



## **CLASS ASSIGNMENT NO. 1 OF 2017**

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

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**CLASS ASSIGNMENT NO. 1 OF 2017****Class Assignments**

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

- (24) one-way radio pager receiver device as specified in the Twenty-fourth Schedule;
- (25) satellite radiolocation receiver device as specified in the Twenty-fifth Schedule;
- (26) wireless closed circuit television ("CCTV") access device as specified in the Twenty-sixth Schedule;
- (27) ultra wide-band ("UWB") communication device as specified in the Twenty-seventh Schedule;
- (28) automotive radar device as specified in the Twenty-eighth Schedule; and
- (29) Inductive application device as specified in the Twenty-ninth Schedule.

### **Commencement**

1. These class assignments come into operation on 28 September 2017.

### **Interpretation**

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

"designated frequency bands" means the frequency bands which are specified in paragraph 2 of each of the schedules in the class assignments;

"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

“the Commission” means the Malaysian Communications and Multimedia Commission.

(2) 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. (1) 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:

- (a) a person subject to a class assignment shall take all necessary steps to ensure that no major interference or harmful interference is caused;
- (b) 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;
- (c) 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;
- (d) 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 without the prior written approval of the Commission;
- (e) a person subject to a class assignment shall ensure that the devices, its operation and arrangement comply with the requirements, specifications, standards, plans and procedures decided by the Commission;
- (f) a person subject to a class assignment shall comply with the International Telecommunication Convention and the International Convention for the Safety of Life at Sea;

- (g) 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;
- (h) 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 assignments, and the certified devices shall bear a certification label as approved by the Commission; and
- (i) 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.

(2) Notwithstanding subparagraph (1)(h), the devices under Eleventh, Twenty-first, Twenty-second, Twenty-third, Twenty-fourth and Twenty-fifth Schedules shall not be required to be certified unless the Commission issues standards or technical codes.

(3) The conditions in subparagraph (1) are subject to any revision, amendment or revocation by the Commission.

#### **Other condition**

5. Use of device and frequency 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. (1) All devices which are required to be certified under the class assignments shall be certified by the Commission or its registered certifying agency in accordance with the Communications and Multimedia (Technical Standards) Regulations 2000.

- (2) The devices shall be certified by way of:
  - (a) compliance approval; or
  - (b) special approval.

(3) 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.

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

- (a) for the applicant's sole purpose;
- (b) for trials;
- (c) for market surveys, demonstration or exhibition;
- (d) research and development; or
- (e) training.

(5) 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.

(6) The list of standards which specifies the technical requirements for certification of devices are accessible from the Commission's website at <http://www.skmm.gov.my/Legal/Register/CMA-Registers.aspx>.

(7) The certification of devices is carried out by SIRIM QAS International Sdn Bhd (SIRIM QAS Intl.) as the registered certifying agency for all communications equipment.



Class Assignments allocation table

Applications	Frequency bands	Maximum transmit power/ field strength/Conditions	Reference/Remarks
Short Range Device (SRD)	3155 kHz to 3400 kHz	13.5 dBμA/m at 10m	Refer to Second Schedule detailed conditions of operation
	6765 kHz to 6795 kHz	100 mW Effective Isotropic 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	
	869 MHz to 870 MHz <sup>1</sup>	500 mW EIRP	
	916 MHz to 919 MHz	25 mW EIRP with duty cycle <1% or Frequency Hopping or Listen Before Talk (LBT)	
	919 MHz to 923 MHz	500 mW EIRP	
	923 MHz to 924 MHz	500 mW EIRP with duty cycle <1% or Frequency Hopping or LBT	
	1880 MHz to 1900 MHz	250 mW EIRP	
	2400 MHz to 2500 MHz	500 mW EIRP	
	5150 MHz to 5350 MHz	1 W EIRP	
	5470 MHz to 5650 MHz	1 W EIRP	

Applications	Frequency bands	Maximum transmit power/ field strength/Conditions	Reference/Remarks
	5725 MHz to 5875 MHz	1 W EIRP	
	24 GHz to 24.250 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 (PRS)	26.965 MHz to 27.405 MHz	Refer to tables in Fifth Schedule for maximum permitted transmit power	Refer to Fifth Schedule detailed conditions of operation and channeling plan
	446.006250 MHz to 446.093750 MHz		
	446.103125 MHz to 446.196875 MHz		
	477.0125 MHz to 477.4875 MHz <sup>2</sup>		
	477.5250 MHz to 477.9875 MHz <sup>2</sup>		
Cordless telephone device	46.610 MHz to 46.970 MHz	50 mW EIRP	Refer to Sixth Schedule detailed conditions of operation and channeling plan
	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 access device	152 MHz to 153 MHz	1 W EIRP	Refer to Seventh Schedule detailed conditions of operation and channeling plan
Very Small Aperture Terminal (VSAT)	5925 MHz to 6725 MHz (uplink)	Refer to tables in Tenth Schedule for maximum permitted transmit power	Refer to Tenth Schedule detailed conditions of operation and channeling plan
	14253.5 MHz to 14489.5 MHz (uplink)		
	13789 MHz to 14243 MHz (uplink)		
Infrared device	187.5 THz to 420 THz	125 mW EIRP	Refer to Eleventh Schedule detailed conditions of operation and channeling plan

