Organization and Architecture Computer

Assignment I

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Comparisson between 2 motherboard with different manufacture

1. H81MDS2 PRO 6.x (BIOSTAR)   VS   GA-H81M-DS2V (Rev.2) (Gigabyte)

Name	H81MDS2 PRO 6.x	GA-H81M-DS2V (Rev.2)
Chipset	∫ Intel® H81	∫ Intel® H81 Express Chipset
CPU SUPPORT	∫ Intel® Core™ i7 LGA 1150 Processor ∫ Intel® Core™ i5 LGA 1150 Processor ∫ Intel® Core™ i3 LGA 1150 Processor ∫ Intel® Pentium® LGA 1150 Processor	∫ Intel® Core™ i7 LGA 1150 Processor ∫ Intel® Core™ i5 LGA 1150 Processor ∫ Intel® Core™ i3 LGA 1150 Processor ∫ Intel® Pentium® LGA 1150 Processor ∫ Intel® Celeron® LGA 1150 Processor
MEMORY	∫ Support Dual Channel DDR3 1600/1333/1066 MHz ∫ 2 x DDR3 DIMM Memory Slot ∫ Max. Supports up to 16GB Memory	∫ Support Dual Channel for DDR3 1600/1333 MHz ∫ 2x1.5C DDR3 DIMM Memory Slot ∫ Max. Supports up to 16GB Memory ∫ Support memory modules non-ECC & XMP
EXPANSION SLOT	∫ 1 x PCI-E x16 2.0 Slot ∫ 2 x PCI-E x1 2.0 Slot	∫ 1 x PCI-E x16 2.0 Slot ∫ 2 x PCI-E x1 2.0 Slot
STORAGE	∫ 2 x SATA3 Connector ∫ 2 x SATA2 Connector	∫ 2 x SATA3 Connector ∫ 2 x SATA2 Connector
USB	∫ 2 x USB 3.0 Port ∫ 2 x USB 2.0 Port ∫ 2 x USB 2.0 Header	∫ 2 x USB 3.0/2.0 ports ∫ 6 x USB 2.0/1.1 ports (2 ports back panel, 4 USB headers)

LAN	) Realtek RTL8111G - 10/100/1000 Controller) Support Super LAN Surge Protection	) Realtek® GbE LAN chip (10/100/1000 Mbit)
INTEGRATED VIDEO	) By CPU model) Supports DX12	) Intel® HD Graphics support
REAR I/O	) 1 x PS/2 Mouse) 1 x PS/2 Keyboard) 2 x USB 3.0 Port) 2 x USB 2.0 Port) 1 x Printer Port) 1 x DVI Connector) 1 x VGA Port) 1 x RJ-45 Port) 3 x Audio Connector	) 1 x PS/2 keyboard/mouse port) 1 x D-Sub port) 1 x DVI-D port) 2 x USB 3.0/2.0 ports) 2 x USB 2.0/1.1 ports) 1 x RJ-45 port) 3 x audio jacks (Line In, Line Out, Mic In)
INTERNAL I/O	) 2 x USB 2.0 Header) 2 x SATA3 6Gb/s Connector) 2 x SATA2 3Gb/s Connector) 1 x Front Audio Header) 1 x Front Panel Header) 1 x CPU Fan Header) 1 x System Fan Header) 1 x Serial Header	) 1 x 24-pin ATX main power connector) 1 x 8-pin ATX 12V power connector) 2 x SATA 6Gb/s connectors) 2 x SATA 3Gb/s connectors) 2 x USB 2.0/1.1 headers) 1 x CPU fan header) 2 x system fan headers) 1 x front panel header) 1 x front panel audio header) 1 x Clear CMOS jumper
H/W MONITORING	) CPU / System Temperature Monitoring) CPU / System Fan Monitoring) System Voltage Monitoring	) CPU/system voltage and temperature detection) CPU/system overheating warning) CPU/system fan monitor

DIMENSION	ꝶ Micro ATX Form Factor Dimension: 22.6cm x 17cm (W x L)	ꝶ Micro ATX Form Factor; 22.6cm x 17.0cm
OS SUPPORT	ꝶ Support Windows 7 / 8 / 8.1 / 10(x64)	ꝶ Support for Windows 8.1/8/7
BUNDLE SOFTWARE	ꝶ BullGuard ꝶ BIO-Remote2 ꝶ Smart Speed LAN ꝶ Intel Rapid Start Technology ꝶ Intel Smart Connect Technology	ꝶ Norton® Internet Security (OEM version)
FEATURES	ꝶ Supports 100% Solid capacitor ꝶ Supports Charger Booster ꝶ Supports BIOS Online Update	ꝶ Support for Q-Flash ꝶ Support for Xpress Install ꝶ Support for APP Center ꝶ Support ON/OFF Charger

Note :
Those comparisson only show global overview of the device, there are still some specific feature of the device that not be listed in above table.

The device shown above had many same feature or specification, the differences are listed on CPU SUPPORT, MEMORY,INTEGRATED VIDEO, REAR I/O,INTERNAL I/O,OS SUPPORT, BUNDLE SOFTWARE and FEATURES.

