

1.2. Operational Description

The EUT is a Full HD Video Wireless Transmitter Module with a built-in 5GHz transceiver, together with Full HD Video Wireless Receiver Module. It has a SIMO design of five channel and one slow rate output wireless channel, which generates an upstream channel for data content transmissions. The data modulation is OFDM, using five antennas to support 2(Transmit) * 1(Receive) technology. The device only provided one transmitting speed 31.5Mbps in 20MHz bandwidth mode and 63Mbps in 40MHz bandwidth mode, the operation frequency is from 5180MHz ~5240MHz and 5745~5825MHz.

Presents the ultimate solution for converting any High Definition (HD) system, including Full HD, into a wireless one. These add-on modules enable wireless A/V applications that fit easily into the living room and eliminate traditional A/V wiring. The perfect HD video and audio quality and the high robustness are unmatched by any other wireless technology and present a true alternative to cable. The WHDI system transmits uncompressed video and audio streams wirelessly and thus simplifies and eliminates system issues, such as: lip-sync, large buffers and other burdens like retransmissions or error propagation.

The device can transmit audio and video signal to associate equipment, device will receive signal from associate equipment when associate equipment request change operation frequency. The AMN2120 WHDITM baseband transmitter chip is the heart of the WV400A WHDI transmitter module. The AMN2120 interfaces the A/V source through the WHDI connector. The AMN2120 includes an internal microcontroller for controlling the physical level. The AMN2120 is based on MIMO technology transmitting through up to four output channels. Four digital-to-analog converters and one analog-to-digital converter are embedded within the chip. The AMN2120 internal PLL accepts an input clock frequency of 40MHz. The input frequency is multiplied and then used as an internal system clock. The AMN2120 also generates a 10 MHz reference clock, derived from 40 MHz for general use.

The MAX2850 is a RF transmitter IC designed for 5GHz wireless HDMI applications. The IC includes all circuitry required to implement the complete 4-channel MIMO RF transmitter function and crystal oscillator, providing a fully integrated transmit path, VCO, frequency synthesis, and baseband/control interface. It includes a fast-setting, sigma-delta RF fractional synthesizer with 76Hz frequency programming step size. The IC also integrates on-chip I/Q amplitude and phases-error calibration circuits. Dynamic on/off control of four external PAs is implemented with programmable precision voltages. A 4-to-1 analog mux routes external PA power-detect voltages to the RSSI pin.

On-chip monolithic filters are included for transmitter I/Q baseband signal reconstruction to support both 20MHz and 40MHz RF channels. The baseband filtering and TX signal paths are optimized to meet stringent WHDI requirements. The upconverter local oscillator is coherent among all the transmitter channels.