

## STATUTORY INSTRUMENTS

# 2015 No. 591

## The Wireless Telegraphy (Ultra-Wideband Equipment) (Exemption) Regulations 2015

### PART 6

#### USE OF ULTRA-WIDEBAND EQUIPMENT FOR MATERIAL SENSING DEVICES

##### Exemption

**24.** The establishment, installation or use of ultra-wideband equipment complying with the terms, provisions and limitations in either regulation 25 or regulation 26 are hereby exempt from the provisions of section 8(1) of the Act.

##### Commencement Information

**I1** Reg. 24 in force at 25.3.2015, see [reg. 1](#)

##### Terms, provisions and limitations for fixed installations

**25.**—(1) The exemption provided for in regulation 24 shall apply to ultra-wideband equipment which is a material sensing device and which complies with the requirements of paragraphs (2) to (4) of this regulation.

(2) The ultra-wideband equipment must—

- (a) have a sensor that detects when it is not running and turns the transmitter off;
- (b) implement a total power control with a dynamic range of 10.0 dB<sup>F1</sup> as described in harmonised standard ETSI EN 302 065-4 for material sensing devices<sup>F2</sup>...; and
- (c) be attached to a fixed installation.

(3) The ultra-wideband equipment must not cause or contribute to undue interference to other users of the electromagnetic spectrum.

(4) The ultra-wideband equipment must emit transmissions which are kept to a minimum and in accordance with the condition in regulation 27.

**F1** Words in [reg. 25\(2\)\(b\)](#) substituted (6.2.2018) by [The Wireless Telegraphy \(Ultra-Wideband Equipment\) \(Exemption\) \(Amendment\) Regulations 2018 \(S.I. 2018/44\)](#), regs. 1, [2\(3\)\(a\)](#)

**F2** [Reg. 25\(2\)\(b\)](#) footnote omitted (6.2.2018) by virtue of [The Wireless Telegraphy \(Ultra-Wideband Equipment\) \(Exemption\) \(Amendment\) Regulations 2018 \(S.I. 2018/44\)](#), regs. 1, [2\(3\)\(b\)](#)

##### Commencement Information

**I2** Reg. 25 in force at 25.3.2015, see [reg. 1](#)

### Terms, provisions and limitations for non-fixed installations

26.—(1) The exemption provided for in regulation 24 shall also apply to ultra-wideband equipment which is a material sensing device and which complies with the requirements of paragraphs (2) to (4) of this regulation.

(2) The ultra-wideband equipment must—

- (a) only have the transmitter turned on by a manually operated non-locking switch;
- (b) be in contact with or in close proximity to the investigated material; and
- (c) direct the emissions into the direction of the object of the analysis.

(3) the ultra-wideband equipment must not cause or contribute to undue interference to other users of the electromagnetic spectrum.

(4) The ultra-wideband equipment must only emit signals <sup>F3</sup>... which—

- (a) are kept to a minimum; and
- (b) if the equipment were to be placed on a representative wall [<sup>F4</sup>(as defined within ETSI EN 302 065-4)]<sup>F5</sup> would be in accordance with the condition in regulation 28.

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| <p><b>F3</b> Words in <a href="#">reg. 26(4)</a> omitted (6.2.2018) by virtue of <a href="#">The Wireless Telegraphy (Ultra-Wideband Equipment) (Exemption) (Amendment) Regulations 2018 (S.I. 2018/44)</a>, regs. 1, <a href="#">2(4)(a)</a></p> <p><b>F4</b> Words in <a href="#">reg. 26(4)(b)</a> substituted (6.2.2018) by <a href="#">The Wireless Telegraphy (Ultra-Wideband Equipment) (Exemption) (Amendment) Regulations 2018 (S.I. 2018/44)</a>, regs. 1, <a href="#">2(4)(b)(i)</a></p> <p><b>F5</b> <a href="#">Reg. 26(4)(b)</a> footnotes omitted (6.2.2018) by virtue of <a href="#">The Wireless Telegraphy (Ultra-Wideband Equipment) (Exemption) (Amendment) Regulations 2018 (S.I. 2018/44)</a>, regs. 1, <a href="#">2(4)(b)(ii)</a></p> |
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#### Commencement Information

