

User Manual

Multi-Display AIO Player

Aetina MDS-DP16H-20

Document Change History

Version	Date	Description	Authors
v01	2021/01/11	Initial Release.	Emily Chou

Contents

1. General Overview.....	- 1 -
1.1 Features	- 1 -
1.1.1 System specifications.....	- 2 -
1.1.2 Graphics specifications.....	- 2 -
1.1.3 I/O Interface.....	- 2 -
1.1.4 Display Support.....	- 2 -
1.1.5 Cooling System.....	- 3 -
1.1.6 Operating System Support.....	- 3 -
1.2 Configuration	- 3 -
2. Getting Started.....	- 4 -
2.1 Getting to know MDS-DP16H-20	- 4 -
2.1.1 Front View.....	- 4 -
2.1.2 Rear View	- 5 -
2.2 Hardware Installation of MDS-DP16H-20	- 6 -
2.2.1 Please follow the instructions from Step 1 to Step 4.....	- 6 -
2.2.2 Display configuration	- 7 -
3. Software Installation.....	- 8 -
3.1 NVIDIA Surround setting.....	- 8 -
3.2 Display setting.....	- 9 -
3.3 MDS-DP16H-20 software (MView Power).....	- 10 -
4. Functional Description	- 10 -
4.1 Architecture	- 11 -
4.2 Display Interface	- 11 -
4.2.1 Digital Output.....	- 11 -
4.2.2 Analog Output.....	- 12 -
4.2.3 Hot Plug.....	- 12 -

4.2.4 EDID caching.....	- 12 -
5. Mechanical Specifications.....	- 13 -
5.1 Dimensions.....	- 13 -
5.2 HDMI Connector	- 15 -
6. Certificates	- 16 -
6.1 Certifications	- 16 -
7. Appendix	- 17 -
7.1 Ordering Information.....	- 17 -



1. General Overview

Aetina Multi Monitors Marvel (M3 Player) series are the hardware and software integrated all-in-one high-performance control player for the video wall. Built to leverage the power of cutting-edge discrete GPU to provide 1:1 pixel to pixel meticulous output quality and unprecedented 8K video decoding, displaying, and streaming.

M3 Player MDS-DP16H-20 supports 4K x4 or FHD x8 channel video capture input for option, driving a multi-monitor video wall configuration on 4x4 or 8x2 as a large workplace with optimal Ultra HD 8K video playback abilities. Besides, backup by Aetina's MView Power professional signage software effectively allows for easy-to-use content management. The all-in-one, powerful player transforms video wall implementation in a simple, flexible, and superior way.

1.1 Features

- Powered by NVIDIA GeForce RTX 2070 GPU
- Intel 9th Generation Coffee lake i7-9750H, 6 Cores/12 Threads CPU, 12M cache
- Drive up to 16 displays with single GPU, hardware and software integrated in Video Wall AIO Player
- Maximum 15360x2400@60Hz (8x2) resolution, support 1920x1200 per port
- Support multimedia file format, painting and scheduling functions
- Easily design elaborate displays of all sizes and configurations

- Support EDID Caching
- Customize configurations to replace the original pre-sets
- Providing unprecedented 8K video playing and 3D visual effects¹
- Extended view-customized area, support PowerPoint or any application in mirror view

1.1.1 System specifications

- Intel 9th Generation Coffee lake i7-9750H, 6 Cores/12 Threads CPU, 12M cache
- Chipset: Intel QM370
- Memory: 2 x SO-DIMM, 2 x 8GB DDR4
- Networking:
 - 1x Intel Wireless-AC 9462NGW M.2 2230 , BT5.0
 - 2x Realtek RTL8111H-CG Gigabit Ethernet controller
- Audio Codec: 1x ALC892-GR 7.1+2 Channel high-definition audio CODEC
- Mass Storage: 1x M.2 SSD slot (PCIe x4, NVMe SATA III auto detect);
1x 2.5" SATAIII HDD/SSD bay

1.1.2 Graphics specifications

- NVIDIA GeForce RTX 2070
- Stream Processing Unites: 2304
- Memory Size: 8GB GDDR6

1.1.3 I/O Interface

- Video Outputs: 16 x HDMI + 1 x Console
- Lan: 2x RJ45 for Gigabit LAN, 2x WiFi Antenna
- USB: 4x USB 3.0 Type-A , 4x USB 3.1 Type-A
- Serial: 1x D-Sub for RS-232
- Audio: 2x Micro Jack audio connectors for Mic / Line Out
- LEDs: 1x Power button with LED, 2x LEDs for HDD/WiFi

1.1.4 Display Support

- Max. Displays: 16
- Max. Displays Output (per port) : HDMI1.4, 1920x1200 at 60Hz
- Max. Video Wall Resolution: 7680x4800 at 60Hz (4 x 4 mode), 15360x2400 at 60Hz (8 x 2 mode)

Note:

1. 8K video playing and 3D visual effects are subject to at least 8GB memory size of the GPU graphics card.

1.1.5 Cooling System

- Active cooling Fan

1.1.6 Operating System Support

- Windows® 10 64-bit

1.2 Configuration

Table 1.1 lists the SKU configuration currently available for the MDS-DP16H-20.

