All-in-One PC for POS, POI, Kiosk Applications

The Shuttle XPC all-in-one X50V7L is the latest addition to the X50 Series and is powered by Intel's Celeron 4205U processor. The new Whiskey Lake-U processor architecture helps improve on power consumption and computing power. Thanks to its passive cooling, the system is virtually noiseless, maintenance-free and approved for 24/7 nonstop operation. Particularly suitable for vertical applications is the arrangement of connectors at the bottom and the IP54 compliant front panel which is dust-protected and protected from splashing of water.

XPC all-in-one Barebone
X50V7L Black
Without WLAN module, but with WLAN antennas

Images for illustration purposes only.

15.6" Touchscreen   *Nonstop operating*   *Fanless cooling*

Front protected: dust & water   *Up to four COM ports*   *Supports Windows 10 & Linux (64-bit)*

Full HD Webcam   *2x USB 3.0 4x USB 2.0*   *Watchdog Hardware*

Feature Highlights

All-in-One Design	• XPC all-in-one with touchscreen • Small: 391 x 327 x 42 mm (WHL) • Stand can also be used as a handle • 100 mm VESA mount capable • IP54 compliant front panel • Approved for 24/7 nonstop operation
Display & Graphics	• 39.6 cm (15.6") resistive touchscreen with a 1366 x 768 resolution • Integrated Intel UHD 610 graphics • HDMI 1.4a + D-Sub/VGA Video output
CPU & Cooling	• Intel Celeron 4205U, 1.8 GHz, 15 W TDP • Fanless heatpipe cooling system
Storage (not included)	• Supports max. 2x 32 GB DDR4-2133 SO-DIMM • Supports one 2.5" SATA hard disk / SSD • Supports one M.2-2280 SSD (SATA / PCIe) • Supports internal USB stick (USB 2.0, type A)
Operating System	• Operating system is not included • Supports Windows 10 (64-bit) & Linux (64-bit)
Connectivity	• HDMI 1.4a, D-Sub/VGA • 4x USB 3.2 Gen 1 (5 Gbps), 2x USB 2.0, internal: 1x USB 2.0 Type A • Microphone input, headphones output • Gigabit LAN • Optional: 4x RS232, 1x LPT, 1x RJ11
Built-in	• 2.0 Megapixel HD webcam • 2x 2 W speakers • Electret Condenser Microphone
Power Supply	• External fanless power adapter, 65 W
Warranty	• 24 months Bring-in Service

Shuttle Product	Processor Model	Cores / Threads	Clock / Turbo	L3-Cache	Intel Graphics	WLAN	UPC Code
X50V7 Black	**Celeron 4205U**	2 / 2	1.8 / – GHz	2 MB	UHD 610	Yes	887993002149
X50V7L Black						–	887993003559
X50V7U3 Black	Core i3-8145U	2 / 4	2.1 / 3.9 GHz	3 MB	UHD 620	Yes	887993002163
X50V7U3L Black						–	887993003566

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Shuttle XPC all-in-one X50V7L – Overview

1	Touchscreen LCD display	**10**	Hole with Power Button	**19**	DC-input for Power Adapter
2	Webcam	**11**	SD Card Reader	**20**	2x USB 2.0
3	Microphone	**12**	2x USB 3.2 Gen 1	**21**	RJ45 Gigabit LAN
4	Power on LED	**13**	Clear CMOS Button	**22**	2x USB 3.2 Gen 1
5	Hard disk LED	**14**	Stand (handle)	**23**	HDMI Video Output
6	Stereo speakers	**15**	Ventilation holes	**24**	Audio Line-out (headphones)
7	Stylus with holder	**16**	Kensington lock	**25**	Microphone Input
8	Power-on button	**17**	D-Sub/VGA Video Output		
9	2x Perforation for optional WLAN/LTE antenna	**18**	Vesa Mount 100x100mm		

Shuttle XPC all-in-one X50V7L – Mainboard

Microphone in (MIC1)
Webcam conn. (CON9)
Onboard power button (SW2)
Power button connector (SW3)
Processor
5-wire touch screen connector (JP8)
SD card reader
SO-DIMM memory slots (max. 2x 32 GB DDR4)
USB 3.0 (= USB 3.2 Gen 1)
USB 3.0 (= USB 3.2 Gen 1)
Onboard Clear CMOS button (SW1)

