Robust Slim-PC for vertical market applications

1.3L Slim PC System
D 8100XA

The D 8100XA is a slim, but powerful Slim-PC with Intel Core i3 desktop processor. Besides its high build quality, the D 8100XA that barely measures 4.3 centimetres in height, also convinces with its system performance and versatility. Its stable and reliable operation make it ideal for use with professional applications such as POS, POI, gambling machines, office, healthcare and industry. Thanks to its robust metal chassis and a wide ambient temperature range from 0 to 50 degrees, the D 8100XA is an industry-grade signage platform perfectly suitable for permanent operation.

Images are for illustration only

Feature Highlights

Slim Design	• Slim 1.3 litre metal chassis, black • 190 x 165 x 43 mm (LWH) • Operating temperature: 0~45°C • Including VESA mount (75/100 mm)
Operating System	• The operating system is not included • Compatible with Windows 7 / 8.1, Linux
Processor	• Intel Core i3-4160, 3.6 GHz, 54W • Dual Core, 4 Threads, 3 MB L3-Cache • Socket LGA 1150, Codename "Haswell" • Heatpipe cooling system with two fans
Chipset	• Intel H81 Express Chipset
Memory	• 4 GB DDR3 SO-DIMM (max. 2x 8 GB)
Graphics	• Integrated Intel HD graphics, 4K support (features depends on processor) • 1x HDMI, 2x DisplayPort, 1x D-Sub/VGA
Storage Bays	• 120 GB SSD drive, 6.4 cm / 2.5", SATA • Two Mini expansion slots: 1x Full-Size (supports mSATA 6 Gb/s) 1x Half-Size PCIe for optional WLAN WLN-S
Other Connectors	• SD card reader, 2x Audio (Line out, mic) • 2x USB 3.0 (rear), 6x USB 2.0 (4x front) • 2x Gigabit LAN (RJ45), supports WOL, PXE • 1x COM port (RS232/RS422/RS485) • Connector for external power button • "Always on" Jumper onboard
Power Supply	• External 90W fanless power adapter
Applications	• Digital Signage, POS, control device, etc.

