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Space product assurance - Procurement of printed circuit boards

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. 07/15

Obsahuje: EN 16602-70-11:2015

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Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, 2015
Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

ICS 31.180; 49.140

English version

Space product assurance - Procurement of printed circuit boards

Assurance produit des projets spatiaux -
Approvisionnement des circuits imprimés

Raumfahrtproduktsicherung - Beschaffung von Leiterplatten

This European Standard was approved by CEN on 11 October 2014.

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Table of contents

Foreword	4
1 Scope.....	5
2 Normative references	6
3 Terms, definitions and abbreviated terms.....	7
3.1 Terms from other standards.....	7
3.2 Terms specific to the present standard	7
3.3 Abbreviated terms.....	10
4 Principles	11
5 Requirements.....	12
5.1 Procurement of PCBs	12
5.1.1 General	12
5.1.2 Design and layout	12
5.2 Base materials.....	13
5.2.1 Base laminate materials.....	13
5.2.2 Basic metallic layer	14
5.2.3 Plated metallic layers and finishes	14
5.2.4 Special materials.....	15
5.3 PCB delivery	16
5.3.1 Marking	16
5.3.2 Associated test coupons	16
5.3.3 Outgoing inspection and PCB manufacturer data package	17
5.4 Packaging.....	17
5.4.1 Handling and storage	17
5.4.2 Packaging	17
5.5 Supplier acceptance of PCBs	18
5.5.1 Supplier acceptance inspection.....	18
5.5.2 Electrical test.....	18
6 Inspection of PCBs.....	19
6.1 General.....	19

6.2	Visual inspection and non-destructive test	19
6.2.1	Verification of marking.....	19
6.2.2	Visual aspects.....	19
6.2.3	External dimensions.....	22
6.2.4	Warp	23
6.2.5	Twist	23
6.3	Microsection inspection criteria	24
6.3.1	General	24
6.3.2	Thickness of metal-plating.....	25
6.3.3	Aspect of plated-through holes.....	27
7	Requirements for PCBs	30
7.1	Rigid single-sided and double-sided PCBs	30
7.2	Rigid single-sided and double-sided PCBs for high frequency application	32
7.3	Flexible PCBs	35
7.4	Rigid-flex PCBs	36
7.5	Rigid multilayer PCBs	37
7.6	Sequential rigid multilayer PCBs.....	39
Annex A	(normative) PCB Certificate of conformance (CoC) – DRD.....	43
Bibliography		45
Figures		
Figure 6-1:	Arbitrary defects on conductors	22
Figure 6-2:	Arbitrary defects on spacing between conductors.....	22
Figure 6-3:	Misalignment of cover layer (for flexible PCBs)	22
Figure 6-4:	Warp	23
Figure 6-5:	Twist.....	24
Figure 6-6:	Dimensional parameters to be measured	24
Figure 6-7:	Microsection of a PTH	26
Figure 6-8:	Undercut for PCBs with fused SnPb finish.....	27
Figure 6-9:	Undercut for PCBs with Au/Ni or Au finish	27
Figure 6-10:	Overhang for PCBs with Au/Ni or Au finish.....	27
Figure 6-11:	Microsection in PTH: Possible defects.....	28
Figure 6-12:	Microsection of PTH: Possible defects	29
Figure 6-13:	Voids in resin inside buried vias	29
Figure A-1 :	Example of a PCB CoC.....	44

Foreword

This document (EN 16602-70-11:2015) has been prepared by Technical Committee CEN/CLC/TC 5 “Space”, the secretariat of which is held by DIN.

This standard (EN 16602-70-11:2015) originates from ECSS-Q-ST-70-11C.

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 July 2015, and conflicting national standards shall be withdrawn at the latest by July 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.

1

Scope

This Standard defines the requirements imposed on the customer, the supplier and the qualified PCB manufacturer for PCB procurement.

The requirements of clause 7 apply to both qualification and procurement of finished PCBs and do not include the manufacturing tolerances.

This Standard is applicable for the following type of boards:

- Rigid PCBs (single-sided, double-sided, multilayer, sequential multilayer and PCBs with metal core)
- Flexible PCBs (single-sided and double-sided)
- Rigid-flex PCBs (multilayer and sequential multilayer)
- High frequency PCBs
- Special PCBs.

PCBs are used for the mounting of components in order to produce PCB assemblies performing complex electrical functions. The PCBs are subjected to thermo-mechanical stresses during their assembly such as mounting of components by soldering, rework and repair under normal terrestrial conditions. In addition the assembled PCB is subjected to the environment imposed by launch and space flights. Therefore the qualification of a PCB supplier to ECSS-Q-ST-70-10 is of extreme importance before the procurement of PCB for space usage.

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

2

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 16602-70	ECSS-Q-ST-70	Space product assurance — Material, mechanical parts and processes
EN 16602-70-02	ECSS-Q-ST-70-02	Space product assurance — Thermal vacuum outgassing test for the screening of space materials
EN 16602-70-07	ECSS-Q-ST-70-07	Space product assurance — Verification and approval of automatic machine wave soldering
EN 16602-70-08	ECSS-Q-ST-70-08	Space product assurance — Manual soldering of high-reliability electrical connections
EN 16602-70-10	ECSS-Q-ST-70-10	Space product assurance — Qualification of printed circuit boards
EN 16602-70-28	ECSS-Q-ST-70-28	Space product assurance — Repair and modification of printed circuit board assemblies for space use
EN 16602-70-38	ECSS-Q-ST-70-38	Space product assurance — High-reliability soldering for surface-mount and mixed technology printed-circuit boards
	IEC 60249 (1993-05)	Base materials for printed circuits
	IEC 60326-2-am 1 (1992-06)	Printed boards. Part 2: Test methods
	IPC-4101	Specification for base materials for rigid and multilayer printed boards
	IPC-MF-150F	Metal foil for printed wiring applications
	IPC-CF-152B	Composite metallic material specification for printed wiring board