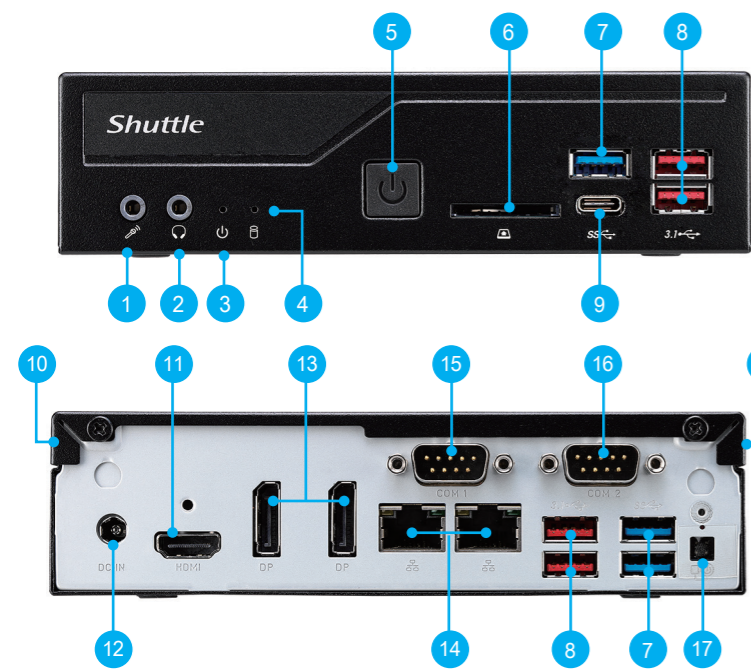


More information on this product can be found at: <http://bit.ly/S-DH470>  
 更多本產品資訊，請查閱：<http://bit.ly/S-DH470>  
 Weitere Informationen zu diesem Produkt finden Sie unter: <http://bit.ly/S-DH470>  
 Pour plus d'informations sur ce produit, visitez: <http://bit.ly/S-DH470>

Puede encontrar más información sobre este producto en: <http://bit.ly/S-DH470>  
 本製品の詳細な情報については、次のURLより確認頂けます。<http://bit.ly/S-DH470>  
 Для получения дополнительной информации об этом продукте перейдите по ссылке: <http://bit.ly/S-DH470>  
 更多本產品信息，請訪問：<http://bit.ly/S-DH470>

Product Overview

產品外觀 \ Produktübersicht \ Présentation du produit \ Resumen del producto \ 製品概要 \ Обзор продукта \ 产品外观



1. MIC-in
2. Headphones
3. Power LED
4. Hard disk drive LED
5. Power Button
6. SD Card Reader
7. USB 3.2 Gen1 Type-A Ports
8. USB 3.2 Gen2 Type-A Ports
9. USB 3.2 Gen1 Type-C Port
10. Kensington® Lock Hole
11. HDMI 2.0 Port
12. Power Jack (DC IN)
13. DisplayPort
14. LAN Ports
15. COM 1 Port (RS232/RS422/RS485)
16. COM 2 Port (RS232 only)
17. Clear CMOS & Power Button & +5V

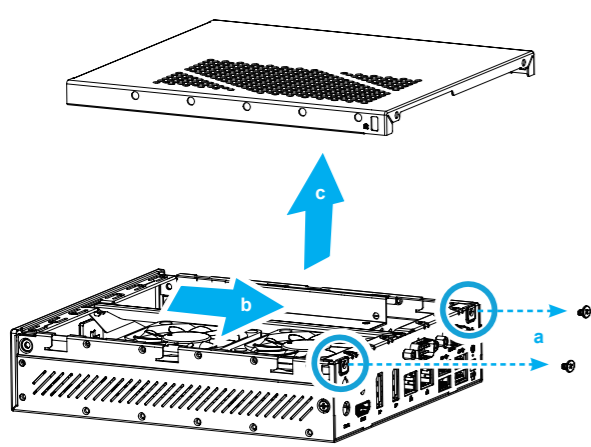
Hardware Installation

硬體安裝 \ Hardware Installation \ Installation du matériel \ Instalación de hardware  
 ハードウェアのインストール \ Установка оборудования \ 硬件安装

