MSI Gaming GE62 2QD(Apache Pro)-453US Intel® Core™ i7 i7-5700HQ Laptop 39,6 cm (15.6") Full HD 8 GB DDR3L-SDRAM 1 TB HDD NVIDIA® GeForce® GTX 960M Wi-Fi 5 (802.11ac) Windows 10 Home Black, Red

Brand : MSI **Product family:** Gaming **Product code:** GE62 2QD-453US

Product name: GE62 2QD(Apache Pro)-453US

Intel Core i7-5700HQ (6M Cache, 2.70 GHz), 15.6" Full HD (1920x1080) LED, 8GB DDR3L, 1TB SATA HDD, DVD Super Multi, Intel HD Graphics 5600 + NVIDIA GeForce GTX 960M 2GB GDDR5, Gigabit Ethernet, WLAN 802.11ac, Bluetooth 4.1, HD Webcam, Windows 10 Home 64-bit MSI Gaming GE62 2QD(Apache Pro)-453US. Product type: Laptop, Form factor: Clamshell. Processor type: Intel® Core™ i7, Processor: i7-5700HQ, Processor frequency: 2,7 GHz. Display diagonal: 39,6 cm (15.6"), HD type: Full HD, Display resolution: 1920 x 1080 pixels. Internal memory: 8 GB, Internal memory type: DDR3L-SDRAM. Total storage capacity: 1 TB, Storage media: HDD, Optical drives: DVD Super Multi. Operating system software: Windows 10 Home. Product colour: Black, Red





Design		Ports & interfaces	
Product type * Product colour * Form factor * Market positioning	Laptop Black, Red Clamshell Gaming	Microphone in Line-in Docking connector ExpressCard slot	
Display Display diagonal * Display resolution * Touchscreen * HD type	39,6 cm (15.6") 1920 x 1080 pixels X Full HD	CardBus PCMCIA slot type SmartCard slot Performance Chipset	x x Intel® HM87
LED backlight Native aspect ratio Display surface Dual-screen	✓ 16:9 Matt ×	Keyboard Pointing device Numeric keypad * Keyboard backlit	Touchpad ✓
Processor Processor manufacturer * Processor type * Processor generation		Windows keys Software Operating system architecture Operating system software *	64-bit Windows 10 Home
Processor * Processor number of cores Processor threads Processor boost frequency Processor frequency * System bus data transfer rate		Processor special features Intel Wireless Display (WiDi) Technology Intel My WiFi Technology Intel Anti-Theft Technology	× ×
Processor cache Processor cache type Processor socket Processor lithography Processor operating modes Processor series	6 MB L3 BGA 1364 14 nm 32-bit, 64-bit Intel Core i7-5700 Mobile Series	Intel® Smart Response Technology Intel Identity Protection Technology Intel Hyper-Threading Technology Intel Turbo Boost Technology Intel® Small Business Advantage (Intel® SBA)	✓ ✓ ✓ 2.0

Processor		Processor special features	
Processor codename	Broadwell	Enhanced Intel SpeedStep Technology	✓
Bus type	DMI2	Intel Clear Video HD Technology	✓
FSB Parity	X G0	Intel Clear Video Technology	✓
Stepping Thermal Design Power (TDP)	47 W	Intel® InTru™ 3D Technology	✓
Configurable TDP-down	37 W	Intel® Insider™	✓
Configurable TDP-down frequency	0,6 GHz	Intel® Quick Sync Video Technology	
Tjunction	105 °C	Intel Flex Memory Access	· •
Maximum number of PCI Express	16	Intel Smart Cache	· •
lanes PCI Express slots version	3.0	Intel AES New Instructions	·
PCI Express configurations	1x16, 2x4, 1x8, 2x8	Intel Trusted Execution Technology	×
ECC supported by processor	×	Intel Enhanced Halt State	··
Memory		Intel VT-x with Extended Page	
Internal memory *	8 GB	Tables (EPT)	✓
Internal memory type	DDR3L-SDRAM	Intel Demand Based Switching	×
Memory speed	1600 MHz	Intel® Secure Key	✓
Memory form factor	SO-DIMM	Intel TSX-NI	×
Memory slots	2x SO-DIMM	Intel Stable Image Platform Program	x
Maximum memory *	16 GB	(SIPP) Intel® OS Guard	✓
Storage			
Total storage capacity *	1 TB	Intel Clear Video Technology for MID Intel 64	✓
Storage media *	HDD	Execute Disable Bit	
Number of HDDs installed	1	Idle States	V
Hard drive capacity	1 TB		✓
Hard drive interface Hard drive rotational speed	SATA 7200 RPM	Thermal Monitoring Technologies	37.5 x 32 x 1.8 mm
