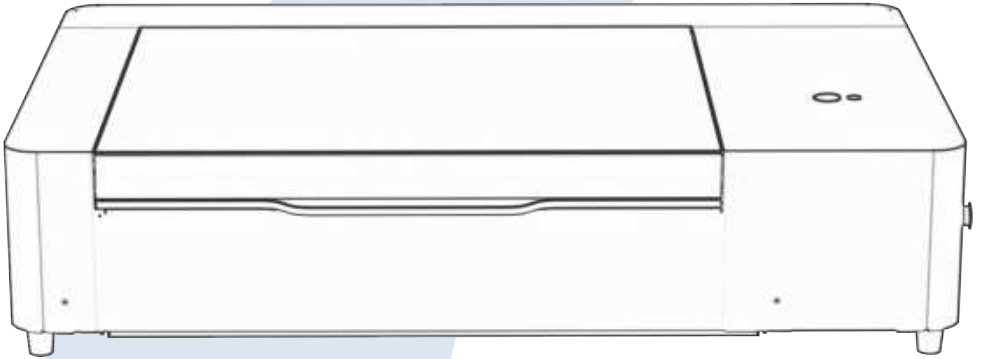
ATOMSTACK



ATOMSTACK HURRICANE

User Manual

Please scan the QR code
for more information.

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01 Safety And Operating Instructions

Before operating this product, ensure you have read and understood all safety notices and operating procedures. Adhere strictly to the following guidelines to ensure the equipment is used safely and correctly:

Pre-use check: Inspect the equipment for any damage before each use. Do not operate if you find any defects.
Work environment: Keep your workspace clean and organized.
Equipment modification: Do not disassemble, alter, or modify the equipment or its operating system.
Monitoring: Continuously monitor the equipment while it is in operation.
Cleanliness: Maintain a clean processing area. Accumulated residues from cutting and engraving can pose a fire hazard. Regularly remove debris and residues.
Operating temperature: Operate the equipment within a temperature range of 5°C to 35°C. Do not operate under freezing conditions.
Equipment integrity: Do not operate the equipment with any parts removed, as this could expose the laser system and increase the risk of damage.
Material restrictions: Avoid materials containing PVC, vinyl, or other chlorine-based substances, as they produce corrosive vapors that are harmful to both health and the equipment. Damages from such materials are not covered under warranty.Do not engrave or cut unknown materials, which may release harmful fumes when vaporized or melted.
Supervision: Never leave the equipment unattended during operation. Always ensure it is functioning correctly.

FCC tatement :

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.
Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: 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 or more of the followingmeasures:

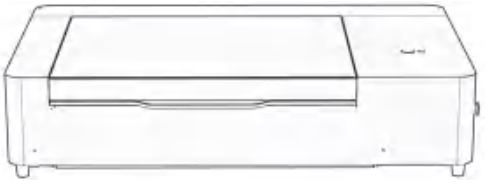
1.Reorient or relocate the receiving antenna.

2.Increase the separation between the equipment and receiver. Connect the equipment into an outlet on a circuit different from that to which thereceiver is connected.

3.Consult the dealer or an experienced radio/TV technician for help.

Adhering to these instructions helps ensure safe and effective use of the equipment.

