

Qosmio F45-AV423 Detailed Product Specification¹

Model Name: F45-AV423	Part Number: PQF43U-00K005	UPC: 032017980655
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Operating System ^{C1} 2

- Genuine Windows Vista® Home Premium (32-bit version)

Processor and Chipset³

Intel® Centrino® Duo processor technology featuring:

- Intel® Core™ 2 Duo Processor T5450
 - 1.66GHz, 2MB L2, 667MHz FSB
- Mobile Intel® GM965 Express Chipset
- Integrated Wi-Fi® compliant wireless LAN
 - Intel® Wireless WiFi Link 4965AGN (802.11a/g/n)⁴

Memory⁵

- Configured with 2048MB PC2-5300 DDR2 SDRAM (both memory slots may be occupied). Maximum capacity 4096MB

Hard Disk Drive⁶

- 250GB (4200 RPM) Serial ATA hard disk drive

Fixed Optical Disk Drive⁷

- HD DVD-ROM/DVD SuperMulti (+/- double layer) drive (in one optical drive), supporting 12 formats
 - Maximum speed and compatibility: HD DVD-ROM (1x), CD-ROM (24x), CD-R (24x), CD-RW (10x), DVD-ROM (8x), DVD-R (4x), DVD+R (4x), DVD-RW (4x), DVD+R (Double Layer (2.4x)), DVD-R (Double Layer (2x)), DVD+RW (4x), DVD-RAM (3x)

Display⁸

- 15.4" diagonal widescreen TruBrite®TFT LCD display at 1280x800 native resolution (WXGA)
 - Native support for 720p content

Graphics⁹

- Mobile Intel® Graphics Media Accelerator X3100 with 128MB-251MB dynamically allocated shared graphics memory

Sound

- 2 built-in harman/kardon® speakers with 1 Bass Reflex sub-woofer
- Sound Volume Control Dial
- Built-in microphone

Input Devices

- 86 key US keyboard
- TouchPad™ pointing device
- Qosmio AV Controller
- TouchPad™ Enable/Disable
- Control Buttons:
 - Internet button to launch default browser
 - CD/DVD control buttons (Play/Pause, Stop, Prev Track, Next Track)

Communications

- Webcam and microphone built into LCD bezel
- Modem¹⁰
- 10/100 Ethernet
- Integrated Wi-Fi® compliant wireless:¹¹
 - Intel® Wireless WiFi Link 4965AGN (802.11a/g/n)⁴

Expandability

- 2 main memory slots. Both slots may be occupied.
- ExpressCard™ slot (ExpressCard/34 and ExpressCard/54)
- 5-in-1 Bridge Media Adapter
 - Secure Digital, Memory Stick™, Memory Stick PRO™, Multi Media Card, xD Picture Card [shared slots]

Ports

- Video
 - RGB (monitor) output port
 - S-Video output port
 - HDMI output port
- Audio

- S/P DIF output port (shared with headphone port)
- Microphone input port
- Headphone output port

Data

- i.LINK(tm) IEEE-1394
- USB v2.0 – 4 ports
- RJ-45 LAN port
- RJ-11 modem port

Security

- Fingerprint reader

Physical Description

- Dimensions (WxDxH Front/H Rear): 14.9" x 11.0" x 1.50" /1.77" without feet
- Weight: Starting at 6.6 lbs depending upon configuration¹²
- LCD Cover Color: Cosmic Black

Power

- 90W (19V 4.74A) Auto sensing ,100-240V/50-60Hz AC Adapter.
 - Dimensions (WxDxH): 5.24" x 1.21" x 2.28"
 - Weight: starting at 0.89 lbs

