



## **CLASS ASSIGNMENT NO. 1 OF 2023**

### **Malaysian Communications and Multimedia Commission**

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## CLASS ASSIGNMENT NO. 1 OF 2023

### Class Assignment

In exercise of the powers conferred by section 169 of the Communications and Multimedia Act 1998 [Act 588] (“Act”), the Commission issues class assignments which confers rights on any person to use the frequency bands for the following devices:

- (1) mobile and broadband wireless access device as specified in the First Schedule;
- (2) short-range radiocommunications device (“SRD”) as specified in the Second Schedule;
- (3) trunked radio access device as specified in the Third Schedule;
- (4) personal radio service (“PRS”) device as specified in the Fourth Schedule;
- (5) cordless telephone device as specified in the Fifth Schedule;
- (6) two-way radio pager access device as specified in the Sixth Schedule;
- (7) radio telemetry access device as specified in the Seventh Schedule;
- (8) fixed- satellite service earth station as specified in the Eighth Schedule;
- (9) infrared device as specified in the Ninth Schedule;
- (10) remote controlled device as specified in the Tenth Schedule;
- (11) security device as specified in the Eleventh Schedule;
- (12) wireless microphone device as specified in the Twelfth Schedule;
- (13) free space optics (“FSO”) device as specified in the Thirteenth Schedule;
- (14) industrial, scientific and medical (“ISM”) device as specified in the Fourteenth Schedule;
- (15) radio frequency identification device (“RFID”) as specified in the Fifteenth Schedule;
- (16) active medical implant as specified in the Sixteenth Schedule;
- (17) aeronautical mobile telemetry access device as specified in Seventeenth Schedule;
- (18) mobile satellite access device as specified in the Eighteenth Schedule;
- (19) satellite broadcasting receiver device as specified in the Nineteenth Schedule;
- (20) terrestrial television broadcasting receiver device as specified in the Twentieth Schedule;
- (21) terrestrial radio broadcasting receiver device as specified in the Twenty-first Schedule;

- (22) one-way radio pager receiver device as specified in the Twenty-second Schedule;
- (23) satellite radionavigation receiver device as specified in the Twenty-third Schedule;
- (24) wireless closed circuit television (“CCTV”) access device as specified in the Twenty-fourth Schedule;
- (25) ultra- wideband (“UWB”) communication device as specified in the Twenty-fifth Schedule;
- (26) automotive radar device as specified in the Twenty-sixth Schedule;
- (27) inductive application device as specified in the Twenty-seventh Schedule;
- (28) satellite broadcasting receiver device (Direct-to-Home by MYTV Broadcasting Sdn Bhd) as specified in the Twenty-eighth Schedule;
- (29) personal locator beacon (“PLB”) device as specified in the Twenty-ninth Schedule; and
- (30) unmanned aircraft systems (“UAS”) device in the Thirtieth Schedule

### **Commencement**

1. These class assignments come into operation on 28 August 2023

### **Interpretation**

2. (a) In the class assignments, unless the context otherwise requires-

“Annexes of International Civil Aviation Organisation” means the establishment and maintenance of international Standards and Recommended Practices (SARPs), as well as Procedures for Air Navigation (PANS) of the Convention on International Civil Aviation (Chicago Convention);

“Designated frequency bands” means the frequency bands which are specified in paragraph 2 of each of the schedules in the class assignment;

“International Convention for the Safety of Life at Sea” means the International Convention for the Safety of Life at Sea concluded in London in 1974 concerning the safety of life at sea, and includes any subsequent convention, to which the Government is a party, and if any amendment to the Convention comes into operation with respect to Malaysia, references in the class assignments shall, unless the context otherwise requires, be construed as references to the Convention as amended;

“International Telecommunication Convention” means the Constitution and Convention of the International Telecommunication Union signed in Geneva in 1992 relating to telecommunications, and includes any subsequent Constitution and Convention, to which the Government is a party, and it extends to any radiocommunications regulations made under the Constitution and the Convention; and if any amendment to the Constitution and the Convention comes into operation with respect to Malaysia, references in the class assignments shall, unless the context otherwise requires, be construed as references to the Constitution and the Convention as amended; and

“Commission” means the Malaysian Communications and Multimedia Commission.

(b) Any term used in the class assignments shall, unless the context otherwise requires, have the same meaning as in the Act or subsidiary legislation made under the Act.

### **Protection**

3. The devices under the class assignments shall not be afforded protection from any radio frequency interference.

### **Conditions**

4. (a) The following conditions shall apply to all class assignments that confer rights on any person to use the frequency bands for the devices as specified in each of the schedules in this class assignment:

- i. a person subject to a class assignment shall take all necessary steps to ensure that no major interference or harmful interference is caused to other radiocommunications services and devices;
- ii. a person subject to a class assignment shall take all necessary steps to eliminate any minor interference, major interference or harmful interference, if such interference occurs;
- iii. a person subject to a class assignment shall ensure that devices causing major interference or harmful interference to cease operation until such time as the major interference or harmful interference has been eliminated;
- iv. a person subject to a class assignment shall ensure that no devices used or operated in that frequency band shall exceed the specified

output powers, emission parameters or coverage area as approved for the class assignment;

- v. a person subject to a class assignment shall ensure that the devices, its operation and arrangement comply with the requirements;
- vi. a person subject to a class assignment shall comply with the International Telecommunication Convention, the International Convention for the Safety of Life at Sea and the Annexes of International Civil Aviation Organisation, unless the Civil Aviation Authority of Malaysia files differences;
- vii. a person subject to a class assignment shall ensure that the devices comply with the Act and subsidiary legislation made under the Act and any mandatory standards registered by the Commission;
- viii. a person subject to a class assignment shall ensure that only devices certified by the Commission or its registered certifying agency under the Act and any subsidiary legislations made under the Act, shall be used or operated in the frequency band specified in the class assignment, and the certified devices shall bear a certification label as approved by the Commission; and
- ix. a person subject to a class assignment shall not operate a device contrary to the Act, any subsidiary legislations made under the Act, the Spectrum Plan or in such a way that endangers people, animals or equipment.

(b) Notwithstanding subparagraph 4(a)(viii) above, the devices under the Ninth, Nineteenth, Twentieth, Twenty-first, Twenty-second and Twenty-third Schedules shall not be required to be certified, unless the Commission issues standards or technical codes in respect of the same.

(c) The conditions in subparagraph 4(a) above are subject to any revision, amendment or revocation by the Commission.

(d) The specific conditions specified in each of the schedules shall be in addition to the conditions specified in subparagraph 4(a) above.



## **Use of Device and Frequency/Frequency Band for Other Purposes**

5. Use of device and frequency/ frequency band for the purpose other than specified in the schedules will require prior written approval from the Commission, on a case by case basis.

### **Certification of devices**

6. (a) All devices which are required to be certified under the class assignment shall be certified by the Commission or its registered certifying agency in accordance with the Communications and Multimedia (Technical Standards) Regulations 2000.

(b) The devices shall be certified by way of:

- i. compliance approval; or
- ii. special approval.

(c) Compliance approval, which is also referred to as type approval, is granted to a specific model of a device which has been certified as compliant with the specified standards or technical codes.

(d) Special approval may be granted to any device which is to be used exclusively by an applicant for any of the following purpose only:

- i. for the applicant's sole purpose;
- ii. for trials;
- iii. for market surveys, demonstration or exhibition;
- iv. research and development; or
- v. training.

(e) Any device which is granted with special approval may be used within defined parameters which may include location, technical specifications, time period, type or class of users or other conditions of usage as specified in the approval.

(f) The list of standards which specifies the technical requirements for certification of devices are accessible from the Commission's website at <https://www.mcmc.gov.my>.

(g) The certification of devices is carried out by a registered certifying agency for all communications equipment.

**Table for Class Assignment devices and conditions**

| Applications                                           | Frequency bands          | Maximum transmit power/<br>field strength/Conditions                                  | Reference/Remarks                                               |
|--------------------------------------------------------|--------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Short - range<br>Radiocommunication<br>Device<br>(SRD) | 3155 kHz to 3400 kHz     | 13.5 dB $\mu$ A/m at 10m                                                              | Refer to Second Schedule on<br>detailed conditions of operation |
|                                                        | 6765 kHz to 6795 kHz     | 100 mW Equivalent Isotropically<br>Radiated Power (EIRP)                              |                                                                 |
|                                                        | 10200 kHz to 11000 kHz   | 10 mW EIRP                                                                            |                                                                 |
|                                                        | 13553 kHz to 13567 kHz   | 100 mW EIRP                                                                           |                                                                 |
|                                                        | 26.957 MHz to 27.283 MHz | 100 mW EIRP                                                                           |                                                                 |
|                                                        | 40.660 MHz to 40.700 MHz | 1 W EIRP                                                                              |                                                                 |
|                                                        | 87.5 MHz to 108 MHz      | 50 nW ERP                                                                             |                                                                 |
|                                                        | 433 MHz to 435 MHz       | 100 mW EIRP                                                                           |                                                                 |
|                                                        | 916 MHz to 919 MHz       | 25 mW EIRP with duty cycle <1% or<br>Frequency Hopping or Listen Before<br>Talk (LBT) |                                                                 |
|                                                        | 919 MHz to 923 MHz       | 500 mW EIRP                                                                           |                                                                 |
|                                                        | 923 MHz to 924 MHz       | 500 mW EIRP with duty cycle <1% or<br>Frequency Hopping or LBT                        |                                                                 |
|                                                        | 1880 MHz to 1900 MHz     | 250 mW EIRP                                                                           |                                                                 |
|                                                        | 2400 MHz to 2500 MHz     | 500 mW EIRP                                                                           |                                                                 |
|                                                        | 5150 MHz to 5250 MHz     | 200 mW EIRP (For indoor and outdoor<br>use only)                                      |                                                                 |
|                                                        | 5150 MHz to 5350 MHz     | 1 W EIRP (For indoor use only)                                                        |                                                                 |
| 5470 MHz to 5650 MHz                                   | 1 W EIRP                 |                                                                                       |                                                                 |
| 5725 MHz to 5875 MHz                                   | 1 W EIRP                 |                                                                                       |                                                                 |

