

RADIOCOMMUNICATIONS CLASS LICENCE



- LOW INTERFERENCE
POTENTIAL DEVICES

made under Division 176 of the

National Information and Communications Technology Act 2009

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1 Name of Class Licence [see Note 1]

This Class Licence is the *Radiocommunications (Low Interference Potential Devices) Class Licence*.

2 Commencement [see Note 1]

This Class Licence commences on gazettal.

Note

A radiocommunications device supported under this Class Licence can be expected to be operating in radiofrequency spectrum also used by other radiocommunications devices (that is, it shares the spectrum with them). Devices supported under this Class Licence are typically used for communications over short distances.

By placing appropriate limits on parameters such as device type, radiated power levels and frequencies of operation, the interference potential of a low interference potential device (**LIPD**) may be held to a sufficiently low level that enables sharing the spectrum with other radiocommunications devices on an uncoordinated basis in most circumstances.

It is recognised that interference arising from the operation of a LIPD is still possible, although under less likely circumstances. As an aid to interference resolution in those circumstances, it is a condition of the operation of a device under this Class Licence that the device not cause interference to other radiocommunications devices; as well, a device will not be afforded protection from interference caused by other radiocommunications services (see paragraph 4 (1) (b) and Note 1 after section 4 of this Class Licence).

Should interference occur, the onus is on the user of a LIPD to take measures to resolve that interference, for example, by re-tuning or ceasing to operate the LIPD. Some LIPDs are designed so that they are able to be re-tuned, to assist the user in avoiding interference locally.

Some of the frequency bands mentioned in this Class Licence cover bands designated for industrial, scientific and medical (**ISM**) applications. ISM applications generate radio frequency energy and use it locally for non-radiocommunications applications (eg. microwave ovens). Radiocommunications services operating in ISM-designated bands may experience interference from ISM applications. In accordance with the internationally-recognised arrangements for interference resolution that apply in such bands, this Class Licence notes that radiocommunications devices operating in ISM-designated bands are not afforded protection from interference that may be caused by ISM applications (see Note 2 after section 4 of this Class Licence).

LIPDs are sometimes used for radio applications with commercial or safety-of-life implications. Users of such applications are reminded that the reliability of their communications may be degraded by interference from other transmitters using the class licence or by ISM applications if in bands designated for that purpose. This is a risk that must be understood by the operator of safety of life services because interference protection is not possible due to the open access nature of the class licence.

Similarly any commercial users of a class licence must accept that this involves an inherent risk of interference and possible consequent financial loss for which no liability can be attributed to any other user of the class licence who is in full compliance with the conditions for using the relevant spectrum

Some applications of LIPDs require that a device meet additional physical or technical requirements outside the scope of this Class Licence. The use, marketing and supply of such devices in PNG may be dependent on the approval of the appropriate regulatory body. The class licence provides only access to the radio spectrum and does not afford a right to operate equipment the use of which is controlled by any other regulating authority. This would include, but not be limited to medical devices controlled by health authorities.

Manufacturers and suppliers of radiocommunications products able to be supported under this Class Licence are encouraged to have regard to the information in this note when forming advice about the suitability of their products for the intended application of the products by customers.

3 Definitions

Act means the *National Information and Communications Technology Act 2009*

coverage area, for a broadcasting station, means the area surrounding the associated television transmitter within the boundary described by the following field strength limits:

- (a) UHF Band IV: 62 dBuV/metre except rural towns where the limit is 64 dBuV/metre;
- (b) UHF Band V: 67 dBuV/metre.

device compliance day, for a device, means the most recent of the following days:

- (a) if the device was manufactured in PNG — the day it was manufactured; and
- (b) if the device was manufactured overseas and imported — the day it was imported; and
- (c) if the device was altered or modified in a material respect — the day it was altered or modified.

infrared device means a radiocommunications device having a radio emission in the frequency range 187.5 THz to 420 THz.

low interference potential device means a radiocommunications device that complies with the conditions set out in this Class Licence.

4 Class Licence

- (1) This Class Licence authorises a person to operate a transmitter included in a class of transmitters mentioned in an item in Schedule 1, subject to the following conditions:
 - (a) the transmitter must be operated:
 - (i) on a frequency, or within a range of frequencies, mentioned in the item; and
 - (ii) at a radiated power that does not exceed the maximum EIRP mentioned in the item; and
 - (iii) within the limitations (if any) mentioned in the item;
 - (b) the transmitter's operation must not cause harmful interference to the operation of radiocommunications services.
- (2) The frequency, or range of frequencies, and the maximum EIRP mentioned in an item in Schedule 1 must be construed in accordance with the interpretative provisions (if any) mentioned in the item.