0 2 Packing List



ATOMSTACK HURRICANE

Hose clamp

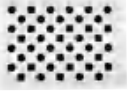
Exhaust duct hose

H2 / H2.5 / H3
L Allen wrench

Phillips screwdriver

Lens

100*30 Dust-free cloth



Calibration card

Kraft paper

Focusing piece

Water funnel

Thumb drive

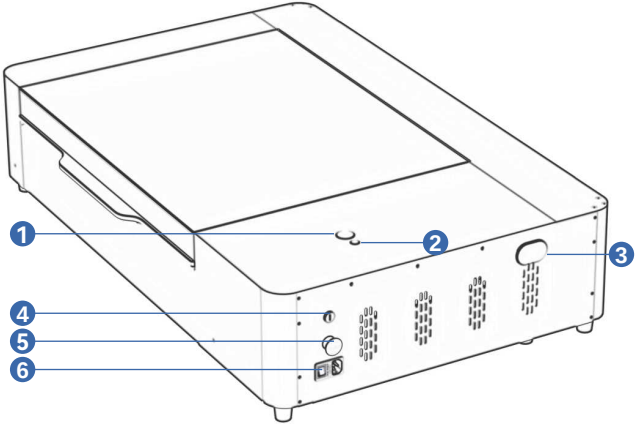
Keys for on/Off switch

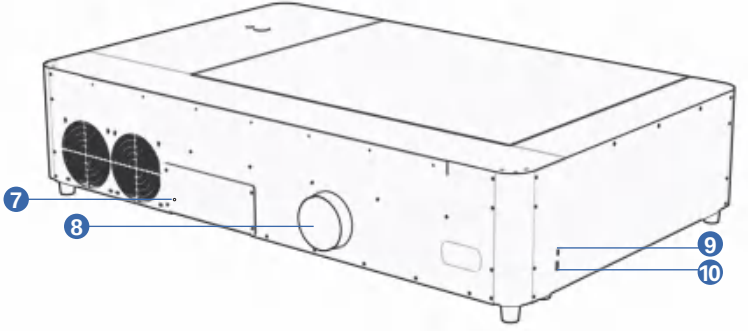
1 to 2 USB cable

Power cord

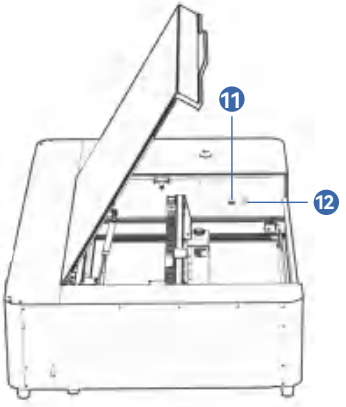
Active fire-extinguishing hose

03 Functional Interfaces





1 Reset/Pause	1.1 During the engraving process, you can press the button to pause the work. Close the lid and press the button again to resume the work. 1.2 When an abnormal alarm occurs, after resolving the problem, press this button to restore the machine to its normal standby state.
2 Auto focus	Click the button to automatically focus on the current material.
3 Water inlet	Cooling water is added to the tank through this port.
4 Switch key	Insert the key and turn it clockwise to power on.
5 E-stop	In case of emergency, press the button to stop operation.
6 Power on/off & Power outlet	Plug the power cord into the socket and press the main switch to turn on the machine.

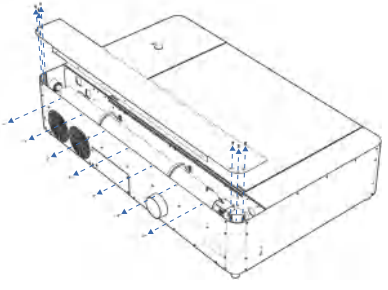


⑦ Active fire-extinguishing water inlet port	Active fire-extinguishing water Inlet.
⑧ Smoke exhaust fan & hose port	Connect the exhaust hose to this port.
⑨ Computer control port	For connecting to computer.
⑩ Thumb drive port	Used for offline work and firmware upgrades.
⑪ Accessory port	Chuck, roller, conveyor and other expansion accessory connections.
⑫ Accessory switch	After connecting expansion accessories, you can switch to control the Y-axis movement or operate the accessories.

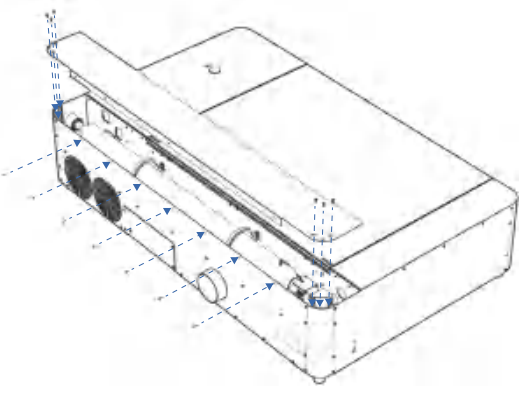
04 Unpacking Guidance

1.Check the appearance of the machine. If it is severely damaged, do not use it. Please contact ATOMSTACK for assistance.