Table 1.1 Product specifications

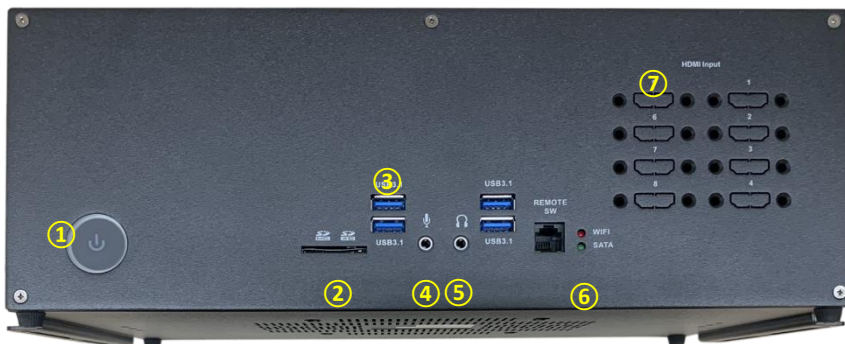
Processor	Intel 9th Generation Coffee lake i7-9750H, 6 Cores/12 Threads CPU, 12M cache, 45W TDP	
Graphics	RTX2070 8GB GDDR6	
System Memory	Support up to 2x DDR4-2666 SO-DIMM up to 32GB;	
Mass Storage	1x M.2 SSD slot (PCIe x4, NVMe SATA III auto detect); 1x 2.5" SATAIII HDD/SSD bay	
Audio Codec	ALC892-GR 7.1+2 Channel high definition audio CODEC	
Networking	Intel Wireless-AC 9462NGW M.2 2230 , BT5.0 2x external antenna for WIFI ; 2x Realtek RTL8111H-CG Gigabit Ethernet controller	
Front Panel	Power switch with LED LED: Power, HDD activity (Green), WiFi activity (Red) 1x 3.5mm stereo out, 1x 3.5mm microphone	4x USB3.1 type A receptacle RJ11: Remote power switch port 8x HDMI: Capture card input (install by order) 1x SD/SDHC/SDXC card reader
Back Panel	1x DC input jack 1x COM PORT 2x 10/100/1000Mbps Ethernet 2x SMA antenna socket 4x USB3.0 type A receptacle	16x (16H)or 9x HDMI+1xDP (9H) output 1xHDMI Console Output 1x CLEAR CMOS: Pin hole on back panel 1x FPGA Reset (reserved, function not available) 1x Service (reserved, function not available)
Case	Black metal chassis with active cooling fans Physical dimension: 321.5(L) x 209.8(L) x 114.5(H) mm excluding mounting plate and protruded portion	
Ambient	Main unit: Operating: 0°C – 35°C. Humidity 10% – 90% non-condensing Storage: -10 – +85°C. Humidity 10% – 90% non-condensing	AC adapter: Operating: 0°C – 40°C. Humidity 10% – 90% non-condensing Storage: -10 – +85°C. Humidity 10% – 95% non-condensing
Power Input	19.5V/350W Power Supply. Maximum Power Consumption: Approximately 290W NEWSUN CR2032HF-90-2 high temperature lithium manganese battery w/3M4920 double side adhesive tape	
Operating System	Windows 10 Pro	
Packing Contents	1x Main unit 2x Dual-band antenna	1x Universal AC input 19.5V/350W Power Supply 1x US plug AC power cord

2. Getting Started

Before you begin installing MDS-DP16H-20, please make sure you have completed the required pre-installation tasks as outlined in this chapter.

2.1 Getting to know MDS-DP16H-20

2.1.1 Front View



Refer to the diagram below to identify the components on this side of the system

① Power switch

The power switch allows powering ON and OFF the system.

② Memory card reader

The built-in memory card reader reads SD/SDHC/SDXC cards used in devices such as digital cameras, MP3 players, mobile phones and PDAs.

③ USB 3.1 port

The USB 3.1 port supports the SuperSpeed USB 3.1 device. Use this port for USB 3.1 devices for maximum performance with USB 3.1 compatible devices.

④ Microphone jack

The microphone jack is designed to connect the microphone used for video conferencing, voice narrations or simple audio recordings.

⑤ Headphone/Audio Out jack

The stereo headphone jack (3.5mm) is used to connect the system's audio out signal to amplified speakers or headphones.

⑥ WIFI/SATA LED

The LED show up WIFI or SSD wording Status.

⑦ Video Input HDMI Port

The HDMI Port which can install the Video Capture card function, support FHD x8 or 4Kx4 Channel.

2.1.2 Rear View



Refer to the diagram below to identify the components on this side of the system.

① WiFi antenna connector

The WiFi antenna connector supports WiFi antenna module.

② USB 3.0 ports

The USB 3.1 port supports the SuperSpeed USB 3.1 device. Use this port for USB 3.1 devices for maximum performance with USB 3.1 compatible devices.

③ Power input (DC19.5V)

The supplied power adapter converts AC power to DC power for use with this power port. To prevent damage to the mini-PC, always use the supplied power adapter.

