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STATUTORY INSTRUMENTS

2015 No.

ELECTRONIC COMMUNICATIONS

The Wireless Telegraphy (White Space Devices) (Exemption) Regulations [●]

Made - - - - - ***

Coming into force - - - - - ***

The Office of Communications (“OFCOM”), in exercise of the powers conferred by section 8(3) of the Wireless Telegraphy Act 2006 (the “Act”) (), makes the following Regulations.

Before making these Regulations, OFCOM have given notice of their proposal to do so in accordance with section 122(4)(a) of the Act, published notice of their proposal in accordance with section 122(4)(b) of the Act and have considered the representations made to them before the time specified in that notice in accordance with section 122(4)(c) of the Act.

Citation and commencement

1. These Regulations may be cited as the Wireless Telegraphy (White Space Devices) (Exemption) Regulations [●] and shall come into force on [DATE].

Interpretation

2. In these Regulations—

“channel usage parameters” means the information specified in regulation 3;

“dBm” means decibels of power referenced to one milliWatt;

“dedicated antenna” means a removable antenna supplied and assessed with a white space device and which has been designed as an indispensable part of that device;

“designated white space database” means a database which has been listed in Schedule 1;

“device parameters” means the information specified in regulation 4;

“DTT channel” is an 8 MHz frequency channel listed in Table 1 of Schedule 2;

“EIRP” means equivalent isotropic radiated power;

“external antenna” means a removable antenna which has not been designed specifically for use with a specific product;

“geo-location capability” means the capability of a white space device to determine the latitude and longitude coordinates of its antenna and the level of uncertainty in the accuracy of its antenna latitude and longitude coordinates, specified as $\pm\Delta x$ and $\pm\Delta y$ metres respectively, corresponding to a ninety-five per cent confidence level;

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“integral antenna” means an antenna designed as a part of a white space device, without the use of an external connector, which cannot be disconnected from the device by a user in order to connect another antenna;

“master device” means a white space device that is able to communicate with and obtain operational parameters from a designated white space database;

“master operational parameters” means the information specified in regulation 5;

“MHz” means megahertz;

“operational parameters” means master operational parameters or slave operational parameters;

“slave device” means a white space device that is only able to transmit when under the direction of a master device;

“slave operational parameters” means the information specified in regulation 6;

“Type A equipment” means a white space device which is intended for fixed use only and which has an integral, dedicated or external antenna;

“Type B equipment” means a white space device which is not intended for fixed use and which has a dedicated or integral antenna;

“unique identifier” means a set of characters comprising—

- (a) the unique serial number of a white space device;
- (b) a white space device’s model number or other identifier of the product family to which the white space device belongs; and
- (c) the unique identifier of the manufacturer of the white space device; and

“white space device” means wireless telegraphy stations or wireless telegraphy apparatus which is able to operate on frequencies within the band 470 MHz to 790 MHz which have been determined by a designated white space database as being available for use.

Channel usage parameters

3. The channel usage parameters are—

- (a) the lower and upper frequency boundaries of the DTT channels within which the white space device will transmit;
- (b) the maximum in-block EIRP spectral density, in dBm over a bandwidth of 0.1 MHz, at which the white space device will transmit in each DTT channel; and
- (c) the maximum permitted in-block EIRP, in dBm, at which the white space device will transmit in each DTT channel.

Device parameters

4. The device parameters are—

- (a) information specifying that the device is a master device or a slave device;
- (b) the white space device’s unique identifier;
- (c) information specifying that the white space device is Type A equipment or Type B equipment;
- (d) the location of the white space device expressed as its antenna latitude and longitude coordinates; and
- (e) the level of uncertainty in the accuracy of the white space device’s antenna latitude and longitude coordinates, specified as $\pm\Delta x$ and $\pm\Delta y$ metres respectively (corresponding to a ninety-five per cent confidence level).

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Master operational parameters

5. The master operational parameters are—
- (a) the lower and upper boundaries of the DTT channels within which a master device may transmit;
 - (b) the maximum permitted in-block EIRP spectral density, in dBm over a bandwidth of 0.1 MHz, for each DTT channel within which a master device may transmit;
 - (c) the maximum permitted in-block EIRP, in dBm, for each DTT channel within which a master device may transmit;
 - (d) limits on the maximum total number of DTT channels that may be used at any given time and the maximum number of contiguous DTT channels that may be used at any given time;
 - (e) the time period during which the operational parameters are valid;
 - (f) the geographic area within which the operational parameters are valid;
 - (g) the time period (T_{update}) within which a master device must check with a designated white space database that the operational parameters it is using are still valid; and
 - (h) information indicating if the simultaneous channel operation power restriction applies as specified in Schedule 3.