Note 1. In some jurisdictions (notably the USA) LIPD devices are often specified in terms of field strength provided at a specific distance from the transmitter (e.g. watts/m² at 1 meter) rather than as an ERP. Devices made for these markets may, or may not comply with the PNG LIPD emitted power requirements. In such cases the user of the class licence will be expected to apply the appropriate mathematical conversion procedure to express the power in ERP form in order to check compliance with the class licence.

Note 2. A low interference potential device will not be afforded protection from interference caused by other radiocommunications devices operating satisfactorily under a relevant licence. The risk of such interference is low and must be accepted in order to maximise the convenience of the class licence for all users. However, a device may become damaged or be operated at a power in excess of the prescribed limit and cause interference. The operation of a device in such a condition is not covered by the class licence and is therefore its use is not in compliance with the Act and may be prosecuted.

Note 2 In accordance with the requirements of footnote [PNG xxx]and 150 to the Table of Allocations in the PNG Radiofrequency Spectrum Plan, a low interference potential device will not be afforded protection from interference that may be caused by ISM applications in the ISM bands 13.553 MHz – 13.567 MHz, 26.957 MHz – 27.283 MHz, 40.66 MHz – 40.70 MHz, 918 MHz – 926 MHz, 2 400 MHz – 2 500 MHz, 5 725 MHz – 5 875 MHz and 24 000 MHz – 24 250 MHz.[Cross Check with the frequency allocation table]

5 Regulatory Instruments

- (2) The device must comply with any regulatory instrument applicable to the device in force.

Note 1 If a standard mentioned in subsection (2) is amended or replaced by another standard after the device compliance day for the device, the device need not comply with the new or amended standard.

Schedule 1 Transmitters

(section 4)

| Item | Class of transmitter | Permitted operating frequency band (MHz) (lower limit exclusive, upper limit inclusive) | Maximum EIRP | Limitations |
|------|----------------------|--|--------------|--|
| 1 | All transmitters | 0.000–0.014 | 200 μ W | |
| 2 | All transmitters | 0.014–0.01995 | 50 μ W | |
| 3 | All transmitters | 0.02005–0.07 | 7.5 μ W | |
| 4 | All transmitters | 0.07–0.16 | 3 μ W | |
| 5 | All transmitters | 1. 0.16–0.285 2. 0.325–0.415 | 500 nW | |
| 6 | All transmitters | 3.025–3.155 | 7.5 nW | |
| 7 | All transmitters | 3.5–3.7 | 30 pW | |
| 8 | All transmitters | 1. 3.7–3.95 2. 4.438–4.65 | 7.5 nW | |
| 9 | All transmitters | 13.553–13.567 | 100 mW | |
| 10 | All transmitters | 24–24.89 | 10 mW | |
| 11 | All transmitters | 26.957–27.283 | 1 W | <ol style="list-style-type: none"> 1. Separation of the operating frequency from the centre frequency of any adjacent citizen band radio channel must be at least 5 kHz. 2. The emission bandwidth must not exceed 10 kHz. |
| 12 | All transmitters | 1. 29.7–29.72 2. 30–30.0625 3. 30.3125–31 4. 36.6–37 5. 39–39.7625 6. 40.25–40.66 | 100 mW | |
| 13 | All transmitters | 40.66–41 | 1 W | |
| 14 | All transmitters | 54–56 | 2.5 mW | |
| 15 | All transmitters | 1. 70–70.24375 2. 77.29375– 77.49375 3. 150.7875– 152.49375 4. 173.29375–174 | 100 mW | |
| 16 | All transmitters | 1. 225–242 2. 244–267 3. 273–303.95 4. 304.05–328.6 5. 335.4–399.9 | 10 μ W | |

| Item | Class of transmitter | Permitted operating frequency band (MHz) (lower limit exclusive, upper limit inclusive) | Maximum EIRP | Limitations |
|------|--|---|--------------|---|
| 17 | All transmitters | 433.05–434.79 | 25 mW | |
| 18 | All transmitters | 915–928 | 3 mW | |
| 19 | All transmitters | 2400–2483.5 | 10 mW | |
| 19A | All transmitters | 5725–5875 | 25 mW | |
| 20 | All transmitters | 1. 10500–10550 2. 24000–24250 | 100 mW | |
| 21 | Wireless audio transmitters and auditory assistance transmitters | 88–108 | 10 μ W | <ol style="list-style-type: none"> 1. Emission must be frequency modulated and have a maximum bandwidth of 180 kHz. 2. Transmission in a radio channel must not originate in the licence area of a radio broadcasting station (including a repeater or translator station) operating in the same channel. |
| 22 | Wireless audio transmitters | 174–230 | 3 mW | <ol style="list-style-type: none"> 1. Emission must be frequency modulated and have a maximum bandwidth of 330 kHz. 2. Transmission in a TV channel must not originate in the licence area of a TV broadcasting station (including a repeater or translator station) operating in the same channel. |