- I3** Reg. 26 in force at 25.3.2015, see [reg. 1](#)

### Transmission limits for fixed installations

27. The condition referred to in regulation 25(4) is that the ultra-wideband equipment only emits transmissions which—

- (a) in frequencies up to 1.73 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -85.0 dBm/MHz; and
  - (ii) a maximum mean power spectral density in the horizontal plane of -85.0 dBm/MHz; and
  - (iii) a maximum peak power no greater than -60.0 dBm;
- (b) in frequency band 1.73 GHz to 2.2GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -65.0 dBm/MHz; and
  - (ii) a maximum mean power spectral density in the horizontal plane of -70.0 dBm/MHz; and
  - (iii) a maximum peak power no greater than -40.0 dBm;
- (c) in frequency band 2.2 GHz to 2.5GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -50.0 dBm/MHz; and
  - (ii) a maximum mean power spectral density in the horizontal plane of -50.0 dBm/MHz; and
  - (iii) a maximum peak power no greater than -25.0 dBm;

- (d) in frequency band 2.5 GHz to 2.69GHz when measured in any direction have—
  - (i) a maximum mean power spectral density—
    - (aa) no greater than -65.0 dBm/MHz; or
    - (bb) no greater than -50.0 dBm/MHz provided that a listen before talk mechanism [<sup>F6</sup>described in harmonised standard ETSI EN 302 065-4] is used to mitigate interference to other users of the electromagnetic spectrum;
  - (ii) a maximum mean power spectral density in the horizontal plane of -70.0 dBm/MHz; and
  - (iii) a maximum peak power no greater than -40dBm;
- (e) in frequency band 2.69 GHz to 2.7GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -55.0 dBm/MHz;
  - (ii) a maximum mean power spectral density in the horizontal plane of -75.0 dBm/MHz; and
  - (iii) a maximum peak power no greater than -30.0 dBm;
- (f) in frequency band 2.7 GHz to 2.9 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -50.0 dBm/MHz;
  - (ii) a maximum mean power spectral density in the horizontal plane of -70.0 dBm/MHz; and
  - (iii) a maximum peak power no greater than -25.0 dBm;
- (g) in frequency band 2.9 GHz to 3.4 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -50.0 dBm/MHz;
  - (ii) a maximum mean power spectral density in the horizontal plane of -70.0 dBm/MHz; and
  - (iii) a maximum peak power no greater than -25.0 dBm;
- (h) in frequency band 3.4 GHz to 3.8 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -50.0 dBm/MHz;
  - (ii) a maximum mean power spectral density in the horizontal plane of -70.0 dBm/MHz; and
  - (iii) a maximum peak power no greater than -25.0 dBm;
- (i) in frequency band 3.8 GHz to 4.8 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -50.0 dBm/MHz;
  - (ii) a maximum mean power spectral density in the horizontal plane of -50.0 dBm/MHz; and
  - (iii) a maximum peak power no greater than -25.0 dBm;
- (j) in frequency band 4.8 GHz to 5.0 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -55.0 dBm/MHz;
  - (ii) a maximum mean power spectral density in the horizontal plane of -75.0 dBm/MHz; and
  - (iii) a maximum peak power no greater than -30.0 dBm;
- (k) in frequency band 5 GHz to 5.25 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -50.0 dBm/MHz;