Optical drives *	DVD Super Multi	Processor package size Supported instruction sets	SSE4.2, AVX 2.0, SSE4.1
Card reader integrated	✓	Processor code	SR2BP
Compatible memory cards	SD, SDHC, SDXC	CPU configuration (max)	1
Graphics		Embedded options available	×
Discrete graphics card model *	NVIDIA® GeForce® GTX 960M	Graphics & IMC lithography	14 nm
Discrete graphics card memory	2 GB	Intel Virtualization Technology for Directed I/O (VT-d)	1
		Directed i/O (VI-d)	
Discrete graphics memory type	GDDR5	Intel Identity Protection Technology	
Discrete graphics memory type On-board graphics card *	GDDR5 ✓	Intel Identity Protection Technology version	1,00
		version Intel Smart Response Technology	1,00
On-board graphics card *		version Intel Smart Response Technology version	1,00
On-board graphics card * Discrete graphics card * On-board graphics card family On-board graphics card model *	✓ ✓	version Intel Smart Response Technology	
On-board graphics card * Discrete graphics card * On-board graphics card family On-board graphics card model * On-board graphics card base	✓ ✓ Intel® HD Graphics	version Intel Smart Response Technology version Intel Stable Image Platform Program	1,00
On-board graphics card * Discrete graphics card * On-board graphics card family On-board graphics card model * On-board graphics card base frequency	Intel® HD Graphics Intel® HD Graphics 5600 300 MHz	version Intel Smart Response Technology version Intel Stable Image Platform Program (SIPP) version Intel Secure Key Technology version Intel Small Business Advantage	1,00
On-board graphics card * Discrete graphics card * On-board graphics card family On-board graphics card model * On-board graphics card base	✓ Intel® HD Graphics Intel® HD Graphics 5600	version Intel Smart Response Technology version Intel Stable Image Platform Program (SIPP) version Intel Secure Key Technology version Intel Small Business Advantage (SBA) version	1,00 0,00 1,00 1,00
On-board graphics card * Discrete graphics card * On-board graphics card family On-board graphics card model * On-board graphics card base frequency On-board graphics card dynamic frequency (max) Maximum on-board graphics card	Intel® HD Graphics Intel® HD Graphics 5600 300 MHz	version Intel Smart Response Technology version Intel Stable Image Platform Program (SIPP) version Intel Secure Key Technology version Intel Small Business Advantage	1,00 0,00 1,00 1,00 0,00
On-board graphics card * Discrete graphics card * On-board graphics card family On-board graphics card model * On-board graphics card base frequency On-board graphics card dynamic frequency (max) Maximum on-board graphics card memory	Intel® HD Graphics Intel® HD Graphics 5600 300 MHz 1050 MHz 32 GB	version Intel Smart Response Technology version Intel Stable Image Platform Program (SIPP) version Intel Secure Key Technology version Intel Small Business Advantage (SBA) version Intel TSX-NI version Intel Virtualization Technology (VT-x)	1,00 0,00 1,00 1,00
On-board graphics card * Discrete graphics card * On-board graphics card family On-board graphics card model * On-board graphics card base frequency On-board graphics card dynamic frequency (max) Maximum on-board graphics card	Intel® HD Graphics Intel® HD Graphics 5600 300 MHz 1050 MHz	version Intel Smart Response Technology version Intel Stable Image Platform Program (SIPP) version Intel Secure Key Technology version Intel Small Business Advantage (SBA) version Intel TSX-NI version Intel Virtualization Technology (VT-x) Intel Dual Display Capable	1,00 0,00 1,00 1,00 0,00