④ LAN ports

The eight-pin RJ-45 LAN port supports standard Ethernet cables for connection to a local network. The LAN port marked with K is for Killer Ethernet.

⑤ COM Port

RS-232 Series Port

⑥ FPGA Reset

Reset each HDMI Output Port resolution back to factory Default

⑦ Clear CMOS

Clear System BIOS Setting

⑧ Console HDMI Port

Console of Monitor

⑨ Video Output HDMI ports

The HDMI (High Definition Multimedia Interface) port supports a FHD device such as an LCD or LED or Project Display device to allow viewing on a larger desktop display.

2.2 Hardware Installation of MDS-DP16H-20

2.2.1 Please follow the instructions from Step 1 to Step 4.

1. Connecting WiFi antenna modules

Connect WiFi antenna modules to the WiFi antenna connectors.

2. Connecting to network devices

Connect one end of a network cable to the LAN port on the system rear panel and the other End to a hub or switch. The LAN port marked with K is for Killer Ethernet.

3. Connecting to HDMI Output to LCD displays

Connect one end of an HDMI cable to the HDMI port on the system rear panel and the other end to a HDMI-compatible display such as an HDTV or monitor.

4. Turning on the system

Connect two supplied AC adapters to the DC IN jack on the system rear panel and then press the power switch on the front panel to turn on the system.

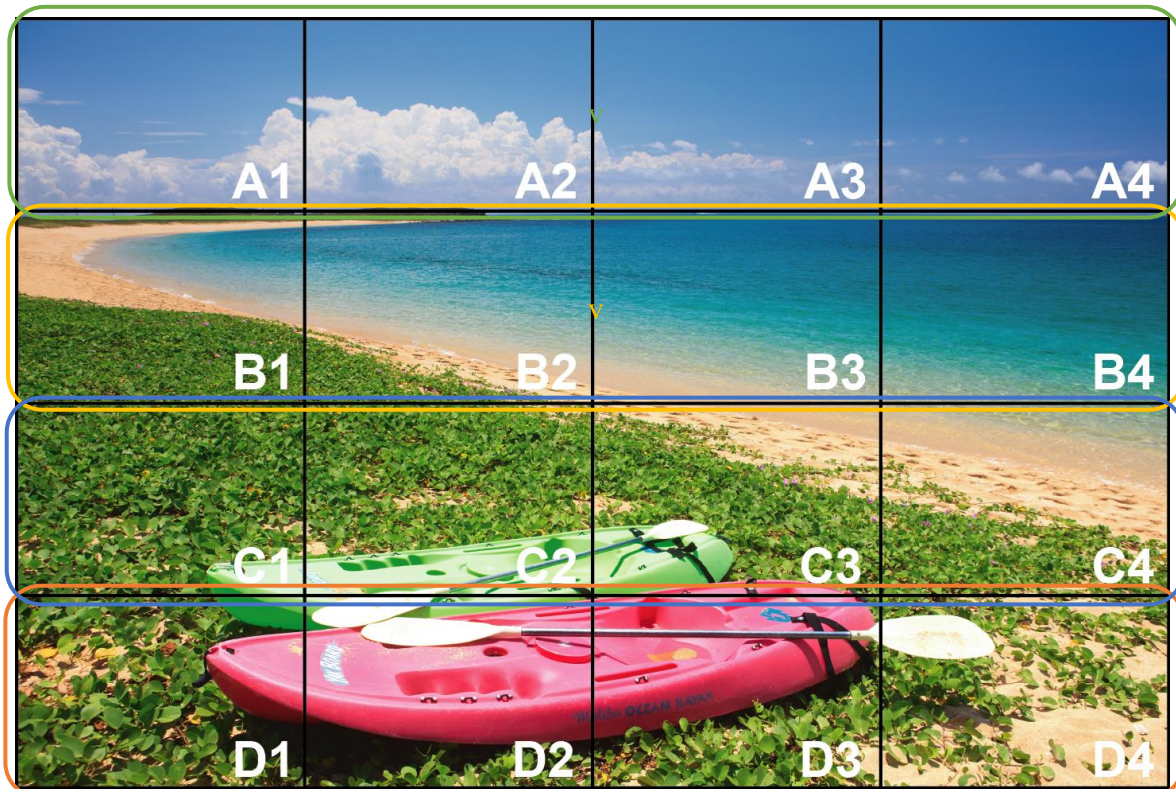
*When the Player is not in use, unplug power adapter or switch off the AC outlet to save on power consumption.

2.2.2 Display configuration

Connector Monitor HDMI Cable to the M3 Player HDMI output port (Figure 2.1 schematic view) and according to NVIDIA Surround function panel change layout configuration.

