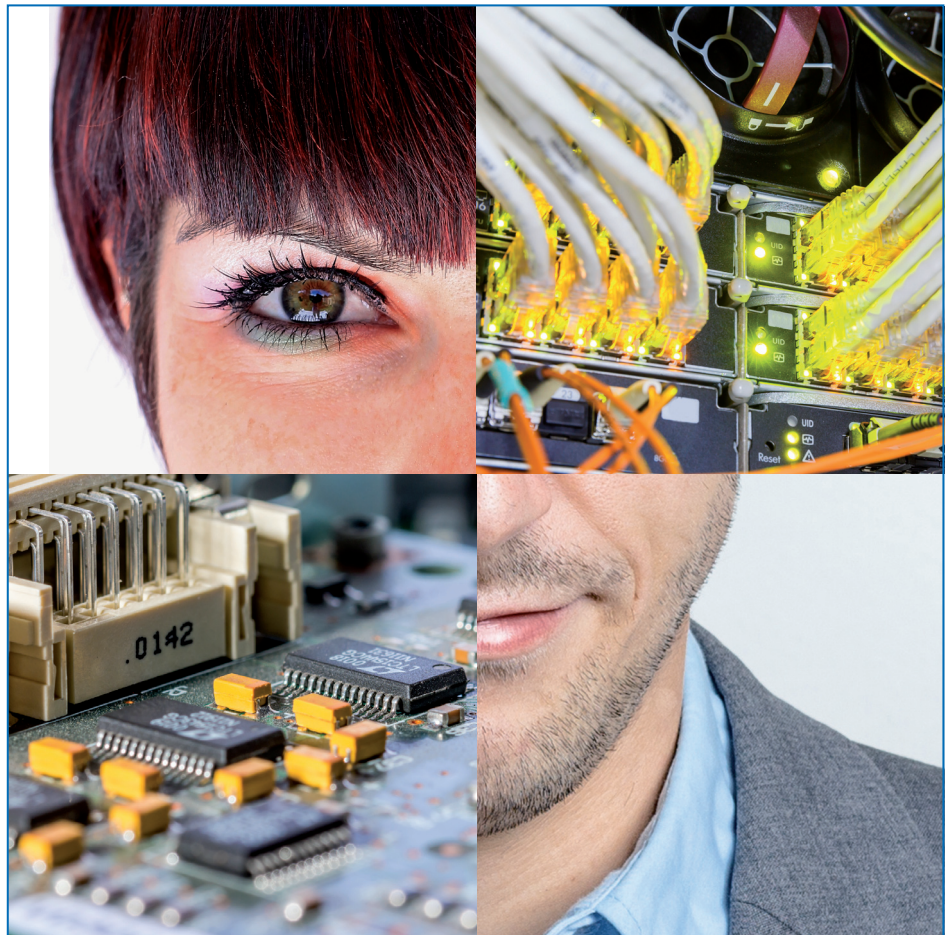


RoHS Guideline

RoHS Component¹ or Electrical Equipment?





Die Elektroindustrie

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The RoHS Directive defines a product that can be directly used by the consumer (“direct use by an end user”) as finished electrical or electronic equipment. This means that the function specified by the manufacturer is directly made available to the end user and that no further processing is required.

Components are used in the production of finished electronic and electrical equipment or for assembly into finished electrical and electronic equipment. Components are unfinished products that have no direct function for an end user.

Introduction

Directive 2011/65/EU (hereafter referred to as “RoHS”) defines electrical and electronic equipment as follows:

“electrical and electronic equipment or EEE means equipment which is dependent on electric currents or electromagnetic fields in order to work properly and equipment for the generation, transfer and measurement of such currents and fields and designed for use with a voltage rating not exceeding 1000 volts for alternating current and 1 500 volts for direct current;”

This definition does not detail what is meant by equipment or when an object is considered to be a piece of equipment.

Article 7(c) and 15(1) of RoHS stipulate that manufacturers draw up an EU declaration of conformity and affix the CE marking on the finished EEE product.

Since the maximum concentration values specified in RoHS refer to homogeneous materials, items that are not finished EEE products themselves must comply with the substance restrictions when intended for use in finished electrical or electronic equipment. According to RoHS, however, only finished EEE products must carry the CE mark; consequently, drawing up an EU conformity declaration is only required for finished products under RoHS.

