

## **CE-T001 Transmitter – Description of Circuit Diagram and Antenna**

The video camera used in the transmitter is powered via a step up DC-DC converter, which transforms the 4.5-volt DC source voltage to a 9-volt DC source. The NTSC video signal from the camera is amplified using a video amplifier and linked to the VCO (voltage controlled oscillator) by means of the modulation coupling. The VCO is modulated with the video signal and controlled by way of the PLL (phase lock loop). The PLL uses a reference oscillator (crystal) and a micro controller to monitor the VCO's frequency through a feedback network. The feedback network compares the phases of both the crystal and the VCO at a lower loop frequency and ultimately biases the VCO via a loop filter and a buffer amplifier to the correct fundamental frequency. The fundamental frequency passes through an attenuator and a filter to ensure signal integrity and proper broadcast level. Further, the fundamental frequency is amplified and filtered before connected to the antenna. Lastly, the unity gain omni-directional antenna is permanently attached with an electrical connection (soldered) for transmittal.