Slave operational parameters

- 6.—(1) The slave operational parameters are—
- (a) the lower and upper boundaries of the DTT channels within which a slave device may transmit;
 - (b) the maximum permitted in-block EIRP spectral density, in dBm over a bandwidth of 0.1 MHz, for each DTT channel within which a slave device may transmit;
 - (c) the maximum permitted in-block EIRP, in dBm, for each DTT channel within which a slave device may transmit;
 - (d) limits on the maximum total number of DTT channels that may be used at any given time and the maximum number of contiguous DTT channels that may be used at any given time;
 - (e) the time period during which the operational parameters are valid;
 - (f) the geographic area within which the operational parameters are valid; and
 - (g) information indicating if the simultaneous channel operation power restriction applies as specified in Schedule 3.
- (2) The slave operational parameters are either—
- (a) parameters that can be used by all slave devices operating in the area in which transmissions from the master device can be received (“generic operational parameters); or
 - (b) parameters that are specific to a particular slave device (“specific operational parameters”).

Exemption

7. The establishment, installation and use of white space devices is hereby exempt from the provisions of section 8(1) of the Wireless Telegraphy Act 2006 where the terms, provisions and limitations in regulations 8, 9 and 10 are met.

General requirements

8. The white space device must—

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- (a) transmit within the frequency band 470 MHz to 790 MHz;
- (b) transmit on frequencies which have been determined by a designated white space database as being available for use;
- (c) not be used airborne;
- (d) not cause or contribute to any undue interference to any wireless telegraphy; and
- (e) not allow a user of the device to input, configure, reconfigure or alter any technical or operational settings or features of the device in a way which would affect its device parameters or its operation in accordance with operational parameters provided by a designated white space database.

Master device requirements

9. If the white space device is a master device, it must—

- (a) have a geo-location capability;
- (b) provide its device parameters to a designated white space database when requesting master operational parameters;
- (c) after having received master operational parameters from a designated white space database, provide to the designated white space database its channel usage parameters;
- (d) only transmit in accordance with—
 - (i) the master operational parameters that it has received from a designated white space database; and
 - (ii) the channel usage parameters that it has reported to the designated white space database;
- (e) only provide slave operational parameters to a slave device if those slave operational parameters have been provided to the master device by a designated white space database;
- (f) provide to the designated white space database from which it has received operational parameters—
 - (i) all device parameters which are reported to it by any slave devices to which it has provided slave operational parameters; and
 - (ii) the channel usage parameters of any slave devices to which it has provided slave operational parameters;
- (g) undertake an update process in respect of the operational parameters which a master device has received from a designated white space database, under which—
 - (i) a master device must verify with a designated white space database if the operational parameters which it has received remain valid or are not valid; and
 - (ii) a master device must undertake this update process within the time period specified in the operational parameter (T_{update}), as described in regulation 5(g); and
- (h) cease all transmissions, and instruct all slave devices to which it has provided slave operational parameters to cease all transmissions, if—
 - (i) it is unable to verify that the operational parameters are still valid in accordance with regulation 9(g); or
 - (ii) if a designated white space database sends an instruction to the master device that the operational parameters are not valid.

Slave white space device requirements

10. If the white space device is a slave device, it must—

- (a) in order to transmit using generic operational parameters, provide the information specified in regulation 4(a) and (b) to a master device;

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- (b) in order to transmit using specific operational parameters, provide all its device parameters to a master device;
- (c) after having received slave operational parameters from a master device, provide its channel usage parameters to that master device, unless the channel usage parameters have been determined by the master device;
- (d) only transmit in accordance with—
 - (i) slave operational parameters which it has received from a master device; and
 - (ii) channel usage parameters that have—
 - (aa) been determined by the slave device and reported to a master device; or
 - (bb) been determined by a master device for the slave device; and
- (e) cease all transmissions if—
 - (i) the slave device loses communications for longer than five seconds with the master device from which it has received its slave operational parameters; or
 - (ii) the slave device receives an instruction to cease transmissions from the master device from which it has received its slave operational parameters.

[•]

[Date]

Group Director of Spectrum Policy Group
For and by the authority of the Office of Communications

SCHEDULE 1

LIST OF DESIGNATED WHITE SPACE DATABASES

[List of designated white space databases to be inserted]

SCHEDULE 2

DTT CHANNEL RASTER AND CHANNEL NUMBERS

Table 1

Table of European harmonised DTT channel raster and corresponding DTT channel numbers

DTT channel raster (MHz)	470	478	486	...	766	774	782
	to	to	to		to	to	To
	478	486	494		774	782	790
DTT channel numbers	21	22	23	...	58	59	60

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SCHEDULE 3

SIMULTANEOUS CHANNEL OPERATION POWER RESTRICTION

The simultaneous channel operation power restriction can take a value of 0 or 1.

A value of 1 indicates that, in case of simultaneous operation in multiple DTT channels, a white space device must restrict its maximum total EIRP to $\{P_{I,i}\}$ dBm, where $P_{I,i}$ is the in-block EIRP provided by the white space database in the operational parameters for DTT channel i specified by the frequency pair $f_{l,i}, f_{u,i}$ and where $f_{l,i}$ is the frequency at the lower edge of the i^{th} channel and $f_{u,i}$ is the frequency at the upper edge of the i^{th} channel.

A value of 0 indicates that this restriction does not apply.

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EXPLANATORY NOTE

(This note is not part of the Regulations)

[To be drafted]

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