Applications	Frequency bands	Maximum transmit power/ field strength/Conditions	Reference/Remarks
Remote controlled device	26.9650 MHz to 27.2750 MHz	50 mW EIRP	Refer to Twelfth Schedule detailed conditions of operation and channeling plan
	40 MHz		
	47 MHz		
	49 MHz		
	303 MHz to 320 MHz		
Security device	433 MHz to 435 MHz	50 mW EIRP	Refer to Thirteenth Schedule detailed conditions of operation and channeling plan
	3 kHz to 195 kHz		
	228.0063 MHz to 228.9937 MHz		
	303 MHz to 320 MHz		
	400 MHz to 402 MHz		
	433 MHz to 435 MHz		
	868.1 MHz <sup>3</sup>		
	869 MHz to 870 MHz <sup>1</sup>		
	76 GHz to 77 GHz		
	26.95728 MHz to 27.28272 MHz		
Wireless microphone device	40.435 MHz to 40.925 MHz	50 mW EIRP	Refer to Fourteenth Schedule detailed conditions of operation and channeling plan
	87.5 MHz to 108 MHz		
	174 MHz to 230 MHz		
	470 MHz to 694 MHz		
	694 MHz to 798 MHz <sup>4</sup>		
	2400 MHz to 2500 MHz		

Applications	Frequency bands	Maximum transmit power/ field strength/Conditions	Reference/Remarks
Free Space Optic (FSO) device	193.5484 THz	650 mW EIRP	Refer to Fifteenth Schedule detailed conditions of operation and channeling plan
	352.9412 THz		
Industrial, Scientific and Medical (ISM) device	6765 kHz to 6795 kHz	500 mW EIRP	Refer to Sixteenth Schedule detailed conditions of operation and channeling plan
	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		
Radio Frequency Identification Device (RFID)	122 GHz to 123 GHz;	100 mW EIRP 100 mW EIRP 500 mW EIRP 2 W ERP 500 mW EIRP	Refer to Seventeenth Schedule detailed conditions of operation and channeling plan
	244 GHz to 246 GHz		
	13.553 MHz to 13.567 MHz		
	433 MHz to 435 MHz		
	869 MHz to 870 MHz <sup>1</sup>		
	919 MHz to 923 MHz		
	2400 MHz to 2500 MHz		

Applications	Frequency bands	Maximum transmit power/ field strength/Conditions	Reference/Remarks
Active medical implant	9 kHz to 315 kHz	30 dB $\mu$ A/m at 10 m	Refer to Eighteenth Schedule detailed conditions of operation and channeling plan
	401 MHz to 402 MHz	25 $\mu$ W ERP for devices with AFA and LBT 250 nW ERP for devices using LPLDC	
	402 MHz to 405 MHz	25 $\mu$ W ERP	
	405 MHz to 406 MHz	25 $\mu$ W ERP for devices with AFA and LBT 250 nW ERP for devices using LPLDC	
Aeronautical mobile telemetry access device	2400 MHz to 2483.5 MHz	100 mW EIRP	Refer to Nineteenth Schedule detailed conditions of operation and channeling plan
	5150 MHz to 5350 MHz		
	5470 MHz to 5725 MHz		
	5725 MHz to 5825 MHz		
Mobile satellite access device	1518 MHz to 1559 MHz	7 W EIRP	Refer to Twentieth Schedule detailed conditions of operation and channeling plan
	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 2520 MHz		
	2670 MHz to 2690 MHz		

Applications	Frequency bands	Maximum transmit power/ field strength/Conditions	Reference/Remarks
Satellite broadcasting receiver device	10.7 GHz to 10.95 GHz	Receive only	Refer to Twenty-first Schedule detailed conditions of operation and channeling plan
	10.95 GHz to 11.2 GHz		
	11.45 GHz to 11.7 GHz		
	12.2 GHz to 12.75 GHz		
Satellite radiolocation receiver device	1164 MHz to 1400 MHz	Receive only	Refer to Twenty-fifth Schedule detailed conditions of operation and channeling plan
	1559 MHz to 1610 MHz		
	5000 MHz to 5030 MHz		
CCTV access device	2400 MHz to 2500 MHz	1 W EIRP	Refer to Twenty-sixth Schedule detailed conditions of operation and channeling plan
	4940 MHz to 4990 MHz		
	5150 MHz to 5350 MHz		
	5650 MHz to 5725 MHz		
Ultra Wide-band (UWB) communication device	5725 MHz to 5875 MHz	-36.00 dBm EIRP	Refer to Twenty-seventh Schedule detailed conditions of operation and channeling plan
	3100 MHz to 3400 MHz		
	3400 MHz to 3800 MHz		
	3800 MHz to 6000 MHz		
	6000 MHz to 8500 MHz		
Automotive radar device	8500 MHz to 10600 MHz	-25.00 dBm EIRP	Refer to Twenty-eighth Schedule detailed conditions of operation and channeling plan
	21.65 GHz to 22 GHz	0.00 dBm EIRP	
	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	

Applications	Frequency bands	Maximum transmit power/ field strength/Conditions	Reference/Remarks
Inductive application device	9 kHz to 90 kHz	72 dBuA/m at 10 m	Refer to Twenty-ninth Schedule detailed conditions of operation and channeling plan
	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	
	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	

<sup>1</sup>Use of the frequency band of 869 MHz to 870 MHz for SRD, security device and RFID only allowed until 31 December 2017.