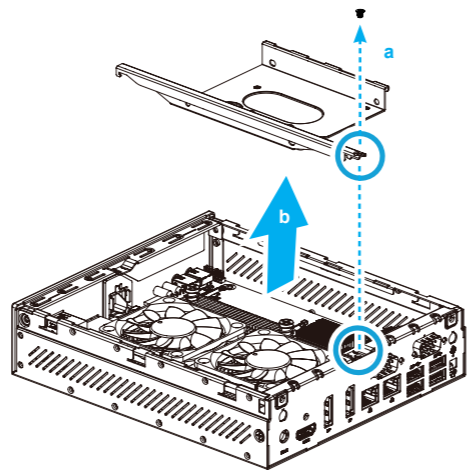
A. Begin Installation

⚠ For safety reasons, please ensure that the power cord is disconnected before opening the case.

1. Unscrew the two screws of the chassis cover. Slide the cover backwards and upwards.



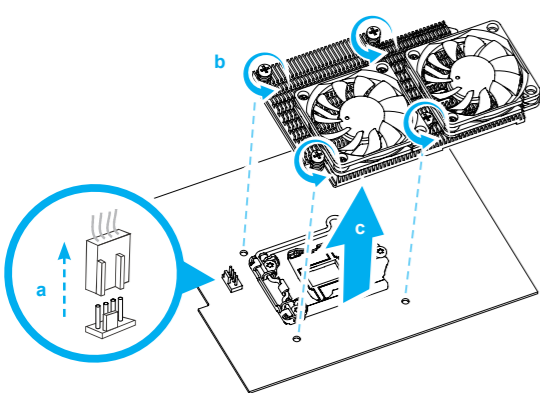
2. Unfasten the rack mount screw and remove the rack.



ⓘ The product's colour and specifications may vary from the actually shipping product.

B. CPU and ICE Module Installation

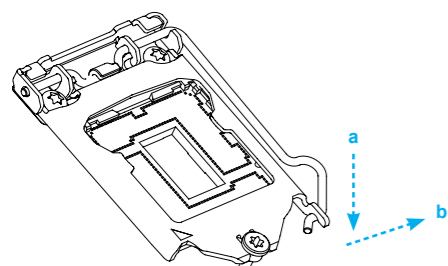
1. Unfasten the four ICE module attachment screws and unplug the fan connector. Remove the ICE module from the chassis and put it aside.



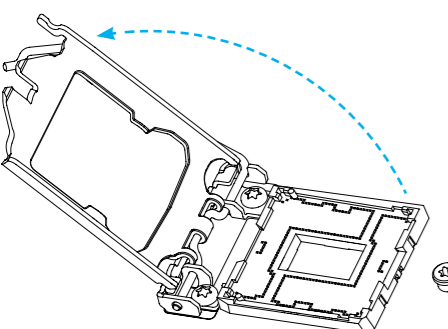
➤ Follow the steps below to correctly install the CPU into the motherboard CPU socket.

⚠ This CPU socket is fragile and can easily be damaged. Always use extreme care when installing a CPU and limit the number of times you remove or change the CPU. Before installing the CPU, make sure to turn off the computer and unplug the power cord from the power outlet to prevent damage of the CPU.

2. Unlock and raise the socket lever.

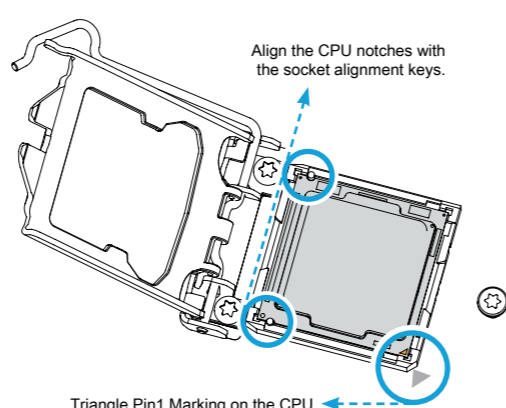


3. Lift the metal load plate off the CPU socket.



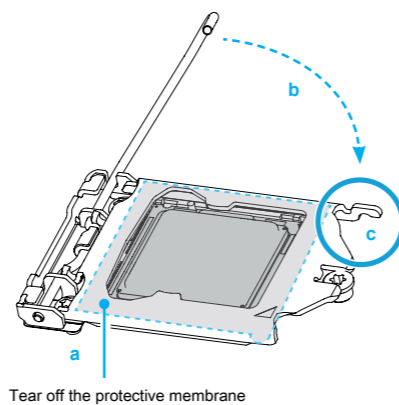
⚠ DO NOT touch the socket contacts. To protect the CPU socket, always use the protective socket cover when the CPU is not installed.