Operating temperature 45°C

intel inside CORE i3 intel inside CORE i5 intel inside CORE i7

4K 2160p
ULTRA HD
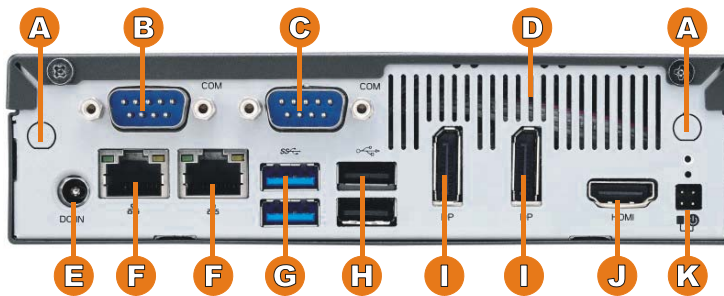3840 x 2160

HDMI HIGH DEFINITION MULTIMEDIA INTERFACE DP

4 046047 102761

Shuttle Order No: PIC-DS81001

Shuttle Slim PC System D 8100XA – Front and Back Panel

Front view

1	Microphone input
2	Headphone output
3	Power LED
4	Hard disk LED
5	Power Button
6	SD Card Reader
7	4x USB 2.0

Rear view

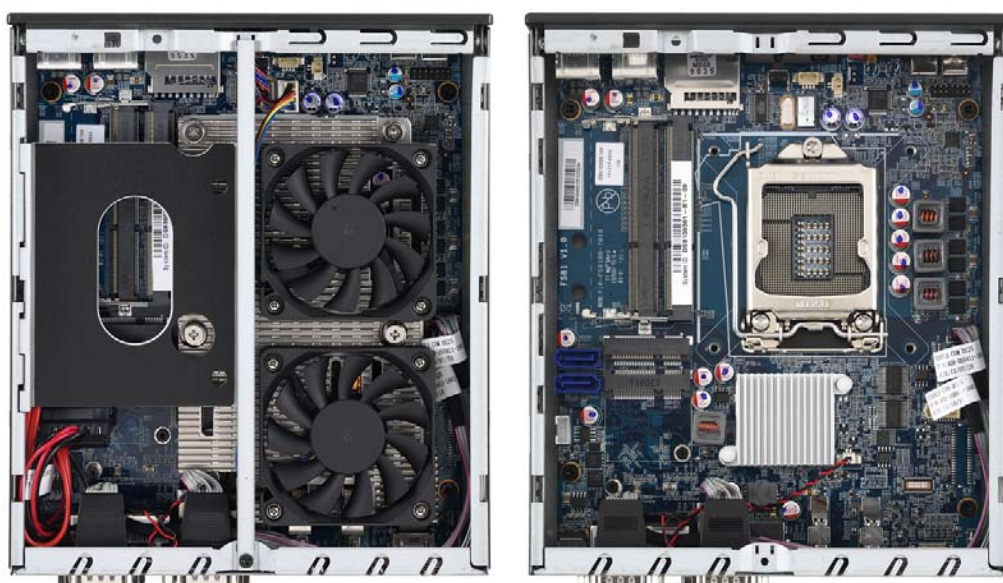| A	2x WLAN perforation
B	RS232/RS422/RS485
C	D-Sub / VGA
D	Ventilation grille
E	DC power input
F	2x RJ45 Gigabit LAN
G	2x USB 3.0
H	2x USB 2.0
I	2x DisplayPort (DP) video output
J	HDMI video output
K	Connector for external power button, Clear CMOS and 5V DC voltage (four pins, 2.54 mm pitch)
L	2x holes for Kensigton Lock
M	VESA mount (two parts)