<sup>2</sup>Use of the frequency bands of 477.0125 MHz to 477.4875 MHz and 477.5250 MHz to 477.9875 MHz for PRS device only allowed until 31 December 2020.

<sup>3</sup>Use of the frequency 868.1 MHz for security device only allowed until 31 December 2017.

<sup>4</sup>Use of the frequency band of 694 MHz to 798 MHz for wireless microphone device only allowed until 30 June 2018.

FIRST SCHEDULE

**Class Assignment for Cellular Mobile Access Device**

1. Definition

- (1) In this class assignment, "cellular mobile access device" means a device communicating with a cellular radio base station provided by a licensee in the designated frequency bands.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

A cellular mobile access device shall only utilize the same spectrum that was assigned by way of a Spectrum Assignment or an Apparatus Assignment for the purpose of receiving and transmitting within the spectrum and such utilization of the spectrum, amongst other uses, is on a shared non-exclusive basis.

3. Class assignment

This class assignment confers rights on any person to operate a cellular mobile access device to communicate only with a cellular radio base station subject to the operation of the cellular radio base station being authorized by a Spectrum Assignment or an Apparatus Assignment.



SECOND SCHEDULE

**Class Assignment for SRD**

1. Definition

- (1) 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.
- (2) Subject to subparagraph (1), 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 utilize any of the frequency bands as specified in the second column of Table A that is assigned for this class assignment, amongst other uses, on a shared non-exclusive basis.

3. Class assignment

This class assignment confers rights on any person to operate a SRD subject to the:

- (a) conditions as specified in paragraph 4; and
- (b) device operating within the frequency bands as specified in paragraph 2.

4. Conditions

(1) Maximum Power

The maximum power shall not exceed the values as specified in the third column of Table A.

## (2) Operational Restrictions

- (a) For SRD operating within the 5250-5350 MHz and 5470-5650 MHz frequency bands, the devices shall use Dynamic Frequency Selection ("DFS") and Transmit Power Control ("TPC");
- (b) The radiated Power Spectral Density ("PSD") for the devices operating within the 5250-5350 MHz and 5470-5650 MHz frequency band is limited to 10 mW/MHz; and
- (c) The devices operating in the frequency band 5150-5350 MHz are only for short range/indoor usage.

TABLE A  
Frequency Bands and Maximum Power

<i>Item</i>	<i>Frequency Bands</i>	<i>Maximum Power</i>
1.	3155 kHz to 3400 kHz	13.5 dBμA/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.	869 MHz to 870 MHz <sup>1</sup>	500 mW EIRP
10.	916 MHz to 919 MHz	25 mW EIRP with duty cycle of <1%, Frequency Hopping or LBT
11.	919 MHz to 923 MHz	500 mW EIRP
12.	923 MHz to 924 MHz	500 mW EIRP with duty cycle of <1%, Frequency Hopping or LBT
13.	1880 MHz to 1900 MHz	250 mW EIRP
14.	2400 MHz to 2500 MHz	500 mW EIRP
15.	5150 MHz to 5350 MHz	1 W EIRP
16.	5470 MHz to 5650 MHz	1 W EIRP
17.	5725 MHz to 5875 MHz	1 W EIRP
18.	24 GHz to 24.25 GHz	1 W EIRP
19.	57 GHz to 64 GHz	10 W EIRP
20.	76 GHz to 77 GHz	5 W EIRP
21.	122 GHz to 123 GHz	1 W EIRP
22.	244 GHz to 246 GHz	1 W EIRP

<sup>1</sup>Use of the frequency band of 869 MHz to 870 MHz for SRD, security device and RFID only allowed until 31 December 2017.

THIRD SCHEDULE

**Class Assignment for Leased Channel Radio Access Device**

1. Definition

- (1) In this class assignment, "leased channel radio access device" means a device communicating with a leased channel radio base station provided by a licensee linking a single radio frequency channel to a person or group of persons in the designated frequency bands.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

A leased channel radio access device shall only utilize the same spectrum that was assigned by way of an Apparatus Assignment for the purpose of receiving and transmitting within the spectrum and such utilization of the spectrum, amongst other uses, is on a shared non-exclusive basis.

3. Class assignment

This class assignment confers rights on any person to operate a leased channel radio access device to communicate only with a leased channel radio base station subject to the operation of the leased channel radio base station being authorized by an Apparatus Assignment.

FOURTH SCHEDULE

**Class Assignment for Trunked Radio Access Device**

1. Definition

- (1) 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.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

A trunked radio access device shall only utilize the same spectrum that was assigned by way of an Apparatus Assignment for the purpose of receiving and transmitting within the spectrum and such utilization of the spectrum, amongst other uses, is on a shared non-exclusive basis.

3. Class assignment

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:

- (a) conditions as specified in paragraph 4; and
- (b) operation of the trunked radio base station being authorized by an Apparatus Assignment.