Battery¹³

- 4000mAh Lithium Ion battery pack

Software ^{C1} 14

- Toshiba Software and Utilities
 - TOSHIBA Value Added Package
 - Electronic User's Guide
 - Bluetooth Stack for Windows by Toshiba
 - TOSHIBA ConfigFree®
 - TOSHIBA Disc Creator
 - TOSHIBA HD DVD Player
 - TOSHIBA Extended Tiles for Windows Mobility Center
 - TOSHIBA Speech System
- Third-party Software
 - TOSHIBA Game Console
 - Microsoft Works Version 8.5
 - Sun® Java™ 2 Runtime Environment
 - Adobe® Acrobat® Reader 8.0
 - InterVideo®WinDVD® 8
 - Google™ Desktop
 - Google™ Toolbar
 - Google Picasa™
 - Yahoo! Music™ Jukebox
 - Ulead® DVD MovieFactory® 5 for TOSHIBA
- Trial Software
 - Microsoft Office Trial Home and Student 2007 Edition (60-day trial)
 - McAfee® Internet Security Suite (30-day trial)
- Special Offers
 - Microsoft Office Live
 - Shutterfly digital photo service
 - Napster® music subscription service
 - eMusic MP3 music subscription service
 - VONGOSM internet video download service
 - ebay®
 - CNN Pipeline

Environmental Specifications

	Operating	Non-operating
Temperature ¹⁵	5° to 35° C (41° to 95° F)	-20° to 65° C (-4° to 149° F)
Thermal Gradient	15° C per hour (max)	20° C per hour (max)
Relative Humidity (non-condensing)	20% to 80%	10% to 95%
Altitude (relative to sea level)	-60 to 3,000 meters	-60 to 10,000 meters
Shock	10G	60G

Vibration	0.5G	1.0G
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- This product is RoHS¹⁶ compatible

1 YEAR STANDARD LIMITED WARRANTY¹⁷

Service Upgrades and Extensions

Toshiba offers many different enhanced services such as SystemGuard®, On-Site Repair, and ServiceExpress to provide additional support to your notebook PC. For a full description and complete list of programs and program terms and conditions, please visit www.pcsupport.toshiba.com.

Recommended Services

Extended Service Plan

Provides an extended service plan for up to 4 total years from the original notebook purchase date.

Part Number	Description
WSN-PEQQ2V	2nd Year Extended Service Plan
WSN-PEQQ3V	2nd/3rd Year Extended Service Plan
WSN-PEQQ4V	2nd/3rd/4th Year Extended Service Plan

SystemGuard Accidental Damage Service w/ ServiceExpress¹⁸

Provides advanced protection from damage caused from handling. Select your express repair service with either Depot Express or Carry-In Express and go to the front of the line. Extended Service Plan included except with 1 Year plan. SystemGuard coverage must be purchased within the first 30 days of notebook purchase.

Part Number	Description
WSN-PSGP1V	1st Year
WSN-PEGP2V	1st/2nd Year + Extended Service Plan
WSN-PEGP3V	1st/2nd/3rd Year + Extended Service Plan

SystemGuard Accidental Damage Service + On-Site Repair¹⁹

Combines SystemGuard and Business On-Site Repair coverage. Extended Service Plan included except with 1 Year plan. SystemGuard coverage must be purchased within the first 30 days of notebook purchase.

Part Number	Description
WSN-PSGN1V	1st Year
WSN-PEGN2V	1st/2nd Year + Extended Service Plan
WSN-PEGN3V	1st/2nd/3rd Year + Extended Service Plan

ServiceExpress

Select your express repair service with either Depot Express or Carry-In Express. Depot Express: Your notebook will be repaired and returned via overnight shipment (excluding weekends and holidays). Carry-In Express: Take your notebook into a Premier ASP and go to the front of the line for expedited repair service. Extended Service Plan included except with 1 Year plan.

Part Number	Description
WSN-PSQP1V	1st Year
WSN-PEQP2V	1st/2nd Year + Extended Service Plan
WSN-PEQP3V	1st/2nd/3rd Year + Extended Service Plan

Subject to Change

While Toshiba has made every effort at the time of publication to ensure the accuracy of the information provided herein, product specifications, configurations, prices, system/component/options availability are all subject to change without notice. For the most up-to-date product information about your computer, or to stay current with the various computer software or hardware options, visit Toshiba's Web site at <http://www.pcsupport.toshiba.com>

Return Policy

Notwithstanding anything to the contrary in any third party License Agreement or product documentation supplied with your PC, Toshiba America Information Systems, Inc. ("TAIS") does not accept the return of component parts, or bundled software, that have been removed from the PC system. Pro-rata refunds on individual PC components or bundled software, including the operating system, will not be granted. If you wish to return a complete PC system, contact the TAIS dealer where you purchased the product, and comply with the dealer's standard return policies and procedures.

