



Lenovo Essential G70-70 i7-4510U Notebook 43.9 cm (17.3") HD+ Intel® Core™ i7 8 GB DDR3L-SDRAM 1000 GB Hybrid-HDD NVIDIA® GeForce® 820M Windows 8.1 Black

Brand : Lenovo

Product family: Essential

Product code: 80HW0086TX

Product name : G70-70



Intel Core i7-4510U (2 GHz), 8GB DDR3L SDRAM, 1TB+8GB SSHD, 17.3" HD+ LED (1600x900), Intel HD Graphics 4400+NVIDIA GeForce 820M 2GB, Wi-Fi 802.11 b/g/n, Bluetooth 4.0, DVD±RW, 4-cell, Windows 8.1 64-bit

Lenovo Essential G70-70. Product type: Notebook, Form factor: Clamshell. Processor family: Intel® Core™ i7, Processor model: i7-4510U, Processor frequency: 2 GHz. Display diagonal: 43.9 cm (17.3"), HD type: HD+, Display resolution: 1600 x 900 pixels. Internal memory: 8 GB, Internal memory type: DDR3L-SDRAM. Total storage capacity: 1000 GB, Storage media: Hybrid-HDD, Optical drive type: DVD±RW. Operating system installed: Windows 8.1. Product colour: Black



Design		Keyboard	
Product type *	Notebook	Pointing device	Touchpad
Product colour *	Black	Numeric keypad *	✓
Form factor *	Clamshell	Spill-resistant keyboard	✓
Housing material	Polycarbonate (PC)	Full-size keyboard	✓
		Windows keys	✓
Display		Software	
Display diagonal *	43.9 cm (17.3")	Operating system installed *	Windows 8.1
Display resolution *	1600 x 900 pixels		
Touchscreen *	✗	Processor special features	
HD type	HD+	Intel® Wireless Display (Intel® WiDi)	✓
Panel type	IPS	Intel® My WiFi Technology (Intel® MWT)	✗
LED backlight	✓	Intel Smart Connect Technology	✓
Native aspect ratio	16:9	Intel® Anti-Theft Technology (Intel® AT)	✓
Display brightness	220 cd/m ²	Intel® Rapid Start Technology	✗
Contrast ratio (typical)	500:1	Intel® Smart Response Technology	✗
Processor		Intel® Identity Protection Technology (Intel® IPT)	✓
Processor manufacturer *	Intel	Intel® Hyper Threading Technology (Intel® HT Technology)	✓
Processor generation	4th gen Intel® Core™ i7	Intel® Turbo Boost Technology	2.0
Processor model *	i7-4510U	Intel® Small Business Advantage (Intel® SBA)	✗
Processor frequency *	2 GHz	Intel® Matrix Storage Technology (Intel® MST)	✗
Processor boost frequency	3.1 GHz	Intel® High Definition Audio (Intel® HD Audio)	✓
Processor family *	Intel® Core™ i7	Intel® Active Management Technology (Intel® AMT)	✗
Processor cores	2	Enhanced Intel SpeedStep Technology	✓
Processor threads	4	Intel® Clear Video HD Technology (Intel® CVT HD)	✓
System bus rate	5 GT/s	Intel Clear Video Technology	✗
Processor cache	4 MB	Intel® InTru™ 3D Technology	✓
Processor cache type	Smart Cache	Intel® Insider™	✓
Processor socket	BGA 1168	Intel® Quick Sync Video Technology	✓
Processor lithography	22 nm	Intel Flex Memory Access	✗
Processor operating modes	64-bit		
Processor series	Intel Core i7-4500 Mobile series		
Processor codename	Haswell		
Bus type	DMI2		
FSB Parity	✗		
Stepping	D0		
Motherboard chipset	Intel SoC		
Thermal Design Power (TDP)	15 W		

