

## Short range devices

Pursuant to section 111 of the Radiocommunications Act 1989 and Regulation 9 of the Radiocommunications Regulations 2001, and acting under delegated authority from the chief executive, I give the following notice.

### Notice

#### 1. Short title and commencement —

1. This notice is the Radiocommunications Regulations (General User Radio Licence for Short Range Devices) Notice 2011.
2. This notice comes into force on **7 April 2011**.

#### 2. Licence—

- (1) Licence Name: General User Radio Licence for Short Range Devices (SRDs)
- (2) Licence: Any person may transmit radio waves using Short Range Devices (SRDs), also known as Restricted Radiation Devices (RRDs), Low Interference Potential Devices (LIPDs), or Spread Spectrum Devices (SSDs), in accordance with the applicable terms, conditions and restrictions of this notice.
- (3) Licence Number: 227313.
- (4) Commencement Date: 7 April 2011.

#### 3. Spectrum—

<i>Low (MHz)</i>	<i>High (MHz)</i>	<i>Reference Frequency (MHz)</i>	<i>Maximum Power dBW e.i.r.p.</i>	<i>Remarks</i>
0.009000	0.030000	0.019500	-76.0	Special Condition 1
0.030000	0.190000	0.110000	-20.0	Special Condition 1
3.180000	3.380000	3.280000	-76.0	Special Conditions 2 and 21
3.640000	4.040000	3.840000	-76.0	Special Conditions 2 and 20
6.765000	6.795000	6.780000	-20.0	Special Condition 1
10.44000	10.760000	10.600000	-76.0	Special Conditions 2 and 20
13.550000	13.570000	13.560000	-10.0	Special Condition 1
26.950000	27.300000	27.125000	0.0	
29.700000	30.000000	29.850000	-10.0	
30.800000	31.500000	31.150000	-10.0	Special Condition 3
35.500000	37.200000	36.350000	-10.0	
40.660000	40.700000	40.680000	0.0	
40.800000	41.000000	40.900000	-10.0	
72.000000	72.250000	72.125000	-10.0	Special Condition 2
72.250000	72.500000	72.375000	-10.0	
87.500000	108.000000	98.000000	-50.0	Special Condition 4
107.000000	108.000000	107.500000	-16.0	
160.100000	160.600000	160.350000	-3.0	
173.000000	174.000000	173.500000	-10.0	
235.000000	300.000000	267.500000	-30.0	Special Condition 1
300.000000	322.000000	311.000000	-20.0	Special Condition 1
402.000000	406.000000	404.000000	-46.0	Special Conditions 5 and 14
433.050000	434.790000	433.920000	-16.0	
444.000000	444.925000	444.462500	-16.0	Special Condition 5
458.540000	458.610000	458.575000	-3.0	

466.800000	466.850000	466.825000	-3.0	
470.000000	470.500000	470.250000	-10.0	Special Condition 5
471.000000	471.500000	471.250000	-10.0	
502.000000	694.000000	598.000000	-50.0	Special Condition 6
819.000000	824.000000	821.000000	-10.0	
864.000000	868.000000	866.000000	6.0	Special Condition 13
868.000000	870.000000	869.000000	-27.0	Special Conditions 1 and 15
869.200000	869.250000	869.225000	-20.0	Special Conditions 1 and 15
915.000000	928.000000	921.500000	-25.0	Special Condition 1
921.000000	928.000000	924.500000	0	Special Condition 23
921.500000	928.000000	924.750000	6.0	Special Conditions 13 and 23
2400.000000	2483.500000	2441.750000	6.0	Special Condition 13
2900.000000	3400.000000	3150.000000	-10.0	Special Condition 7
5150.000000	5250.000000	5200.000000	-7.0	Special Conditions 8 and 16
5250.000000	5350.000000	5300.000000	0.0	Special Conditions 9 and 17
5470.000000	5725.000000	5597.500000	0.0	Special Conditions 9 and 18
5470.000000	5725.000000	5597.500000	-10.0	Special Condition 7
5725.000000	5875.000000	5800.000000	6.0	Special Condition 13
5725.000000	5875.000000	5800.000000	3.0	Special Condition 10
8500.000000	10000.000000	9250.000000	-10.0	Special Condition 7
10000.000000	10600.000000	10300.000000	-16.0	Special Condition 7
15700.000000	17300.000000	16500.000000	-10.0	Special Condition 7
24000.000000	24250.000000	24125.000000	0.0	
33400.000000	36000.000000	34700.000000	-10.0	Special Condition 7
46700.000000	46900.000000	46800.000000	-10.0	Special Condition 11
57000.000000	66000.000000	61500.000000	13.0	Special Condition 22
57000.000000	64000.000000	60500.000000	13.0	Special Conditions 12 and 19
59000.000000	64000.000000	61500.000000	-10.0	Special Condition 7
76000.000000	77000.000000	76500.000000	14.0	Special Condition 11
122000.000000	123000.000000	122500.000000	0.0	
244000.000000	246000.000000	245000.000000	0.0	

