Addendum No. 1

Supply and Delivery of Fabrication Laboratory Shared Service Facility for Bataan Peninsula State University

(Bidding Number – **BD24-002**)
September 2024

This addendum No. 1 is issued to modify or amend items in the Bid Documents dated **September 2024** (Bidding Number – **BD24-002**). This shall form an integral part of the Bid Documents.

Section I. Invitation to Bid

1. The ***Department of Trade and Industry Region 3***, through the ***General Appropriations Act of the Philippines*** intends to apply the total sum of ***Thirteen Million Five Hundred Thousand Pesos (PhP 13,500,000.00), tax inclusive,*** being the ABC to payments under the contract for ***BD24-002***, with detailed breakdown as follows:

Lot 1 – P 5, 972,000.00
Lot 2 – P 7, 528,000.00

Total – PhP 13,500,000.00

Bids received in excess of the ABC shall be automatically rejected at bid opening.

2. The ***Department of Trade and Industry Region 3*** now invites bids for the above Procurement Project. Delivery of the Goods is required ***within forty-five (45) days upon receipt of the Notice to Proceed***. Bidders should have completed a contract similar to the project within two (2) years prior to the date of submission and receipt of bids. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).

Section III. Bid Data Sheet

I-3	Statement of the bidder’s Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided for in Sections 23.4.1.3 and 23.4.2.4 of the 2016 revised IRR of RA No. 9184, within two (2) years prior to the date of bid submission. The SLCC must be at least Fifty percent (50%) of the approved budget for the contract (ABC) or ***Lot 1 – Two Million Nine Hundred Eighty Six Thousand Pesos (₱2,986,000.00 and Lot 2 – Three Million Seven Hundred Sixty Four Thousand Pesos (₱3,764,000.00)***

	Supporting Document/s: The statement shall be supported by a copy/(ies) of the Official Receipt (O.R.) or Certificate of Acceptance by the end-user or Sales Invoice (S.I.) issued for the Contract

19.2	Two (2) Lots – ***Supply and Delivery of Fabrication Laboratory Shared Service Facility for Bataan Peninsula State University***

14.1	The bid security shall be in the form of a Bid Securing Declaration, or any of the following forms and amounts:
Lot 1	a. The amount of not less than **One Hundred Nineteen Thousand Four Hundred Forty Pesos (₱119,440.00)** or two percent (2%) of ABC, if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; or, b. The amount of not less than **Two Hundred Ninety-Eight Thousand Six Hundred Pesos (₱298,600.00)** or five percent (5%) *of ABC*, if bid security is in Surety Bond.
Lot 2	a. The amount of not less than One Hundred Fifty Thousand Five Hundred Sixty Pesos **(₱150,560.00)** or two percent (2%) of ABC, if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; or, b. The amount of not less than Three Hundred Seventy-Six Thousand Four Hundred Pesos **(₱376,400.00)** or five percent (5%) of ABC, if bid security is in Surety Bond.

Section VI. Schedule of Requirements

The delivery schedule expressed as weeks/months stipulates hereafter a delivery date which is the date of delivery to the project site.

<table>
<tr><th colspan="5"><i>Lot 1</i></th></tr>
<tr><th>Item Number</th><th>Quantity</th><th>Item</th><th>Place of Delivery</th><th>Date of Delivery</th></tr>
<tr><td>1</td><td>1</td><td>Vacuum Forming Machine</td><td rowspan="3"></td><td rowspan="3"></td></tr>
<tr><td>2</td><td>1</td><td>Polyetheretherketone (PEEK) 3D Printer</td></tr>
<tr><td>3</td><td>4</td><td>High Speed 3D Printer</td></tr>
</table>

4	1	Desktop PC for CAD Modelling	**Bataan Peninsula State University DR3AM Center, BPSU Main Campus, Bataan Provincial Capitol Compound, Balanga, Bataan**	**Delivery, installation, commissioning of machineries and equipment in the identified sites of end user FOB within 45 days from issuance and receipt of Notice to Proceed.**
5	3	Multi-Color FDM 3D Printer		
6	1	Desktop PC for CAD Modelling		
7	1	60-seat Premium 3D CAD Software with initial 4 years Subscription Services		
8	1	Professional Desktop Fused Deposition Modelling/Fused Filament Fabrication 3D Printer		
9	1	Food 3D Printer		
10	1	Printed Circuit Board (PCB) Printer		
11	1	Computer Numerical Control (CNC) Router		
12	1	Desktop PC for CAD Modelling		
13	1	Graphing Software		
14	1	Digital Embroidery		
15	1	Duplicator		

Please state compliance to the Schedule of Requirements

Name of Supplier hereby states its compliance to the abovementioned Schedule of Requirements, its delivery schedule and special conditions of the contract.

____

Name of Authorized Representative/Supplier
Signed

Lot 2				
Item Number	**Quantity**	**Item**	**Place of Delivery**	**Date of Delivery**
1	1	3D Pellet Printer	**Bataan Peninsula State University DR3AM Center, BPSU Main Campus, Bataan Provincial Capitol Compound, Balanga, Bataan**	**Delivery, installation, commissioning of machineries and equipment in the identified sites of end user FOB within 45 days from issuance and receipt of Notice to Proceed.**
2	1	Desktop PC for CAD Modelling		
3	1	Professional Image Processing Software (Segmentation, Analysis and Simulation)		
4	1	High-End Desktop PC		
5	1	3D Scanner		
6	1	High-End Laptop		
7	1	Large-Format Printer and Cutter		
8	1	Desktop PC for CAD Modelling		
9	1	Flatbed UV Printer		
10	1	Garment / T-shirt printer		
11	1	CO_2 Laser Cutter / Engraver		

<u>Please state compliance to the Schedule of Requirements</u>

Name of Supplier hereby states its compliance to the abovementioned Schedule of Requirements, its delivery schedule and special conditions of the contract.

____

Name of Authorized Representative/Supplier
Signed

Section VII. Technical Specifications

Lot 1		
Item #	**Qty**	**Item**
1	1	**Vacuum Forming Machine** ITEM SPECIFICATIONS Sheet Size: 330 mm x 250 mm Maximum Sheet Thickness: 3.0 mm Minimum Sheet Thickness: 0.2 mm Forming Area: 280 mm x 200 mm Maximum Depth Draw: 200 mm Dimensions: L400 X W335 X H405 mm Weight: 9 kg Standard Input Voltage: 100 V - 240 V Standard Frequency: 50, 60 Hz Standard Wattage: 1.32 kW Noise Level: 65 dB Heater Temperature: up to 250 deg Celsius Inclusions: Plastic Sheets (10pcs) *Table with metal frame and wooden top (see attachment)* English Manual Certificate of authority to sell from the manufacturer or local distributor/reseller Training certificate provided by manufacturer to certified trainer. After-Sales Support certificate issued by the manufacturer. Parts Availability certificate issued by the manufacturer. On-Site Training and Installation 12 Months warranty for parts and service
2	1	**Polyetheretherketone (PEEK) 3D Printer** ITEM SPECIFICATIONS Printing Technology: Fused Filament Fabrication (FFF) Extruder: Single Extruder Diameter: Swappable 0.25, 0.4, 0.6 and 0.8mm nozzle, default 0.4mm Layer Resolution: 0.05-0.4mm Position Accuracy: XY:0.025mm, Z:0.0025mm Print Speed: 30-200mm/s Filament Diameter: 1.75mm Build Platform: PI + Glass Ceramics Supported Filament: PEEK, PEKK, PEI, PPSU, ABS, PC, Nylon, Carbon Fiber-Filled, PETG, PVA, PLA, TPU, HIPS, Woodfill,

		Metalfill, etc. Language: Chinese & English User Interface Features: Full-color Touch Screen Connectivity: SD card, USB Camera: Yes Power Failure Recovery: Yes Filament Absent Warning: Yes Build Plate Leveling: Auto Leveling, Manual Leveling Build Volume: 10.3"*10.3"*10.3"(260*260*260mm) Dimensions: 530*490*645mm Weight: 46kg Heated-Plate Temperature (MAX): 160°C Extruder Temperature (MAX): 450°C Heated Chamber (MAX): 90°C Software: Appropriate 3D printing slicing software; Compatible Software: Simplify3D & Cura Input Supported File Type: .Stl, .Obj, .Obj, .X3D Output Supported File Type: Gcode Operating Environment: Temperature: 15°C To 32°C Humidity: 30% To 70% Storage Environment Temperature: 0°C To 54°C Humidity: 10% To 85% Material Storage Environment Temperature: 13°C to 24°C Humidity: 20% To 50% Voltage Input: 100~120VAC (110V Version only, refer to the nameplate) 200~240VAC (220V Version only, refer to the nameplate) 47~63Hz Power: 1200W Inclusions: *Slicing Software included: Licensed Professional Software (Perpetual License)* *1 set Starter Material / Consumables* English Manual *Table with metal frame and wooden top (see attachment)* *3-Layer Metal Cabinet (Drawer) for Accessories, Supplies and Materials (see attachment)* Certificate of authority to sell from the manufacturer or local distributor/reseller. Training certificate provided by manufacturer to certified trainer. After-Sales Support certificate issued by the manufacturer. Parts Availability certificate issued by the manufacturer. On-Site Training and Installation 12 Months warranty for parts and service
3	4	**High Speed 3D Printer**

		ITEM SPECIFICATIONS Technology: Fused Deposition Modelling (FDM) / Fused Filament Fabrication (FFF) Product Dimensions: 355x355x482mm Package Dimensions: 428x428x567mm Net Weight: 12.4kg Gross Weight: 16kg Display Screen: 4.3" color touch screen Rated Input Voltage 100-0240V~, 50/60Hz Output Voltage: 24VDC Rated Power: 350W Printing Technology: FDM Build Volume: 220x220x250mm Printing Accuracy: 100mm+-0.1mm Layer Height: 0.1-0.35mm Typical Printing Speed 300mm/s Max. Printing Speed: 600mm/s Acceleration: 20000mm/s2 Filament Diameter: 1.75mm Nozzle Diameter: 0.4mm (Standard) Nozzle Temperature: 300C Build Surface: PEI Flexible build Dimensions: 139.76" x 139.76" x 188.98" Inclusions: *Slicing Software included: Licensed Professional Software (Perpetual License)* *1 set Starter Material / Consumables* *Industrial-grade Adjustable Shelves 4 layers [only 1 shelf for the 4 units] (See attachment)* English Manual Certificate of authority to sell from the manufacturer or local distributor/reseller. Training certificate provided by manufacturer to certified trainer. After-Sales Support certificate issued by the manufacturer. Parts Availability certificate issued by the manufacturer. On-Site Training and Installation 12 Months warranty for parts and service

4	1	**Desktop PC for CAD Modelling**
		
		ITEM SPECIFICATIONS
		- 3.4 GHz Eight-Core Processor
		    # of CPU Cores: 8
		    # of Threads: 16
		    Max. Boost Clock: Up to 4.6GHz