| Applications                                    | Frequency bands                                                       | Maximum transmit power/<br>field strength/Conditions                       | Reference/Remarks                                                                       |
|-------------------------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|                                                 | 5925 MHz to 6425 MHz                                                  | 25 mW EIRP<br>(For indoor and outdoor use)                                 |                                                                                         |
|                                                 |                                                                       | 250 mW EIRP<br>(For indoor use only)                                       |                                                                                         |
|                                                 | 24 GHz to 24.25 GHz                                                   | 1 W EIRP                                                                   |                                                                                         |
|                                                 | 57 GHz to 64 GHz                                                      | 10 W EIRP                                                                  |                                                                                         |
|                                                 | 76 GHz to 77 GHz                                                      | 5 W EIRP                                                                   |                                                                                         |
|                                                 | 122 GHz to 123 GHz                                                    | 1 W EIRP                                                                   |                                                                                         |
|                                                 | 244 GHz to 246 GHz                                                    | 1 W EIRP                                                                   |                                                                                         |
| Personal Radio Service<br>(PRS) device          | 26.965 MHz to 27.405 MHz                                              | Refer to tables in Fourth Schedule for<br>maximum permitted transmit power | Refer to Fourth Schedule on<br>detailed conditions of operation<br>and channelling plan |
|                                                 | 446.00625 MHz to 446.093750 MHz                                       |                                                                            |                                                                                         |
|                                                 | 446.103125 MHz to 446.196875 MHz                                      |                                                                            |                                                                                         |
| Cordless telephone device                       | 46.610 MHz to 46.970 MHz                                              | 50 mW EIRP                                                                 | Refer to Fifth Schedule on<br>detailed conditions of operation.                         |
|                                                 | 49.610 MHz to 49.970 MHz                                              | 50 mW EIRP                                                                 |                                                                                         |
|                                                 | 1880 MHz to 1900 MHz                                                  | 250 mW EIRP                                                                |                                                                                         |
|                                                 | 2400 MHz to 2483.5 MHz                                                | 100 mW EIRP                                                                |                                                                                         |
| Two-way radio pager<br>access device            | 152 MHz to 153 MHz                                                    | 1 W EIRP                                                                   | Refer to Sixth Schedule on<br>detailed conditions of operation.                         |
| Fixed- Satellite Service<br>(FSS) Earth Station | 3400 MHz to 4200 MHz (downlink) /<br>5925 MHz to 6725 MHz (uplink)    | Refer to tables in Eighth Schedule for<br>maximum permitted transmit power | Refer to Eighth Schedule on<br>detailed conditions of operation.                        |
|                                                 | 10700 MHz to 12750 MHz (downlink)<br>/13750 MHz to 14500 MHz (uplink) |                                                                            |                                                                                         |

| Applications                  | Frequency bands                                                        | Maximum transmit power/<br>field strength/Conditions | Reference/Remarks                                                  |
|-------------------------------|------------------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------|
|                               | 19700 MHz to 21200 MHz (downlink) /<br>29500 MHz to 30000 MHz (uplink) |                                                      |                                                                    |
| Infrared device               | 187.5 THz to 420 THz                                                   | 125 mW EIRP                                          | Refer to Ninth Schedule on<br>detailed conditions of operation.    |
| Remote controlled device      | 26.965 MHz to 27.275 MHz                                               | 50 mW EIRP                                           | Refer to Tenth Schedule on<br>detailed conditions of operation.    |
|                               | 40 MHz                                                                 |                                                      |                                                                    |
|                               | 47 MHz                                                                 |                                                      |                                                                    |
|                               | 49 MHz                                                                 |                                                      |                                                                    |
|                               | 303 MHz to 320 MHz                                                     |                                                      |                                                                    |
|                               | 433 MHz to 435 MHz                                                     |                                                      |                                                                    |
| Security device               | 3 kHz to 195 kHz                                                       | 50 mW EIRP                                           | Refer to Eleventh Schedule on<br>detailed conditions of operation. |
|                               | 228.0063 MHz to 228.9937 MHz                                           |                                                      |                                                                    |
|                               | 303 MHz to 320 MHz                                                     |                                                      |                                                                    |
|                               | 400 MHz to 402 MHz                                                     |                                                      |                                                                    |
|                               | 433 MHz to 435 MHz                                                     |                                                      |                                                                    |
|                               | 76 GHz to 77 GHz                                                       |                                                      |                                                                    |
| Wireless microphone<br>device | 26.95728 MHz to 27.28272 MHz                                           | 50 mW EIRP                                           | Refer to Twelfth Schedule on<br>detailed conditions of operation.  |
|                               | 40.435 MHz to 40.925 MHz                                               |                                                      |                                                                    |
|                               | 87.5 MHz to 108 MHz                                                    | 50 nW EIRP                                           |                                                                    |
|                               | 174 MHz to 230 MHz                                                     | 50 mW EIRP                                           |                                                                    |
|                               | 470 MHz to 694 MHz                                                     |                                                      |                                                                    |
|                               | 2400 MHz to 2500 MHz                                                   |                                                      |                                                                    |
|                               | 5725 MHz to 5850 MHz                                                   |                                                      |                                                                    |

| Applications                                    | Frequency bands                           | Maximum transmit power/<br>field strength/Conditions                                                                                                           | Reference/Remarks                                                 |
|-------------------------------------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Free Space Optic (FSO) device                   | 193.5484 THz                              | 650 mW EIRP                                                                                                                                                    | Refer to Thirteenth Schedule on detailed conditions of operation. |
|                                                 | 352.9412 THz                              |                                                                                                                                                                |                                                                   |
| Industrial, Scientific and Medical (ISM) device | 6765 kHz to 6795 kHz                      | 500mW EIRP                                                                                                                                                     | Refer to Fourteenth Schedule on detailed conditions of operation. |
|                                                 | 13.553 MHz to 13.567 MHz                  |                                                                                                                                                                |                                                                   |
|                                                 | 26.957 MHz to 27.283 MHz                  |                                                                                                                                                                |                                                                   |
|                                                 | 40.66 MHz to 40.70 MHz                    |                                                                                                                                                                |                                                                   |
|                                                 | 2400 MHz to 2500 MHz                      |                                                                                                                                                                |                                                                   |
|                                                 | 5725 MHz to 5875 MHz                      |                                                                                                                                                                |                                                                   |
|                                                 | 24 GHz to 24.25 GHz                       |                                                                                                                                                                |                                                                   |
|                                                 | 61 GHz to 61.5 GHz                        |                                                                                                                                                                |                                                                   |
|                                                 | 122 GHz to 123 GHz;<br>244 GHz to 246 GHz |                                                                                                                                                                |                                                                   |
| Radio Frequency Identification Device (RFID)    | 13.553 MHz to 13.567 MHz                  | 100 mW EIRP                                                                                                                                                    | Refer to Fifteenth Schedule on detailed conditions of operation.  |
|                                                 | 433 MHz to 435 MHz                        | 100 mW EIRP                                                                                                                                                    |                                                                   |
|                                                 | 919 MHz to 923 MHz                        | 2 W ERP                                                                                                                                                        |                                                                   |
|                                                 | 2400 MHz to 2500 MHz                      | 500 mW EIRP                                                                                                                                                    |                                                                   |
| Active medical implant                          | 9 kHz to 315 kHz                          | 30 dB $\mu$ A/m at 10 m                                                                                                                                        | Refer to Sixteenth Schedule on detailed conditions of operation.  |
|                                                 | 401 MHz to 402 MHz                        | 25 $\mu$ W ERP for devices with Adaptive Frequency Agility (AFA) and Listen Before Talk (LBT)<br>250 nW ERP for devices using Low Power Low Duty Cycle (LPLDC) |                                                                   |
|                                                 | 402 MHz to 405 MHz                        | 25 $\mu$ W ERP                                                                                                                                                 |                                                                   |

| Applications                                   | Frequency bands          | Maximum transmit power/<br>field strength/Conditions                              | Reference/Remarks                                                                    |
|------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                                | 405 MHz to 406 MHz       | 25 $\mu$ W ERP for devices with AFA and LBT<br>250 nW ERP for devices using LPLDC |                                                                                      |
| Aeronautical mobile<br>telemetry access device | 2400 MHz to 2483.5 MHz   | 100 mW EIRP                                                                       | Refer to Seventeenth Schedule on detailed conditions of operation.                   |
|                                                | 5150 MHz to 5350 MHz     |                                                                                   |                                                                                      |
|                                                | 5470 MHz to 5725 MHz     |                                                                                   |                                                                                      |
|                                                | 5725 MHz to 5825 MHz     |                                                                                   |                                                                                      |
| Mobile satellite access<br>device              | 1518 MHz to 1559 MHz     | 7 W EIRP                                                                          | Refer to Eighteenth Schedule on detailed conditions of operation.                    |
|                                                | 1610 MHz to 1660.5 MHz   |                                                                                   |                                                                                      |
|                                                | 1668 MHz to 1668.4 MHz   |                                                                                   |                                                                                      |
|                                                | 1980 MHz to 2010 MHz     |                                                                                   |                                                                                      |
|                                                | 2170 MHz to 2200 MHz     |                                                                                   |                                                                                      |
|                                                | 2483.5 MHz to 2500 MHz   |                                                                                   |                                                                                      |
| Satellite broadcasting<br>receiver device      | 10.7 GHz to 10.95 GHz    | Receive only                                                                      | Refer to Nineteenth and Twenty-eighth Schedules on detailed conditions of operation. |
|                                                | 10.95 GHz to 11.20 GHz   |                                                                                   |                                                                                      |
|                                                | 11.20 GHz to 11.45 GHz   |                                                                                   |                                                                                      |
|                                                | 11.45 GHz to 11.70 GHz   |                                                                                   |                                                                                      |
|                                                | 11.463 GHz to 11.517 GHz |                                                                                   |                                                                                      |
|                                                | 11.70 GHz to 11.95 GHz   |                                                                                   |                                                                                      |
|                                                | 12.20 GHz to 12.50 GHz   |                                                                                   |                                                                                      |
| Satellite radionavigation<br>receiver device   | 1164 MHz to 1400 MHz     | Receive only                                                                      | Refer to Twenty-third Schedule on detailed conditions of operation.                  |
|                                                | 1559 MHz to 1610 MHz     |                                                                                   |                                                                                      |
|                                                | 5000 MHz to 5030 MHz     |                                                                                   |                                                                                      |