2. Z370 GODLIKE GAMING (MSI)   VS   Z370-LIGHTSABER (ECS)

Name	Z370 GODLIKE GAMING	Z370-LIGHTSABER
Chipset	ʃ Intel® Z370 Chipset	ʃ Intel® Z370 Express Chipset
CPU SUPPORT	ʃ Max Support Intel® Core™ i7 8th Generation LGA 1151 Processor	ʃ Intel® K Series Unlock
MEMORY	ʃ 4 x DDR4 memory slots, support up to 64GB ʃ Dual channel memory architecture ʃ Supports Intel® Extreme Memory Profile (XMP)	ʃ Dual-channel DDR4 Memory architecture ʃ Supports DDR4 2400 non-ECC, Un-buffered SDRAM Memory ʃ Support up to 64 GB* ʃ Intel® extreme Memory Profile (XMP) 1.3/1.2 Memory Modules
EXPANSION SLOT	ʃ 4 x PCIe 3.0 x16 slots* ʃ 1 x PCIe 3.0 x1 slot	ʃ 3 X PCI Express X16 Gen 3.0 slot(s) ʃ 3 X PCI Express X 1 Gen 3.0slot(s)
STORAGE	ʃ 6 x SATA 6Gb/s ports* ʃ Supports RAID 0, RAID 1, RAID 5 and RAID 10 for SATA storage devices	ʃ 6 X Serial ATAIII 6Gb/s ʃ RAID0, RAID1,RAID5, RAID 10 configuration
USB	ʃ 6 x USB 3.1 Gen1 ʃ 6 x USB 2.0	ʃ 6 X USB3.0 port(s)
LAN	ʃ 3 x Killer™ E2500 Gigabit LAN controller	ʃ Killer E2500 Gigabit Fast Ethernet Controller ʃ Wake-On-LAN
REAR I/O	ʃ 1 x Clear CMOS button ʃ 2 x Wi-Fi Antenna connectors	ʃ 1 x PS/2 keyboard/mouse port ʃ 1 x D-Sub port

	⟩ 1 x PS/2 keyboard/ mouse combo port	⟩ 1 X PS/2 combo connector
	⟩ 6 x USB 3.1 Gen1 Type-A ports	⟩ 1 X Audio port (Line-in,4x Line-out, Mic in)
	⟩ 3 x LAN (RJ45) ports	⟩ 1 X HDMI port(s)
	⟩ 1 x USB 3.1 Gen2 Type-A port	⟩ 1 X Display port
	⟩ 1 x USB 3.1 Gen2 Type-C port	⟩ 1 X Optical S/PDIF Out port(s)
	⟩ 1 x 6.3mm Gold-plated stereo headphone jack	⟩ 2 X USB3.1 port(s)
	⟩ 5 x OFC audio jacks	⟩ 6 X USB3.0 port(s)
	⟩ 1 x Optical S/PDIF OUT connector1 x RJ-45 Port	⟩ 4 X USB2.0 port(s)
		⟩ 1 X Clear_CMOS Button
INTERNAL I/O	⟩ 1 x 24-pin ATX main power connector	⟩ 1 X 24-pin ATX Power Supply connector
	⟩ 1 x 8-pin ATX 12V power connector	⟩ 1 X 8-pin ATX 12V Power Connector
	⟩ 1 x 4-pin ATX 12V power connector	⟩ 2 X 4-pin CPU_FAN connector
	⟩ 1 x 6-pin ATX PCIe power connector	⟩ 2 X 4-pin SYS_FAN connector
	⟩ 6 x SATA 6Gb/s connectors	⟩ 1 X 4-pin PWR_FAN connector
	⟩ 4 x M.2 slots (M Key x3 ,E Key x1)	⟩ 1 X Power on button
	⟩ 1 x U.2 port	⟩ 1 X Reset button
	⟩ 1 x USB 3.1 Gen2 Type-C port	⟩ 1 X Front Panel switch/LED header
	⟩ 2 x USB 3.1 Gen1 connectors (supports additional 4 USB 3.1 Gen1 ports)	⟩ 1 X Front panel audio header
	⟩ 3 x USB 2.0 connectors (supports additional 6 USB 2.0 ports)	⟩ 1 X Speaker header ⟩ 1 X USB 3.0 header o Support additional 2 USB ports
	⟩ 1 x 4-pin CPU fan connector	⟩ 2 X USB 2.0 header

	ꃋ 1 x 4-pin Water Pump connector	○ Support additional 3 USB ports
	ꃋ 8 x 4-pin system fan connectors	ꃋ 6 X SATA III 6Gb/s connector(s)
	ꃋ 2 x Front panel connectors	ꃋ 1 X CLR_CMOS header
	ꃋ 1 x Front panel audio connector	ꃋ 1 X 7S-LED Display
	ꃋ 1 x TPM module connector	ꃋ 1 X Chassis intrusion header
	ꃋ 1 x Chassis Intrusion connector	ꃋ 1 X 80P Switch button
	ꃋ 3 x 2-pin Thermal Sensors connectors	ꃋ 1 X Quick OC button
		ꃋ 1 X BIOS set button
	ꃋ 1 x 5050 RGB LED 12V connector (JRGB1)	ꃋ 1 X ROM Backup button
		ꃋ 1 X BIOS Update button
	ꃋ 1 x Rainbow 5050 RGB LED 5V connector (JRAINBOW1)	ꃋ 4 X RGB header
DIMENSION	ꃋ 12 in. x 10.7 in. (30.5 cm x 27.2 cm) ꃋ E-ATX Form Factor	ꃋ ATX Form Factor ꃋ 305mm x 244mm

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