| Item | Class of transmitter | Permitted operating frequency band (MHz) (lower limit exclusive, upper limit inclusive) | Maximum EIRP | Limitations |
|------|-----------------------------|---|--------------|---|
| 22A | Wireless audio transmitters | 520–820 | 100 mW | <p data-bbox="1065 306 1349 898">3. When transmitting in an unused TV channel, and in the coverage area of a TV broadcasting station (including a repeater or translator station) operating in an adjacent TV channel, the channel centre frequency of the wireless audio transmitter must be at least 200 kHz above the upper edge of the adjacent TV channel, or 400 kHz below the lower edge of the adjacent TV channel.</p> <p data-bbox="1065 905 1349 1056">1. Emission must be frequency modulated and have a maximum bandwidth of 330 kHz.</p> <p data-bbox="1065 1062 1349 1402">2. Transmission in a broadcasting services bands channel must not originate in the coverage area of a broadcasting station or a datacasting service station (including a repeater or translator station) operating in the same channel.</p> <p data-bbox="1065 1409 1349 1814">3. The origin of a transmission in a broadcasting services bands channel must be such that the resulting field strength at the nearest boundary of the coverage area of a broadcasting station or a datacasting service station using the channel does not exceed 30 dBuV/m.</p> |

| Item | Class of transmitter | Permitted operating frequency band (MHz) (lower limit exclusive, upper limit inclusive) | Maximum EIRP | Limitations |
|------|---------------------------------------|--|--------------|--|
| | | | | 4. When transmitting in an unused broadcasting services bands channel, and in the coverage area of a broadcasting station or a datacasting service station (including a repeater or translator station) operating in an adjacent channel, the channel centre frequency of the wireless audio transmitter must be at least 400 kHz above the upper edge of the adjacent channel, or 400 kHz below the lower edge of the adjacent channel. |
| 23 | Biomedical telemetry transmitters | 174–230 | 10 μ W | |
| 24 | Biomedical telemetry transmitters | 520–668 | 11 mW | Transmission in a TV channel must not originate in the licence area of an analogue TV broadcasting station (including a repeater or translator station) operating in the same channel. |
| 25 | Telecommand or telemetry transmitters | 472.0125–472.1125 | 100 mW | |
| 26 | Telecommand or telemetry transmitters | 1. 2400–2450 2. 5725–5795 3. 5815–5875 | 1 W | |
| 27 | Telecommand or telemetry transmitters | 5795–5815 | 2 W | |
| 28 | Auditory assistance transmitters | 3.155–3.4, with a carrier frequency of: (a) 3.175 MHz; or (b) 3.225 MHz; or (c) 3.275 MHz; or (d) 3.325 MHz. | 60 μ W | |

| Item | Class of transmitter | Permitted operating frequency band (MHz) (lower limit exclusive, upper limit inclusive) | Maximum EIRP | Limitations |
|------|--|--|--------------|---|
| 29 | Auditory assistance transmitters | <ol style="list-style-type: none"> 1. 41–42, with a carrier frequency of: <ol style="list-style-type: none"> (a) 41.55 MHz; or (b) 41.65 MHz; or (c) 41.75 MHz; or (d) 41.85 MHz; or (e) 41.95 MHz. 2. 43–44, with a carrier frequency of: <ol style="list-style-type: none"> (a) 43.05 MHz; or (b) 43.15 MHz; or (c) 43.25 MHz; or (d) 43.35 MHz; or (e) 43.45 MHz. | 1.3 mW | |
| 30 | Radiofrequency identification transmitters | <ol style="list-style-type: none"> 1. 1.77–2.17 2. 2.93–3.58 3. 7.2–10.01 | 100 pW | |
| 31 | Radiofrequency identification transmitters | <ol style="list-style-type: none"> 1. 13.553–13.567 2. 918–922 –check GSM Guardband 3. 2400–2450 4. 5725–5795 5. 5815–5875 6. 24000–24250 | 1 W | |
| 32 | Radiofrequency identification transmitters | 5795–5815 | 2 W | |
| 33 | Alarm transmitters (including security and personal safety transmitters) | 303.60–304.05 | 100 μ W | |
| 34 | Home detention monitoring equipment | 314.075–314.325 | 200 μ W | In a 10 second period, a single transmission must not exceed 10 milliseconds. |
| 35 | Radiodetermination transmitters | 24000–24250 | 1 W | |
| 36 | Radiodetermination transmitters | 60000–61000 | 20 mW | |