| Applications                                                                  | Frequency bands       | Maximum transmit power/<br>field strength/Conditions | Reference/Remarks                                                     |
|-------------------------------------------------------------------------------|-----------------------|------------------------------------------------------|-----------------------------------------------------------------------|
| CCTV access device                                                            | 2400 MHz to 2500 MHz  | 1 W EIRP                                             | Refer to Twenty-fourth Schedule on detailed conditions of operation.  |
|                                                                               | 4940 MHz to 4990 MHz  |                                                      |                                                                       |
|                                                                               | 5150 MHz to 5350 MHz  |                                                      |                                                                       |
|                                                                               | 5650 MHz to 5725 MHz  |                                                      |                                                                       |
|                                                                               | 5725 MHz to 5875 MHz  |                                                      |                                                                       |
| Ultra - Wideband (UWB) communication device (Generic and road/ rail vehicles) | 3100 MHz to 3400 MHz  | -36.00 dBm EIRP                                      | Refer to Twenty-fifth Schedule on detailed conditions of operation.   |
|                                                                               | 3400 MHz to 3800 MHz  | -40.00 dBm EIRP                                      |                                                                       |
|                                                                               | 3800 MHz to 6000 MHz  | -30.00 dBm EIRP                                      |                                                                       |
|                                                                               | 6000 MHz to 8500 MHz  | 0.00 dBm EIRP/ -13.3dBm EIRP (road/ rail vehicle)    |                                                                       |
|                                                                               | 8500 MHz to 10600 MHz | -25.00 dBm EIRP                                      |                                                                       |
| Automotive radar device                                                       | 21.65 GHz to 22 GHz   | 0.00 dBm EIRP                                        | Refer to Twenty-sixth Schedule on detailed conditions of operation.   |
|                                                                               | 22 GHz to 29.5 GHz    | 0.00 dBm EIRP                                        |                                                                       |
|                                                                               | 76 GHz to 77 GHz      | 55.00 dBm EIRP                                       |                                                                       |
|                                                                               | 77 GHz to 81 GHz      | 55.00 dBm EIRP                                       |                                                                       |
| Inductive application device                                                  | 9 kHz to 90 kHz       | 72 dBuA/m at 10 m                                    | Refer to Twenty-seventh Schedule on detailed conditions of operation. |
|                                                                               | 90 kHz to 119 kHz     | 42 dBuA/m at 10 m                                    |                                                                       |
|                                                                               | 119 kHz to 135 kHz    | 66 dBuA/m at 10 m                                    |                                                                       |
|                                                                               | 135 kHz to 140 kHz    | 42 dBuA/m at 10 m                                    |                                                                       |
|                                                                               | 140 kHz to 148.5 kHz  | 37.7 dBuA/m at 10 m                                  |                                                                       |
|                                                                               | 315 kHz to 400 kHz    | -5 dBuA/m at 10 m                                    |                                                                       |
|                                                                               | 400 kHz to 600 kHz    | -8 dBuA/m at 10 m                                    |                                                                       |
|                                                                               | 984 kHz to 7484 kHz   | 9 dBuA/m at 10 m                                     |                                                                       |

| Applications                           | Frequency bands        | Maximum transmit power/<br>field strength/Conditions                                                                                                                                     | Reference/Remarks                                                   |
|----------------------------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
|                                        | 3155 kHz to 3400 kHz   | 13.5 dBuA/m at 10 m                                                                                                                                                                      |                                                                     |
|                                        | 6765 kHz to 6795 kHz   | 42 dBuA/m at 10 m                                                                                                                                                                        |                                                                     |
|                                        | 7400 kHz to 8800 kHz   | 9 dBuA/m at 10 m                                                                                                                                                                         |                                                                     |
|                                        | 10200 kHz to 11000 kHz | 9 dBuA/m at 10 m                                                                                                                                                                         |                                                                     |
|                                        | 13553 kHz to 13567 kHz | 42 dBuA/m at 10 m                                                                                                                                                                        |                                                                     |
|                                        | 26957 kHz to 27283 kHz | 42 dBuA/m at 10 m                                                                                                                                                                        |                                                                     |
|                                        | 148.5 kHz to 30 MHz    | -5 dBuA/m at 10 m                                                                                                                                                                        |                                                                     |
|                                        | 49 MHz                 | -2.8 dB uA/m at 10 m                                                                                                                                                                     |                                                                     |
| Personal Locator Beacon (PLB) device   | 406.0 MHz to 406.1 MHz | The transmitter output power shall be within the limits of $5W \pm 2dB$ (35 dBm - 39 dBm) measured into a 50-Ohm load, with a voltage standing-wave ratio (VSWR) not greater than 1.25:1 | Refer to Twenty-ninth Schedule on detailed conditions of operation. |
|                                        | 121.5 MHz              | Between 25 and 100 mW Effective Radiated Peak Envelope Power (ERPEP).                                                                                                                    |                                                                     |
| Unmanned Aircraft Systems (UAS) device | 433 MHz to 435 MHz     | 100 mW EIRP                                                                                                                                                                              | Refer to Thirtieth Schedule on detailed conditions of operation.    |
|                                        | 2400 MHz to 2500 MHz   | 500 mW EIRP                                                                                                                                                                              |                                                                     |
|                                        | 5725 MHz to 5875 MHz   | 1 W EIRP                                                                                                                                                                                 |                                                                     |
|                                        | 24.05 GHz to 24.25 GHz | 100 mW EIRP                                                                                                                                                                              |                                                                     |



**First Schedule – Mobile and Broadband Wireless Access Device**

1. Definition
  - (a) In this class assignment, “mobile and broadband wireless access device” means a device communicating with a radio base station provided by a licensee in the designated frequency bands.
  - (b) In this class assignment, “mobile and broadband wireless access device” includes cellular mobile access device and broadband wireless access device.
  - (c) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.
  
2. Frequency bands
  - (a) Mobile and broadband wireless access devices shall only utilise the same frequency bands that was assigned by way of a spectrum assignment or an apparatus assignment for the purpose of receiving and transmitting within the frequency bands assigned to the radio base station and such utilisation of the frequency bands, amongst other uses, is on a shared non-exclusive basis.
  
3. Class assignment
  - (a) This class assignment confers rights on any person to operate a mobile and broadband wireless access device to communicate only with a radio base station subject to the operation of the radio base station being authorised by a spectrum assignment or an apparatus assignment.

**Second Schedule – Short-range Radiocommunication Device**

1. Definition
  - (a) In this class assignment, “SRD” means a radiocommunications device that provides either unidirectional or bi-directional communication for mobile and fixed applications in the designated frequency bands.
  - (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.
2. Frequency bands
  - (a) SRD shall only utilise any of the frequency bands as specified in the second column of Table 2-1 that is assigned for this class assignment, amongst other uses, on a shared non-exclusive basis.
3. Class assignment
  - (a) This class assignment confers rights on any person to operate a SRD subject to the:
    - i. conditions as specified in paragraph 4 of this schedule; and
    - ii. device operating within the frequency bands as specified in paragraph 2 of this schedule.
4. Condition(s)
  - (a) Maximum Power
    - i. The maximum power shall not exceed the values as specified in the third column of Table 2-1; and

(b) Operational Restrictions

For SRD operating within the 5250 MHz to 5350 MHz and 5470 MHz to 5650 MHz frequency bands, the devices shall use Dynamic Frequency Selection (“DFS”) and Transmitter Power Control (“TPC”).

TABLE 2-1  
Frequency Bands and Maximum Power

| Item | Frequency Bands            | Maximum Power                                                | Power Spectral Density (PSD) |
|------|----------------------------|--------------------------------------------------------------|------------------------------|
| 1.   | 3155 kHz to 3400 kHz       | 13.5 dB $\mu$ A/m at 10m                                     | -                            |
| 2.   | 6765 kHz to 6795 kHz       | 100 mW EIRP                                                  | -                            |
| 3.   | 10200 kHz to 11000 kHz     | 10 mW EIRP                                                   | -                            |
| 4.   | 13553 kHz to 13567 kHz     | 100 mW EIRP                                                  | -                            |
| 5.   | 26.9570 MHz to 27.2830 MHz | 100 mW EIRP                                                  | -                            |
| 6.   | 40.660 MHz to 40.7 MHz     | 1 W EIRP                                                     | -                            |
| 7.   | 87.5 MHz to 108 MHz        | 50 nW ERP                                                    | -                            |
| 8.   | 433 MHz to 435 MHz         | 100 mW EIRP                                                  | -                            |
| 9.   | 916 MHz to 919 MHz         | 25 mW EIRP with duty cycle of <1%, Frequency Hopping or LBT  | -                            |
| 10.  | 919 MHz to 923 MHz         | 500 mW EIRP                                                  | -                            |
| 11.  | 923 MHz to 924 MHz         | 500 mW EIRP with duty cycle of <1%, Frequency Hopping or LBT | -                            |
| 12.  | 1880 MHz to 1900 MHz       | 250 mW EIRP                                                  | -                            |
| 13.  | 2400 MHz to 2500 MHz       | 500 mW EIRP                                                  | -                            |

| Item | Frequency Bands      | Maximum Power                                 | Power Spectral Density (PSD)                                                                  |
|------|----------------------|-----------------------------------------------|-----------------------------------------------------------------------------------------------|
| 14.  | 5150 MHz to 5250 MHz | 200 mW EIRP (For indoor and outdoor use only) | -                                                                                             |
| 15.  |                      | 1 W EIRP (For indoor use only)                | -                                                                                             |
| 16.  | 5250 MHz to 5350 MHz | 1 W EIRP (For indoor use only)                | 10 mW/MHz                                                                                     |
| 17.  | 5470 MHz to 5650 MHz | 1 W EIRP                                      | 10 mW/MHz                                                                                     |
| 18.  | 5725 MHz to 5875 MHz | 1 W EIRP                                      | -                                                                                             |
| 19.  | 5925 MHz to 6425 MHz | 25 mW EIRP<br>(For indoor and outdoor use)    | 1.25 mW/MHz<br>Narrowband usages<br>(channel bandwidths below 20MHz) are limited to 10 mW/MHz |
|      |                      | 250 mW EIRP<br>(For indoor use only)          | 12.5 mW/MHz                                                                                   |
| 20.  | 24 GHz to 24.25 GHz  | 1 W EIRP                                      | -                                                                                             |
| 21.  | 57 GHz to 64 GHz     | 10 W EIRP                                     | -                                                                                             |
| 22.  | 76 GHz to 77 GHz     | 5 W EIRP                                      | -                                                                                             |
| 23.  | 122 GHz to 123 GHz   | 1 W EIRP                                      | -                                                                                             |
| 24.  | 244 GHz to 246 GHz   | 1 W EIRP                                      | -                                                                                             |

**Third Schedule –Trunked Radio Access Device**

1. Definition

- (a) In this class assignment, “trunked radio access device” means a device communicating with a trunked radio base station provided by a licensee in which the communications traffic may pass through any of the channels automatically assigned by the trunked radio system from a trunked group of channels served by a trunked radio base station in the designated frequency bands.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) A trunked radio access device shall only utilise the same frequency bands that was assigned by way of an apparatus assignment for the purpose of receiving and transmitting within the frequency bands and such utilisation of the frequency bands, amongst other uses, is on a shared non-exclusive basis.