		Base Clock: 3.4GHz L1 Cache: 512KB L2 Cache: 4MB L3 Cache: 32MB Default TDP: 65W Processor Technology for CPU Cores: TSMC 7nm FinFET Unlocked for Overclocking: Yes CPU Socket: AM4 Socket Count: 1P Thermal Solution (PIB): Not included Max. Operating Temperature (Tjmax): 90°C - B550M WIFI MOTHERBOARD Chipset: B550 Memory: 4 x DIMM, Max. 128GB, DDR4 4600(O.C)/ 4400(O.C)/ 4266(O.C.)/4133(O.C.)/4000(O.C.)/ 3866(O.C.)/733(O.C.)/3600(O.C.)/ 3466(O.C.)/ 3333(O.C.)/3200/3000/2800/2666/2400/ 2133 MHz Un-buffered Memory * 4 x DIMM, Max. 128GB, DDR4 4800(O.C.)/ 4600(O.C)/ 4466(O.C.)/4400(O.C)/4266(O.C.)/ 4133(O.C.)/4000(O.C.)/ 3866(O.C.)/3733(O.C.)/ 3600(O.C.)/ 3466(O.C.)/ 3333(O.C.)/3200/3000/ 2800/2666/2400/2133 MHz Un-buffered Memory * Dual Channel Memory Architecture ECC Memory (ECC mode) support varies by CPU. Graphic 1 x DisplayPort 1.2 1 x HDMI 2.1(4K@60HZ) *Graphics specifications may vary between CPU types. Expansion Slots Desktop Processors: 1 x PCIe 4.0 x16 (x16 mode) G-Series Desktop Processors: 1 x PCIe 3.0 x16 (x16 mode) B550 Chipset: 1 x PCIe 3.0 x16 (x4 mode) *1 1 x PCIe 3.0 x1 *1 * Support PCIe bifurcation for RAID on CPU function. Storage Total supports 2 x M.2 slot(s) and 4 x SATA 6Gb/s ports Desktop Processors: 1 x M.2_1 socket 3, with M Key, Type 2242/2260/2280 (PCIE 4.0 x4 and SATA modes) storage devices support

		Desktop Processors: 1 x M.2_1 socket 3, with M Key, Type 2242/2260/2280 (PCIE 3.0 x4 and SATA modes) storage devices support B550 Chipset : 1 x M.2_2 socket 3, with M Key, Type 2242/2260/2280/22110(PCIE 3.0 x4 and SATA modes) storage devices support 4 x SATA 6Gb/s port(s), Support Raid 0, 1, 10 LAN: 2.5Gb Ethernet Wireless Data Network: Wi-Fi 6 AX200 2x2 Wi-Fi 6 (802.11 a/b/g/n/ac/ax) support 1024QAM/OFDMA/MU-MIMO Supports up to 2.4Gbps max data rate Supports dual band frequency 2.4/5 GHz Supports channel bandwidth: HT20/HT40/HT80/HT160 Supports PCIe interface Bluetooth: Bluetooth v5.1* *BT 5.1 function will be ready in 10 build 19041 or later. Audio: ALC S1200A 7.1 Surround Sound High Definition Audio CODEC - Supports : Jack-detection, Multi-streaming, Front Panel Jack-retasking, up to 24-Bit/192kHz playback Audio Feature : - Exclusive DTS Custom for GAMING Headsets. - Optical S/PDIF out port(s) at back panel - Audio cover - Audio Shielding - Dedicated audio PCB layers - Premium Japanese audio capacitors USB Ports Rear USB Port (Total 8) 2 x USB 3.2 Gen 2 port(s)(1 x Type-A +1 x USB Type-C®) 4 x USB 3.2 Gen 1 port(s)(4 x Type-A) 2 x USB 2.0 port(s)(2 x Type-A) Front USB Port (Total 6) 2 x USB 3.2 Gen 1 port(s)(2 x Type-A) 4 x USB 2.0 port(s)(4 x Type-A) Software Features: Appropriate Software Special Features: PROTECTION Back I/O Ports 1 x PS/2 keyboard/mouse combo port(s)

		1 x DisplayPort 1 x HDMI 1 x LAN (2.5G) port(s) 2 x USB 3.2 Gen 2 (teal blue) (1 x Type-A+1 x USB Type-C®) 2 x USB 2.0 4 x USB 3.2 Gen 1 (blue) (one port can be switched to BIOS RECOVERY) 1 x Optical S/PDIF out 5 x Audio jack(s) 1 x BIOS RECOVERY Button(s) 1 x Wi-Fi Module Internal I/O Ports 1 x CPU Fan connector(s) 1 x CPU OPT Fan connector(s) 2 x Chassis Fan connector(s) 2 x RGB Strip Headers 1 x Addressable Gen 2 header(s) 1 x USB 3.2 Gen 1(up to 5Gbps) connector(s) support(s) additional 2 USB 3.2 Gen 1 port(s) 2 x USB 2.0 connector(s) support(s) additional 4 USB 2.0 port(s) 1 x M.2 Socket 3 with M Key, type 2242/2260/2280 storage devices support (SATA mode & X4 PCIE mode) 1 x M.2 Socket 3 with M Key, type 2242/2260/2280/22110 storage devices support (SATA mode & X4 PCIE mode) 1 x SPI TPM header 4 x SATA 6Gb/s connector(s) 1 x 24-pin EATX Power connector(s) 1 x 8-pin EATX 12V Power connectors 1 x Front panel audio connector(s) (AAFP) 1 x Clear CMOS jumper(s) 1 x System panel connector 1 x COM port header 1 x Speaker connector Accessories User´s manual I/O Shield 2 x SATA 6Gb/s cable(s) 1 x Supporting DVD 1 x Gaming Sticker 1 x Certification card(s) 1 x Wi-Fi moving antenna 1 x M.2 SSD screw package(s) 1 x M.2 Rubber Package(s) BIOS: 256 Mb Flash ROM, UEFI AMI BIOS Operating System: latest proprietary operating system

		Form Factor: mATX Form Factor 9.6 inch x 9.6 inch (24.4 cm x 24.4 cm) Note: *1 PCIEX16_2 will run x2 mode when PCIEX1 is used. - 16GB DDR4 3600MHZ RAM Capacity: 16GB (2 x 8GB) Type: 288-Pin DDR4 SDRAM Speed: DDR4 3600 (PC4 28800) CAS Latency: 18 Timing: 18-22-22-42 Voltage: 1.35V ECC: No Buffered/Registered: Unbuffered Multi-channel Kit: Dual Channel Kit Chipset: XMP 2.0 Color Black Heat Spreader Yes - 500GB SSD Card Capacity: 500GB Form Factor: M.2 2280 Connector: M.2 Sequential Read Performance: 3500MB/s Sequential Write Performance: 2300MB/s Random Read: 360K IOPS Random Write: 390K IOPS Interface: PCIe Gen3 x4, NVMe v1.4 Warranty: 5-Year Limited Warranty Endurance (TBW): 300 Dimensions (L x W x H): 80mm x 22mm x 2.38mm Weight: 6.5gms Operating Temperature: 0°C to 70°C Non-Operating Temperature: -40°C to 85°C Certifications: BSMI, ICES-003/NMB-003, CE, FCC, KC, Maghreb, RCM, UKCA, VCCI, CB-Scheme, TUV, UL - VIDEO CARD Bus Standard: PCI Express 4.0 OpenGL: OpenGL®4.6 Video Memory: 8GB GDDR6 Engine Clock: OC Mode - 1740 MHz (Boost Clock) Gaming Mode - 1710 MHz (Boost Clock) CUDA Core: 4864 Memory Speed: 14 Gbps Memory Interface: 256-bit Resolution: Digital Max Resolution 7680 x 4320 Interface: Yes x 2 (Native HDMI 2.1) Yes x 3 (Native DisplayPort 1.4a) HDCP Support Yes (2.3)

		- CPU CASE Type: ATX Case Drive Space: 5:25" - 0 Drive Space: 3.25" - 2 Drive Space: 2.5" - 2 Main Board: ATX Power Supply: PS2 Expansion Slot: 7 Slots Case Dimension: 400x 185 x 440mm Fan Capacity Front: 2 x 12cm Rear: 1x12cm Top: 2 x 12cm Measurement: 1080pcs / 40' HQ Maximum Compatibility: VGA Card Length: 380mm | CPU Cooler: 160mm | M/B: 305x244mm - FSP 750W GOLD POWER SUPPLY UNIT - Monitor: 21.5" WIDE BLACK FHD LED MONITOR (VGA, HDMI) - MOUSE AND KEYBOARD *- Table with metal frame and wooden top (see attachment)* *- Swivel Chair (see attachment)*
5	3	**Multi-color FDM 3d printer** ITEM SPECIFICATIONS Technology: Fused Deposition Modelling (FDM) / Fused Filament Fabrication (FFF) Build Volume (W×D×H) 256 × 256 × 256 mm^3 Nozzle 0.4 mm Hardened Steel Included Hot end All-Metal Max Hot End Temperature 300 ℃ Filament Diameter 1.75 mm Supported Filament PLA, PETG, TPU, ABS, ASA, PVA, PET Ideal for PA, PC, Carbon/ Glass Fiber Reinforced Polymer Build Plate Surface Bambu Cool Plate, Bambu Engineering Plate Included Max Build Plate Temperature 110℃@220V, 120℃@110V Max Speed of Tool Head 500 mm/s Max Acceleration of Tool Head 20 m/s^2 Physical Dimensions 389 × 389 × 457 mm^3, Package size 480 × 480 × 590 mm^3, Net weight 14.13 kg, Gross weight (AMS included) 22.3 kg Electrical Requirements 100-240 VAC, 50/60 H, 1000W@220V, 350W@110V

		Inclusions: *Slicing Software included: Licensed Professional Software (Perpetual License)* *1 set Starter Material / Consumables* *Industrial-grade Adjustable Shelves [4 layers - only 1 shelf for the 3 units] (See attachment)* English Manual Certificate of authority to sell from the manufacturer or local distributor/reseller. Training certificate provided by manufacturer to certified trainer. After-Sales Support certificate issued by the manufacturer. Parts Availability certificate issued by the manufacturer. On-Site Training and Installation 12 Months warranty for parts and service
6	1	**Desktop PC for CAD Modelling** ITEM SPECIFICATIONS - 3.4 GHz Eight-Core Processor # of CPU Cores: 8 # of Threads: 16 Max. Boost Clock: Up to 4.6GHz Base Clock: 3.4GHz L1 Cache: 512KB L2 Cache: 4MB L3 Cache: 32MB Default TDP: 65W Processor Technology for CPU Cores: TSMC 7nm FinFET Unlocked for Overclocking: Yes CPU Socket: AM4 Socket Count: 1P Thermal Solution (PIB): Not included Max. Operating Temperature (Tjmax): 90°C - B550M WIFI MOTHERBOARD Chipset: B550 Memory: 4 x DIMM, Max. 128GB, DDR4 4600(O.C)/ 4400(O.C)/ 4266(O.C.)/4133(O.C.)/4000(O.C.)/ 3866(O.C.)/733(O.C.)/3600(O.C.)/ 3466(O.C.)/ 3333(O.C.)/3200/3000/2800/2666/2400/ 2133 MHz Un-buffered Memory * 4 x DIMM, Max. 128GB, DDR4 4800(O.C.)/ 4600(O.C)/ 4466(O.C.)/4400(O.C)/4266(O.C.)/ 4133(O.C.)/4000(O.C.)/ 3866(O.C.)/3733(O.C.)/ 3600(O.C.)/ 3466(O.C.)/ 3333(O.C.)/3200/3000/