4. Please orientate the CPU correctly and align the CPU notches with the socket alignment keys. Make sure the CPU sits perfectly horizontal, then push it gently into the socket.

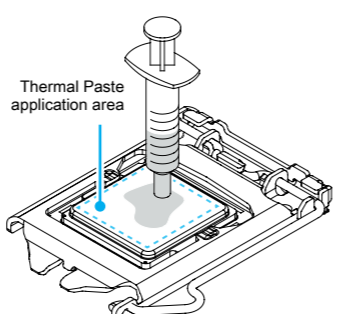


⚠ Please be aware of the CPU orientation, DO NOT force the CPU into the socket to avoid bending of pins on the socket and damage of CPU!

5. Tear off the protective membrane from the metal load plate. Close the metal load plate, lower the CPU socket lever and lock in place.

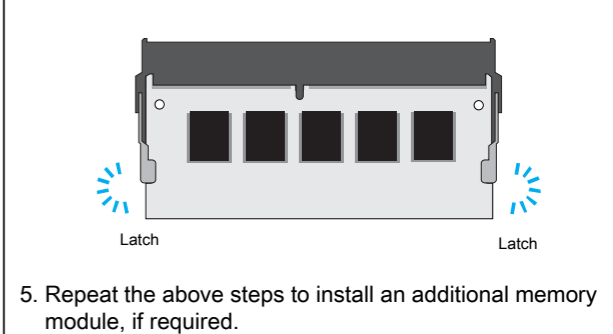
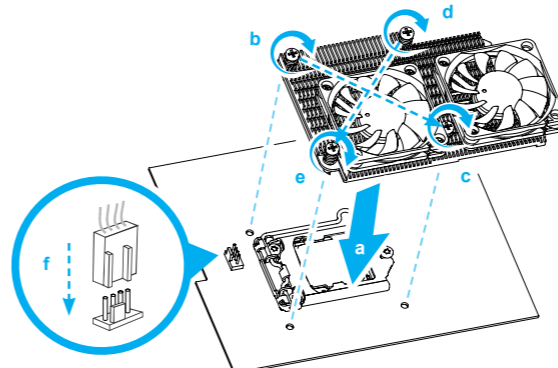


6. Spread thermal paste evenly on the CPU surface.



⚠ Please do not apply excess amount of thermal paste.

7. Screw the ICE module to the motherboard. Note to press down on the opposite diagonal corner while tightening each screw.
8. Connect the fan.