3. Class assignment

- (a) This class assignment confers rights on any person to operate a trunked radio access device to communicate only with a trunked radio base station, subject to the:
  - i. condition as specified in paragraph 4 of this schedule; and
  - ii. operation of the trunked radio base station being authorised by an apparatus assignment.

4. Condition(s)

- (a) The maximum ERP shall not exceed 25 W.

**Fourth Schedule – Personal Radio Service Device**

1. Definition
  - (a) In this class assignment, “PRS device” means a two-way radiocommunications device operating in the designated frequency bands.
  - (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.
  
2. Frequency bands
  - (a) A PRS device shall only utilise any of the following frequency bands assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:
    - i. 26.965000 MHz to 27.405000 MHz;
    - ii. 446.006250 MHz to 446.093750 MHz; or
    - iii. 446.103125 MHz to 446.196875 MHz.
  
3. Class assignment
  - (a) This class assignment confers rights on any person to operate a PRS device subject to:
    - i. the conditions as specified in paragraph 4 of this schedule; and
    - ii. the device operating within the frequency bands as specified in the second column of Tables 4-1, 4-2, and 4-3.
  
4. Condition(s)
  - (a) Channel plan
    - i. The channel plan as specified in Tables 4-1, 4-2, and 4-3 shall be complied with;

- (b) Modulation type and channel spacing
  - i. The modulation type shall be as specified in the third column of Tables 4-1, 4-2, and 4-3; and
  - ii. The maximum channel spacing shall be as specified in the:
    - (a) first and second sub-columns of the fifth column of Table 4-1; and
    - (b) fifth column of Tables 4-2, and 4-3;
- (c) Reserved channels
  - i. The channels as specified in the sixth column of Tables 4-1 shall be reserved for emergency and calling use;
- (d) Encryption device
  - i. No encryption devices are to be employed on any of the channels as specified in Tables 4-1, 4-2, and 4-3;
- (e) Maximum transmission period
  - i. Transmission for voice shall not exceed 180 seconds in duration for each transmission; and
  - ii. Transmission, other than voice, shall not exceed 3 seconds in duration for each transmission;
- (f) Call signs
  - i. No call signs are to be utilised other than in a field of operation where such call signs are required;
- (g) Telephone interconnect
  - i. No connection of a PRS device to a telephony service is authorised;

- (h) Operation restrictions
  - i. No person shall operate a PRS device:
    - (a) in such a way that would cause unnecessary alarm or serious affront to another person; or
    - (b) to harass or denigrate another person;
- (i) Commandeer
  - i. A PRS device may be commandeered to assist in the case of:
    - (a) emergency;
    - (b) national interest; or
    - (c) danger to person or property; and
- (j) The maximum EIRP shall not exceed the values as specified in the:
  - i. first and second sub columns of the fourth column of Table 4-1; and
  - ii. fourth column in Tables 4-2 and 4-3.

TABLE 4-1  
**27 MHz Citizen Band PRS Frequencies**  
 (A medium-range simplex radiocommunications service)

| Channel | Frequency (MHz) | Modulation Type | Peak power (Watts) (Maximum ERP) |                      | Channel Spacing (kHz)   |                      | Reserved Channel |
|---------|-----------------|-----------------|----------------------------------|----------------------|-------------------------|----------------------|------------------|
|         |                 |                 | Double Side Band: AM/FM          | Single Side Band: AM | Double Side Band: AM/FM | Single Side Band: AM |                  |
| 1       | 26.9650         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 2       | 26.9750         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 3       | 26.9850         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 4       | 27.0050         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 5       | 27.0150         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 6       | 27.0250         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |



| Channel | Frequency (MHz) | Modulation Type | Peak power (Watts) (Maximum ERP) |                      | Channel Spacing (kHz)   |                      | Reserved Channel |
|---------|-----------------|-----------------|----------------------------------|----------------------|-------------------------|----------------------|------------------|
|         |                 |                 | Double Side Band: AM/FM          | Single Side Band: AM | Double Side Band: AM/FM | Single Side Band: AM |                  |
| 7       | 27.0350         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 8       | 27.0550         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 9       | 27.0650         | AM / FM         | 4                                | 12                   | 6                       | 3                    | Emergency        |
| 10      | 27.0750         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 11      | 27.0850         | AM / FM         | 4                                | 12                   | 6                       | 3                    | Calling          |
| 12      | 27.1050         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 13      | 27.1150         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 14      | 27.1250         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 15      | 27.1350         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 16      | 27.1550         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 17      | 27.1650         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 18      | 27.1750         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 19      | 27.1850         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 20      | 27.2050         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 21      | 27.2150         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 22      | 27.2250         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 23      | 27.2350         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 24      | 27.2450         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 25      | 27.2550         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 26      | 27.2650         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 27      | 27.2750         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 28      | 27.2850         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 29      | 27.2950         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 30      | 27.3050         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 31      | 27.3150         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |

| Channel | Frequency (MHz) | Modulation Type | Peak power (Watts) (Maximum ERP) |                      | Channel Spacing (kHz)   |                      | Reserved Channel |
|---------|-----------------|-----------------|----------------------------------|----------------------|-------------------------|----------------------|------------------|
|         |                 |                 | Double Side Band: AM/FM          | Single Side Band: AM | Double Side Band: AM/FM | Single Side Band: AM |                  |
| 32      | 27.3250         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 33      | 27.3350         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 34      | 27.3450         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 35      | 27.3550         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 36      | 27.3650         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 37      | 27.3750         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 38      | 27.3850         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 39      | 27.3950         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |
| 40      | 27.4050         | AM / FM         | 4                                | 12                   | 6                       | 3                    |                  |

TABLE 4-2

**Analog Personal Mobile Radio 446 MHz (Analog PMR 446)**

(A short-range simplex radiocommunications service)

| Channel | Frequency (MHz) | Modulation Type | Peak power (Watts) (Maximum ERP) | Channel Spacing (kHz) |
|---------|-----------------|-----------------|----------------------------------|-----------------------|
| 1       | 446.00625       | FM              | 0.5                              | 12.5                  |
| 2       | 446.01875       | FM              | 0.5                              | 12.5                  |
| 3       | 446.03125       | FM              | 0.5                              | 12.5                  |
| 4       | 446.04375       | FM              | 0.5                              | 12.5                  |
| 5       | 446.05625       | FM              | 0.5                              | 12.5                  |
| 6       | 446.06875       | FM              | 0.5                              | 12.5                  |
| 7       | 446.08125       | FM              | 0.5                              | 12.5                  |
| 8       | 446.09375       | FM              | 0.5                              | 12.5                  |

TABLE 4-3

**Digital Personal Mobile Radio 446 MHz (Digital PMR 446)**

(A short-range simplex radiocommunications service)

| <b>Channel</b> | <b>Frequency<br/>(MHz)</b> | <b>Modulation<br/>Type</b> | <b>Peak power<br/>(Watts)<br/>(Maximum<br/>ERP)</b> | <b>Channel<br/>Spacing<br/>(kHz)</b> |
|----------------|----------------------------|----------------------------|-----------------------------------------------------|--------------------------------------|
| 1              | 446.103125                 | 4FSK                       | 0.5                                                 | 6.25                                 |
| 2              | 446.109375                 | 4FSK                       | 0.5                                                 | 6.25                                 |
| 3              | 446.115625                 | 4FSK                       | 0.5                                                 | 6.25                                 |
| 4              | 446.121875                 | 4FSK                       | 0.5                                                 | 6.25                                 |
| 5              | 446.128125                 | 4FSK                       | 0.5                                                 | 6.25                                 |
| 6              | 446.134375                 | 4FSK                       | 0.5                                                 | 6.25                                 |
| 7              | 446.140625                 | 4FSK                       | 0.5                                                 | 6.25                                 |
| 8              | 446.146875                 | 4FSK                       | 0.5                                                 | 6.25                                 |
| 9              | 446.153125                 | 4FSK                       | 0.5                                                 | 6.25                                 |
| 10             | 446.159375                 | 4FSK                       | 0.5                                                 | 6.25                                 |
| 11             | 446.165625                 | 4FSK                       | 0.5                                                 | 6.25                                 |
| 12             | 446.171875                 | 4FSK                       | 0.5                                                 | 6.25                                 |
| 13             | 446.178125                 | 4FSK                       | 0.5                                                 | 6.25                                 |
| 14             | 446.184375                 | 4FSK                       | 0.5                                                 | 6.25                                 |
| 15             | 446.190625                 | 4FSK                       | 0.5                                                 | 6.25                                 |
| 16             | 446.196875                 | 4FSK                       | 0.5                                                 | 6.25                                 |

**Fifth Schedule – Cordless Telephone Device**

1. Definition

- (a) In this class assignment, “cordless telephone device” means a two-way low power mobile or portable device which communicates with a local base station in the designated frequency bands and is directly connected to a licensee.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) A cordless telephone device shall only utilise any of the frequency bands as specified in the second column of Table 5-1 that is assigned for this class assignment, amongst other uses, on a shared non-exclusive basis.

3. Class assignment

- (a) This class assignment confers rights on any person to operate a cordless telephone device subject to the:
  - i. condition as specified in paragraph 4 of this schedule; and
  - ii. device operating within the frequency bands as specified in paragraph 2 of this schedule.

4. Condition(s)

- (a) The maximum EIRP shall not exceed the values as specified in the third column of Table 5-1.

