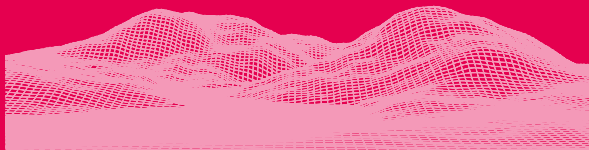


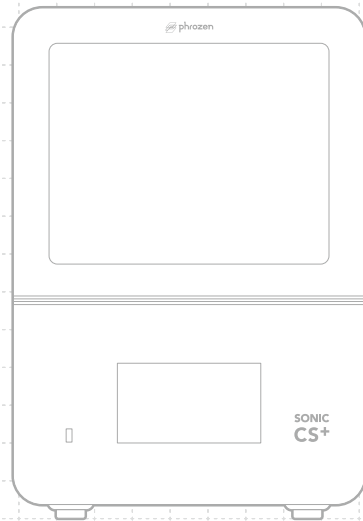


SONIC  
CS+



**Dear User,**




Thank you for joining us. Please read the Sonic CS+ manual thoroughly and follow the instructions step by step to get the best printing experience.







<b>01 Safety and Compliance</b>	<b>03</b>	<b>04 Get Started</b>	<b>11</b>
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# 01 Safety and Compliance

## Safety Messages

Symbol	Name	Description
	"ON" (power)	Indicates connection to the mains supply.
○	"OFF" (power)	Indicates disconnection from the mains supply.
	General warning sign	Signifies a general warning.
	Caution: hot surface	Indicates that the marked item can be hot and should not be touched when it is still hot.
	Warning: dangerous voltage	Indicates hazards arising from dangerous voltages.

Symbol	Name	Description
	Warning: hand crush hazard	Indicates a risk of hand or finger injury due to moving mechanical parts or pinch points.
	Warning: ultraviolet radiation	Exposure to UV light can be harmful to skin and eyes, using UV cover on the unit or protective equipment to avoid direct eye or skin exposure to UV light.
	Protective earth	Always connect the printer to a properly grounded outlet to prevent electric shock or potential damage to the equipment.
	Fuse specification	Indicates the correct fuse specification. Using an incorrect fuse may fail to protect the device and could result in damage.

## Hazards

### Electrical safety

#### DANGER

- Operate the device only under the conditions specified in this manual. Failure to do so may result in equipment damage, inaccurate printing results, or personal injury.
- Do not remove the device cover or expose internal components, as this may lead to electric shock.

#### DANGER

- To prevent personal injury, place the device on a stable, level surface that can support its weight and ensure that it is securely positioned to prevent accidental movement.
- Do not place your hands or head inside the device while it is operating. Doing so may cause personal injury.

### Power supply requirements

#### WARNING

- Use only the power cord provided by the manufacturer. It is designed specifically for this device and should not be used with other equipment.
- The power outlet must be a standard three-prong socket, and the ground terminal must be connected to the protective grounding of the power system.

- Ensure that the grounding cable is connected according to applicable standard or with guidance from an experienced electrician.
- Make sure the power switch is in the off position before connecting to the power supply.
- Before disconnecting from the power source, ensure the printing task is complete, the control software is closed, and all access doors or covers are shut. Failure to do so may damage the device.

### Daily maintenance

#### WARNING

Always wear a laboratory coat, a mask, and gloves before performing the following steps.

#### Maintaining the power supply

- If the device will not be used for seven days or longer, turn it off and unplug the power cord.
- Before each use, check that the power cord and cables are securely connected and undamaged, or contact the technical support if a replacement is required.

## Regulatory Information

### 1 FCC Interference Statement – Part 15.105(a) Class B Digital Device

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### 2 FCC Part 15 Clause 15.21:

"Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment".

### 3 RF Exposure Guidance Statement:

"In order to comply with FCC RF Exposure requirements, this device must be installed to provide at least 20 cm separation from the human body at all times."

Radiation Exposure Statement:

1. This equipment complies with FCC/IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance 20cm between the radiator & your body.
2. The device has been evaluated to meet general RF exposure requirement

## ISED Canada User Manual Guidance

### 1 ISED Canada RSS-Gen Notice:

(EN) "This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device."

(FH) "L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme

aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1. L'appareil ne doit pas produire de brouillage ;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement."

### 2 ISED Canada ICES-003 Compliance Label (CAN BE PROVIDED ON LABEL OR IN MANUAL):

This is only required if product is within ICES-003 scope and is not exempt:

\* Insert either "A" or "B", but not both, to identify the applicable Class of the device used for compliance verification.