Toshiba America Information Systems, Incorporated ("TAIS")
 9740 Irvine Boulevard
 Irvine CA 92618
 ToshibaDirect website: <http://www.toshibadirect.com>
 TAIS website for resellers: <http://sell.toshiba.com>
 TAIS PC Support website: <http://pcsupport.toshiba.com>

On-Site Repair Service

On-site service will be provided at the customer's home or business location (excluding weekends and holidays) to perform the necessary hardware repairs. Extended Service Plan included except with 1 Year plan.

Part Number	Description
WSN-PSQN1V	1st Year
WSN-PEQN2V	1st/2nd Year + Extended Service Plan
WSN-PEQN3V	1st/2nd/3rd Year + Extended Service Plan

Accessories

For additional and most updated accessories, please visit www.accessories.toshiba.com

Memory Upgrade

Part Number	Description
PA3512U-1M1G	Toshiba 1GB DDR2-667 Memory Module
PA3513U-1M2G	Toshiba 2GB DDR2-667 Memory Module

Power

Part Number	Description
PA3290U-3ACA	Toshiba 120W Global AC Adapter
PA3589U-1BRS	Toshiba Primary Li Ion Battery Pack (6 cell)

Expansion

Part Number	Description
PA3541U-2PRP	dynadock USB Docking Station with video port (VGA)
PA3542U-2PRP	dynadock USB Docking Station with video port (DVI)
PA3579U-1ETC	Toshiba Universal Notebook/Projector Stand

Security & Protection

Part Number	Description
PA3567U-1ETC	Toshiba Keyboard Protector -14"-15", 17" NBs (A4)
PA410U	Targus DEFCON CL Cable Lock

Storage

Part Number	Description
PA3109U-3FDD	Toshiba USB Floppy Disk Drive Kit
PA3556U-1M1G	Toshiba 1GB USB Hi-Speed Flash Drive, Ready Boost
PA3556U-1M2G	Toshiba 2GB USB Hi-Speed Flash Drive, Ready Boost
PA3556U-1M4G	Toshiba 4GB USB Hi-Speed Flash Drive

Wireless/Bluetooth

Part Number	Description
PA3624U-1BTM	Toshiba USB Adapter with Bluetooth 2.0+EDR capability
PA3573U-1ETA	Toshiba Bluetooth Optical Tilt-Wheel Mouse (Black/Silver)
PA3573U-1ETB	Toshiba Bluetooth Optical Tilt-Wheel Mouse (Black/Red)

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^{C1} **64-bit computing:**

64-bit computing requires that the following hardware and software requirements are met:

- 64-bit Operating System
- 64-bit CPU, Chipset and BIOS (Basic Input/Output System)
- 64-bit Device drivers
- 64-bit applications

Certain device drivers and/or applications may not be compatible with a 64-bit CPU and therefore may not function properly. A 32-bit version of the operating system is preinstalled on your computer unless explicitly stated that the operating system is 64-bit. See "Detailed Specs" for more information.

¹ **Product Series Legal Footnote.** The product specifications and configuration information are designed for a product Series. Your particular model may not have all the features and specifications listed or illustrated. For more detailed information about the features and specifications on your particular model, please visit Toshiba's Web site at pcsupport.toshiba.com.

Product Offering Legal Footnote. Toshiba America Information Systems, Inc. reserves the right to modify or withdraw this offer at anytime without notice

² **Operating System.**

Also see **64-Bit Computing** Legal Footnote, if applicable.

Certain Microsoft® software product(s) included with this computer may use technological measures for copy protection. IN SUCH EVENT, YOU WILL NOT BE ABLE TO USE THE PRODUCT IF YOU DO NOT FULLY COMPLY WITH THE PRODUCT ACTIVATION PROCEDURES. Product activation procedures and Microsoft's privacy policy will be detailed during initial launch of the product, or upon certain reinstallations of the software product(s) or reconfigurations of the computer, and may be completed by Internet or telephone (toll charges may apply).