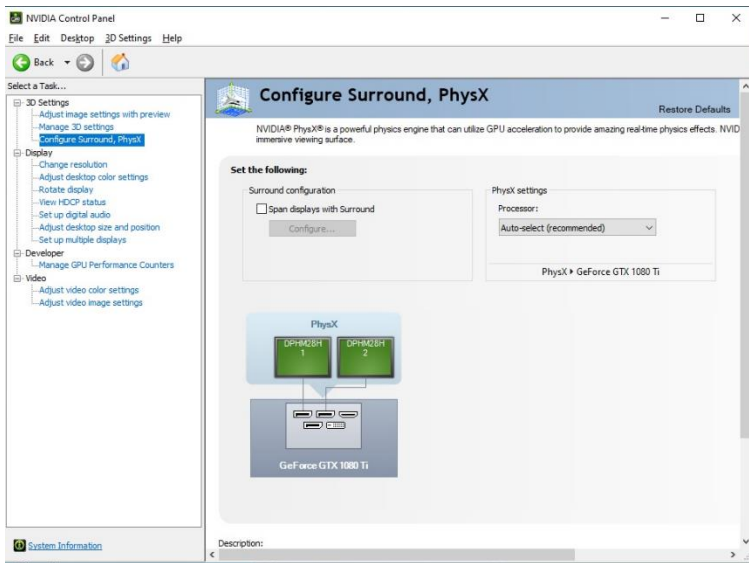


Figure 2.1 MDS-DP16H-20

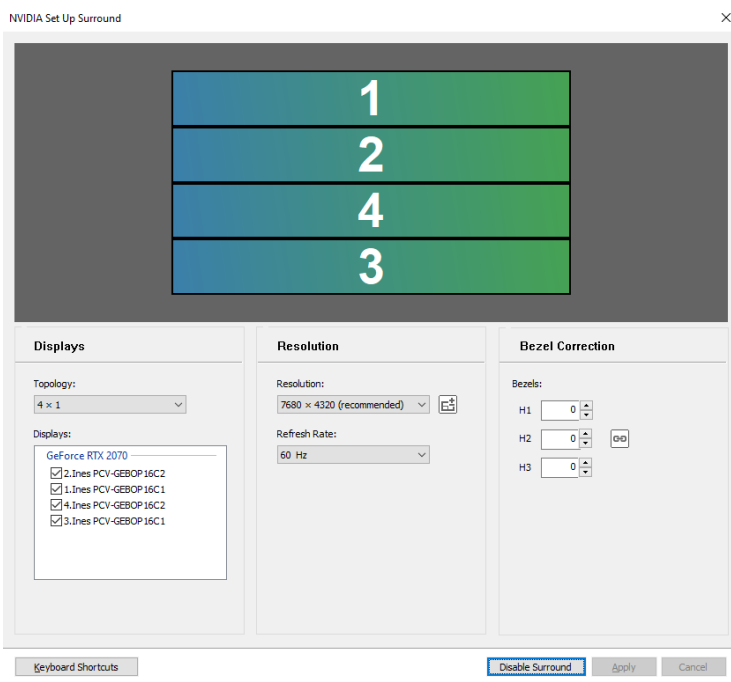


3. Software Installation

3.1 NVIDIA Surround setting



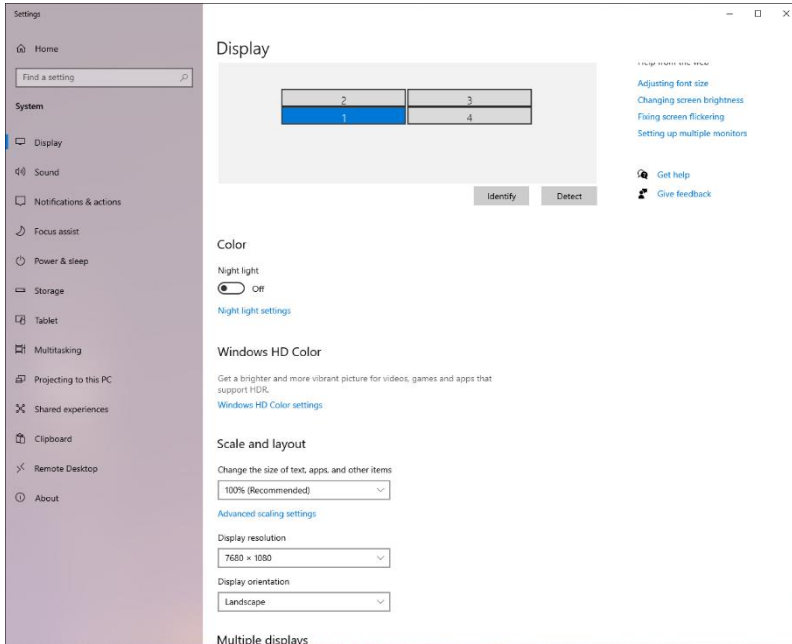
Choose “Configure Surround, PhysX”, and then click “Span displays with Surround” → “Configure...”