M.2-2280 SSD-Slot
USB 2.0 (5) for onboard Type-A connector
M.2-2230 slot
SATA 6 Gbps for 2.5" drive
Debug port (DBG1)
Connector for optional COM/LPT adapter POS01 or PCL71 (CON3)
CMOS battery
LED connector (LED1)
eDP connector (EDP1)
Power connector for the accessory POS01 (CON6)
Speakers connector (SPK1)
D-Sub VGA port

DC-Input · USB 2.0 · USB 2.0 · RJ45 LAN · USB 3.0 · USB 3.0 · HDMI · Line-out · Mic-in

Installable Components:
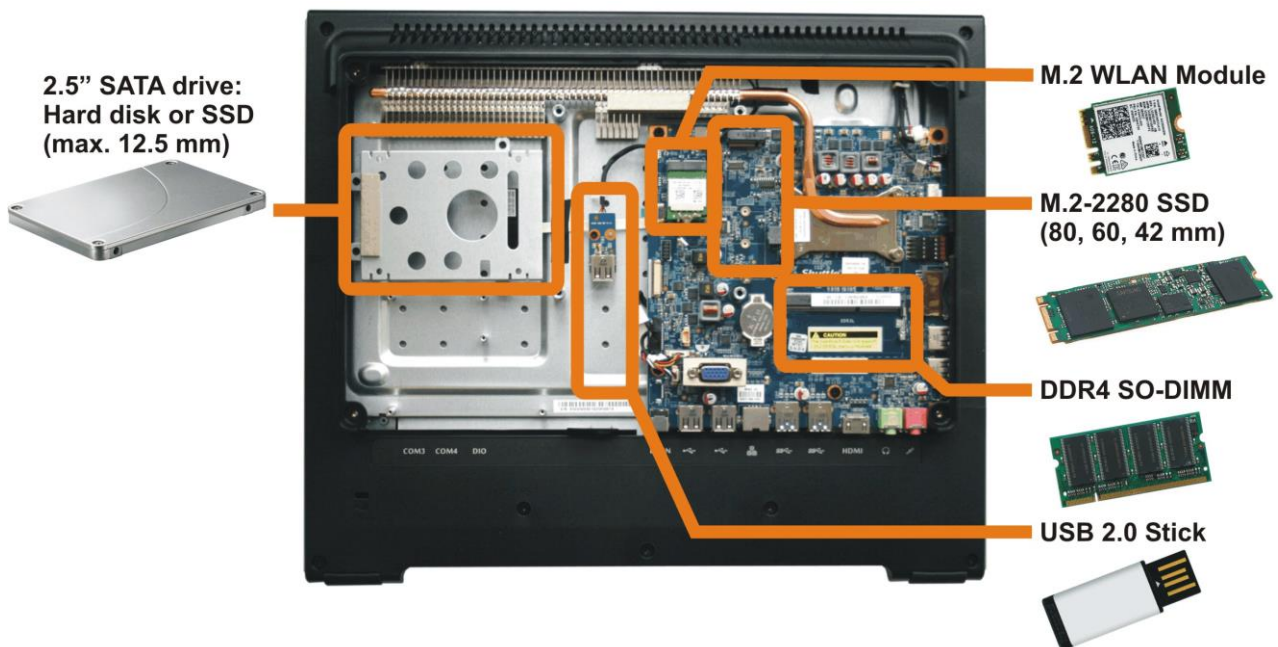
2.5" SATA drive: Hard disk or SSD (max. 12.5 mm)

M.2 WLAN Module
M.2-2280 SSD (80, 60, 42 mm)
DDR4 SO-DIMM
USB 2.0 Stick

Shuttle XPC all-in-one X50V7L – Special Features

All applications at your fingertips

The innovative touchscreen technology delivers the simplest operation possible and makes the screen the centre of action. Its high-quality design lets you control the whole range of multimedia - music, movies, video playback and web browsers start by just touching the screen.

All-in-One PC

Your complete PC system with many components already built in comes in just one single device! This includes the webcam, microphone, mainboard, display, touchscreen input interface, wireless LAN module and speakers. It helps you save space, looks simply stylish and reduces cable clutter.

24/7 nonstop-operation

The Shuttle XPC all-in-one X50V7L is officially approved for 24/7 permanent operation. Thanks to its low power consumption and completely passive cooling, this PC runs highly reliably making it perfectly suitable for digital signage and POI/POS applications.

Conditions for permanent use:

- Free circulation of air amongst the PC must be guaranteed
- Ventilation holes must be kept clear
- If a hard disk is installed, this must also be approved for permanent operation by its manufacturer.

