

72W AC-DC Medical-grade Desktop Power Adapter ADA720K480S001B



1 Features

- Wide input voltage: the input working voltage range is 100-240VAC.
- High energy efficiency: Six levels of energy consumption, power efficiency up to 88%.
- High reliability: Compliant with EN60601-1, IEC CLASS II and 2×MOPP insulation protection level, CE.
- Flame retardant insulation: UL94V-0 flame retardant heat resistant material.
- Full protections: Short Circuit/ Over Voltage/ Over Current/ Self-recovery.

2 Applications

- Blood glucose meter
- Blood oxygen meter
- COVID-19 PCR test machine
- Household beauty device
- Physiotherapy equipment

3 Description

ADA720K480S001B is a desktop power adapter with a single output. With 100 -240 VAC universal input voltage, it can continuously output any DC voltage of 48VDC, 1M output cable length. Widely used in portable medical equipment .

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4 Naming Convention

ADA720K480S001B: Output Voltage 48V, Output Power 72W, medical desktop power adapter AC / DC

□□	Product Code	AD=Isolated AC/DC; DD=Isolated DC/DC
□	Packaging Form	A=adapter; M=resin filled power module; P=PCB module
XXX	Power Coding	First two digits multiplied by 10 to the power of the third digit
□	Application Level	C=commercial grade T=industrial grade K=medical grade S=harsh environment application
XXX	Output Voltage	*10 ⁻¹ V
□	Custom tag	S=standard product Z=customized product
XXX	Product ID	001-999, used to identify different products of the same category
□	Major Upgrade Information	A-Z, fixed as A for the first mass production

5 Specification

5.1 Input Parameter

Voltage Range	100~240 VAC, 180~370VDC
Frequency Range	47~63Hz
Input Current (Max.)	1.1A @ 100VAC, 0.6A @ 240VAC
Efficiency (Typ.)	88%
Standby Consumption	0.2W
Impulse Current (Typ.)	30A @ 100VAC, 40A @ 240VAC
Leakage Current (Typ.)	0.1mA @ 230VAC, 50Hz

5.2 Output Parameter

Output Voltage	48VDC
Voltage Tolerance	±5%
Output Current	1500mA
Rated Power (Max.)	72W
Line Regulation	±3% at full load
Maximum Capacitive Load	7000uF
Load Regulation	±3%
Ripple & Noise	150mV (Typ.), 200mV (Max.)@20MHz
Frequency (Typ.)	65kHz
Hold up Time (Typ.)	15mS @ 100VAC 80mS @ 240VAC

5.3 Environment

Operating Temperature	-40 ~ +70℃
Storage Temperature	-40 ~ +85℃
Storage Humidity	95%RH(Max.)
Soldering Temperature	250±10℃ @ Wave Soldering, 5~10s 360±10℃ @ Manual Soldering, 3-5s

5.4 Protection Function

Short Circuit	Long term short circuit, auto recovery.
Over Current	≥140%IO auto recovery
Over Voltage	≤55VDC @ 48V output
IEC Safety Class	CLASSII
Electric Shock Protection	2×MOPP @ primary to secondary