		2800/2666/2400/2133 MHz Un-buffered Memory * Dual Channel Memory Architecture ECC Memory (ECC mode) support varies by CPU. Graphic 1 x DisplayPort 1.2 1 x HDMI 2.1(4K@60HZ) *Graphics specifications may vary between CPU types. Expansion Slots Desktop Processors: 1 x PCIe 4.0 x16 (x16 mode) G-Series Desktop Processors: 1 x PCIe 3.0 x16 (x16 mode) B550 Chipset: 1 x PCIe 3.0 x16 (x4 mode) *1 1 x PCIe 3.0 x1 *1 * Support PCIe bifurcation for RAID on CPU function. Storage Total supports 2 x M.2 slot(s) and 4 x SATA 6Gb/s ports Desktop Processors: 1 x M.2_1 socket 3, with M Key, Type 2242/2260/2280 (PCIE 4.0 x4 and SATA modes) storage devices support Desktop Processors: 1 x M.2_1 socket 3, with M Key, Type 2242/2260/2280 (PCIE 3.0 x4 and SATA modes) storage devices support B550 Chipset : 1 x M.2_2 socket 3, with M Key, Type 2242/2260/2280/22110(PCIE 3.0 x4 and SATA modes) storage devices support 4 x SATA 6Gb/s port(s), Support Raid 0, 1, 10 LAN: 2.5Gb Ethernet Wireless Data Network: Wi-Fi 6 AX200 2x2 Wi-Fi 6 (802.11 a/b/g/n/ac/ax) support 1024QAM/OFDMA/MU-MIMO Supports up to 2.4Gbps max data rate Supports dual band frequency 2.4/5 GHz Supports channel bandwidth: HT20/HT40/HT80/HT160 Supports PCIe interface Bluetooth: Bluetooth v5.1* *BT 5.1 function will be ready in 10 build 19041 or later. Audio: ALC S1200A 7.1 Surround Sound High Definition Audio CODEC - Supports : Jack-detection, Multi-streaming, Front Panel Jack-retasking, up to 24-Bit/192kHz playback

		Audio Feature : - Exclusive DTS Custom for GAMING Headsets. - Optical S/PDIF out port(s) at back panel - Audio cover - Audio Shielding - Dedicated audio PCB layers - Premium Japanese audio capacitors USB Ports Rear USB Port (Total 8) 2 x USB 3.2 Gen 2 port(s)(1 x Type-A +1 x USB Type-C®) 4 x USB 3.2 Gen 1 port(s)(4 x Type-A) 2 x USB 2.0 port(s)(2 x Type-A) Front USB Port (Total 6) 2 x USB 3.2 Gen 1 port(s)(2 x Type-A) 4 x USB 2.0 port(s)(4 x Type-A) Software Features: Appropriate Software Special Features: PROTECTION Back I/O Ports 1 x PS/2 keyboard/mouse combo port(s) 1 x DisplayPort 1 x HDMI 1 x LAN (2.5G) port(s) 2 x USB 3.2 Gen 2 (teal blue) (1 x Type-A+1 x USB Type-C®) 2 x USB 2.0 4 x USB 3.2 Gen 1 (blue) (one port can be switched to BIOS RECOVERY) 1 x Optical S/PDIF out 5 x Audio jack(s) 1 x BIOS RECOVERY Button(s) 1 x Wi-Fi Module Internal I/O Ports 1 x CPU Fan connector(s) 1 x CPU OPT Fan connector(s) 2 x Chassis Fan connector(s) 2 x RGB Strip Headers 1 x Addressable Gen 2 header(s) 1 x USB 3.2 Gen 1(up to 5Gbps) connector(s) support(s) additional 2 USB 3.2 Gen 1 port(s) 2 x USB 2.0 connector(s) support(s) additional 4 USB 2.0 port(s) 1 x M.2 Socket 3 with M Key, type 2242/2260/2280 storage devices support (SATA mode & X4 PCIE mode) 1 x M.2 Socket 3 with M Key, type 2242/2260/2280/22110 storage devices support (SATA mode & X4 PCIE mode)

		1 x SPI TPM header 4 x SATA 6Gb/s connector(s) 1 x 24-pin EATX Power connector(s) 1 x 8-pin EATX 12V Power connectors 1 x Front panel audio connector(s) (AAFP) 1 x Clear CMOS jumper(s) 1 x System panel connector 1 x COM port header 1 x Speaker connector Accessories User´s manual I/O Shield 2 x SATA 6Gb/s cable(s) 1 x Supporting DVD 1 x Gaming Sticker 1 x Certification card(s) 1 x Wi-Fi moving antenna 1 x M.2 SSD screw package(s) 1 x M.2 Rubber Package(s) BIOS: 256 Mb Flash ROM, UEFI AMI BIOS Operating System: latest proprietary operating system Form Factor: mATX Form Factor 9.6 inch x 9.6 inch (24.4 cm x 24.4 cm) Note: *1 PCIEX16_2 will run x2 mode when PCIEX1 is used. - 16GB DDR4 3600MHZ RAM Capacity: 16GB (2 x 8GB) Type: 288-Pin DDR4 SDRAM Speed: DDR4 3600 (PC4 28800) CAS Latency: 18 Timing: 18-22-22-42 Voltage: 1.35V ECC: No Buffered/Registered: Unbuffered Multi-channel Kit: Dual Channel Kit Chipset: XMP 2.0 Color Black Heat Spreader Yes - 500GB SSD Card Capacity: 500GB Form Factor: M.2 2280 Connector: M.2 Sequential Read Performance: 3500MB/s Sequential Write Performance: 2300MB/s Random Read: 360K IOPS

		Random Write: 390K IOPS Interface: PCIe Gen3 x4, NVMe v1.4 Warranty: 5-Year Limited Warranty Endurance (TBW): 300 Dimensions (L x W x H): 80mm x 22mm x 2.38mm Weight: 6.5gms Operating Temperature: 0°C to 70°C Non-Operating Temperature: -40°C to 85°C Certifications: BSMI, ICES-003/NMB-003, CE, FCC, KC, Maghreb, RCM, UKCA, VCCI, CB-Scheme, TUV, UL - VIDEO CARD Bus Standard: PCI Express 4.0 OpenGL: OpenGL®4.6 Video Memory: 8GB GDDR6 Engine Clock: OC Mode - 1740 MHz (Boost Clock) Gaming Mode - 1710 MHz (Boost Clock) CUDA Core: 4864 Memory Speed: 14 Gbps Memory Interface: 256-bit Resolution: Digital Max Resolution 7680 x 4320 Interface: Yes x 2 (Native HDMI 2.1) Yes x 3 (Native DisplayPort 1.4a) HDCP Support Yes (2.3) - CPU CASE Type: ATX Case Drive Space: 5:25" - 0 Drive Space: 3.25" - 2 Drive Space: 2.5" - 2 Main Board: ATX Power Supply: PS2 Expansion Slot: 7 Slots Case Dimension: 400x 185 x 440mm Fan Capacity Front: 2 x 12cm Rear: 1x12cm Top: 2 x 12cm Measurement: 1080pcs / 40' HQ Maximum Compatibility: VGA Card Length: 380mm | CPU Cooler: 160mm | M/B: 305x244mm - FSP 750W GOLD POWER SUPPLY UNIT - Monitor: 21.5" WIDE BLACK FHD LED MONITOR (VGA, HDMI) - MOUSE AND KEYBOARD *- Table with metal frame and wooden top (see attachment)* *- Swivel Chair (see attachment)*

7	1	**60-seat Premium 3D CAD Software with initial 4 years Subscription Services** ITEM SPECIFICATIONS - Premium (3D CAD software) - Simulation Premium (FEA tools) - Flow Simulation (CFD tools) - Motion (kinematics analysis) - Plastics (part and mold filling analysis) - Sustainability (environmental impact tools) - Electrical Professional (electrical systems design tools) - Model Base Definition (define, organize, and publish 3D PMI) - Visualize (develop rich, photo-quality content) - Computer Aided Manufacturing Supports for Education Edition includes: - Complete Curriculum, including a Teacher Guide and Student Guide that makes teaching easier at every level. - Extensive interactive Courseware projects - Access to online educational community, plus our library of articles, tutorials, product resources, and more. - Free Access to Customer Portal. - Free Updates and upgrade to latest version. - Free installation assistance. Training: - Includes training for 5 faculty members / staff. - Training period is 4 full days - Lunch is included Terms and Conditions: 1. Warranty: Technical support during subscription 2. All prices quoted are subject to change w/o prior notice
8	1	**Professional Desktop Fused Deposition Modelling/Fused Filament Fabrication 3D Printer** ITEM SPECIFICATIONS Technology: Fused Deposition Modelling (FDM) / Fused Filament Fabrication (FFF) Dimensions Build volume

		330 x 240 x 300 mm (13 x 9.4 x 11.8 inches) Assembled dimensions: W 495 x D 585 x H 780 mm (W 19.5 x D 23 x H 30.7 inches) Print technology: Fused Deposition Modeling (FDM) Compatible filament diameter: 2.85 mm Weight: 29.1 kg (64.2 lbs) Maximum power output: 500 W Printer properties Layer resolution: 0.25 mm nozzle: 150 - 60 micron 0.4 mm nozzle: 200 - 20 micron 0.6 mm nozzle: 300 - 20 micron 0.8 mm nozzle: 600 - 20 micron XYZ resolution: 6.9, 6.9, 2.5 micron Feeder type: Dual-geared feeder, reinforced for composite materials Display: 4.7-inch (11.9 cm) color touchscreen Print core replacement: Swappable print cores Print head: Dual extrusion print head with an auto-nozzle lifting system, swappable print cores, and flood detection. Nozzle diameters: 0.25 mm, 0.4 mm, 0.6 mm, 0.8 mm Operation parameters Nozzle temperature 180 - 280 °C Nozzle heat-up time: < 2 minutes Operating sound: < 51 dBA Build plate leveling: Advanced active leveling Build plate: Glass build plate Build plate heat-up time: < 5 minutes (from 20 to 60 °C) Operating ambient temperature: 15 - 32 °C (59 - 90 °F) Non-operating temperature: 0 - 32 °C (32 - 90 °F) Ecosystem: Supplied free software - Appropriate Slicing Software - Appropriate printer management software Essential Software – enterprise-grade online software tools Supported OS: All leading industry OS Plugin integration: All leading Professional CAD software Supported file types: STL, OBJ, X3D, 3MF, BMP, GIF, JPG, PNG Printable formats: G, GCODE, GCODE.gz, UFP File transfer: Wi-Fi (2.4 GHz), Ethernet, USB

