QuickSpecs

Overview

HP 245 G8 Notebook PC

Left

1. Webcam LED
2. Webcam
3. Internal dual digital microphone
4. Touchpad
5. Touchpad buttons
6. Power indicator LED

7. Hard drive indicator LED
8. SD Card slot
9. USB-C® 3.2 Gen1 port
10. Nano Security lock slot (Lock sold separately)
11. Power button

Overview

Right

1. AC Smart Pin adapter plug
2. RJ-45 / Ethernet port
3. HDMI port (Cable not included)

4. USB-A 3.2 Gen 1 port
5. USB-A 3.2 Gen 1 port
6. Audio combo jack

QuickSpecs

Overview

At a Glance

- A new compact narrow bezel design with thinner & lighter chassis
- Preinstall with Windows 10 versions or FreeDOS
- Choice of AMD Ryzen™ , Athlon™ or AMD APU processors
- Choice of 35.56 cm (14") diagonal HD SVA Anti-Glare WLED or FHD IPS Anti-Glare WLED
- Choice of Integrated AMD Radeon™ Vega Graphics or Radeon™ Graphics
- Security features including Firmware TPM 2.0
- Weight starting at 3.25 lbs (1.47 kgs)
- Battery life Up to 7 hours[1]
- Wireless LAN (WLAN) up to 802.11ac keep you connected
- One USB 3.2 Gen 1 Type-C® (Data Transfer Only), Two USB 3.2 Gen 1 Type-A
- Choice of Solid State Drives up to 1 TB and Hard Drive up to 1 TB
- Fast and upgradeable dual channel DDR4 SODIMM memory up to 16 GB
- HP webcam with dual digital microphone and HD (supporting WDR- Wide Dynamic Range) or VGA camera

1. Windows 10 MM18 battery life will vary depending on various factors including product model, configuration, loaded applications, features, use, wireless functionality, and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See http://www.bapco.com for additional details.

NOTE: See important legal disclosures for all listed specs in their respective feature sections.

QuickSpecs

Technical Specifications

PRODUCT NAME

HP 245 G8 Notebook PC

OPERATING SYSTEMS

Preinstalled
Windows 10 Pro 64 – HP recommends Windows 10 Pro
Windows 10 Pro 64 (National Academic only) [2]
Windows 10 Home 64 [1]
Windows 10 Home Single Language 64 [1]
FreeDOS

1. Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com.

2. Some devices for academic use will automatically be updated to Windows 10 Pro Education with the Windows 10 Anniversary Update. Features vary; see https://aka.ms/ProEducation for Windows 10 Pro Education feature information.

Supported Version

HP tested Windows 10, version 1809 on this platform For testing information on newer versions of Windows10, please see: https://support.hp.com/document/c05195282.

PROCESSORS

AMD Ryzen™ 5 3500U APU with Radeon™ Vega 8 Mobile Graphics (2.1 GHz base frequency, up to 3.7 GHz burst frequency, 4 MB cache, 4 cores) [3,4,5]

AMD Ryzen™ 3 3300U APU with Radeon™ Vega 6 Graphics (2.1 GHz base frequency, up to 3.5 GHz burst frequency, 4 MB cache, 4 cores) [3,4,5]

AMD Ryzen™ 3 3250U APU with Radeon™ Graphics (2.6 GHz base frequency, up to 3.5 GHz burst frequency, 1 MB cache, 2 cores) [3,4,5]

AMD Athlon™ Gold 3150U APU with Radeon™ Graphics (2.4 GHz base frequency, up to 3.3 GHz burst frequency, 1 MB cache, 2 cores) [3,4,5]

AMD Athlon™ Silver 3050U APU with Radeon™ Graphics (2.3 GHz base frequency, up to 3.2 GHz burst frequency, 1 MB cache, 2 cores) [3,4,5]

AMD Athlon™ Pro 3145U APU with Radeon™ Graphics (2.4 GHz base frequency, up to 3.3 GHz burst frequency, 1 MB cache, 2 cores) [3,4,5]

AMD Athlon™ Pro 3045U APU with Radeon™ Graphics (2.3 GHz base frequency, up to 3.2 GHz burst frequency, 1 MB cache, 2 cores)

AMD 3020e APU with Radeon™ Graphics (1.2 GHz base frequency, up to 2.6 GHz burst frequency, 4 MB cache, 2 cores) [3,4,5]

AMD A6-9225 APU with Radeon™ R4 Graphics (2.6 GHz base frequency, up to 3 GHz burst frequency, 1 MB cache, 2 cores) [3,4,5]

AMD A4-9125 APU with Radeon™ R3 Graphics (2.3 GHz base frequency, up to 2.6 GHz burst frequency, 1 MB cache, 2 cores) [3,4,5]

AMD PROA6-8350B APU with Radeon™ R4 Graphics (3.1 GHz base frequency, up to 3.7 GHz burst frequency, 1 MB cache, 2 cores) [3,4,5]

AMD PROA4-5350B APU with Radeon™ R3 Graphics (3.0 GHz base frequency, up to 3.6 GHz burst frequency, 1 MB cache, 2 cores) [3,4,5]

Technical Specifications

Processors Family
AMD Ryzen™ 5 Mobile Processors [6]
AMD Ryzen™ 3 Mobile Processors [6]
7th Generation AMD A6 APU processor [6]
7th Generation AMD A4 APU processor [6]
AMD PRO APU processor [6]
AMD Athlon™ Mobile Processors [6]

3. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.
4. Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. AMD's numbering is not a measurement of clock speed.
5. AMD Max Boost frequency performance varies depending on hardware, software and overall system configuration.
6. In accordance with Microsoft's support policy, HP does not support the Windows 8 or Windows 7 operating system on products configured with Intel and AMD 7th generation and forward processors or provide any Windows 8 or Windows 7 drivers on http://www.support.hp.com.

CHIPSET

Chipset is integrated with processor

GRAPHICS

Integrated
AMD Radeon™ Vega 8 Mobile Graphics
AMD Radeon™ Vega 6 Mobile Graphics
AMD Radeon™ Graphics
AMD Radeon™ R4 Graphics
AMD Radeon™ R3 Graphics

Supports
Support HD decode, DX12, HDMI 1.4b [7]

7. HD content required to view HD images.

DISPLAYS

Internal
Non-Touch
35.56 cm (14") diagonal, HD (1366 x 768), SVA , Anti-Glare WLED, 250nits, eDP micro-edge, 45% NTSC [7,8,9]
35.56 cm (14") diagonal, FHD (1920 x 1080), IPS, Anti-Glare WLED, 250nits eDP micro-edge, 45% NTSC [7,8,9]

HDMI
Port supports resolutions up to 1920 x 1080 external resolution @60 Hz

7. HD content required to view HD images.
8. Sold separately or as an optional feature.
9. Resolutions are dependent upon monitor capability, and resolution and color depth settings.

STORAGE AND DRIVES

Technical Specifications

Primary Storage
1 TB 5400 rpm SATA [10]
500 GB 7200 rpm SATA [10]
500 GB 5400 rpm SATA [10]

Primary M.2 Storage
128 GB M.2 SATA-3 TLC Solid State Drive [10]
256 GB M.2 SATA-3 TLC Solid State Drive [10]
256 GB PCIe® NVMe™ M.2 Value Solid State Drive [10]
512 GB PCIe® NVMe™ M.2 Value Solid State Drive [10]
1TB PCIe® NVMe™ M.2 Value Solid State Drive [10]

Dual Storage
128 GB M.2 SATA-3 TLC Solid State Drive + 1TB 5400rpm SATA [10]
256 GB PCIe® NVMe™ M.2 Value Solid State Drive + 1TB 5400rpm SATA [10]

10. For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10) is reserved for system recovery software.

MEMORY

Maximum Memory
16 GB DDR4-2400 SDRAM [11]

Memory
16 GB DDR4-2400 SDRAM (2 X 8 GB) [11]
16 GB DDR4-2133 SDRAM (2 X 8 GB) [11]
12 GB DDR4-2400 SDRAM (4 GB (1 x 4GB) and 8 GB (1 x 8 GB)) [11]
12 GB DDR4-2133 SDRAM (4 GB (1 x 4GB) and 8 GB (1 x 8 GB)) [11]
8 GB DDR4-2400 SDRAM (2 x 4 GB) [11]
8 GB DDR4-2133 SDRAM (2 x 4 GB) [11]
8 GB DDR4-2400 SDRAM (1 x 8 GB) [11]
8 GB DDR4-2133 SDRAM (1 x 8 GB) [11]
8 GB DDR4-2400 SDRAM (1 x 4 GB) [11]
8 GB DDR4-2133 SDRAM (1 x 4 GB) [11]

Memory Slots
2 SODIMM (AMD Ryzen™ / Athlon™ Mobile Processors)
Supports Dual Channel Memory
1 SODIMM

NOTE: All slots are customer non-accessible / non-upgradeable

11. Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed.