5.5 Reliability

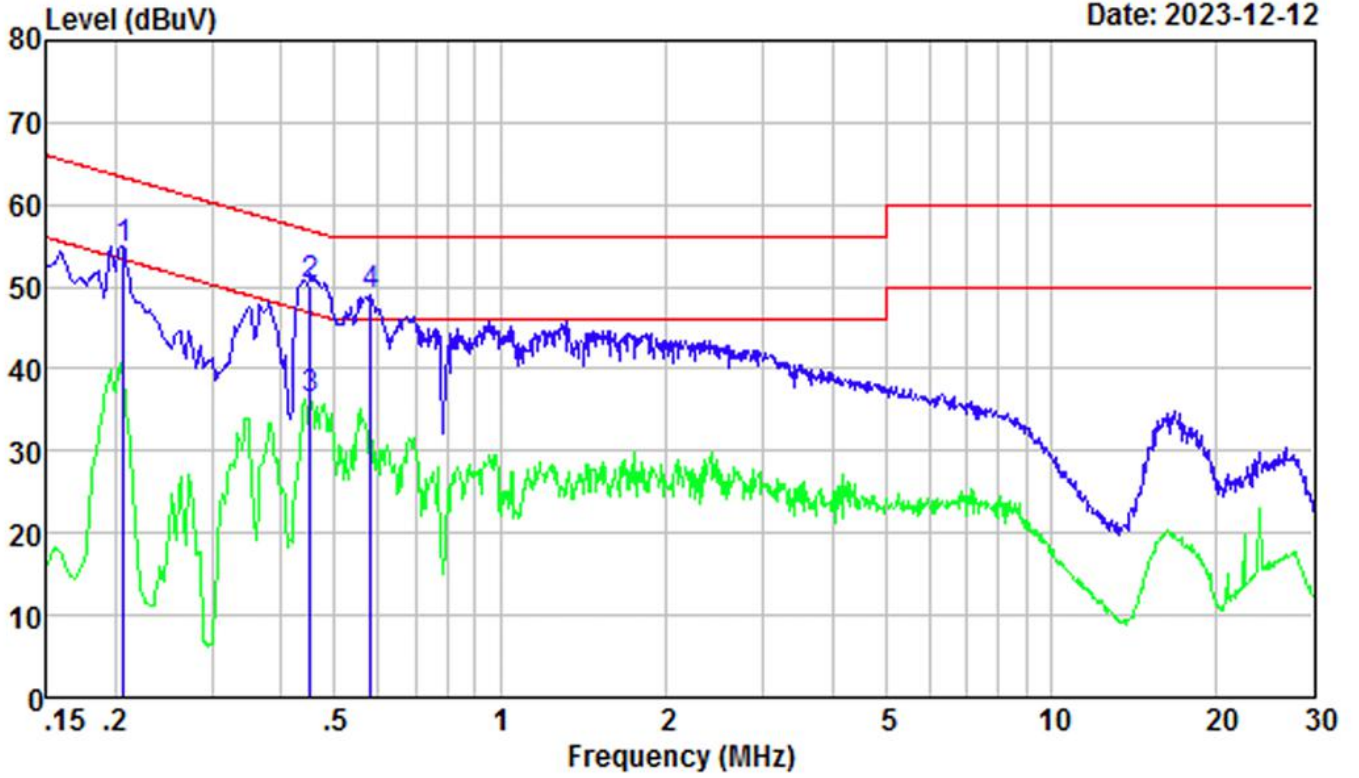
MTBF	≥100,000H @ 25℃
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5.6 Safety Standards / Directives

Medical Safety	EN60601-1
CE	Compliant
Isolation Voltage (Min.)	Input to Output
4000VAC @ 1 minute test and the leakage current is smaller than 5mA.	

