

LDRA Productivity Package for Consumer Devices

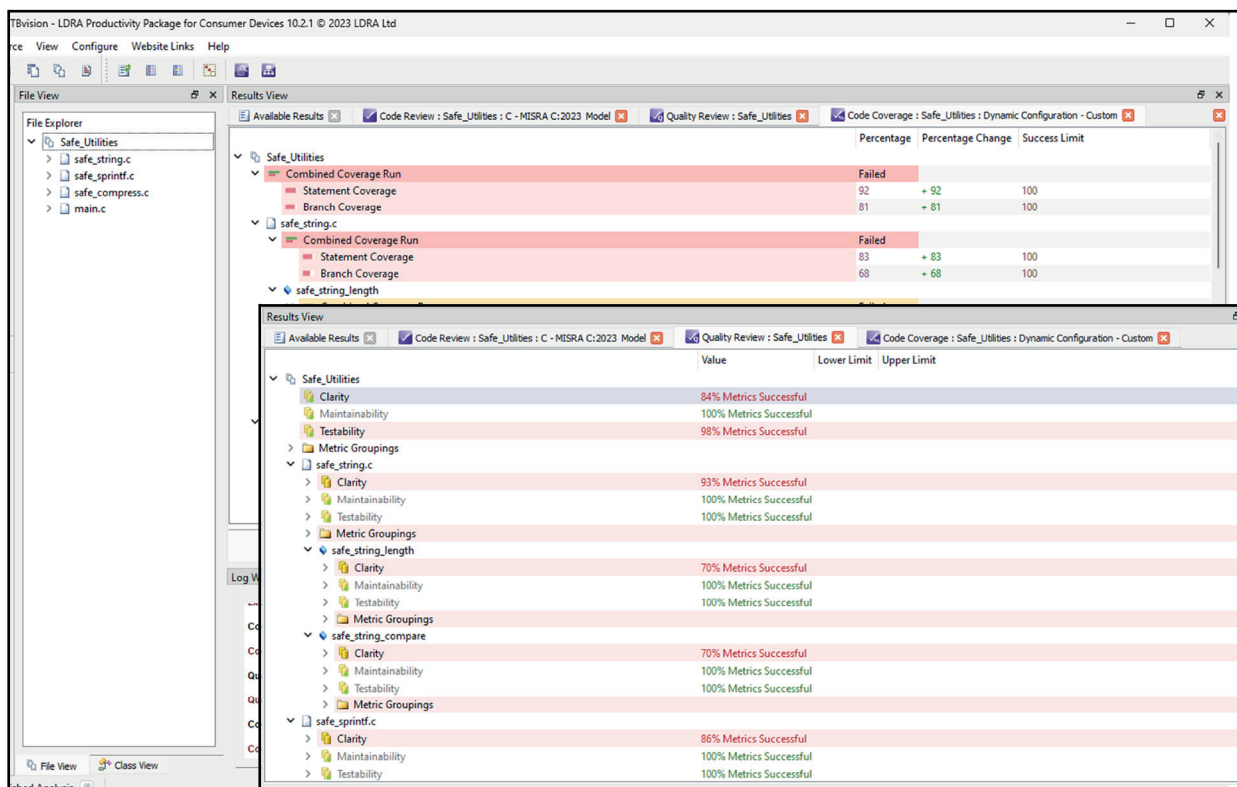
LDRA Productivity Package for Consumer Devices

The LDRA Productivity Package for Consumer Devices is a set of targeted capabilities drawn from the LDRA tool suite enabling customers to achieve IEC 60730 compliance through to Class C, the highest level of assurance for consumer device software. It includes capabilities to address objectives directly referenced in IEC 60730 and those deferred to IEC 61508.



The package includes LDRA's best in class capabilities for the development and verification of consumer device software. The package's flexibility and scalability address the changing needs of the most demanding projects and enhances collaboration across large and small teams, making it ideal for use at any point in the software development lifecycle. The breadth of capabilities included in the package make it suitable for use in the consumer devices sector, as well for the development of software to varying levels of assurance.

The LDRA Productivity Package for Consumer Devices embraces both static and dynamic analysis techniques to encompass a wide range of essential features designed to ensure compliance with functional safety and security standards.



Static code analysis is used to evaluate code quality and gather critical metrics. It enables checking against the rules defined by coding standards such as MISRA, CERT, and CWE, in addition to user configurable rules sets.

Dynamic analysis capabilities include unit, integration and system level testing on simulators and target hardware alike. Structural coverage analysis including MC/DC enables the assessment of coverage statistics and the implementation of requirements-based and on-target testing, while the analysis of data coupling and control coupling helps to ensure that source code is implemented in accordance with its developer's intentions.

Reporting of both static and dynamic analyses is tuned to industry requirements and formatted to reflect the objectives of IEC 60730, including those it defers to IEC 61508. Optional add-on capabilities including requirements traceability, web-based project reporting of testing and analysis results, and tool qualification. These capabilities complement the base productivity package to provide a comprehensive toolkit for ensuring the highest level of assurance in the development of industrial control software, meeting the rigorous standards of IEC 60730.

The image displays two screenshots of the LDRA Productivity Package for Consumer Devices. The top screenshot shows the 'Test Manager Report' for 'Safe_Uilities', detailing code review results for files like main.c, safe_compress.c, safe_sprintf.c, and safe_string.c. The bottom screenshot shows the 'MISRA C:2023 Compliance Overview Report', indicating 99% compliance (200/201 guidelines) and 1 guideline violation.

LDRA Productivity Package for Consumer Devices Test Manager Report

System Set: Safe_Uilities

Date of Analysis	Report Produced on	LDRA Version	Reporting Scope
Mon Feb 19 2024 12:04:03	Mon Feb 19 2024 12:11:17	10.2.1	Source File and Associated Header

Code Review

File	Result	Unique Violations in Function	Number of Unique Violations	Breakdown of Violations
main.c	PASS	0%	0	
safe_compress.c	FAIL	50%	1	1-R
safe_sprintf.c	FAIL	25%	1	1-R
safe_string.c	FAIL	25%	1	1-R

LDRA Productivity Package for Consumer Devices MISRA C:2023 Compliance Overview Report

System Set: Safe_Uilities

MISRA C:2023 Compliance	Guideline Violations	Mandatory	Required	Advisory	Document
99% 200 / 201 Guidelines	1	0	1	0	0

Date of Analysis	Report Produced on	LDRA Version	Reporting Scope
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MISRA C:2023 Guidelines

Guideline	Compliance	Level	Violations	Description
D.1.1	Compliant	Required	0	Any implementation-defined behaviour on which the output of the program depends shall be documented and understood
D.4.1	Compliant	Required	0	Run-time failures shall be minimised

The LDRA Productivity Package for Consumer Devices at a glance:

- Functional safety and security standards compliance with IEC 60730, including those objectives deferred to IEC 61508
- Static code analysis including key quality, complexity and testability metrics
- Coding standards compliance including MISRA, CERT, and CWE for both C and C++, along with many other commercially available coding standards
- The ability to define bespoke coding standards
- Dynamic structural coverage analysis including MC/DC
- Unit and system level testing on target hardware
- Requirements-based and on-target testing
- Security analysis and reporting, including taint analysis
- Data coupling and control coupling analysis
- Can be extended through add-on capabilities including requirements traceability, web-based project-level reporting, tool qualification packages, and object to source code traceability and coverage
- Breadth of capabilities meets the needs of most consumer device software development and verification projects
- Flexibility and scalability to support projects at any point in the lifecycle

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