Right side
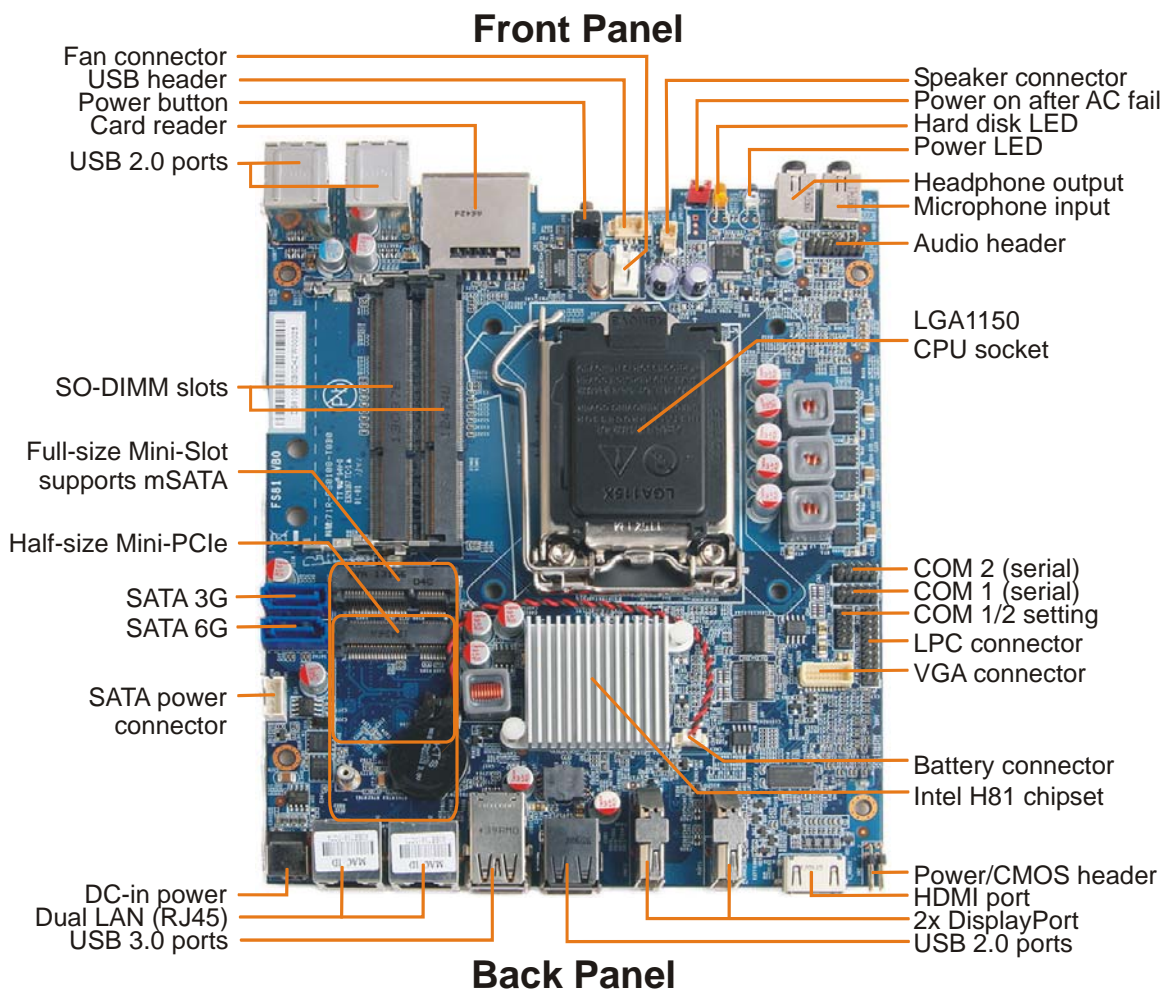

Left side

COM port Pin 9 Configuration
Pin 9 is a multi-functional signal. Based on jumper configuration on the mainboard, it can be configured as Ring Indicator (RI) or external power supply with either 5V or 12V voltage level (each COM port separately).
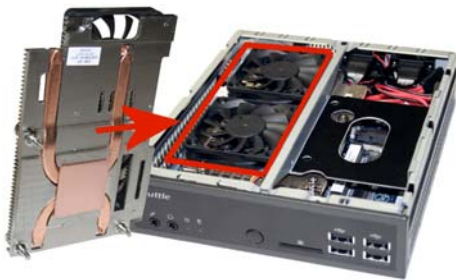
Shuttle Slim PC System D 8100XA – Mainboard

Front Panel

Fan connector
USB header
Power button
Card reader
USB 2.0 ports

Speaker connector
Power on after AC fail
Hard disk LED
Power LED
Headphone output
Microphone input
Audio header

SO-DIMM slots

LGA1150
CPU socket

Full-size Mini-Slot
supports mSATA

Half-size Mini-PCIe

SATA 3G
SATA 6G

COM 2 (serial)
COM 1 (serial)
COM 1/2 setting
LPC connector
VGA connector

SATA power
connector

Battery connector
Intel H81 chipset

DC-in power
Dual LAN (RJ45)
USB 3.0 ports

Power/CMOS header
HDMI port
2x DisplayPort
USB 2.0 ports

Back Panel

Top view without chassis cover (with and without drive tray and cooling system)

Shuttle Slim-PC System D 8100XA – Product Features

1.3 L

190 mm

43 mm

165 mm

Robust, stylish and particularly small

You should have held it in your own hands to see how small it actually is. Barely measuring a volume of 1.35 litre, its steel chassis gives it the appropriate stability required for professional applications in digital signage. Despite its dimensions of 19 x 16.5 x 4.3 cm (LWH), the overall system performance is very high thanks to support of Intel Core desktop processors. The interior of the D 8100XA is very tidy too so that it won't take long to set it up. Its sleek and stylish looks lets it easily find a place in both home and office environments.

Low noise thanks to heatpipe cooling system

An active dual-fan heatpipe cooling system ensures whisper-quiet operation and system stability.

Extended temperature range and reliability

The D 8100XA is outstandingly robust thanks to its rugged chassis. With an ambient temperature range from 0-45 °C it is suitable for use in the most demanding environments. Solely designed with all solid capacitors, D 8100XA is guaranteed to deliver maximum stability, reliability and longer system lifetime for long-term applications like digital signage.

45°C

Energy-saving

The power consumption mainly depends on the processor in use and its load. Using an Core i5-4670 (3.1 – 3.8 GHz, TDP = 65W) processor, the system consumes about 22W in idle mode. Under full load, the power consumption is 70W.
Note: the maximum output wattage of the power adapter is specified with 90W. Assuming the adapter's efficiency is 90%, the input wattage can reach up to 100W.

Great Connectivity

Despite its small size, D 8100XA sports a wide range of I/O connectors. Besides the SD card reader, it features a couple of USB 3.0, six USB 2.0, Dual Gigabit LAN, digital video, audio and one serial port.

