



Lenovo ThinkPad W540 Intel® Core™ i7 i7-4900MQ Mobile workstation 39,4 cm (15.5") Quad HD 8 GB DDR3L-SDRAM 512 GB SSD NVIDIA® Quadro® K2100M Windows 8 Pro Black

Brand : Lenovo

Product family: ThinkPad

Product code: 20BH004RUK

Product name : W540

Intel Core i7-4900MQ, 2.8Hz, NVIDIA Quadro K2100M, 8GB (1x 8GB) DDR3L, 1600MHz, 15.5", 2880 x 1620, IPS, 512GB SSD, DVD±RW, 802.11a/b/g/n, Bluetooth 4.0, 720p, X-Rite, 9-cell (99.9Wh), 170W, Windows 8 Pro 64-bit

Lenovo ThinkPad W540. Product type: Mobile workstation, Form factor: Clamshell. Processor family: Intel® Core™ i7, Processor model: i7-4900MQ, Processor frequency: 2,8 GHz. Display diagonal: 39,4 cm (15.5"), HD type: Quad HD, Display resolution: 2880 x 1620 pixels. Internal memory: 8 GB, Internal memory type: DDR3L-SDRAM. Total storage capacity: 512 GB, Storage media: SSD, Optical drive type: DVD±RW. Operating system installed: Windows 8 Pro. Product colour: Black



Design		Keyboard	
Product type *	Mobile workstation	Pointing device	Trackpad
Product colour *	Black	Numeric keypad *	✓
Form factor *	Clamshell	Keyboard backlight	✓
Intel® vPro™ Platform Eligibility	✗	Island-style keyboard	✓
Display		Windows keys	✓
Display diagonal *	39.4 cm (15.5")	Software	
Display resolution *	2880 x 1620 pixels	Operating system architecture	64-bit
Touchscreen *	✗	Operating system installed *	Windows 8 Pro
HD type	Quad HD	Processor special features	
Panel type	IPS	Intel® Wireless Display (Intel® WiDi)	✓
LED backlight	✓	Intel® My WiFi Technology (Intel® MWT)	✗
Native aspect ratio	16:9	Intel® Anti-Theft Technology (Intel® AT)	✓
Display brightness	350 cd/m²	Intel® Identity Protection Technology (Intel® IPT)	✓
Contrast ratio (typical)	1000:1	Intel® Hyper Threading Technology (Intel® HT Technology)	✓
Processor		Intel® Turbo Boost Technology	2.0
Processor manufacturer *	Intel	Enhanced Intel SpeedStep Technology	✓
Processor family *	Intel® Core™ i7	Intel® Clear Video HD Technology (Intel® CVT HD)	✓
Processor generation	4th gen Intel® Core™ i7	Intel Clear Video Technology	✗
Processor model *	i7-4900MQ	Intel® InTru™ 3D Technology	✓
Processor cores	4	Intel® Insider™	✓
Processor threads	8	Intel® Quick Sync Video Technology	✓
Processor boost frequency	3.8 GHz	Intel Flex Memory Access	✗
Processor frequency *	2.8 GHz	Intel® Smart Cache	✓
Processor cache	8 MB	Intel® AES New Instructions (Intel® AES-NI)	✓
Processor cache type	Smart Cache		
Processor socket	PGA946		
Processor lithography	22 nm		
Processor operating modes	64-bit		
Processor series	Intel Core i7-4900 Mobile Series		
Processor codename	Haswell		
Bus type	DMI2		