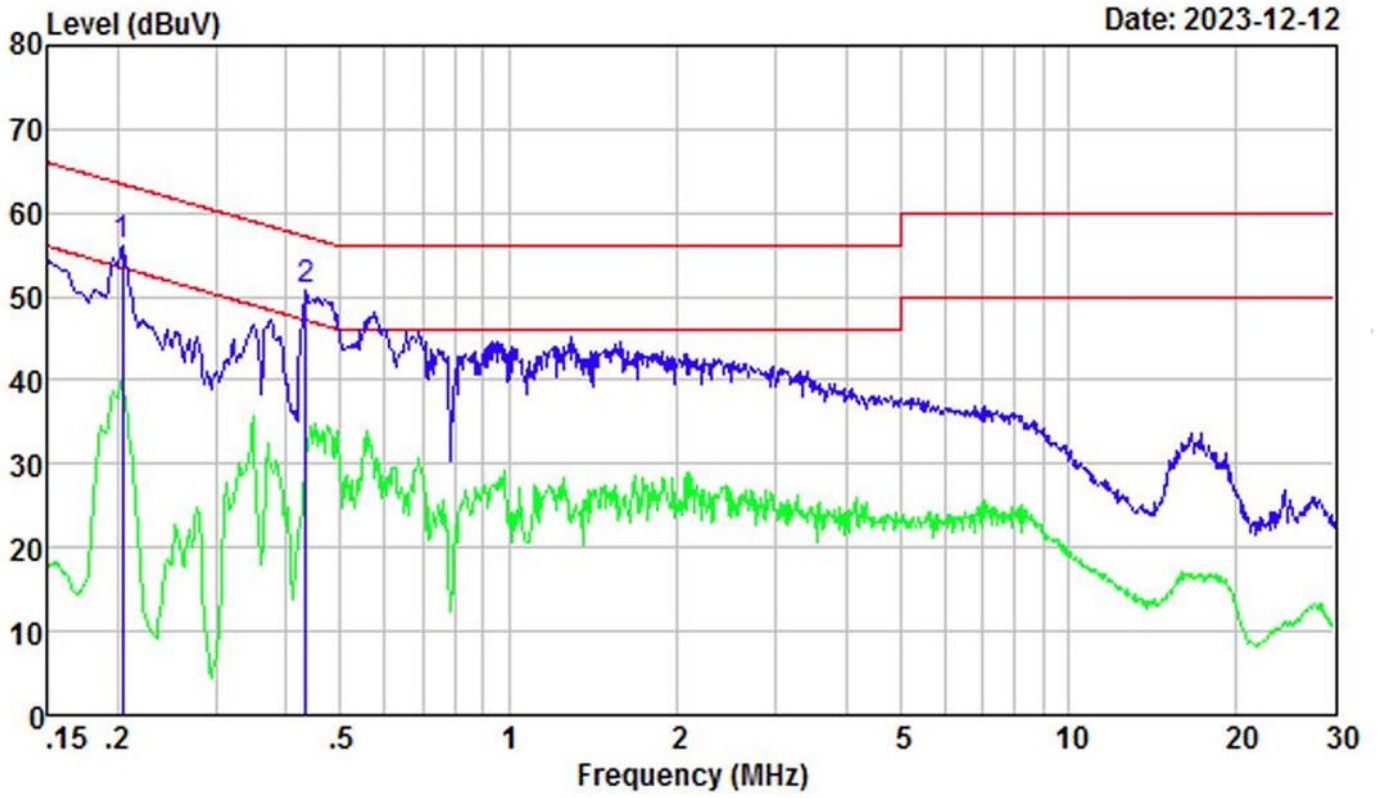
5.7 EMC

Parameter	Standard	Test Level / Note
Conducted Emission	EN55011(CISPR11) / EN55032(CISPR32)	CLASS B
Radiated Emission	EN55011(CISPR11) / EN55032(CISPR32)	CLASS B
Voltage Fluctuation	EN61000-3-2	-
Harmonic Current	EN61000-3-2	-
Electrostatic Discharge	IEC EN61000-4-2	±8KV/Contact ±2, 4, 8, 15KV/Air
Radiate Susceptibility	IEC EN61000-4-3	10V/m
Electrical Fast Transient Burst	IEC EN61000-4-4	±2 KV
Surge	IEC EN61000-4-5	±0.5/±1KV Professional/Family medicine
Conducted Susceptibility	IEC EN61000-4-6	3Vm/0.15MHz-80MHz 6Vm (Within 15m band) /0.15MHz-80MHz 80%AM, 1kHz
Voltage Dips and Interruption	IEC EN61000-4-11	0%UT 0.5cycle 0°, 45°, 90°, 135°, 180°, 270°, 315°. 0%UT 1cycle 70%UT 25/30 cycle 0° 0%UT 250/300 cycle



(MHz)	(dBUV)	(dBUV)	(dB)	(detector)
0.207	54.66	63.32	8.66	Peak
0.452	50.11	56.85	6.74	QP
0.452	36.41	46.85	10.44	Average
0.582	49.04	56.00	6.96	Peak