On-board graphics card * Discrete graphics card * On-board graphics card family On-board graphics card model * On-board graphics card base frequency On-board graphics card dynamic frequency (max) Maximum on-board graphics card memory On-board graphics card DirectX version On-board graphics card OpenGL	Intel® HD Graphics Intel® HD Graphics 5600 300 MHz 1050 MHz 32 GB	version Intel Smart Response Technology version Intel Stable Image Platform Program (SIPP) version Intel Secure Key Technology version Intel Small Business Advantage (SBA) version Intel TSX-NI version Intel Virtualization Technology (VT-x) Intel Dual Display Capable Technology	1,00 0,00 1,00 1,00 0,00 ✓
On-board graphics card * Discrete graphics card * On-board graphics card family On-board graphics card model * On-board graphics card base frequency On-board graphics card dynamic frequency (max) Maximum on-board graphics card memory On-board graphics card DirectX version On-board graphics card OpenGL version	Intel® HD Graphics Intel® HD Graphics 5600 300 MHz 1050 MHz 32 GB 11.2 4.3	version Intel Smart Response Technology version Intel Stable Image Platform Program (SIPP) version Intel Secure Key Technology version Intel Small Business Advantage (SBA) version Intel TSX-NI version Intel Virtualization Technology (VT-x) Intel Dual Display Capable Technology Intel FDI Technology	1,00 0,00 1,00 1,00 0,00 * * * * * * * * * * * *
On-board graphics card * Discrete graphics card * On-board graphics card family On-board graphics card model * On-board graphics card base frequency On-board graphics card dynamic frequency (max) Maximum on-board graphics card memory On-board graphics card DirectX version On-board graphics card OpenGL version On-board graphics card ID	Intel® HD Graphics Intel® HD Graphics 5600 300 MHz 1050 MHz 32 GB 11.2 4.3 0x1612	version Intel Smart Response Technology version Intel Stable Image Platform Program (SIPP) version Intel Secure Key Technology version Intel Small Business Advantage (SBA) version Intel TSX-NI version Intel Virtualization Technology (VT-x) Intel Dual Display Capable Technology Intel FDI Technology Intel Rapid Storage Technology	1,00 0,00 1,00 1,00 0,00 ✓ × ×
On-board graphics card * Discrete graphics card * On-board graphics card family On-board graphics card model * On-board graphics card base frequency On-board graphics card dynamic frequency (max) Maximum on-board graphics card memory On-board graphics card DirectX version On-board graphics card OpenGL version	Intel® HD Graphics Intel® HD Graphics 5600 300 MHz 1050 MHz 32 GB 11.2 4.3	version Intel Smart Response Technology version Intel Stable Image Platform Program (SIPP) version Intel Secure Key Technology version Intel Small Business Advantage (SBA) version Intel TSX-NI version Intel Virtualization Technology (VT-x) Intel Dual Display Capable Technology Intel FDI Technology	1,00 0,00 1,00 1,00 0,00 ✓ ×
On-board graphics card * Discrete graphics card * On-board graphics card family On-board graphics card model * On-board graphics card base frequency On-board graphics card dynamic frequency (max) Maximum on-board graphics card memory On-board graphics card DirectX version On-board graphics card OpenGL version On-board graphics card ID Number of discrete graphics cards	Intel® HD Graphics Intel® HD Graphics 5600 300 MHz 1050 MHz 32 GB 11.2 4.3 0x1612	version Intel Smart Response Technology version Intel Stable Image Platform Program (SIPP) version Intel Secure Key Technology version Intel Small Business Advantage (SBA) version Intel TSX-NI version Intel Virtualization Technology (VT-x) Intel Dual Display Capable Technology Intel FDI Technology Intel Rapid Storage Technology Intel Fast Memory Access Processor ARK ID	1,00 0,00 1,00 1,00 0,00 ✓ × ×