2.Check the laser tube. Unscrew the screws of the rear cover, remove the rear cover, and if the laser tube shows any cracks or damage, do not use the machine and contact ATOMSTACK for assistance.

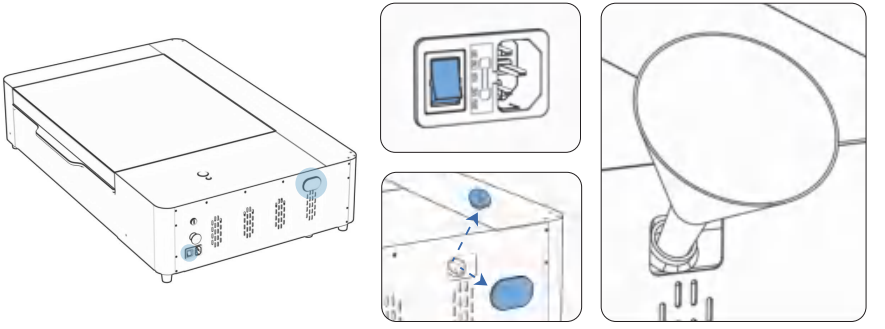


3.Reinstall the rear cover onto the machine and tighten the screws.

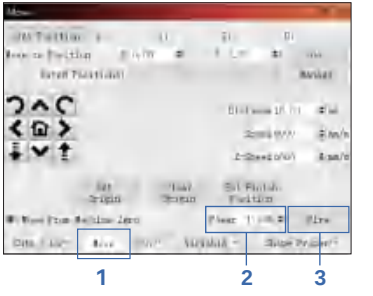


0 4 Unpacking Guidance

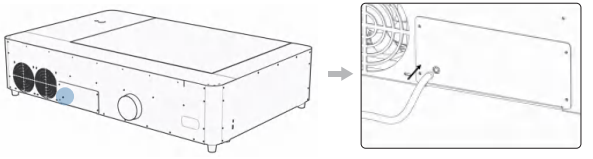
4.Ensure the status of the emergency stop switch and reset it if it is pressed.
5.Method of adding water to the water tank : first turn off the power switch, open the water tank cover, and add the purified water.



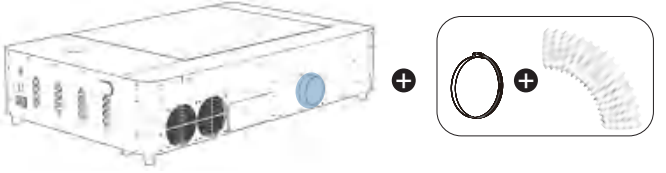
5.1. Please add 1000mL of water for the first time.
5.2. Start the water pump for the second water fill:
a. Connect the power cord and turn the key to the [ON] position.
b. Turn on the power switch.
c. Set the fire power to 1%, and click "fire" button
d. The water pump will start. Check the machine for any water leaks.
e. If there are no leaks, turn off the power switch.
f. Add water to the water tank for the second time, filling it to the upper limit mark on the water level scale.
g. For instructions on using the LightBurn software, refer to the user manual on the USB flash drive.



6.Fire extinguishing device container filling method. (Container needs to be prepared by users, recommended volume of 500ml)



7.Exhaust pipe installation guidelines.



8.Machine working environment temperature: It is recommended to use the ambient temperature of the machine in: 5 ℃ < ambient temperature <35 ℃, 5 ℃ or 35 ℃ or more will issue a warning, the temperature ≤ 0 ℃ or ≥ 40 ℃ will stop working。

Fahrenheit		Celsius		Water temperature state
75°F	41°F<temp<95°F	24℃	5℃<temp<35℃	Normal
95°F	95°F<=temp<104°F	35℃	35℃<=temp<40℃	Water temperature near upper limit alarm.
41°F	32°F<temp<=41°F	5℃	0℃<temp<=5℃	Water temperature near lower limit alarm.
104°F	>=104°F	40℃	>=40℃	Water temperature too high, equipment suspended.
32°F	<=32°F	0℃	<=0℃	Water temperature too low, equipment suspended.