#### 4. Location—

- (1) Transmit Location: All New Zealand.
- (2) Receive Location: All New Zealand.

#### 5. Special conditions—

1. Use is limited to determination, telemetry and telecommand.
2. Use is limited to auditory aids.
3. Use is limited to model control.
4. Use is limited to audio senders.
5. Use is limited to biomedical telemetry.
6. Use is limited to audio/video senders.
7. Use is limited to radiolocation.
8. Use is limited to wireless LAN indoor systems only.
9. Use is limited to wireless LAN.
10. Use is limited to road transport and traffic telematics.
11. Use is limited to field disturbance sensors.
12. Use is limited to fixed point-to-point links.
13. Transmitters using e.i.r.p.'s greater than 0 dBW (1 W) must employ frequency hopping or digital modulation techniques.
14. In the band 402 to 406 MHz, the maximum permitted duty cycle is 0.1%.
15. In the band 868 to 870 MHz, the maximum permitted peak power is -27 dBW (2 mW) and the maximum permitted duty cycle is 1%, except in the band 869.2 to 869.25 MHz, where the maximum permitted peak power is -20 dBW (10 mW) and the maximum permitted duty cycle is 0.1%.
16. In the band 5150 to 5250 MHz, the maximum permitted power density is 10 dBm/MHz (10 mW/MHz) e.i.r.p. or equivalently -36 dBW/25 kHz (0.25 mW/25 kHz) e.i.r.p.

17. Indoor-Only Systems: In the band 5250 to 5350 MHz, the maximum permitted mean power is –7 dBW (200 mW) e.i.r.p. and the maximum permitted mean power density is –20 dBW/MHz (10 mW/MHz) e.i.r.p., provided Dynamic Frequency Selection and Transmitter Power Control are implemented.  
If Transmitter Power Control is not used, then the e.i.r.p. values must be reduced by 3 dB;
- Indoor and Outdoor Systems: In the band 5250 to 5350 MHz, the maximum permitted mean power is 0 dBW (1 W) e.i.r.p. and the maximum permitted mean power density is –13 dBW/MHz (50 mW/MHz), provided Dynamic Frequency Selection and Transmitter Power Control are implemented in conjunction with the following vertical radiation angle mask where  $q$  is the angle above the local horizontal plane (of the Earth):
- |                                      |                                     |
|--------------------------------------|-------------------------------------|
| Maximum permitted mean power density | Elevation angle above horizontal    |
| –13 dB(W/MHz)                        | for $0^\circ \leq q < 8^\circ$      |
| –13 – 0.716( $q - 8$ ) dB(W/MHz)     | for $8^\circ \leq q < 40^\circ$     |
| –35.9 – 1.22( $q - 40$ ) dB(W/MHz)   | for $40^\circ \leq q \leq 45^\circ$ |
| –42 dB(W/MHz)                        | for $45^\circ < q$ ;                |
18. In the band 5470 to 5725 MHz, the maximum permitted transmitter power is –6 dBW (250 mW) with a maximum permitted mean power of 0 dBW (1 W) e.i.r.p. and a maximum permitted mean power density of –13 dBW/MHz (50 mW/MHz), provided Dynamic Frequency Selection and Transmitter Power Control are implemented. If Transmitter Power Control is not in use, then the maximum permitted mean power shall be reduced by 3 dB.
19. In the band 57 to 64 GHz, the average power density of any emission, measured during the transmit interval, shall not exceed –40 dBW/cm<sup>2</sup> (9  $\mu$ W/cm<sup>2</sup>) at a distance of 3 metres and the peak power density of any emission shall not exceed –37 dBW/cm<sup>2</sup> (18  $\mu$ W/cm<sup>2</sup>) at a distance of 3 metres. In the band 57 to 64 GHz, the peak total transmitter power shall not exceed –3 dBW (500 mW). In the band 57 to 64 GHz, for emissions of bandwidths less than 100 MHz, the transmitter peak power must be limited to –3 dBW (500 mW) x (bandwidth (MHz) / 100 (MHz)).
20. In the bands 3.64 to 4.04 MHz and 10.44 to 10.76 MHz, the maximum permitted field strength is –40 dB $\mu$ A/m measured in a 10 kHz bandwidth at 10 metres.
21. In the band 3.18 to 3.38 MHz, the maximum permitted field strength is –20 dB $\mu$ A/m measured in a 10 kHz bandwidth at a distance of 10 metres.
22. Indoor-Only Systems: In the band 57000 to 66000 MHz, the power spectral density must not exceed 13 dBm/MHz e.i.r.p. and spurious emissions outside the band must be less than –30 dBm/MHz.
23. Transmissions from devices operating in the band 921 to 928 MHz must not exceed the following unwanted emission limits: –79 dBW (–49 dBm) from 800 to 915 MHz, then varying from –79 dBW (–49 dBm) at 915 MHz to –66 dBW (–36 dBm) at 921 MHz in accordance with the formula  $y = mx + C$ , where:  $y = \text{dBm}$ ,  $x = \text{MHz}$ ,  $m = dy/dx$ ,  $C = \text{the value of } y \text{ where } x = 0 \text{ (the } y \text{ intercept)}$ . The maximum value of –63 dBW (–33 dBm) applies from 928 MHz to 1 GHz. The reference bandwidth for emissions is 100 kHz. Outside the band 800 MHz to 1 GHz, the limits prescribed in applicable standards prescribed in the Radiocommunications (Radio Standards) Notice 2010 apply. In the absence of applicable standards, the limits prescribed in Table 2 of the notice apply.

