

# ZHC518A-5000W(VHF)/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 **5000W**.

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.

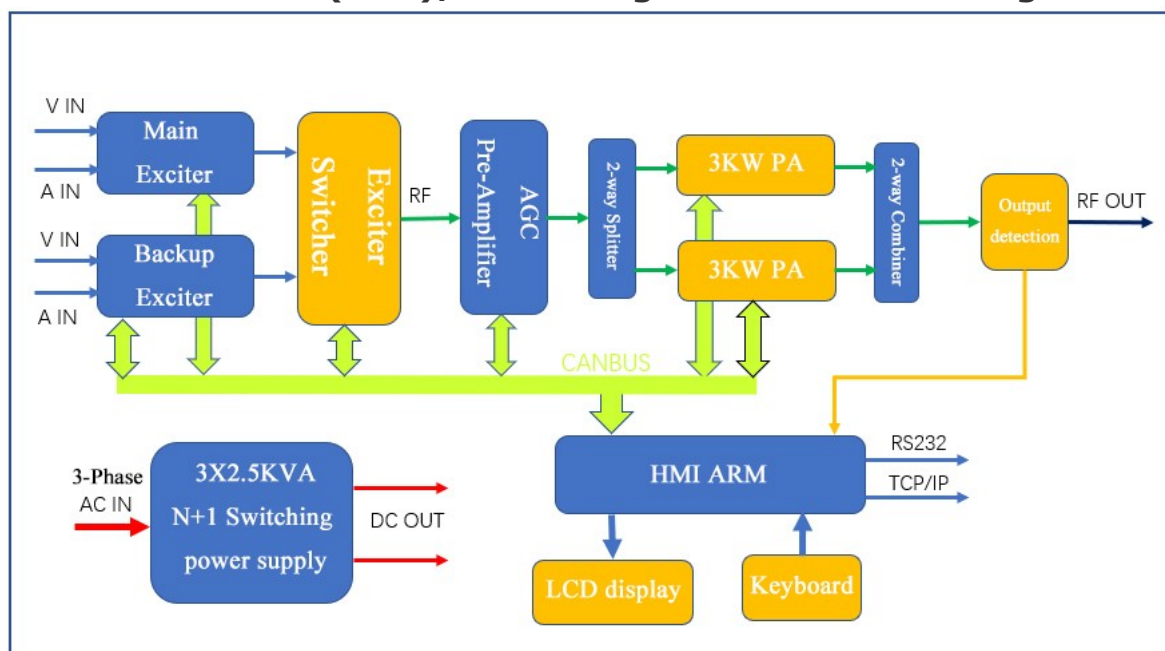
## Features:

- 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 3000W 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 3000W power amplifier is installed in a 3U high 19-inch standard chassis, which is composed of four identical 750W 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 micro strip 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-5000W(VHF)/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: 5000W
4. Output impedance:  $50\Omega$
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: 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:  $75\Omega$
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:  $-10\text{dB}$
2. Sound carrier frequency deviation:  $\pm 200\text{Hz}$
3. Audio input level:  $0\text{dBm} \pm 6\text{dBm}$
4. Audio input impedance:  $600\Omega$  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