Conducted Harassment Test (LINE)

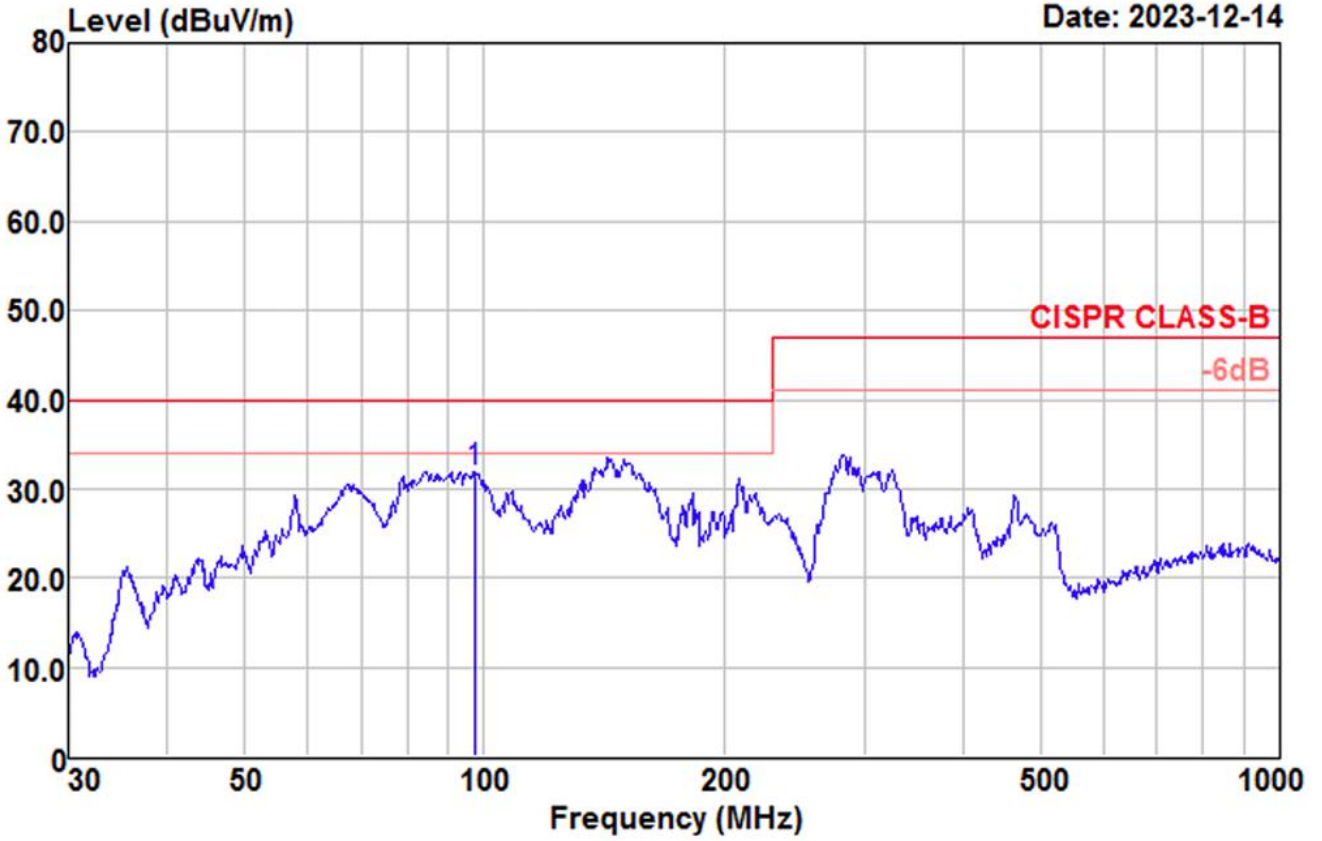


(MHz)	(dBuV)	(dBuV)	(dB)	(detector)
0.204	56.23	63.45	7.22	Peak
0.433	50.69	57.20	6.51	Peak