4. Conditions

The maximum EIRP shall not exceed 25 W.

FIFTH SCHEDULE

**Class Assignment for PRS Device**

1. Definition

- (1) In this class assignment, PRS device means a two-way radiocommunications device operating in the designated frequency bands.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

A PRS device shall only utilize any of the following frequency bands assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:

- (a) 26.965000 MHz to 27.405000 MHz;
- (b) 446.006250 MHz to 446.093750 MHz;
- (c) 446.103125 MHz to 446.196875 MHz;
- (d) 477.0125 MHz to 477.4875 MHz<sup>2</sup>; or
- (e) 477.5250 MHz to 477.9875 MHz<sup>2</sup>.

3. Class assignment

This class assignment confers rights on any person to operate a PRS device subject to:

- (a) the conditions as specified in paragraph 4; and
- (b) the device operating within the frequency bands as specified in the second column of Tables B, C, D, E and F.

4. Conditions

(1) Channel plan

The channel plan as specified in Tables B, C, D, E and F shall be complied with.

(2) Modulation type and channel spacing

- (a) The modulation type shall be as specified in the third column of Tables B, C, D, E and F; and
- (b) The maximum channel spacing shall be as specified in the:
  - (i) first and second sub-columns of the fifth column of Table B; and
  - (ii) fifth column of Tables C, D, E and F.

(3) Reserved channels

The channels as specified in the sixth column of Tables B, E and F shall be reserved for emergency and calling use.

(4) Encryption device

No encryption devices are to be employed on any of the channels as specified in Tables B, C, D, E and F.

(5) Maximum transmission period

- (a) Transmission for voice shall not exceed 180 seconds in duration for each transmission.
- (b) Transmission, other than voice, shall not exceed 3 seconds in duration for each transmission.

(6) Call signs

No call signs are to be utilized other than in a field of operation where such call signs are required.

(7) Telephone interconnect

No connection of a PRS device to a telephony service is authorized.

(8) Operation restrictions

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.

(9) Commandeer

A PRS device may be commandeered to assist in the case of:

- (a) emergency;
- (b) national interest; or

- (c) danger to person or property.
- (10) The maximum EIRP shall not exceed the values as specified in the:
- (a) first and second subcolumns of the fourth column of Table B; and
- (b) fourth column in Tables C, D, E and F.

TABLE B

**27 MHz Citizen Band - PRS Frequencies**

(A medium-range simplex radiocommunications service for commercial and recreational use)

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	
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	
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 C

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

(A short-range simplex radiocommunications service for business and recreational use)

<i>Channel</i>	<i>Frequency (MHz)</i>	<i>Modulation Type</i>	<i>Peak power (Watts) (Maximum ERP)</i>	<i>Channel Spacing (kHz)</i>
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 D

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

(A short-range simplex radiocommunications service for business and recreational use)

<i>Channel</i>	<i>Frequency (MHz)</i>	<i>Modulation Type</i>	<i>Peak power (Watts) (Maximum ERP)</i>	<i>Channel Spacing (kHz)</i>
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

TABLE E

**477 MHz Citizen Band - PRS Frequencies**

(A short-range simplex radiocommunications service for business and commercial use)

<i>Channel</i>	<i>Frequency (MHz)</i>	<i>Modulation Type</i>	<i>Peak power (Watts) (Maximum ERP)</i>	<i>Channel Spacing (kHz)</i>	<i>Reserved Channel</i>
1	477.0125	FM / PM	5	12.5	
2	477.0250	FM / PM	5	12.5	
3	477.0375	FM / PM	5	12.5	

4	477.0500	FM / PM	5	12.5	
5	477.0625	FM / PM	5	12.5	
6	477.0750	FM / PM	5	12.5	
7	477.0875	FM / PM	5	12.5	
8	477.1000	FM / PM	5	12.5	
9	477.1125	FM / PM	5	12.5	Emergency
10	477.1250	FM / PM	5	12.5	
11	477.1375	FM / PM	5	12.5	Calling
12	477.1500	FM / PM	5	12.5	
13	477.1625	FM / PM	5	12.5	
14	477.1750	FM / PM	5	12.5	
15	477.1875	FM / PM	5	12.5	
16	477.2000	FM / PM	5	12.5	
17	477.2125	FM / PM	5	12.5	
18	477.2250	FM / PM	5	12.5	
19	477.2375	FM / PM	5	12.5	
20	477.2500	FM / PM	5	12.5	
21	477.2625	FM / PM	5	12.5	
22	477.2750	FM / PM	5	12.5	
23	477.2875	FM / PM	5	12.5	
24	477.3000	FM / PM	5	12.5	
25	477.3125	FM / PM	5	12.5	
26	477.3250	FM / PM	5	12.5	
27	477.3375	FM / PM	5	12.5	
28	477.3500	FM / PM	5	12.5	
29	477.3625	FM / PM	5	12.5	
30	477.3750	FM / PM	5	12.5	
31	477.3875	FM / PM	5	12.5	
32	477.4000	FM / PM	5	12.5	
33	477.4125	FM / PM	5	12.5	
34	477.4250	FM / PM	5	12.5	
35	477.4375	FM / PM	5	12.5	
36	477.4500	FM / PM	5	12.5	
37	477.4625	FM / PM	5	12.5	
38	477.4750	FM / PM	5	12.5	
39	477.4875	FM / PM	5	12.5	

