Low Interference Potential Devices

Australian Communications and Media Authority (ACMA)

- Approval requirements for Class Licence and Short Range Devices

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Class Licensing
Short Range Spread Spectrum Devices

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Requirements for Operation under Class Licence

- **Radiocommunications (Low Interference Potential Devices) Class Licence 2000**

  (with variations)

Introduction

The operation of Short Range Spread Spectrum Devices is authorised under the

Radiocommunications (Spread Spectrum Devices) Class Licence 2002 (the Spread Spectrum Devices Class Licence).

Class Licences

Under a class licence, all users operate in the same spectrum segment on a shared basis and are subject to the same conditions.

A class licence governs the frequencies that may be used, commonly prescribes equipment standards, and may specify other technical and operational parameters.

Class licences do not have to be applied for, and no licence fees are payable.

Radiocommunications Class Licence (Spread Spectrum Devices)

Spread spectrum devices are defined in the class licence as radiocommunications devices that employ:

- direct sequence spread spectrum modulation techniques,
- frequency hopping spread spectrum modulation techniques, or both, to transmit information.

Radiocommunications Class Licence (Spread Spectrum Devices)

The Spread Spectrum Devices Class Licence supports the use of short range spread spectrum devices used in applications such as:

- bar code readers,
- point of sale networks,
- radio local area networks (LANs)
- wireless private automatic branch exchanges (PABXs).

Conditions of Operation

Compliance With Standards

To operate under the class licence a spread spectrum device must either:

- meet the provisions of section **15.247** of the FCC Rules except for the frequency bands of operation specified in that section and the provisions of **15.247 (b)** which relate to transmitter power and antenna gain,

  or

- meet the requirements of **ETS 300 328.**

- To be replaced with AS/NZS4268 (Australian version of

  ETS 300 328 but with a few variations)

Frequency Bands and Power

The Spread Spectrum Devices Class Licence provides for the operation of spread spectrum devices employing direct sequence, frequency hopping or a combination of direct sequence and frequency hopping modulation techniques within the frequency bands and power limits in the next table.

Spread Spectrum Devices
- Frequency Bands and Power Limits

Frequency Band (MHz)	Maximum Equivalent Isotropically Radiated Power (EIRP)
915 to 928	1 watt
2400 to 2483.5	4 watts (devices other than frequency hopping devices with a bandwidth greater than 1 MHz)
2400 to 2483.5	500 milliwatts (frequency hopping devices with a bandwidth greater than 1 MHz)
5725 to 5875	1 watt

Variations 2005

Transmitter	Frequency Band (MHz)	Maximum Equivalent Isotropically Radiated Power (EIRP)	
Radio Local Area Network transmitters used indoors	5150 – 5250	200 mW (averaged over the entire transmission burst)	
Radio Local Area Network transmitters used indoors	5250 – 5350	200 mW (averaged over the entire transmission burst)	
Frequency hopping transmitters	915 – 928	1 W	
Frequency hopping transmitters	2400 – 2483.5	500 mW	
Frequency hopping transmitters	2400 – 2483.5	4 W	
Frequency hopping transmitters	5725 - 5850	4 W	

Interference Management

Spread spectrum devices operating under the class licence:

- must not cause interference to other radiocommunications services and will not be afforded protection from interference caused by other radiocommunications services and

Interference Management

- when operating in bands designated for industrial, scientific and medical (ISM) applications will not be afforded protection from interference which may be caused by ISM applications (eg microwave ovens).

- Relevant ISM bands are:
  - 918-926 MHz,
  - 2400-2500 MHz
  - 5725-5875 MHz.

Low Interference Potential Device – Labelling Requirements

- No specific labelling requirements for Low Interference Potential Devices operating under Class Licence.
  - C-tick does not apply
- Get evidence of compliance
- Complete a DoC

- Most transmitters under scope of EMR Standard 2003
  - C-tick marking requirements apply

Breaches of Licence Conditions

It is important that spread spectrum device users comply with the conditions in the class licence. Subsection 132(3) of the *Radiocommunications Act 1992* (the Act) provides that:

'Operation of a radiocommunications device is not authorised by a class licence if it is not in accordance with the conditions of the licence.'