"CAN ICES-3 (B)/NMB-3(B)"

### 3 ISED Canada Notice for Equipment with Detachable Antennas (for license-exempt equipment):-

For licence-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:

(EN) This radio transmitter [enter the device's ISED certification number] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

(FH) Le présent émetteur radio [identifier le dispositif par son numéro de certification d'ISED] a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antennes énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué pour tout type figurant sur la liste, sont strictement interdits pour l'exploitation de l'émetteur.

The antenna (type / gain / impedance) which can be used with the transmitter is: XXXX  
L'antenne (type / gain / impédance) qui peut être utilisée avec l'émetteur est : XXXX

### 4 RF Exposure Guidance Statement (in English and French, for equipment used a specified distance (more than 5mm away from persons)):





"In order to comply with ISED RF Exposure requirements, this device must be installed to provide at least 20 cm separation from the human body at all times.




"Afin de se conformer aux exigences d'exposition RF ISED, cet appareil doit être installé pour fournir au moins 20 cm de séparation du corps humain en tout temps."

(EN) This equipment should be installed and operated with a minimum distance 20 cm between the radiator & your body.

(FH) Lors de l'installation et du fonctionnement de cet équipement, la distance minimale entre le radiateur et le corps doit être de 20 cm.

## Certifications and Compliance

Symbol	Name	Description
	Manufacturer	Indicates the medical device manufacturer.
	Date of manufacture	Indicates the date when the medical device was manufactured.
	Authorized representative in the European Community	Indicates the Authorized representative in the European Community.
	CE Mark of Conformity	Indicates that the product conforms to European health, safety, and environmental protection standards. Handle with care.

Symbol	Name	Description
	WEEE symbol	Indicates that waste electrical and electronic equipment must not be disposed of as unsorted municipal waste and must be collected separately. Please contact an authorized representative of the manufacturer for information concerning the decommissioning of your equipment.
	Serial number	Indicates the manufacturer's serial number, used to identify a specific medical device.
	Consult instructions for use	Indicates that the user should consult the instructions for use before operating the device.



## Product Description

### Intended Use

For printing dental applications.

### Working Principle

Utilizes LCD-based masked stereolithography (MSLA) to cure resin layer-by-layer with UV light.

### Structural Composition

Includes an LCD, UV LED light source, resin vat, building plate, Z-axis motion system, and touch panel.

### Suggested Environment

Temperature 20 ~ 30 °C / 68 ~ 86 °F

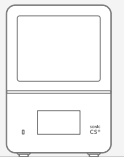
Humidity 40 ~ 60% RH

Altitude Below 2000 meters

## 02 Key Notes

### Printing Environment

Store your 3D printer in a dry and well-ventilated environment. Place it on a flat surface and avoid direct sunlight exposure.



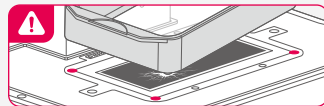
20 ~ 30 °C / 68 ~ 86 °F

### Key Notes Before Getting

When removing the protective film, only remove the protective film with a tab. Do not remove any film without a tab.



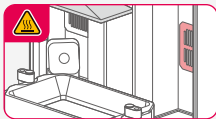
When installing the resin vat, please align the bottom of the resin vat with the platform grooves to avoid damage caused by the resin vat scratching the LCD.



### Key Notes During Operation

⚠ Please do not touch the heater while it is still hot to avoid burns.

Please do not pour any liquid on the connector to avoid short circuit.



### Protection measures

When handling resins or prints, please wear personal protective equipment such as gloves, masks, protective goggles, and long-sleeved clothes.



### Maintenance

When cleaning the printer, use 95% alcohol and Lint Free Wipes to carefully clean the printer, resin vat, and the building plate.



# 03 Introduction

## Printer Parts

### PART.1

#### Interior Light

\* The interior light is programmed to turn off after 10 minutes of operation. Prolonged lighting can partially cure the resin, potentially impacting printing quality.

