligent network management and monitoring, with RS232 and TCP / IP communication interface.

ZHC518A-3000W/M2 Analog TV Transmitter Diagram



Technical Specifications:

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Overall performances:

1. Operating frequency band: VHF / UHF
2. Image carrier frequency deviation: $\pm 300\text{Hz}$
3. Output power: 3000W
4. Output impedance: 50Ω
5. Inter-modulation distortion: $\leq -50\text{dB}$
6. Useless emission: $\leq -50\text{dB}$ inside adjacent channels;
 $\leq -65\text{dB}$ outside adjacent channels
7. RF output interface: 7/8" Flange or 1-5/8" Flange
8. Power supply: three phase 380VAC
9. Cooling method: forced air cooling
10. Working environment temperature: $-10\sim+45^{\circ}\text{C}$
11. Dimensions: 570mm(width) x 1360mm(height) x 850mm(depth)
12. Weight: 180Kg

Image performance:

1. Video input level: 1VP-P positive polarity
2. Video input impedance: 75Ω
3. Video in-band reflection loss: $\geq 35\text{dB}$
4. Video input interface: BNC-K
5. Periodic clutter signal-to-noise ratio: $\geq 55\text{dB}$
6. Continuous random wave SNR: $\geq 60\text{dB}$ (weighted),
 $\geq 55\text{dB}$ (un weighted)
7. Group delay: $\pm 30\text{ns}$
8. 2T square wave distortion: $\leq 1\%$
9. Distortion of brightness waveform: $\leq 1.2\%$
10. Non-linear brightness distortion: $\leq 3\%$
11. Differential gain DG: $\leq \pm 3\%$
12. Differential phase DP: $\leq \pm 3^{\circ}$
13. Color / bright gain difference: $\leq 1\%$
14. Color / bright delay difference: $\pm 5\text{ns}$
15. Modulation degree: $\leq 87.5\%$

Sound performance:

1. Sound / image carrier power ratio: -10dB
2. Sound carrier frequency deviation: $\pm 200\text{Hz}$
3. Audio input level: $0\text{dBm} \pm 6\text{dBm}$
4. Audio input impedance: 600Ω balanced or $10\text{K}\Omega$ unbalanced
5. Audio input interface: XLR-K / BNC-K
6. Sound modulation capability: $> \pm 100\text{KHz}$
7. FM signal-to-noise ratio: $\geq 70\text{dB}$
8. Amplitude-frequency characteristic: $\pm 1\text{dB}$

- 9. AM noise (no modulation): $\leq -55\text{dB}$
- 10. Internal carrier noise (100% modulation): $\leq -50\text{dB}$
- 11. Harmonic distortion: $\leq 0.3\%$
- 12. Maximum frequency deviation: $\pm 50\text{KHz}$
- 13. Pre-emphasis time constant: 50us