

Application Note

Ref. : ARF Compliance with Standards

Author : PCY

COMPLIANCE WITH STANDARDS : WHAT DOES IT MEAN ?

1 - PRESENTATION OF THE DOCUMENT

This document presents the various requirements necessary for regulatory compliance of a radio product. The two European regulations covering radio-transmission equipment without licence (full rights) are the following:

- Radio Standard EN300-220-1
- EMC Standard ETS300-683

The general requirements of these texts and the resistance tests they give rise to will be successively presented hereafter.

THE REQUIREMENTS AND TESTS APPLY TO THE FINISHED PRODUCT AND NOT TO THE RADIO MODULE ONLY !!!

2 - GENERAL REQUIREMENTS

Free licence Equipment must operate in the following European frequency bands:

- 26 to 27 MHz
- 40.660 to 40.700 MHz
- 433.050 to 434.790 MHz
- 866 to 870 MHz

The equipment must present a maximum RADIATED transmission power of 10 mW in bands 1 to 3 and of 25 mW maximum in band 4 (except from 868 to 870 MHz where $P < 5$ mW).

A transmitter or transceiver device must be equipped with a securedly integrated, non-removable antenna !

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3 - REGULATORY TESTS

Radio tests / EN300-220-1

Transmitter:

Power radiated as a pure carrier < 10 mW (or 25 mW according to the working band)

(NB : Imposes the possibility of turn-on of the product as a pure carrier)

Harmonics radiated as a modulated carrier < 250nW (or 4 nW according to the bands !)

(NB : Imposes the possibility of turn-on of the product as a modulated carrier)

Modulation band < Authorized frequency band (<250 nW at the limits)

(NB : Imposes the possibility of turn-on of the product as a modulated carrier)

Receiver:

Stray radiation of the receiver < 2 nW

(NB : Imposes the possibility of turn-off of the product in permanent receipt)

EMC tests / ETS 300-683

Transmitter:

Radiated emissions on transmitter on standby < 47 dB μ V/m if < 230 MHz or 47 dB μ V/m if > 230 MHz

Conducted emissions on transmitter on standby < 47 dB μ V/m if < 230 MHz or 47 dB μ V/m if > 230 MHz

Complete operational system:

> Preservation of functionality

Radiated immunity > 3 V/m (> 10 V/m if industrial equipment) except \pm 10 % around working frequency

Conducted immunity

> Momentary fault with return to functionality

Shock waves on accesses and power supplies

Fast transients on accesses and power supplies

Electrostatic discharges 4 kV on contact and 8 kV in air.

Issued

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