## 6. General conditions applying to all transmissions under this licence—

- The frequency ranges, peak power of transmissions within those frequency ranges, and designated uses of frequencies are those prescribed in this licence. All transmissions in a given frequency range must comply with any special conditions relating to that frequency range.
- Transmitters, and persons supplying or using transmitters, must comply with the requirements of Regulations 32 to 37 of the Radiocommunications Regulations 2001.
- Frequency use is on a shared basis and the chief executive does not accept liability under any circumstances for any loss or damage of any kind occasioned by the unavailability of frequencies or interference to reception.
- Should interference occur to services licensed pursuant to a radio licence or a spectrum licence, the chief executive reserves the right to require and ensure that any transmission or any emission pursuant to this General User Radio Licence change frequency, reduce power, or cease operation.
- Transmissions that are broadcasting, as defined in the Broadcasting Act 1989, are not permitted.

## 7. Consequential revocation of licences—

- The Radiocommunications Regulations (General User Radio Licence for Short Range Devices) Notice No. 2 2010, dated the 26th day of July 2010 and published in the *New Zealand Gazette*, 29 July 2010, No. 92, page 2436, is revoked.
- Notwithstanding the revocation of the notice under subsection (1), every transmitter capable of making transmissions compliant with the requirements of that notice on the commencement date of this notice is deemed to be compliant with the requirements of this notice.

Dated at Wellington this 4th day of April 2011.

SANJAI RAJ, Group Manager, Radio Spectrum Management, Ministry of Economic Development

## Explanatory Note

*This note is not part of the notice, but is intended to indicate its general effect.*

*This notice:*

1. *expands on the unwanted emission limits requirements for devices operating in the 921.5 to 928 MHz band, including an upper range (1 GHz) and a lower range (800 MHz) for measurement purposes;*
2. *specifies an unwanted emission limit of  $-33$  dBm above 928 MHz for devices operating in the 921 to 928 MHz band. This limit allows further harmonisation with Australia;*
3. *adds a new allocation in the 3 MHz band to auditory aids;*
4. *extends the audio sender band to the limits of the FM broadcasting band.*

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Information on the operation of Wireless LAN and Related Systems in the 2 GHz and 5 GHz Bands