		Safety and compliance Certification: CE, FCC, VPAT, RoHS, REACH, CB, BIS, KC, PSE, RCM, SRRC, MIC, NCC, Safe unattended professional use Security certification: ISO/IEC 27001 certified (https://support.makerbot.com/s/article/1667411337398) Inclusions: *Slicing Software included: Licensed Professional Software (Perpetual License)* *1 set Starter Material / Consumables* English Manual *Table with metal frame and wooden top (See attachment)* *Swivel Chair (See attachment)* *3-Layer Metal Cabinet (Drawer) for Accessories, Supplies and Materials (See attachment)* Certificate of authority to sell from the manufacturer or local distributor/reseller. Training certificate provided by manufacturer to certified trainer. After-Sales Support certificate issued by the manufacturer. Parts Availability certificate issued by the manufacturer. On-Site Training and Installation 12 Months warranty for parts and service
9	1	**Food 3D Printer** ITEM SPECIFICATIONS Single syringe with 100 cubic centimeters volume (cc) capacity Print area: up to 220 x 195 x 170 mm Syringe and printbed heating Automatic calibration Dimensions: 510 x 420 x 700 mm Smarter control and monitoring with touch screen and webcam. The touchscreen is intuitively designed for an excellent user experience. The webcam gives you the freedom to keep an eye on your print job if you need to step away Motorized syringe for more accurate and controlled paste flow Inclusions: English Manual *Table with metal frame and wooden top (See attachment)* *Swivel Chair (See attachment)* Certificate of authority to sell from the manufacturer or local

		distributor/reseller. Training certificate provided by manufacturer to certified trainer. After-Sales Support certificate issued by the manufacturer. Parts Availability certificate issued by the manufacturer. On-Site Training and Installation 12 Months warranty for parts and service
10	1	**Printed Circuit Board (PCB) Printer** ITEM SPECIFICATIONS Printing Specifications Minimum trace width 0.2 mm Minimum passive size 1005 Minimum pin-to-pin pitch (conductive ink) 0.8 mml Minimum pin-to-pin pitch (solder paste) 0.5 mml Resistivity 12 mΩ/sq @ 70 um height Substrate material FR4 Maximum board thickness 3 mm Soldering Specifications Solder paste alloy Sn42/Bi57.6/Ag0.4 Solder wire alloy SnBiAg1 Soldering iron temperature 180-210 °C Print Bed Print area 135 x 113.5 mm Max. heated bed temperature 240 °C Heated bed ramp rate ~2°C/s Footprint Dimensions: 390 x 257 x 207 mm (L x W x H) Weight 7 kg Computing Requirements Compatible operating systems latest proprietary operating system Compatible file format Gerber Connection type Wired USB Certification EN 61326-1:2013 EMC requirements IEC 61010-1 Safety requirements CE Marking Affixed to the printers delivered to European customers Inclusions: *Drill attachment* *Slicing Software included: Licensed Professional Software (Perpetual License)* *1 set Starter Material / Consumables*

		English Manual *Table with metal frame and wooden top (See attachment)* *Swivel Chair (See attachment)* Certificate of authority to sell from the manufacturer or local distributor/reseller. Training certificate provided by manufacturer to certified trainer. After-Sales Support certificate issued by the manufacturer. Parts Availability certificate issued by the manufacturer. On-Site Training and Installation 12 Months warranty for parts and service
11	1	**Computer Numerical Control (CNC) Router** ITEM SPECIFICATIONS X axis travel 23.81" (605mm) Y axis travel = 47.63" (1210mm) Z axis travel 3.937" (100mm) Table work area = 28.4" x 61" Electro Spindle 800W (1HP) Includes Collets 1/4" & 1/8" Spindle speed 0-24,000 RPM Rapid feed rate 150 IPM (3.81 MPM) Precision Linear Guideway X/Y/Z Precision Ball Screw X/Y/Z Ball Screw Diameter 16mm Resolution +/- .00589" (0.15mm) Power requirements 115V, 50~60Hz, 13A, 1-Phase (Canada 220V, 7A) Working Table High rigidity Aluminum Extrusion Gantry bridge High rigidity Aluminum Extrusion Gantry Supports Aluminum billet machined Max Gantry Clearance 5 1/2" (139.0mm) Gantry Clearance Above Spoil Brds 4 1/2" (114.3mm) Machine Base All Welded Steel Frame Machine Dimensions = 62"L x 35"W x 28"H Shipping Dimensions = 65" x 38" x 21" Machine Weight = 242 lbs Tool Touch Off Included Controller RichAuto B11 DSP CNC motion control system USB port for easy file transfer Inclusions: Licensed Professional Software (if needed) - Perpetual License

		1 set Starter Material / Consumables English Manual *Heavy Duty Steel Storage Cabinet with Lock (See attachment)* Certificate of authority to sell from the manufacturer or local distributor/reseller. Training certificate provided by manufacturer to certified trainer. After-Sales Support certificate issued by the manufacturer. Parts Availability certificate issued by the manufacturer. On-Site Training and Installation 12 Months warranty for parts and service
12	1	**Desktop PC for CAD Modelling** ITEM SPECIFICATIONS - 3.4 GHz Eight-Core Processor # of CPU Cores: 8 # of Threads: 16 Max. Boost Clock: Up to 4.6GHz Base Clock: 3.4GHz L1 Cache: 512KB L2 Cache: 4MB L3 Cache: 32MB Default TDP: 65W Processor Technology for CPU Cores: TSMC 7nm FinFET Unlocked for Overclocking: Yes CPU Socket: AM4 Socket Count: 1P Thermal Solution (PIB): Not included Max. Operating Temperature (Tjmax): 90°C - B550M WIFI MOTHERBOARD Chipset: B550 Memory: 4 x DIMM, Max. 128GB, DDR4 4600(O.C)/ 4400(O.C)/ 4266(O.C.)/4133(O.C.)/4000(O.C.)/ 3866(O.C.)/733(O.C.)/3600(O.C.)/ 3466(O.C.)/ 3333(O.C.)/3200/3000/2800/2666/2400/ 2133 MHz Un-buffered Memory * 4 x DIMM, Max. 128GB, DDR4 4800(O.C.)/ 4600(O.C)/ 4466(O.C.)/4400(O.C)/4266(O.C.)/ 4133(O.C.)/4000(O.C.)/ 3866(O.C.)/3733(O.C.)/ 3600(O.C.)/ 3466(O.C.)/ 3333(O.C.)/3200/3000/ 2800/2666/2400/2133 MHz Un-buffered Memory * Dual Channel Memory Architecture ECC Memory (ECC mode) support varies by CPU.

		Graphic 1 x DisplayPort 1.2 1 x HDMI 2.1(4K@60HZ) *Graphics specifications may vary between CPU types. Expansion Slots Desktop Processors: 1 x PCIe 4.0 x16 (x16 mode) G-Series Desktop Processors: 1 x PCIe 3.0 x16 (x16 mode) B550 Chipset: 1 x PCIe 3.0 x16 (x4 mode) *1 1 x PCIe 3.0 x1 *1 * Support PCIe bifurcation for RAID on CPU function. Storage Total supports 2 x M.2 slot(s) and 4 x SATA 6Gb/s ports Desktop Processors: 1 x M.2_1 socket 3, with M Key, Type 2242/2260/2280 (PCIE 4.0 x4 and SATA modes) storage devices support Desktop Processors: 1 x M.2_1 socket 3, with M Key, Type 2242/2260/2280 (PCIE 3.0 x4 and SATA modes) storage devices support B550 Chipset : 1 x M.2_2 socket 3, with M Key, Type 2242/2260/2280/22110(PCIE 3.0 x4 and SATA modes) storage devices support 4 x SATA 6Gb/s port(s), Support Raid 0, 1, 10 LAN: 2.5Gb Ethernet Wireless Data Network: Wi-Fi 6 AX200 2x2 Wi-Fi 6 (802.11 a/b/g/n/ac/ax) support 1024QAM/OFDMA/MU-MIMO Supports up to 2.4Gbps max data rate Supports dual band frequency 2.4/5 GHz Supports channel bandwidth: HT20/HT40/HT80/HT160 Supports PCIe interface Bluetooth: Bluetooth v5.1* *BT 5.1 function will be ready in 10 build 19041 or later. Audio: ALC S1200A 7.1 Surround Sound High Definition Audio CODEC - Supports : Jack-detection, Multi-streaming, Front Panel Jack-retasking, up to 24-Bit/192kHz playback Audio Feature : - Exclusive DTS Custom for GAMING Headsets. - Optical S/PDIF out port(s) at back panel - Audio cover

		- Audio Shielding - Dedicated audio PCB layers - Premium Japanese audio capacitors USB Ports Rear USB Port (Total 8) 2 x USB 3.2 Gen 2 port(s)(1 x Type-A +1 x USB Type-C®) 4 x USB 3.2 Gen 1 port(s)(4 x Type-A) 2 x USB 2.0 port(s)(2 x Type-A) Front USB Port (Total 6) 2 x USB 3.2 Gen 1 port(s)(2 x Type-A) 4 x USB 2.0 port(s)(4 x Type-A) Software Features: Appropriate Software Special Features: PROTECTION Back I/O Ports 1 x PS/2 keyboard/mouse combo port(s) 1 x DisplayPort 1 x HDMI 1 x LAN (2.5G) port(s) 2 x USB 3.2 Gen 2 (teal blue) (1 x Type-A+1 x USB Type-C®) 2 x USB 2.0 4 x USB 3.2 Gen 1 (blue) (one port can be switched to BIOS RECOVERY) 1 x Optical S/PDIF out 5 x Audio jack(s) 1 x BIOS RECOVERY Button(s) 1 x Wi-Fi Module Internal I/O Ports 1 x CPU Fan connector(s) 1 x CPU OPT Fan connector(s) 2 x Chassis Fan connector(s) 2 x RGB Strip Headers 1 x Addressable Gen 2 header(s) 1 x USB 3.2 Gen 1(up to 5Gbps) connector(s) support(s) additional 2 USB 3.2 Gen 1 port(s) 2 x USB 2.0 connector(s) support(s) additional 4 USB 2.0 port(s) 1 x M.2 Socket 3 with M Key, type 2242/2260/2280 storage devices support (SATA mode & X4 PCIE mode) 1 x M.2 Socket 3 with M Key, type 2242/2260/2280/22110 storage devices support (SATA mode & X4 PCIE mode) 1 x SPI TPM header 4 x SATA 6Gb/s connector(s) 1 x 24-pin EATX Power connector(s) 1 x 8-pin EATX 12V Power connectors

		1 x Front panel audio connector(s) (AAFP) 1 x Clear CMOS jumper(s) 1 x System panel connector 1 x COM port header 1 x Speaker connector Accessories User´s manual I/O Shield 2 x SATA 6Gb/s cable(s) 1 x Supporting DVD 1 x Gaming Sticker 1 x Certification card(s) 1 x Wi-Fi moving antenna 1 x M.2 SSD screw package(s) 1 x M.2 Rubber Package(s) BIOS: 256 Mb Flash ROM, UEFI AMI BIOS Operating System: latest proprietary operating system Form Factor: mATX Form Factor 9.6 inch x 9.6 inch (24.4 cm x 24.4 cm) Note: *1 PCIEX16_2 will run x2 mode when PCIEX1 is used. - 16GB DDR4 3600MHZ RAM Capacity: 16GB (2 x 8GB) Type: 288-Pin DDR4 SDRAM Speed: DDR4 3600 (PC4 28800) CAS Latency: 18 Timing: 18-22-22-42 Voltage: 1.35V ECC: No Buffered/Registered: Unbuffered Multi-channel Kit: Dual Channel Kit Chipset: XMP 2.0 Color Black Heat Spreader Yes - 500GB SSD Card Capacity: 500GB Form Factor: M.2 2280 Connector: M.2 Sequential Read Performance: 3500MB/s Sequential Write Performance: 2300MB/s Random Read: 360K IOPS Random Write: 390K IOPS Interface: PCIe Gen3 x4, NVMe v1.4 Warranty: 5-Year Limited Warranty Endurance (TBW): 300