Some software may differ from its retail version (if available), and may not include user manuals or all program functionality.

Offers. Offer terms, duration and product availability all subject to change without notice

³ **Processor (Central Processing Unit).**

Also see **64-Bit Computing** Legal Footnote, if applicable.

CPU performance in your computer product may vary from specifications under the following conditions:

1. use of certain external peripheral products
2. use of battery power instead of AC power
3. use of certain multimedia, computer generated graphics or video applications
4. use of standard telephone lines or low speed network connections
5. use of complex modeling software, such as high end computer aided design applications
6. use of several applications or functionalities simultaneously
7. use of computer in areas with low air pressure (high altitude >1,000 meters or >3,280 feet above sea level)
8. use of computer at temperatures outside the range of 5°C to 30°C (41°F to 86°F) or >25°C (77°F) at high altitude (all temperature references are approximate and may vary depending on the specific computer model – please visit the Toshiba website at www.pcsupport.toshiba.com for details).

CPU performance may also vary from specifications due to design configuration.

Under some conditions, your computer product may automatically shut-down. This is a normal protective feature designed to reduce the risk of lost data or damage to the product when used outside recommended conditions. To avoid risk of lost data, always make back-up copies of data by periodically storing it on an external storage medium. Use your computer product only under recommended conditions. Read additional restrictions under "Environmental Conditions" in your product "Detailed Specs." Contact Toshiba Technical Service and Support for more information.

⁴ **Wireless-N.** The 802.11a/g/n wireless adapter is based on a draft release version of the IEEE 802.11n specification, which may not be compatible with, or support all features (e.g., security) of, certain Wi-Fi® equipment.

⁵ **Memory (Main System).** Part of the main system memory may be used by the graphics system for graphics performance and therefore reduce the amount of main system memory available for other computing activities. The amount of main system memory allocated to support graphics may vary depending on the graphics system, applications utilized, system memory size and other factors. For PC's configured with 4 GB of system memory, the full system memory space for computing activities will be considerably less and will vary by model and system configuration.

⁶ **Hard Disk Drive (HDD) Capacity.**

1 Gigabyte (GB) means $10^9 = 1,000,000,000$ bytes using powers of 10. The computer operating system, however, reports storage capacity using powers of 2 for the definition of $1 \text{ GB} = 2^{30} = 1,073,741,824$ bytes, and therefore shows less storage capacity. Available storage capacity will also be less if the product includes one or more pre-installed operating systems, such as Microsoft Operating System and/or pre-installed software applications, or media content. Actual formatted capacity may vary.

⁷ **Optical Drive.** Due to manufacturing and quality variations in third party optical media (e.g., CD or DVD) or optical media players/recorders, in certain cases, your Toshiba optical drive may not record on certain optical media that bear the applicable logo, or playback optical media recorded by other PCs or optical media recorders. Additionally, certain optical media recorded on your optical drive may not playback or operate properly on other PCs or optical media players. These problems are not due to any defect in your Toshiba PC or optical drive. Please refer to your PC's product specification for listing of specific format compatibilities.

Recording or viewing of certain optical media may be limited or prevented in accordance with applicable copy protection standards.

⁸ **Display.** Small bright dots may appear on your screen display when you turn on your PC. Your display contains an extremely large number of thin-film transistors (TFT) and is manufactured using high-precision technology. Any small bright dots that may appear on your display are an intrinsic characteristic of the TFT manufacturing technology. Over a period of time, and depending on the usage of the computer, the brightness of the screen will deteriorate. This is also an intrinsic characteristic of the screen technology. When the computer is operated on battery power, the screen with dim and you may not be able to increase the brightness of the screen while on battery power.

⁹ **Graphics (Graphics Processing Unit).**

GPU performance may vary depending on product model, design configuration, applications, power management settings and features utilized. GPU performance is only optimized when operating in AC power mode and may decrease considerably when operating in battery power mode.

Total Available Graphics Memory is the total of, as applicable, Dedicated Video Memory, System Video Memory and Shared System Memory. Shared System Memory will vary depending on system memory size and other factors.

