



## Lenovo ThinkPad W520 Intel® Core™ i7 i7-2720QM 39,6 cm (15.6") Full HD 4 GB DDR3-SDRAM 500 GB HDD NVIDIA® Quadro® 2000M Windows 7 Professional Black

**Brand :** Lenovo

**Product family:** ThinkPad

**Product code:** NY524GE

**Product name :** W520

Intel Core i7-2720QM (2.20 GHz), 4GB DDR3 RAM, 500GB SATA HDD, 15.6" FHD (1920x1080), Nvidia Quadro 2000M 2GB, Gigabit Ethernet, WLAN 802.11a/g/n, DVD-RW, Windows 7 Professional 64-bit  
Lenovo ThinkPad W520. Processor family: Intel® Core™ i7, Processor model: i7-2720QM, Processor frequency: 2,2 GHz. Display diagonal: 39,6 cm (15.6"), HD type: Full HD, Display resolution: 1920 x 1080 pixels. Internal memory: 4 GB, Internal memory type: DDR3-SDRAM. Total storage capacity: 500 GB, Storage media: HDD, Optical drive type: DVD-RW. On-board graphics card model: Intel® HD Graphics 3000, Discrete graphics card model: NVIDIA® Quadro® 2000M. Operating system installed: Windows 7 Professional. Product colour: Black



Design		Keyboard	
Product colour *	Black	Keyboard type	7-row with Trackpoint
Display		Pointing device	ThinkPad UltraNav
Display diagonal *	39,6 cm (15.6")	Spill-resistant keyboard	✓
Display resolution *	1920 x 1080 pixels	Windows keys	✓
HD type	Full HD	Software	
LED backlight	✓	Operating system architecture	64-bit
Native aspect ratio	16:9	Operating system installed *	Windows 7 Professional
Processor		Processor special features	
Processor manufacturer *	Intel	Intel® Wireless Display (Intel® WiDi)	✓
Processor family *	Intel® Core™ i7	Intel® My WiFi Technology (Intel® MWT)	✓
Processor generation	2nd gen Intel® Core™ i7	Intel® Anti-Theft Technology (Intel® AT)	✓
Processor model *	i7-2720QM	Intel® Identity Protection Technology (Intel® IPT)	✓
Processor cores	4	Intel® Hyper Threading Technology (Intel® HT Technology)	✓
Processor threads	8	Intel® Turbo Boost Technology	2.0
Processor boost frequency	3,3 GHz	Enhanced Intel SpeedStep Technology	✓
Processor frequency *	2,2 GHz	Intel® Clear Video HD Technology (Intel® CVT HD)	✓
Processor cache	6 MB	Intel Clear Video Technology	✗
Processor cache type	Smart Cache	Intel® InTru™ 3D Technology	✓
Processor socket	Socket 1224	Intel® Insider™	✓
Processor front side bus	1600 MHz	Intel® Quick Sync Video Technology	✓
Processor lithography	32 nm	Intel Flex Memory Access	✓
Processor operating modes	64-bit	Intel® AES New Instructions (Intel® AES-NI)	✓
Processor series	Intel Core i7-2700 Mobile Series	Intel Trusted Execution Technology	✓
Processor codename	Sandy Bridge	Intel Enhanced Halt State	✓
Bus type	DMI	Intel VT-x with Extended Page Tables (EPT)	✓
FSB Parity	✗		
Stepping	D2		
Thermal Design Power (TDP)	45 W		
Tjunction	100 C		
Maximum number of PCI Express lanes	16		
PCI Express slots version	2.0		
PCI Express configurations	1x16, 2x8		

