Lenovo

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

Product type *	Notebook
Product colour *	Black
Form factor *	Clamshell
Housing material	Polycarbonate (PC)

Display

Display diagonal *	43.9 cm (17.3")
Display resolution *	1600 x 900 pixels
Touchscreen *	✘
HD type	HD+
Panel type	IPS
LED backlight	✔
Native aspect ratio	16:9
Display brightness	220 cd/m²
Contrast ratio (typical)	500:1

Processor

Processor manufacturer *	Intel
Processor generation	4th gen Intel® Core™ i7
Processor model *	i7-4510U
Processor frequency *	2 GHz
Processor boost frequency	3.1 GHz
Processor family *	Intel® Core™ i7
Processor cores	2
Processor threads	4
System bus rate	5 GT/s
Processor cache	4 MB
Processor cache type	Smart Cache
Processor socket	BGA 1168
Processor lithography	22 nm
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

Keyboard

Pointing device	Touchpad
Numeric keypad *	✔
Spill-resistant keyboard	✔
Full-size keyboard	✔
Windows keys	✔

Software

Operating system installed *	Windows 8.1

Processor special features

Intel® Wireless Display (Intel® WiDi)	✔
Intel® My WiFi Technology (Intel® MWT)	✘
Intel Smart Connect Technology	✔
Intel® Anti-Theft Technology (Intel® AT)	✔
Intel® Rapid Start Technology	✘
Intel® Smart Response Technology	✘
Intel® Identity Protection Technology (Intel® IPT)	✔
Intel® Hyper Threading Technology (Intel® HT Technology)	✔
Intel® Turbo Boost Technology	2.0
Intel® Small Business Advantage (Intel® SBA)	✘
Intel® Matrix Storage Technology (Intel® MST)	✘
Intel® High Definition Audio (Intel® HD Audio)	✔
Intel® Active Management Technology (Intel® AMT)	✘
Enhanced Intel SpeedStep Technology	✔
Intel® Clear Video HD Technology (Intel® CVT HD)	✔
Intel Clear Video Technology	✘
Intel® InTru™ 3D Technology	✔
Intel® Insider™	✔
Intel® Quick Sync Video Technology	✔
Intel Flex Memory Access	✘

Processor

Tjunction	100 °C
Maximum number of PCI Express lanes	12
PCI Express slots version	2.0
PCI Express configurations	4x1, 2x4
ECC supported by processor	✘

Memory

Internal memory *	8 GB
Internal memory type	DDR3L-SDRAM
Memory clock speed	1600 MHz
Memory form factor	SO-DIMM
Memory layout (slots x size)	1 x 8 GB
Memory slots	2x SO-DIMM
Maximum internal memory *	16 GB

Storage

Total storage capacity *	1000 GB
Storage media *	Hybrid-HDD
Number of HDDs installed	1
HDD speed	5400 RPM
Hybrid-HDD capacity	1000 GB
Hybrid-HDD cache memory	8 GB
Optical drive type *	DVD±RW
Card reader integrated	✔
Compatible memory cards	MMC, SD

Graphics

Discrete graphics card model *	NVIDIA® GeForce® 820M
On-board graphics card *	✔
Discrete graphics card *	✔
On-board graphics card family	Intel® HD Graphics
On-board graphics card model *	Intel® HD Graphics 4400
On-board graphics card base frequency	200 MHz
On-board graphics card dynamic frequency (max)	1100 MHz
Maximum on-board graphics card memory	1.74 GB
On-board graphics card DirectX version	11.2/12
On-board graphics card OpenGL version	4.3
On-board graphics card ID	0xA16
Discrete graphics card memory	2 GB
Discrete graphics memory type	GDDR3
Number of discrete graphics cards installed	1

Audio

Audio system	Dolby Advanced v2
Number of built-in speakers	2
Speaker power	1.5 W
Built-in microphone	✔

Camera

Front camera	✔
Front camera resolution	1280 x 720 pixels

Network

Wi-Fi	✔
Wi-Fi standards	802.11b, 802.11g, Wi-Fi 4 (802.11n)
Ethernet LAN	✔
Ethernet LAN data rates	10,100,1000 Mbit/s
Bluetooth	✔

Processor special features

Intel® Smart Cache	✔
Intel® AES New Instructions (Intel® AES-NI)	✔
Intel Trusted Execution Technology	✘
Intel Enhanced Halt State	✔
Intel VT-x with Extended Page Tables (EPT)	✔
Intel Demand Based Switching	✘
Intel® Secure Key	✔
Intel TSX-NI	✘
Intel® Clear Video Technology for Mobile Internet Devices (Intel CVT for MID)	✘
Intel 64	✔
Execute Disable Bit	✔
Idle States	✔
Thermal Monitoring Technologies	✔
Processor package size	40 x 24 x 1.5 mm
Supported instruction sets	AVX 2.0, SSE4.1, SSE4.2
Processor code	SR1EB
CPU configuration (max)	1
Embedded options available	✘
Intel Virtualization Technology for Directed I/O (VT-d)	✘
Intel Smart Connect Technology version	1.00
Intel Identity Protection Technology version	1.00
Intel Secure Key Technology version	1.00
Intel ME Firmware Version	9.5
Intel TSX-NI version	0.00
Intel Virtualization Technology (VT-x)	✔
Intel Dual Display Capable Technology	✘
Intel FDI Technology	✔
Intel Rapid Storage Technology	✔
Intel Fast Memory Access	✘
Processor ARK ID	81015
Conflict-Free processor	✔

Battery

Battery technology	Lithium-Ion (Li-Ion)
Number of battery cells	4
Battery capacity *	41 Wh
Battery life (max)	5 h

Power

AC adapter power	65 W
AC adapter frequency	50 - 60 Hz
AC adapter input voltage	100 - 240 V

Security

Cable lock slot	✔
Cable lock slot type	Kensington
Password protection	✔
Password protection type	HDD, Power on, Supervisor

Sustainability

Sustainability certificates	RoHS, EPEAT Silver, ENERGY STAR

Weight & dimensions

Width	418 mm
Depth	283 mm
Height	28 mm

Network

Bluetooth version	4.0

Ports & interfaces

USB 2.0 ports quantity *	2
USB 3.2 Gen 1 (3.1 Gen 1) Type-A ports quantity *	1
Ethernet LAN (RJ-45) ports	1
HDMI ports quantity *	1
DVI port	✖
VGA (D-Sub) ports quantity	1
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

Weight & dimensions

Weight *	2.9 kg

Packaging content

Manual	✔
Power cord included	✔

Other features

AC adapter included	✔
Maximum internal memory (64-bit)	16 GB
Intel® Virtualization Technology (Intel® VT)	VT-x