TABLE F

**477 MHz Family Band - PRS Frequencies**

(A very short-range simplex radiocommunications service for recreational use)

<i>Channel</i>	<i>Frequency (MHz)</i>	<i>Modulation Type</i>	<i>Peak power (Watt) (Maximum EIRP)</i>	<i>Channel Spacing (kHz)</i>	<i>Reserved Channel</i>
1	477.5250	FM / PM	0.5	12.5	
2	477.5375	FM / PM	0.5	12.5	
3	477.5500	FM / PM	0.5	12.5	
4	477.5625	FM / PM	0.5	12.5	
5	477.5750	FM / PM	0.5	12.5	
6	477.5875	FM / PM	0.5	12.5	
7	477.6000	FM / PM	0.5	12.5	
8	477.6125	FM / PM	0.5	12.5	
9	477.6250	FM / PM	0.5	12.5	Emergency
10	477.6375	FM / PM	0.5	12.5	
11	477.6500	FM / PM	0.5	12.5	Calling
12	477.6625	FM / PM	0.5	12.5	
13	477.6750	FM / PM	0.5	12.5	
14	477.6875	FM / PM	0.5	12.5	
15	477.7000	FM / PM	0.5	12.5	
16	477.7125	FM / PM	0.5	12.5	
17	477.7250	FM / PM	0.5	12.5	
18	477.7375	FM / PM	0.5	12.5	
19	477.7500	FM / PM	0.5	12.5	
20	477.7625	FM / PM	0.5	12.5	
21	477.7750	FM / PM	0.5	12.5	
22	477.7875	FM / PM	0.5	12.5	
23	477.8000	FM / PM	0.5	12.5	
24	477.8125	FM / PM	0.5	12.5	
25	477.8250	FM / PM	0.5	12.5	
26	477.8375	FM / PM	0.5	12.5	
27	477.8500	FM / PM	0.5	12.5	
28	477.8625	FM / PM	0.5	12.5	
29	477.8750	FM / PM	0.5	12.5	
30	477.8875	FM / PM	0.5	12.5	
31	477.9000	FM / PM	0.5	12.5	

32	477.9125	FM / PM	0.5	12.5	
33	477.9250	FM / PM	0.5	12.5	
34	477.9375	FM / PM	0.5	12.5	
35	477.9500	FM / PM	0.5	12.5	
36	477.9625	FM / PM	0.5	12.5	
37	477.9750	FM / PM	0.5	12.5	
38	477.9875	FM / PM	0.5	12.5	

<sup>2</sup>Use of the frequency bands of 477.0125 MHz to 477.4875 MHz and 477.5250 MHz to 477.9875 MHz for PRS device only allowed until 31 December 2020.

SIXTH SCHEDULE

**Class Assignment for Cordless Telephone Device**

1. Definition

- (1) 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.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

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

3. Class assignment

This class assignment confers rights on any person to operate a cordless telephone device subject to the:

- (a) conditions as specified in paragraph 4; and
- (b) device operating within the frequency bands as specified in paragraph 2.

4. Conditions

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

TABLE G  
**Frequency Bands and Maximum EIRP**

<i>Item</i>	<i>Frequency Bands</i>	<i>Maximum EIRP</i>
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

SEVENTH SCHEDULE

**Class Assignment for Two-Way Radio Pager Access Device**

1. Definition

- (1) 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.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

A two-way radio pager access device shall only utilize the following frequency band assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:

152 MHz to 153 MHz

3. Class assignment

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:

- (a) conditions as specified in paragraph 4;
- (b) device operating within the frequency bands as specified in paragraph 2; and
- (c) operation of the paging base station being authorized by an Apparatus Assignment.

4. Conditions

The maximum EIRP shall not exceed 1 W.

EIGHTH SCHEDULE

**Class Assignment for Wireless Access Device**

1. Definition

- (1) In this class assignment, "wireless access device" means a fixed or mobile two-way radiocommunications device communicating with a fixed station provided by a licensee in the designated frequency bands.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

A wireless access device shall only utilize the same spectrum that was assigned by way of a Spectrum Assignment or an Apparatus Assignment for the purpose of receiving and transmitting within the spectrum and such utilization of the spectrum, amongst other uses, is on a shared non-exclusive basis.

3. Class assignment

This class assignment confers rights on any person to operate a wireless access device to communicate only with a fixed wireless base station subject to the operation of the fixed wireless base station being authorized by a Spectrum Assignment or an Apparatus Assignment.



NINTH SCHEDULE

**Class Assignment for Radio Telemetry Access Device**

1. Definition

- (1) 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.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

A radio telemetry access device shall only utilize the same spectrum that was assigned by way of an Apparatus Assignment for the purpose of receiving and transmitting within the spectrum and such utilization of the spectrum, amongst other uses, is on a shared non-exclusive basis.

3. Class assignment

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 authorized by an Apparatus Assignment.