Technical Specifications

NETWORKING/COMMUNICATIONS

WLAN
Realtek RTL8822CE 802.11ac 2x2 Wi-Fi® + Bluetooth® 5 [26]
Realtek RTL8822CE 802.11a/b/g/n/ac (2x2) Wi-Fi® with Bluetooth® 4.2 Combo [12]
Realtek RTL8822CE 802.11a/b/g/n/ac (1x1) Wi-Fi® with Bluetooth® 4.2 Combo [12]

Miracast
Compatible with Miracast-certified devices (For Win10) [13]

Ethernet
Realtek 10/100/1000 GbE NIC [14]

12. Wi-Fi supporting gigabit speeds (802.11ac) is achievable when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 160MHz channels.
13. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.
14. The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.
26. Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 5 (802.11 ac) is backwards compatible with prior 802.11 specs.

AUDIO/MULTIMEDIA

Audio
2 Integrated stereo speakers
Integrated dual digital microphone

Camera
HP TrueVision HD Camera [7,8]

Webcam
VGA webcam [8]

7. HD content required to view HD images.
8. Sold separately or as an optional feature.

Technical Specifications

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard
Full Size Textured island-style Keyboard

Pointing Device
Touchpad with multi-touch gesture support (PTP certified)

Function Keys
F1 - Open " How to get help in Windows 10" webpage
F2 - Brightness Down
F3 - Brightness Up
F4 - Display Switching
F5 - Blank
F6 - Mute
F7 - Volume Down
F8 -Volume Up
F9 - Previous
F10 - Play/Pause
F11 - Next
F12 - Airplane mode

SOFTWARE AND SECURITY

Preinstalled Software
Software
HP Support Assistant [16]
Native Miracast Support [17]
HP documentation
HP Setup Integrated OOBE
HP SSRM
HP Audio Switch
HP JumpStarts
McAfee LiveSafe™ [15]
Xerox® DocuShare® 90 day free trial offer[25]

Security Management
Firmware TPM 2.0 [18]

15. 30 days free trial
16. HP Support Assistant requires Windows and Internet access.
17. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.
18. Firmware TPM is version 2.0. which is a subset of the TPM 2.0 specification version v0.89 as implemented by Intel Platform Trust Technology (PTT).32. Firmware TPM is version 2.0.
25. Simply sign up and start using Xerox® DocuShare® Go. No credit card. No obligation. Data will become unavailable unless a subscription is entered before the end of the 90 day free trial period. See visit www.xerox.com/docusharego for details.

Technical Specifications

POWER

Power Supply [19]
HP Smart 65 W EM External AC power adapter [19]
HP Smart 45 W External AC power adapter [19]

Primary Battery
HP Long Life 3-cell, 41 Wh Li-ion [20]
HP Long Life 4-cell, 46 Wh Li-ion Battery (India only) [20]

Power Cord
1M (3.28 feet) length power cord

Battery life
Up to 7 hours [21]

Battery Weight
0.18 kg
0.39 lb

19. Availability may vary by country.
20. Battery is internal and not replaceable by customer. Serviceable by warranty.
21. Windows 10 MM18 battery life will vary depending on various factors including product model, configuration, loaded applications, features, use, wireless functionality, and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See www.bapco.com for additional details.

WEIGHTS & DIMENSIONS

Product Weight
Starting at 3.25 lb [22]
Starting at 1.47 kg [22]

Product Dimensions (w x d x h)
12.76 x 8.89 x 0.78 in
32.4 x 22.59 x 1.99 cm

22. Weight will vary by configuration.

Technical Specifications

PORTS/SLOTS

Ports
2 USB-A 3.2 Gen1
1 USB Type-C 3.2 Gen1 (Data Transferring only)
1 HDMI v1.4b [23]
1 RJ-45
1 AC Power
1 Headphone/microphone combo jack

Expansion Slots
Support SD/SDHC/SDXC
1 Multi-format digital media reader

23. HDMI cable sold separately.

SERVICE AND SUPPORT

1-year limited warranty and 90 day software limited warranty options depending on country. Batteries have a default one year limited warranty. Refer to http://www.hp.com/support/batterywarranty/ for additional battery information. On-site service and extended coverage is also available. HP Care Pack Services are optional extended service contracts that go beyond the standard limited warranties. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at: http://www.hp.com/go/cpc. [24]

24. HP Care Packs are sold separately. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit http://www.hp.com/go/cpc. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

Technical Specifications

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)

Nominal Operating Voltage	19.5 V
Average Operating Power	TBD
Integrated graphics	6.03W
Discrete Graphics	N/A (Switchable graphics design)
Max Operating Power	Discrete < 65W UMA < 45W

Temperature

Operating	32° to 95° F (0° to 35° C) (not writing optical) 41° to 95° F (5° to 35° C) (writing optical)
Non-operating	-4° to 140° F (-20° to 60° C)

Relative Humidity

Operating	10% to 90%, non-condensing
Non-operating	5% to 95%

Shock

Operating	40 G, 2 ms duration, half-sine
Non-operating	240 G, 2 ms duration, half-sine

Random Vibration

Operating	1.043 grms
Non-operating	3.5 grms

Altitude (unpressurized)

Operating	-15 m to 3048 m (-50 ft to 10000 ft)
Non-operating	-15 m to 12192 m (-50 ft to 40000 ft)

Planned Industry Standard Certifications

UL	Yes
CSA	No
FCC Compliance	Yes
ENERGY STAR®	Yes
EPEAT®	Yes
ICES	Yes
Australia /	No
NZ A – Tick Compliance	No
CCC	Yes
Japan VCCI Compliance	No
KC	No
BSMI	Yes
CE Marketing Compliance	Yes
BNCI or BELUS	No
CIT	No
GOST	No
Saudi Arabian Compliance (ICCP)	No
SABS	No
UKRSERTCOMPUTER	No

Technical Specifications

DISPLAYS

Note: All specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.

Panel LCD 14-in FHD (1920x1080) Anti-Glare WLED UWVA 45percent cg 250nits eDP NWBZ slim		
	Outline Dimensions (W x H x D)	316.11 x 198.07 max. (w/ PCB)(mm)
	Active Area	309.31 x 173.99(mm)
	Weight	285g max.
	Diagonal Size	14.0"
	Thickness	3.0mm max.
	Interface	eDP 1.2
	Surface Treatment	Anti-glare (AG)
	Touch Enabled	None
	Contrast Ratio	600:1 (typ)
	Refresh Rate	60Hz
	Brightness	250nit typ.
	Pixel Resolution	1920 x 1080 (FHD)
	Format	RGB
	Backlight	LED
	Color Gamut Coverage	45%
	Color Depth	6bit
	Viewing Angle	UWVA 85/85/85/85

Panel LCD 14-in HD (1366x768) Anti-Glare WLED SVA 45percent cg 250nits eDP NWBZ ultraslim		
	Outline Dimensions (W x H x D)	315.9+/-0.3 x 197.55 +/- 0.5
	Active Area	309.4 x 173.95(mm)
	Weight	285g Max
	Diagonal Size	14"
	Thickness	3.0mm max
	Interface	eDP 1.2
	Surface Treatment	Anti-glare (AG)
	Touch Enabled	None
	Contrast Ratio	300:1 (typ)
	Refresh Rate	60Hz
	Brightness	250nit typ.
	Pixel Resolution	1366 x 768 (HD)
	Format	RGB
	Backlight	LED
	Color Gamut Coverage	45%
	Color Depth	6 bits
	Viewing Angle	SVA 45/45/15/30

QuickSpecs

Technical Specifications

STORAGE AND DRIVES*

*For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10) is reserved for system recovery software.