0 5 Function Introduction

1.Stops when enclosure opened

1.1 When the top cover is opened, the open alarm function is triggered and the machine suspends its work, the guard is closed and the reset button needs to be pressed for the machine to resume work.

2.Tilt alarm

2.1Trigger tilt alarm:15° < horizontal plane angle < 20°Function trigger: the machine automatically stops working, buzzer sounds, and there will be an alarm prompt on the PC.;
2.2 Disarm:The alarm is automatically disarmed when the machine is restored to level.

3.Abnormal water temperature/level alarm

3.1 Trigger water temperature/water level abnormal alarm: When the water level is under the lowest water level scale or when the water temperature is lower than 0℃ or more than 35℃, the water temperature abnormal alarm will be triggered, the indicator light will be on red, the buzzer will sound, the laser will stop emitting light, and there will be an alarm prompt on the PC side;
3.2 Release alarm:The alarm will be released automatically when the water temperature is 5~35℃ and the water level is in normal position.

4.Flame detection

4.1 Trigger flame alarm:When there is an open flame on the processed plate during processing, the flame alarm will be triggered and the machine will stop working.
4.2 Release the alarm: need to press the reset button, the machine can resume normal operation.

5.Automatic fire extinguishing function

5.1 When the process of triggering the flame alarm, the automatic fire extinguishing device is immediately activated, the air nozzle will be sprayed in the area of the alarm detection point for 5 seconds, and then stop spraying, the flame detection device to continue to detect whether there is still an open flame, such as there is still an open flame in the area of the alarm detection point to continue spraying for 10 seconds, and so on, until the flame detected no open flame.

6.Power failure follow-up carving function

6.1 Need atomstack studio, APP to use this function, when the carving process appears machine power failure, the software will prompt whether to continue the previous task to continue to carve, point to confirm the machine will continue to complete the carving in the last carving task interrupted position.

06 Optical Path Calibration

1.The following signs indicates optical path calibration is needed:

1.1 Machine collision occurs, the red indicator starts to dim, or the cutting ability deteriorates, you need to open the Z-axis protective cover, manually push the laser head to move left and right on the X-axis and up and down on the Y-axis. During the movement, observe whether the red light indicator spot deviates from the center of the focusing lens. If a deviation occurs, optical path calibration is required.

1.2 When the laser output power is uneven in different areas of the workspace.

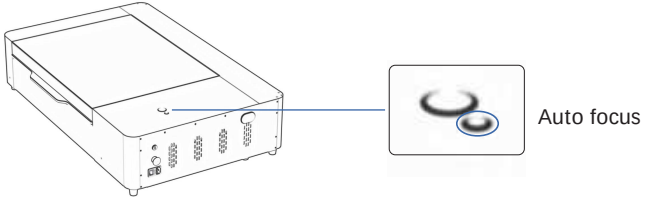
1.3 When replacing the CO2 tube optical path needs to be recalibrated.

2. For optical path calibration method please refer to the calibration video, which is getable from the USB drive or official website https://www.atom-stack.com/pages/hurricane-guide.

07 Focusing Method

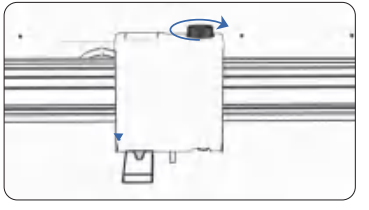
1.Auto-focus:

Press the [Auto focus] button on the control panel, and the machine will automatically complete the focusing process. Note: For soft materials or when using the chuck roller accessory, it is recommended to use manual focus.



2.Manual Focus:

Rotate the laser head focusing nut until the air nozzle lowers onto the 8mm thick focusing piece, just touching the focusing piece.