- (ii) a maximum mean power spectral density in the horizontal plane of -50.0 dBm/MHz; and
- (iii) a maximum peak power no greater than -25.0 dBm;
- (l) in frequency band 5.25 GHz to 5.35 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -50.0 dBm/MHz;
  - (ii) a maximum mean power spectral density in the horizontal plane of -60.0 dBm/MHz; and
  - (iii) a maximum peak power no greater than -25.0 dBm;
- (m) in frequency band 5.35 GHz to 5.6 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -50.0 dBm/MHz;
  - (ii) a maximum mean power spectral density in the horizontal plane of -50.0 dBm/MHz; and
  - (iii) a maximum peak power no greater than -25.0 dBm;
- (n) in frequency band 5.6 GHz to 5.65 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -50.0 dBm/MHz;
  - (ii) a maximum mean power spectral density in the horizontal plane of -65.0 dBm/MHz; and
  - (iii) a maximum peak power no greater than -25.0 dBm;
- (o) in frequency band 5.65 GHz to 5.725 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -50.0 dBm/MHz;
  - (ii) a maximum mean power spectral density in the horizontal plane of -60.0 dBm/MHz; and
  - (iii) a maximum peak power no greater than -25.0 dBm;
- (p) in frequency band 5.725 GHz to 8.5 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -50.0 dBm/MHz;
  - (ii) a maximum mean power spectral density in the horizontal plane of -50.0 dBm/MHz; and
  - (iii) a maximum peak power no greater than -25.0 dBm;
- (q) in frequency band 8.5 GHz to 10.6 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -65.0 dBm/MHz;
  - (ii) a maximum mean power spectral density in the horizontal plane of -65.0 dBm/MHz; and
  - (iii) a maximum peak power no greater than -40.0 dBm; and
- (r) in frequency bands above 10.6 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -85.0 dBm/MHz;
  - (ii) a maximum mean power spectral density in the horizontal plane of -85.0 dBm/MHz; and
  - (iii) a maximum peak power no greater than -60.0 dBm;

**F6** Words in [reg. 27\(d\)\(i\)\(bb\)](#) substituted (6.2.2018) by [The Wireless Telegraphy \(Ultra-Wideband Equipment\) \(Exemption\) \(Amendment\) Regulations 2018 \(S.I. 2018/44\)](#), regs. 1, 2(5)

### Commencement Information

**14** Reg. 27 in force at 25.3.2015, see [reg. 1](#)

### Transmission limits for non-fixed installations

**28.** The condition referred to in regulation 26(4)(b) is that the ultra-wideband equipment only emits transmissions which—

- (a) in frequencies up to 1.73 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -85.0 dBm/MHz; and
  - (ii) a maximum peak power no greater than -60.0 dBm;
- (b) in frequency band 1.73 GHz to 2.2 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -70.0 dBm/MHz; and
  - (ii) a maximum peak power no greater than -45.0 dBm;
- (c) in frequency band 2.2 GHz to 2.5 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -50.0 dBm/MHz; and
  - (ii) a maximum peak power no greater than -25.0 dBm;
- (d) in frequency band 2.5 GHz to 2.69 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density—
    - (aa) no greater than -65.0 dBm/MHz; or
    - (bb) no greater than -50.0 dBm/MHz provided that a listen before talk mechanism <sup>F7</sup>described in harmonised standard ETSI EN 302 065-4<sup>F8</sup> is used to mitigate interference to other users of the electromagnetic spectrum;
  - (ii) a maximum peak power no greater than -40.0 dBm; and
  - (iii) a total radiated power spectral density no greater than -75.0 dBm/MHz;
- (e) in frequency band 2.69 GHz to 2.7 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -70.0 dBm/MHz provided that all transmissions are limited to a maximum of 100 milliseconds in any one second; and
  - (ii) a maximum peak power no greater than -45.0 dBm;
- (f) in frequency band 2.7 GHz to 2.9 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -70.0 dBm/MHz; and
  - (ii) a maximum peak power no greater than -45.0 dBm;
- (g) in frequency band 2.9 GHz to 3.4 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density
    - (aa) no greater than -70.0 dBm/MHz; or
    - (bb) no greater than -50.0 dBm/MHz provided that a listen before talk mechanism <sup>F9</sup>described in harmonised standard ETSI EN 302 065-4<sup>F8</sup> is used to mitigate interference to other users of the electromagnetic spectrum;
  - (ii) a maximum peak power no greater than -45.0 dBm;
- (h) in frequency band 3.4 GHz to 3.8 GHz when measured in any direction have—