Breaches of Licence Conditions

If any condition of licence is breached (for example, using higher power than that authorised in the class licence), that operation is no longer authorised under the class licence.

In such instances, the operator would be subject to the offence provisions of the Act.

Transmitter Classes

Radiocommunications (Low Interference Potential Devices) Class Licence 2000
(with variations)

Radiocommunications (Electromagnetic Radiation- Human Exposure) Standard 2003 ***(applies in most cases)***

Hint: Always check current notices

Class Licence Devices and Requirements

TABLE 3

AUSTRALIAN REQUIREMENTS (REFERENCED BY TRANSMITTER CLASS)

Class of transmitter	Permitted operating frequency band (MHz) (lower limit exclusive, upper limit inclusive)	Maximum EIRP	Reference	Row
Alarm transmitters (Personal safety)	27.500 to 27.510	100µW	Table 1	38
Alarm transmitters used with personal alarm transmitters	27.500 to 27.510	500 mW	Table 1	39
Alarm transmitters (including security and personal safety transmitters)	303.60 to 304.05	100µW	Table 1	33
Alarm transmitters	344.8 to 345.2	1 mW	Table 1	40
All transmitters	0.000 to 0.014	200 µW	Table 1	1
All transmitters	0.014 to 0.01995	50µW	Table 1	2
All transmitters	0.02005 to 0.07	7.5µW	Table 1	3
All transmitters	0.07 to 0.16	3µW	Table 1	4
All transmitters	0.16 to 0.285	500 nW	Table 1	5
All transmitters	0.325 to 0.415	500 nW	Table 1	5

Class Licence Devices and Requirements

All transmitters	3.025 to 3.155	7.5 nW	Table 1	6
All transmitters	3.5 to 3.7	30 pW	Table 1	7
All transmitters	3.7 to 3.95	7.5 nW	Table 1	8
All transmitters	4.438 to 4.65	7.5 nW	Table 1	8
All transmitters	13.553 to 13.567	100 mW	Table 1	9
All transmitters	24 to 24.89	10 mW	Table 1	10
All transmitters	26.957 to 27.283	1 W	Table 1	11
All transmitters	29.7 to 29.72	100 mW	Table 1	12
All transmitters	30 to 30.0625	100 mW	Table 1	12
All transmitters	30.3125 to 31	100 mW	Table 1	12
All transmitters	36.6 to 37	100 mW	Table 1	12
All transmitters	39 to 39.7625	100 mW	Table 1	12
All transmitters	40.25 to 40.66	100 mW	Table 1	12
All transmitters	40.66 to 41	1W	Table 1	13
All transmitters	54 to 56	2.5 mW	Table 1	14
All transmitters	70 to 70.24375	100 mW	Table 1	15

(continued)

Class Licence Devices and Requirements

TABLE 3 (*continued*)

Class of transmitter	Permitted operating frequency band (MHz) (lower limit exclusive, upper limit inclusive)	Maximum EIRP	Reference	Row
All transmitters	77.29375 to 77.49375	100 mW	Table 1	15
All transmitters	150.7875 to 152.49375	100 mW	Table 1	15
All transmitters	173.29375 to 174	100 mW	Table 1	15
All transmitters	225 to 242	10µW	Table 1	16
All transmitters	244 to 267	10µW	Table 1	16
All transmitters	273 to 303.95	10µW	Table 1	16
All transmitters	304.05 to 328.6	10µW	Table 1	16
All transmitters	335.4 to 399.9	10µW	Table 1	16
All transmitters	433.05 to 434.79	25 mW	Table 1	17
All transmitters	915 to 928	3 mW	Table 1	18
All transmitters	2400 to 2463	10 mW	Table 1	19
All transmitters	10 500 to 10 550	100 mW	Table 1	20
All transmitters	24 000 to 24 250	100 mW	Table 1	20
Aquatic-animal-tracking transmitters	48 to 49	10 mW	Table 1	37