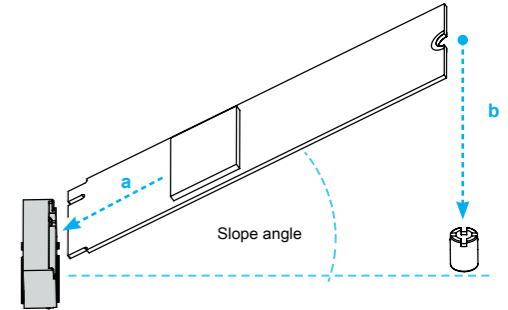


5. Repeat the above steps to install an additional memory module, if required.

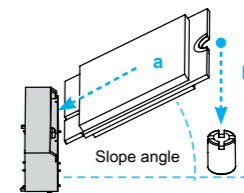
D. M.2 Device Installation

1. Locate the M.2 key slots on the motherboard.

➤ M.2 2242/2260/2280 M key slot

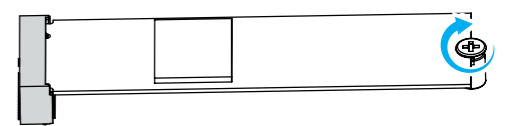


➤ M.2 2230 E Key slot

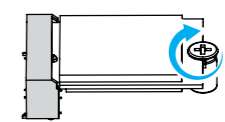


2. Install the M.2 device into the M.2 slot and secure with the screw.

➤ M.2 2242/2260/2280 M key slot



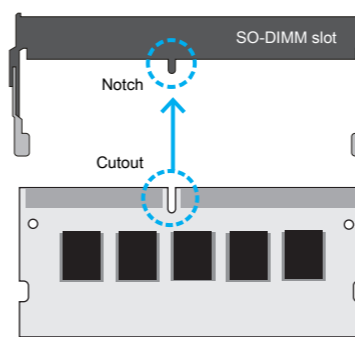
➤ M.2 2230 E Key slot



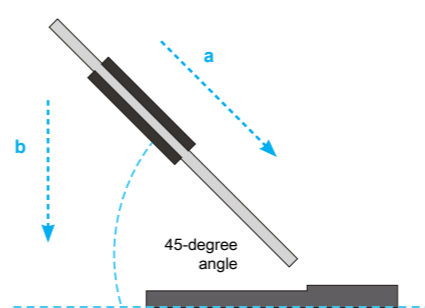
C. Memory Module Installation

⚠ This motherboard does only support 1.2 V DDR4 SO-DIMM memory modules.

1. Locate the SO-DIMM slots on the motherboard.
2. Align the notch of the memory module with the one of the relevant memory slot.

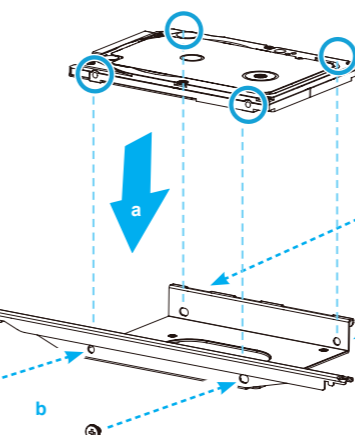


3. Gently insert the module into the slot in a 45-degree angle.
4. Carefully push down the memory module until it snaps into the locking mechanism.

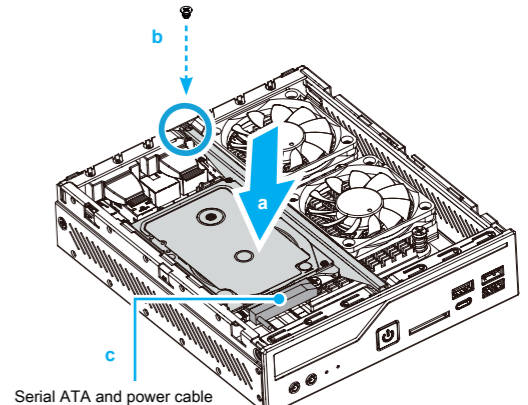


E. HDD or SSD Installation

1. Place an HDD or SSD in the rack and secure with the four screws from the sides.

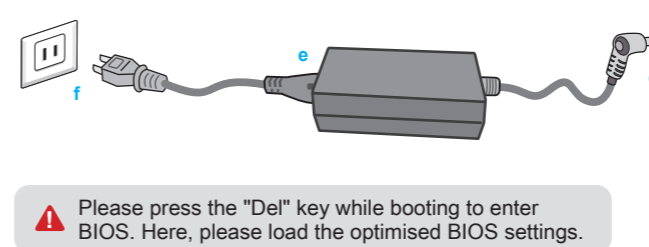


2. Slide the rack back into the chassis and refasten the screw. Connect the Serial ATA and power cable to the HDD or SSD.



F. Complete

1. Please replace and affix the case cover with two screws, then connect the power cord.
2. Complete.



⚠ Please press the "Del" key while booting to enter BIOS. Here, please load the optimised BIOS settings.

