Lenovo

Lenovo ThinkPad X220 Intel® Core™ i7 i7-2620M 31.8 cm (12.5") 4 GB DDR3-SDRAM 320 GB HDD Windows 7 Professional Black

Brand : Lenovo   **Product family:** ThinkPad   **Product code:** 429147U

Product name : X220

Intel Core i7-2620M(2.70GHz), 4GB RAM, 320GB 7200rpm HD, 12.5in 1366x768 LCD, Intel HD Graphics, Intel 802.11agn wireless, Bluetooth, 1Gb Ethernet, UltraNav, Secure Chip, Fingerprint reader, 6c Li-Ion, Windows 7 Professional 64
Lenovo ThinkPad X220. Processor family: Intel® Core™ i7, Processor model: i7-2620M, Processor frequency: 2.7 GHz. Display diagonal: 31.8 cm (12.5"), Display resolution: 1366 x 768 pixels. Internal memory: 4 GB, Internal memory type: DDR3-SDRAM. Total storage capacity: 320 GB, Storage media: HDD. On-board graphics card model: Intel® HD Graphics 3000. Operating system installed: Windows 7 Professional. Product color: Black. Weight: 1.3 kg

Design	
Product color *	Black
Housing material	Plastic

Display	
Display diagonal *	31.8 cm (12.5")
Display resolution *	1366 x 768 pixels
LED backlight	✔
Native aspect ratio	16:9
Display surface	Matt
Dual-screen	✘

Processor	
Processor manufacturer *	Intel
Processor family *	Intel® Core™ i7
Processor generation	2nd gen Intel® Core™ i7
Processor model *	i7-2620M
Processor cores	2
Processor threads	4
Processor boost frequency	3.4 GHz
Processor frequency *	2.7 GHz
System bus rate	5 GT/s
Processor cache	4 MB
Processor cache type	Smart Cache
Processor socket	BGA 1023
Processor lithography	32 nm
Processor operating modes	64-bit
Processor series	Intel Core i7-2600 Mobile Series
Processor codename	Sandy Bridge
Bus type	DMI
FSB Parity	✘
Stepping	J1
Thermal Design Power (TDP)	35 W
Tjunction	100 °C
Maximum number of PCI Express lanes	16

Software	
Operating system architecture	64-bit
Drivers included	✔
Operating system installed *	Windows 7 Professional

Processor special features	
Intel® Wireless Display (Intel® WiDi)	✔
Intel® My WiFi Technology (Intel® MWT)	✔
Intel® Anti-Theft Technology (Intel® AT)	✔
Intel® Identity Protection Technology (Intel® IPT)	✔
Intel® Hyper Threading Technology (Intel® HT Technology)	✔
Intel® Turbo Boost Technology	2.0
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	✔
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® Clear Video Technology for Mobile Internet Devices (Intel CVT for MID)	✘
Intel 64	✔

Processor

PCI Express slots version	2.0
PCI Express configurations	1x16, 2x8, 1x8+2x4
CPU multiplier (bus/core ratio)	27
ECC supported by processor	✘

Memory

Internal memory *	4 GB
Internal memory type	DDR3-SDRAM
Memory clock speed	1333 MHz
Memory layout (slots x size)	2 x 2 GB
Memory slots	2x SO-DIMM
Maximum internal memory *	8 GB

Storage

Total storage capacity *	320 GB
Storage media *	HDD
Number of HDDs installed	1
HDD interface	SATA
HDD speed	7200 RPM
Optical drive type *	✘
Card reader integrated	✔
Compatible memory cards	Memory Stick (MS), MMC, MS PRO, SD, xD

Graphics

Discrete graphics card model *	Not available
On-board graphics card *	✔
Discrete graphics card *	✘
On-board graphics card family	Intel® HD Graphics
On-board graphics card model *	Intel® HD Graphics 3000
On-board graphics card base frequency	650 MHz
On-board graphics card dynamic frequency (max)	1300 MHz
On-board graphics card ID	0x116

Audio

Audio system	HDA
Number of built-in speakers	2
Speaker power	2 W
Built-in subwoofer	✘

Network

Wi-Fi	✔
Networking features	Gigabit Ethernet
Ethernet LAN	✔
Bluetooth	✔
Bluetooth version	2.1+EDR
WWAN	Not installed
Data network	Not supported
Cabling technology	10/100/1000Base-T(X)
4G WiMAX	✘

Ports & interfaces

USB 2.0 ports quantity *	3
USB 3.2 Gen 1 (3.1 Gen 1) Type-A 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	✘

Processor special features

Execute Disable Bit	✔
Idle States	✔
Thermal Monitoring Technologies	✔
Processor package size	37.5 x 37.5 (rPGA988B); 31 x 24 (BGA1023)
Supported instruction sets	AVX
Processor code	SR041
CPU configuration (max)	1
Embedded options available	✘
Graphics & IMC lithography	32 nm
Intel Virtualization Technology for Directed I/O (VT-d)	✔
Intel Identity Protection Technology version	1.00
Intel Virtualization Technology (VT-x)	✔
Intel Dual Display Capable Technology	✔
Intel FDI Technology	✔
Intel Rapid Storage Technology	✘
Intel Fast Memory Access	✔
Processor ARK ID	52231
Conflict-Free processor	✘
Integrated 4G WiMAX	✔

Battery

Number of battery cells	6
Battery life (max)	15 h

Power

DC-in jack	✔

Security

Cable lock slot	✔
Cable lock slot type	Kensington
Fingerprint reader	✔
Trusted Platform Module (TPM)	✔
Password protection type	BIOS

Operational conditions

Operating temperature (T-T)	5 - 35 °C
Storage temperature (T-T)	5 - 43 °C
Operating relative humidity (H-H)	8 - 80%
Storage relative humidity (H-H)	5 - 95%
Operating altitude	0 - 2438 m

Sustainability

Sustainability certificates	ENERGY STAR

Weight & dimensions

Width	305 mm
Depth	206.5 mm
Height (front)	1.9 cm
Height (rear)	3.46 cm
Weight *	1.3 kg

Packaging content

AC adapter included *	✔
Handheld remote control	✘

Other features

LightScribe	✘
Infrared data port	✘

Ports & interfaces

Microphone in	✔
Line-in	✘
Docking connector	✘
ExpressCard slot	✔
CardBus PCMCIA slot type	✘
SmartCard slot	✘
TV-out	✘

Keyboard

Pointing device	ThinkPad UltraNav
Numeric keypad *	✘
Full-size keyboard	✔

Other features

Graphics card family	Intel
Type	PC
Display	LCD
Power requirements	230 V
TV-in port	✔
HDD user password	✔
Internal modem	✘
TV tuner integrated	✘

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