Class Licence Devices and Requirements

Auditory assistance transmitters	3.155 to 3.4 (on specified channels)	60µW	Table 1	28
Auditory assistance transmitters	41 to 42 (on specified channels)	1.3 mW	Table 1	29
Auditory assistance transmitters	43 to 44 (on specified channels)	1.3 mW	Table 1	29
Biomedical telemetry transmitters	174 to 230	10µW	Table 1	23
Biomedical telemetry transmitters	520 to 668	3 mW	Table 1	24
Digital modulation transmitters	915 to 928	1 W	Table 1	45
Digital modulation transmitters	2400 to 2483.5	4 W	Table 1	46
Digital modulation transmitters	5725 to 5850	4 W	Table 1	47
Home detention monitoring equipment	314.075 to 314.325	200µW	Table 1	34
Radio-controlled Model aircraft, land-craft and watercraft.	29.72 to 30 MHz	Between 300 mW and 1 W	Table 2	1
Radio-controlled Model aircraft and watercraft only.	36 to 36.6 MHz (on specified channels)	Between 300 mW and 1 W	Table 2	2

(*continued*)

Class Licence Devices and Requirements

TABLE 3 (*continued*)

Class of transmitter	Permitted operating frequency band (MHz) (lower limit exclusive, upper limit inclusive)	Maximum EIRP	Reference	Row
Radio-controlled Model aircraft only.	36 to 36.6 MHz (on specified channels)	Between 0.3 and 1 Watt	Table 2	3
R-LANS (Radio Local Area Network transmitters used indoors)	5150 to 5350	200 mW (averaged over the entire transmission burst)	Table 1	41
Radio-determination transmitters	5725 to 5875	1 mW	Table 1	42
Radio-determination transmitters	76 000 to 77 000	25 W	Table 1	43
Radio-determination transmitters	24 000 to 24 250	1 W	Table 1	35
Radio-determination transmitters	60 000 to 61 000	20 mW	Table 1	36
Radiofrequency identification transmitters	1.77 to 2.17	100 pW	Table 1	30
Radiofrequency identification transmitters	2.93 to 3.58	100 pW	Table 1	30

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Radiofrequency identification transmitters	7.2 to 10.01	100 pW	Table 1	30
Radiofrequency identification transmitters	13.553 to 13.567	1 W	Table 1	31
Radiofrequency identification transmitters	918 to 926	1 W	Table 1	31
Radiofrequency identification transmitters	2400 to 2450	1 W	Table 1	31
Radiofrequency identification transmitters	5725 to 5795	1 W	Table 1	31
Radiofrequency identification transmitters	5795 to 5815	2 W	Table 1	32
Radiofrequency identification transmitters	5815 to 5875	1 W	Table 1	31
Radiofrequency identification transmitters	24 000 to 24 250	1 W	Table 1	31
Telecommand or telemetry transmitters	472.0125 to 472.1125	100 mW	Table 1	25
Telecommand or telemetry transmitters	2400 to 2450	1 W	Table 1	26
Telecommand or telemetry transmitters	5725 to 5795	1 W	Table 1	26

(*continued*)

Class Licence Devices and Requirements

TABLE 3 (*continued*)

Class of transmitter	Permitted operating frequency band (MHz) (lower limit exclusive, upper limit inclusive)	Maximum EIRP	Reference	Row
Telecommand or telemetry transmitters	5795 to 5815	2 W	Table 1	27
Telecommand or telemetry transmitters	5815 to 5875	1 W	Table 1	26
Video Sender transmitters	529 to 806	12µW	Table 1	44
Wireless audio transmitters and auditory assistance transmitters	88 to 108	10µW	Table 1	21
Wireless audio transmitters	174 to 230	3 mW	Table 1	22
Wireless audio transmitters	520 to 820	3 mW	Table 1	22
W-LANS (Wireless -Local Area Network transmitters used indoors)	5150 to 5350	200 mW (averaged over the entire transmission burst)	Table 1	41

More Information

- EMC Technologies Ltd
  - Melbourne
  - Sydney
  - Brisbane
  - **Auckland (NZ) - Andrew Cutler, Manager**
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  - **www.emctech.com.au**

- AMCA Area Office
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