

Space product assurance - Derating - EEE components

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 16602-30-11:2014 sisaldab Euroopa standardi EN 16602-30-11:2014 inglisekeelset teksti.	This Estonian standard EVS-EN 16602-30-11:2014 consists of the English text of the European standard EN 16602-30-11:2014.
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ICS 49.140

English version

Space product assurance - Derating - EEE components

Assurance produit des projets spatiaux - Derating des
composants EEERaumfahrtproduktsicherung - Herabsetzen/Unterlastung
von EEE-Komponenten

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

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Foreword

This document (EN 16602-30-11:2014) has been prepared by Technical Committee CEN/CLC/TC 5 "Space", the secretariat of which is held by DIN.

This standard (EN 16602-30-11:2014) originates from ECSS-Q-ST-30-11C Rev 1.

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of an identical text or by endorsement, at the latest by March 2015, and conflicting national standards shall be withdrawn at the latest by March 2015.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.

Introduction

This Standard specifies derating requirements applicable to electronic, electrical and electromechanical components.

Derating is a long standing practice applied to components used on spacecrafts. Benefits of this practice are now proven, but for competitiveness reasons, it becomes necessary to find an optimized reliability. Too high a derating can lead to over-design, over-cost and over-sizing of components, the direct consequence being excess volume and weight. The aim is to obtain reliable and high performance equipment without over-sizing of the components. For this reason and if possible, this Standard provides derating requirements depending on mission duration and mean temperature, taking into account demonstrated limits of component capabilities.

1 Scope

This Standard applies to all parties involved at all levels in the realization of space segment hardware and its interfaces.

The objective of this Standard is to provide customers with a guaranteed performance and reliability up to the equipment end-of-life. To this end, the following are specified:

- Load ratios or limits to reduce stress applied to components;
- Application rules and recommendations.

This standard may be tailored for the specific characteristics and constraints of a space project, in accordance 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 revisions 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 most 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 16602-60	ECSS-Q-ST-60	Space product assurance - Electrical, electronic and electromechanical (EEE) components
	ESCC 2269010	Evaluation test programme for monolithic microwave integrated circuits (MMICS)
	ESCC 2265010	Evaluation Test Programme for Discrete Microwave Semiconductors