

STN	Zabezpečovanie výrobkov kozmického programu. Zabezpečovanie tvrdosti žiarenia. Komponenty EEE.	STN EN 16602-60-15 31 0542
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Space product assurance - Radiation hardness assurance - EEE components

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/15

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ICS 49.140

English version

Space product assurance - Radiation hardness assurance - EEE components

Assurance produit des projets spatiaux - Assurance
radiation - Composants EEE

Raumfahrtproduktsicherung - Sicherung der
Strahlungshärte für EEE-Komponenten

This European Standard was approved by CEN on 13 March 2014.

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Foreword

This document (EN 16602-60-15:2014) has been prepared by Technical Committee CEN/CLC/TC 5 "Space", the secretariat of which is held by DIN.

This standard (EN 16602-60-15:2014) originates from ECSS-Q-ST-60-15C.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2015, and conflicting national standards shall be withdrawn at the latest by March 2015.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

This document has been developed to cover specifically space systems and has therefore precedence over any EN covering the same scope but with a wider domain of applicability (e.g. : aerospace).

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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Scope

This standard specifies the requirements for ensuring radiation hardness assurance (RHA) of space projects. These requirements form the basis for a RHA program that is required for all space projects in conformance to ECSS-Q-ST-60. RHA program is project specific. This standard addresses the three main radiation effects on electronic components: Total Ionizing Dose (TID), Displacement Damage or Total Non-Ionizing Dose (TNID), and Single event Effects (SEE).

Spacecraft charging effects are out of the scope of this standard.

In this standard the word “component” refers to Electrical, Electronic, and Electromechanical (EEE) components only. Other fundamental constituents of space hardware units and sub-systems such as solar cells, optical materials, adhesives, polymers, and any other material are not covered by this standard.

This standard may be tailored for the specific characteristic and constraints of a space project in conformance with ECSS-S-ST-00.

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Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this ECSS Standard. For dated references, subsequent amendments to, or revision of any of these publications do not apply. However, parties to agreements based on this ECSS Standard are encouraged to investigate the possibility of applying the more recent editions of the normative documents indicated below. For undated references, the latest edition of the publication referred to applies.

EN reference	Reference in text	Title
EN 16601-00-01	ECSS-S-ST-00-01	ECSS system - Glossary of terms
EN 16602-10-09	ECSS-Q-ST-10-09	Space product assurance - Nonconformance control system
EN 16602-30	ECSS-Q-ST-30	Space product assurance - Dependability
EN 16602-30-11	ECSS-Q-ST-30-11	Space product assurance - Derating - EEE components
EN 16602-60	ECSS-Q-ST-60	Space product assurance - Electrical, electronic, and electromechanical (EEE) components
EN 16603-10-04	ECSS-E-ST-10-04	Space engineering - Space environment
EN 16603-10-12	ECSS-E-ST-10-12	Space engineering - Methods for the calculation of radiation received and its effects, and a policy for design margins
	ESCC 22900	ESCC Basic Specification: Total dose steady state irradiation test method
	ESCC 25100	ESCC Basic Specification: Single Event Effect Test Method and Guidelines
	MIL-STD-750E method 1080 (20 Nov. 2006)	Test methods for semiconductor devices - Single event burnout and single event gate rupture test
	MIL-STD-750E method 1019 (20 Nov. 2006)	Test methods for semiconductor devices - Steady-state total dose irradiation procedure
	MIL-STD-883G method 1019	Microcircuits - Ionizing radiation (total dose) test procedure

	(28 Feb. 2006)	
	MIL-HDBK-814 (8 Feb. 1994)	Military Handbook: Ionizing dose and neutron hardness Assurance guidelines for microcircuits and semiconductor devices

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