



Safe is a product
that works without
interferences



DEKRA Greenpaper on the new Radio Equipment Directive (RED, 2014/53/EU)

Simple, easy, and fast: technological advancements in the last decade have fostered the introduction of increasingly user-friendly devices to the market, which seem to be getting smarter and smarter. If the words plug and play sound like music to your ears, chances are you prefer to take a less 'wired' road.

Radio frequency communication is now welcome in the new generation of consumer products and also found in the realms of assembly lines, power plants, infrastructure, medical devices, and mobility. More importantly: not only revolutionary, cutting edge technologies are connected, traditional appliances are learning some new tricks too. Coffee makers, water cookers, power tools, and switches are undergoing their own revolution by "learning how to speak" through Wi-Fi, Bluetooth and wireless KNX, for example.

The popularization of these technologies in various sectors has spurred the need for more stringent and comprehensive regulations. Until recently, the essential requirements for Europe were ruled by the Radio & Telecommunications Terminal Equipment (R&TTE) directive 1999/5/EC, which set parameters for the efficient use of the RF spectrum, EMC, and the safety of such devices. With the increasingly complex technologies made possible by the advent of the Internet of Things (IoT), smart cities, smart grids, and Industry 4.0, it became clear that the R&TTE directive required an update. The Radio Equipment Directive (2014/53/EU) establishes a regulatory framework for placing radio equipment on the market. It has been applicable since June 13, 2016. A 1-year transitional period between this

directive and the now-repealed Radio and Telecommunication Terminal Equipment (R&TTE) Directive (1999/5/EC) ended on June 12, 2017. As of June 13, 2017 only the new RED is applicable.

Moving from old to new

The R&TTE Directive from 1999 required an update for various reasons. First of all, it needed to be realigned with various new regulations, which include the new Electromagnetic Compatibility (EMC) Directive (2014) and the new Low Voltage (LV) Directive (2014). Also, the R&TTE Directive did not clearly define the roles and responsibilities of, for example, the manufacturer and the Notified Body. In addition, the directive was not focused on traceability and market surveillance of products and manufacturers and it needed a better defined scope and more clarity overall.

RED's essential requirements

The RED clearly defines some of the essential requirements that economic operators, which will we go into later, who design, manufacture, or market radio equipment need to comply with.

Article 3.1 in the RED describes the essential requirements radio equipment needs to adhere to in order to:

- a) Protect the health and safety of persons and domestic animals and to protect property, taking into account the objectives and safety requirements set out in the Low Voltage Directive 2014/35/EU, but with no applicable voltage limit
- b) Ensure an adequate level of electromagnetic compatibility as set out in the EMC Directive 2014/30/EU

Scope

So what does radio equipment entail exactly? The new RED defines the scope more clearly and states that “radio equipment means electrical or electronic products which intentionally emit and/or receive radio waves for the purpose of radio communications and/or determination. In addition, it can be an electrical or electronic product which must be completed with an accessory, such as an antenna, to intentionally emit and/or receive radio waves for the purpose mentioned before”.



Article 3.2 of the RED states that radio equipment shall be constructed so that it both effectively uses and supports the efficient use of the radio spectrum in order to avoid harmful interference.

Finally, article 3.3 describes that radio equipment falling within certain categories must comply with additional essential requirements, which we have set out for you below:

- > Equipment that needs to interwork with accessories (e.g. a standard charger)
- > Equipment that has to interwork via networks with other radio equipment
- > Ensure access to emergency services
- > Include features that ensure e.g. protection from fraud, privacy, and ease-of-use by the disabled
- > Support features in order to ensure that specific software can only be used in combination with radio equipment of which compliance with the software has been demonstrated

This is a broad definition, but in essence it entails all devices previously covered by the old R&TTE operating at frequencies lower than 3000 GHz, with the following relevant additions:

- > Sound and TV receive-only equipment (e.g. broadcast receivers)
- > Equipment operating below 9 kHz
- > Radio-determination equipment is clearly included

Currently, telecommunications terminal equipment and equipment using ISM bands are not in the scope of the RED. They will be covered by other applicable directives (medical, machinery) or by the Low Voltage Directive (LVD) and the EMC directive depending on the type of equipment to be considered.

What else is not covered? Annex I of the RED describes equipment not covered by the RED. Amongst these are:

- > **Amateur radio equipment**, defined by ITU Radio Regulations unless available on the market
- > **Airborne products**, parts, and appliances covered by Regulation (EC) N° 216/2008 Article 3
- > **Marine equipment** covered by the Council Directive 96/98/EC
- > Custom and purpose-built **evaluation kits for professional use** at R&D facilities

Operators and responsibilities

To facilitate application of the RED directive, certain provisions from the R&TTE Directive were clarified and simplified. In addition, various administrative obligations, deemed unnecessary, were deleted, such as the prior notification of radio equipment using non-harmonized frequency bands. One of the RED's most important goals was to reinforce the obligations of economic operators, such as manufacturers, and improve the legal tools that market surveillance authorities could use. Indeed, one of the most important changes compared to the old R&TTE Directive is that the obligations of manufacturers, authorized representatives, distributors, and importers have been defined and included clearly. The RED clearly lays out the definitions of these economic operators in the following list:

- > **Manufacturer:** Any natural or legal person who manufactures radio equipment or has radio equipment designed or manufactured and markets that equipment under their name or trade mark
- > **Authorized representative:** Any natural or legal person within the European Union who has received a written mandate from a manufacturer to act on their behalf in relation to specified tasks
- > **Importer:** Any natural or legal person established within the European Union who places radio equipment from a third country in the European Union market
- > **Distributor:** Any natural or legal person in the supply chain, other than the manufacturer or the importer, who makes radio equipment available to the market

Now you know who you are according to the RED, it is time to take a look at the responsibilities that the RED lays out. Below you will find an overview of what the specific requirements per operator are:

Manufacturers

Manufacturers must design and manufacture radio equipment in accordance with the essential requirements. The equipment needs to be constructed so that it can operate in at least one EU member state without infringing applicable requirements on the use of the radio spectrum. In addition, manufacturers must draw up technical documentation before placing a product in the market and affix the CE marking. Finally, they will need to show conformity of production procedures and a declaration of conformity.

The RED explains some of the traceability requirements for manufacturers as well: it should be clear who the manufacturer of the equipment is and the registered name or trade mark and

postal address need to be included. The instructions and safety information should be available in the target language or as determined by the Member State. The equipment's frequency band, maximum radio frequency power transmitted, restrictions of use, a description of accessories and components, and software that allows operation also need to be included.

Authorized representatives

A manufacturer can, by written mandate, appoint an authorized representative. The manufacturer's obligations (meeting the essential requirements and the drawing up of the technical documentation) shall not be part of the authorized representative's mandate.

Instead, the authorized representative follows the mandate strictly. They must keep the EU Declaration of Conformity and technical documentation at the disposal of national market surveillance authorities for 10 years after the radio equipment has been placed in the market. They must also provide a competent national authority with all the required information and documentation necessary to demonstrate compliance of the radio equipment with the RED. Finally, they must cooperate with the competent national authorities to eliminate risks posed by radio equipment (covered in the mandate)

Importers

Importers must only place compliant products in the market and must make sure that the conformity assessment to the RED for the product has been completed. To ensure traceability, they must also provide contact details on the products, next to that of the manufacturer, or in the accompanying documentation if the product is too small. Importers must also ensure that instructions and information issued with the product come in a language accepted by the member state. In addition, importers must not jeopardize the product's compliance in the storage or transportation of the product.

If a product is not compliant or if it poses a risk, importers must perform investigative testing and corrective action and report it to the national authorities in the countries in which it is available. Finally, importers must keep a copy of the Declaration of Conformity and ensure that the technical documentation is available for 10 years. They must also cooperate with national authorities upon request regarding risk elimination.

Distributors

Distributors need to verify that their product bears the CE marking. In addition, they must ensure that the product is accompanied by the required documentation in a language easily understood by users. If the distributor believes a product is not compliant it must not put it in the market or take corrective action (a recall, a withdrawal) if it is already. If a product poses a risk, the distributor must notify the appropriate national authority and provide them with all the required documentation upon request. Finally, distributors shall not jeopardize product compliance during transportation or storage.

In effect, the obligations laid out by the RED have become clearer and more straight-forward. Do you know what your responsibilities and obligations are? Get in touch.



Market access

Countries outside of the European Union have their own regulatory requirements for the commercialization of radio frequency equipment. However, in many countries, mainly in Europe, the Middle East, and Africa, these requirements are very well aligned with those from the European Union. This ranges from the direct acceptance of the EU Type Examination Certificate or Declaration of Conformity to obtaining national approval certificates, and the acceptance of test reports which show conformity with the essential requirements of the RED. A product that is compliant with the provisions and requirements of the RED can offer greater benefits for market access in many countries outside the European Union.

Compliance assessment

How can you demonstrate compliance with the essential requirements? Manufacturers demonstrate compliance of their radio equipment with the essential requirements using any of the following conformity assessments procedures:

- a) Internal production control: only to be used if the essential requirements are covered by the use of radio frequency harmonized standards published in the Official Journal of the European Union
- b) EU Type Examination
- c) Full Quality Assurance

As a result, an EU Declaration of Conformity needs to be drawn up, stating fulfilment of the essential requirements.

How we can help you

Sounds confusing? DEKRA can help you comply with the new RED directive. Our global state-of-the-art laboratory testing network can meet your needs for radio frequency, EMC, electrical safety, and so on. In addition, DEKRA is an EU Notified Body (1909) for RED, so DEKRA is authorized the compliance of your products with the requirements of the RED. An easy way to obtain guidance and autonomy is through DEKRA's TACS4, a continuously updated online database that includes detailed RF regulatory and approval requirements in almost 200 countries for a large number of cellular and wireless technologies.

Get in touch with our experts.

Sources & acknowledgements

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