Fanless and quiet

The Shuttle XPC all-in-one X50V7L uses a passive thermal module with heatpipes to lead heat out of the case quickly and evenly. The unique fanless design makes it perfect to be used in noise-sensitive environments such as living rooms, hospitals, libraries etc. As an additional benefit, fanless cases rarely gather dust on the inside and stay cleaner than others. So it's not only quiet and low in energy use, but also virtually maintenance-free.

Connects to two external Full HD displays

The Shuttle XPC all-in-one X50V7L features two video outputs: One analog D-Sub/VGA connector and one HDMI connector. Two external Full HD displays can be connected in extended mode. Now add the built-in display of the X50V7L and there are three displays showing different content.

Protection Class IP54

The front panel of the Shuttle XPC all-in-one X50V7L is dust-protected and protected from splashing of water according to IP protection class 54. Consequently, this All-in-One PC can be used for those indoor applications, where the touchscreen may be exposed to humidity and occasional splashing of water. This is particularly welcome in restaurants, laboratories, production or other places.

Supports high-performance M.2 SSDs

The M.2 slot (type 2280) is equipped with 4X PCI-Express v3.0 lanes and SATA 3.0 interface. Modern M.2 SSDs with PCI Express interface (PCIe) and NVMe provide a significant higher bandwidth as those using the older SATA standard. Type 2280 means it supports the usual M.2 cards with a width of 22 mm and a length of 80 mm.


Optimised Cable Management

Most of the connectors are now located on the back panel facing down. This leads to an effective cable management making for a clean, tidy appearance on the desk.
On the left side sit those connectors which need to be accessed from the front: the card reader and two USB ports.

PCL71   POS01

Optional COM, LPT, DIO ports

Shuttle offers two optional accessories in order to add legacy ports to the Shuttle XPC all-in-one X50V7L. While the Shuttle XPC Accessory **PCL71** adds two serial COM ports and one parallel LPT port, the **POS01** adds two more COM ports (with RJ45 connector) and one Digital I/O 12 V / 24 V (RJ11) for a cash drawer, for example. COM ports are still common in industrial automation systems, scientific analysis, POS systems and other industrial applications.
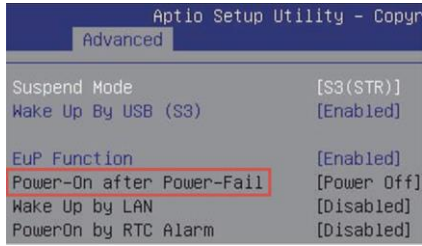
Power on after Power fail

The BIOS setup provides a "Power-On after Power Fail" function that can be found under "Power Management Configuration" where the PC's behaviour after power failure can be determined.

Hidden Power Button

<u>Left photo:</u> The power button can be deactivated to prevent unauthorised use. Just disconnect the appropriate cable from its header inside the chassis (see red circle).
<u>Right photo:</u> The power button can still be pressed using a straightened paper clip.
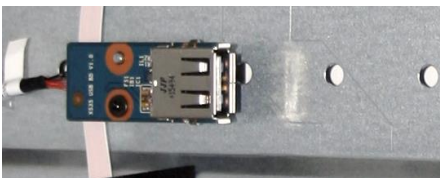
Internal USB Slot

The Shuttle XPC all-in-one X50V7L features an internal USB 2.0 connector (type A) for a USB stick of max. 9 cm in length. This onboard connector support USB sticks (such as flash memory, WLAN or LTE/4G) or other USB devices like a radio module for home automation or RFID.

Perforations for two optional external antennas

Der Shuttle XPC all-in-one X50V7L features two 7.5 mm perforations for the installation of two external WLAN or LTE/4G antennas.
Note: the WLAN/LTE module is not included with X50V7L

VESA mount

The stand on the rear can easily be removed to unveil four VESA mounting screw holes that can be used for mounting arms and other mounting devices from a variety of manufacturers.

Stylus for the touchscreen

The Shuttle XPC all-in-one X50V7L is equipped with a 5-wire resistive touchscreen for simple operation by finger (even with gloves) or stylus. The stylus comes supplied as standard and sits in an opening located on the top of the chassis. Using the stylus results in a smoother and more precise input than just using a finger.

Kensington Lock

This is a small, metal-reinforced hole as part of an anti-theft system. (Lock and cable not included.)

Carrying handle

The practical stand can be pulled upwards so that it can also be used as a handle making the Shuttle XPC all-in-one X50V7L easy to carry.