Processor		Processor special features	
Tjunction	100 °C	Intel® Smart Cache	✓
Maximum number of PCI Express lanes	12	Intel® AES New Instructions (Intel® AES-NI)	✓
PCI Express slots version	2.0	Intel Trusted Execution Technology	✗
PCI Express configurations	4x1, 2x4	Intel Enhanced Halt State	✓
ECC supported by processor	✗	Intel VT-x with Extended Page Tables (EPT)	✓
Memory		Intel Demand Based Switching	✗
Internal memory *	8 GB	Intel® Secure Key	✓
Internal memory type	DDR3L-SDRAM	Intel TSX-NI	✗
Memory clock speed	1600 MHz	Intel® Clear Video Technology for Mobile Internet Devices (Intel CVT for MID)	✗
Memory form factor	SO-DIMM	Intel 64	✓
Memory layout (slots x size)	1 x 8 GB	Execute Disable Bit	✓
Memory slots	2x SO-DIMM	Idle States	✓
Maximum internal memory *	16 GB	Thermal Monitoring Technologies	✓
Storage		Processor package size	40 x 24 x 1.5 mm
Total storage capacity *	1000 GB	Supported instruction sets	AVX 2.0, SSE4.1, SSE4.2
Storage media *	Hybrid-HDD	Processor code	SR1EB
Number of HDDs installed	1	CPU configuration (max)	1
HDD speed	5400 RPM	Embedded options available	✗
Hybrid-HDD capacity	1000 GB	Intel Virtualization Technology for Directed I/O (VT-d)	✗
Hybrid-HDD cache memory	8 GB	Intel Smart Connect Technology version	1.00
Optical drive type *	DVD±RW	Intel Identity Protection Technology version	1.00
Card reader integrated	✓	Intel Secure Key Technology version	1.00
Compatible memory cards	MMC, SD	Intel ME Firmware Version	9.5
Graphics		Intel TSX-NI version	0.00
Discrete graphics card model *	NVIDIA® GeForce® 820M	Intel Virtualization Technology (VT-x)	✓
On-board graphics card *	✓	Intel Dual Display Capable Technology	✗
Discrete graphics card *	✓	Intel FDI Technology	✓
On-board graphics card family	Intel® HD Graphics	Intel Rapid Storage Technology	✓
On-board graphics card model *	Intel® HD Graphics 4400	Intel Fast Memory Access	✗
On-board graphics card base frequency	200 MHz	Processor ARK ID	81015
On-board graphics card dynamic frequency (max)	1100 MHz	Conflict-Free processor	✓
Maximum on-board graphics card memory	1.74 GB	Battery	
On-board graphics card DirectX version	11.2/12	Battery technology	Lithium-Ion (Li-Ion)
On-board graphics card OpenGL version	4.3	Number of battery cells	4
On-board graphics card ID	0xA16	Battery capacity *	41 Wh
Discrete graphics card memory	2 GB	Battery life (max)	5 h
Discrete graphics memory type	GDDR3	Power	
Number of discrete graphics cards installed	1	AC adapter power	65 W
Audio		AC adapter frequency	50 - 60 Hz
Audio system	Dolby Advanced v2	AC adapter input voltage	100 - 240 V
Number of built-in speakers	2	Security	
Speaker power	1.5 W	Cable lock slot	✓
Built-in microphone	✓	Cable lock slot type	Kensington
Camera		Password protection	✓
Front camera	✓	Password protection type	HDD, Power on, Supervisor
Front camera resolution	1280 x 720 pixels	Sustainability	
Network		Sustainability certificates	RoHS, EPEAT Silver, ENERGY STAR
Wi-Fi	✓	Weight & dimensions	
Wi-Fi standards	802.11b, 802.11g, Wi-Fi 4 (802.11n)	Width	418 mm
Ethernet LAN	✓	Depth	283 mm
Ethernet LAN data rates	10,100,1000 Mbit/s	Height	28 mm
Bluetooth	✓		

Network		Weight & dimensions	
Bluetooth version	4.0	Weight *	2.9 kg
Ports & interfaces		Packaging content	
USB 2.0 ports quantity *	2	Manual	✓
USB 3.2 Gen 1 (3.1 Gen 1) Type-A ports quantity *	1	Power cord included	✓
Ethernet LAN (RJ-45) ports	1	Other features	
HDMI ports quantity *	1	AC adapter included	✓
DVI port	✗	Maximum internal memory (64-bit)	16 GB
VGA (D-Sub) ports quantity	1	Intel® Virtualization Technology (Intel® VT)	VT-x
S/PDIF out port	✗		
Microphone in	✗		
Combo headphone/mic port	✓		
Docking connector	✗		
Charging port type	DC-in jack		
ExpressCard slot	✗		
CardBus PCMCIA slot type	✗		
SmartCard slot	✗		
Number of SATA III connectors	4		

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