TABLE 5-1  
**Frequency Bands and Maximum EIRP**

| <b>Item</b> | <b>Frequency Bands (MHz)</b> | <b>Maximum EIRP</b> |
|-------------|------------------------------|---------------------|
| 1.          | 46.610 MHz to 46.970 MHz     | 50 mW               |
| 2.          | 49.610 MHz to 49.970 MHz     | 50 mW               |
| 3.          | 1880 MHz to 1900 MHz         | 250 mW              |
| 4.          | 2400 MHz to 2483.5 MHz       | 100 mW              |

**Sixth Schedule – Two-Way Radio Pager Access Device**

1. Definition

- (a) In this class assignment, “two-way radio pager access device” means a two-way radiocommunications device communicating with a paging base station provided by a licensee for receiving or sending a tone, voice, numeric or alphanumeric message in the designated frequency bands.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) A two-way radio pager access device shall only utilise the 152 MHz to 153 MHz frequency band assigned for this class assignment, amongst other uses, on a shared non-exclusive basis.

3. Class assignment

- (a) This class assignment confers rights on any person to operate a two-way radio pager access device to communicate only with a paging base station subject to the:
  - i. condition as specified in paragraph 4 of this schedule;
  - ii. device operating within the frequency band as specified in paragraph 2 of this schedule; and
  - iii. operation of the paging base station being authorised by an apparatus assignment.

4. Condition(s)

- (a) The maximum EIRP shall not exceed 1 W.

**Seventh Schedule – Radio Telemetry Access Device**

1. Definition

- (a) In this class assignment, “radio telemetry access device” means a one or two-way radiocommunications device communicating with a fixed station provided by a licensee for automatic or on request reporting of measurements or records through radio connectivity served by a fixed station in the designated frequency bands.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) A radio telemetry access device shall only utilise the same frequency bands that was assigned by way of an apparatus assignment for the purpose of receiving and transmitting within the frequency bands and such utilisation of the frequency bands, amongst other uses, is on a shared non-exclusive basis.

3. Class assignment

- (a) This class assignment confers rights on any person to operate a radio telemetry access device to communicate only with a radio telemetry base station subject to the operation of the radio telemetry base station being authorised by an apparatus assignment.

**Eighth Schedule – Fixed-Satellite Service Earth Station**

1. Definition

- (a) In this class assignment:
  - i. “Fixed-satellite service (“FSS”) earth station” means a fixed/portable ground station used for Very Small Aperture Terminal (“VSAT”) and/or Hub and intended for communication with one or more space stations provided by a licensee in the designated frequency bands;
  - ii. “VSAT” means a two-way earth station that transmits and receives data from FSS; and
  - iii. “Hub” means a central FSS earth station connecting to multiple VSAT within a compound of a designated location.
  
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) An FSS earth station used for VSAT and/or Hub shall only utilise the frequency bands as per Table 8-1 assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:

TABLE 8-1  
**Frequency Bands**

| <b>Downlink Frequency (MHz)</b> | <b>Uplink Frequency (MHz)</b> | <b>FSS Earth Station</b> |
|---------------------------------|-------------------------------|--------------------------|
| 3400 to 3700                    | 6425 to 6725                  | VSAT and Hub             |



| Downlink Frequency (MHz) | Uplink Frequency (MHz) | FSS Earth Station |
|--------------------------|------------------------|-------------------|
| 3700 to 4200             | 5925 to 6425           | VSAT only         |
| 10700 to 10950           | 13750 to 14500         |                   |
| 10950 to 11200           |                        |                   |
| 11200 to 11450           |                        |                   |
| 11450 to 11700           |                        |                   |
| 11700 to 12200           |                        |                   |
| 12200 to 12750           |                        |                   |
| 19700 to 21200           | 29500 to 30000         |                   |

3. Class assignment

- (a) This class assignment confers rights on any person to operate a FSS earth station subject to:
- i. operating within the frequency bands as specified in paragraph 2 of this schedule; and
  - ii. the conditions as specified in paragraph 4 of this schedule.

4. Condition(s)

- (a) License requirement
- i. Operation of FSS earth station must be provided by valid Network Service Provider and/or Network Facilities Provider license holder.
- (b) Use of Frequency
- i. The satellite systems operating in the designated frequency bands shall not exceed the values of power limits in Article 21 and Article 22 of the ITU Radio Regulations;
  - ii. The use of the frequency bands is on a non-protection and non-interference basis, in which priority shall be given to current and future use of frequency assignments by Malaysian satellite network filings;

- iii. The use of the frequency bands shall not restrict and impose constraints for the current and future use by the Malaysian Government; and
- iv. No compensation will be given should there be any policy change in the future.

(c) Connecting space station

- i. FSS earth station connecting to any space station which has completed coordination with Malaysian satellite network filing(s) and the frequencies are registered in the ITU Master International Frequency Register (MIFR).

(d) Type of FSS earth station

- i. Type of FSS earth station for designated frequency bands is as specified in the third column of Table 8-1.

(e) Maximum antenna diameter

- i. The maximum antenna diameter for FSS earth station used is as specified in the third column of Table 8-2.

TABLE 8-2  
**Maximum Antenna Diameter**

| Downlink Frequency (MHz) | Uplink Frequency (MHz) | Maximum antenna diameter (metre) |                                 |
|--------------------------|------------------------|----------------------------------|---------------------------------|
|                          |                        | VSAT                             | Hub                             |
| 3400 to 3700             | 6425 to 6725           | No maximum limit                 |                                 |
| 3700 to 4200             | 5925 to 6425           | 2.4                              | Subject to Apparatus Assignment |
| 10700 to 10950           | 13750 to 14500         | 1.2                              | Subject to Apparatus Assignment |
| 10950 to 11200           |                        |                                  |                                 |
| 11200 to 11450           |                        |                                  |                                 |
| 11450 to 11700           |                        |                                  |                                 |
| 11700 to 12200           |                        |                                  |                                 |
| 12200 to 12750           |                        |                                  |                                 |
| 19700 to 21200           | 29500 to 30000         |                                  |                                 |

- (f) Registration to the Commission is compulsory for every FSS earth station used as VSAT and Hub.
- (g) Operation of FSS earth station for Hub operating in the 3400 MHz to 3700 MHz (downlink) and 6425 MHz to 6725 MHz (uplink) frequency bands is limited to stations located at the locations in Table 8-3.

TABLE 8-3  
**FSS Hub Station Location**

| No | FSS Hub Station Location                                        | GPS                              |
|----|-----------------------------------------------------------------|----------------------------------|
| 1. | All Asia Broadcast Centre,<br>Bukit Jalil, Selangor             | 3°03'5.07" N<br>101°42'0.53" E   |
| 2. | MEASAT Teleport and<br>Broadcast Centre, Cyberjaya,<br>Selangor | 2°56'5.00" N<br>101°39'29.00" E  |
| 3. | TSGI Cyberport, Cyberjaya,<br>Selangor                          | 2°56'14.00" N<br>101°39'28.00" E |

**Ninth Schedule – Infrared Device**

1. Definition

- (a) In this class assignment, “infrared device” means a radiocommunications device operating in the electromagnetic frequency band from 187.5 THz to 420 THz.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) An infrared device shall only utilise the 187.5 THz to 420 THz frequency band assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:

3. Class assignment

- (a) This class assignment confers rights on any person to operate an infrared device subject to the:
  - i. condition as specified in paragraph 4 of this schedule; and
  - ii. device operating within the frequency band as specified in paragraph 2 of this schedule.

4. Condition(s)

- (a) The maximum power shall not exceed 125 mW.

**Tenth Schedule – Remote Controlled Device**

1. Definition

- (a) In this class assignment, “remote controlled device” means a device which is occasionally used to remotely control, by method of low power radio emissions, consumer devices including, but not limited to, remote controlled, air conditioners, gates, locks, video equipment, cameras, and toys.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) A remote controlled device shall only utilise any of the following frequency bands assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:
  - i. 26.965 MHz to 27.275 MHz;
  - ii. 40 MHz;
  - iii. 47 MHz;
  - iv. 49 MHz;
  - v. 303 MHz to 320 MHz; or
  - vi. 433 MHz to 435 MHz.

3. Class assignment

- (a) This class assignment confers rights on any person to operate a remote controlled device subject to the:
  - i. condition as specified in paragraph 4 of this schedule; and
  - ii. device operating within the frequency bands as specified in paragraph 2 of this schedule.

4. Condition(s)

- (a) The maximum EIRP shall not exceed 50 mW.

**Eleventh Schedule – Security Device**

1. Definition

- (a) In this class assignment, “security device” means a low power radio device specifically utilised for consumer security applications and used to remotely control, interrogate and download information, or detect objects.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) A security device shall only utilise any of the following frequency bands assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:
  - i. 3 kHz to 195 kHz;
  - ii. 228.0063 MHz to 228.9937 MHz;
  - iii. 303 MHz to 320 MHz;
  - iv. 400 MHz to 402 MHz;
  - v. 433 MHz to 435 MHz; or
  - vi. 76 GHz to 77 GHz.

3. Class assignment

- (a) This class assignment confers rights on any person to operate a security device subject to the:
  - i. condition as specified in paragraph 4 of this schedule; and
  - ii. device operating within the frequency bands as specified in paragraph 2 of this schedule.

4. Condition(s)

The maximum EIRP shall not exceed the values as specified in the third column of Table 11-1.

TABLE 11-1  
**Frequency Bands and Maximum EIRP**

| <b>Item</b> | <b>Frequency Bands</b>       | <b>Maximum EIRP</b> |
|-------------|------------------------------|---------------------|
| 1.          | 3 kHz to 195 kHz             | 50 mW               |
| 2.          | 228.0063 MHz to 228.9937 MHz | 50 mW               |
| 3.          | 303 MHz to 320 MHz           | 50 mW               |
| 4.          | 400 MHz to 402 MHz           | 50 mW               |
| 5.          | 433 MHz to 435 MHz           | 50 mW               |
| 6.          | 76 GHz to 77 GHz             | 50 mW               |

**Twelfth Schedule – Wireless Microphone Device**

1. Definition

- (a) In this class assignment, “wireless microphone device” means a low power device for the transmission of audio or voice over short distances to a remote receiver to be amplified.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) A wireless microphone device shall only utilise any of the following frequency bands assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:
  - i. 26.95728 MHz to 27.28272 MHz;
  - ii. 40.435 MHz to 40.925 MHz;
  - iii. 87.5 MHz to 108 MHz;
  - iv. 174 MHz to 230 MHz;
  - v. 470 MHz to 694 MHz;
  - vi. 2400 MHz to 2500 MHz; or
  - vii. 5725 MHz to 5850 MHz.