SSD 128GB 2280 M2 SATA-3 TLC (SSD 128GB 2280 M2 SATA-3 TLC)		
Drive Weight	0.01 lb (6 g) ~ 0.02 lb (10 g)
Capacity	128 GB
Height	0.09 in (2.3 mm)
Width	0.87 in (22 mm)
Interface	ATA-8, SATA 3.0
Performance	
Maximum Sequential Read	Up To 560 MB/s
Maximum Sequential Write	Up To 530 MB/s
Logical Blocks	250,069,680
Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]

SSD 1TB 2280 PCIe NVMe Value (SSD 1TB 2280 PCIe NVMe Value)		
Drive Weight	0.01 lb (6 g) ~ 0.02 lb (10 g)
Capacity	1 TB
Height	0.09 in (2.3 mm)
Width	0.87 in (22 mm)
Interface	PCIe NVMe Gen3X4
Performance	
Maximum Sequential Read	Up to 2400MB/s
Maximum Sequential Write	Up to 1950MB/s
Logical Blocks	2,000,409,264
Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]

SSD 256GB 2280 M2 SATA-3 TLC (SSD 256GB 2280 M2 SATA-3 Three Layer Cell)		
Drive Weight	0.01 lb (6 g) ~ 0.02 lb (10 g)
Capacity	256 GB
Height	0.09 in (2.3 mm)
Width	0.87 in (22 mm)
Interface	PCIe NVMe Gen3X4
Performance	
Maximum Sequential Read	Up to 530MB/s
Maximum Sequential Write	Up to 520MB/s
Logical Blocks	500,118,192
Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]

Technical Specifications

SSD 256GB 2280 PCIe NVMe Value (SSD 256GB 2280 PCIe NVMe Value)	**Drive Weight**	0.01 lb (6 g) ~ 0.02 lb (10 g)
	Capacity	256GB
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe Gen3X2
	Performance	
	Maximum Sequential Read	Up to 1500MB/s
	Maximum Sequential Write	Up to 750MB/s
	Logical Blocks	500,118,192
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	TRIM, L1.2

SSD 512GB 2280 PCIe NVMe Value (SSD 512GB 2280 PCIe NVMe Value)	**Drive Weight**	0.01 lb (6 g) ~ 0.02 lb (10 g)
	Capacity	512GB
	Height	0.09 in (2.3 mm)
	Width	0.87 in (22 mm)
	Interface	PCIe NVMe Gen3X2
	Performance	
	Maximum Sequential Read	Up to 1500MB/s
	Maximum Sequential Write	Up to 750MB/s
	Logical Blocks	1,000,215,216
	Operating Temperature	32° to 158°F (0° to 70°C) [ambient temp]
	Features	TRIM, L1.2

Technical Specifications

NETWORKING/COMMUNICATIONS

Realtek RTL8822CE 802.11ac 2x2 Wi-Fi® + Bluetooth® 5[1]	**Wireless LAN Standards**	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
	Interoperability	Wi-Fi certified modules
	Frequency Band	802.11b/g/n • 2.402 – 2.482 GHz 802.11a/n/ac • 4.9 – 4.95 GHz (Japan) • 5.15 – 5.25 GHz • 5.25 – 5.35 GHz • 5.47 – 5.725 GHz • 5.825 – 5.850 GHz
	Data Rates	• 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz) • 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, and 80MHz)
	Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
	Security[2]	• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • WAPI
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power[3]	• 802.11b : +18.5dBm minimum • 802.11g : +17.5dBm minimum • 802.11a : +18.5dBm minimum • 802.11n HT20(2.4GHz) : +15.5dBm minimum • 802.11n HT40(2.4GHz) : +14.5dBm minimum • 802.11n HT20(5GHz) : +15.5dBm minimum • 802.11n HT40(5GHz) : +14.5dBm minimum • 802.11ac VHT80(5GHz) : +11.5dBm minimum
	Power Consumption	• Transmit mode: 2.0 W • Receive mode:1.6 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode: 50 mW (WLAN unassociated) • Connected Standby/Modern Standby: 10mW • Radio disabled: 8 mW
	Power Management	ACPI and PCI Express compliant power management

Technical Specifications

	802.11 compliant power saving mode	
Receiver Sensitivity[4]	• 802.11b, 1Mbps: -93.5dBm maximum • 802.11b, 11Mbps: -84dBm maximum • 802.11a/g, 6Mbps: -86dBm maximum • 802.11a/g, 54Mbps: -72dBm maximum • 802.11n, MCS07: -67dBm maximum • 802.11n, MCS15: -64dBm maximum • 802.11ac, MCS0: -84dBm maximum • 802.11ac, MCS9: -59dBm maximum	
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications	
Form Factor	PCI-Express M.2 MiniCard	
Dimensions	1. Type 2230 : 2.3 x 22.0 x 30.0 mm 2. Type 1216: 1.67 x 12.0 x 16.0 mm	
Weight	1. Type 2230 : 2.8g 2. Type 126: 1.3g	
Operating Voltage	3.3v +/- 9%	
Temperature	**Operating** **Non-operating**	14° to 158° F (−10° to 70° C) −40° to 176° F (−40° to 80° C)
Humidity	**Operating** **Non-operating**	10% to 90% (non-condensing) 5% to 95% (non-condensing)
Altitude	**Operating** **Non-operating**	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF LED Off – Radio ON	

1.Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 5 (802.11 ac) is backwards compatible with prior 802.11 specs.
2. Check latest software/driver release for updates on supported security features.
3.The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0 Wireless Technology

Bluetooth Specification	4.0/4.1/4.2/5.0 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy : 0~79 (1 MHz/CH) BLE : 0~39 (2 MHz/CH)
Data Rates and Throughput	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps BLE : 1 Mbps data rate; throughput up to 0.2 Mbps Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR.

Technical Specifications

Realtek 802.11a/b/g/n/ac (1x1) Wi-Fi® and Bluetooth® 4.2 Combo[1]	**Wireless LAN Standards**	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
	Interoperability	Wi-Fi certified modules
	Frequency Band	802.11b/g/n • 2.402 – 2.482 GHz 802.11a/n/ac • 4.9 – 4.95 GHz (Japan) • 5.15 – 5.25 GHz • 5.25 – 5.35 GHz • 5.47 – 5.725 GHz • 5.825 – 5.850 GHz
	Data Rates	• 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz) • 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, and 80MHz)
	Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
	Security[2]	• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • WAPI
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power[3]	• 802.11b : +14dBm minimum • 802.11g : +12dBm minimum • 802.11a : +12dBm minimum • 802.11n HT20(2.4GHz) : +12dBm minimum • 802.11n HT40(2.4GHz) : +12dBm minimum • 802.11n HT20(5GHz) : +10dBm minimum • 802.11n HT40(5GHz) : +10dBm minimum • 802.11ac VHT80(5GHz) : +10dBm minimum
	Power Consumption	• Transmit mode: 2.0 W • Receive mode:1.6 W • Idle mode (PSP) 180 mW (WLAN Associated) • Idle mode: 50 mW (WLAN unassociated) • Connected Standby/Modern Standby: 10mW • Radio disabled: 8 mW
	Power Management	ACPI and PCI Express compliant power management

Technical Specifications

	802.11 compliant power saving mode	
Receiver Sensitivity[4]	• 802.11b, 1Mbps: -93.5dBm maximum • 802.11b, 11Mbps: -84dBm maximum • 802.11a/g, 6Mbps: -86dBm maximum • 802.11a/g, 54Mbps: -72dBm maximum • 802.11n, MCS07: -67dBm maximum • 802.11n, MCS15: -64dBm maximum • 802.11ac, MCS0: -84dBm maximum • 802.11ac, MCS9: -59dBm maximum	
Antenna type	High efficiency antenna with spatial diversity, mounted in the display enclosure Two embedded dual band 2.4/5 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth communications	
Form Factor	PCI-Express M.2 MiniCard	
Dimensions	Type 2230 : 2.3 x 22.0 x 30.0 mm	
Weight	Type 2230 : 2.8g	
Operating Voltage	3.3v +/- 9%	
Temperature	**Operating** **Non-operating**	14° to 158° F (−10° to 70° C) −40° to 176° F (−40° to 80° C)
Humidity	**Operating** **Non-operating**	10% to 90% (non-condensing) 5% to 95% (non-condensing)
Altitude	**Operating** **Non-operating**	0 to 10,000 ft (3,048 m) 0 to 50,000 ft (15,240 m)
LED Activity	LED Amber – Radio OFF LED Off – Radio ON	

1. Wi-Fi supporting gigabit speeds (802.11ac) is achievable when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 160MHz channels.
2. Check latest software/driver release for updates on supported security features.
3. The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

HP Integrated Module with Bluetooth® 4.0/4.1/4.2 Wireless Technology

Bluetooth Specification	4.0/4.1/4.2 Compliant
Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy : 0~79 (1 MHz/CH)BLE : 0~39 (2 MHz/CH)
Data Rates and Throughput	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps BLE : 1 Mbps data rate; throughput up to 0.2 Mbps Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR.