TENTH SCHEDULE

**Class Assignment for VSAT**

1. Definition

- (1) In this class assignment, VSAT means an earth station communicating with a space station provided by a licensee in the designated frequency bands.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

A VSAT shall only utilize the following frequency bands assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:

- (a) 3400 MHz to 4200 MHz (downlink) / 5925 MHz to 6725 MHz (uplink);
- (b) 11464 MHz to 11700 MHz (downlink) / 14253.5 MHz to 14489.5 MHz (uplink);  
or
- (c) 12258.5 MHz to 12494.5 MHz (downlink) / 13789 MHz to 14243 MHz (uplink).

3. Class assignment

This class assignment confers rights on any person to operate a VSAT subject to the:

- (a) conditions as specified in paragraph 4;
- (b) VSAT operating within the frequency bands as specified in paragraph 2;
- (c) VSAT being connected to a network service provided through a space station operated by Malaysia East Asia Satellite ("MEASAT") at 91.5° East; and
- (d) either the:
  - (i) VSAT being used by the end user for connecting with a licensed network service provider for use with other licensed network services or applications services;

- (ii) VSAT being connected with a licensed network service provider for use as a private network facility; or
- (iii) VSAT being used for connecting with a licensed network service provider for telemetry applications.

#### 4. Conditions

- (1) Maximum VSAT antenna diameter

The maximum diameter for VSAT is less than 2.4 m.

- (2) Data rate

The maximum data rate for VSAT shall not exceed the values as specified in the third column of Table J.

TABLE J  
**Frequency Bands and Maximum Data Rate**

<i>Item</i>	<i>Frequency Bands</i>	<i>Data rate</i>
1.	3400 MHz to 4200 MHz (downlink) / 5925 MHz to 6725 MHz (uplink)	Not exceeding 2 Mbps
2.	11464 MHz to 11700 MHz (downlink) / 14253.5 MHz to 14489.5 MHz (uplink)	Not exceeding 10 Mbps
3.	12258.5 MHz to 12494.5 MHz (downlink) / 13789 MHz to 14243 MHz (uplink)	Not exceeding 10 Mbps

- (3) The maximum level of angle off-axis EIRP density from a VSAT shall not exceed the values as specified in the second column of Table K.

TABLE K  
Maximum EIRP

5.925 – 6.725 GHz Operation	
<u>Angle off-axis</u>	<u>Maximum EIRP per 4 kHz</u>
$2.5^{\circ} \leq \varphi \leq 7^{\circ}$	$(32 - 25 \log \varphi)$ dB (W/4 kHz)
$7^{\circ} < \varphi \leq 9.2^{\circ}$	11 dB (W/4 kHz)
$9.2^{\circ} < \varphi \leq 48^{\circ}$	$(35 - 25 \log \varphi)$ dB (W/4 kHz)
$48^{\circ} < \varphi \leq 180^{\circ}$	-7 dB (W/4 kHz)
13.789 – 14.243 GHz Operation	
<u>Angle off-axis</u>	<u>Maximum EIRP per 1 MHz</u>
$2^{\circ} \leq \varphi \leq 7^{\circ}$	$(43 - 25 \log \varphi)$ dB (W/MHz)
$7^{\circ} < \varphi \leq 9.2^{\circ}$	22 dB (W/MHz)
$9.2^{\circ} < \varphi \leq 48^{\circ}$	$(46 - 25 \log \varphi)$ dB (W/MHz)
$\varphi > 48^{\circ}$	+4 dB (W/MHz)
14.2535 – 14.4895 GHz Operation	
<u>Angle off-axis</u>	<u>Maximum EIRP per 40 kHz</u>
$3^{\circ} \leq \varphi \leq 7^{\circ}$	$(42 - 25 \log \varphi)$ dB (W/40 kHz)
$7^{\circ} < \varphi \leq 9.2^{\circ}$	21 dB (W/40 kHz)
$9.2^{\circ} < \varphi \leq 48^{\circ}$	$(45 - 25 \log \varphi)$ dB (W/40 kHz)
$48^{\circ} < \varphi \leq 180^{\circ}$	+3 dB (W/40 kHz)

ELEVENTH SCHEDULE

**Class Assignment for Infrared Device**

1. Definition

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

2. Frequency bands

An infrared device shall only utilize the following frequency band assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:

187.5 THz to 420 THz.

3. Class assignment

This class assignment confers rights on any person to operate an infrared device subject to the:

- (a) conditions as specified in paragraph 4; and
- (b) device operating within the frequency band as specified in paragraph 2.

4. Conditions

The maximum power shall not exceed 125 mW.

TWELFTH SCHEDULE

**Class Assignment for Remote Controlled Device**

1. Definition

- (1) 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 doors, air conditioners, gates, locks, video equipment, cameras and toys.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

A remote controlled device shall only utilize any of the following frequency bands assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:

- (a) 26.965 MHz to 27.275 MHz;
- (b) 40 MHz;
- (c) 47 MHz;
- (d) 49 MHz;
- (e) 303 MHz to 320 MHz; or
- (f) 433 MHz to 435 MHz.

3. Class assignment

This class assignment confers rights on any person to operate a remote controlled device subject to the:

- (a) conditions as specified in paragraph 4; and
- (b) device operating within the frequency bands as specified in paragraph 2.

4. Conditions

The maximum EIRP shall not exceed 50 mW.