Safety Information

安全資訊 \ Sicherheitshinweise \ Informations de sécurité \ Información de seguridad  
 安全に関する情報 \ Информация о безопасности \ 安全信息

⚠ Incorrectly replacing the battery may damage this computer. Replace only with the same or equivalent as recommended by Shuttle. Dispose of used batteries according to the manufacturer's instructions.  
 更換電池方式錯誤可能會損壞本電腦以及引發爆炸、火災或其他危險。僅能依Shuttle的建議，以相同或同等之電池更換。請依照製造商的使用說明處理廢電池。  
 Das unkorrekte Austauschen der Batterie kann diesen Computer beschädigen. Ersetzen Sie die Batterie nur durch den von Shuttle empfohlenen Typ oder ein gleichwertiges Modell. Entsorgen Sie gebrauchte Batterien gemäß den Herstellerangaben.  
 Ne pas remplacer correctement la pile peut endommager l'ordinateur. Remplacez-la uniquement par un modèle identique ou un équivalent comme recommandé par Shuttle. Débarrassez-vous des piles usagées d'après les instructions du constructeur.  
 La sustitución incorrecta de la batería puede dañar este equipo. Sustituya la batería únicamente por una igual o equivalente recomendada por Shuttle. Deseche las baterías usadas según las instrucciones del fabricante.  
 バッテリーを間違っでセットすると、このコンピュータが損傷する原因となります。交換する際は、Shuttleが推奨するバッテリーと同じものまたは同等のものだけを使用するようにしてください。使用済みバッテリーは、メーカーの指示に従って処分してください。  
 Неправильная замена батареи может привести к повреждению компьютера. Батарея должна соответствовать стандарту производителя Shuttle или быть идентичной предыдущей. Утилизация использованной батареи должна следовать инструкции производителя.  
 更換電池方式錯誤可能會損壞本電腦。僅能依 Shuttle 的建議，以相同或同等之電池更換。請依照製造商的使用說明處理廢電池。

注意：仅适用于在非热带气候条件下安全使用，在热带气候条件下使用时，可能有安全隐患。



注意：仅适用于海拔 2000m 以下安全使用，在海拔 2000m 以上使用时，可能有安全隐患。



注意：允许产品使用的最高环境温度 为 40°C。

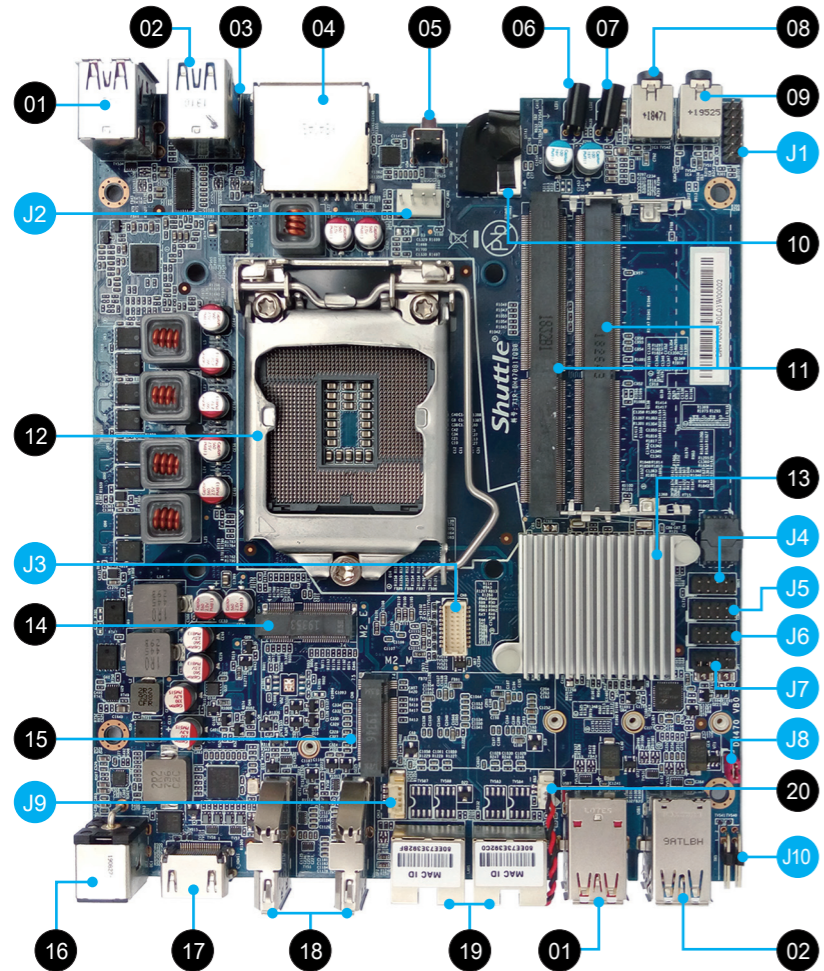
All bundled parts, power cord included, shall not be used without this product.