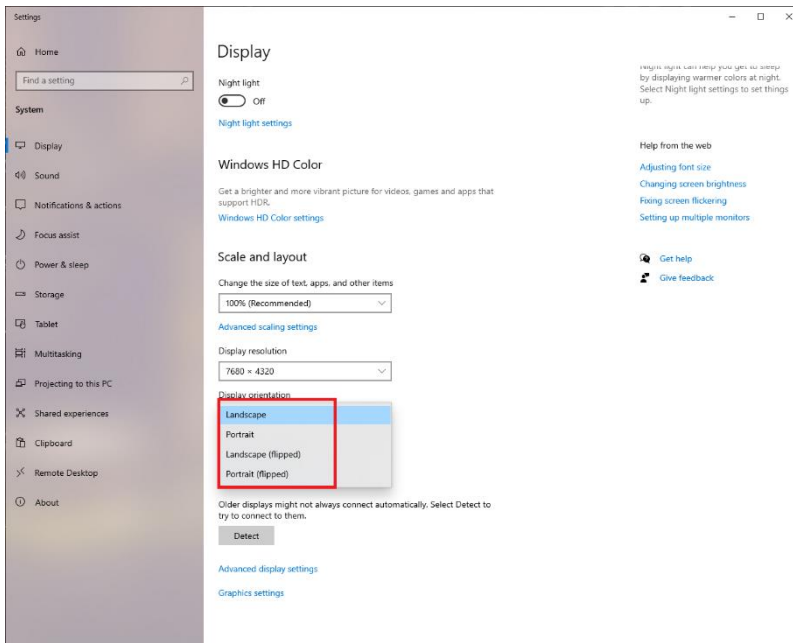
Choose Topology type, and then click the display numbers in sequence from top to bottom. After clicking the display numbers, click “Enable Surround”

Close setup window to finish the Surround configure.

3.2 Display setting



Display setting panel.



Base on your monitor that can choose Landscape or Portrait mode from display panel.

3.3 MDS-DP16H-20 software (MView Power)

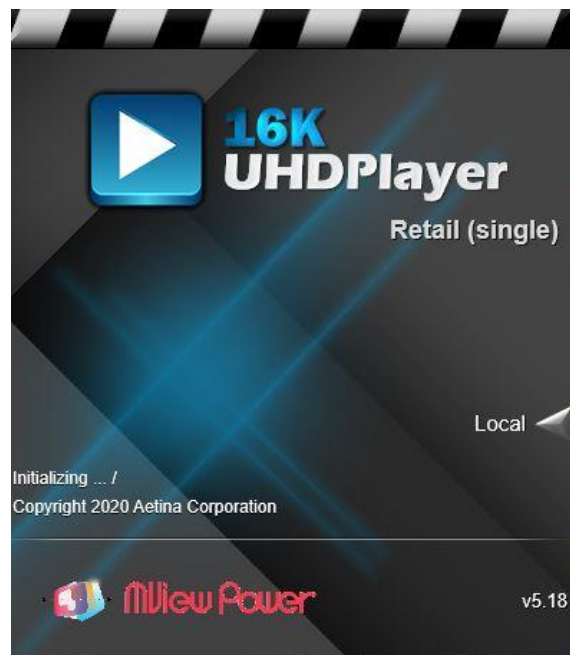
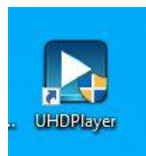
Aetina MView Power is the brilliant, intuitive, and easy-installation video-wall editing and management software. Support the editable player, scheduling, local control, and remote monitoring. It is built inside the M3 Player and also supports for Aetina M3 Box. With MView Power, integrators can define display format, as well as efficiently execute advanced pictures and videos. Aetina video wall products allow you to customize the perfect solution for your specific needs.

It is built inside the M3 player and also supports for Aetina M3 box. With MView Power, integrators can define display format, as well as efficiently execute advanced pictures and videos. It simplifies the process of video wall content design and management, enabling setup in three quick steps - selecting objects, edit, and play. MView Power features dynamic multi-layer object mixing and flashing animation for desirable visual effects.

The system related requirements are described as follows:

- Work platform: Microsoft Windows® 10 64-bit or more.
- Resolution: Single screen resolution at least 1920 x 1080 (It is recommended to use screens of the same model and specifications)
- Other equipment: mouse, keyboard.
- This manual is for software version: v5.0 or higher

Please confirm the **MView Power** shortcut already on the desktop.