3. Class assignment

- (a) This class assignment confers rights on any person to operate a wireless microphone device subject to the:
  - i. condition as specified in paragraph 4 of this schedule; and
  - ii. device operating within the frequency bands as specified in paragraph 2 of this schedule.



4. Condition(s)

- (a) The maximum EIRP shall not exceed 50 mW for all frequency bands specified in paragraph 2 above except for frequency band 87.5 MHz to 108 MHz. The maximum EIRP for frequency band 87.5 MHz to 108 MHz shall not exceed 50 nW.

**Thirteenth Schedule – Free Space Optics Device**

1. Definition

- (a) In this class assignment, “FSO device” means a device that uses line-of-sight optical technology to provide a point-to-point communication link.
- (b) Subject to subparagraph 1(a) of this schedule, all terminology of an absolute technical nature shall have the same meaning as in the International Telecommunication Convention.

2. Frequency bands

- (a) A FSO device shall only utilise any of the following frequencies assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:
  - i. 193.5484 THz (wavelength of 1550 nm); or
  - ii. 352.9412 THz (wavelength of 850 nm).

3. Class assignment

- (a) This class assignment confers rights on any person to operate a FSO device subject to the:
  - i. condition as specified in paragraph 4 of this schedule; and
  - ii. device operating within the frequency bands as specified in paragraph 2 of this schedule.

4. Condition(s)

- (a) The maximum power shall not exceed 650 mW.

**Fourteenth Schedule – Industrial, Scientific and Medical Device**

1. Definition

- (a) In this class assignment, “ISM device” means a device which generate locally radio frequency energy that is used for industrial, scientific, medical, domestic or similar purposes, excluding in the field of telecommunications.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) An ISM device shall only utilise any of the following frequency bands as specified in Table 14-1 that is assigned for this class assignment, amongst other uses, on a shared non-exclusive basis.

3. Class assignment

- (a) This class assignment confers rights on any person to operate an ISM device subject to the:
  - i. condition as specified in paragraph 4 of this schedule; and
  - ii. device operating within the frequency bands as specified in paragraph 2 of this schedule.

4. Condition(s)

- (a) The maximum power shall not exceed the values as specified in Table 14-1.

TABLE 14-1  
Frequency Bands and Maximum EIRP

| Item | Frequency Bands          | Maximum EIRP |
|------|--------------------------|--------------|
| 1.   | 6765 kHz to 6795 kHz     | 500 mW       |
| 2.   | 13.553 MHz to 13.567 MHz | 500 mW       |
| 3.   | 26.957 MHz to 27.283 MHz | 500 mW       |
| 4.   | 40.66 MHz to 40.70 MHz   | 500 mW       |
| 5.   | 2400 MHz to 2500 MHz     | 500 mW       |
| 6.   | 5725 MHz to 5875 MHz     | 500 mW       |
| 7.   | 24 GHz to 24.25 GHz      | 500 mW       |
| 8.   | 61 GHz to 61.5 GHz       | 500 mW       |
| 9.   | 122 GHz to 123 GHz       | 500 mW       |
| 10.  | 244 GHz to 246 GHz       | 500 mW       |

**Fifteenth Schedule – Radio Frequency Identification Device**

1. Definition

- (a) In this class assignment, “RFID” means a two-way radiocommunications device that is used to automatically identify any object, animal or person in the designated frequency bands.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) A RFID shall only utilise any of the frequency bands as specified in the second column of Table 15-1 that is assigned for this class assignment, amongst other uses, on a shared non-exclusive basis.

3. Class assignment

- (a) This class assignment confers rights on any person to operate a RFID subject to the:
  - i. condition as specified in paragraph 4 of this schedule; and
  - ii. device operating within the frequency bands as specified in paragraph 2 of this schedule.

4. Condition(s)

- (a) The maximum power shall not exceed the values as specified in the third column of Table 15-1.

TABLE 15-1  
**Frequency Bands and Maximum Power**

| <b>Item</b> | <b>Frequency Bands</b>   | <b>Maximum Power</b> |
|-------------|--------------------------|----------------------|
| 1.          | 13.553 MHz to 13.567 MHz | 100 mW EIRP          |
| 2.          | 433 MHz to 435 MHz       | 100 mW EIRP          |
| 3.          | 919 MHz to 923 MHz       | 2 W ERP              |
| 4.          | 2400 MHz to 2500 MHz     | 500 mW EIRP          |

**Sixteenth Schedule – Active Medical Implant Device**

1. Definition

- (a) In this class assignment, “active medical implant device” means a device which is implanted in a body that communicates with a controller in the designated frequency bands.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) An active medical implant shall only utilise the following frequency bands as specified in the second column of Table 16-1 that is assigned for this class assignment, amongst other uses, on a shared non-exclusive basis.

3. Class assignment

- (a) This class assignment confers rights on any person to operate an active medical implant subject to the:
  - i. condition as specified in paragraph 4 of this schedule; and
  - ii. device operating within the frequency bands as specified in paragraph 2 of this schedule.

4. Condition(s)

- (a) The maximum power shall not exceed the values as specified in the third column of Table 16-1.

TABLE 16-1  
**Frequency Bands and Maximum Power**

| Item | Frequency Bands    | Maximum Power                                                                                                                                                  |
|------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.   | 9 kHz to 315 kHz   | 30 dB $\mu$ A/m at 10 m                                                                                                                                        |
| 2.   | 401 MHz to 402 MHz | 25 $\mu$ W ERP for devices with Adaptive Frequency Agility (AFA) and Listen Before Talk (LBT)<br>250 nW ERP for devices using Low Power Low Duty Cycle (LPLDC) |
| 3.   | 402 MHz to 405 MHz | 25 $\mu$ W ERP                                                                                                                                                 |
| 4.   | 405 MHz to 406 MHz | 25 $\mu$ W ERP for devices with AFA and LBT<br>250 nW ERP for devices using LPLDC                                                                              |



**Seventeenth Schedule – Aeronautical Mobile Telemetry Access Device**

1. Definition

- (a) In this class assignment, “aeronautical mobile telemetry access device” means a device installed in an aircraft and communicating within an aircraft to indicate or record data through radio connectivity in the designated frequency bands.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) An aeronautical mobile telemetry device shall only utilise any of the frequency bands as specified in the second column of Table 17-1 that is assigned for this class assignment, amongst other uses, is on a shared non-exclusive basis.

3. Class assignment

- (a) This class assignment confers rights on any person to operate an aeronautical mobile telemetry access device subject to the:
  - i. condition as specified in paragraph 4 of this schedule; and
  - ii. device operating within the frequency bands as specified in paragraph 2 of this schedule.

4. Condition(s)

- (a) The maximum EIRP shall not exceed the values as specified in the third column of Table 17-1.

TABLE 17-1  
**Frequency Bands and Maximum EIRP**

| <b>Item</b> | <b>Frequency Bands</b> | <b>Maximum EIRP</b> |
|-------------|------------------------|---------------------|
| 1.          | 2400 MHz to 2483.5 MHz | 100 mW              |
| 2.          | 5150 MHz to 5350 MHz   | 100 mW              |
| 3.          | 5470 MHz to 5725 MHz   | 100 mW              |
| 4.          | 5725 MHz to 5825 MHz   | 100 mW              |

**Eighteenth Schedule – Mobile Satellite Access Device**

1. Definition

- (a) In this class assignment, “mobile satellite access device” means a portable two-way radiocommunications device communicating with any satellite station provided by a licensee for the provision of application services in the designated frequency bands.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) A mobile satellite access device shall only utilise any of the frequency bands assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:
  - i. 1518 MHz to 1559 MHz;
  - ii. 1610 MHz to 1660.5 MHz;
  - iii. 1668 MHz to 1668.4 MHz.
  - iv. 1980 MHz to 2010 MHz;
  - v. 2170 MHz to 2200 MHz; or
  - vi. 2483.5 MHz to 2500 MHz.

3. Class assignment

- (a) This class assignment confers rights on any person to operate a mobile satellite access device subject to the:
  - i. condition as specified in paragraph 4 of this schedule; and
  - ii. device operating within the frequency bands as specified in paragraph 2 of this schedule.

## 4. Condition(s)

- (a) The maximum EIRP shall not exceed the values as specified in Table 18-1.

TABLE 18-1  
**Frequency Bands and Maximum EIRP**

| <b>Item</b> | <b>Frequency bands</b> | <b>Maximum EIRP</b> |
|-------------|------------------------|---------------------|
| 1.          | 1518 MHz to 1559 MHz   | 7 W                 |
| 2.          | 1610 MHz to 1660.5 MHz | 7 W                 |
| 3.          | 1668 MHz to 1668.4 MHz | 7 W                 |
| 4.          | 1980 MHz to 2010 MHz   | 7 W                 |
| 5.          | 2170 MHz to 2200 MHz   | 7 W                 |
| 6.          | 2483.5 MHz to 2500 MHz | 7 W                 |

**Nineteenth Schedule – Satellite Broadcasting Receiver Device**

1. Definition

- (a) In this class assignment, “satellite broadcasting receiver device” means an earth station which is used to receive radio or television transmission provided by licensee in the designated frequency bands.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) A satellite broadcasting receiver device shall only utilise the following frequency bands assigned for this class assignment, amongst other uses, on a shared non-exclusive basis as follows:
  - i. Measat Broadcast Network Systems Sdn. Bhd.
    - (a) 10.7 GHz to 10.95 GHz;
    - (b) 10.95 GHz to 11.2 GHz;
    - (c) 11.20 GHz to 11.45 GHz;
    - (d) 11.45 GHz to 11.7 GHz;
    - (e) 11.70 GHz to 11.95 GHz; or
    - (f) 12.2 GHz to 12.50 GHz
  - ii. Smart Digital International Sdn. Bhd.
    - (a) 12.568 GHz to 12.622 GHz.

3. Class assignment

- (a) This class assignment confers rights on any person to operate a satellite broadcasting receiver device subject to the:
  - i. conditions specified in paragraph 4 of this schedule;
  - ii. satellite broadcasting receiver device operating within the frequency bands as specified in the subparagraph 2(a)(i) of this schedule being

- connected to a network service provided through a space station named Malaysia East Asia Satellite (MEASAT) at 91.5° East;
- iii. satellite broadcasting receiver device operating within the frequency bands as specified in the subparagraph 2(a)(ii) of this schedule being connected to a network service provided through a space station named SES-12 operated by New Skies Satellite BV (“SES”) at 95° East; and
  - iv. the device being used by the end user for receiving content applications service from a licensed service provider.