電源ケーブル等、すべての付属品は本機以外ではご使用になれません。

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CE This device meets the requirements for the EU conformity in accordance to the currently valid EU directives. Dieses Produkt erfüllt die Anforderungen für die EU-Konformität entsprechend der aktuell geltenden EU-Richtlinien. Ce produit répond aux exigences de la conformité UE suivant les directives européennes actuellement en vigueur.





**01. USB 3.2 Gen2 Type-A Ports**  
 USB 3.2 Gen2 Type-A 連接埠  
 USB 3.2 Gen2 Typ-A Anschlüsse  
 Prises USB 3.2 Gen2 Type-A  
 Puertos USB 3.2 Gen2 tipo A  
 USB 3.2 Gen2 Type-A 埠  
 USB 3.2 Gen2 Type-A 端口

**02. USB 3.2 Gen1 Type-A Ports**  
 USB 3.2 Gen1 Type-A 連接埠  
 USB 3.2 Gen1 Typ-A Anschlüsse  
 Prises USB 3.2 Gen1 Type-A  
 Puertos USB 3.2 Gen1 tipo A  
 USB 3.2 Gen1 Type-A 埠  
 USB 3.2 Gen1 Type-A 端口

**03. USB 3.2 Gen1 Type-C Port**  
 USB 3.2 Gen1 Type-C 連接埠  
 USB 3.2 Gen1 Typ-C Anschluss  
 Prise USB 3.2 Gen1 Type-C  
 Puerto USB 3.2 Gen1 tipo C  
 USB 3.2 Gen1 Type-C 埠  
 USB 3.2 Gen1 Type-C 端口

**04. SD Card Reader \ SD 讀卡機**  
 SD Cardreader  
 Lecteur de carte mémoire SD  
 Conecteur Debug  
 Conexión Debug  
 SDカードリーダー  
 Считыватель SD-карт  
 SD卡片阅读器

**05. Power Button \ 電源按鈕**  
 Ein-/Aus-Button  
 Bouton d'alimentation  
 Botón de encendido  
 電源スイッチ  
 Кнопка питания \ 電源按鈕

**06. Hard disk drive LED**  
 硬碟指示燈 \ Festplatten-LED  
 Indicateur disque dur  
 Diodo LED del disco duro  
 ハードディスクドライブ LED  
 LED-индикатор жесткого диска  
 硬盘指示灯

**15. M.2 2242/2260/2280 M key slot**  
 M.2 2242/2260/2280 M key 插槽  
 M.2-2242/2260/2280 (M) Steckplatz  
 Emplacement M.2 2242/2260/2280 M  
 Ranura M.2 2242/2260/2280 M  
 M.2 2242/2260/2280 M 插槽  
 Slot M.2 2242/2260/2280 M 插槽  
 M.2 2242/2260/2280 M key 插槽

**16. Power Jack (DC IN) \ DC 電源連接埠**  
 DC-Stromanschluss \ Prise alimentation DC  
 Conexión de la fuente de alimentación (CC)  
 Conexión de la fuente de alimentación (CC)  
 Гнездо для подключения питания (DC IN)  
 DC 電源埠 \ 電源插孔 (直流電輸入)  
 Восстановление AC Авто включение

**17. HDMI 2.0 Port**  
 HDMI 2.0 連接埠  
 DisplayPort Anschluss  
 DisplayPort  
 Prise HDMI 2.0  
 Puerto HDMI 2.0  
 HDMI 2.0 埠  
 HDMI 2.0 порт  
 HDMI 2.0 埠

**18. DisplayPort**  
 DisplayPort 連接埠  
 DisplayPort Anschluss  
 DisplayPort  
 Prise DisplayPort  
 DisplayPort  
 DisplayPort  
 DisplayPort 埠  
 DisplayPort 埠

**19. LAN Ports**  
 網路連接埠  
 Netzwerk-Anschlüsse  
 Prises LAN  
 Puertos LAN  
 LAN 埠  
 Сетевые LAN-порты  
 LAN 埠

**20. Battery connector**  
 電池插座  
 Anschluss für die Batterie  
 Connecteur de pile  
 Conector de batería  
 Батарея-конектор  
 Разъем для батареи  
 電池接頭

