

EU General Product Safety Regulation (GPSR) Risk Assessment

Product Name: Joulescope JS220 EVK1

Manufacturer: Jetperch LLC (www.joulescope.com)

Document Version: 1.0

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1. Introduction

This risk assessment evaluates the Joulescope JS220 Evaluation Kit 1 to ensure compliance with the EU General Product Safety Regulation. The document identifies potential risks, assesses their severity and likelihood, and proposes mitigations to ensure product safety.

2. Product Description

Functionality: Evaluation Kit used to demonstrate and explore the capabilities of the Joulescope JS220 Precision DC energy analyzer.

Key Features: Provides regulated voltage with a variable current load to stimulate the Joulescope JS220; USB interface.

Intended Use: Laboratory, educational, and development environments for electronics and IoT systems testing.

User Demographics: Trained professionals, researchers, and engineers.

Operational Environment: Indoor use; non-hazardous, non-condensing environments.

3. Hazard Identification

Hazard Type	Description
Electrical Shock	Potential risk due to incorrect use with high voltages.
Overheating	Risk of overheating during prolonged or high-power operation.
Fire	Associated with electrical faults, overheating, or incorrect use of the device.
Mechanical Damage	Risk of sharp edges or loose components leading to physical injury.
Data Integrity / Safety	Risk of misleading readings due to incorrect operation or faulty calibration.
USB Interface	Potential for improper connection causing damage to the host device or Joulescope JS220.
Hazardous Materials	Risk of exposure to harmful substances.

4. Risk Assessment Table

Hazard	Likelihood	Severity	Risk Level	Mitigation Measures
Electrical Shock	Low	High	Low	Low voltage design: product voltage limited to USB supply, which should not exceed 5.5 V.
Overheating	Low	Medium	Low	Product incorporates overcurrent detection and shutoff on USB power supply.
Fire	Low	High	Low	Low voltage design. Ensure components meet flame-retardant standards (UL94).
Mechanical Damage	Low	Low	Low	The 5 pin connector does protrude which could cause accidental damage due to mishandling. Protruding headers are consistent with comparable evaluation kits and development boards in this class. However, future product revisions should inset the connector so it does not protrude.
Data Integrity	Medium	Low	Low	Each unit is individually tested and calibrated in the factory. The Quick Start Guide explains the correct operation.
USB Interface	Low	Medium	Low	Compliant to USB 2 standard, except for suspend mode current consumption. Includes ESD, over-voltage, under-voltage, and over-current protective circuitry.
Hazardous Materials	Low	High	Low	The product is EU RoHS3 and REACH compliant. Conduct material testing. Include safety data in product documentation. Manufacturing documents specify lead-free solder.

5. Residual Risk Evaluation

After implementing the mitigations above, the residual risks are deemed acceptable for the intended use and user demographic. Additional risk mitigation will be applied if new hazards are identified during production or customer feedback.

6. Conformity Declaration

The Joulescope JS220 EVK1 complies with the applicable standards and regulations, ensuring safety and performance under the conditions of intended use. Compliance testing and certification include:

Electrical Safety: IEC 61010-1

RoHS2 and RoHS3 Compliance: Directive 2011/65/EU and Directive 2015/863

Since this evaluation kit is intended for limited industrial use, it was not tested for compliance with CE.

7. Conclusion

This document will be updated periodically to reflect changes in product design, usage, and safety standards. Regular reviews will ensure continued compliance with the EU GPSR.

8. References

EU General Product Safety Regulation (GPSR)

IEC 61010-1 (Safety requirements for electrical equipment for measurement, control, and laboratory use)

EN 61326-1 (EMC requirements for electrical equipment)

IEC 61000-4-2:2008: (Electromagnetic compatibility)

CISPR 11:2015, Limits and methods of measurement of electromagnetic disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment, Amendment 1:2016

Product documentation:

[Joulescope JS220 Evaluation Kit 1 Datasheet](#)

[Joulescope JS220 Evaluation Kit 1 Quick Start Guide](#)

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