SD Card Reader

The built-in SD card reader at the front side makes it easy to transfer files from your camera so you can share videos and photos on your DS437 with ease. It supports SD, SDHC and SDXC memory flash cards in standard size format also supports boot up from bootable SD cards.
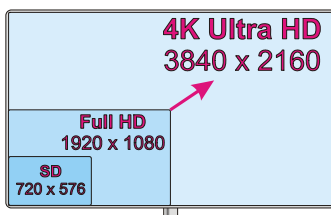
Dual Gigabit LAN Network

Today's media-rich communications across the internet and within enterprises create need for bandwidth. This is why Shuttle applies Gigabit-LAN performance to their Mini PCs and D 8100XA even supports two of them. Dual networking allows the computer to connect to a single network using two cables at once with an appropriate switch (teaming mode with load balancing or failover function) or to two different networks depending on the needs of the user.

Dual Display with HDMI, DisplayPort or VGA

D 8100XA features four video outputs: 1x HDMI, 2x DisplayPort and 1x D-Sub/VGA. Dual View technology offers multiple display support on up to two separate monitors. This helps improve on productivity by allowing for spreading multiple windows across two monitors while working with them simultaneously.

Supports 4K Ultra HD at 60Hz

The D 8100XA supports one display running at 4K (3840 x 2160 / 2160p) high resolution when connected to its DisplayPort video output. Being the successor to the Full HD standard, Ultra HD delivers a four times higher resolution with a wider colour space and colour depth.

One serial port

Many PCs do not have these legacy ports any longer, since they have been superseded and replaced by USB for most consumer applications, but they are still commonly used for applications such as industrial automation systems, scientific analysis, POS systems and other industrial applications. The D 8100XA features one serial RS-232 port which also support both 5 or 12V auxiliary voltage. This COM port also supports the RS422 and RS485 standard.

Slots for mini expansion cards

The D 8100XA features two slots for Mini expansion cards. One is a half-size Mini-PCIe-slot dedicated for Wireless LAN adapter cards (e.g. the accessory WLN-C). The second is of full-size format and it supports mSATA (Mini Serial ATA) cards. This means even the new generation of Solid State Drives (SSD) in a compact Mini PCIe card form factor can be used. The mSATA interface supports a transfer rate of up to 6 Gb/s for super high-speed storage.
Photos: half-size WLAN card (left) and full-size mSATA SSD card (right).

Optional WLAN kit "WLN-S"

The Shuttle Slim-PC Accessory WLN-S is a wireless LAN kit consisting of a Mini-PCIe card, two antennas and appropriate cables. With WLN-S you can equip the D 8100XA with the wireless LAN standard according to IEEE 802.11b/g/n. Data transfer speeds of up to 300 MBit/s can be reached and WPA2 with AES encryption is supported, too.

VESA mount

The supplied 75/100mm VESA mount allows for installation on to walls or monitors which is particularly interesting for the industry segment, company buildings and public institutions. Other than this, the chassis bears numerous threaded holes (M3) enabling it to be fitted almost anywhere.
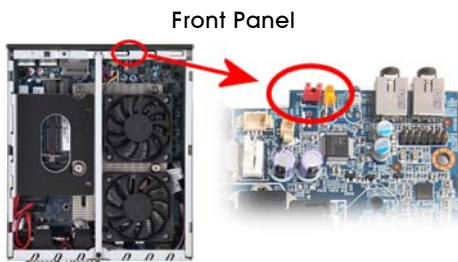
Kensington Lock

This is a small, metal-reinforced hole as part of an anti-theft system. The D 8100XA provides an appropriate hole on both side of its chassis. The lock and cable are not included.

External power button by separate remote line

If because of space constraints (e.g. in case of fixed installation), the machine cannot be switched on by pressing the front power button, it can be powered on by a separate remote line. You will find an appropriate four-pin-connector at the back panel of the D 8100XA (pitch 2.54 mm). Furthermore, this connector provides a Clear CMOS function and +5V DC voltage supply for external devices.