08 Camera Calibration Method

1.Open the top cover: Open the top lid (Check the pic at the right side)
2.Calibrate the camera: Please refer to the manual of the software in the USB or the official website:http://www.atomstack.com/pages/hurricane-guide
3.Using the camera positioning function.
4.Close the top lid and start working.

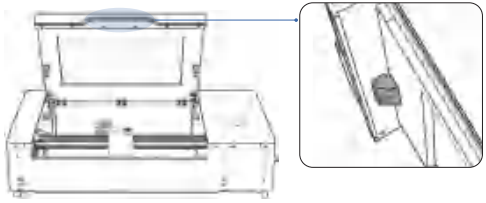
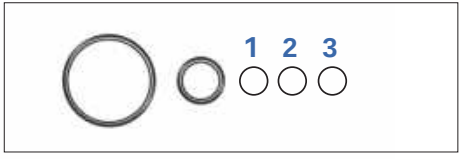


Figure 1

09 Indicator Introduction



1	Status light	Steady blue	Standby, the machine is working well.
		Flashing blue	Performing a task
		Steady yellow	Task paused
		Flashing red	Exceptions occur or trigger alarm

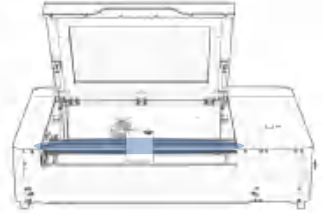
1.Water temperature and water level: Coolant water level and water temperature status indicator, when the yellow light appears, take protective measures in advance , in order to prevent damage to the machine.
2.Indication of light : Blinking in red indicates error of laser, please open the rear cover to check laser tube (refer to the part 4)
3.Flame sensing function: Red light blinking means a flame in the processing space of the machine.

2	Water temperature and water level	Steady blue	Normal
		Steady yellow	Water temperature water level too high or too low warning
		Flashing red	Water temperature lever is too high or too low and need to make the adjustment to the normal water level.
	Indication of light output	Steady blue	Normal
		Flashing red	Abnormal light output, please check the laser light output.
	Flame Detection	Steady blue	Normal
		Flashing red	Flame detected

10 Maintenance Of Machine

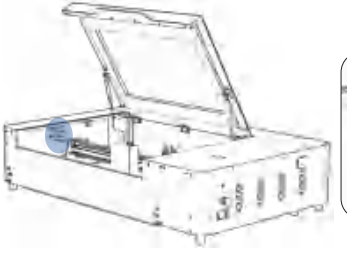
1.Dual Axis Core Cleaning

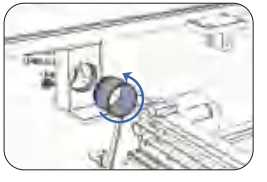
Suggested cleaning frequency: Once a week;
Wipe the upper and lower optical axis cleaning tool:
dust-free cloth + anhydrous ethanol;



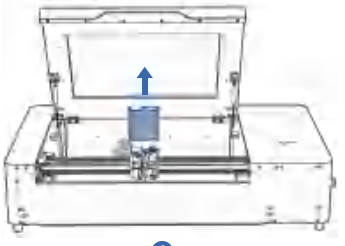
2.Lens Cleaning

Suggested cleaning frequency: Twice a week;
Cleaning tools: dust-free cloth + anhydrous ethanol;
2.1 When cleaning the second mirror, you can rotate to remove the lens dust cartridge and then clean the mirror;





2.2 When cleaning the third reflector and focusing mirror, first remove the protective cover, unplug the air hose, loosen the two fixing screws of the lens holder, take out the lens holder, rotate counterclockwise to remove the fixing ring of the focusing mirror, take out the focusing mirror, both surfaces of the lens need to be cleaned (pay attention to the convex side of the focusing mirror is facing down when installing);



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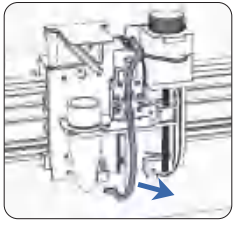

