ASUS®

WiCast
Wireless HDMI Kit

EW2000

User Manual

User Manual

Model No.:EW2000

Model name: WHDI transmitter module

Version: v0.1

Date: July-12, 2010

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device is restricted to indoor use when operated in the 5.15 to 5.25 GHz frequency range.

FCC / IC Radiation Exposure Statement:

This equipment complies with FCC/ IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This module is intended for OEM integrator only and limited to host with ASUS WiCast model: EW2000; EW2000TX. The OEM integrator is still responsible for the FCC compliance requirement of the end product, which integrates this module.
20cm minimum distance has to be able to be maintained between the antenna and the users for the host this module is integrated into. Under such configuration, the FCC radiation exposure limits set forth for an population/uncontrolled environment can be satisfied.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

The FCC part 15.19 statement below has to also be available in the manual: This device complies with Part 15 of FCC rules.
Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that required for successful communication.

This device has been designed to operate with an antenna having a maximum gain of [2.11] dBi. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication.

This Class [B] digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe [B] est conforme à la norme NMB-003 du Canada.

Contents

3. Overview

3.1. Scope

The EW2000 wireless transmitter module, together with the EW2000 wireless receiver module, presents the ultimate solution for converting any High Definition (HD) system into a wireless one. This add-on module enables wireless A/V applications that easily fit into the living room and eliminate traditional A/V wiring. The ultimate HD video and audio quality and robustness are unmatched by any other wireless technology, and present a true alternative to cable.

3.2. Features

- Transmission technology
  - MIMO

- Cable Free
  - To eliminate the wires clutter from the living room

- Video resolutions
  - Up to 1080p

- Frequencies supported
  - Unlicensed 5GHz band

- Range
  - At least 5m in room
 - Line-of-sight will depend on the environment

- Application Bandwidth
  - The Control Channel allows two-way communication of 100Kbps

- Latency
 - Less than 1ms delay between video/audio source and sink.

3.3.   Specification

Interface	Digital Video:30-bit RGB or YCrCb Digital audio: I2S and SPDIF Two-Wire serial bus slave interface One interrupt line
Network Standard	5GHz unlicensed band
Modulation	OFDM
Technique	Proprietary
Operating Frequency	5.18GHz to 5.875GHz
Operating Channels	USA/Canada: 36/40/44/48/149/153/157/161/165 Japan: 36/40/44/48 EU/AUS/NZ: 36/40/44/48
RF Output Power	TBD
Antenna	With 2 external antennas
Supply Voltage	5V±10%
Power Consumption	3.5W max