On-board graphics card * Discrete graphics card * On-board graphics card family On-board graphics card model * On-board graphics card base frequency On-board graphics card dynamic frequency (max) Maximum on-board graphics card memory On-board graphics card DirectX version On-board graphics card OpenGL version On-board graphics card ID Number of discrete graphics cards installed	Intel® HD Graphics Intel® HD Graphics 5600 300 MHz 1050 MHz 32 GB 11.2 4.3 0x1612	version Intel Smart Response Technology version Intel Stable Image Platform Program (SIPP) version Intel Secure Key Technology version Intel Small Business Advantage (SBA) version Intel TSX-NI version Intel Virtualization Technology (VT-x) Intel Dual Display Capable Technology Intel FDI Technology Intel Rapid Storage Technology Intel Fast Memory Access Processor ARK ID Conflict-Free processor	1,00 0,00 1,00 1,00 0,00
On-board graphics card * Discrete graphics card * On-board graphics card family On-board graphics card model * On-board graphics card base frequency On-board graphics card dynamic frequency (max) Maximum on-board graphics card memory On-board graphics card DirectX version On-board graphics card OpenGL version On-board graphics card ID Number of discrete graphics cards installed Graphics card Open GL support	Intel® HD Graphics Intel® HD Graphics 5600 300 MHz 1050 MHz 32 GB 11.2 4.3 0x1612	version Intel Smart Response Technology version Intel Stable Image Platform Program (SIPP) version Intel Secure Key Technology version Intel Small Business Advantage (SBA) version Intel TSX-NI version Intel Virtualization Technology (VT-x) Intel Dual Display Capable Technology Intel FDI Technology Intel Rapid Storage Technology Intel Fast Memory Access Processor ARK ID Conflict-Free processor	1,00 0,00 1,00 1,00 0,00
On-board graphics card * Discrete graphics card * On-board graphics card family On-board graphics card model * On-board graphics card base frequency On-board graphics card dynamic frequency (max) Maximum on-board graphics card memory On-board graphics card DirectX version On-board graphics card OpenGL version On-board graphics card ID Number of discrete graphics cards installed Graphics card Open GL support Audio	Intel® HD Graphics Intel® HD Graphics 5600 300 MHz 1050 MHz 32 GB 11.2 4.3 0x1612 1	version Intel Smart Response Technology version Intel Stable Image Platform Program (SIPP) version Intel Secure Key Technology version Intel Small Business Advantage (SBA) version Intel TSX-NI version Intel Virtualization Technology (VT-x) Intel Dual Display Capable Technology Intel FDI Technology Intel FDI Technology Intel Fast Memory Access Processor ARK ID Conflict-Free processor Battery Battery technology	1,00 0,00 1,00 1,00 0,00
On-board graphics card * Discrete graphics card * On-board graphics card family On-board graphics card model * On-board graphics card base frequency On-board graphics card dynamic frequency (max) Maximum on-board graphics card memory On-board graphics card DirectX version On-board graphics card OpenGL version On-board graphics card ID Number of discrete graphics cards installed Graphics card Open GL support Audio Audio	Intel® HD Graphics Intel® HD Graphics 5600 300 MHz 1050 MHz 32 GB 11.2 4.3 0x1612 1 ✓	version Intel Smart Response Technology version Intel Stable Image Platform Program (SIPP) version Intel Secure Key Technology version Intel Small Business Advantage (SBA) version Intel TSX-NI version Intel Virtualization Technology (VT-x) Intel Dual Display Capable Technology Intel FDI Technology Intel Rapid Storage Technology Intel Fast Memory Access Processor ARK ID Conflict-Free processor	1,00 0,00 1,00 1,00 0,00