Technical Specifications

Realtek 802.11a/b/g/n/ac (2x2) Wi-Fi® and Bluetooth® 4.2 Combo[1]	**Wireless LAN Standards**	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11ac IEEE 802.11d IEEE 802.11e IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11r IEEE 802.11v
	Interoperability	Wi-Fi certified modules
	Frequency Band	802.11b/g/n • 2.402 – 2.482 GHz 802.11a/n/ac • 4.9 – 4.95 GHz (Japan) • 5.15 – 5.25 GHz • 5.25 – 5.35 GHz • 5.47 – 5.725 GHz • 5.825 – 5.850 GHz
	Data Rates	• 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, and 40MHz) • 802.11ac : MCS0 ~ MCS9, (1SS, and 2SS) (20MHz, 40MHz, and 80MHz)
	Modulation	Direct Sequence Spread Spectrum BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM
	Security[2]	• IEEE and WiFi compliant 64 / 128 bit WEP encryption for a/b/g mode only • AES-CCMP: 128 bit in hardware • 802.1x authentication • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • IEEE 802.11i • WAPI
	Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
	Roaming	IEEE 802.11 compliant roaming between access points
	Output Power[3]	• 802.11b : +14dBm minimum • 802.11g : +12dBm minimum • 802.11a : +12dBm minimum • 802.11n HT20(2.4GHz) : +12dBm minimum • 802.11n HT40(2.4GHz) : +12dBm minimum • 802.11n HT20(5GHz) : +10dBm minimum • 802.11n HT40(5GHz) : +10dBm minimum • 802.11ac VHT80(5GHz) : +10dBm minimum
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Transmit Power	The Bluetooth component shall operate as a Class II Bluetooth device with a maximum transmit power of + 4 dBm for BR and EDR.

Technical Specifications

POWER

AC Adapter 65 Watt Smart nPFC EM Barrel 4.5mm New EM	Dimensions (H x W x D)	102x55x30mm	
	Weight	unit: 250g +/- 10g	
	Input	Input Efficiency	88.0 % at 115 Vac and 89.0 % at 230Vac
		Input frequency range	47 ~ 63 Hz
		Input AC current	Max. 1.7 A at 90 Vac
	Output	Output power	65W
		DC output	19.5V
		Hold-up time	5ms at 115 Vac input
		Output current limit	<11.0A
	Connector	C6 (3pin/with grounded, with Smart ID DC connector)	
	Environmental Design	Operating temperature	32°F to 95°F (0° to 35°C)
		Non-operating (storage) temperature	-4°F to 185°F (-20° to 85°C)
		Altitude	0 to 16,400 ft (0 to 5,000 m)
		Humidity	20% to 95%
		Storage Humidity	10% to 95%
	EMI and Safety Certifications	CE Mark - full compliance with LVD and EMC directives Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE. MTBF - over 200,000 hours at 25°C ambient condition.	

QuickSpecs

Technical Specifications

AC Adapter 45 Watt Smart nPFC Standard Barrel 4.5mm Right Angle 1.8m		
Dimensions	95 x 40 x 26.5 mm	
Weight	200 g +/- 10 g	
Input	**Input Efficiency**	87.74 % at 115 Vac and 88.4 % at 230Vac
	Input frequency range	47 ~ 63 Hz
	Input AC current	Max. 1.4 A at 90 Vac
Output	**Output power**	45 W
	DC output	19.5 V
	Hold-up time	5 ms at 115 Vac input
	Output current limit	<8.0A
Connector	C6 (3pin/with grounded, with Smart ID DC connector)	
Environmental Design	**Operating temperature**	32°F to 95°F (0°to 35°C)
	Non-operating (storage) temperature	-4°F to 185°F (-20°to 85°C)
	Altitude	0 to 16,400 ft (0 to 5000m)
	Humidity	20% to 95%
	Storage Humidity	10% to 95%
EMI and Safety Certifications	CE Mark - full compliance with LVD and EMC directives Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE. MTBF - over 200,000 hours at 25°C ambient condition.	

Technical Specifications

Country of Origin

China

QuickSpecs

Options and Accessories (sold separately and availability may vary by country)

Type	Description	Part Number
Cases	HP Prelude Pro Top Load	1X645AA
	HP Prelude Pro Backpack	1X644AA
	HP Prelude Top Load 15.6	1E7D7AA
	HP Prelude Backpack 15.6	1E7D6AA
Docking	HP USB-C®/A Universal Dock G2	5TW13AA
	HP 4.5 mm and USB-C® Dock Adapter G2	6LX61AA
Input/Output	HP USB Essential Keyboard/Mouse	H6L29AA
	HP Wired Desktop 320MK Mouse and Keyboard	9SR36AA
	HP Slim Wireless Keyboard & Mouse	T6L04AA
	HP Wired Desktop 320K Keyboard	9SR37AA
	HP Slim Wireless Keyboard (Link-5)	T6U20AA
	HP 3-Button USB Laser Mouse	H4B81AA
	HP Essential USB Mouse	2TX37AA
	HP USB Travel Mouse	G1K28AA
	HP Bluetooth Travel Mouse	6SP30AA
	HP Comfort Grip Wireless Mouse	H2L63AA
	HP Wired Desktop 320M Mouse	9VA80AA
	HP HDMI to VGA Adapter	H4F02AA
	HP HDMI to DVI	F5A28AA
Power	HP 45W Smart AC Adapter	H6Y88AA
	HP 65W Smart AC Adapter	H6Y89AA
	HP 65W Slim Adapters (w/ detachable DC cable + TIPS)	H6Y82AA
Storage	HP External USB Optical Drive	F2B56AA

Summary of Changes

Date of change:	Version History:		Description of change:
	V1 to V2		

HP 245 G8 Notebook PC

Budget friendly. Business ready.

Get connected with the HP 245 Laptop PC with powerful technology and a streamlined chassis that's easy to take everywhere you go. Complete business tasks with the AMD Ryzen™ processor[2] and essential collaboration tools.

HP recommends Windows 10 Pro for business

Nice and light

- The HP 245 Laptop keeps up with mobile workstyles with a thin and light design. The beautiful display with its narrow border design and big screen-to-body-ratio provides ample space for work or streaming content.

Powered for business

- Confidently complete projects with the latest technology including a powerful AMD Ryzen™ processor,[2] with optional DDR4 memory.[3]

Well-connected

- This laptop is ready to connect to all your peripherals[3] and is designed to fit the needs of business with a USB Type-C® data port, an RJ-45 port and an HDMI port.

- Help secure the future of your business. PCs from HP make the most of Windows 10 Pro to protect you from today's security threats and maximize management and productivity features for business.[1]

- Sometimes in life, only a face-to-face conversation will do. Thanks to the optional HP HD camera with wide dynamic range (WDR), you always come off looking your best during virtual conferences in bright and low light conditions.[4,5]

- Get the best of both worlds with dual storage options. Boot up and access apps faster with a high-speed solid-state drive and enjoy expansive storage for digital media with a high-capacity hard drive.[6]

- HP Noise Cancellation improves collaboration by applying industry-leading, noise-filtering technology to all inbound and outbound audio for effective online calls and meetings.

- The firmware Trusted Platform Module (TPM) provides hardware-based encryption keys to help secure your data, e-mail, and user credentials.