Shuttle XPC all-in-one X50V7L − Range of Applications

Digital Signage
Visual advertising,
Info Terminal

POS
Checkout system in Retail
Stores, Restaurants, Hotels

POS Radio
Playing advertising
and music

Call System
e.g. for nurses (hospital)
or security personnel
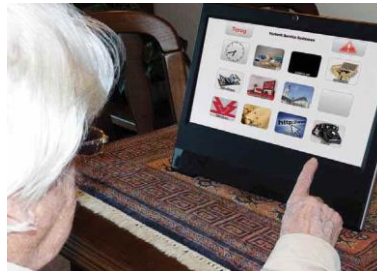

Smart Home Control
Surveillance,
Home Automation

Device Control
e.g. for copy
machines

Device Control
e.g. for health services or
fitness equipment

Communication Device
e.g. for the elderly

Visualisation
e.g. for industrial production
machines

On a boat
e.g. for navigation and
entertainment

Data Collector
e.g. Recording of
working hours

Entertainment
e.g. at the dentist or
in the waiting room

Shuttle XPC all-in-one X50V7L – Specifications

Fanless and silent	Passive heatpipe cooling, no fan noise at all Perfect to be used in noise-sensitive environments Fanless, dust-free and thus virtually maintenance-free
24/7 nonstop operation	This device is approved for 24/7 permanent operation. Requirements: - Free circulation of air amongst the PC must be guaranteed. - Ventilation holes must be kept clear. - If a hard disk is installed, this must also be approved for permanent operation by its manufacturer.
IP54 protected	The front panel is dust-protected and protected from splashing of water according to protection class IP54.
Chassis	Colour: black Dimensions: 391 x 327 x 42 mm (W x H x D) 100mm VESA mount capable Mounting hole for Kensington lock Weight: 3.6 kg net, 4.8 kg gross
Operating System	This system comes without operating system. It is compatible with: - Windows 10 (64-bit) - Linux (64-bit)
Touchscreen	Touchscreen function supports fingertip input Resistive 5-wire single-touch technology Stylus for the built-in touchscreen
15.6" Display	39.6 cm / 15.6" LCD display, ratio: 16:9 widescreen panel Resolution: 1366 x 768 = 1.05 Megapixel Backlight unit: High power LED, Luminance: 220 cd/sqm Glass thickness: 0.5 mm
Processor	Model: Intel Celeron 4205U (ULV) System-on-a-chip architecture (SoC) with integrated memory and graphics controller: no chipset required FCBGA1528 package - directly soldered onto the mainboard Code name: Whiskey Lake U (8th Generation Intel Core) Cores / Threads: 2 / 2 Clock rate: 1.8 GHz L1/L2/L3 Cache: 128 kB / 512 kB / 2048 kB TDP wattage: 15 W maximum Manufacturing process: 3rd generation enhanced 14nm++ Maximum Tjunction Temperature: 100 °C Supports 64-bit, VT-x (EPT), VT-d, Enhanced SpeedStep, NX bit, AES-NI, SSE 4.1/4.2

Integrated Graphics	Intel UHD Graphics 610 GPU clock frequency: 300~900 MHz Execution Units (EUs): 12 Supports DirectX 12 Supports full H264, H265 8/10 bit, VP8/9, VC-1, AVC hardware decoding Supports Quick Sync Video and Clear Video HD technology
Up to three displays	Two video ports support two additional independent screens: 1) HDMI 1.4a supports 1920 x 1080 @ 60 Hz or 3840 x 2160 @ 30 Hz 2) VGA / D-Sub analog video supports 1920 x 1080 @ 60 Hz Special conditions for operation in Multi-Monitor mode: 1) Clone mode: all displays show the same content at 1366 x 768 resolution 2) Extended mode: all displays show different content
BIOS	AMI BIOS in 8 MByte EEPROM with SPI interface Supports Power fail resume / always on Supports Wake-on-LAN (WOL) from S3, S4, S5 ACPI states Supports hardware monitoring and watch dog functionality Supports Firmware TPM v2.0 functionality
Memory	2x SO-DIMM slot with 260 pins Supports DDR4-2133 (PC4-17000) SDRAM at 1.2 V Supports Dual Channel mode Supports a maximum of 32 GB per DIMM, maximum total size: 64 GB Supports two unbuffered DIMM modules (no ECC or registered)
Storage	Supports one SATA hard disk or one SATA SSD drive in 6.35 cm /2.5" format The SATA 3.0 interface supports up to 600 MB/s data transfer speed (6 Gbit/s). Supports one drive with up to 12.5 mm in height
M.2-2280 Slot	The M.2 2280 BM slot provides the following interfaces: - PCI-Express Gen. 3.0 X4 with up to 32 Gbps Data Transfer Speed - SATA v3.0 (max. 6 Gbps) It supports M.2 cards with a width of 22 mm and a length of 80 mm (type 2280). Supports M.2 SATA SSDs (with B+M key) and M.2 PCIe SSDs (with M key)
Card Reader	Integrated card reader supports SD, SDHC and SDXC memory flash cards
Webcam	Integrated 2.0 Megapixel (1600 x 1200) HD webcam
Microphone Speakers	Front panel with integrated Electret Condenser Microphone and 2x 2W speakers
Audio	Realtek ALC269 Audio Codec Two analog audio connectors (3.5 mm) on the bottom side: 1) Line-out (headphones) 2) Microphone input Digital Audio is supported via HDMI.