4. Condition(s)

- (a) The maximum diameter for a satellite broadcasting receiver device antenna shall not exceed 0.8 meters and 1.2 meters for single satellite broadcasting receiver device and multiple satellite broadcasting receiver device respectively. The use of 1.2 meters diameter satellite broadcasting receiver device antenna however, is restricted to multi dwelling buildings only.

**Twentieth Schedule – Terrestrial Television Broadcasting Receiver Device**

1. Definition
  - (a) In this class assignment, “terrestrial television broadcasting receiver device” means a receiver which is used to receive television transmission from broadcasting transmitter station provided by a licensee in the designated frequency bands.
  - (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.
  
2. Frequency bands
  - (a) A terrestrial television broadcasting receiver device shall only utilise the same frequency bands that was assigned by way of an apparatus assignment for the purpose of receiving the frequency bands and such utilisation of the frequency bands, amongst other uses, is on a shared non-exclusive basis.
  
3. Class assignment
  - (a) This class assignment confers rights on any person to operate a terrestrial television broadcasting receiver device to receive transmission from a broadcasting transmitter station subject the operation of the broadcasting transmitter station being authorised by an apparatus assignment.

**Twenty-First Schedule – Terrestrial Radio Broadcasting Receiver Device**

1. Definition

- (a) In this class assignment “terrestrial radio broadcasting receiver device” means a receiver which is used to receive radio transmission from broadcasting transmitter station provided by a licensee in the designated frequency bands.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) A terrestrial radio broadcasting receiver device shall only utilise the same frequency bands that was assigned by way of an apparatus assignment for the purpose of receiving the frequency bands and such utilisation of the frequency bands, amongst other uses, is on a shared non-exclusive basis.

3. Class assignment

- (a) This class assignment confers rights on any person to operate a terrestrial radio broadcasting receiver device to receive transmission from a broadcasting transmitter station subject to the operation of the broadcasting transmitter station being authorised by an apparatus assignment.



**Twenty-Second Schedule – One-Way Radio Pager Receiver Device**

1. Definition

- (a) In this class assignment, “one-way radio pager receiver device” means a one-way radiocommunications device communicating with a paging base station provided by a licensee for receiving a tone, voice, numeric or alphanumeric message in the designated frequency bands.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) A one-way radio pager receiver device shall only utilise the same spectrum that was assigned by way of an apparatus assignment for the purpose of receiving within the spectrum and such utilisation of the spectrum, amongst other uses, is on a shared non-exclusive basis.

3. Class assignment

- (a) This class assignment confers rights on any person to operate a one-way radio pager receiver device to communicate only with a paging base station subject to the operation of the paging base station being authorised by an apparatus assignment.

**Twenty-Third Schedule – Satellite Radionavigation Receiver Device**

1. Definition

- (a) In this class assignment, satellite radionavigation receiver device means a receiver device communicating with a space station which provides positional information in the designated frequency bands.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) The satellite radionavigation receiver device shall only utilise the following frequency bands assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:
  - i. 1164 MHz to 1400 MHz;
  - ii. 1559 MHz to 1610 MHz; or
  - iii. 5000 MHz to 5030 MHz.

3. Class assignment

- (a) This class assignment confers rights on any person to operate a satellite radionavigation receiver device subject to such device operating within the frequency bands as specified in paragraph 2 of this schedule.

**Twenty-Fourth Schedule – Wireless Closed Circuit Television Access Device**

1. Definition

- (a) In this class assignment, “CCTV access device” means a device, either a CCTV camera or the associated terminal stations that provide for two-way point-to-point or two-way point-to-multipoint configuration for CCTV applications in the designated frequency bands not including the CCTV hub station.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency Bands

- (a) A wireless CCTV access device shall only utilise the following frequency bands assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:
  - i. 2400 MHz to 2500 MHz;
  - ii. 4940 MHz to 4990 MHz;
  - iii. 5150 MHz to 5350 MHz;
  - iv. 5650 MHz to 5725 MHz; or
  - v. 5725 MHz to 5875 MHz.

3. Class Assignment

- (a) This class assignment confers rights on any person to operate the wireless CCTV access device subject to the:
  - i. conditions as specified in paragraph 4 of this schedule; and
  - ii. device operating within the frequency bands as specified in paragraph 2 of this schedule, whereby for devices operating within the frequency bands specified in subparagraphs 2(ii) and 2(iv) of this schedule, the operation of the CCTV hub station being authorised by an apparatus assignment.

4. Condition(s)

- (a) The maximum EIRP shall not exceed the values as specified in the third column of Table 24-1; and

TABLE 24-1  
**Frequency Bands and Maximum EIRP**

| Item | Frequency Bands      | Maximum EIRP |
|------|----------------------|--------------|
| 1.   | 2400 MHz to 2500 MHz | 1 W          |
| 2.   | 4940 MHz to 4990 MHz | 1 W          |
| 3.   | 5150 MHz to 5350 MHz | 1 W          |
| 4.   | 5650 MHz to 5725 MHz | 1 W          |
| 5.   | 5725 MHz to 5875 MHz | 1 W          |

(b) Operational Restrictions

- i. For wireless CCTV access devices operating within the 5250 MHz to 5350 MHz frequency band, the devices must use DFS and TPC.

**Twenty-Fifth Schedule – Ultra - Wideband Communication Device**

1. Definition

- (a) In this class assignment, “UWB communication device” means a device that utilises the UWB technology for short-range communication, involving the intentional communication to transmit and/or receive information between devices.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency Bands

- (a) A UWB communication device shall only utilise any of the frequency bands as specified in the second column of Table 25-1 that is assigned for this class assignment, amongst other uses, on a shared non-exclusive basis.

3. Class Assignment

- (a) This class assignment confers rights on a person to operate a UWB communication device subject to the:
  - i. conditions as specified in paragraph 4 of this schedule; and
  - ii. device operating within the frequency bands as specified in paragraph 2 of this schedule.

4. Condition(s)

- (a) The maximum EIRP density shall not exceed the values as specified in the third and fourth column of Table 25-1;

TABLE 25-1  
**Frequency Bands and Maximum Mean EIRP Density**

| Item | Frequency Bands       | General UWB Device          |                         | UWB device in Road and Rail vehicles |                         |
|------|-----------------------|-----------------------------|-------------------------|--------------------------------------|-------------------------|
|      |                       | Maximum mean EIRP (dBm/MHz) | Maximum peak EIRP (dBm) | Maximum mean EIRP (dBm/MHz)          | Maximum peak EIRP (dBm) |
| 1.   | 3100 MHz to 3400 MHz  | -70.00                      | -36.00                  | -70.00                               | -36.00                  |
| 2.   | 3400 MHz to 3800 MHz  | -80.00                      | -40.00                  | -80.00                               | -40.00                  |
| 3.   | 3800 MHz to 6000 MHz  | -70.00                      | -30.00                  | -70.00                               | -30.00                  |
| 4.   | 6000 MHz to 8500 MHz  | -41.30                      | 0.00                    | -53.30                               | -13.30                  |
| 5.   | 8500 MHz to 10600 MHz | -65.00                      | -25.00                  | -65.00                               | -25.00                  |

- (b) The maximum peak of EIRP density is defined in 50 MHz bandwidth;
- (c) Additional requirements for general UWB communication device
- i. General UWB communication device which operates in the frequency band of 3100 MHz to 10600 MHz shall only be utilised for communication purposes and shall only be used in confined areas of buildings or localised on-site operations. Use of outdoor mounted antennae is not permissible;
  - ii. Emission of UWB communication device shall not be intentionally directed outside of the building in which the device is being used;
  - iii. Transmission of UWB communication device shall only be permitted when it is in communication with an intended receiver. The device shall cease transmission unless it receives acknowledgment from the intended receiver;
  - iv. The operation of UWB communication device is not permissible to the:
    - (a) Devices and/or antenna used or connected at fixed outdoor location;
    - (b) Devices installed in flying models, aircraft or other aviation; and
    - (c) Devices installed in road and rail vehicles.

(d) Additional requirements for UWB device in road and rail vehicles

- i. UWB device in road and rail vehicles that operates in the frequency band of 3100 MHz to 10600 MHz shall only be utilised for short range communications in road and rail vehicles, which include devices mounted inside or at the surface;
- ii. The use of UWB device in road and rail vehicles does not apply to fixed road infrastructure installations;
- iii. The use of UWB device in road and rail vehicles does not apply to fixed outdoor locations, for use in flying models, aircraft and other form of aviation; and
- iv. The maximum mean EIRP spectral density for the emission outside the vehicle at elevation angles higher than 0 degree. The reference plane for the 0 degree is the sensor mounting height.

**Twenty-Sixth Schedule – Automotive Radar Device**

1. Definition

- (a) In this class assignment, “automotive radar device” means a radar device mounted on land transportation vehicles to detect the location and movement of persons or objects near a vehicle.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency Bands

- (a) An automotive radar system shall only utilise any of the frequency bands as specified in the second column of Table 26-1 that is assigned for this class assignment, amongst other uses, on a shared non-exclusive basis.

3. Class Assignment

- (a) This class assignment confers rights on a person to operate an automotive radar device subject to the:
  - i. conditions as specified in paragraph 4 of this schedule; and
  - ii. device operating within the frequency bands as specified in paragraph 2 of this schedule.

4. Condition(s)

- (a) The maximum mean EIRP density shall not exceed the values as specified in the third and fourth column of Table 26-1;



TABLE 26-1

**Frequency Bands and Maximum Mean EIRP Density**

| <b>Item</b> | <b>Frequency Bands</b> | <b>Maximum mean EIRP</b> | <b>Maximum peak EIRP</b> |
|-------------|------------------------|--------------------------|--------------------------|
| 1.          | 21.65 GHz to 22 GHz    | -61.30 dBm/MHz           | 0.00 dBm                 |
| 2.          | 22 GHz to 29.5 GHz     | -41.30 dBm/MHz           | 0.00 dBm                 |
| 3.          | 76 GHz to 77 GHz       | 50.00 dBm                | 55.00 dBm                |
| 4.          | 77 GHz to 81 GHz       | -3.00 dBm/MHz            | 55.00 dBm                |

- (b) The maximum peak of EIRP density is defined in 50 MHz bandwidth;
- (c) For the frequency band 24 GHz to 24.25 GHz, narrow band emission with a maximum peak EIRP of 30 dBm is allowed;
- (d) The emissions within 23.6 GHz to 24 GHz frequency band that appear 30° or greater above the horizontal plane shall be attenuated by at least 35 dB;
- (e) The automotive radar device shall be restricted for land transportation only; and
- (f) The operation of automotive radar device shall only be activated when the land transportation or vehicle is operating.