4. Functional Description

4.1 Architecture

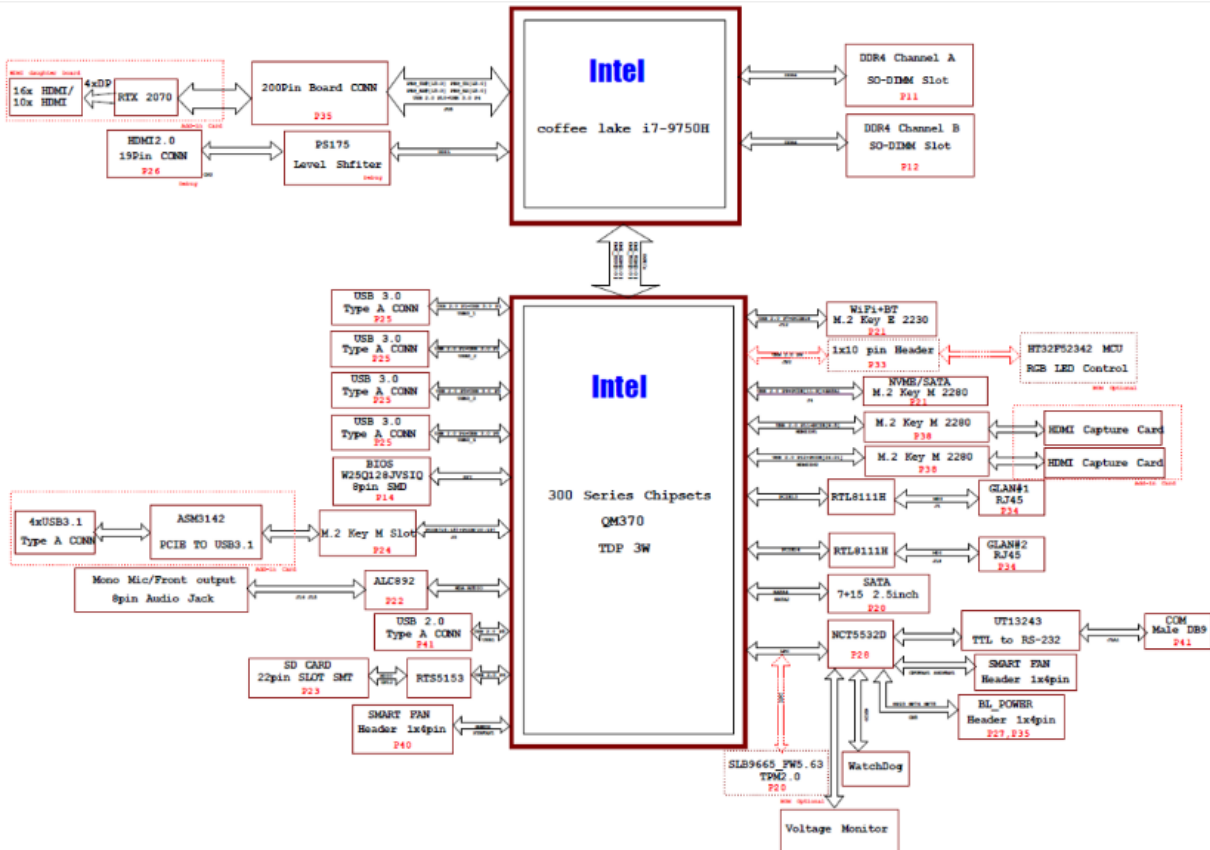


Figure 4.1 MDS-DP16H-20 Block diagram

4.2 Display Interface

The MDS-DP16H-20 provides sixteen digital output channels. The digital output channels can be active at the same time.

4.2.1 Digital Output

- HDMI
 - Maximum resolution: 7680x4800 at 60Hz (4 x 4 mode), 15360x2400 at 60Hz (8 x 2 mode)
 - Displays Output (per port) : HDMI1.4, 1920x1200 at 60Hz

4.2.2 Analog Output

This model does not support Analog output.

4.2.3 Hot Plug

The MDS-DP16H-20 supports Hot Plug detect for digital monitors.

4.2.4 EDID caching

The MDS-DP16H-20 prevents display default configuration reset while monitor malfunction or disconnection, optimizes displaying quality and stability.

5. Mechanical Specifications

5.1 Dimensions

The Actual dimensions of the MDS-DP16H-20 is shown below.



