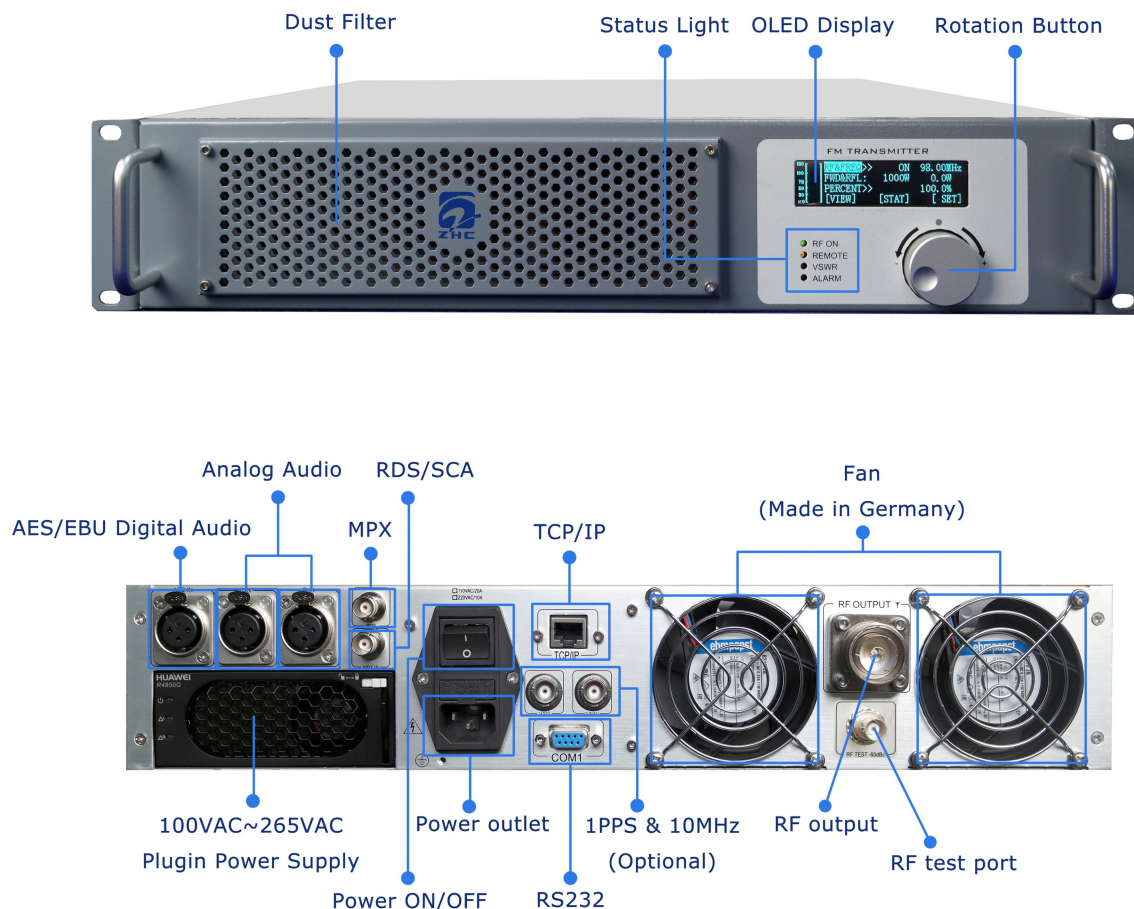


ZHC618F-500W Light FM Stereo Transmitter



1. Overview

ZHC618F-500W/LIGHT stereo FM radio transmitter is an integrated high-quality FM transmitter that **stereo-encodes** the input left and right channel **audio signals** and adjusts the **FM modulation** to the broadcast band, then **RF amplify** to the 500W output power for wireless broadcasting. The transmitter adopts the most advanced software radio technology to achieve the international leading level of product performance indicators.

With a new large-scale field-programmable gate array (**FPGA**) and direct digital frequency synthesis (**DDS**) technology at up to **5G**, the product achieves the **highest technical specifications** in the industry to date, providing listeners with a **CD-like** sound experience.

The product consists of audio interface unit, digital processing and frequency modulation unit, RF power amplifier unit, human-machine interface unit, communication interface unit, clock synchronization unit and power supply unit. The transmitter is installed