- Get fast connections with Gigabit LAN and optional WLAN 802.11ac/Bluetooth® 5.0 combo.[4,7]

HP 245 G8 Notebook PC Specifications Table

Available Operating Systems	Windows 10 Pro 64 – HP recommends Windows 10 Pro for business[1,21] Windows 10 Pro 64 (National Academic only)[1,2,21] Windows 10 Home 64[1,21] Windows 10 Home Single Language 64[1,21] FreeDOS
Processor family[6]	AMD A4-Series processor; AMD A6-Series processor; AMD Athlon™ processor; AMD Ryzen™ 3 processor; AMD Ryzen™ 5 processor; AMD 3000 Series processor
Available Processors[3,4,5,6]	AMD A4-9125 with Radeon™ R3 Graphics (2.3 GHz base clock, up to 2.6 GHz max boost clock, 1 MB L2 cache, 2 cores); AMD A6-9225 with Radeon™ R4 Graphics (2.6 GHz base clock, up to 3.0 GHz max boost clock, 1 MB L2 cache, 2 cores); AMD Athlon™ Gold 3150U with Radeon™ Graphics (2.4 GHz base clock, up to 3.3 GHz max boost clock, 4 MB L3 cache, 2 cores); AMD Athlon™ Silver 3050U (2.3 GHz base clock, up to 3.2 GHz max boost clock, 1 MB L2 cache, 2 cores); AMD PRO A4-5350B with Radeon™ R3 Graphics (3.0 GHz base clock, up to 3.6 GHz max boost clock, 1 MB L2 cache, 2 cores); AMD PRO A6-8350B with Radeon™ R4 Graphics (3.1 GHz base clock, up to 3.7 GHz max boost clock, 1 MB L2 cache, 2 cores); AMD Ryzen™ 3 3250U with Radeon™ Graphics (2.6 GHz base clock, up to 3.5 GHz max boost clock, 4 MB L3 cache, 2 cores); AMD Ryzen™ 3 3300U with Radeon™ Vega 6 Graphics (2.1 GHz base clock, up to 3.5 GHz max boost clock, 4 MB L3 cache, 4 cores); AMD Ryzen™ 5 3500U with Radeon™ Vega 8 Graphics (2.1 GHz base clock, up to 3.7 GHz max boost clock, 4 MB L3 cache, 4 cores); AMD Athlon™ Pro 3145U with Radeon™ Graphics (2.4 GHz base clock, up to 3.3 GHz max boost clock, 1 MB L2 cache, 2 cores); AMD Athlon™ Pro 3045U with Radeon™ Graphics (2.3 GHz base clock, up to 3.2 GHz max boost clock, 1 MB L2 cache, 2 cores); AMD 3020e with Radeon™ Graphics (1.2 GHz base clock, up to 2.6 GHz max boost clock, 4 MB L3 cache, 2 cores)
Display size (diagonal)	14"[12,13]
Maximum memory	16 GB DDR4-2400 SDRAM [7] Both slots are customer accessible/upgradeable. Supports dual channel memory.
Memory slots	2 SODIMM
Internal storage	up to 1 TB 5400 rpm SATA with 256 GB PCIe® NVMe™ Value M.2 SSD [8] up to 1 TB 5400 rpm SATA with 128 GB M.2 SATA SSD TLC [8] 256 GB up to 1 TB PCIe® NVMe™ Value M.2 SSD [8] 128 GB up to 256 GB M.2 SATA-3 SSD TLC [8] 500 GB up to 1 TB 5400 rpm SATA [8] up to 500 GB 7200 rpm SATA [8]
Display	14" diagonal, FHD (1920 x 1080), IPS, micro-edge, anti-glare, 250 nits, 45% NTSC; 14" diagonal, HD (1366 x 768), micro-edge, anti-glare, 250 nits, 45% NTSC [12,13]
Available Graphics	Integrated: AMD Radeon™ R3 Graphics; AMD Radeon™ R4 Graphics; AMD Radeon™ Vega 6 Graphics; AMD Radeon™ Vega 8 Graphics; AMD Radeon™ Graphics (Support HD Decode, DX12, and HDMI 1.4b.)
Audio	Stereo speakers, integrated digital microphone
Wireless technologies	(Compatible with Miracast-certified devices (models with Windows 10).)
Expansion slots	1 multi-format digital media reader (Supports SD, SDHC, SDXC.)
Ports and Connectors	2 Super Speed USB Type-A 5Gbps signaling rate; 1 SuperSpeed USB Type-C® 5Gbps signaling rate; 1 RJ-45; 1 headphone/microphone combo; 1 HDMI 1.4b; 1 AC power (HDMI cable sold separately.)
Input devices	Full-size, textured keyboard with numeric keypad; Touchpad with multi-touch gesture support
Communications	Realtek RTL8111HSH-CG 10/100/1000 GbE NIC [11] Realtek RTL8821CE 802.11a/b/g/n/ac (1x1) Wi-Fi® and Bluetooth® 4.2 combo; Realtek 802.11a/b/g/n/ac (1x1) Wi-Fi® and Bluetooth® 4.2 combo; Realtek 802.11a/b/g/n/ac (2x2) Wi-Fi® and Bluetooth® 5 combo ;
Camera	HP True Vision 720p HD camera; VGA camera [12]
Security management	TPM 2.0; Hardware TPM[19]
Fingerprint reader	Fingerprint reader not available
Power	HP Smart 65 W EM External AC power adapter; HP Smart 45 W External AC power adapter[21]
Battery type	HP Long Life 3-cell, 41 Wh Li-ion; HP Long Life 4-cell, 46 Wh Li-ion [18]
Battery life	Up to 7 hours[17]
Dimensions	32.4 x 22.59 x 1.99 cm
Weight	Starting at 1.47 kg (Weight will vary by configuration.)
Energy efficiency compliance	ENERGY STAR® certified; EPEAT® registered where applicable. EPEAT registration varies by country. See www.epeat.net for registration status by country.[20]
Warranty	HP Services offers 1-year limited warranties and 90 day software limited warranty options depending on country. Batteries have a default one year limited warranty. On-site service and extended coverage is also available. HP Care Pack Services are optional extended service contracts that go beyond the standard limited warranties. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at: http://www.hp.com/go/cpc.

HP 245 G8 Notebook PC

Accessories and services (not included)

HP Prelude Pro Recycled Backpack

Commute with a stylish and durable backpack thoughtfully designed with the environment in mind and made with recycled fabric[1]. The HP Prelude Pro Recycled Backpack comes with safety features for your peace of mind when you carry your devices from work to home and beyond.
Product number: 1X644AA

HP Prelude Pro Recycled Top Load

Commute with a stylish and durable top load thoughtfully designed with the environment in mind and made with recycled fabric[1]. The HP Prelude Pro Recycled Top load comes with safety features for your peace of mind when you carry your devices from work to home and beyond.
Product number: 1X645AA

HP USB-C/A Universal Dock G2

Get to work fast with one cable from your USB-A- and USB-C™-enabled notebooks[1] to your displays, devices, and wired network with the flexible, compact HP USB-C/A Universal Dock G2. The dock is driven by DisplayLink and compatible with notebooks from HP, Apple®, Dell, Lenovo, and more.[2]
Product number: 5TW13AA

HP Comfort Grip Wireless Mouse

The HP Comfort Grip Wireless Mouse features a 30-month battery life and a bold, modern design that integrates seamlessly with HP Business Notebooks.
Product number: H2L63AA

HP 65W Smart AC Adapter

Feed your notebook with controlled servings of electricity. HP's new 65W Smart AC Adapter regulates power and offsets electrical spikes, is designed to reduce cable stress, and includes a special dongle to support current and prior HP models – perfect for replacing your notebook's power adapter or as a needed back-up.
Product number: H6Y89AA

HP Slim USB Keyboard and Mouse

Work smart and maximize your workspace with the stylish HP Slim USB Keyboard and Mouse, designed to complement the 2015 class of HP Business PCs.
Product number: T6T83AA

HP 3-year Travel Next Business Day Low End Notebook Only Hardware Support

This HP services offers notebook users on the go prompt, reliable coverage in major geographies of the world, for 3 years. For more information on Care Pack services, please visit www.hp.com/go/cpc.
Product number: UC909E

HP Care Pack

HP 245 G8 Notebook PC

Messaging Footnotes

[1] Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com.
[2] Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. AMD's numbering is not a measurement of clock speed.
[3] Sold separately or as an optional feature.
[4] Optional feature must be configured at purchase.
[5] Internet connection required and sold separately.
[6] Based on internal testing of SSDs vs. HDDs.
[7] Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 5 (802.11 ac) is backwards compatible with prior 802.11 specs.

Technical Specifications Footnotes

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[2] Some devices for academic use will automatically be updated to Windows 10 Pro Education with the Windows 10 Anniversary Update. Features vary; see https://aka.ms/ProEducation for Windows 10 Pro Education feature information.
[3] Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. AMD's numbering is not a measurement of clock speed.
[4] Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.
[5] Max Boost clock frequency performance varies depending on hardware, software and overall system configuration.
[6] In accordance with Microsoft's support policy, HP does not support the Windows 8 or Windows 7 operating system on products configured with Intel and AMD 7th generation and forward processors or provide any Windows 8 or Windows 7 drivers on http://www.support.hp.com.
[7] Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed.
[8] For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10) is reserved for system recovery software.
[9] Wireless access point and internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 5 (802.11 ac) is backwards compatible with prior 802.11 specs.
[10] Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.
[11] The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.
[12] HD content required to view HD images.
[13] Resolutions are dependent upon monitor capability, and resolution and color depth settings.
[14] HP Support Assistant requires Windows and Internet access.
[15] 30 days free trial.
[16] Firmware TPM is version 2.0. which is a subset of the TPM 2.0 specification version v0.89 as implemented by Intel Platform Trust Technology (PTT).
[17] Windows 10 MM18 battery life will vary depending on various factors including product model, configuration, loaded applications, features, use, wireless functionality, and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See www.bapco.com for additional details.
[18] 30-day McAfee® LiveSafe™ trial included. Internet access required and not included. Subscription required after expiration. See WWW.McAfee.com for more details.
[19] HP Care Packs are sold separately. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit www.hp.com/go/cpc. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.
[20] Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. Status varies by country. Visit www.epeat.net for more information.
[21] HP tested Windows 10, version 1809 on this platform. For testing information on newer versions of Windows 10, please see https://support.hp.com/document/c05195282.
[22] Simply sign up and start using Xerox® DocuShare® Go. No credit card. No obligation. Data will become unavailable unless a subscription is entered before the end of the 90 day free trial period. See visit www.xerox.com/docusharego for details.