**Twenty-Seventh Schedule – Inductive Applications Device**

1. Definition

- (a) In this class assignment, “inductive application device” means a radiocommunications device that provides communication over short distances for example anti-theft system, wireless power transfer, RFID, asset tracking, alarm systems, utilities management, railway applications, access control, for mobile and fixed applications in the designated frequency bands.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) An inductive application device shall only utilise any of the frequency bands as specified in the second column of Table 27-1 that is assigned for this class assignment, amongst other uses, on a shared non-exclusive basis.

3. Class assignment

- (a) This class assignment confers rights on any person to operate an inductive application device subject to:
  - i. the condition as specified in paragraph 4 of this schedule; and
  - ii. the device operating within the frequency bands as specified in paragraph 2 of this schedule.

4. Condition(s)

- (a) The maximum power shall not exceed the values as specified in Table 27-1.

TABLE 27-1  
**Frequency Bands and Maximum Power**

| Item | Frequency Bands        | Maximum Power       |
|------|------------------------|---------------------|
| 1.   | 9 kHz to 90 kHz        | 72 dBuA/m at 10 m   |
| 2.   | 90 kHz to 119 kHz      | 42 dBuA/m at 10 m   |
| 3.   | 119 kHz to 135 kHz     | 66 dBuA/m at 10 m   |
| 4.   | 135 kHz to 140 kHz     | 42 dBuA/m at 10 m   |
| 5.   | 140 kHz to 148.5 kHz   | 37.7 dBuA/m at 10 m |
| 6.   | 315 kHz to 400 kHz     | -5 dBuA/m at 10 m   |
| 7.   | 400 kHz to 600 kHz     | -8 dBuA/m at 10 m   |
| 8.   | 984 kHz to 7484 kHz    | 9 dBuA/m at 10 m    |
| 9.   | 3155 kHz to 3400 kHz   | 13.5 dBuA/m at 10 m |
| 10.  | 6765 kHz to 6795 kHz   | 42 dBuA/m at 10 m   |
| 11.  | 7400 kHz to 8800 kHz   | 9 dBuA/m at 10 m    |
| 12.  | 10200 kHz to 11000 kHz | 9 dBuA/m at 10 m    |
| 13.  | 13553 kHz to 13567 kHz | 42 dBuA/m at 10 m   |
| 14.  | 26957 kHz to 27283 kHz | 42 dBuA/m at 10 m   |
| 15.  | 148.5 kHz to 30 MHz    | -5 dBuA/m at 10 m   |
| 16.  | 49 MHz                 | -2.8 dBuA/m at 10 m |

**Twenty-Eight Schedule – Satellite Broadcasting Receiver Device**  
**(Direct-to-Home by MYTV Broadcasting Sdn Bhd)**

1. Definition
  - (a) In this class assignment, satellite broadcasting receiver device means an earth station which is used to receive radio or television transmission provided by licensee in the designated frequency bands.
  - (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.
  
2. Frequency bands
  - (a) A satellite broadcasting receiver device shall only utilise the frequency band 11.463 GHz to 11.517 GHz assigned for this class assignment, amongst other uses, on a shared non-exclusive basis.
  
3. Class assignment
  - (a) This class assignment confers rights on any person to operate a satellite broadcasting receiver device subject to the:
    - i. conditions specified in paragraph 4 of this schedule;
    - ii. satellite broadcasting receiver device operating within the frequency band as specified in paragraph 2 of this schedule; and
    - iii. satellite broadcasting receiver device being connected to a network service provided through space station AsiaSat-9 operated by Asia Satellite Telecommunications Company Limited at 122° East.

## 4. Conditions

(a) Satellite broadcasting receiver device antenna diameter

The maximum diameter for a satellite broadcasting receiver device antenna shall not exceed 0.66 m for single satellite broadcasting receiver device;

(b) Content Applications Service

The satellite broadcasting receiver device shall receive the same content applications service as received via Digital Terrestrial Television (“DTT”) provided by a licensed service provider; and

(c) Locations/Areas of Service

The satellite broadcasting receiver device shall only be used/installed at:

- i. the DTT Phase 2B-2 coverage locations/areas<sup>1</sup> at the DTT Phase 2B-2 sites listed below; and

| No. | Site                 | State           |
|-----|----------------------|-----------------|
| 1.  | Bukit Chupak         | Kelantan        |
| 2.  | Bukit Palong         | Kedah           |
| 3.  | Padang Pauh          | Perlis          |
| 4.  | Bukit Penara         | Penang          |
| 5.  | Layang-Layang        | Sabah           |
| 6.  | Bukit Tampalagus     | Sabah           |
| 7.  | Bukit Kimiri         | Sabah           |
| 8.  | Felda Sahabat        | Sabah           |
| 9.  | Hotel Perkasa        | Sabah           |
| 10. | Luasong              | Sabah           |
| 11. | Nabawan              | Sabah           |
| 12. | Gunung Telapak Buruk | Negeri Sembilan |
| 13. | Bukit Ampangan       | Sarawak         |
| 14. | Bukit Song           | Sarawak         |
| 15. | Lubok Antu           | Sarawak         |
| 16. | Miri                 | Sarawak         |

- ii. blind spot locations/areas<sup>2</sup>.

<sup>1</sup> The DTT Phase 2B-2 coverage locations/areas are to be defined according to the technical parameters in the Detailed Business Plan dated 3 June 2013 and Detailed Business Plan – Revision Part 2: Service Rollout and Coverage dated 17 March 2014.

<sup>2</sup> Blind spot locations/areas are defined as locations/areas within the DTT service area BUT cannot receive the DTT service due to signal blockage, as verified by the Commission.

**Twenty-Ninth Schedule – Personal Locator Beacon Device**

1. Definition
  - (a) In this class assignment, “PLB device” means a personal electronic transmitting device that is designed to alert search and rescue authority when distress situation happened in the air, on the water, on the land and even in the remote areas.
  - (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.
  
2. Frequency bands
  - (a) A PLB shall only utilise the following frequency band assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:
    - i. 406.0 MHz to 406.1 MHz<sup>3</sup>; and
    - ii. 121.5 MHz
  
3. Class assignment
  - (a) This class assignment confers rights on any person to operate a PLB device, subject to the conditions specified in paragraph 4 of this schedule to:
    - i. use the 406.0 MHz to 406.1 MHz frequency band to transmit a distress signal to the satellite networks provided by Cospas – Sarsat<sup>4</sup> and relayed to a ground receiving station known as Local User Terminal(s) (LUTs); and
    - ii. use the 121.5 MHz frequency to transmit homing signal only.

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<sup>3</sup> The use of the band 406-406.1 MHz by the mobile-satellite service is limited to low power satellite emergency position-indicating radiobeacons (see also **Article 31**). (WRC-07); ITU Radio Regulations No. **5.266**

<sup>4</sup> Cospas – Sarsat is an international satellite system for search and rescue

4. Condition(s)
- (a) The maximum power shall not exceed the values as specified in the third column of Table 29-1;
  - (b) Every PLB device used in Malaysia should be using country code number 533; and
  - (c) Registration<sup>5</sup> to the Malaysia Maritime Enforcement Agency is compulsory for every PLB device.

TABLE 29-1  
Frequency Bands and Maximum Power

| Item | Frequency Bands        | Maximum power conditions                                                                                                                                                                  |
|------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.   | 406.0 MHz to 406.1 MHz | The transmitter output power shall be within the limits of 5W $\pm$ 2dB (35 dBm - 39 dBm) measured into a 50-Ohm load, with a voltage standing-wave ratio (VSWR) not greater than 1.25:1. |
| 2.   | 121.5 MHz              | Between 25 and 100 mW Effective Radiated Peak Envelope power (ERPEP).                                                                                                                     |

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<sup>5</sup> <http://bim.mmea.gov.my>

**Thirtieth Schedule – Unmanned Aircraft Systems Device**

1. Definition

- (a) In this class assignment, “UAS device” means a radiocommunications device that is intended to be used for controlling the unmanned aircraft (UA), transmitting payload data from the UA and detection of obstacles during UA flight.
- (b) Subject to subparagraph 1(a) of this schedule, all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

- (a) An UAS device shall only utilise any of the frequency bands as specified in the second column of Table 30-1 that is assigned for this class assignment, amongst other uses, on a shared non-exclusive basis.

3. Class assignment

- (a) This class assignment confers rights on any person to operate an UAS device subject to the:
  - i. conditions as specified in paragraph 4 of this schedule; and
  - ii. the device operating in the frequency bands as specified in paragraph 2 of this schedule.

4. Condition(s)

- (a) Maximum Power  
The maximum power shall not exceed the values as specified in the third column of Table 30-1; and



(b) Operational Restrictions

Any person who wishes to operate a UAS device shall refer to the Guidelines on the Use of Radio Spectrum for Unmanned Aircraft Systems issued by the Commission on the 26 October 2021 on MCMC's website.

TABLE 30-1  
Frequency Bands and Maximum Power

| Item | Frequency Bands                     | Maximum Power |
|------|-------------------------------------|---------------|
| 1.   | 433 MHz to 435 MHz                  | 100 mW EIRP   |
| 2.   | 2400 MHz to 2500 MHz                | 500 mW EIRP   |
| 3.   | 5725 MHz to 5875 MHz                | 1 W EIRP      |
| 4.   | 24.05 GHz to 24.25 GHz <sup>6</sup> | 100 mW EIRP   |

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<sup>6</sup> For radar system installed on-board unmanned aircraft

**Revocation**

7. The Notification of Issuance of Class Assignments No. 2 of 2022 dated 25 July 2022 is hereby revoked.

Dated: 28 August 2023



**Tan Sri Mohamad Salim Fateh Din**

*Chairman*

*Malaysian Communications and Multimedia Commission*