



Wireless Digital Media Adaptor

DMA-10W

Operation Principle

Version: 1.0

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1 Introduction

This product is a digital media adaptor for decoding and displaying digital multimedia content (e.g. MPEG, MP3, digital images etc.) on TV from a server, with both wired (Ethernet) and wireless capabilities (IEEE 802.11b/g).

1.1 Scope

The Digital Media Adaptor (DMA) consists of a series of audio and video client for enabling of wireless video playback. The signal may come directly from the Internet or from a hard disk. The resolution of display supports SDTV or DVD-quality. The Wireless LAN (WLAN) interface of the device complies with IEEE 802.11b and IEEE 802.11g standard, supporting data rate up to 54Mbps.

This product is sold in the form of main board without casing.

1.2 Features

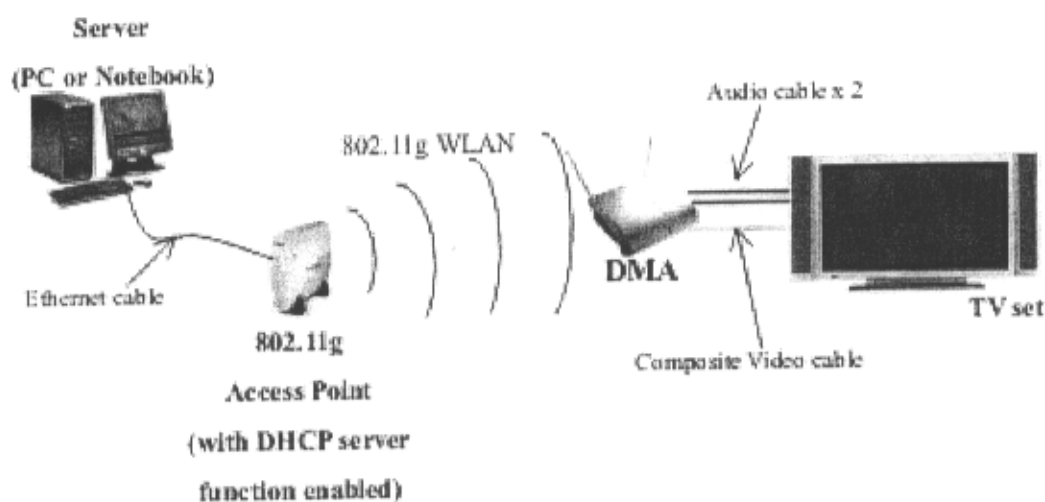
- Advanced wireless gateway brings video programs to any display engine (TV, Plasma TV, LCD, Projector) in SDTV resolutions.
- Full feature video and audio playback functions:
 - Support MPEG 1, 2, 4, DivX, XviD
 - Support MP3, WMA and WAV
 - Output: YPbPr (Progressive Scan), S-Video, Composite Video (NTSC or PAL), Stereo Audio, SPDIF Digital OUT
 - Video Output: 10-bit Video DAC
 - Audio Output: up to 24 bits, 96 kHz
- Full feature digital image functions: support JPEG, GIF, BMP, TIFF formats
- USB port for connecting to USB storage device e.g. flash disk
- Ethernet interface for wire connection
- Wireless Compatibility: compatible with IEEE 802.11b and IEEE 802.11g high data rate standard to provide wireless speed up to

- 54Mbps data rate.
- Security: supports 64 or 128 bit WEP encryption
- Dynamic data rate: auto fallback switching with 54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2 and 1Mbps
- Supports dual diversity antenna

2 Operation Principle Description

2.1 Wireless Mode

A sample network diagram of a Wireless Digital Media Adaptor system can be as follows:



The server which can be a PC or notebook contains media files such as photos, music or movies in MP3, MPEG or JPEG formats. The server is connected to a wireless LAN access point so that the media files can be accessed by DMA via wireless LAN. DMA is normally connected with a TV. The users can select their desired media files with a remote control. DMA will decode and convert the media files into video and audio signals, and then output the signals to TV. There are composite, s-video and component outputs in DMA which can be used to connect the video signals to TV. For better audio quality, DMA can be connected to Hi-Fi system via the analog stereo output or digital audio output.

2.2 Wired Mode

The server and DMA can be connected with Ethernet cable directly or via a hub. In this case, the media files are transmitted through the cables in the LAN. Similar to wireless mode, the user can select the media files in the server with the remote control and the file content will be played in TV.

2.3 USB Mode

USB flash disk or storage device can be connected to DMA directly via its USB port. The media files in USB disk can be selected by the user with the remote control. Then, DMA will decode and convert the file content and output the video and audio signals to TV.

3 Specification

Parts	Functions
Front Panel	
Infrared receiver	Receive the infrared control signal from remote control
Back Panel	
LAN LEDs	Display the status and transmission of LAN interface
WLAN LEDs	Display the status and transmission of wireless interface
S-Video OUT	Connect to S-Video IN of display device (e.g. TV or LCD monitor etc.)
Composite Video OUT	Connect to Composite Video IN of display device
YPbPr OUT	Connect to YPbPr IN of display device
Stereo Audio OUT	Connect to Audio IN of audio device (e.g. TV, LCD monitor, HiFi amplifier etc.)
RJ-45 jack	Connect to Ethernet device (e.g. switch, router or PC etc.) for wired connection using CAT5 cable
Power connector jack	Connect to external power adaptor DC 12V
Reset	Restart the device
USB Port	Connect to external USB hard disk
Digital SPDIF OUT	Connect to external device for digital audio decode
Other	
Power Switch Connector	Connect to a power switch
Internal USB connector	Connect to a secondary USB device (HDD)
External Antenna connector	Connect to external antenna for wireless communications

Radio Emission Type	Comply with IEEE 802.11b and 802.11g DSSS (Direct Sequence Spread Spectrum) physical layer.
Operating Frequency	2.4 GHz ~ 2.4835 GHz ISM band
Data Modulation types	OFDM (Orthogonal Frequency Division Multiplexing) CCK (Complementary Code Keying) DQPSK (Differential Quadrature Phase Shift Keying), DBPSK (Differential Binary Phase Shift Keying)
Channel Number	Channels 1-11 for United States/Canada
Data Rate	54Mbps with fall back rates of 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1 Mbps
Security	64/128 bits WEP Encryption, 802.1x Authentication, WPA
Media Access Protocol	CSMA/CA (Carrier Sense Multiple Access with Collision Avoidance) with ACK architecture, 32 bits MAC-layer
Operating Voltage	3.3 VDC \pm 5%
Antenna port impedance	50ohm