| Item | Class of transmitter | Permitted operating frequency band (MHz) (lower limit exclusive, upper limit inclusive) | Maximum EIRP | Limitations |
|------|--|---|--------------|---|
| 37 | Transmitters used for underground communications | <ol style="list-style-type: none"> 1. 31–32 2. 33–34 3. 35–36 4. 37–38 5. 42–43 6. 44–45 7. 70.24375–74.8 8. 75.2–77.29375 9. 77.49375–84.69375 10. 149.25–149.9 11. 150.05–151.39375 12. 152.49375–156 13. 157.45–160.6 14. 160.975–161.475 15. 162.05–173.29375 16. 403–406 17. 406.1–420 18. 450–500.99375 19. 504.99375–510.99375 20. 514.99375–520 | 3.5 nW | The maximum EIRP applies at an above-ground opening associated with the underground communications. |
| 38 | Transmitters used for underground Broadcasting and Datacasting | <ol style="list-style-type: none"> 1. 0.5265–1.605 2. 87.5–108 3. 174–230 4. 519–820 | 10 µW | <ol style="list-style-type: none"> 1. The maximum EIRP applies to emissions from an above-ground opening associated with the underground environment. 2. For the augmentation of an above-ground broadcasting service and datacasting service in underground tunnels. |
| 39 | Aquatic animal tracking transmitters | 48–49 | 10 mW | |
| 40 | Radiodetermination transmitters operated in radiofrequency-shielded enclosures | <ol style="list-style-type: none"> 1. 5250–7000 2. 8500–10600 3. 24050–26500 4. 75000–85000 | 75 nW | <ol style="list-style-type: none"> 1. The maximum EIRP applies outside the shielded room enclosure. 2. The transmitter must meet the requirements of European Telecommunications Standards Institute (ETSI) Standard 302 372-1 as existing from time to time. |

| Item | Class of transmitter | Permitted operating frequency band (MHz) (lower limit exclusive, upper limit inclusive) | Maximum EIRP | Limitations |
|------|--|---|--|--|
| 41 | Personal alarm transmitters | 27.500–27.510 | 100 μ W | |
| 42 | Transmitters used with personal alarm transmitters operating in the frequency band 27.500–27.510 MHz | 27.500–27.510 | 500 mW | Each transmission must not exceed 4 seconds over a 60 second period. |
| 43 | Alarm transmitters | 344.8–345.2 | 1 mW | The average EIRP must not exceed 100 μ W: (a) if the length of a pulse train does not exceed 0.1 second — in the length of one complete pulse train; or (b) if the length of a pulse train exceeds 0.1 second — in the 0.1 second period during which the EIRP is at its maximum value; or (c) if a transmitter operates for more than 0.1 second — in the 0.1 second period during which the EIRP is at its maximum value. |
| 44 | Radio Local Area Network transmitters used indoors | 5150–5250 | 200 mW (averaged over the entire transmission burst) | 1. If the emission bandwidth is 1 MHz or greater, the radiated power spectral density in any 1 MHz is limited to 10 mW per MHz. 2. If the emission bandwidth is less than 1 MHz, the radiated power spectral density in any 4 kHz is limited to 40 μ W per 4 kHz. |

| Item | Class of transmitter | Permitted operating frequency band (MHz) (lower limit exclusive, upper limit inclusive) | Maximum EIRP | Limitations |
|------|--|---|--|--|
| 44A | Radio Local Area Network transmitters used indoors | 5250–5350 | 200 mW (averaged over the entire transmission burst) | <ol style="list-style-type: none"> 1. If the emission bandwidth is 1 MHz or greater, the spectral density in any 1 MHz is limited to 10 mW EIRP per MHz. 2. If the emission bandwidth is less than 1 MHz, the spectral density in any 4 kHz is limited to 40 μW EIRP per 4 kHz. 3. From 1 January 2006 devices operated for the first time must use Dynamic Frequency Selection (DFS) and Transmit Power Control (TPC). If TPC is not used then the maximum EIRP is limited to 100 mW. |
| 45 | Digital modulation transmitters | 915–928 (Align to GSM Gaurdband) | 1 W | <ol style="list-style-type: none"> 1. The radiated peak power spectral density in any 3 kHz is limited to 25 mW per 3 kHz. 2. The minimum 6 dB bandwidth must be at least 500 kHz. |
| 45A | Digital modulation transmitters | 2400–2483.5 | 4 W | <ol style="list-style-type: none"> 1. The radiated peak power spectral density in any 3 kHz is limited to 25 mW per 3 kHz. 2. The minimum 6 dB bandwidth must be at least 500 kHz. |
| 45B | Digital modulation transmitters | 5725–5850 | 4 W | <ol style="list-style-type: none"> 1. The radiated peak power spectral density in any 3 kHz is limited to 25 mW per 3 kHz. 2. The minimum 6 dB bandwidth must be at least 500 kHz. |