3.4. Mechanical Characteristics
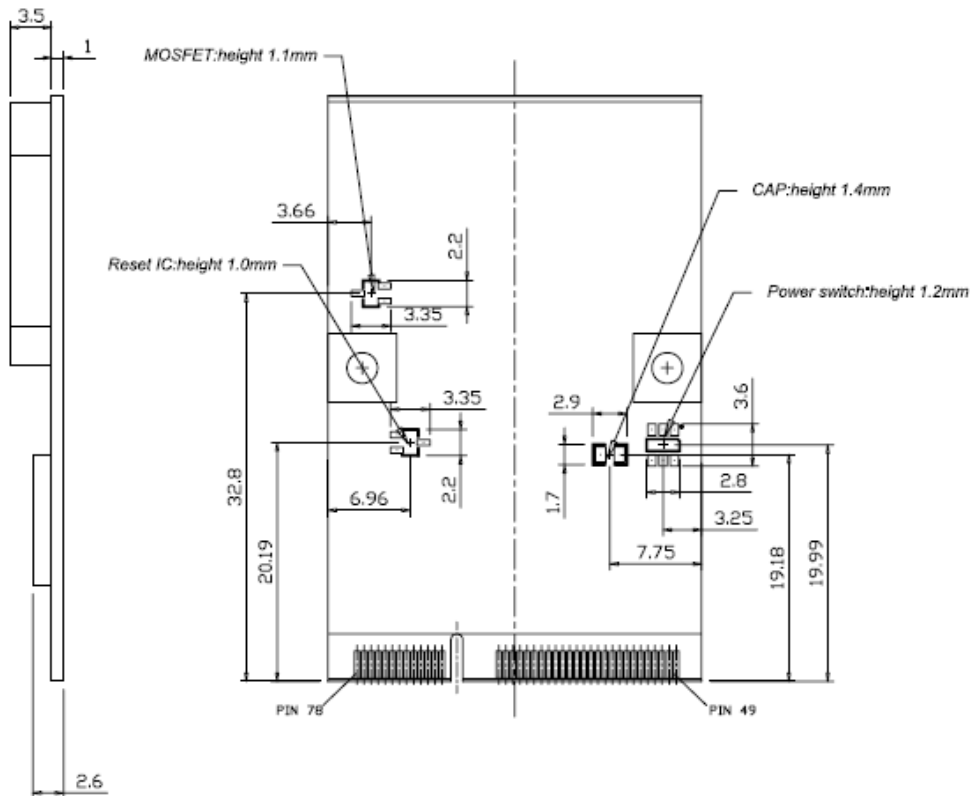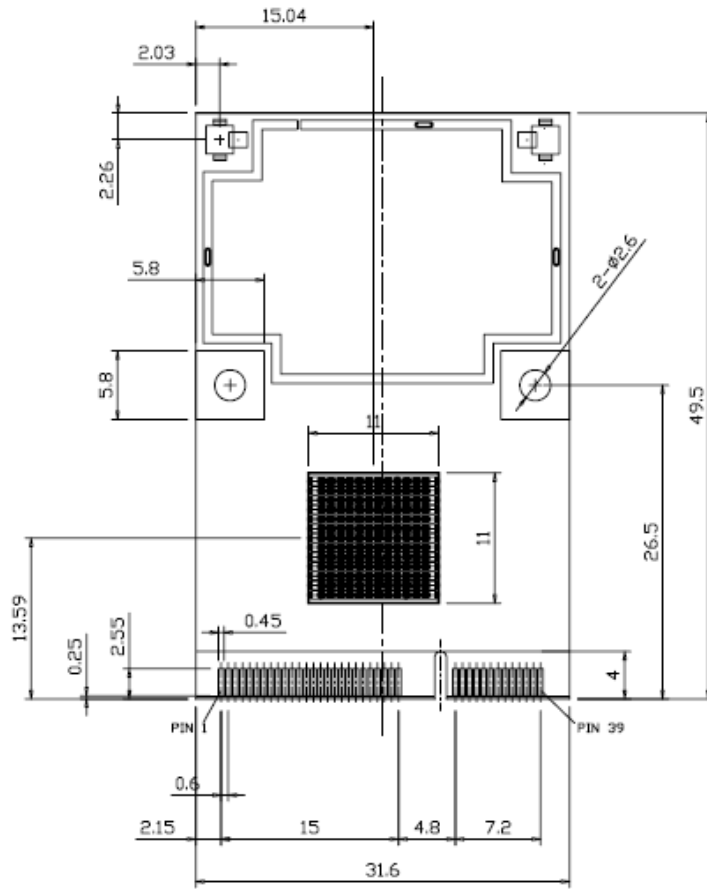
3.5.   Module function Block Diagram
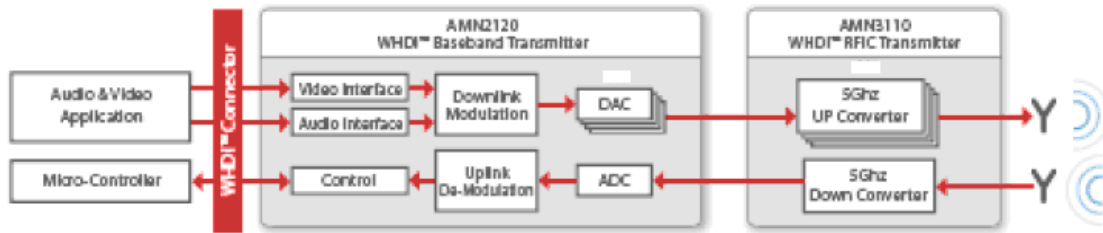
3.6.   RoHS Compliant
HM510 is fully compliant to RoHS requirement.

3.7.   EMI EMC certifications
HM510 is fully compliant with FCC regulatory requirements.

4. Engineering sheets

Pins Out and Pin Descriptions :

1	GND	40	GND
2	5V	41	5V
3	5V	42	5V
4	GND	43	GND
5	WHDI_DCLK	44	WHDI_H_SYNC
6	GND	45	WHDI_V_SYNC
7	WHDI_DE	46	GND
8	WHDI_D34	47	WHDI_D35
9	WHDI_D32	48	WHDI_D33
10	WHDI_D30	49	WHDI_D31
11	WHDI_D28	50	WHDI_D29
12	WHDI_D26	51	WHDI_D27
13	GND	52	GND
14	WHDI_D22	53	WHDI_D23
15	WHDI_D20	54	WHDI_D21
16	WHDI_D18	55	WHDI_D19
17	WHDI_D16	56	WHDI_D17
18	WHDI_APP_DEBUG1_D14	57	WHDI_APP_DEBUG2_D15
19	GND	58	GND
20	WHDI_D10	59	WHDI_D11
21	WHDI_D8	60	WHDI_D9
22	WHDI_D6	61	WHDI_D7
23	WHDI_D4	62	WHDI_D5
24	WHDI_D2	63	WHDI_D3
25	GND	64	GND
26	WHDI_MCLK	65	WHDI_I2S_D3
27	WHDI_SCLK	66	WHDI_I2S_D2
28	WHDI_LRCLK	67	WHDI_I2S_D1
29	WHDI_SPDIF	68	WHDI_I2S_D0
30	GND	69	WHDI_HPD
31	WHDI_USB_D-	70	WHDI_I2CS_SCL
32	WHDI_USB_D+	71	WHDI_I2CS_SDA
33	GND	72	WHDI_TXD_APP
34	WHDI_M_SCL	73	WHDI_RXD_APP

35	WHDI_M_SDA	74	WHDI_RESET_IN
36	WHDI_INT_OUT_PE	75	WHDI_HDMI_RESET_OUT
37	WHDI_HDMI_INT_IN	76	WHDI_GPIO0
38	WHDI_PWM0	77	WHDI_GPIO1
39	WHDI_PWM1	78	WHDI_GPIO2