+5V voltage (2)   (4) Power Button
Clear CMOS (1)   (3) Ground

Power on after Power fail

The BIOS setup provides a "Power-On after Power Fail" function that can be found under "Power Management Configuration". As the name indicates, this function determines the PC's behaviour after power failure: (1) unconditional power on, (2) restore former status or (3) keep system turned off. As a matter of the nature of this function, it may fail after short power failures. This is why the D 8100XA also comes with a hardware-based solution. By removing Jumper 4 (see image) the system will start unconditionally once power is applied.

Front Panel

Shuttle Slim PC DS81 Versions

	DS81	D 8100XA	D 8100BA
Type	Barebone	System without OS	System with OS
Order No.	PIB-DS81001	PIC-DS81001	PIT-D0810BA1
Bar code	811686006534	4046047102761	4046047102778
Operating System	-	-	Windows 7 Professional 64 Bit
Processor	-	Intel Core i3-4160	Intel Core i3-4160
Storage	-	120 GB SSD	120 GB SSD
Memory	-	4 GB DDR3	4 GB DDR3
Video outputs	1x HDMI 2x DisplayPorts optional: 1x D-Sub/VGA	1x HDMI 2x DisplayPorts 1x D-Sub/VGA	1x HDMI 2x DisplayPorts 1x D-Sub/VGA
Serial Ports	1x RS232 1x RS232/422/485	1x RS232/422/485	1x RS232/422/485

Connectivity / Applications

The D 8100XA's great connectivity makes it well-suited for a wide field of applications and external devices.

The D 8100XA is your powerful 1.3-litre Slim-PC solution for particularly:

- Digital Signage
- In-store Audio/Video entertainment
- Gambling
- Home-Media
- Office
- Call Center
- Education
- Kiosk
- Point of Sales (POS)
- Medical
- Automation
- Small server

Shuttle Slim PC System D 8100XA - Specifications

Chassis	Nettop PC with black chassis made of metal Dimensions: 190 x 165 x 43 mm (LWH) = 1.35 litres Weight: 1.3 kg net and 2.1 kg gross Two holes for Kensington Locks and numerous threaded holes (M3) at both sides of the chassis
Operation System	This system comes without operating system. It is compatible with Windows 8 / 8.1, Windows 7, Linux
Mainboard Chipset BIOS	Mainboard: Shuttle FS81 (8 layer design) Mini-ITX form factor 17 x 17 cm Chipset: Intel® H81 Express Chipset (Intel DH82H81 PCH, code name "Lynx Point") AMI BIOS in 8 Mbit EEPROM with SPI interface All capacitors are high quality solid capacitors Supports hardware monitoring and watch dog functionality Supports Unified Extensible Firmware Interface (UEFI) [2] Supports power on after power failure [3]
Power Adapter	External 90 W power adapter (fanless) Input: 100~240 V AC, 50/60 Hz Output: 19 V DC, 4.74 A, max. 90 W DC Connector: 5.5/2.5mm (outer/inner diameter)
Processor	Intel® Core™ i3-4160 processor 2 cores, 4 threads (Hyper-Threading), 3.6 GHz clock frequency Socket LGA 1150 (H3) Fourth generation of Intel Core processors, code name "Haswell" 22nm process echnology Thermal Design Power (TDP) = 54W. Intel Smart Cache (L3): 3 MB Intel HD graphics 4400, 350-1150 MHz GPU clock frequency Supports 64 bit instruction set, SSE4.1/4.2, AVX2.0, VT-x with EPT, SpeedStep
Processor Cooling	Heat pipe processor cooling with two 60 mm fans on the upper side of the chassis
Memory	4 GB DDR3 SDRAM memory Supports max. 8 GB per DIMM, maximum total size of 16 GB
Storage	120 GB SSD drive Serial-ATA III interface 6.4 cm / 2.5" form factor