### PART.2

#### Air Filtration System

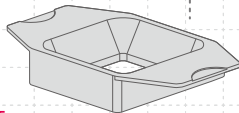
### PART.3

#### Camera

### PART.4

#### Standard Heating Resin Vat

#### Mini Heating Resin Vat



### PART.5

#### LCD

### PART.6

#### USB Port

### PART.7

#### Touch Panel

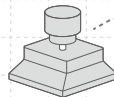
### PART.8

#### Lift-Up Lid

### PART.9

#### Standard Building Plate

#### Mini Building Plate



### PART.10

#### Heater

### PART.11

#### Z-Axis

### PART.12

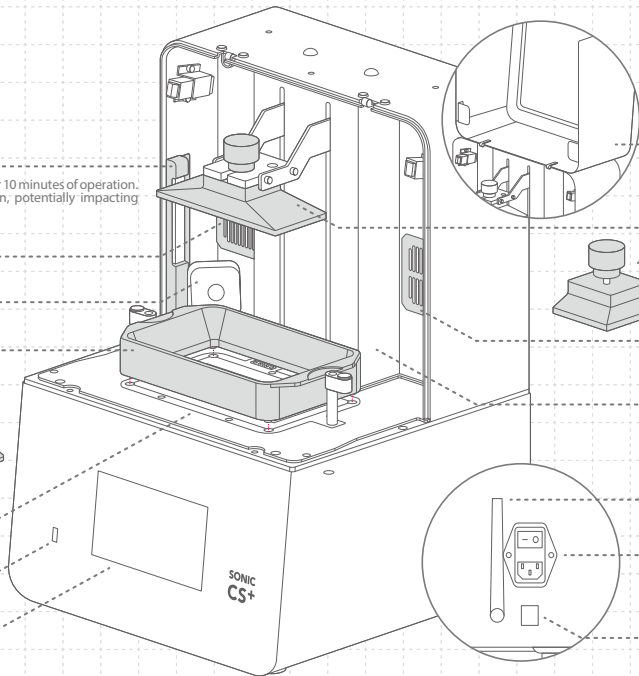
#### Wi-Fi Antenna

### PART.13

#### Power Switch & Socket

### PART.14

#### Ethernet Port



## The Toolbox



Warranty Card



Gloves



Power Cord 1.5 m



Plastic Funnel



Metal Scraper



Plastic Scraper



T-Hex Wrench x2



USB



DS Slicer



Wi-Fi Antenna



Magnetic Fan  
Dust Filter



Sandpaper

## Specification

### Operation

System	Phrozen OS	Touch Panel	7-inch
Slicer	Phrozen Dental Synergy Slicer	Connectivity	USB   Ethernet   Wi-Fi
		Built-in Memory	8 GB

### Printing Specifications

Technology	Resin 3D Printer - LCD Type		
Light Source	385 nm UV LED	Layer Thickness	30 / 50 / 100 $\mu$ m
XY Resolution	22 x 22 $\mu$ m	Rated Power	240W
Compatible File Format	.prz / .ctb		
Power Requirement	100-240V AC ; 50-60Hz		

### Hardware Specifications

Printer Size (W x D x H)	38 x 36 x 55 cm	Printer Weight	22 kg
Maximum Printer Height	93.2 cm		
Printing Volume (W x D x H)	Standard Building Plate - 16.5 x 7.1 x 17.5 cm Mini Building Plate - 7 x 7 x 17.5 cm		

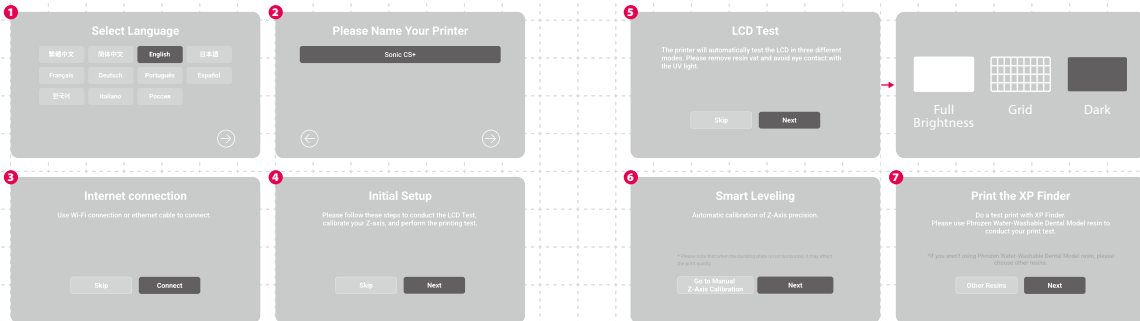
Radio Frequency and corresponding Maximum Conducted Output Power	
2400 ~ 2483.5 MHz 18 dBm	5150 ~ 5250 MHz 10 dBm
5725 ~ 5850 MHz 11 dBm	

- \* All specifications were tested in a laboratory and are subject to change without prior notice. For the latest update, please refer to Phrozen's official website.
- \* The included power cord set packaged with the main unit cannot be used with electrical equipment other than the specified device.
- \* Please note that the 5150-5350 MHz band is restricted to indoor use only.

