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RO-IR UWB-08

TECHNICAL REGULATION

for the radio interface

concerning equipment using ultra-wideband (UWB) technology

(UWB onboard aircraft)

98/34/EC Notification number: 2015/143/RO

1. Basic considerations

The Radio Equipment and Telecommunications Terminal Equipment Directive 1999/5/EC (R&TTE Directive) was implemented in Romania (RO) by Government Decision No. 130/2015.

This technical regulation contains the necessary equipment parameters for the licence exempt use of equipment using ultra-wideband (UWB) technology (UWB onboard aircraft) in the specified frequency bands and considers especially compliance with Articles 3.2, 4.1, 6 and 7.2 of Directive 1999/5/EC.

Nothing in this technical regulation shall preclude the need for equipment placed on the market in Romania to comply with Directive 1999/5/EC.

The obligations arising from Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations and of rules on Information Society services (OJ L 204 p. 37), as amended by Directive 98/48/EC of the European Parliament and of the Council of 20 July 1998 (OJ L 217 p. 18), have been hereby met.

All Romanian Technical Regulations notified under Directive 1998/34/EC will be published and will be made available free of charge from the ANCOM web-site at:
http://www.ancom.org.ro/en/interface-regulations-_2723

2. Radio Interface Specifications

UWB onboard aircraft

Frequency range
f ≤ 1.6 GHz
1.6 < f ≤ 2.7 GHz
2.7 < f ≤ 3.4 GHz
3.4 < f ≤ 3.8 GHz
3.8 < f ≤ 6 GHz
6 < f ≤ 6.65 GHz
6.65 < f ≤ 6.6752 GHz
6.6752 < f ≤ 8.5 GHz
8.5 < f ≤ 10.6 GHz
f > 10.6 GHz

For the purpose of this technical regulation, *equipment using ultra-wideband (UWB) technology* means equipment incorporating, as an integral part or as an accessory, technology for short-range radio communication, involving the intentional generation and transmission of radio-frequency energy that spreads over a frequency range wider than 50 MHz, which may overlap several frequency bands allocated to radio communication services.

Onboard aircraft means the use of radio links for intra-aircraft communications purposes inside an aircraft.

Maximum mean power spectral density, specified as e.i.r.p. of the radio device under test at a particular frequency, is the average power per unit bandwidth (centred on that frequency) radiated in the direction of the maximum level under the specified conditions of measurement.

Peak power, specified as e.i.r.p., is the power contained within a 50 MHz bandwidth at the frequency at which the highest mean radiated power occurs, radiated in the direction of the maximum level under the specified conditions of measurement.

For the purpose of this technical regulation, *non-interference and non-protected basis* means that no harmful interference may be caused to any radio communications service and that no claim may be made for protection of these devices against harmful interference originating from radio communications services.

The use of radio spectrum by equipment using ultra-wideband technology (UWB) is allowed on a non-interference and non-protected basis provided that such equipment meets the conditions set out in the Annex below.

<table>
<tr><th></th><th>Nr</th><th>Parameter</th><th>Description</th><th>Comments</th></tr>
<tr><td rowspan="12">Normative part</td><td>1</td><td>Radio communication Service</td><td></td><td></td></tr>
<tr><td>2</td><td>Application</td><td>Short Range Devices / UWB applications</td><td>UWB onboard aircraft</td></tr>
<tr><td>3</td><td>Frequency band</td><td>See row (7) below for applicable frequency bands</td><td>Harmonised radio spectrum for ultra-wideband technology
(Decision 2014/702/EU amending Decision 2007/131/EC)</td></tr>
<tr><td>4</td><td>Channelling</td><td>-</td><td></td></tr>
<tr><td>5</td><td>Modulation / Occupied bandwidth</td><td>-</td><td></td></tr>
<tr><td>6</td><td>Direction / Separation</td><td>-</td><td></td></tr>
<tr><td>7</td><td>Transmit power / Power density</td><td>
<table>
<tr><th>Frequency range</th><th>Maximum mean power spectral density (e.i.r.p)</th><th>Maximum peak power (e.i.r.p) (defined in 50 MHz)</th></tr>
<tr><td>f ≤ 1.6 GHz</td><td>– 90 dBm/MHz</td><td>– 50 dBm</td></tr>
<tr><td>1.6 < f ≤ 2.7 GHz</td><td>– 85 dBm/MHz</td><td>– 45 dBm</td></tr>
<tr><td>2.7 < f ≤ 3.4 GHz</td><td>– 70 dBm/MHz</td><td>– 36 dBm</td></tr>
<tr><td>3.4 < f ≤ 3.8 GHz</td><td>– 80 dBm/MHz</td><td>– 40 dBm</td></tr>
<tr><td>3.8 < f ≤ 6 GHz</td><td>– 70 dBm/MHz</td><td>– 30 dBm</td></tr>
<tr><td>6 < f ≤ 6.65 GHz</td><td>– 41.3 dBm/MHz</td><td>0 dBm</td></tr>
<tr><td>6.65 < f ≤ 6.6752 GHz</td><td>– 62.3 dBm/MHz</td><td>– 21 dBm</td></tr>
<tr><td>6.6752< f ≤ 8.5 GHz</td><td>– 41.3 dBm/MHz</td><td>0 dBm</td></tr>
<tr><td>8.5 < f ≤ 10.6 GHz</td><td>– 65 dBm/MHz</td><td>– 25 dBm</td></tr>
<tr><td>f > 10.6 GHz</td><td>– 85 dBm/MHz</td><td>– 45 dBm</td></tr>
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</td><td></td></tr>
<tr><td>8</td><td>Channel access and occupation rules</td><td>-</td><td></td></tr>
<tr><td>9</td><td>Authorisation regime</td><td>Licence exemption</td><td></td></tr>
<tr><td>10</td><td>Additional essential requirements</td><td>-</td><td></td></tr>
<tr><td>11</td><td>Frequency planning assumptions</td><td>-</td><td></td></tr>
</table>

Informative part	**12**	**Planned changes**	-	
	13	**Reference**	Decision 2014/702/EU amending Decision 2007/131/EC	
	14	**Notification number**	2015/143/RO	
	15	**Remarks**	*Notch of 21 dB should be implemented to meet a level – 62.3 dBm/MHz.* *Alternative mitigation techniques offering equivalent protection such as the use of shielded portholes could be a solution.* *7.25 to 7.75 GHz (Fixed Satellite Service- FSS) and 7.45 to 7.55 GHz (Meteorological Satellite - MetSat) protection:* *– 51.3 – 20*log$_{10}$(10[km]/x[km])(dBm/MHz) for heights above ground above 1 000 m, where x is the aircraft height above ground in kilometres, and – 71.3 dBm/MHz for heights above ground of* *1 000 m and below.* *7.75 to 7.9 GHz (Meteorological satellite- MetSat) protection: – 44.3 – 20*log$_{10}$(10[km]/x[km]) (dBm/MHz) for heights above ground above 1 000 m, where x is the aircraft height above ground in kilometres, and – 64.3 dBm/MHz for heights above ground of 1 000 m and below.*	