Integrated Graphics	Integrated Graphics Intel HD graphics 4400 Clockrate: 350 MHz Max. dynamic clockrate: 1.15 GHz Supports Dual-Independent-Display at Full HD 1080p resolution Supports Blu-ray (BD) playback with HDCP Supports one 4K display running at 3840 x 2160 (2160p/60Hz) high resolution when connected to its DisplayPort video output HDMI and two DisplayPorts supports HD video plus multi-channel digital audio via a single cable Analog D-Sub VGA video output
Mini- slots	D 8100XA features two Mini expansion slots: 1) half size Mini-PCIe, supports PCIe 2.0 e.g. for WLAN cards [5] 2) full size mSATA, supports SATA 6G e.g. for Mini SATA (mSATA) flash memory cards [6]
Audio	Audio Realtek® ALC 662-VC High-Definition Audio Two analog audio connectors (3.5mm) at the front panel: 1) 2 channel line out (head phone) 2) microphone input Digital multi-channel audio output: via HDMI and DisplayPort
Dual Gigabit LAN Controller	Dual Realtek 8111G Ethernet network controller (Gigabit) Supports 10 / 100 / 1.000 MBit/s operation With two RJ45 ports (dual network) supports Teaming [4] Supports WAKE ON LAN (WOL) Supports network boot by Preboot eXecution Environment (PXE)
Card reader	Integrated card reader Supports SD, SDHC and SDXC memory flash cards Supports boot up from SD card
Front Panel Connectors	Microphone input Audio Line-out (headphone) 4x USB 2.0 SD card reader Power button, Power LED (blue), HDD LED (yellow)
Back Panel Connectors	1x HDMI connector [1] 2x DisplayPort connectors (DP, supports 4k resolution) 1x D-Sub VGA connector 2x USB 3.0, 2x USB 2.0 2x Gigabit LAN (RJ45) 1x RS232 serial port (5V/12V, switchable to RS422 / RS485) DC-input connector for external power adapter Four pin connector (2.54 mm pitch) supports - external power on button - Clear CMOS function - +5V DC voltage for external components Perforation for Wireless LAN antennas (2 holes)

Other Onboard Connectors	Power on after power fail (hardware solution, Jumper 4) [3] 1x USB 2.0 (4 Pins) 2x serial interface (COM), 1x occupied for back panel connectors Fan connector (4 pins) occupied by the cooling system LPC interface (2x10 pins) Audio connectors (7x2 pins) Speaker connector (2 pins) Power connector for SATA drives (4 pins, occupied)
Scope of delivery	VESA mount for 75/100mm standard (two metal brackets) Four thumbscrews M3 x 5 mm (screws together VESA mount and PC) Four screws M4 x 10 mm (to fix the VESA mount to the external device) Driver DVD (Windows 7/8 32/64 bit) External power adapter with power cord
Optional Accessory	WLN-S: Wireless LAN kit consisting of a Mini-PCIe card, two antennas and appropriate antenna cables.
Environmental Specifications	Operating temperature range: 0~45 °C Relative humidity, non-condensing: 10~90%
Conformity Certifications	EMI: FCC, CE, BSMI, C-Tick Safety: CB, BSMI, ETL 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-guidelines: - EMV-guideline 89/336/EWG electromagnetic tolerance - LVD-guideline 73/23/EWG use of electric devices within certain voltage-limits

[1] **HDMI** supports DVI-D with optional adapter

[2] **Unified Extensible Firmware Interface (UEFI)** - required when booting from hard disks larger than 2.2 TB under Windows 64 bit operating systems such as Windows 7, Windows Vista SP1 and Windows Server 2008/2003 SP1.

[3] **Power on after power fail:**

The BIOS setup provides a "Power-On after Power Fail" function that can be found under "Power Management Configuration". As the name indicates, this function determines the PC's behaviour after power failure: (1) unconditional power on, (2) restore former status or (3) keep system turned off. As a matter of the nature of this function, it may fail after short power failures. This is why the DS81 also comes with a hardware-based solution. By removing Jumper 4 (on the mainboard beside the hard disk LED) the system will start unconditionally once power is supplied.

[4] **Teaming Mode**

The teaming function allows you to group both available network adapters together to function as a single adapter - a method of creating a virtual LAN. The benefit of this approach is that it enables load balancing and failover.

[5] **Optional Wireless LAN module:** this Slim PC supports an optional WLAN module, which consists of a half-size Mini-PCIe card with IEEE 802.11n functionality and an external antenna with appropriate antenna cable. Shuttle offers a suitable accessory kit "WLN-S" with two antennas.

[6] **mini-SATA (mSATA)**

not to be confused with the "micro SATA" connector, is a newer industry standard which converts the electrical SATA interface (1.5 or 3.0 Gbit/s) to the pysical "Mini PCI Express" mini card form factor.

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