		Dimensions (L x W x H): 80mm x 22mm x 2.38mm Weight: 6.5gms Operating Temperature: 0°C to 70°C Non-Operating Temperature: -40°C to 85°C Certifications: BSMI, ICES-003/NMB-003, CE, FCC, KC, Maghreb, RCM, UKCA, VCCI, CB-Scheme, TUV, UL - VIDEO CARD Bus Standard: PCI Express 4.0 OpenGL: OpenGL®4.6 Video Memory: 8GB GDDR6 Engine Clock: OC Mode - 1740 MHz (Boost Clock) Gaming Mode - 1710 MHz (Boost Clock) CUDA Core: 4864 Memory Speed: 14 Gbps Memory Interface: 256-bit Resolution: Digital Max Resolution 7680 x 4320 Interface: Yes x 2 (Native HDMI 2.1) Yes x 3 (Native DisplayPort 1.4a) HDCP Support Yes (2.3) - CPU CASE Type: ATX Case Drive Space: 5:25" - 0 Drive Space: 3.25" - 2 Drive Space: 2.5" - 2 Main Board: ATX Power Supply: PS2 Expansion Slot: 7 Slots Case Dimension: 400x 185 x 440mm Fan Capacity Front: 2 x 12cm Rear: 1x12cm Top: 2 x 12cm Measurement: 1080pcs / 40' HQ Maximum Compatibility: VGA Card Length: 380mm | CPU Cooler: 160mm | M/B: 305x244mm - FSP 750W GOLD POWER SUPPLY UNIT - Monitor: 21.5" WIDE BLACK FHD LED MONITOR (VGA, HDMI) - MOUSE AND KEYBOARD *- Table with metal frame and wooden top (see attachment)* *- Swivel Chair (see attachment)*
13	1	**Graphing Software** ITEM SPECIFICATIONS - Engineering graphing software - Capable of the ff:

		- Linear and Polynomial Fitting - Nonlinear Fitting - Peak Analysis - Descriptive Statistics - Hypothesis Testing - Nonparametric Tests - Multivariate Analysis - Power and Sample Size - ROC Curve - Signal Analysis (Smoothing and Filtering, Fast Fourier Transform) - Mathematics (Simple Math Operations, Interpolation, Extrapolation, Area Calculation) - Graphing (2D Graphing, 3D Graphing) - Curve Fitting - Graph Customization - Data Processing, etc
14	1	**Digital Embroidery** ITEM SPECIFICATIONS Can embroider using digital designs Basic Features Accessory Storage Yes Adjustable Screen Brightness No Automatic Thread Cutter Yes Built-in Languages Yes Built-In Memory Yes Included Accessory Feet Button Fitting Foot, Zipper Foot, Overcasting Foot, Blind stich Foot, Monogramming Foot, Zigzag Foot, Embroidery Foot Needle Position Key (Up/Down) Yes Needle Threading System Advanced Number of Presser Feet 8 Presser Foot Leveling Yes Quick Set Bobbin Yes Start/Stop Button Yes Thread Sensor On/Off No Wide Table Included No Wireless Enabled Yes Dimensions Carton Dimensions (W" x D" x H") 16.500 " x 21.000 " x 15.750 " Carton Weight (lbs) 26.700 Unit Dimensions (W" x D" x H") 7.76" x 16.50" x 12.09" Unit Weight (lbs) 15.06 Embroidering Built-In Designs 135

		Built-in Embroidery Lettering Alphabet Fonts 10 Embroidery Position Marker No Maximum Embroidery Area 4" x 4" Sewing Automatic Height Adjustment (AHA) No Built-In Lettering Fonts 10 Built-In Stitch Selections (Stitches) 103 Button Hole Styles 10 Independent Bobbin Winding Motor No Knee Lifter No Maximum Sewing Speed (Stitches Per Minute) 710 Pivot Function No Speed Control Yes Carton Contents: Zigzag foot “J” (on machine), Monogramming foot “N”, Overcasting foot “G”, Zipper foot “I”, Blind stitch foot “R”, Button fitting foot “M”, Buttonhole foot “A”, Embroidery foot “Q”, Needle set, Twin needle, Bobbin (2) (One bobbin is on machine), Pre- wound bobbin (3) (60 weight white embroidery bobbin thread), Bobbin clip (4), Seam ripper, Scissors, Cleaning brush, Eyelet punch, Screwdriver, Disc-shaped screwdriver, Extra spool pin, Spool cap (large), Spool cap (medium) (on machine), Spool cap (small), Thread spool insert (mini king thread spool), Spool net, Bobbin case (on machine), Foot controller, Embroidery frame set (medium), 10 cm (H) × 10 cm (W) (4 inches (H) × 4 inches (W)), Accessory bag, Dust cover, Operation Manual, Quick Reference Guide, Embroidery Design Guide Inclusions: *1 set Starter Material / Consumables* *Voltage Regulator Transformer (110V to 220V if needed)* English Manual *Swivel Chair (See attachment)* Certificate of authority to sell from the manufacturer or local distributor/reseller. Training certificate provided by manufacturer to certified trainer. After-Sales Support certificate issued by the manufacturer. Parts Availability certificate issued by the manufacturer. On-Site Training and Installation 12 Months warranty for parts and service
15	1	**Duplicator** **ITEM SPECIFICATIONS** A3 Size Paper B4 Size Output Master Making Method: Thermal Digital

		Master Making Interval: 23 seconds (A4.100%) Resolution: Scan (input) resolution: 300x360 dpi Print (output) resolution: 300x600 dpi Scanning Method: ADF Scanner Document Feeder Document Weight: 45-210gsm 17-34lbs (Bond) Document Capacity: 1 sheet Printing Method: Stencil print Document Type: Sheet, Book (max) Document Size: Max: 297mmx420mm Min: 100x148mm Image Area: Max: 250x355mm Feeding Capacity: 1,300sheets (64gsm) Stacker Capacity: 1,300sheets (64gsm) Paper size: Max: 297x420mm Min: 100x148mm Paper Weight: 42-210gsm Print Speed: 60ppm/130ppm (3steps) Zoom: 50-200% Preset reduction/enlargement: 57, 70, 81, 86, 94, 115, 122, 141, 173% Margin: x94% Registration adjustment: Vertical ±15mm and Horizontal ±15mm Other function: Ink save mode, Multiple exposure (2, 4, 8, & 16-up, 2in1), Confidential safeguard, 90, 180 degree rotation, Master re-make (save the data from last master making), Repeat counter, Pre-print, Interval print (2 mode, by time specified), Print per set/prints per document program, Energy save mode(LCD / back light turned off /sleep LED), Ink replenishing mode, Auto- reset, Online print (USB 2.0), Double feed detection. Power source: 100-240V, 50/60Hz, 1.6-0.8A/ Max speed printing - MAX. 135WEnergy save mode -MIN. 10.2W Dimensions: 1,290mm x 620mm x 1165mm **Inclusions:** • Price is VAT Inc • Including the delivery fee • FREE LIFETIME SERVICE WARRANTY • Ink Starter Set • 1 Year Standard Warranty on Parts Should also include additional: One (1) Black Ink: (600 cc) 10,000-15,000 copies One (1) Master Stencil Roll: (200 cuts/roll) per cut yield 10,000 - 15,000 copies

Please state compliance to the Technical Specifications

Name of Supplier hereby states its compliance to the abovementioned Technical Specifications for all items.

____

Name of Authorized Representative/Supplier
Signed

Lot 2		
Item #	**Qty**	**Item**
1	1	**3D Pellet Printer** **ITEM SPECIFICATIONS** Print Technology: Dual Direct Drive Pellets, Independent Extruder Build Volume: at least 290 x 185 x 200 mm (minimum) Dual Printing: at least 280 x 165 x 200 mm (minimum) Mirror Printing: at least 147 x 185 x 200 mm (minimum) Print Capability: Mirror Printing, Dual Printing Pellet diameter: 3 - 5 mm Layer Resolution: 10µm Extruder maximum temperature: 300º C Build Plate Leveling: Semi- Automatic -Manual Nozzle Diameter (mm): Direct Drive HR: 0.15 - 0.25 - 0.4 - 0.6 - 0.8 mm Pellet: 0.4 - 0.6 - 0.8 - 2.0 - 4.0 - 5.0 mm Connectivity: USB, Wifi, SD Card Display : 5" color touch screen Control devices: PC, tablet, Smartphone Control mode: Web Direct Drive: ABS, ASA, NYLON, PET-G, PLA, PP, TPU, PLA-3D870, PVA Pellets: PLA, ABS, PETG, A93, WOOD, ABS+CF, PC, HDPE, Ultem, Peek Dimensions: 550mm x 440mm x 460mm **Inclusions:** Slicing Software included: Licensed Professional Software (Perpetual License) 1 set Starter Material / Consumables Power cables 1 Unit UPS 3D Printer Kit 1 Unit Print Bed English Manual Certificate of authority to sell from the manufacturer or local distributor/reseller. Training certificate provided by manufacturer to certified trainer. After-Sales Support certificate issued by the manufacturer.

		Parts Availability certificate issued by the manufacturer. On-Site Training and Installation 12 Months warranty for parts and service
2	1	**Desktop PC for CAD Modelling** ITEM SPECIFICATIONS - 3.4 GHz Eight-Core Processor # of CPU Cores: 8 # of Threads: 16 Max. Boost Clock: Up to 4.6GHz Base Clock: 3.4GHz L1 Cache: 512KB L2 Cache: 4MB L3 Cache: 32MB Default TDP: 65W Processor Technology for CPU Cores: TSMC 7nm FinFET Unlocked for Overclocking: Yes CPU Socket: AM4 Socket Count: 1P Thermal Solution (PIB): Not included Max. Operating Temperature (Tjmax): 90°C - B550M WIFI MOTHERBOARD Chipset: B550 Memory: 4 x DIMM, Max. 128GB, DDR4 4600(O.C)/ 4400(O.C)/ 4266(O.C.)/4133(O.C.)/4000(O.C.)/ 3866(O.C.)/733(O.C.)/3600(O.C.)/ 3466(O.C.)/ 3333(O.C.)/3200/3000/2800/2666/2400/ 2133 MHz Un-buffered Memory * 4 x DIMM, Max. 128GB, DDR4 4800(O.C.)/ 4600(O.C)/ 4466(O.C.)/4400(O.C)/4266(O.C.)/ 4133(O.C.)/4000(O.C.)/ 3866(O.C.)/3733(O.C.)/ 3600(O.C.)/ 3466(O.C.)/ 3333(O.C.)/3200/3000/ 2800/2666/2400/2133 MHz Un-buffered Memory * Dual Channel Memory Architecture ECC Memory (ECC mode) support varies by CPU. Graphic 1 x DisplayPort 1.2 1 x HDMI 2.1(4K@60HZ) *Graphics specifications may vary between CPU types. Expansion Slots Desktop Processors: 1 x PCIe 4.0 x16 (x16 mode)