Sign up for updates hp.com/go/getupdated

BioEnable G1

GPS devices

Specifications

Parameter	Specification	
Electrical Characteristics	Chipset	u-blox M8030-KT
	Receiving Format	GPS,GLONASS,Galileo,BeiDou, QZSS and SBAS
	Frequency	GPS l. GLONASS l. BeiDou Bl. SBAS l. Galileo El
	Channels	72 Searching Channel
Sensitivity	Tracking	-167dBm
	Reacquisition	-160dBm
	Cold start	-148dBm
	Hot start	-1S6dBm
Accuracy	Position Horizontal	2.0 m CEP 2D RMS SBAS Enable (Typical Open Sky)
	Velocity	O. m/sec 95% (SA off)
	Timing	lus synchronized to GPS time
Acquisition Time	Cold Start	26s
	Warm start	25s
	Hot start	ls
Data and Update Rate	Support Rate	4800bps to 921600bps,Default 9600bps
	Data Level	DefaultUSBlevel
	Data Protocol	NMEA-0183 or UBX, Default NMEA-0183
	Single GNSS	1Hz-18Hz
	Concurrent GNSS	1Hz-10Hz,Default Hz
	FLASH	Build in 4M FLASH, You can free configure output data
Operational Limits	Altitude	50,000m Max
	Velocity	51Sm/sMax
	Acceleration	Less than4g
Power consumption	vcc	DC Voltage 3.6V-S.SV,Typical : 5.0V
	Current	Capture 70mA@S.OV
Mechanical Specifications	Dimension	©0=56mm*18mm
	Weight	lOOg
	Connector	USB 2 .0 Male interface
	Cable Length	2.0m
	Magnetic fixed	Magnetic bottom
Environment	Operating temp	-40·c +85·c

PIN Description

PIN	PIN NAME	I/O	Description
1	VCC	I	3.6 V -5.5V Supply Input, Typical : 5.0V
2	D-	O	USB D-
3	D+	I	USB D+
4	GND	G	Ground

1 Vcc
2 D-
3 D+
4 GND
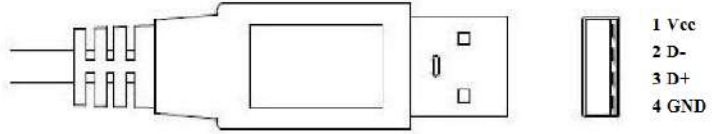
Contact Us

BioEnable Technologies Pvt. Ltd.
Corporate Office : PUNE
Office No 203, 2nd Level Cyber City Tower S-4,
Magarpatta City, Hadapsar, Pune- 411013 MH, India
https://aadhaar.bioenabletech.com/

T:+91 20 66813621
M: +91-9850871144
+91-8600102062
scanners@bioenabletech.com
www.bioenabletech.com

BIOENABLE
Identify - Automate - Track

Cost Effective and Easy-to-use Iris Recognition for Biometric Enrollment

Product Description

The CMITech BMT-20 is a binoculars-type iris biometrics imaging device that simultaneously and quickly captures highest quality iris biometric images. Easy to use, the system can be reliably positioned by the subject with minimal instructions, or by an operator with the aid of positioning feedback LEDs on the top of the imager's housing.

The patent-pending optical design of the BMT-20 features expanded depth of field and a very large tolerance for inter-pupillary distance, which provide superior tolerance for the positioning of all subjects' eyes. The BMT-20 is ideal for enrollment programs of all sizes, including those involving very young children.

Designed with the latest in optical and system control technology by one of the leaders in the industry, the BMT-20 is physically robust, highly reliable and durable. Meeting the elevated IP64 intrusion protection standard, this system is sealed against dust and other airborne particles to provide extended life in harsh environmental conditions.

Dedicated to building trust with end-users and partners alike, CMITech's products and technology are intended to improve processes, mechanisms and quality within all enrollment programs, large and small.

Key Features

Feature	User Advantages
• **State-of-the-art optical design**	The optical design includes utilizing highest quality optics and long internal optical path, which allows the BMT-20 to exceed industry standards for image quality as specified by ISO in the 19794-6 document. The standard is 4.0 lp/mm at 60% contrast ratio.
• **Single sensor design**	The proprietary and patented single sensor design interleaves left and right iris images for simultaneous capture. By utilizing only a single sensor, power consumption through the USB connection is minimized. This allows for optimized NIR illumination, resulting in the shortest exposure times possible, thereby minimizing any potential for motion blurring.
• **Long internal optical path**	The optical design is folded within the BMT-20 system, providing the longest optical path of any binoculars-type iris recognition imager. At 365 mm (+/- 15 mm), the long optical path provides much greater depth of field while minimizing optical distortions.

BMT-20

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Feature	User Advantages

• **Dedicated, on-board image processor supports very high speed, simultaneous capture of subjects irises**

In real-time coordination with the host PC software, the on-board image processor facilitates very high speed image capture, resulting in the fastest and most robust capture of both of the subject's irises at the same time. Typically, both irises are captured within one (1.0) second from the time that the subject places the system on his / her forehead.

• **Extended depth of field**

The BMT-20 is capable of imaging over a depth of 30 mm, making the system highly tolerant of a) subject positioning in the "Z" dimension and b) how deep the subject's eyes are relative to his / her forehead. The BMT-20 therefore offers highly robust iris imaging across the widest range of people, including small children.

• **Wide inter-pupillary distance tolerance**

The BMT-20 can capture iris image pairs from subjects with inter-pupillary distances as small as 4.0 cm, which is the minimum distance for a child of 5 years old. This makes the BMT-20 ideal for enrollment of all subjects within all national identity programs.

• **All solid-state design-no moving parts**

The superior optical design of the BMT-20 provides the widest inter-pupillary distance and depth of field without needing any moving components. Reliability and durability are optimized with an all solid-sate design.

• **Meets IP64-6 specifications for particulate intrusion prevention**

Meeting this very high standard means that the BMT-20 is highly resistant to contamination by very small airborne particles such as dust and dirt, such as would be commonly found in harsh non-conditioned enrollment environments. Stringently tested against this standard, this feature will provide extended life and high reliability. Other systems only meet the lesser IP54 specification.

• **Internal white LED**

Internal, white light emitting diodes (LEDs) are turned on just prior to imaging to constrict the subject's pupil for iris biometric image capture, providing ideally sized pupils for optimal iris biometric identification and authentication.

In dark rooms, the pupils of most subjects will dilate, shrinking the amount of iris area, which diminishes the effectiveness of the iris biometric image. By making the iris area larger, the iris biometric images are optimized.

• **Near-real time off-axis gaze detection**

Detection of subject gaze angle (i.e. whether the subject is looking directly ahead at the imager), which is the correct position of the eyes for optimal iris biometrics. If the subject is looking away, the system will automatically wait to capture a valid iris biometric image until the subject does look straight ahead.

• **Motion detection**

System calculates eye motion relative to the system, and waits until subject meets motion threshold (which is adjustable) in order to assure there is no adverse motion blurring of images.

BMT-20

Feature	User Advantages

- **Foldable side visors and forehead positioning rest**

Side visors and the forehead positioning aid on the BMT-20 combine to block bright light, such as sunlight, from entering the optical path of the system during imaging. In this way, the BMT-20 can be utilized outdoors and still deliver ideal iris biometrics imaging.

- **External color LED positioning indicators**

The BMT-20 can be operated in two modes: first by the subject himself after being giving short and easy to understand instructions. The system can also be operated by a trained operator, who will position the device based on external color LED's to center the system over the subject's eyes.