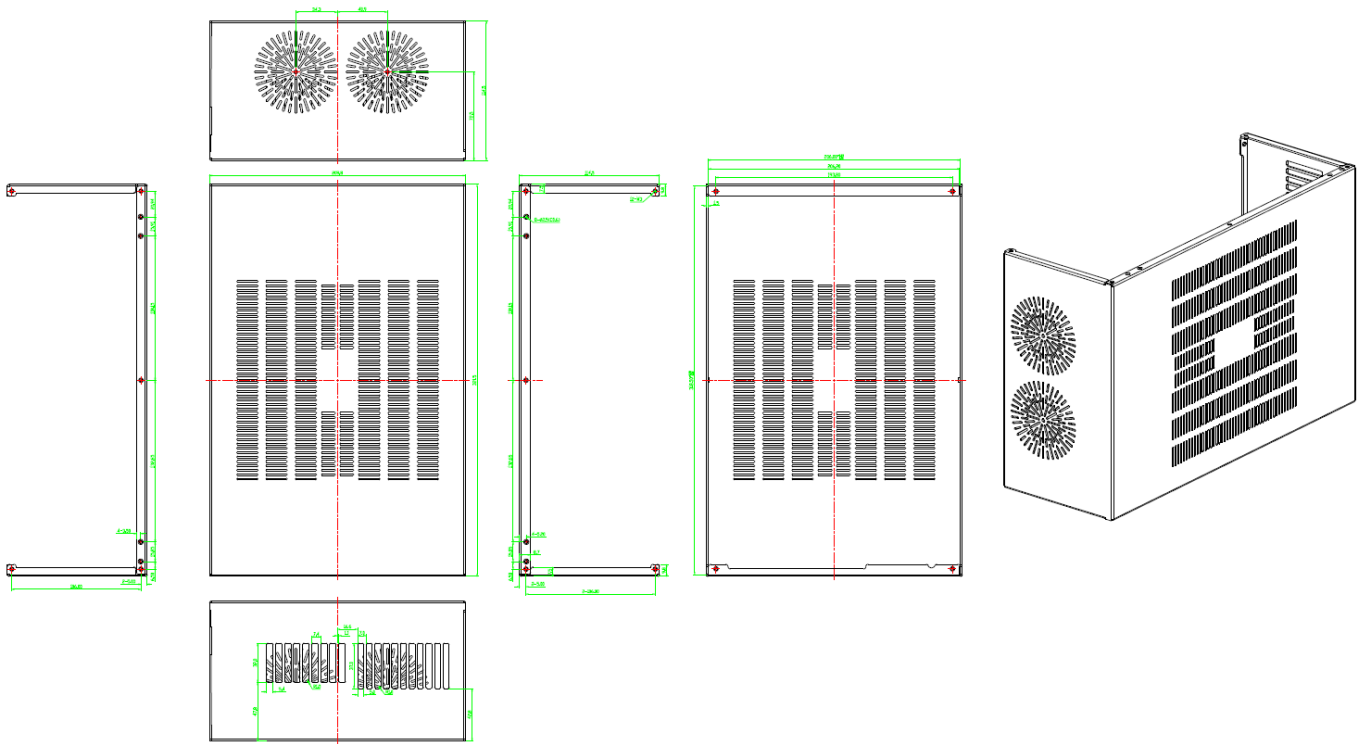


Figure 5.1 MDS-DP16H-20 (321.5 x 209.8 x 114.5mm)