Direct Use by an End User²

The Frequently Asked Questions (FAQ) document issued in relation to RoHS specifies in Q6.5 and Q6.6 that an EEE product placed on the market for direct use by an end user is considered to be a finished product.

The document explains the term “direct use” using the example of a graphics card and a bare PCB. The graphics card is considered to be a finished piece of electrical or electronic equipment when sold as a finished product and when it is intended to perform an electrical or electronic function. By contrast, a bare PCB placed on the market for further processing or integration in a finished EEE product is itself not a finished EEE product.

Consequently, “direct use” refers to when the function of a finished EEE product is available to the end user without further processing. The graphics card mentioned above is usually installed in the designated slot of a computer. It is connected to a predefined interface. The end user does not make any changes or alterations to the graphics card. By contrast, a bare PCB cannot be directly used by the end user and must first be populated with components. It is not therefore a finished EEE product.

In this case, processing a bare PCB to turn it into a finished graphics card would involve soldering and pressing components into the board.

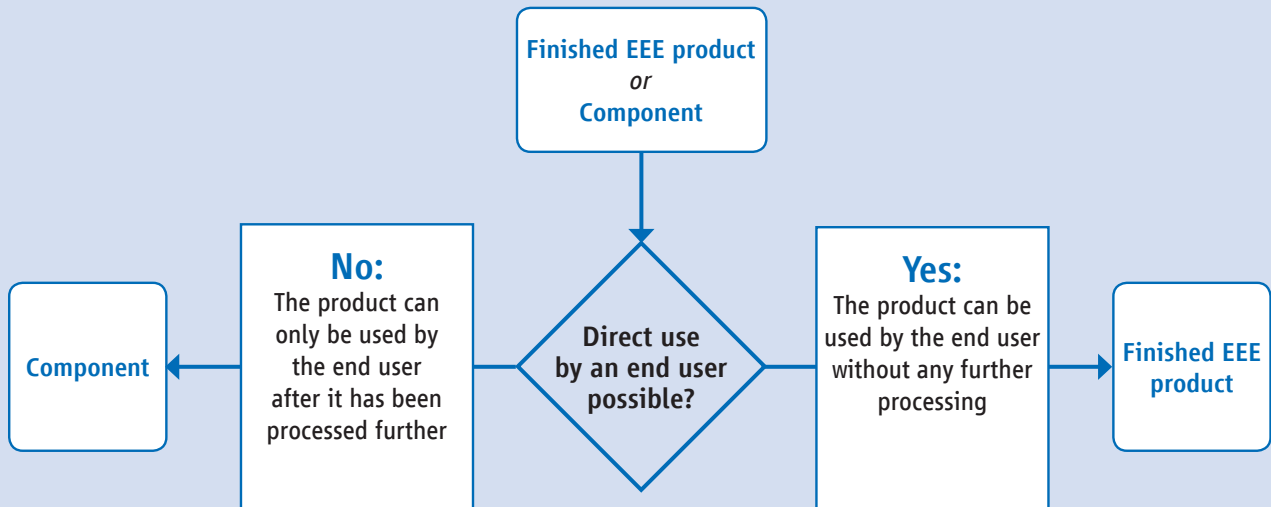
This can be done in an industrial environment, e.g. shop floor, during (field) installation or in the private sector.

Examples of processing steps include soldering, welding, pressing, crimping, potting, etc., but also work carried out during installation or the assembly of components. This is often followed by a quality assurance and safety check.

¹ Electrical/electronic components

² For more information on end users within the meaning of the harmonisation legislation, see Section 3.5 of the “Blue Guide” (Official Journal of the EU 2016/C 272/01)

Fig. 1: Decision flow chart – finished EEE product or component under RoHS



Source: ZVEI

Table 1: Examples

Products	Finished EEE product or component?	Remark/reason
Household appliance, e.g. toaster etc.	Finished EEE product	Direct use possible
Connector for mounting on cable or machine	Component	Further processing required (mounting on cable or machine)
Adapter for direct use by the end user, e.g. travel adapter	Finished EEE product	Direct use possible
Adapter for installation in electrical wiring systems, e.g. HF or HV adapter	Component	Further processing (installation) required
Passive components, PCB components, e.g. resistors, capacitors, PCB terminals	Component	Further processing (soldering, mounting) required
Terminal blocks	Component	Further processing (installation) required
Router, modem	Finished EEE product	Direct use possible

Source: ZVEI



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