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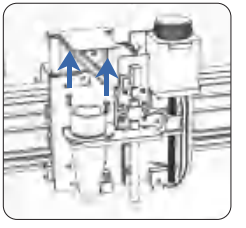

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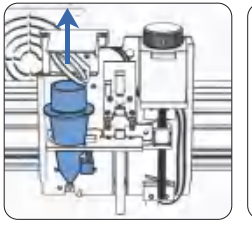

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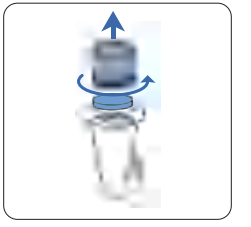

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3.Cooling Water Replacement

Recommended frequency: Once a month
Water quality requirement: Pure water (If in cold areas, during cold season, to avoid freezing of cooling water at night at 0℃, please add antifreeze.) Refer to the USB stick video or official website for replacement method: https://www.atomstack.com/pages/hurricane-guide;

4.Camera lens Cleaning

Suggested cleaning frequency: Once a week;
Tools: Dust-free cloth + anhydrous ethanol.

11 Q&A

1.The machine does not respond when the power switch is turned on?
1.1 Check if the emergency stop switch is pressed. If it is, rotate it to reset. 1.2 Check if the key switch is turned to the "ON" position.
2.How to clean the debris after cutting?
2.1 Pull out the drawer, remove the honeycomb board, and use a brush to clean off the debris on the honeycomb board.
3.Do i need to purchase protective glasses when using ATOMSTACK HURRICANE?
3.1 The HURRICANE's protective cover is designed to filter laser light and has a detection function when the box is opened, so there is no need to purchase protective glasses.
4.Can ATOMSTACK HURRICANE cut glass or engrave on glass?
4.1 It cannot cut glass, but it can engrave on glass.
5.Can ATOMSTACK HURRICANE cut metal or engrave on metal?
5.1 It cannot cut metal, but it can engrave on coated metal plates (including stainless steel) and anodized aluminum.
6.What is the maximum thickness of transparent acrylic that ATOMSTACK HURRICANE can cut?
6.1 It can cut transparent acrylic up to 20mm thick.
7.How to transport ATOMSTACK HURRICANE?
7.1 For short-distance transport: remove the exhaust pipe, unplug the power cord, and wrap the four corners of the machine with PE foam for transport. 7.2 For long-distance transport: remove the exhaust pipe, unplug the power cord, secure the laser module, X-axis gantry, drawer, honeycomb board, protective cover, and other movable parts, and repackage the HURRICANE using the original packaging materials and methods as much as possible.
8.Can reflective metal materials be engraved?
8.1 Reflective metal materials need to be coated black for engraving, otherwise, the CO2 laser reflection may damage the machine.

11 Q&A

9.Do not use ATOMSTACK HURRICANE to process harmful materials?
9.1 Such as leather containing chromium, PVC or polyvinyl butyral; as well as PTFE, beryllium oxide, and any materials containing halogens, epoxy resins, or phenolic resins.
10.Can it be stored in an environment below 0°C?
10.1 For long-term storage in an environment below 0°C, drain the cooling water in advance. Use it indoors at 5-28°C. To prevent the cooling water from freezing at night below 0°C, add antifreeze.
11.Can the LaserGRBL software be used?
11.1 Due to the baud rate of 460800, the LaserGRBL software is not compatible as it cannot process data in a timely manner.

12 Contact Us

Customer service:

For detailed warranty policy, please visit our official website:
www.atomstack.com
For technical support and service, please email:
support@atomstack.com。

Manufacturer:

Shenzhen atomstack technologies co., ltd.

Zip code: 518172

Address:

17th Floor, Building 3A, Phase II, Intelligent Park, No. 76, Baohe Avenue, Baolong Street, Longgang District, Shenzhen, Guangdong, China.

Scan QR code:

Scan with QR code reader/barcode scanner or any app with scanner

FCC STATEMENT :

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.
Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: 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 or more 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.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.