



CIRCUIT DESCRIPTIONS

AV-S101/AVC-S101 Video Sender

The AV-S101/AVC-S101 Video Sender consist two units, the transmitting unit and the receiving unit. The transmitting unit includes AV transmitter by 2.4GHz and IR receiver by 433.92MHz; and the receiving unit include AV receiver by 2.4GHz and IR transmitter by 433.92MHz.

The main function of the transmitting unit is sending the video and audio signals to the receiving unit by 2.4GHz RF signal with FM modulation. The receiving unit will pick up the 2.4GHz RF signal and does the FM demodulation; then put the video and audio signals to TV, or other AV devices.

In addition, the IR transmitter in the receiving unit will send the IR (Infrared) signal, coming from the remote control by 433.92MHz RF signal with ASK modulation, to the IR receiver in the transmitting unit. Then, the IR receiver will restore the IR signal and emit it to the assigned devices.

The circuit description is as below :

A. AV-T101/AVC-T101 Video Sender Transmitting Unit :

- a. **2.4GHz AV transmitter :** Consisting (1) Voltage Regulator (2) 2.4GHz TX RF Module (3) Channel Setting (4) CMOS Camera(just for AVC-T101)
- (1) **Voltage Regulator :** The unit converts the 9V DC output of the adapter to 5V DC by 78L05 voltage regulator, and supplies the 5V DC to the 2.4GHz TX RF Module and Channel Setting
 - (2) **2.4 GHz TX RF Module :** The unit converts the audio –L channel, audio –R channel and video signals to FM modulated signals, and transmits these signals in 2.4GHz band.
 - (3) **Channel Setting :** To set the transmitting frequency in fixed channel
 - (4) **CMOS Camera :** The unit captures real time video and audio signals and sends them to 2.4GHz Tx RF module.
- b. **433.92MHz IR receiver :** consisting (1) LNA (2) ASK demodulator (3) 38KHz modulator
- (1) **LNA :** Amplify the 433.92MHz RF signal
 - (2) **ASK demodulator Channel Setting :** Down convert the RF signal to the IF signal, then demodulate it.
 - (3) **38KHz modulator :** Modulate the data from ASK demodulator by 38KHz signal and emit it by IR LED.



B. AV-R101 Video Sender Receiving Unit :

- a. 2.4GHz AV receiver :** Consisting of (1) Voltage Regulator (2) 2.4GHz RX RF Module (3) Channel Setting PIC Microcontroller (4) Audio R – channel FM Demodulator (5) Audio L – channel FM Demodulator (6) Audio R – channel Amplifier (7) Audio L – channel Amplifier (8) Video Amplifier.

(1) **Voltage Regulator :** The unit converts the 9V DC output of the adapter to 5V DC by 78L05 voltage regulator, and supplies the 5V DC to the 2.4GHz RX RF module and channel setting PIC microcontroller.

(2) **2.4GHz X RF Module :** The unit receiver the 2,4GHz band RF signals which come from the video sender transmitter, and converts the RF signals to audio –L channel IF signal, audio –R channel IF signal and video signal.

(3) **Channel Setting Microcontroller :** The EM78P153 microcontroller sets the fix frequency channel for 2.4GHz RX RF module.

(4) **Audio R – channel FM Demodulator :** To demodulate the audio R – channel FM modulated signal.

(5) **Audio L – channel FM Demodulator :** To demodulate the audio L – channel FM modulated signal.

(6) **Audio R – Channel Amplifier :** To amplify the audio R – channel signal.

(7) **Audio L – Channel Amplifier :** To amplify the audio L – channel signal.

(8) **Video Amplifier :** To amplify the video signal.

- b. IR transmitter :** consisting (1) IR receiver module (2)433.92MHz ASK modulator (3)Power amplifier

(1) **IR receiver module :** Receive the IR signal from remote control and transfer it to the electrical data

(2) **433.92MHz ASK modulator :** Modulate the data to 433.92MHz RF signal

(3) **Power amplifier :** Amplify the RF signal and emit it.