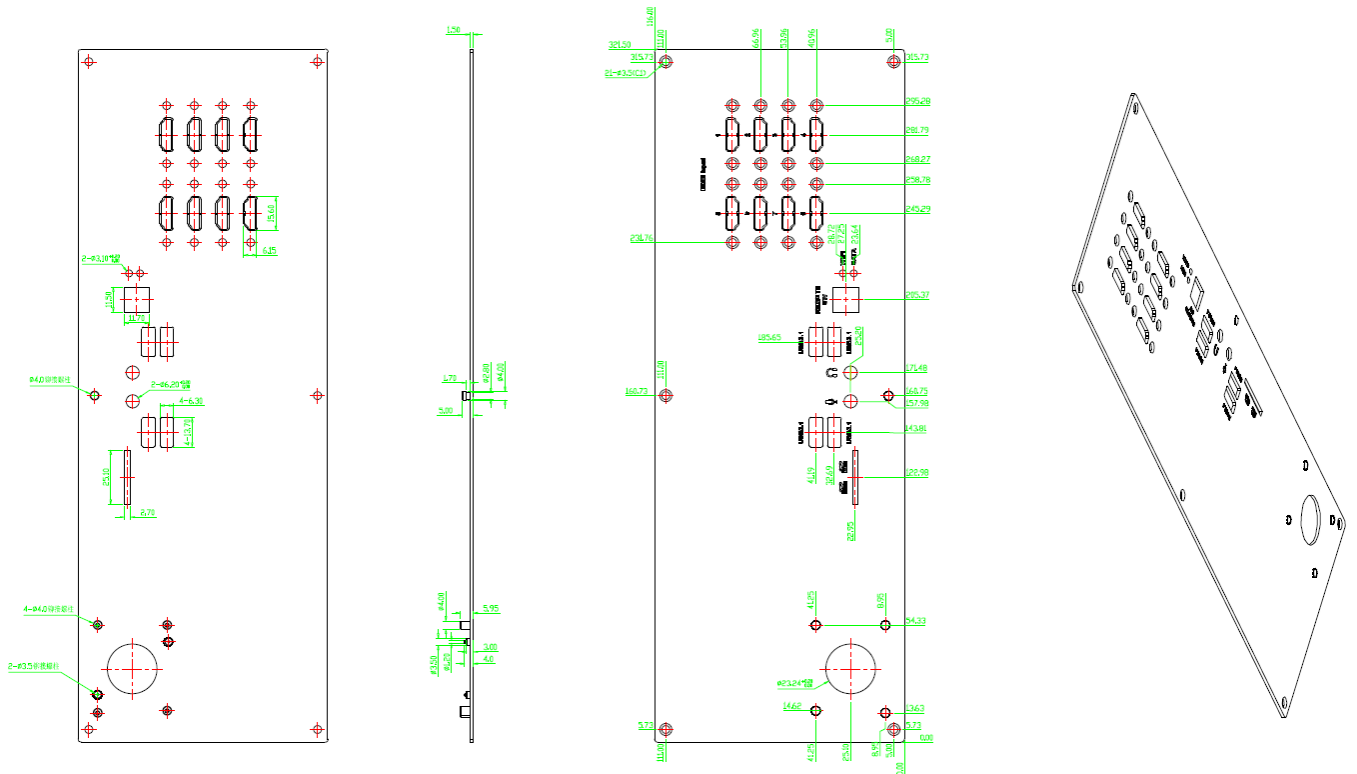


Figure 5.2 Front Panel of MDS-DP16H-20

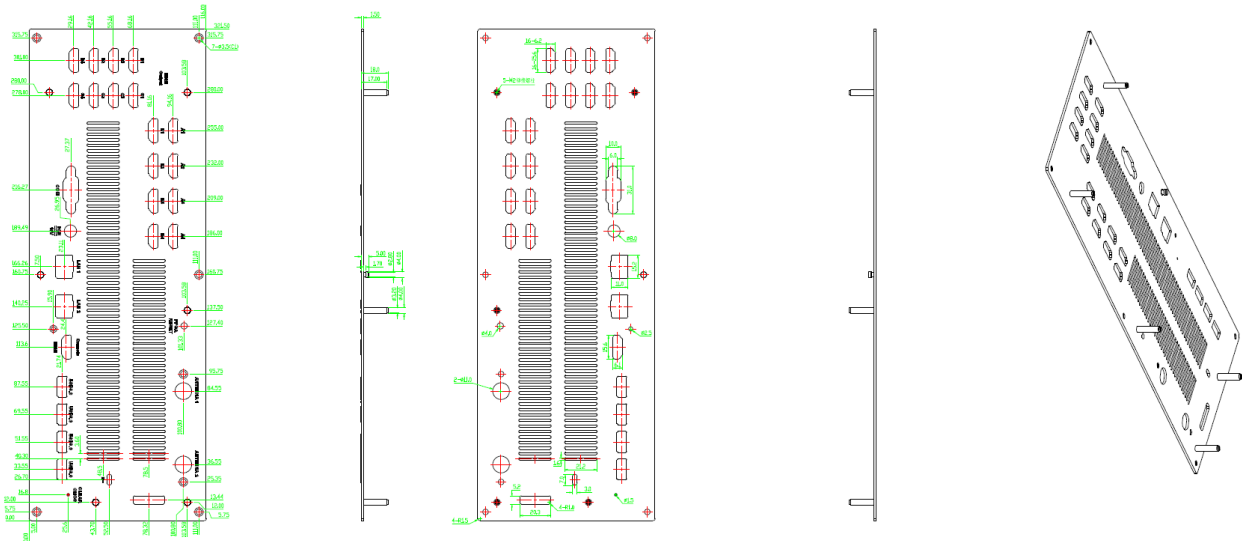


Figure 5.3 Back Panel of MDS-DP16H-20 (HDMI connector x 16 ports)

5.2 HDMI Connector

HDMI (High-Definition Multimedia Interface) is an industry-supported, uncompressed, all-digital audio/video interface. HDMI provides an interface between any audio/video source, such as a multimedia PC system, DVD player or A/V receiver and an audio and/or video monitor, such as a LCD monitor, over a single cable (Figure 5.4).

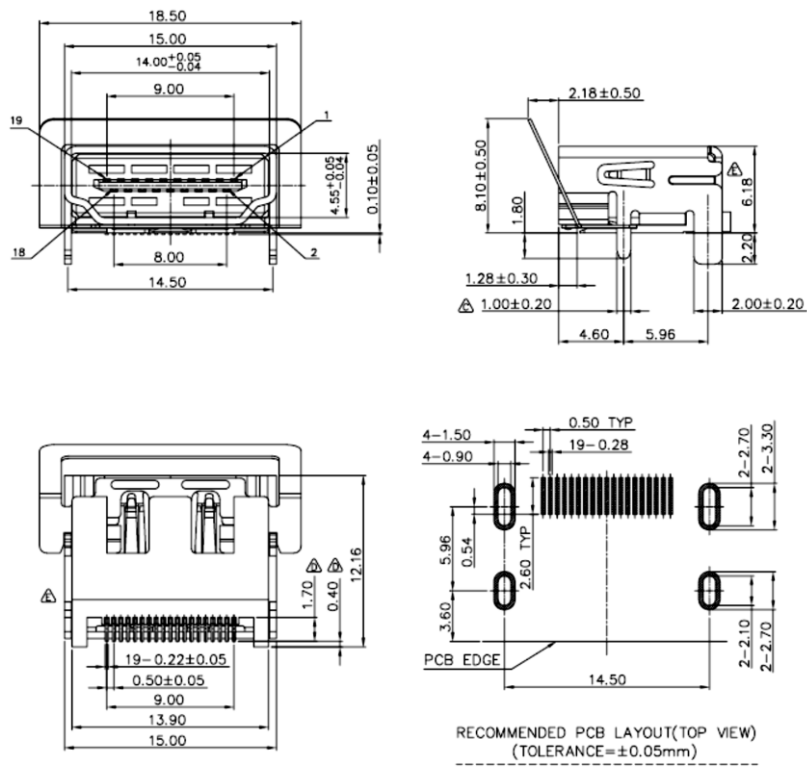


Figure 5.4 HDMI Connector

6. Certificates

6.1 Certifications

Driver for WHQL certified Windows 10 available from NVIDIA.

Conformité Européenne (CE): TBD

Federal Communications Commission (FCC): TBD

7. Appendix

7.1 Ordering Information

Table 7.1 Models available

Model Number	Description
MDS-DP16H-20	Intel® Core™ i7-9750H, 2 x SO-DIMM DDR4, NVIDIA GeForce RTX 2070, 8GB GDDR6 256-bits GPU card, 16 x HDMI outputs, 350W PSU , 0°C to +35°C

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