		G-Series Desktop Processors: 1 x PCIe 3.0 x16 (x16 mode) B550 Chipset: 1 x PCIe 3.0 x16 (x4 mode) *1 1 x PCIe 3.0 x1 *1 * Support PCIe bifurcation for RAID on CPU function. Storage Total supports 2 x M.2 slot(s) and 4 x SATA 6Gb/s ports Desktop Processors: 1 x M.2_1 socket 3, with M Key, Type 2242/2260/2280 (PCIE 4.0 x4 and SATA modes) storage devices support Desktop Processors: 1 x M.2_1 socket 3, with M Key, Type 2242/2260/2280 (PCIE 3.0 x4 and SATA modes) storage devices support B550 Chipset : 1 x M.2_2 socket 3, with M Key, Type 2242/2260/2280/22110(PCIE 3.0 x4 and SATA modes) storage devices support 4 x SATA 6Gb/s port(s), Support Raid 0, 1, 10 LAN: 2.5Gb Ethernet Wireless Data Network: Wi-Fi 6 AX200 2x2 Wi-Fi 6 (802.11 a/b/g/n/ac/ax) support 1024QAM/OFDMA/MU-MIMO Supports up to 2.4Gbps max data rate Supports dual band frequency 2.4/5 GHz Supports channel bandwidth: HT20/HT40/HT80/HT160 Supports PCIe interface Bluetooth: Bluetooth v5.1* *BT 5.1 function will be ready in 10 build 19041 or later. Audio: ALC S1200A 7.1 Surround Sound High Definition Audio CODEC - Supports : Jack-detection, Multi-streaming, Front Panel Jack-retasking, up to 24-Bit/192kHz playback Audio Feature : - Exclusive DTS Custom for GAMING Headsets. - Optical S/PDIF out port(s) at back panel - Audio cover - Audio Shielding - Dedicated audio PCB layers - Premium Japanese audio capacitors USB Ports Rear USB Port (Total 8) 2 x USB 3.2 Gen 2 port(s)(1 x Type-A +1 x USB Type-C®) 4 x USB 3.2 Gen 1 port(s)(4 x Type-A)

		2 x USB 2.0 port(s)(2 x Type-A) Front USB Port (Total 6) 2 x USB 3.2 Gen 1 port(s)(2 x Type-A) 4 x USB 2.0 port(s)(4 x Type-A) Software Features: Appropriate Software Special Features: PROTECTION Back I/O Ports 1 x PS/2 keyboard/mouse combo port(s) 1 x DisplayPort 1 x HDMI 1 x LAN (2.5G) port(s) 2 x USB 3.2 Gen 2 (teal blue) (1 x Type-A+1 x USB Type-C®) 2 x USB 2.0 4 x USB 3.2 Gen 1 (blue) (one port can be switched to BIOS RECOVERY) 1 x Optical S/PDIF out 5 x Audio jack(s) 1 x BIOS RECOVERY Button(s) 1 x Wi-Fi Module Internal I/O Ports 1 x CPU Fan connector(s) 1 x CPU OPT Fan connector(s) 2 x Chassis Fan connector(s) 2 x RGB Strip Headers 1 x Addressable Gen 2 header(s) 1 x USB 3.2 Gen 1(up to 5Gbps) connector(s) support(s) additional 2 USB 3.2 Gen 1 port(s) 2 x USB 2.0 connector(s) support(s) additional 4 USB 2.0 port(s) 1 x M.2 Socket 3 with M Key, type 2242/2260/2280 storage devices support (SATA mode & X4 PCIE mode) 1 x M.2 Socket 3 with M Key, type 2242/2260/2280/22110 storage devices support (SATA mode & X4 PCIE mode) 1 x SPI TPM header 4 x SATA 6Gb/s connector(s) 1 x 24-pin EATX Power connector(s) 1 x 8-pin EATX 12V Power connectors 1 x Front panel audio connector(s) (AAFP) 1 x Clear CMOS jumper(s) 1 x System panel connector 1 x COM port header 1 x Speaker connector Accessories User´s manual

		I/O Shield 2 x SATA 6Gb/s cable(s) 1 x Supporting DVD 1 x Gaming Sticker 1 x Certification card(s) 1 x Wi-Fi moving antenna 1 x M.2 SSD screw package(s) 1 x M.2 Rubber Package(s) BIOS: 256 Mb Flash ROM, UEFI AMI BIOS Operating System: latest proprietary operating system Form Factor: mATX Form Factor 9.6 inch x 9.6 inch (24.4 cm x 24.4 cm) Note: *1 PCIEX16_2 will run x2 mode when PCIEX1 is used. - 16GB DDR4 3600MHZ RAM Capacity: 16GB (2 x 8GB) Type: 288-Pin DDR4 SDRAM Speed: DDR4 3600 (PC4 28800) CAS Latency: 18 Timing: 18-22-22-42 Voltage: 1.35V ECC: No Buffered/Registered: Unbuffered Multi-channel Kit: Dual Channel Kit Chipset: XMP 2.0 Color Black Heat Spreader Yes - 500GB SSD Card Capacity: 500GB Form Factor: M.2 2280 Connector: M.2 Sequential Read Performance: 3500MB/s Sequential Write Performance: 2300MB/s Random Read: 360K IOPS Random Write: 390K IOPS Interface: PCIe Gen3 x4, NVMe v1.4 Warranty: 5-Year Limited Warranty Endurance (TBW): 300 Dimensions (L x W x H): 80mm x 22mm x 2.38mm Weight: 6.5gms Operating Temperature: 0°C to 70°C Non-Operating Temperature: -40°C to 85°C Certifications: BSMI, ICES-003/NMB-003, CE, FCC, KC, Maghreb, RCM, UKCA, VCCI, CB-Scheme, TUV, UL - VIDEO CARD Bus Standard: PCI Express 4.0

		OpenGL: OpenGL®4.6 Video Memory: 8GB GDDR6 Engine Clock: OC Mode - 1740 MHz (Boost Clock) Gaming Mode - 1710 MHz (Boost Clock) CUDA Core: 4864 Memory Speed: 14 Gbps Memory Interface: 256-bit Resolution: Digital Max Resolution 7680 x 4320 Interface: Yes x 2 (Native HDMI 2.1) Yes x 3 (Native DisplayPort 1.4a) HDCP Support Yes (2.3) - CPU CASE Type: ATX Case Drive Space: 5:25" - 0 Drive Space: 3.25" - 2 Drive Space: 2.5" - 2 Main Board: ATX Power Supply: PS2 Expansion Slot: 7 Slots Case Dimension: 400x 185 x 440mm Fan Capacity Front: 2 x 12cm Rear: 1x12cm Top: 2 x 12cm Measurement: 1080pcs / 40' HQ Maximum Compatibility: VGA Card Length: 380mm | CPU Cooler: 160mm | M/B: 305x244mm - FSP 750W GOLD POWER SUPPLY UNIT - Monitor: 21.5" WIDE BLACK FHD LED MONITOR (VGA, HDMI) - MOUSE AND KEYBOARD *- Table with metal frame and wooden top (see attachment)* *- Swivel Chair (see attachment)*
3	1	**Professional Image Processing Software (Segmentation, Analysis and Simulation)** ITEM SPECIFICATIONS An image processing software that allows the user to import, visualize and segment medical images (such as images from a CT or MRI scanner). Users can check and correct the segmentations and create digital 3D models. The models can then be used for measuring, treatment planning and producing an output file to be used for additive manufacturing (3D printing).

		A software that combines CAD tools with pre-processing (meshing) capabilities. It should work on triangulated (STL) files which makes it suitable for freeform 3D data, like the anatomical data coming from the segmentation of medical images. The software may be used to import anatomical data and other 3D objects in STL format. Once objects have been loaded, they can be used for many applications including measuring, designing, modeling and 3D printing. The software should allow for thorough 3D measurements, analyses, surgical planning and more. 1.Base Functionality • Importing medical images in DICOM format and other formats (BMP, TIFF, JPG and raw images) • Viewing images and DICOM data • Selecting a region of interest using generic segmentation tools • Verifying and editing a region of interest • Calculating a digital 3D model and editing the model • Measuring on images and 3D models • Exporting images, measurements, and 3D models to third-party package 1.1 Base: Image Import Load and process stacks of 2D images from several formats including DICOM 3.0 format, BMP, TIFF, JPG and raw images. The data is loaded and then stored in a file format (original input images are not modified). Both during and after import, the user can inspect not only the images but also associated DICOM data (if present in the image files). The software should represent and visualize the images as either gray values or Hounsfield units. CT images are always calibrated based on the Hounsfield units, with the intensity of water being 0. Background air typically has a value of –1000. The user can choose (as a preference) to offset the units by 1000 to obtain positive values in the range of 0 to 4095. 1.2 Base: Visualization After import, the images should be displayed: the original scanner images together with the two orthogonal sections. In the case of axial images, the coronal and sagittal sections are created. The software should offer features and settings to control image visualization, including the following: • Rotate, Pan, and Zoom • Fit to Screen / Full Screen

		• Reslice images • Fluoroscopy simulation • Contrast and brightness • Interpolation of images • Viewing direction • Image filters • Alignment image • Scatter removal filter • Pseudo color visualization • Image layouts • Navigation. • Cine Loop for 4D datasets • Overlay While the above part applies to visualization on the 2D images, features and settings related to visualization in 3D include the following: • 3D preview • 3D rendering and shading • Contour visualization • Transparency • Clipping • Colors 1.3 Base: Measurement tools Tools to measure distances (in mm), angles (in degrees), etc., as specified below. Measurements to be displayed with 4 digits behind the decimal point, however accuracy of measurements is inherently limited by the pixel size of the images. Measurements can be performed either on the 2D images or in the 3D workspace. Supported measurements include: • Distance, angle, radius, length, and diameter measurements • Minimal distance over surface • Measure ellipse and area • Centerline measurements • Profile Line • 3D Histogram • Intensity monitoring • Intensity measurement in Region of Interest 1.4 Base: Segmentation tools Tools to produce a binary ‘mask’ as output, representing the region of interest. A mask defines for each voxel in the image data whether it is part of the region of interest or not. Note that the original images are visualized together with the segmentation results, no original information is lost or hidden. Multiple different segmentation objects (masks) can be made in one session. Visualization of one or multiple masks can be done in 2D as

		well as in 3D using specific colors. The generic segmentation tools required: • Global and Local Thresholding • Region growing • Dynamic region growing • Segmentation by LiveWire • Manual editing (‘Edit Mask’) • Cavity Fill • Smooth Mask • Smart Fill and Smart Brush • Morphology operations • Boolean operations • Multiple slice edit and 3D Interpolate • Split Mask • Mask properties • Compare Masks • Segment Thin Bone • Segment Vessel • Label • Tracing thin structures • CT Bone Wizard • Calculate Part (from mask) • Calculate Mask from Object 1.5 Base: 3D editing tools After 3D objects (STL objects) are created, the software should support the editing of those objects. Supported operations include: • Edit contours • Smooth, Wrap and Reduce • Mirror, Transform and Boolean 1.6 Base: Export tools Export capabilities: • Project to DICOM • Image to DICOM • DICOM Tags • BMP/JPEG • 3D View to DICOM • 360 View to DICOM • 2D Mask area • Grayvalues • 3D Parts (Binary STL, ASCII STL, DICOM Encapsulated STL, DICOM SSO, MGX, DXF, 3MF, DICOM Encapsulated OBJ, Wavefront OBJ, VRML 2.0, PLY, Point Cloud) • Txt and Cloud (Share) • Media (Print, Save Screenshot, Capture Movie) 1.7 Base: Other tools • Registration tools: allows registering imported 3D models onto 3D