- (i) a maximum mean power spectral density no greater than -50.0 dBm/MHz provided that all transmissions are limited to a maximum of 100 milliseconds in any one second;
- (ii) a maximum peak power no greater than -25.0 dBm; and
- (iii) a total radiated power spectral density no greater than -55.0 dBm/MHz;
- (i) in frequency band 3.8 GHz to 4.8 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -50.0 dBm/MHz; and
  - (ii) a maximum peak power no greater than -25.0 dBm;
- (j) in frequency band 4.8 GHz to 5.0 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -55.0 dBm/MHz provided that all transmissions are limited to a maximum of 100 milliseconds in any one second;
  - (ii) a maximum peak power no greater than -30.0 dBm; and
  - (iii) a total radiated power spectral density no greater than -65.0 dBm/MHz;
- (k) in frequency band 5 GHz to 5.25 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -50.0 dBm/MHz; and
  - (ii) a maximum peak power no greater than -25.0 dBm;
- (l) in frequency band 5.25 GHz to 5.35GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -60.0 dBm/MHz; and
  - (ii) a maximum peak power no greater than -35.0 dBm;
- (m) in frequency band 5.35 GHz to 5.6 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -50.0 dBm/MHz; and
  - (ii) a maximum peak power no greater than -25.0 dBm;
- (n) in frequency band 5.6 GHz to 5.65 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -65.0 dBm/MHz; and
  - (ii) a maximum peak power no greater than -40.0 dBm;
- (o) in frequency band 5.65 GHz to 5.725 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -60.0 dBm/MHz; and
  - (ii) a maximum peak power no greater than -35.0 dBm;
- (p) in frequency band 5.725 GHz to 8.5 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -50.0 dBm/MHz; and
  - (ii) a maximum peak power no greater than -25.0 dBm;
- (q) in frequency band 8.5 GHz to 10.6 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -65.0 dBm/MHz; and
  - (ii) a maximum peak power no greater than -40.0 dBm; and
- (r) in frequency bands above 10.6 GHz when measured in any direction have—
  - (i) a maximum mean power spectral density no greater than -85.0 dBm/MHz; and
  - (ii) a maximum peak power no greater than -60.0 dBm;

**F7** Words in [reg. 28\(d\)\(i\)\(bb\)](#) substituted (6.2.2018) by [The Wireless Telegraphy \(Ultra-Wideband Equipment\) \(Exemption\) \(Amendment\) Regulations 2018 \(S.I. 2018/44\)](#), regs. 1, **2(6)(a)(i)**

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**Changes to legislation:** There are currently no known outstanding effects for the *The Wireless Telegraphy (Ultra-Wideband Equipment) (Exemption) Regulations 2015, PART 6*. (See end of Document for details)

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- F8** Reg. 28(d)(i)(bb) footnote omitted (6.2.2018) by virtue of *The Wireless Telegraphy (Ultra-Wideband Equipment) (Exemption) (Amendment) Regulations 2018 (S.I. 2018/44)*, regs. 1, **2(6)(a)(ii)**
- F9** Words in reg. 28(g)(i)(bb) substituted (6.2.2018) by *The Wireless Telegraphy (Ultra-Wideband Equipment) (Exemption) (Amendment) Regulations 2018 (S.I. 2018/44)*, regs. 1, **2(6)(b)**
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**Commencement Information**

- I5** Reg. 28 in force at 25.3.2015, see **reg. 1**

**Changes to legislation:**

There are currently no known outstanding effects for the The Wireless Telegraphy (Ultra-Wideband Equipment) (Exemption) Regulations 2015, PART 6.