# 04 Get Started

When using the printer for the first time, we recommend following the step-by-step instructions to complete your first test print.

- 1 Select interface language.
- 2 Name your Sonic CS+.
- 3 Connect to the internet.
- 4 Enter the Initial Setup.
- 5 The touch panel will display the following patterns. If the LCD screen clearly and completely shows the same patterns, the LCD test is passed.
- 6 Following the instruction to complete Smart Leveling.
- 7 Once you finish the setup of the printer, you can start the first test print.



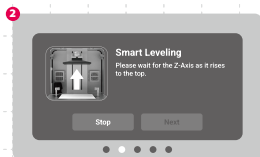
# 05 Function

## Smart Leveling

Click "Tools"  > "Z-Axis Control"  > "Smart Leveling"  . Follow the instruction for Smart Leveling:

- 1 Remove the resin vat, install the Building Plate and tighten the hand screws, then place a piece of A4 paper on top of the LCD.
- 2 Wait for the building plate to rise to the top and then descend to the bottom to trigger the actuators.
- 3 Pull the paper and determine if the friction at all corners of the paper is equal.  
If paper in all corners is too tight or too loose, you can adjust it using Z-Offset.
- 4 Click  , Smart Leveling is completed after the resin vat returns to its original position.

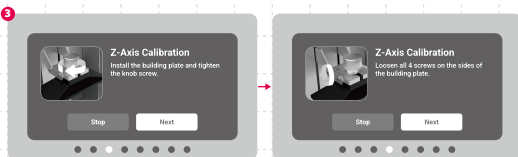
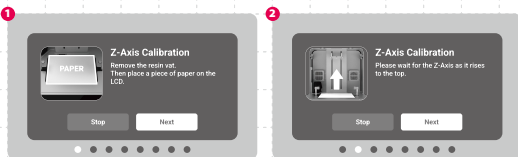
\* If you replaced or adjusted the building plate, Z-axis, LCD, or LCD protector, please do the "Manual Z-Axis Calibration" again.




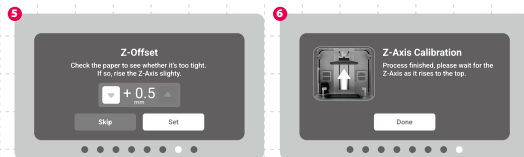
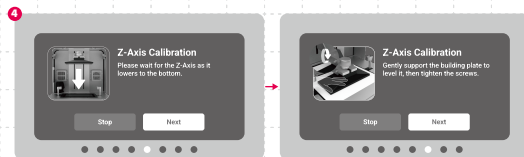
## Manual Z-Axis Calibration

Click "Tools"  > "Z-Axis Control"  > "Smart Leveling"  > Click . Follow the on-screen prompts for manual Z-Axis calibration:

- 1 Remove the resin vat, and place an A4 paper on top of the LCD.
- 2 Wait for the building plate to rise to the top.
- 3 Install the building plate and lock the knob screws, then loosen four screws on both sides.
- 4 Once the building plate has been lowered to the bottom, gently press the building plate and tighten the four screws on both sides of the



- building plate diagonally.
- 5 Pull the paper and determine if the friction at all corners of the paper is equal. If paper in all corners is too tight or too loose, you can adjust it using Z-Offset.
- 6 Click "Done"  and wait for the building plate to return to top to complete the manual Z-Axis calibration.



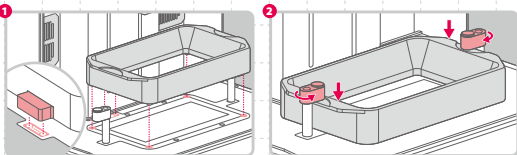
## Z-Axis Control

You can click "Move to Z-Axis Top"  to enable this function.



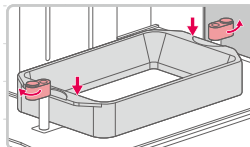
## Install the Resin Vat

- 1 Put the connector at the back side and align the screws at the bottom of the resin vat with the platform grooves to place the resin vat.
- 2 Gently press both sides of the resin vat and rotate both toggles inward to fix the resin vat in place.