¹⁰ **Modem Speed.** Due to FCC limitations, speeds of 53 kbps are the maximum permissible transmission rates during download. Actual data transmission speeds will vary depending on line conditions.

¹¹ **Wireless.** Wireless connectivity and some features may require you to purchase additional software, external hardware or services. Availability of public wireless LAN access points may be limited. The transmission speed over the wireless LAN and the distance over which wireless LAN can reach may vary depending on surrounding electromagnetic environment, obstacles, access point design and configuration, and client design and software/hardware configurations. The actual transmission speed will be lower than the theoretical maximum speed. To use the Atheros SuperAG™ or SuperG™ wireless function, if available, your client and access point must support the corresponding feature. Performance of these functions may vary depending on the format of data transmitted.

¹² **Weight.** Weight may vary depending on product configuration, vendor components, manufacturing variability and options selected.

¹³ **Battery Life.** Battery life may vary considerably from specifications depending on product model, configuration, applications, power management settings and features utilized, as well as the natural performance variations produced by the design of individual components. Published battery life numbers are achieved on select models and configurations tested by Toshiba at the time of publication. See "Detailed Specs" for specific battery measurement test. Recharge time varies depending on usage. Battery may not charge while computer is consuming full power. After a period of time, the battery will lose its ability to perform at maximum capacity and will need to be replaced. This is normal for all batteries. To purchase a new battery pack, see the accessories information that shipped with your computer or visit the Toshiba web site at www.accessories.toshiba.com.

¹⁴ **Software.** Some software may differ from its retail version (if available), and may not include user manuals or all program functionality.

Certain Microsoft® software products (including Microsoft Office Small Business Accounting if applicable) included with this computer may use technological measures for copy protection. IN SUCH EVENT, YOU WILL NOT BE ABLE TO USE THE PRODUCT IF YOU DO NOT FULLY COMPLY WITH THE PRODUCT ACTIVATION PROCEDURES. Product activation procedures and Microsoft's privacy policy will be detailed during initial launch of the product, or upon certain reinstallations of the software products or reconfigurations of the computer, and may be completed by Internet or telephone (toll charges may apply).

Internet access is required to enable certain functionality of certain Microsoft products (including Microsoft Office Small Business Accounting 2006) which may be included with this computer.

The Microsoft Office 2007 60-Day Trial software (if applicable) is intended for evaluation purposes only. You must activate the software before you can use it. Product activation procedures will be detailed during initial launch of the software; activation requires Internet access. This software has an expiration date of 60 days from date of first use, at which time the software will operate under reduced-functionality mode, limiting end-user options and operations. The Microsoft Office 2007 60-Day Trial software is distributed without charge to the End User Customer but if the End User wants to continue to use such product after the trial period, then the End User Customer will have to pay a fee for the perpetual version of such Office Product.

For systems with Microsoft Money Essentials 2007 installed, note that some online services for Microsoft® Money 2007 and Microsoft® Money 2007 Essentials will expire on the earlier of two years after your activation of the software or September 1, 2009. Also, you may need to get some online services separately from your financial institution, which may charge a fee. See the online services policy at <http://money.msn.com/Money/2007/OSP.asp>.

¹⁵ **Temperature (Environmental) Conditions.** All temperature references are approximate and the performance of your computer may vary from specifications even when operating within the recommended temperature range.

¹⁶ **RoHS.** This notebook is compatible with European Union Directive 2002/95/EC, Restriction of the use of certain Hazardous Substances in electrical and electronic equipment (RoHS), which restricts use of lead, cadmium, mercury, hexavalent chromium, PBB, and PBDE. Toshiba requires its notebook component suppliers to meet RoHS requirements and verifies its suppliers' commitment to meeting RoHS requirements by conducting component sampling inspections during the product design approval process.

¹⁷ **Warranty:** The terms and conditions of Toshiba's standard limited warranty are available at www.warranty.toshiba.com.

¹⁸ **Service Plans:** The terms and conditions of service upgrade and extension plans offered by Toshiba are available at www.pcsupport.toshiba.com.

¹⁹ **Service Plans:** The terms and conditions of service upgrade and extension plans offered by Toshiba are available at www.pcsupport.toshiba.com.