



User manual





Thank you for purchasing M1 International's SHIELDPAD.

This user manual includes product use & precaution instruction. This manual is designed to help you operating SHIELDPAD.

Due to increased use of radiation in our life(in medical, agricultural, industrial areas) and Japan's nuclear reactor catastrophe, danger of radiation are getting larger.

Protect your safety from radiation with portable alarm dosimeter SHIELDPAD.

Notifications

Product pictures & screenshots in this manual are example to help user's understanding. The feature may be subject to change without prior notice for quality improvement.

Cautions

To reduce the risk of accident to persons when using this product, please follow basic precautions, including the following:

(※ The manufacturer assumes no responsibility for any damage caused by mishandling that is beyond normal usage defined in these manual of this product.)

- ① Please use this product with intended use written in manual.
- ② This product includes many fragile components like OLED screen, semiconductor sensors. Please beware of sudden impact.
- ③ M1 international is not liable for performance issues or incompatibilities caused by personal disassembly or modification. Attempting to customize the product may cause the device to work improperly. We do not offer A/S for disassembled & customized product.
- ④ Recommended temperature of product is 0°C~40 °C. Please do not use device in very cold or very hot temperature.
- ⑤ This product does not support water resistance. Please beware of water.
- ⑥ Please charge with standard USB Type-C cable.
(Using unstandard cable may harm the device.)
- ⑦ We provide limited warranty in damage and issues of products caused by users.
- ⑧ Please charge SHIELD^{PAD} with AC/DC type KYT05100BC-05 charger of Shenzhen keyuantai industry co.ltd. Using other types of charging supplies may result in a fire hazard and harm the device

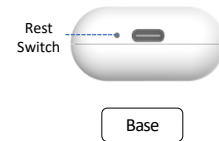
▷ Package contents ◁

- ① Package box
- ② Main body
- ③ Silicon case
- ④ USB type – C for charging
- ⑤ Product manual

※ The items supplied with the device and any available accessories are vary depending on the region or service providers.



Product overview



Starting your device

► Power ON/OFF

| Power ON |

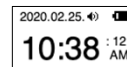
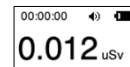
To turn the device on, press front button about 3 seconds.

| Power OFF |

To power off the device, press front button about 4 seconds in Exposure Dose screen. Device will turned off with melody.

► Functions of front button

① Pressing the front button once will change your screen in repeated order by 1) Exposure Dose screen -> 2) Accumulated Dose screen -> 3) Clock screen



1) Exposure Dose screen 2) Accumulated Dose screen 3) Clock screen

② Pressing the front button over 2 seconds in Accumulated Dose screen will make screen to flicker. Pressing the button once more will reset Accumulated Dose data and accumulated time.

③ In Exposure Dose screen, you can adjust sound ON/OFF option by rapidly pressing the button twice.

④ If there is no operation of device for 3 minutes and radiation dose—doesn't increase over 0.5 $\mu\text{Sv/h}$, device will enter low power mode. You can escape low power mode by pressing the button.

▷ Exposure Dose Screen ◁

► You can see the information displayed in Exposure Dose screen



No	Description	④	⑤	Remarks
①	Current time(hours, minutes, seconds)	-		
②	Sound ON	(Sound ON) ↔		(Sound OFF)
③	Remaining battery	- 🔊		🔊
④	Measured Data(Exposure Dose)	-		
⑤	Unit of data			Auto unit conversion (μ ↔ m)

- When you turn on the device, you can see Exposure Dose screen as default.
- If there is no input operation and radiation dose doesn't increase over 0.5 μSv/h for 3 minutes, device will enter low power mode.
- In low power mode, It shows screen once in 3 seconds.
- If you press the button or radiation dose increases in low power mode, device will exit low power mode.
- You can power off device by pressing the button over 4 seconds.
- You can adjust sound ON/OFF by rapidly pressing the button twice.

▷ Accumulated Dose screen ◁

► You can see the information displayed in Accumulated Dose screen



No	Description	Remarks
①	Accumulate time(hours, minutes, seconds)	-
②	Sound ON	🔊 (Sound ON) ↔ 🔇 (Sound OFF)
③	Remaining battery	-
④	Measured Data(Accumulated Dose)	-
⑤	Unit of data	Auto unit conversion(μSv ↔ mSv ↔ Sv)

► If you press the button in Exposure Dose screen, It will switch into the Accumulated Dose screen.