THIRTEENTH SCHEDULE

**Class Assignment for Security Device**

1. Definition

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

2. Frequency bands

A security device shall only utilize any of the following frequency bands assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:

- (a) 3 kHz to 195 kHz;
- (b) 228.0063 MHz to 228.9937 MHz;
- (c) 303 MHz to 320 MHz;
- (d) 400 MHz to 402 MHz;
- (e) 433 MHz to 435 MHz;
- (f) 868.1 MHz<sup>3</sup>;
- (g) 869 MHz to 870 MHz<sup>1</sup>; or
- (h) 76 GHz to 77 GHz.

3. Class assignment

This class assignment confers rights on any person to operate a security device subject to the:

- (a) conditions as specified in paragraph 4; and
- (b) device operating within the frequency bands as specified in paragraph 2.

## 4. Conditions

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

**TABLE L**  
**Frequency Bands and Maximum EIRP**

<i>Item</i>	<i>Frequency Bands</i>	<i>Maximum EIRP</i>
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.	868.1 MHz <sup>3</sup>	50 mW
7.	869 MHz to 870 MHz <sup>1</sup>	500 mW
8.	76 GHz to 77 GHz	50 mW

<sup>1</sup>Use of the frequency band of 869 MHz to 870 MHz for SRD, security device and RFID only allowed until 31 December 2017.

<sup>3</sup>Use of the frequency 868.1 MHz for security device only allowed until 31 December 2017.



## FOURTEENTH SCHEDULE

### **Class Assignment for Wireless Microphone Device**

#### **1. Definition**

- (1) 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.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

#### **2. Frequency bands**

A wireless microphone device shall only utilize any of the following frequency bands assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:

- (a) 26.95728 MHz to 27.28272 MHz;
- (b) 40.435 MHz to 40.925 MHz;
- (c) 87.5 MHz to 108 MHz;
- (d) 174 MHz to 230 MHz
- (e) 470 MHz to 694 MHz
- (f) 694 MHz to 798 MHz<sup>4</sup>; or
- (g) 2400 MHz to 2500 MHz.

<sup>4</sup>Use of the frequency band of 694 MHz to 798 MHz for wireless microphone device is only allowed until 30 June 2018.

#### **3. Class assignment**

This class assignment confers rights on any person to operate a wireless microphone device subject to the:

- (a) conditions as specified in paragraph 4; and
- (b) device operating within the frequency bands as specified in paragraph 2.

4. Conditions

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.

FIFTEENTH SCHEDULE

**Class Assignment for FSO Device**

1. Definition

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

2. Frequency bands

A FSO device shall only utilize any of the following frequencies assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:

- (a) 193.5484 THz (wavelength of 1550 nm); or
- (b) 352.9412 THz (wavelength of 850 nm).

3. Class assignment

This class assignment confers rights on any person to operate a FSO device subject to the:

- (a) conditions as specified in paragraph 4; and
- (b) device operating within the frequency bands as specified in paragraph 2.

4. Conditions

The maximum power shall not exceed 650 mW.

SIXTEENTH SCHEDULE

**Class Assignment for ISM Device**

1. Definition

- (1) 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.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

An ISM device shall only utilize any of the following frequency bands assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:

- (a) 6765 kHz to 6795 kHz;
- (b) 13.553 MHz to 13.567 MHz;
- (c) 26.957 MHz to 27.283 MHz;
- (d) 40.660 MHz to 40.7 MHz;
- (e) 2400 MHz to 2500 MHz;
- (f) 5725 MHz to 5875 MHz;
- (g) 24 GHz to 24.25 GHz;
- (h) 61 GHz to 61.5 GHz;
- (i) 122 GHz to 123 GHz; or
- (j) 244 GHz to 246 GHz.

3. Class assignment

This class assignment confers rights on any person to operate an ISM device subject to the:

- (a) conditions as specified in paragraph 4; and
- (b) device operating within the frequency bands as specified in paragraph 2.

4. Conditions

The maximum EIRP shall not exceed 500 mW.

SEVENTEENTH SCHEDULE

**Class Assignment for RFID**

1. Definition

- (1) 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.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

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

3. Class assignment

This class assignment confers rights on any person to operate a RFID subject to the:

- (a) conditions as specified in paragraph 4; and
- (b) device operating within the frequency bands as specified in paragraph 2.

4. Conditions

The maximum power shall not exceed the values as specified in the third column of Table M.

TABLE M  
**Frequency Bands and Maximum Power**

<i>Item</i>	<i>Frequency Bands</i>	<i>Maximum Power</i>
1.	13.553 MHz to 13.567 MHz	100 mW EIRP
2.	433 MHz to 435 MHz	100 mW EIRP
3.	869 MHz to 870 MHz <sup>1</sup>	500 mW EIRP
4.	919 MHz to 923 MHz	2 W ERP
5.	2400 MHz to 2500 MHz	500 mW EIRP

<sup>1</sup>The use of the frequency band of 869 MHz to 870 MHz for SRD, security device and RFID is only allowed until 31 December 2017.

