

Functional description

SM-916 PLL Synthesized Wireless Microphone (Transmitter)

There are four distinct sections in a wireless microphone (transmitter), namely the Audio (AF), the Radio (RF), the PLL control and the power supply sections :

1. The Audio (AF) section

The audio input is the microphone transducer, which transforms sound wave into electrical signal. This signal goes through an input limiter / compressor and pilotone circuitry added before modulating the radio frequency as carrier.

2. The Radio (RF) section

The radio section generates the radio signal as the carrier for the audio signal, which is modulated into the RF signal. The modulated RF signal then goes through a RF amplifier circuit before radiated out through the antenna.

3. The PLL control section

The PLL synthesized section is made up of a CPU, PLL control and the VCO (voltage-controlled oscillator) circuits..

4. The power supply section.

The power supply for the transmitter is the battery, either a 9V or 2 pieces of AA type (1.5V) batteries. The minimum operating voltage for the transmitter is about 5.8V. Thus, for transmitter model using the 2 AA batteries, a DC-DC converter circuit is necessary.