**11. DDR4 SO-DIMM slots**  
 DDR4 SO-DIMM 插槽  
 DDR4 SO-DIMM Steckplätze  
 Slot mémoire SO-DIMM DDR4  
 zócalo de DDR4 SO-DIMM  
 DDR4 SO-DIMM 插槽  
 Слот памяти DDR4 SO-DIMM  
 DDR4 SO-DIMM 插槽

**12. Processor socket LGA1200**  
 LGA1200 處理器插座  
 Sockel für LGA1200-CPU's  
 Socket Processeur LGA1200  
 Zócalo LGA1200 de CPU  
 Процессорный разъем LGA1200  
 LGA1200 处理器插座

**13. Intel® H470 Chipset**  
 Intel® H470 晶片組  
 Intel® H470 Chipsatz  
 Intel® H470 Chipset  
 Intel® H470 Conjunto de chips  
 Intel® H470 晶片組  
 Набор микросхем Intel® H470  
 Intel® H470 晶片組

**14. M.2 2230 E key slot (supports CNVi)**  
 M.2 2230 E key 插槽 (支援 CNVi)  
 M.2-2230 (E) Steckplatz (unterstützt CNVi)  
 Emplacement M.2 2230 E (compatible CNVi)  
 Ranura M.2 2230 E (soporta CNVi)  
 M.2 2230 E 插槽 (CNVi 対応)  
 Slot M.2 2230 E 插槽 (поддержка CNVi)  
 M.2 2230 E key 插槽 (支持 CNVi)

**07. Power LED**  
 電源指示燈  
 Betriebsanzeige-LED  
 Indicateur alimentation  
 LED de encendido  
 電源 LED  
 LED-индикатор питания  
 电源指示灯

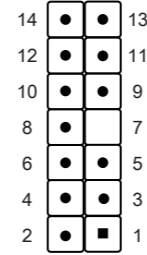
**08. Headphones**  
 耳機孔  
 Kopfhörer-Ausgang  
 Prise casque  
 Auriculares  
 イヤホン  
 Гнездо для наушников  
 耳机孔

**09. MIC-in**  
 麥克風插孔  
 Mikrofon-Eingang  
 Prise micro  
 Micrófono  
 麦克风  
 Гнездо для микрофона  
 麦克风插孔

**10. SATA connector**  
 SATA 排線插座  
 SATA-Anschluss  
 Connecteur SATA  
 Base de conexiones SATA  
 SATA 连接器  
 SATA 埠  
 SATA 接口

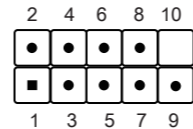
**J1** Audio connector \ 音效接頭  
 Audio-Anschluss \ Connecteur audio  
 Conector del Audio \ オーディオコネクタ  
 Аудио разъем \ 音效接頭

AUDIO1	
Pin	Signal Name
1	Pull 10K to AGND
2	LINE-R
3	NA
4	LINE-L
5	Pull 5.1K to AGND
6	FRONT-L
7	NULL
8	SENSE
9	Pull 20K to AGND
10	FRONT-R
11	FR_AUDIO-JD
12	MIC1-R
13	AGND
14	MIC1-L



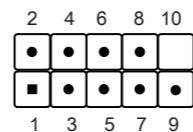
**J4** Debug header  
 Debug 插座  
 Debug-Anschluss  
 Connecteur Debug  
 Conexión Debug  
 Отладочный разъем  
 Debug 接頭

DBG1	
Pin	Signal Name
1	LPC_24M
2	LAD1
3	SIORST-
4	LAD0
5	LFRAME-
6	+3.3V
7	LAD3
8	GND
9	LAD2
10	NULL



**J6** COM port  
 COM 插座  
 COM-Ausgang  
 Port COM  
 Puerto COM  
 COM 埠  
 COM 接頭

COM2	
Pin	Signal Name
1	DCD
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI
10	NULL



**J8** AC auto power-on \ 回電自動開啟電源  
 Automatisches Einschalten bei Spannungsversorgung  
 Démarrage automatique à la mise sous tension  
 Encendido automático con suministro de corriente  
 AC自動電源オン \ 回电自动开启电源  
 Восстановление AC Авто включение