Processor		Processor special features	
FSB Parity	✗	Intel Trusted Execution Technology	✓
Stepping	C0	Intel Enhanced Halt State	✓
Thermal Design Power (TDP)	47 W	Intel VT-x with Extended Page Tables (EPT)	✓
Tjunction	100 °C	Intel Demand Based Switching	✗
Maximum number of PCI Express lanes	16	Intel® Secure Key	✓
PCI Express slots version	3.0	Intel TSX-NI	✗
PCI Express configurations	1x16, 2x8, 1x8+2x4	Intel® Clear Video Technology for Mobile Internet Devices (Intel CVT for MID)	✗
ECC supported by processor	✗	Intel 64	✓
Memory		Execute Disable Bit	✓
Internal memory *	8 GB	Idle States	✓
Internal memory type	DDR3L-SDRAM	Thermal Monitoring Technologies	✓
Memory clock speed	1600 MHz	Processor package size	37.5 x 37.5 x 4.7 mm
Memory form factor	SO-DIMM	Supported instruction sets	AVX 2.0, SSE4.1, SSE4.2
Memory layout (slots x size)	1 x 8 GB	Processor code	SR15K
Memory slots	4x SO-DIMM	CPU configuration (max)	1
Maximum internal memory *	32 GB	Embedded options available	✗
Storage		Intel Virtualization Technology for Directed I/O (VT-d)	✓
Total storage capacity *	512 GB	Intel Identity Protection Technology version	1.00
Storage media *	SSD	Intel Secure Key Technology version	1.00
Number of SSDs installed	1	Intel TSX-NI version	0.00
SSD capacity	512 GB	Intel Virtualization Technology (VT-x)	✓
SSD interface	SATA III	Intel Dual Display Capable Technology	✗
Optical drive type *	DVD±RW	Intel FDI Technology	✓
Card reader integrated	✓	Intel Rapid Storage Technology	✗
Compatible memory cards	MMC, SD, SDHC, SDXC	Intel Fast Memory Access	✗
Graphics		Processor ARK ID	75131
Discrete graphics card model *	NVIDIA® Quadro® K2100M	Conflict-Free processor	✓
Discrete graphics card memory	2 GB	Battery	
On-board graphics card *	✓	Battery technology	Lithium-Ion (Li-Ion)
Discrete graphics card *	✓	Number of battery cells	9
On-board graphics card family	Intel® HD Graphics	Battery capacity *	99.9 Wh
On-board graphics card model *	Intel® HD Graphics 4600	Battery life (max)	11.1 h
On-board graphics card base frequency	400 MHz	Power	
On-board graphics card dynamic frequency (max)	1300 MHz	AC adapter power	170 W
Maximum on-board graphics card memory	1.74 GB	DC-in jack	✓
On-board graphics card DirectX version	11.1	Security	
On-board graphics card ID	0x416	Cable lock slot	✓
Audio		Cable lock slot type	Kensington
Audio system	HD Audio, Realtek ALC3232, Dolby Home Theater v4	Fingerprint reader	✓
Number of built-in speakers	2	Operational conditions	
Speaker power	1 W	Operating temperature (T-T)	5 - 35 °C
Built-in microphone	✓	Storage temperature (T-T)	5 - 43 °C
Camera		Operating relative humidity (H-H)	8 - 95%
Front camera	✓	Storage relative humidity (H-H)	5 - 95%
Network		Operating altitude	0 - 3048 m
Wi-Fi	✓	Certificates	
Wi-Fi standards	802.11a, 802.11b, 802.11g	Compliance certificates	RoHS
Ethernet LAN	✓	Sustainability	
Ethernet LAN data rates	10,100,1000 Mbit/s	Sustainability certificates	EPEAT Gold, ENERGY STAR
Bluetooth	✓		
Bluetooth version	4.0		

Ports & interfaces		Weight & dimensions	
USB 2.0 ports quantity *	2	Width	376.6 mm
USB 3.2 Gen 1 (3.1 Gen 1) Type-A ports quantity *	2	Depth	248.1 mm
Ethernet LAN (RJ-45) ports	1	Height (front)	2.79 cm
Mini DisplayPorts quantity	1	Height (rear)	2.95 cm
DVI port	✗	Weight *	2.7 kg
Mini DisplayPort/Thunderbolt combo port	✓	Other features	
VGA (D-Sub) ports quantity	1	LightScribe	✗
S/PDIF out port	✗	Maximum internal memory (64-bit)	32 GB
Combo headphone/mic port	✓	Intel® Virtualization Technology (Intel® VT)	VT-d, VT-x
Docking connector	✗	Intel segment tagging	Professional
ExpressCard slot	✗		
CardBus PCMCIA slot type	✗		
SmartCard slot	✗		
USB Sleep-and-Charge	✓		
Performance			
Motherboard chipset	Intel® QM87		

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