Wired Network	Intel i211 Ethernet Controller with MAC, PHY and PCIe interface Supports 10 / 100 / 1.000 MBit/s operation Supports WAKE ON LAN (WOL) from S3, S4 modes Supports network boot by Preboot eXecution Environment (PXE)
Prepared for WLAN (optional)	This product comes with two pre-mounted internal WLAN antennas and has a M.2-2230-E slot for an optional M.2-WLAN card. The case also features two 6.5 mm perforations for the installation of external WLAN antennas, which must be pruchased separately.
Front LEDs	Power LED (blue) Hard disk LED (orange)
Connectors left side	Power button 2x USB 3.2 Gen 1 (5 Gbps) SD card reader Hole with power button Hole with Clear CMOS button Perforation for optional WLAN/LTE antenna (diameter: 6.5 mm)
Connectors bottom side	HDMI 1.4a (supports digital video and digital audio) 2x USB 3.2 Gen 1 (5 Gbps) 2x USB 2.0 Gigabit Network (LAN, RJ45) Audio Line-out / headphones (3.5 mm jack) Microphone input (3.5 mm jack) DC input for external power adapter (5.5 / 2.5 mm) Perforation for optional WLAN/LTE antenna (diameter: 6.5 mm) Optional: 2x COM/serial (RJ45), DIO (RJ11) for cash drawer (accessory POS01)
Connectors rear side	VGA connector (D-Sub 15 pol., analog video) Optional: 2x COM/serial (D-Sub), 1x LPT/parallel (accessory: PCL71 or POS01)
Connectors onboard	Internal USB 2.0 type A connector for a USB stick Serial ATA (6 Gbps) Serial ATA power connector 3x USB 2.0 header (all occupied) eDP connector (Embedded DisplayPort) - occupied by the display Connector for optional COM/LPT adapter POS01 or PCL71
Power Adapter	External 65 W power adapter (fanless) Input: 100~240 V AC, 50/60 Hz, max. 1.6 A Output: 19 V DC, max. 3.42 A, max. 65 W DC Connector: 5.5 / 2.5 mm (outer/inner diameter) Note: The X50V7L also supports a 60 W power adapter with 12 V DC output voltage
DC Input	DC Input Connector: 5.5 / 2.5 mm (outer/inner diameter) The DC-input of the computer supports an external power source with either 12V±5% or 19V±5%.

Included Accessories	Quick Guide Driver DVD External Power Adapter (65W / 19V) with Power cord Serial ATA cable for the 2.5" drive Screws
Optional Accessories	<u>PCL71:</u> COM / LPT adapter: - 1x Parallel (25p D-Sub) - 2x Serial RS232 (9p D-Sub) supports 0 / 5 / 12V <u>POS01:</u> COM / LPT adapter: - 1x Parallel (25p D-Sub) - 2x Serial RS232 (9p D-Sub) supports 0 / 5 / 12V - 2x Serial RS232 (8p RJ45) - 1x DIO/RJ11 connector for cash drawer supports 12 / 24V <u>PF55:</u> Carrying bag
Environ-mental criteria	Operating temperature: 0~40 °C Humidity: 10~90 %, non-condensing
Certification and Compliance	EMI: CE, FCC, BSMI Safety: CB, BSMI, ETL Other compliances: RoHS, ErP Lot6, Energy Star v5.0
Conformity	This device is classed as a technical information equipment (ITE) in class B and is intended for use in living room and office. The CE-mark approves the conformity by the EU directives: (1) 2014/30/EU relating to electromagnetic compatibility (EMC), (2) 2014/35/EU relating to Electrical Equipment designed for use within certain voltage limits (LVD), (3) 2009/125/EC relating to ecodesign requirements for energy-related products (ErP), (4) 2014/53/EU Radio Equipment Directive (RED)