Red :   Device is too high
Blue :   Device is too low
Green : Device position is OK

- **Position sensor**

A position sensor detects if the system is upside down, preventing capture of images that can be reversed, left and right. This assures that all iris biometric samples are exactly as intended.

- **High temperature range**

The tested and certified operating temperature range of the BMT-20 is a full 0 to 50 degrees Celsius, making the system fully useable in non-conditioned environments in the hottest of summer days.

- **Powered by USB 2.0 cable**

The BMT-20 is fully powered by the USB 2.0 connection (maximum 500 mA at 5.0 V), which means that it operates without an independent power supply.

Technical Specifications

Dimensions	219 x 161 x 58 mm (8.6 x 6.3 x 2.3 inches)
Weight	680 g (1.5 lbs)
MTF / spatial resolution	Exceeds 4.0 lp/mm @ > 60% contrast
Pixel resolution	18.4 to 20 pixels/mm
Iris image pixel resolution	640 x 480 pixels
Image output	Meets ISO 19794-6
Capture distance (to forehead)	0 to 10mm (0.0 to 0.4 inches)
Optical path distance	350 to 380 mm
Depth of field	30 mm (1.2 inches)
Inter-pupillary distance covered	40 to 90mm (1.6 to 3.5 inches)
Time of capture	Around 1 second, typical, from time of head placement
IR illumination for iris imaging	Dual LED: wavelengths of 850 nm nominal (~ 60%); and 750 nm nominal (~ 40%)

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Technical Specifications, continued

Internal LED for pupil contraction	Broadband visible (white)
External LED indications for operator assisted positioning	Red: Device position is too high Blue: Device position is too low Green: Device position is OK White: Image capture in progress
Operating temperature range	0 to 50°C
Humidity	10 to 90% RH, non-condensing
Eye safety standard	IEC 62471, IEC 60825-1
Durability	IP64 intrusion prevention standard
Interface	USB 2.0 High Speed
Power	USB 2.0 (500 mA at 5V) No additional power required
PC hardware and OS requirements	Intel® Atom™ or above processor Windows XP 32 bit or above Linux OS version of SDK and drivers in progress
Other certifications	CE , FCC, USB-IF, India STQC, RoHS, WHQL

Please contact CMITech or your representative for more information on the CMIRIS Software Development Kit (SDK), and the CMITech Demo / Evaluation Package that includes all drivers.

CMITech Company, Ltd.

#604 Dongyeong-Venturestel, 5cha 199-32,
Anyang-dong, Anyang, Gyeonggi-do, 430-728 Korea
Tel   +82.70.8633.8277
Fax +82.31.441.9755
Contact sales@cmi-tech.com

CMITech America, Inc.

2033 Gateway Place, Suite 500
San Jose, CA 95110 USA
Tel   (1) 408 573-6930

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Canon

Specifications

General Specifications

Printing resolution (dpi)	4800* (horizontal) x 1200 (vertical) * Ink droplets can be placed with a pitch of 1/4800 inch at minimum.
Interface	**USB Port:** Hi-Speed USB * A computer that complies with Hi-Speed USB standard is required. Since the Hi-Speed USB interface is fully upwardly compatible with USB 1.1, it can be used at USB 1.1.
Print width	8 inches/203.2 mm (for Borderless Printing: 8.5 inches/216 mm)
Printable area	**Borderless printing:** Top/Bottom/Left/Right margin: 0.0 inch (0.0 mm) **Standard printing:** -Top margin: • 0.12 inches (3.0 mm) -Bottom margin: • 0.20 inches (5.0 mm) -Left margin: • Letter/Legal: 0.26 inches (6.4 mm) • Other sizes: 0.14 inches (3.4 mm) -Right margin: • Letter/Legal: 0.25 inches (6.3 mm) • Other sizes: 0.14 inches (3.4 mm)
Operating environment	**Temperature:** 41 to 95 °F (5 to 35 °C) **Humidity:** 10 to 90 % RH (no condensation) * The performance of the printer may be reduced under certain temperature and humidity conditions. Recommended conditions: **Temperature:** 59 to 86 °F (15 to 30 °C) **Humidity:** 10 to 80 % RH (no condensation) * For the temperature and humidity conditions of papers such as photo paper, refer to the paper's packaging or the supplied instructions.
Storage environment	**Temperature:** 32 to 104 °F (0 to 40 °C) **Humidity:** 5 to 95 % RH (no condensation)
Power supply	AC 100-240 V, 50/60 Hz (The supplied power cord is only for the country or region you purchased.)

Power consumption	**Printing (Copy):** 9 W or less
	Standby (minimum): 0.6 W or less *1*2
	OFF: 0.2 W or less *1
	*1 USB connection to PC
	*2 The wait time for standby cannot be changed.
External dimensions	Approx. 17.6 (W) x 13 (D) x 6.5 (H) inches
	Approx. 445 (W) x 330 (D) x 163 (H) mm
	* With the Paper Support and Paper Output Tray retracted.
Weight	Approx. 13.9 lb (Approx. 6.3 kg)
	* With the Print Head and ink tanks installed.
Print Head/Ink	Total 1472 nozzles (BK 320 nozzles, C/M/Y each 384 nozzles)

Copy Specifications

Multiple copy	max. 20 pages

Scan Specifications

Scanner driver	TWAIN 1.9 Specification, WIA
Maximum scanning size	A4/Letter, 8.5" x 11.7"/216 x 297 mm
Scanning resolution	**Optical resolution (horizontal x vertical) max:** 600 x 1200 dpi
	* Optical Resolution represents the maximum sampling rate based on ISO 14473.
Gradation (Input / Output)	**Gray:** 16 bit/8 bit
	Color: RGB each 16 bit/8 bit

Minimum System Requirements

Conform to the operating system's requirements when higher than those given here.

Operating System	Windows 10, Windows 8.1, Windows 7 SP1
	Note: Operation can only be guaranteed on a PC with pre-installed Windows 7 or later.
	.NET Framework 4.5.2 or 4.6 is required.
Hard Disk Space	3.1 GB
	Note: For bundled software installation.
	The necessary amount of hard disk space may be changed without notice.
Display	XGA 1024 x 768

- This printer cannot be used with the iOS, Android and Windows 10 S.
- Internet connection or CD-ROM drive is required to install the software.

- Internet connection is required to use Easy-WebPrint EX and all the user's guide.
- Easy-WebPrint EX: Internet Explorer 8, 9, 10 and 11* (for Windows) is required.
- Some functions may not be available with Windows Media Center.
- TWAIN driver (ScanGear) is based on the TWAIN specification V1.9 and requires the Data Source Manager comes with the operating system.

Information in this guide is subject to change without notice.

Canon

Specifications

General Specifications

Printing resolution (dpi)	4800* (horizontal) x 1200 (vertical) * Ink droplets can be placed with a pitch of 1/4800 inch at minimum.
Interface	**USB Port:** Hi-Speed USB * * A computer that complies with Hi-Speed USB standard is required. Since the Hi-Speed USB interface is fully upwardly compatible with USB 1.1, it can be used at USB 1.1.
Print width	8 inches/203.2 mm (for Borderless Printing: 8.5 inches/216 mm)
Operating environment	**Temperature:** 41 to 95 °F (5 to 35 °C) **Humidity:** 10 to 90 % RH (no condensation) * The performance of the printer may be reduced under certain temperature and humidity conditions. Recommended conditions: **Temperature:** 59 to 86 °F (15 to 30 °C) **Humidity:** 10 to 80 % RH (no condensation) * For the temperature and humidity conditions of papers such as photo paper, refer to the paper's packaging or the supplied instructions.
Storage environment	**Temperature:** 32 to 104 °F (0 to 40 °C) **Humidity:** 5 to 95 % RH (no condensation)
Power supply	AC 100-240 V, 50/60 Hz
Power consumption	**Printing (Copy):** Approx. 11 W **Standby (minimum):** Approx. 0.8 W *1*2 **OFF:** Approx. 0.4 W *1 *1 USB connection to PC *2 The wait time for standby cannot be changed.
External dimensions	Approx. 17.6 (W) x 13 (D) x 6.5 (H) inches Approx. 445 (W) x 330 (D) x 163 (H) mm * With the Paper Output Tray retracted.
Weight	Approx. 12.7 lb (Approx. 5.8 kg) * With the Print Head and ink tanks installed.
Print Head/Ink	Total 1472 nozzles (BK 320 nozzles, C/M/Y each 384 nozzles)

Copy Specifications

Multiple copy	max. 21 pages

Scan Specifications

Scanner driver	**Windows:** TWAIN 1.9 Specification, WIA **Mac OS:** ICA
Maximum scanning size	A4/Letter, 8.5" x 11.7"/216 x 297 mm
Scanning resolution	**Optical resolution (horizontal x vertical) max:** 600 x 1200 dpi *1 **Interpolated resolution max:** 19200 x 19200 dpi *2 *1 Optical Resolution represents the maximum sampling rate based on ISO 14473. *2 Increasing the scanning resolution will limit the maximum possible scanning area.
Gradation (Input / Output)	**Gray:** 16 bit/8 bit **Color:** 48 bit/24 bit (RGB each 16 bit/8 bit)

Minimum System Requirements

Conform to the operating system's requirements when higher than those given here.

