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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland
Email: inmail@iec.ch
Web: www.iec.ch

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRONICS ASSEMBLY TECHNOLOGY –
ELECTRONIC MODULES**

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International Standard IEC 62421 has been prepared by IEC technical committee 91: Electronics assembly technology.

The text of this standard is based on the following documents:

FDIS	Report on voting
91/689/FDIS	91/722/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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ELECTRONICS ASSEMBLY TECHNOLOGY – ELECTRONIC MODULES

1 Scope and object

This International Standard provides a generic standard of electronic modules on which their sectional standards are based.

This standard provides a definition, business model, interface between the trading partners, and related areas of standardization of electronic modules. In addition a generic set of test method is provided.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068 (all parts), *Environmental testing*

IEC 60068-1:1988, *Environmental testing – Part 1: General and guidance*

IEC 60068-2-1: *Environmental Testing – Part 2-1: Tests – Test A: Cold*

IEC 60068-2-2: *Environmental testing – Part 2-2: Tests – Tests B: Dry heat*

IEC 60068-2-6: *Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)*

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IEC 60068-2-14: *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 60068-2-20: *Environmental testing – Part 2-20: Tests – Test T: Soldering*

IEC 60068-2-21: *Environmental testing – Part 2-21: Tests – Test U: Robustness of terminations and integral mounting devices*

IEC 60068-2-27: *Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock*

IEC 60068-2-45: *Environmental testing – Part 2-45: Tests – Test XA and guidance: Immersion in cleaning solvents*

IEC 60068-2-58: *Environmental testing – Part 2-58: Tests – Test Td: Test methods for solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMD)*

IEC 60068-2-78: *Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state*

ISO 3: *Preferred numbers – Series of preferred numbers*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in the IEC 60068 series, as well as the following, apply.

3.1

electronic module

functional block which contains individual electronic elements and /or electronic packages, to be used in a next level assembly

NOTE An individual module having an application-specific function, including electronic, optoelectronic, mechanical or other elements. The module typically provides protection of its elements and packages to assure the required level of reliability.

Electronic modules may be categorized by signal interface, for example:

- wired module: a module which has only electrical interfaces (majority of present day modules)
- wireless module: a module which has a wireless interface
- opto-electronic module: a module which has an optoelectronic interface
- sensor module: a module which can input physical information
- actuator module: a module which could output physical information

3.2

coplanarity

distance in height between the lowest and highest leads or terminals when the module is in its seating plane

3.3

operating temperature range

range of the ambient temperature at which an electronic module may be used continuously

3.4

storage temperature range

range of the ambient temperature at which an electronic module may be stored continuously

3.5

rated voltage

maximum d.c. voltage or the root-mean square value of an a.c. voltage which may be applied continuously to an electronic module at any temperature within the operating temperature range

4 Business model and interface between supplier and user

4.1 Business model (see Figure 1 and Figure 2)

4.1.1 General

Business models for electronic module manufacturing are classified into three types (See Figure 1):

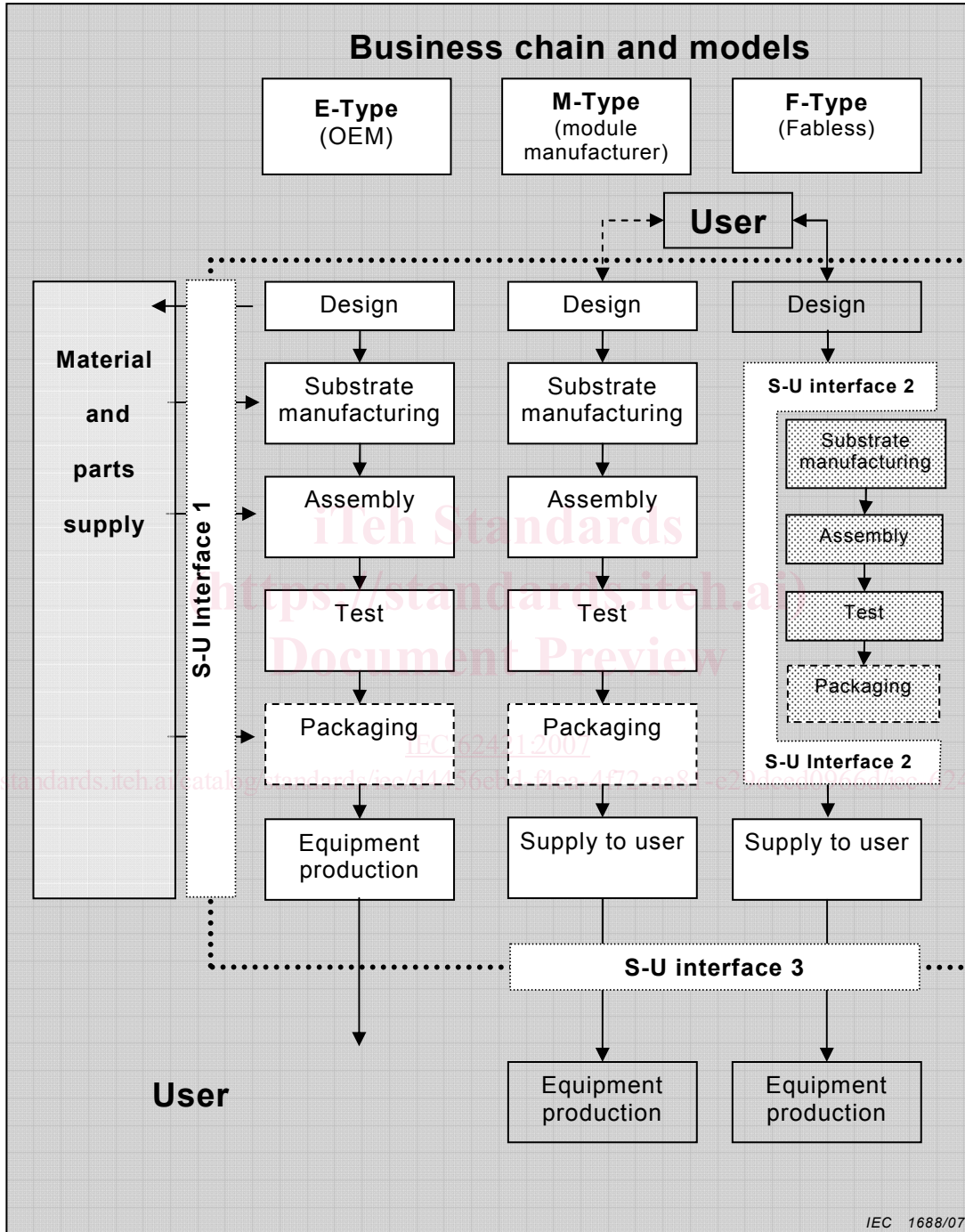
- E-type;
- M-type;
- F-type business models.

A supplier of material/parts is at one end of a business chain, from the viewpoint of an electronic module supplier. A user of electronic modules is at the other end of the chain.

Items to be specified in standards of electronic modules depend on the business model to which the relevant module is classified.

Items to be standardized basically depend on the relationship between suppliers and users (S-U Interface). Moreover, the S-U Interface depends on the business model.

The S-U interface showing the relationship between suppliers and users shall be clarified in the scope of a standard for an electronic module.



NOTE S-U interface: Supplier and user interface.

Figure 1 – S-U interfaces in each business model

4.1.2 E-type business model

The user of the electronic modules is also the supplier of the electronic modules. (The modules are designed, manufactured and used within the same company.)