

Description of Operation

The **EM 500 DIG PLUS** transmitter is equipped with modern technology available, to provide maximum performance at minimal cost, while fully conforming to required technical regulations.

The transmitter consists of a synthesizer module that provides monophonic and stereophonic operation capability, a control system that monitors power output and various operational conditions of the transmitter, RF driver module that feeds a stable high efficiency RF amplifier, cooling fans that are DC controlled to optimize efficiency, and power supplies that are separately controlled.

Audio signals are fed into the stereo coder board or in the case of monophonic operation, the stereo board is not included. The synthesizer module creates an FM modulated signal from the monophonic input signal or the stereo generator module signal that is applied to it. The output of the synthesizer board feeds the RF driver amplifier. The FM modulated signal now passes to the main RF power amplifier capable of 500 watts operation under all conditions. The RF amplifier module uses DC voltage fed from a power supply and fan controller system. The fans that cool the RF amplifier module are variable speed to optimize the power consumption and cooling to the RF driver and power amplifier.

Front panel user interface is accomplished by using a selector knob and LCD display to adjust transmitter parameters like power output and frequency and keep track of other parameters such as unit temperature, forward and reflected power. The front panel interface provides input to the overall control system for the transmitter, the auxiliary power supply board, and mode of operation. All transmitter connection points are located on the rear of the transmitter.