		models created in different image datasets. • Anonymize Images: anonymize the DICOM tags from the imported images. • Project Metadata: define any custom-defined metadata and store it inside the project. The tool allows to add, modify, and delete metadata. • Run Matlab script: run custom Matlab script on some of the objects in the project. • Reporting tools: Printing, Save screenshot, Capture Movie 2. Analysis Functionality Users should be able to indicate landmarks and annotate and to construct geometrical entities or ‘analytical primitives’ (points, lines, planes, circles, cylinders, spheres, splines, centerlines), which can serve to indicate anatomical landmarks, anatomical axes, anatomical planes, or planned resection planes, etc. These geometrical entities can be created by drawing, by fitting, by entering coordinates, radius, and vectors, or by creation of entities based on previously created entities using a few predefined creation methods (‘Create Primitives’ tool). On the images and 3D models, polylines can also be grown. The created entities can be exported to a CAD system in IGES format. Users should be able to perform advanced measurements, advanced measurements based on centerlines and splines, wall thickness analysis, part comparison analysis, curvature analysis, Distance to curve analysis, Distance to curve over surface analysis, midplane thickness analysis, Extrema analysis, self-supporting analysis & collision detection. 3. Simulation Functionality Users should be able to evaluate the patient’s anatomy, performing measurements, and planning osteotomies and distractions in 3D. The software should have a tool that supports 3D cephalometry and allows the user to perform several standard analyses (templates) listed in a library. Each analysis lists the landmarks that need to be defined. Planes and measurements are indicated automatically if you have defined all the necessary landmarks. Landmarks can be placed in 2D and 3D. New analyses can be created and saved, and points and planes can be imported from other existing cephalometric

		analyses. The software should also offer a 3D environment for planning certain surgical steps like cuts etc. Osteotomies and distractions are implemented (a distractor can be chosen out of an available distractor library). Attention to be paid to the user-friendliness of the software: a wizard guides the user through the steps needed to achieve bone repositioning. • Select osteotomy or distraction: Choose osteotomy (LeFort 1, LeFort 2, LeFort 3, Ramus Lengthening, Bilateral Sagittal Split, Simple Plane, Freeform) • Choose distraction (Alveolar distraction, Unilateral and bilateral Ramus lengthening, maxillary) • Define the necessary landmarks: Automatic placement of the cutting path, and possibility to adjust the suggested position cutting path • Cut and split the chosen object • Reposition the created new part to desired location During the planning process, the objects and distractors should be seen in 3D as well as in 2D. All positions of the moved parts can be saved, and it is possible at each stage to return to the home position. It should be possible to compare and analyze the virtual pre- and post-operative positions. Apart from the osteotomy wizard, the user should be able to plan resections by means of various ‘cut’ tools (planar cut, etc). The ‘soft tissue’ feature can assist the user in assessing a possible outcome by using a biomechanical model. The result is to be visualized in 3D as a computer animation. 4. Cloud-based Communication platform An online platform to upload and share software project files with different users, allowing easy navigation in the medical images and 3D files as well as basic line drawings, measurements, and annotations. The following should be possible: • Upload a case and share with different collaborators • View cases in the 3D Viewer within the browser o 3D View manipulation o Image View (Contrast change, Multiplanar reconstruction, Enlarging view and more) o Custom views o Indication tools o Measurement tools o Section tool o Fly-through tool to view inside a structure along the centerline

		• Case comments • Case management • Institution Account Management • User Management 4.1 Automatic Segmentation capabilities Software package should have complimentary access to AI-enabled Automatic Segmentation algorithms that were designed to perform segmentation without human intervention at the initial stage: • CMF CBCT Segmentation • CMF CT Segmentation • Heart CT Segmentation • Knee CT Segmentation • Knee MRI Segmentation • Shoulder CT Segmentation • Hip CT Segmentation • Torso CT Segmentation • Ankle CT Segmentation • Bone CT Segmentation *Other Terms and Conditions* *Type of license: Perpetual* *Number of seat: 1 license* *Maintenance* *The term of a maintenance contract shall commence on the purchase date of the actual license and will be automatically renewed every year, unless terminated in writing by either party at least two (2) months before the expiration date of the running maintenance contract. An invoice covering the maintenance charge will be sent to the Buyer one (1) month before the expiration date of the running maintenance contract. A new maintenance period is valid for one year and starts at the end date of the previous maintenance contract. Gaps between maintenance periods must be filled up in order to take a new maintenance contract.* *Maintenance includes support, bugfixes and upgrades of the purchased modules. Depending on the software, it may also include an emergency password replacement service. Maintenance allows the transfer of the software without a transfer fee being due.* *Training:* *- Includes training for at least 4 faculty members / staff.* *- Training period is* ***at least*** *1 full day*
4	1	**High-End Desktop PC** ITEM SPECIFICATIONS

		Processor 13th Generation Core™ i7-13700KF Processor (E-cores up to 4.20 GHz P-cores up to 5.30 GHz) Operating System: latest proprietary operating system Graphic Card: 16GB GDDR6X Memory: 32 GB DDR5-5200MHz (UDIMM) - (2 x 8 GB) Storage: 512 GB SSD M.2 2280 PCIe Gen4 Performance TLC Cooling System: 150W 120mm Air Cooling + 1 x Rear + 3 x Front + 2 x Top with ARGB Fan Pointing Device: USB Optical Mouse Keyboard: USB, Calliope, Black - English (US) WiFi Wireless LAN Adapters Wi-Fi 6E 2x2 AX & Bluetooth® 5.1 or above Monitor: 21.5" WIDE BLACK FHD LED MONITOR (VGA, HDMI) *Table with metal frame and wooden top (see attachment)* *Swivel Chair (see attachment)*
5	1	**3D Scanner** ITEM SPECIFICATIONS Scanner Type: Handheld with Built-in touchscreen interface Description: Hand-held 3D scanner meant to capture (from 30cm to 10m in length). With Built-in touchscreen for ease-of-use during scanning. 3D Point Accuracy : 0.1 mm or better 3D Resolution : 0.6 mm or better Depth of view : at least 55-95 cm Field of view: at least 280 x 360 mm (min.) to 490 x 650 mm (max.) 3D Light source: White LED Texture Resolution: 2.3 mp Frame Rate : 35 fps or better Data acquisition speed : at least 3M points /sec Multi core processing: Yes 3D Formats: OBJ, PLY, STL, etc. Interface: Built in touchscreen - 4 inches or bigger Tracking Modes: Geometry, Markers, Texture Capable of scanning: Black surfaces, Glossy objects, Sharp edges, Human hair Dimensions: At least 165 × 85 × 274 mm or equivalent Software: Include license operating software that can fill holes, simplify the mesh, apply texture. Inclusions: *Calibration Board*

		Magnetic Marker *USB Cable* *Appropriate Software* *Carry Case* English Manual *Safety Box with Security Lock using key and pin code (see attachment)* Certificate of authority to sell from the manufacturer or local distributor/reseller. Training certificate provided by manufacturer to certified trainer. After-Sales Support certificate issued by the manufacturer. Parts Availability certificate issued by the manufacturer. On-Site Training and Installation 12 Months warranty for parts and service
6	1	**High-End Laptop** ITEM SPECIFICATIONS Operating System: latest proprietary operating system Processor: Core i7-10750H Processor 2.60 GHz 12M Cache, up to 5.00 GHz Graphics: GTX 1660 Ti 6GB GDDR6 VRAM Memory: *32GB DDR4* up to 3200MHz SDRAM Support up to 48GB Storage: 1TB SSD Display: 15.6-inch Full HD 12 Months warranty for parts and service
7	1	**Large Format Printer and Cutter** ITEM SPECIFICATIONS Printing Method: Piezo ink-jet method Width: 11.7 to 54 in. (297 to 1,371 mm) Thickness: Max. 39.3 ml (1.0 mm) with liner, for printing Max. 15.7 ml (0.4 mm) with liner and 8.6 ml (0.22 mm) without liner, for cutting Media Roll outer diameter: Max. 9.8 in. (250 mm) Media Roll weight: Max. 77 lb. (35 kg) Media Core diameter: 3 in. (76.2 mm) or 2 in. (50.8 mm) Printing/cutting width (*1): Max. 52.9 in. (1,346 mm) Printing resolution (dots per inch): Max. 1,200 dpi Cutting speed:0.39 to 11.8 in/s (10 to 300 mm/s) Blade force (*2): 30 to 500 gf Software resolution (when cutting): 0.98 ml/step (0.025 mm/step) Dimensions: at least 103.7 in. x 29.5 in. x 52.0 in. (2,632 mm x 748 mm x 1,320 mm)

		Media heating system (*3): Print heater set temperature: 86 to 113 (°F 30 to 45 °C) Dryer set temperature: 86 to 131 °F (30 to 55 °C) Connectivity: Ethernet Power-saving function: Automatic sleep feature Rated input: 100-120/220-240 Va.c. 50/60 Hz 8.0/4.1 A 8 liters Ink (CMYK) - 1L per color 1 pc Cleaning Solution 1 pc AVR 2kva 1 rolls Generic Sticker Dedicated stands, power cord, media holders, replacement blade for separating knife, drain bottle, User's Manual, Software Inclusions: *1 set Starter Material / Consumables* English Manual *Heavy Duty Steel Storage Cabinet with Lock (see attachment)* Certificate of authority to sell from the manufacturer or local distributor/reseller. Training certificate provided by manufacturer to certified trainer. After-Sales Support certificate issued by the manufacturer. Parts Availability certificate issued by the manufacturer. On-Site Training and Installation 12 Months warranty for parts and service
8	1	**Desktop PC for CAD Modelling** ITEM SPECIFICATIONS - 3.4 GHz Eight-Core Processor # of CPU Cores: 8 # of Threads: 16 Max. Boost Clock: Up to 4.6GHz Base Clock: 3.4GHz L1 Cache: 512KB L2 Cache: 4MB L3 Cache: 32MB Default TDP: 65W Processor Technology for CPU Cores: TSMC 7nm FinFET Unlocked for Overclocking: Yes CPU Socket: AM4 Socket Count: 1P Thermal Solution (PIB): Not included Max. Operating Temperature (Tjmax): 90°C

		- B550M WIFI MOTHERBOARD Chipset: B550 Memory: 4 x DIMM, Max. 128GB, DDR4 4600(O.C)/ 4400(O.C)/ 4266(O.C.)/4133(O.C.)/4000(O.C.)/ 3866(O.C.)/733(O.C.)/3600(O.C.)/ 3466(O.C.)/ 3333(O.C.)/3200/3000/2800/2666/2400/ 2133 MHz Un-buffered Memory * 4 x DIMM, Max. 128GB, DDR4 4800(O.C.)/ 4600(O.C)/ 4466(O.C.)/4400(O.C)/4266(O.C.)/ 4133(O.C.)/4000(O.C.)/ 3866(O.C.)/3733(O.C.)/ 3600(O.C.)/ 3466(O.C.)/ 3333(O.C.)/3200/3000/ 2800/2666/2400/2133 MHz Un-buffered Memory * Dual Channel Memory Architecture ECC Memory (ECC mode) support varies by CPU. Graphic 1 x DisplayPort 1.2 1 x HDMI 2.1(4K@60HZ) *Graphics specifications may vary between CPU types. Expansion Slots Desktop Processors: 1 x PCIe 4.0 x16 (x16 mode) G-Series Desktop Processors: 1 x PCIe 3.0 x16 (x16 mode) B550 Chipset: 1 x PCIe 3.0 x16 (x4 mode) *1 1 x PCIe 3.0 x1 *1 * Support PCIe bifurcation for RAID on CPU function. Storage Total supports 2 x M.2 slot(s) and 4 x SATA 6Gb/s ports Desktop Processors: 1 x M.2_1 socket 3, with M Key, Type 2242/2260/2280 (PCIE 4.0 x4 and SATA modes) storage devices support Desktop Processors: 1 x M.2_1 socket 3, with M Key, Type 2242/2260/2280 (PCIE 3.0 x4 and SATA modes) storage devices support B550 Chipset : 1 x M.2_2 socket 3, with M Key, Type 2242/2260/2280/22110(PCIE 3.0 x4 and SATA modes) storage devices support 4 x SATA 6Gb/s port(s), Support Raid 0, 1, 10 LAN: 2.5Gb Ethernet Wireless Data Network: Wi-Fi 6 AX200 2x2 Wi-Fi 6 (802.11 a/b/g/n/ac/ax) support 1024QAM/OFDMA/MU-MIMO