| Item | Class of transmitter | Permitted operating frequency band (MHz) (lower limit exclusive, upper limit inclusive) | Maximum EIRP | Limitations |
|------|---|---|---|---|
| 46 | Radio Local Area Network transmitters | 1. 5470–5600 2. 5650–5725 | 1 W (averaged over the entire transmission burst) | 1. The maximum radiated mean power density must not exceed 50 mW/MHz EIRP in any 1 MHz band. 2. Must use Dynamic Frequency Selection (DFS) and Transmit Power Control (TPC). If TPC is not implemented, then the maximum EIRP is limited to 500 mW. |
| 47 | Radiodetermination transmitters | 5725–5875 | 1 mW | |
| 48 | Radiodetermination transmitters | 76000–77000 | 25 W | |
| 49 | Medical implant communications systems transmitters | 401–406 | 25 μ W (averaged over the transmission burst within a reference bandwidth of 300 kHz) | 1. The maximum EIRP applies outside the body. 2. Systems must have a minimum of nine channels selectable by the system controller and spread across the whole band. 3. Implanted transmitters must only transmit under external control, except for medical implant events. 4. Systems must utilise a listen-before-transmit protocol. |

Note 1 The systems and associated medical implant communications systems transmitters mentioned in item 49 are devices that require marketing approval by the Therapeutic Goods Administration.

Note 2 A medical implant event is an occurrence or lack of occurrence, recognised by a medical implant device or a health care professional, that requires the immediate transmission of data by the medical implant communications systems transmitter to protect the safety or wellbeing of the person that the medical implant device has been implanted.

| | | | | |
|----|--|--|--------|--|
| 50 | Medical implant telemetry systems transmitters | 1. 401–402 2. 403.560–403.760 3. 405–406 | 100 nW | The maximum EIRP applies outside the body. |
|----|--|--|--------|--|

Note The systems and associated medical implant devices mentioned in item 50 are devices that require marketing approval by the Therapeutic Goods Administration.

| Item | Class of transmitter | Permitted operating frequency band (MHz) (lower limit exclusive, upper limit inclusive) | Maximum EIRP | Limitations |
|------|--|---|-----------------------|--|
| 51 | Data communications transmitters used outdoors | 59000–63000 | 150 W | <ol style="list-style-type: none"> 1. Transmitters are limited to land and maritime deployments. 2. Maximum transmitter power must be 20 mW or less. 3. Spurious emissions outside the band must be less than -30dBm/MHz. 4. For outdoor use only. |
| 51A | Data communications transmitters used indoors | 57000–66000 | 20 W | <ol style="list-style-type: none"> 1. Maximum transmitter power must be 20 mW or less. 2. Spurious emissions outside the band must be less than -30dBm/MHz. |
| 52 | Frequency hopping transmitters | 915–928[Align with GSM guardbands] | 1 W | A minimum of 20 hopping frequencies must be used. |
| 53 | Frequency hopping transmitters | 2400–2483.5 | 500 mW | A minimum of 15 hopping frequencies must be used. |
| 54 | Frequency hopping transmitters | 2400–2483.5 | 4 W | A minimum of 75 hopping frequencies must be used. |
| 55 | Frequency hopping transmitters | 5725–5850 | 4 W | A minimum of 75 hopping frequencies must be used. |
| 56 | Ultra-wideband short-range vehicle radar systems | 22000–26500 | See limitations | <ol style="list-style-type: none"> 1. The maximum radiated average power density is -41.3 dBm/MHz EIRP. 2. The maximum broadband radiated peak power density is 0 dBm/50 MHz EIRP. 3. Must meet the requirements of ETSI 302-288-1 as it applies from time to time. |
| 57 | Infrared transmitters | 187.5 THz–420 THz | 125 mW (output power) | |