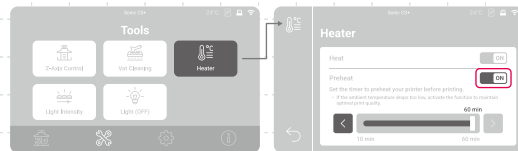
## Remove the Resin Vat

Gently press the resin vat and rotate both toggles outward to remove the resin vat.



## Preheat

When "Preheat" is enabled, the heating resin vat and heater will warm up for a specified amount of time duration before printing.



\* Printing will start after the preset heating time.

## Residue Detection

This feature can be found by select "Settings" ⚙️ > "System" ⚙️.



If enabled, the printer will check for any solid residue between the resin vat and the building plate in its initial descent. Printing will be paused and a warning message will appear on the screen if such residue is detected.



## Print Risk Warning



This feature can be found by select "Settings" ⚙️ > "System" ⚙️.

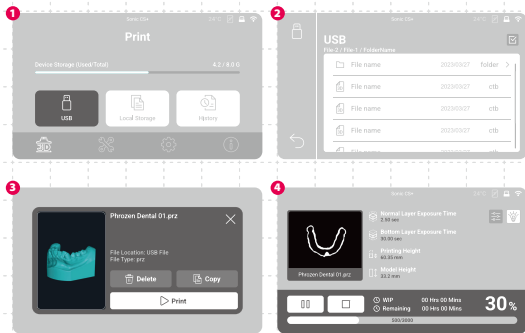


If enabled, the printer will monitor the release condition during printing. A warning message will appear on the screen if unusual release forces are detected.




## Start Printing

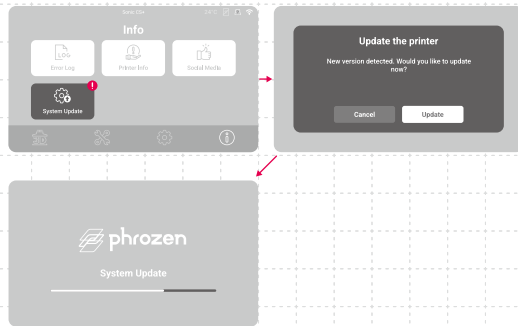
- 1 Plug the USB, USB icon  will appear in the upper right corner of the screen.
- 2 View USB files.
- 3 Select the file and click  .
- 4 When you start printing, the printer interface displays the current printing status.



## 06 Firmware Update

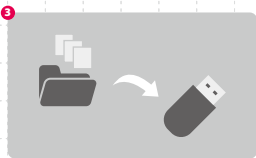
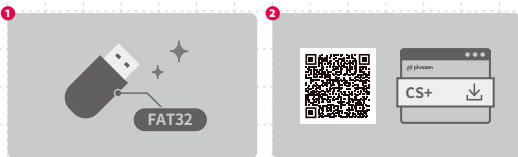
### Update through OTA

If a new firmware version is available, the notification dot will appear on "System Update" , you can click and update.

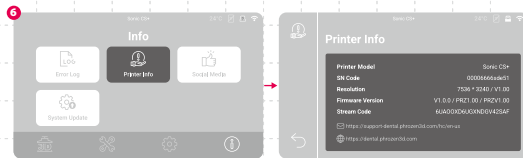
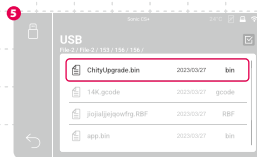


## Update through USB

- 1 It is recommended to format the USB to FAT32.
- 2 Download the firmware for Sonic CS+ from the [Firmware downloads Page](#).
- 3 Unzip the installation files into the root folder of the USB.
- 4 Plug the USB when the printer is idle.



- 5 Reboot to update "ChituUpgrade.bin".
- 6 Once the update is complete, remove the USB and check firmware version through "Info" > "Printer Info".



## After-Sales Service & Warranty

- Phrozen offers a one-year warranty for all parts and LCD, excluding other consumable components and PFA (nFEP) film.
- If you have any questions while using Sonic CS+, please scan the QR code to visit the Phrozen Help Center, where you can find helpful product guides or get in touch with our support team.



Phrozen Dental  
Help Center



# Congratulations!

You have just completed your first run.  
We hope you've had a great experience!

Please follow Phrozen's social media accounts  
to learn more about printing tips and share your  
printing experience with the community.



**Facebook**



**Facebook Group**



**Instagram**



**Phrozen Dental  
Official Website**



**YouTube**