On-board graphics card * Discrete graphics card * On-board graphics card family On-board graphics card model * On-board graphics card base frequency On-board graphics card dynamic frequency (max) Maximum on-board graphics card memory On-board graphics card DirectX version On-board graphics card OpenGL version On-board graphics card ID Number of discrete graphics cards installed Graphics card Open GL support Audio Audio Speakers manufacturer	Intel® HD Graphics Intel® HD Graphics 5600 300 MHz 1050 MHz 32 GB 11.2 4.3 0x1612 1 Sound Blaster Cinema Dynaudio	version Intel Smart Response Technology version Intel Stable Image Platform Program (SIPP) version Intel Secure Key Technology version Intel Small Business Advantage (SBA) version Intel TSX-NI version Intel Virtualization Technology (VT-x) Intel Dual Display Capable Technology Intel FDI Technology Intel Rapid Storage Technology Intel Fast Memory Access Processor ARK ID Conflict-Free processor Battery Battery technology Number of battery cells Battery capacity *	1,00 0,00 1,00 1,00 0,00
On-board graphics card * Discrete graphics card * On-board graphics card family On-board graphics card model * On-board graphics card base frequency On-board graphics card dynamic frequency (max) Maximum on-board graphics card memory On-board graphics card DirectX version On-board graphics card OpenGL version On-board graphics card ID Number of discrete graphics cards installed Graphics card Open GL support Audio Audio Speakers manufacturer Built-in microphone	Intel® HD Graphics Intel® HD Graphics 5600 300 MHz 1050 MHz 32 GB 11.2 4.3 0x1612 1 Sound Blaster Cinema Dynaudio	version Intel Smart Response Technology version Intel Stable Image Platform Program (SIPP) version Intel Secure Key Technology version Intel Small Business Advantage (SBA) version Intel TSX-NI version Intel Virtualization Technology (VT-x) Intel Dual Display Capable Technology Intel FDI Technology Intel FDI Technology Intel Fast Memory Access Processor ARK ID Conflict-Free processor Battery Battery technology Number of battery cells Battery capacity * Power	1,00 0,00 1,00 1,00 0,00
On-board graphics card * Discrete graphics card * On-board graphics card family On-board graphics card model * On-board graphics card base frequency On-board graphics card dynamic frequency (max) Maximum on-board graphics card memory On-board graphics card DirectX version On-board graphics card OpenGL version On-board graphics card ID Number of discrete graphics cards installed Graphics card Open GL support Audio Audio Audio system Speakers manufacturer Built-in microphone Camera	Intel® HD Graphics Intel® HD Graphics 5600 300 MHz 1050 MHz 32 GB 11.2 4.3 0x1612 1 ✓ Sound Blaster Cinema Dynaudio ✓	version Intel Smart Response Technology version Intel Stable Image Platform Program (SIPP) version Intel Secure Key Technology version Intel Small Business Advantage (SBA) version Intel TSX-NI version Intel Virtualization Technology (VT-x) Intel Dual Display Capable Technology Intel FDI Technology Intel Rapid Storage Technology Intel Fast Memory Access Processor ARK ID Conflict-Free processor Battery Battery technology Number of battery cells Battery capacity *	1,00 0,00 1,00 1,00 0,00

Camera		Power	
Video capturing speed	30 fps	AC adapter frequency	50 - 60 Hz
Network		DC-in jack	✓
Wi-Fi	✓	Security	
Top Wi-Fi standard *	Wi-Fi 5 (802.11ac)	Cable lock slot	×
Wi-Fi standards	802.11a, Wi-Fi 5 (802.11ac), 802.11b, 802.11g, Wi-Fi 4 (802.11n)	Weight & dimensions	
Ethernet LAN connection	✓	Width	383 mm
Ethernet LAN data rates	10,1000,100 Mbit/s	Depth	260 mm
Bluetooth	✓	Height	27 mm
Bluetooth version	4.1	Weight *	2,4 kg
Ports & interfaces		Packaging content	
USB 2.0 ports quantity *	1	AC adapter included *	✓
USB 3.2 Gen 1 (3.1 Gen 1) Type-A	3	Cables included	AC
ports quantity *	3	Manual	✓
Ethernet LAN (RJ-45) ports	1	Other features	
HDMI ports quantity *	1	LightCaribo	X
HDMI version	1.4b	LightScribe	
Mini DisplayPorts quantity	1	3D compatibility	X
DVI port	×	Intel Virtualization Technology	VT-x, VT-d
Headphone outputs	1		
S/PDIF out port	✓		

Catalog Object Cloud



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