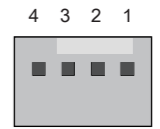


**J9** USB connector \ USB 插座  
 USB-Anschluss \ Connecteur USB  
 Conector del USB \ USB コネクタ  
 USB 埠 \ USB 接頭



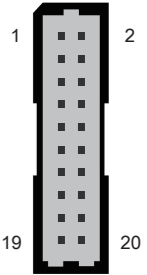
**J2** Fan connector \ 風扇連接埠 \ Lüfteranschluss \ Connecteur ventilateur  
 Conector del ventilador \ FAN コネクタ \ Разъем вентилятора \ 風扇插座

CPU_FAN1	
Pin	Signal Name
1	GND
2	+12V
3	FAN_IO
4	FAN_CTL



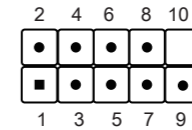
**J3** VGA connector \ VGA 插座 \ VGA-Anschluss \ Connecteur VGA  
 Conector del VGA \ VGA コネクタ \ VGA разъем \ VGA 接頭

CN6					
Pin	Signal Name	Pin	Signal Name	Pin	Signal Name
1	GND	2	GND	3	VGA_SCL
4	GND	5	VGA_SDA	6	GND
7	GND	8	GND	9	CRT_VSYNC
10	GND	11	CRT_HSYNC	12	GND
13	GND	14	GND	15	BOU-O
16	VGA_PWR	17	GOUT-O	18	VGA_PWR
19	ROUT-O	20	VGA_PWR		



**J5** COM port \ COM 插座  
 COM-Ausgang \ Port COM  
 Puerto COM \ COM 埠  
 COM-порты \ COM 接頭

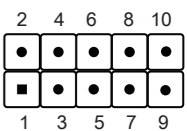
COM1			
Pin	Signal Name		
1	RS232	RS422	RS485
2	DCD	TXD-	DATA-
3	RXD	TXD+	DATA+
4	TXD	RXD+	NA
5	DTR	RXD-	NA
6	GND	GND	GND
7	DSR	NA	NA
8	RTS	NA	NA
9	CTS	NA	NA
10	RI	NA	NA
11	NULL	NULL	NULL



**J7** COM 1 & COM 2 power switch \ COM 1 & COM 2 電源切換  
 Konfiguration von COM 1 & COM 2 \ Gestion de l'alimentation des COM 1 & COM 2  
 COM 1 & COM 2 Enchufe Interruptor \ COM 1 & COM 2 電源スイッチ  
 Переключатель питания COM 1 & COM 2 \ COM 1 & COM 2 電源切換

COM PORT Pin 9 "Ring Indicator" (RI) configuration:

Configure COM 1 with the first jumper:  
 - Short Pin 1-2: Pin 9 = RI1 (default)  
 - Short Pin 5-7: Pin 9 = +5V  
 - Short Pin 7-9: Pin 9 = +12V



Configure COM 2 with the second jumper:  
 - Short Pin 3-4: Pin 9 = RI2 (default)  
 - Short Pin 6-8: Pin 9 = +5V  
 - Short Pin 8-10: Pin 9 = +12V

JP1			
Pin	Signal Name	Pin	Signal Name
1	-XRI1	2	COM_-XRI1
3	-XRI2	4	COM_-XRI2
5	+5V	6	+5V
7	COM1_PWR	8	COM2_PWR
9	+12V	10	+12V

**J10** Clear CMOS & power button & +5V  
 清除 CMOS & 電源按鈕 & +5V  
 Clear CMOS & Einschalt-Button & +5V  
 Reset CMOS & Bouton d'alimentation & +5V  
 Clear CMOS & Botón de encendido & +5V  
 CMOSクリア & 電源スイッチ & +5V  
 Сброс CMOS, внешняя кнопка питания, +5 V  
 清除 CMOS & 電源按鈕 & +5V

JP2	
Pin	Signal Name
1	AMP+
2	GND

CN12	
Pin	Signal Name
1	GND
2	USB_D+
3	USB_D-
4	USB_5V

SW1	
Pin	Signal Name
1	RTCRST-
2	+5V
3	GND
4	PWRSW-