Conducted Harassment Test (NEUTRAL)

Data: 1151

Date: 2023-12-14

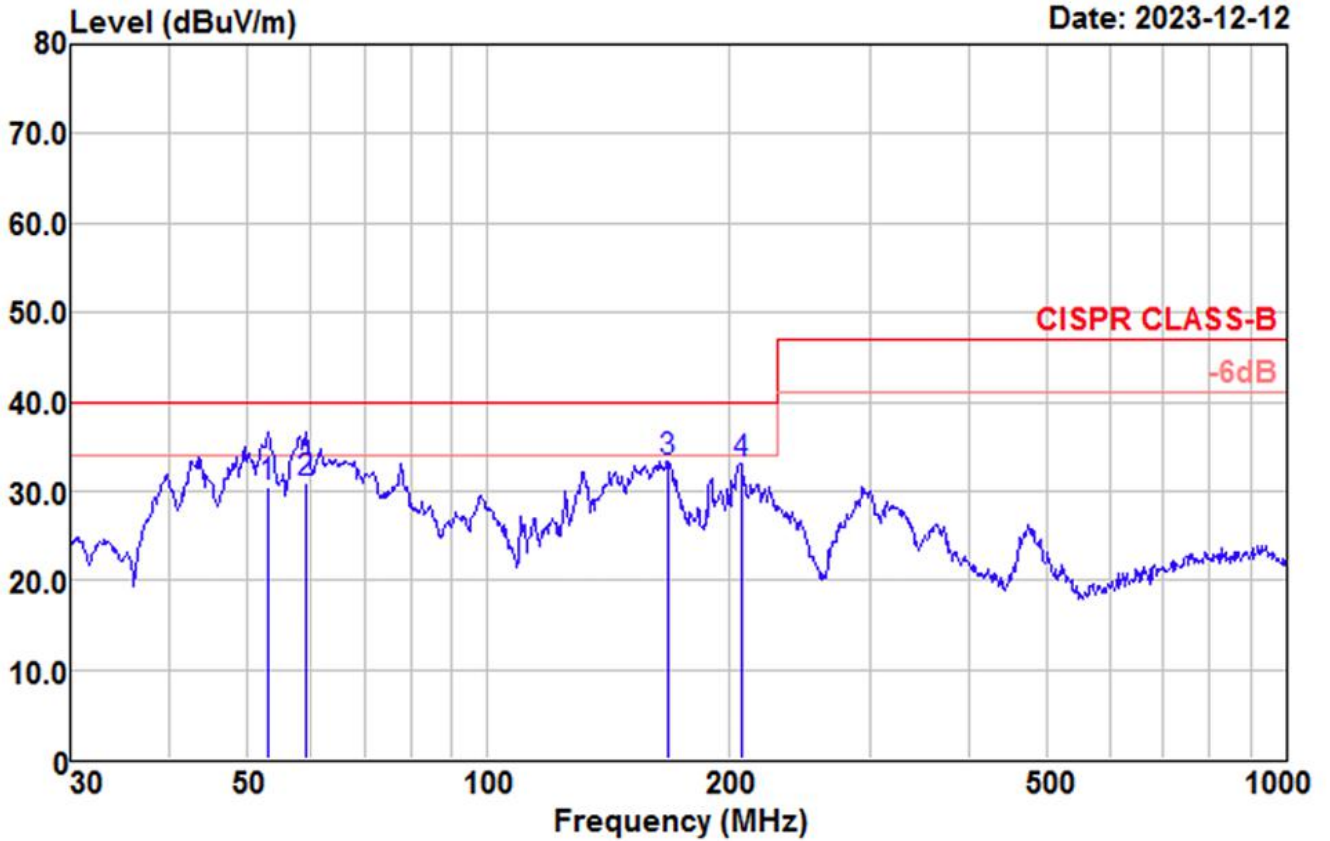


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
97.115	54.14	8.47	1.85	32.49	31.97	40.00	-8.03	Peak