Windows

Operating System	Windows 10, Windows 8.1*, Windows 8 Windows 7, Windows 7 SP1 Windows Vista SP2 Windows XP SP3 32-bit only * Windows 8.1 includes Windows 8.1 Update.
Hard Disk Space	3.1 GB Note: For bundled software installation. The necessary amount of hard disk space may be changed without notice.
Display	XGA 1024 x 768

Mac OS

Operating System	OS X v10.7.5 - OS X v10.11
Hard Disk Space	1.5 GB Note: For bundled software installation. The necessary amount of hard disk space may be changed without notice.
Display	XGA 1024 x 768

Other Supported OS

This product cannot be used with the iOS, Android, Windows RT, and Windows 10 Mobile.

- An internet connection is required to use Easy-WebPrint EX and all the Online Manual.
- Windows: Operation can only be guaranteed on a computer with Windows 10, Windows 8.1, Windows 8, Windows 7, Windows Vista or Windows XP pre-installed.
- Windows: A CD-ROM Drive or internet connection is required during software installation.
- Windows: Internet Explorer 8, 9, 10 or 11 is required to install Easy-WebPrint EX.
- Windows: Some functions may not be available with Windows Media Center.
- Windows: .NET Framework 4 or 4.5 must be installed to use the Windows software.
- Windows: XPS Essentials Pack is required to print on Windows XP.
- Windows: The TWAIN driver (ScanGear) is based on the TWAIN 1.9 Specification and requires the Data Source Manager bundled with the operating system.
- Mac OS: For Mac OS, an internet connection is required during software installation.

Information in this guide is subject to change without notice.

DACTYSCAN84C

GREEN BIT

BIOMETRIC SYSTEMS

THE DACTYSCAN84c IS A COMPACT AND FBI APP. F CERTIFIED 10-PRINT LIVESCAN IN FULL COMPLIANCE WITH THE "10-PRINT CAPTURE SCANNER & SOFTWARE USER GROUP REQUIREMENTS" SUITABLE FOR ALL APPLICATIONS IN NEED OF 4-SLAPS AND ROLLED ACQUISITION. MAIN APPLICATIONS ARE E-ID DOCUMENT ISSUING AND CRIMINAL IDENTIFICATION.

The DactyScan84c is a 3.2" x 3.0" 10-prints and rolls Livescan at 500 dpi certified by the FBI according to FBI IAFIS IQS App. F. as Livescan System as well as for Identification Flats.

FBI APP. F CERTIFIED

With up to 25 frames per second for 4-slaps and up to 27 frames per second for rolled prints acquisition the Dactyscan84c is unique in terms of acquisition speed. An ergonomic design combined with an easy-to-integrate SDK architecture makes the DactyScan84c the perfect choice for system integrators and solution providers.

10-PRINTS AND ROLLED ACQUISITION

A user interface based on 12 LEDs facilitates the acquisition procedure by indicating the fingerprint(s) to be acquired and providing quality feedback thus eliminating the necessity for skilled operators thus increasing workflow efficiency.

HIGH SPEED ACQUISITION: 25 FPS FOR 4-SLAPS 27 FPS FOR ROLLS

High reliability and low maintenance costs since the Dactyscan84c is not using silicon pads/coatings or a heated platen to overcome image quality issues due to halo or skin conditions.

LINUX OS COMPATIBLE

The Dactyscan84c is available as OEM module as well for all system integrators looking for a compact 10-print Livescan to be physically integrated in embedded solutions.

MULTISCAN SDK FEATURES

AUTOMATIC SEQUENCE CHECKING:
guarantees a correct scanning sequence.

ROLLED FINGERPRINT CAPTURING:
display in real-time, self-adaptive to rolling speed
and directions, seamless composite image
generation, automatic stop detection.

SEGMENTATION:
automatic segmentation of four- slap and two thumbs
fingerprint images in single flat images.

CORRECT POSITION AND SLAP COMPLETENESS
CHECK:
Checks for correct finger placing; checks for
incomplete slaps due to missing fingers.

SLIDE DETECTION FOR FLAT PRINTS:
detects deformations of fingerprints due to sliding
during acquisition.

STANDARD OUTPUT FORMAT:
Creation of "ANSI/NIST-ITL-1-2007" type 1, 2, 4
and 14 records - EFTS71 output format support.

ELIMINATION OF LATENT PRINTS:
elimination of latent prints originated from recent scans.

AUTOMATIC ACQUISITION START AND STOP:
sensing of finger placement and automatic acquisition
of the image with the highest quality. Quality thresholds
for images can be set through the Multiscan SDK.

HALO ELIMINATION:
elimination of halo due to moist fingerprints during
acquisition.

IMAGE QUALITY CHECKING:
dynamic estimation of fingerprint image quality
during scanning process; NISTIR7151 quality check.

ANTI-FAKE "LITE" :
distinguishes between real human finger patterns and
other surfaces with relief structure (e.g. gloves, tissue).

IMAGE COMPRESSION:
FBI certified WSQ compression; further compression
formats available are jpeg and jpeg2000.

FINGER ALLOCATION CHECK:
checks presence of finger core, and basic/ distal flows.

TECHNICAL DATA

FINGERPRINT SCANNER	Plain four fingers up to 3,2" x 3,0" - Two plain thumbs up to 3,2" x 3,0" Flat finger up to 3,2" x 3,0" - Rolled finger up to 1,6" x 1,6"
INTERFACE/POWER SUPPLY	USB 2.0
QUALITY AND FORMATS	FBI IAFIS IQS CJIS-RS-0010 (V7) Appendix F compliance ANSI/NIST-ITL 1-2007 ISO/IEC FCD 19794-4 ANSI/NIST-ITL 1-2000 ANSI/NIST-ITL 1-2000 Interpol Implementation
TEMPERATURE	Storage: from -20°C to +60°C - Operating: from +0°C to +50°C
HUMIDITY	From 10 to 90% (non-condensing)
DIMENSIONS	148 x 152 x 148 mm
WEIGHT	1,5 Kg
SUPPORTED OPERATING SYSTEMS	Microsoft Windows XP, Vista and 7 in 32-bit and 64-bit configuration Linux Ubuntu and Fedora distributions (tested with kernel 2.6.35) in 32-bit and 64-bit configuration

IPSPL PWC-09 HD 1080P Conference Camera

Plug & Play No drivers required

KEY SPECIFICATIONS

- High quality with exquisite appearance.
- High definition with 1080P and true color images.
- Up & down 30 degrees rotatable, you can adjust the angle as you like.
- Optical lens, high precision and no distorted pictures.
- Auto focus, don't need to adjust the lens.
- Designed for both laptop and desktop.
- Compatible with USB 2.0.
- Auto white balance, auto color correction.
- Support for Windows 2000/XP/7/8/10/Vista 32bit.
- Supports various video meeting softwares.

QUICK DETAILS

- Certification: CE
- Max. Resolution:1920x1080
- Auto Focus: YES
- Product Warranty: 3 Years
- Image Sensor: CMOS
- Interface Type: USB
- Brand Name: IPSPL
- Model Number: PWC-09
- Product Name: HD PC Webcam USB
- Type: HD 1080P Webcam
- Color: Black
- UIDAI Approved Camera

Capture Type	Plain live capture
Image Quality	Full Frontal (0x01)
Camera's Image Resolution (Pixels)	1920 x 1080
Capture mode	Manual Capture with Auto Focus, Auto Lighting Adjustment
Native Sensor Resolution	2.1
Camera Connectivity	High Speed USB 2.0
Camera Lens	Fixed, SLR
Camera Power Supply	Through USB
Operating Temperature Range (Degree C)	0 — 50
Operating Humidity (%RH)	10-90%
Durability	Shock Resistant
Camera Operating System Compatibility	Linux / Windows