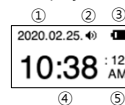
► If there is no input operation over 3 minutes or dose is under $0.5 \mu\text{Sv/h}$, device will enter low power mode automatically.

► Device will exit low power mode if there is input operation or dose increasement.

► Pressing the button over 2 seconds will make accumulated dose value to flicker. You can reset accumulated time and dose value by pressing the button once more.

▷ Clock Screen ◁

► You can see the information displayed in Clock Screen



No	Description	Remarks
①	Date(Year, Month, Day)	-
②	Sound ON	🔊 (Sound ON) ↔ 🔇 (Sound OFF)
③	Remaining battery	-
④	AM/PM	-
⑤	Time(hours, minute, seconds)	-

► If you press the button in Accumulated Dose screen, device will switch into Clock screen.

► Low power mode is also applied on this screen.

► If you press the button over 2 seconds, it will switch into Date & Time Edit Mode. In this mode, number will increase by 1 when you press the button shortly. By pressing the button about 2 seconds in Date & Time Edit Mode, cursor will move from year, month, day, hours, minutes, — seconds, to AM/PM order. Device will exit Date & Time Edit Mode If there is no input about 30 seconds.

► Exposure Dose & Accumulated Dose are consistently measured.

▷ Appendix ◁

► Radiation in our life environment

Radiation exists on Earth, Space, everywhere. Every people are exposed to radiation in normal life. Average radiation exposure rate in normal life about 3.0mSv(millisievert) in year(It can differ to geological features).

However, we could exposed to additional radiation in particular condition. Flighting on a plane, using product composed of natural radiation ingredient, taking a X-ray may cause additional expose to radiation.

► Units of radiation measurement

Exposure Dose	Accumulated Dose
10^{-9} = 'n' = "nano"	10^{-9} = 'n' = "nano"
10^{-6} = 'u' = "micro"	10^{-6} = 'u' = "micro"
10^{-3} = 'm' = "milli"	10^{-3} = 'm' = "milli"
Sv/h = "Sivert per hour"	Sv = "Sivert"

Specification		
Model Name		SHIELD ^{PAD}
		RADO-C
Measure range	Exposure Dose	0.1 μ Sv/h ~ 10 mSv/h
	Accumulated Dose	0.1 μ Sv ~ 999 Sv
Energy Range		60 KeV ~ 1.5 MeV (γ -ray, X-ray)
Detection Sensor		Scintillator
Reaction time		1 seoncd
Accuracy		\pm 15%
Sound level		60dB(at 10cm)
Display		OLED
Power		Built-in battery 1050mAh
Charge voltage		5V 1.6W
Size		53.5 X 44.3 X 21.3mm (H x W x D)
Weight		\leq 60g
Operation temperature		0°C ~ 40°C

▷ Customer service & A/S ◁

▶ Please check before A/S

① Can't turn on the device

Battery might be discharged. Please recharge your device with USB cable and turn on the device again.

② There is system error during operation

There is reset switch on the base of the device. Please reset the device by pressing the button with sharp things and re-power the device.

If these solutions are not working, please call to our A/S center.

▶ A/S center location

| Address |

(우)34326 대전광역시 대덕구 대덕대로 1284번길 17 사무동 201호(신일동)

| Phone number |

042. 719. 7883 (Monday ~ Friday : 09:00 ~ 18:00)

▷ Warranty Certificate ◁

Our device has passed rigorous testing to ensure its stable and safe performances. "M1 INTERNATIONAL. INC." provide A/S and replace under the terms of this warranty within the warranty period.

Model	SHIELD _{PAD} (RADO)
Serial number	
Warranty life	1 year
Purchase date	/ /
Purchase address	

1) Warranty life : 1 year

2) Terms of warranty

► "M1 INTERNATIONAL. INC." warrants that this product is free from defects in material and workmanship under normal use and service for the warranty period.

► All components except main body are replacements.

► This Standard Limited Warranty is conditioned upon proper use of the product. This Standard Limited Warranty does not cover:

01) Defects or damage resulting from accident, misuser, abnormal use, exposure to liquid.

02) Defects or damage resulting from improper testing, operation, or adjustment not furnished or approved by M1 International.

03) Defects or damage resulting from external causes such as collision with an object, fire, flooding, exposure to weather conditions.

FCC Compliance 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.

FCC Interference Statement

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 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 which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

SHIELD_{PAD}

Portable Alarm Dosimeter



㈜ 엠원인터내셔널
M1 INTERNATIONAL INC.