Radiation Interference Test (Horizontal)

Data: 1150

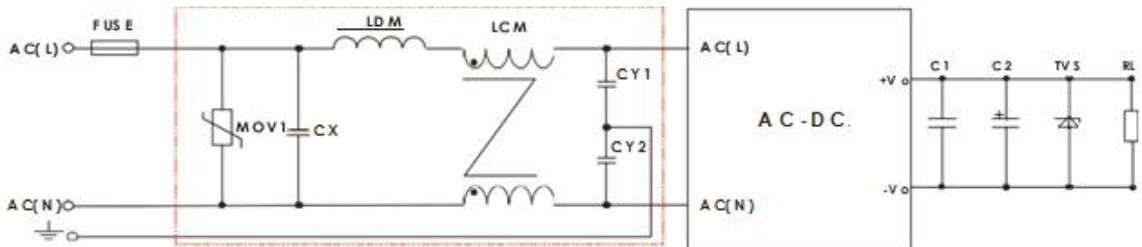
Date: 2023-12-12



Freq MHz	Reading level dBUV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBUV/m	Limit level dBUV/m	Over limit dB	Remark
53.131	47.90	13.70	1.34	32.41	30.53	40.00	-9.47	QP
59.025	48.70	13.26	1.42	32.42	30.96	40.00	-9.04	QP
167.824	50.33	13.02	2.49	32.50	33.34	40.00	-6.66	Peak
207.123	53.40	9.46	2.79	32.49	33.16	40.00	-6.84	Peak

Radiation Interference Test (Vertical)