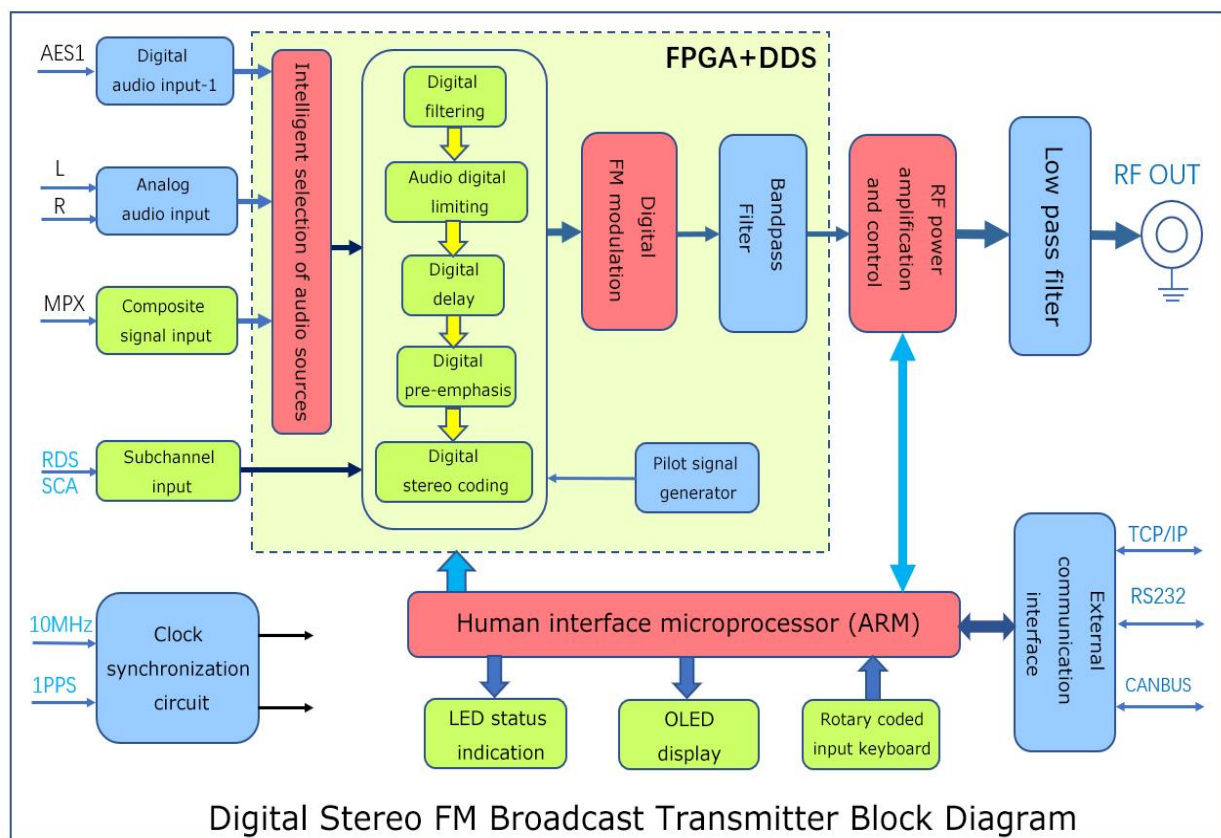
in a 19-inch 2U standard chassis, intensive design, small size and light weight. The whole transmitter is designed with high reliability, which makes the product run continuously and stably for a long time.

2. Technical characteristics and principle block diagram

Product technology has the following technical features:

- Full process digital processing to achieve a perfect auditory effect of [CD-like](#) sound quality
- Full-scale digital processing with large-scale field-programmable gate array ([FPGA](#)) technology
- Direct digital frequency synthesis ([DDS](#)) technology at speeds up to 5G to peak transmitter specifications
- High reliability microprocessor ([ARM](#)) technology as the primary controller
- Support for multiple audio source inputs (transmitters can be [automatically](#) selected by priority):
 - ◆ [AES/EBU](#) digital audio signal input (highest priority)
 - ◆ Analog stereo analog audio signal input (2nd priority)
 - ◆ [MPX](#) stereo composite signal input (3rd priority)
- Supports one [RDS](#) or [SCA](#) subcarrier input
- Upgradeable to FM [synchronous](#) broadcast transmitter
- Electronically controlled [AGC](#) controls output power zero drift
- Perfect over-current, over-voltage, over-temperature, over-power, standing wave ratio alarm and protection
- One-touch shuttle quick keyboard input
- Real-time display of operating parameters using [OLED](#)
- With [TCP/IP](#), [RS232](#) communication interface
- 19-inch standard chassis, height 2U

The Transmitter Block Diagram:



3. Technical specifications

Electrical Specifications:

- | | |
|--|--|
| 1. Nominal emission frequency | 87MHz~108MHz
(other frequencies can be customized), stepping 10kHz |
| 2. Carrier frequency tolerance | ±200Hz |
| 3. Output power | 0~500W continuously adjustable |
| 4. Output power tolerance | ±1dB |
| 5. Output impedance | 50Ω |
| 6. RF output connector | 7/16" |
| 7. Residual wave radiation | < -70dB |
| 8. Parasitic amplitude modulation noise | < -50dB |
| 9. Pilot frequency deviation | ±0.1Hz |
| 10. 38KHz residual component in the S signal | < -50dB |
| 11. 100% modulation frequency offset | ±75KHz
(maximum modulation frequency offset 112.5KHz) |
| 12. Audio pre-emphasis | 0μs/25μs/ 50μs/75μs optional |
| 13. Signal-to-noise ratio | ≥92dB (1kHz, 100% modulation) |
| 14. Stereo separation | ≥73dB (L → R, R → L) |
| 15. Distortion | ≤0.01% (30Hz ~ 15000Hz, 100% modulation) |
| 16. Frequency response | ±0.01dB (no emphasis, no de-emphasis)
±0.05dB (emphasis, de-emphasis) |
| 17. Left and right channel level difference | ≤0.01dB (100% modulation) |

18. Analog audio input	-12dBm ~ +8dBm
19. Analog audio input impedance	600Ω balance
20. AES input impedance	110Ω balance
21. AES input level	0.2~10Vpp
22. AES sampling rate	30kHz ~ 96kHz
23. RDS input impedance	10kΩ unbalance
24. RDS input level	0dBm
25. MPX input impedance	10kΩ unbalanced
26. MPX input level	1.0Vpp
27. Input audio Level Gain	-15dB~+15dB Step 0.1dB
28. Heat dissipation method	Forced convection
29. Power supply voltage	100VAC~265VAC/ 47Hz~63Hz

Physical Specifications:

30. Chassis standard	19" inch
31. Chassis size	2U (width 484mm × height 88mm × depth 500mm)
32. Total weight	13.5Kg (including packaging)
33. Operating environment temperature	-10 ° C ~ +45 ° C
34. Relative humidity	<95%
35. Altitude	<4500m