Shuttle XPC all-in-one X50 Series
Product Comparison

Model	X50V4	X50V5 Series	X50V6 Series	X50V7(L) Series
Processor	Intel ULV processor Code name: Haswell-U 22 nm, 15 W TDP	Intel ULV processor Code name: Skylake-U 14 nm, 15 W TDP	Intel ULV processor Code name: Kaby Lake-U 14 nm, 15 W TDP	Intel ULV processor Code name: Whiskey Lake-U 14 nm, 15 W TDP
SKUs	**X50V4**: Celeron 2957U	**X50V5**: Celeron 3855U **X50V5U3**: Core i3-6100U	**X50V6**: Celeron 3865U **X50V6U3**: Core i3-7100U	**X50V7(L)**: Celeron 4205U **X50V7U3(L)**: Core i3-8145U
Operation System Support	Windows 7 – 64-bit Windows 8.1 – 64-bit Windows 10 – 64-bit Linux – 64-bit	Windows 7 – 64-bit Windows 8.1 – 64-bit Windows 10 – 64-bit Linux – 64-bit	Windows 10 – 64-bit Linux – 64-bit	Windows 10 – 64-bit Linux – 64-bit
SSD Card Support	mSATA	M.2-2280BM (PCIe x4, SATA)	M.2-2280BM (PCIe x4, SATA)	M.2-2280BM (PCIe x4, SATA)
Memory Support	Max. 1x 8 GB DDR3L-1600 204-pin SO-DIMM	Max. 1x 16 GB DDR3L-1600 204-pin SO-DIMM	Max. 2x 16 GB DDR4-2133 260-pin SO-DIMM	Max. 2x 32 GB DDR4-2133 (Celeron) DDR4-2400 (Core i3) 260-pin SO-DIMM
USB	2x USB 3.2 Gen 1 4x USB 2.0 1x USB 2.0 onboard	2x USB 3.2 Gen 1 4x USB 2.0 1x USB 2.0 onboard	2x USB 3.2 Gen 1 4x USB 2.0 1x USB 2.0 onboard	4x USB 3.2 Gen 1 2x USB 2.0 1x USB 2.0 onboard
Wired LAN	Realtek RTL8411 Gigabit LAN	Intel i219LM Gigabit LAN	Intel i211 Gigabit LAN	Intel i211 Gigabit LAN
Wireless LAN	Realtek RTL8188EE IEEE 802.11n Internal antenna	Realtek RTL8821AE IEEE 802.11ac + BT 2x internal antenna	Realtek RTL8188EE IEEE 802.11n Internal antenna	Realtek RTL8821CE-CG IEEE 802.11ac, BT 4.2 (not for L models *) 2x internal antenna
Perforation for optional antenna	1x 9 mm for TV/SAT	1x 9 mm for TV/SAT	1x 9 mm for TV/SAT	2x 6.3 mm for WLAN/LTE
Power adapter	65 W / 19 V	65 W / 19 V (supports 60 W / 12 V)	65 W / 19 V (supports 60 W / 12 V)	65 W / 19 V (supports 60 W / 12 V)
TPM	-	Firmware TPM v2.0 (since 2016-09-13)	Firmware TPM v2.0	Firmware TPM v2.0

*) no WLAN module is included in the X50V7**L** and X50V7U3**L** models.

Shuttle XPC all-in-one – Comparison

Touch Display	Model	Processor	Colour	UPC Code
11.6" 1366 x 768 pixels Capacitive	P20U	Intel Celeron 3865U	Black	887993001487
15.6" 1366 x 768 pixels Resistive	X50V7(L)	Intel Celeron 4205U	Black	887993002149 887993003559
			White	887993002156
	X50V7U3(L)	Intel Core i3-8145U	Black	887993002163 887993003566
			White	887993002170
15.6" 1920 x 1080 pixels Capacitive	P51U	Intel Celeron 4205U	Black	887993001791
	P51U3	Intel Core i3-8145U	Black	887993002187
19.5" 1600 x 900 pixels Capacitive	P90U	Intel Celeron 3865U	Black	887993001661
			White	887993001890
	P90U3	Intel Core i3-7100U	Black	887993001685
			White	887993001906
	P90U5	Intel Core i5-7200U	Black	887993001678

P20U (11.6")

X50V7 (15.6")

P51U (15.6")

P90U (19.5")

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