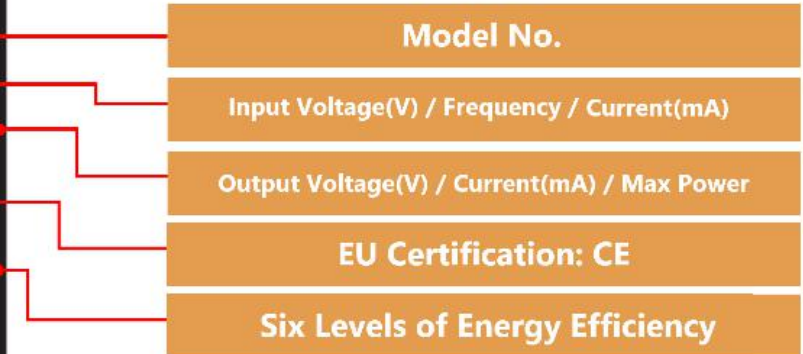
6 Typical Application Circuit

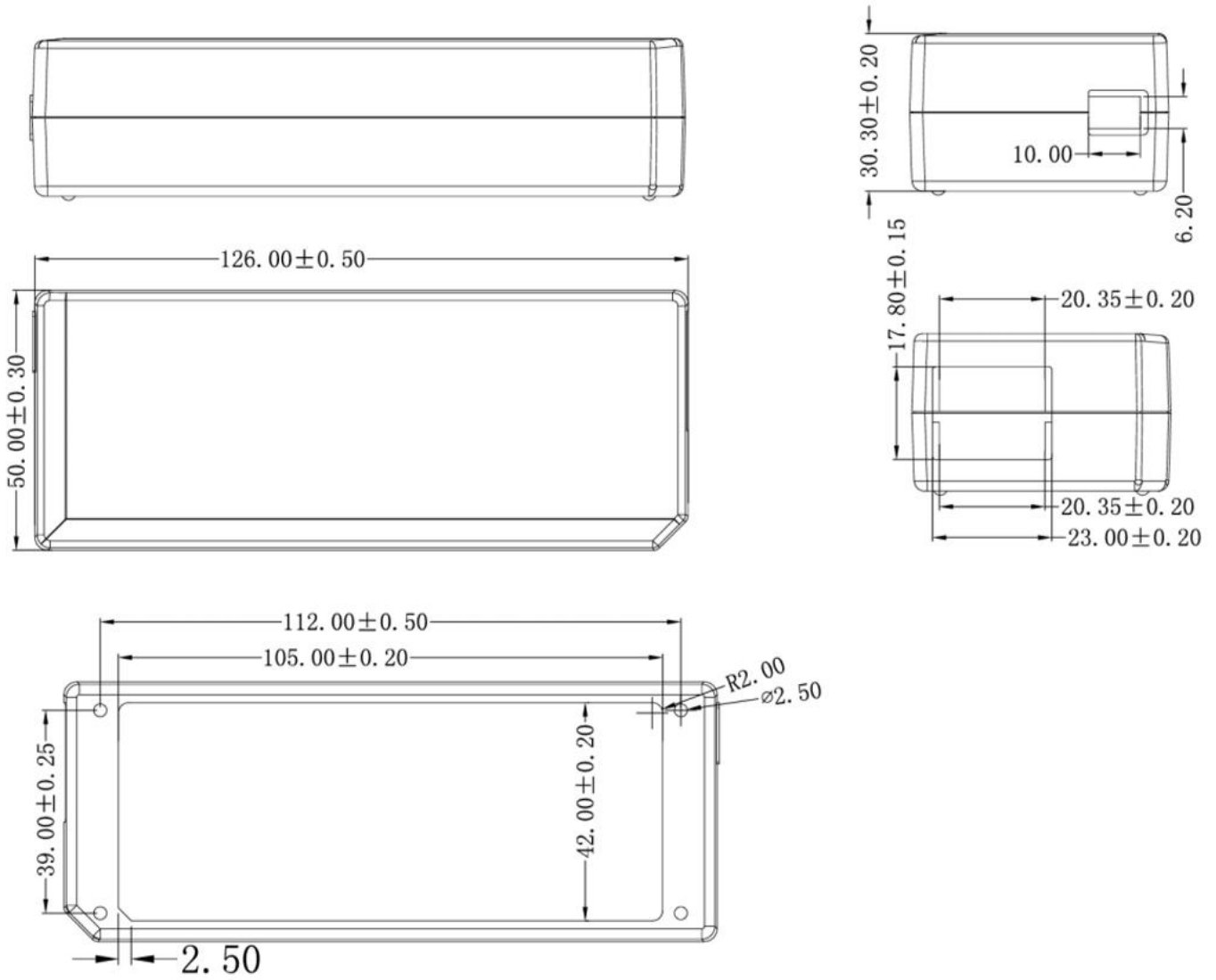


Note: EMC has higher requirements without any additional circuit.

7 Mechanical Specification

Dimension	126*50*30.3mm
Enclosure Material	Black flame retardant and heat resistant plastics(UL94V-0)
Cooling Mode	Natural air cooling
Power and Cable Specification	ul2464×20Awg*1m,5.5*2.5*straight head+magnetic ring+SR





8 Precautions for Use

Avoid using the equipment close to or stacked with other equipment, which may lead to improper operation. If it must be used close to or stacked, pay attention to observe and verify the equipment and other equipment to ensure normal operation.

The use of other accessories, sensors and cables provided by the equipment manufacturer may increase the electromagnetic radiation or reduce the immunity.

The distance between the portable radio frequency communication equipment and the equipment should not be greater than 30cm, otherwise the performance of the equipment may be reduced.

9 Revision History

Version	Date	Description	Author
00	2024-09-04	First edition	YML

Disclaimer: The product design is subject to alternation and improvement without prior notice.

Please contact us if you have any questions about the use of this document or our products, or if you would like to know the latest information about our products:

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Thank you all for continuous support of DWIN, and your approval is the driving force of our progress!

Important Disclaimer

DWIN reserves the right to make any changes to product designs without prior notice.

Customers should ensure strictly adhering to all the relevant standards and requirements during the product application process, including but not limited to functional safety, information security, and regulatory provisions.

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