Processor		Processor special features	
CPU multiplier (bus/core ratio)	22	Intel Demand Based Switching	✗
ECC supported by processor	✗	Intel® Clear Video Technology for Mobile Internet Devices (Intel CVT for MID)	✗
Memory		Intel 64	✓
Internal memory *	4 GB	Execute Disable Bit	✓
Internal memory type	DDR3-SDRAM	Idle States	✓
Memory clock speed	1333 MHz	Thermal Monitoring Technologies	✓
Memory slots	4x SO-DIMM	Processor package size	37.5 x 37.5 (rPGA988B); 31.0 x 24.0 (BGA1224)
Maximum internal memory *	32 GB	Supported instruction sets	AVX
Storage		Processor code	SR00W
Total storage capacity *	500 GB	CPU configuration (max)	1
Storage media *	HDD	Embedded options available	✗
Number of hard drives installed	1	Graphics & IMC lithography	32 nm
Hard drive capacity	500 GB	Intel Virtualization Technology for Directed I/O (VT-d)	✓
Hard drive interface	SATA	Intel Identity Protection Technology version	1,00
Hard drive speed	7200 RPM	Intel Virtualization Technology (VT-x)	✓
Optical drive type *	DVD-RW	Intel Dual Display Capable Technology	✓
Card reader integrated	✓	Intel FDI Technology	✓
Compatible memory cards	MMC	Intel Rapid Storage Technology	✗
Graphics		Intel Fast Memory Access	✓
Discrete graphics card model *	NVIDIA® Quadro® 2000M	Processor ARK ID	50067
Discrete graphics card memory	2 GB	Conflict-Free processor	✗
Discrete graphics memory type	GDDR3	Integrated 4G WiMAX	✓
On-board graphics card *	✓	Battery	
Discrete graphics card *	✓	Battery technology	Lithium-Ion (Li-Ion)
On-board graphics card family	Intel® HD Graphics	Number of battery cells	9
On-board graphics card model *	Intel® HD Graphics 3000	Battery life (max)	8,9 h
On-board graphics card base frequency	650 MHz	Power	
On-board graphics card dynamic frequency (max)	1300 MHz	AC adapter power	170 W
On-board graphics card ID	0x116	DC-in jack	✓
Number of discrete graphics cards	1	Security	
Maximum resolution	1920 x 1080 pixels	Cable lock slot	✓
Audio		Password protection type	HDD, Power on, Supervisor
Number of built-in speakers	2	Sustainability	
Speaker power	1 W	Sustainability certificates	EPEAT Gold, ENERGY STAR
Built-in microphone	✓	Weight & dimensions	
Audio included	Mute Button, Speakers (integrated)	Width	372,8 mm
Network		Depth	245,1 mm
Wi-Fi	✓	Height (front)	3,16 cm
Networking features	Gigabit Ethernet	Height (rear)	3,58 cm
Wi-Fi standards	802.11a, 802.11g, Wi-Fi 4 (802.11n)	Width (imperial)	37,3 cm (14.7")
Ethernet LAN	✓	Depth (imperial)	24,5 cm (9.65")
Bluetooth	✗	Height (front) (imperial)	3,2 cm (1.26")
Cabling technology	10/100/1000Base-T(X)	Height (rear) (imperial)	3,58 cm (1.41")
Ports & interfaces		Weight *	3,11 kg
USB 2.0 ports quantity *	1	Packaging content	
USB 3.2 Gen 1 (3.1 Gen 1) Type-A ports quantity *	2	AC adapter included *	✓
eSATA/USB 2.0 ports quantity	1		
Ethernet LAN (RJ-45) ports	1		
DisplayPorts quantity	1		
DVI port	✗		
VGA (D-Sub) ports quantity	1		
Headphone outputs	1		
S/PDIF out port	✗		
Microphone in	✓		

Ports & interfaces		Other features	
Docking connector	✗	Manageability features	Client Security Solution, ThinkVantage Access Connections, ThinkVantage Active Protection System, ThinkVantage Rescue and Recovery
ExpressCard slot	✓		
CardBus PCMCIA slot type	✗		
TV-out	✗		
Performance		Wireless technology	Wi-Fi
Motherboard chipset	Intel® QM67 Express	Infrared data port	✗
		Graphics card family	Intel, NVIDIA
		Type	PC
		Display	TFT
		Compliance industry standards	IEEE 802.3, IEEE 802.3u, IEEE 802.3ab
		Drive bays	Ultrabay Enhanced
		Intel segment tagging	Professional

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