		Supports up to 2.4Gbps max data rate Supports dual band frequency 2.4/5 GHz Supports channel bandwidth: HT20/HT40/HT80/HT160 Supports PCIe interface Bluetooth: Bluetooth v5.1* *BT 5.1 function will be ready in 10 build 19041 or later. Audio: ALC S1200A 7.1 Surround Sound High Definition Audio CODEC - Supports : Jack-detection, Multi-streaming, Front Panel Jack-retasking, up to 24-Bit/192kHz playback Audio Feature : - Exclusive DTS Custom for GAMING Headsets. - Optical S/PDIF out port(s) at back panel - Audio cover - Audio Shielding - Dedicated audio PCB layers - Premium Japanese audio capacitors USB Ports Rear USB Port (Total 8) 2 x USB 3.2 Gen 2 port(s)(1 x Type-A +1 x USB Type-C®) 4 x USB 3.2 Gen 1 port(s)(4 x Type-A) 2 x USB 2.0 port(s)(2 x Type-A) Front USB Port (Total 6) 2 x USB 3.2 Gen 1 port(s)(2 x Type-A) 4 x USB 2.0 port(s)(4 x Type-A) Software Features: Appropriate Software Special Features: PROTECTION Back I/O Ports 1 x PS/2 keyboard/mouse combo port(s) 1 x DisplayPort 1 x HDMI 1 x LAN (2.5G) port(s) 2 x USB 3.2 Gen 2 (teal blue) (1 x Type-A+1 x USB Type-C®) 2 x USB 2.0 4 x USB 3.2 Gen 1 (blue) (one port can be switched to BIOS RECOVERY) 1 x Optical S/PDIF out 5 x Audio jack(s) 1 x BIOS RECOVERY Button(s) 1 x Wi-Fi Module Internal I/O Ports

		1 x CPU Fan connector(s) 1 x CPU OPT Fan connector(s) 2 x Chassis Fan connector(s) 2 x RGB Strip Headers 1 x Addressable Gen 2 header(s) 1 x USB 3.2 Gen 1(up to 5Gbps) connector(s) support(s) additional 2 USB 3.2 Gen 1 port(s) 2 x USB 2.0 connector(s) support(s) additional 4 USB 2.0 port(s) 1 x M.2 Socket 3 with M Key, type 2242/2260/2280 storage devices support (SATA mode & X4 PCIE mode) 1 x M.2 Socket 3 with M Key, type 2242/2260/2280/22110 storage devices support (SATA mode & X4 PCIE mode) 1 x SPI TPM header 4 x SATA 6Gb/s connector(s) 1 x 24-pin EATX Power connector(s) 1 x 8-pin EATX 12V Power connectors 1 x Front panel audio connector(s) (AAFP) 1 x Clear CMOS jumper(s) 1 x System panel connector 1 x COM port header 1 x Speaker connector Accessories User´s manual I/O Shield 2 x SATA 6Gb/s cable(s) 1 x Supporting DVD 1 x Gaming Sticker 1 x Certification card(s) 1 x Wi-Fi moving antenna 1 x M.2 SSD screw package(s) 1 x M.2 Rubber Package(s) BIOS: 256 Mb Flash ROM, UEFI AMI BIOS Operating System: latest proprietary operating system Form Factor: mATX Form Factor 9.6 inch x 9.6 inch (24.4 cm x 24.4 cm) Note: *1 PCIEX16_2 will run x2 mode when PCIEX1 is used. - 16GB DDR4 3600MHZ RAM Capacity: 16GB (2 x 8GB) Type: 288-Pin DDR4 SDRAM Speed: DDR4 3600 (PC4 28800) CAS Latency: 18 Timing: 18-22-22-42 Voltage: 1.35V ECC: No

			Buffered/Registered: Unbuffered Multi-channel Kit: Dual Channel Kit Chipset: XMP 2.0 Color Black Heat Spreader Yes - 500GB SSD Card Capacity: 500GB Form Factor: M.2 2280 Connector: M.2 Sequential Read Performance: 3500MB/s Sequential Write Performance: 2300MB/s Random Read: 360K IOPS Random Write: 390K IOPS Interface: PCIe Gen3 x4, NVMe v1.4 Warranty: 5-Year Limited Warranty Endurance (TBW): 300 Dimensions (L x W x H): 80mm x 22mm x 2.38mm Weight: 6.5gms Operating Temperature: 0°C to 70°C Non-Operating Temperature: -40°C to 85°C Certifications: BSMI, ICES-003/NMB-003, CE, FCC, KC, Maghreb, RCM, UKCA, VCCI, CB-Scheme, TUV, UL - VIDEO CARD Bus Standard: PCI Express 4.0 OpenGL: OpenGL®4.6 Video Memory: 8GB GDDR6 Engine Clock: OC Mode - 1740 MHz (Boost Clock) Gaming Mode - 1710 MHz (Boost Clock) CUDA Core: 4864 Memory Speed: 14 Gbps Memory Interface: 256-bit Resolution: Digital Max Resolution 7680 x 4320 Interface: Yes x 2 (Native HDMI 2.1) Yes x 3 (Native DisplayPort 1.4a) HDCP Support Yes (2.3) - CPU CASE Type: ATX Case Drive Space: 5:25" - 0 Drive Space: 3.25" - 2 Drive Space: 2.5" - 2 Main Board: ATX Power Supply: PS2 Expansion Slot: 7 Slots Case Dimension: 400x 185 x 440mm Fan Capacity Front: 2 x 12cm Rear: 1x12cm Top: 2 x 12cm Measurement: 1080pcs / 40' HQ

		Maximum Compatibility: VGA Card Length: 380mm | CPU Cooler: 160mm | M/B: 305x244mm - FSP 750W GOLD POWER SUPPLY UNIT - Monitor: 21.5" WIDE BLACK FHD LED MONITOR (VGA, HDMI) - MOUSE AND KEYBOARD *- Table with metal frame and wooden top (see attachment)* *- Swivel Chair (see attachment)*
9	1	**Flatbed UV Printer** ITEM SPECIFICATIONS Can print directly on solid materials such as woods, plastics, metals, rubber, leather, glass, and more Printer Technology: Drop-on-demand Micro Piezo Inkjet Technology Description: Print quality on a wide variety of solid materials and objects including ABS, Alu-board, PC, PET, PMMA (acrylic), PS, PVC, etc. Application: Prototypes, personalised gifts, packaging, souvenirs, awards, specialty industrial items as well as labels, decals, signs, etc. Print Head: 1 Max. Media Size: at least 483 mm (19") x 594 mm (23.4”) Max. Media Thickness: at least 150 mm (5.9") Max. Print Area: at least 473 mm (18,6”) x 584 mm (23") Media Drying System: Long-life LED-UV curing lamp Vacuum System: Standard integrated - electronically adjustable hold-down strength No. of Ink Slot: 6 Ink Type: LED-UV ink Ink Colors: KCMY, white+ varnish Print Resolutions: 1440/1080/720dpi Interface: Ethernet Power Supply: AC 100-240V - 50/60Hz±1Hz Power Consumption Operating Status: 300W or less Machine Measurements (W) x (D) x (H) : 1188 x 1533.6 x 604.3 mm (46.8"x 60.4" x 23.8") Inclusions: AVR Software Rotary attachment Consumables: 1 set CMYK + White and Varnish

		Peripherals or Machine parts: Vacuum table, LED Pointer, Front Cover, plus Rotary attachment Machine software English Manual *Swivel Chair (See attachment)* *3-Layer Metal Cabinet (Drawer) for Accessories, Supplies and Materials (See attachment)* Certificate of authority to sell from the manufacturer or local distributor/reseller.
10	1	**Garment / T-shirt printer** Prints directly on fabrics and textiles Specifications: Printing Technology: Advanced Inkjet Technology Nozzle Configuration : at least 3,200 nozzles Maximum Print Resolution: 2400 x 1200 dpi Print Speed: Production (2 pass), For Fabric: Up to 62sec / 21m2 (600 x 1200 dpi) Production (7 pass): For Fabric & Rigid: Up to 208sec / 7.5m2 (1200 x 1200 dpi) Production (12 pass), For Fabric & Rigid: Up to 350sec / 4.5m2 (2400 x 1200 dpi) Ink Colours: Cyan, Magenta, Yellow, Black Ink Capacity: 140ml Dimensions: 97cm 81.1cm x 24.5cm Inclusions: *Heat Press (Dimensions: T-shirt Press: 30 x 38 cm; Mug Press: 5-7.5 / 7.59 cm; Plate Press: 11 cm / 15 cm; Cap Press:14 x 8.5 cm)* *Starter Material / Consumables* English Manual *Table with metal frame and wooden top (See attachment)* *Swivel Chair (See attachment)* *3-Layer Metal Cabinet (Drawer) for Accessories, Supplies and Materials* Certificate of authority to sell from the manufacturer or local distributor/reseller. Training certificate provided by manufacturer to certified trainer. After-Sales Support certificate issued by the manufacturer. Parts Availability certificate issued by the manufacturer. On-Site Training and Installation 12 Months warranty for parts and service

11	1	**CO_2 Laser Cutter / Engraver** ITEM SPECIFICATIONS Mechanics Work Surface area: at least 1290 x 990 mm Dimension: 1850 x 1500 x 1100 mm or equivalent Cutting speed: at least 30000 mm/min Engraving Speed: at least 60000 mm/min Laser Type: CO2 Laser Tube Laser power Included: up to 100Watts Focus Lens: at least 2.0 in standard Resolution Ratio: at least 0.025 mm Repositioning accuracy: at least '+/- 10% Operating humidity: 5%-80% Graphic format supported: BMP,GIF,JPEG,UNITX,TGA,TIFF,PLT,CDR,DWG,DXF Software Compatibility: CorelDraw, Photoshop, AutoCAD, Tajima , CAM/CAD Cooling Method: Water Cooling (Chiller Included) Materials Compatibility: Acrylic, Wood, Fabric, Cardboard, Paper, Synthetic Granite, Natural Granite, Leather, Foam board, Glass Extendable Size: Front and Back of laser machine can be opened suitable for super length material process Power Requirements: 220V, 50HZ/60HZ Package Inclusions: 1 Unit AVR Software 1 Unit Spare Lens 2 Units Spare Mirror 1 Unit Rotary Attachment 1 Unit Air Compressor 1 Unit Chiller 1 set Starter Consumable Other Inclusions: Starter Material / Consumables English Manual *3-Layer Metal Cabinet (Drawer) for Accessories, Supplies and Materials* Certificate of authority to sell from the manufacturer or local

		distributor/reseller. Training certificate provided by manufacturer to certified trainer. After-Sales Support certificate issued by the manufacturer.

<u>Please state compliance to the Technical Specifications</u>

Name of Supplier hereby states its compliance to the abovementioned Technical Specifications for all items.

____

Name of Authorized Representative/Supplier
Signed

Elenita R. Ordonio
DIR. ELENITA R. ORDONIO
DTI -3 BAC Chairperson