EIGHTEENTH SCHEDULE

**Class Assignment for Active Medical Implant**

1. Definition

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

2. Frequency bands

An active medical implant shall only utilize the following frequency bands as specified in the second column of Table N that is assigned for this Class Assignment, amongst other uses, on a shared non-exclusive basis.

3. Class assignment

This class assignment confers rights on any person to operate an active medical implant subject to the:

- (a) conditions as specified in paragraph 4; and
- (b) device operating within the frequency bands as specified in paragraph 2.

4. Conditions

The maximum power shall not exceed the values as specified in the third column of Table N.



TABLE N  
Frequency Bands and Maximum Power

<i>Item</i>	<i>Frequency Bands</i>	<i>Maximum Power</i>
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) 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 250 nW ERP for devices using LPLDC

NINETEENTH SCHEDULE

**Class Assignment for Aeronautical Mobile Telemetry Access Device**

1. Definition

- (1) 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.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

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

3. Class assignment

This class assignment confers rights on any person to operate an aeronautical mobile telemetry access device subject to the:

- (a) conditions as specified in paragraph 4; and
- (b) device operating within the frequency bands as specified in paragraph 2.

4. Conditions

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

TABLE O  
**Frequency Bands and Maximum EIRP**

<i>Item</i>	<i>Frequency Bands</i>	<i>Maximum EIRP</i>
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

TWENTIETH SCHEDULE

**Class Assignment for Mobile Satellite Access Device**

1. Definition

- (1) 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.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

A mobile satellite access device shall only utilize any of the frequency bands assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:

- (a) 1518 MHz to 1559 MHz;
- (b) 1610 MHz to 1660.5 MHz;
- (c) 1668 MHz to 1668.4 MHz;
- (d) 1980 MHz to 2010 MHz;
- (e) 2170 MHz to 2200 MHz;
- (f) 2483.5 MHz to 2520 MHz; or
- (g) 2670 MHz to 2690 MHz.

3. Class assignment

This class assignment confers rights on any person to operate a mobile satellite access device subject to the:

- (a) conditions as specified in paragraph 4; and
- (b) device operating within the frequency bands as specified in paragraph 2.

4. Conditions

The maximum EIRP shall not exceed 7 W.

TWENTY-FIRST SCHEDULE

**Class Assignment for Satellite Broadcasting Receiver Device**

1. Definition

- (1) 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.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

A satellite broadcasting receiver device shall only utilize the following frequency bands assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:

- (a) 10.7 GHz to 10.95 GHz;
- (b) 10.95 GHz to 11.2 GHz;
- (c) 11.45 GHz to 11.7 GHz; or
- (d) 12.2 GHz to 12.75 GHz.

3. Class assignment

This class assignment confers rights on any person to operate a satellite broadcasting receiver device subject to the:

- (a) conditions specified in paragraph 4;
- (b) satellite broadcasting receiver device operating within the frequency bands as specified in the paragraph 2;

- (c) satellite broadcasting receiver device being connected to a network service provided through a space station operated by Malaysia East Asia Satellite (MEASAT) at 91.5° East; and
- (d) the device being used by the end user for receiving content applications service from a licensed service provider.

4. Conditions

Maximum satellite receiver device antenna diameter

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

TWENTY-SECOND SCHEDULE

**Class Assignment for Terrestrial Television Broadcasting Receiver Device**

1. Definition

- (1) 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.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

A terrestrial television broadcasting receiver device shall only utilize the same spectrum that was assigned by way of an Apparatus Assignment for the purpose of receiving the spectrum and such utilization of the spectrum, amongst other uses, is on a shared non-exclusive basis.

3. Class assignment

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 authorized by an Apparatus Assignment.

TWENTY-THIRD SCHEDULE

**Class Assignment for Terrestrial Radio Broadcasting Receiver Device**

1. Definition

- (1) 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.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

A terrestrial radio broadcasting receiver device shall only utilize the same spectrum that was assigned by way of an Apparatus Assignment for the purpose of receiving the spectrum and such utilization of the spectrum, amongst other uses, is on a shared non-exclusive basis.

3. Class assignment

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 authorized by an Apparatus Assignment.



TWENTY-FOURTH SCHEDULE

**Class Assignment for One-Way Radio Pager Receiver Device**

1. Definition

- (1) 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.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

A one-way radio pager receiver device shall only utilize the same spectrum that was assigned by way of an Apparatus Assignment for the purpose of receiving within the spectrum and such utilization of the spectrum, amongst other uses, is on a shared non-exclusive basis.

3. Class assignment

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 authorized by an Apparatus Assignment.

TWENTY-FIFTH SCHEDULE

**Class Assignment for Satellite Radiolocation Receiver Device**

1. Definition

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

2. Frequency bands

The satellite radiolocation receiver device shall only utilize the following frequency bands assigned for this Class Assignment, amongst other uses, on a shared non-exclusive basis:

- (a) 1164 MHz to 1400 MHz;
- (b) 1559 MHz to 1610 MHz; or
- (c) 5000 MHz to 5030 MHz.

3. Class assignment

This class assignment confers rights on any person to operate a satellite radiolocation receiver device subject to such device operating within the frequency bands as specified in paragraph 2.

TWENTY-SIXTH SCHEDULE

**Class Assignment for Wireless CCTV Access Device**

1. Definition

- (1) 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.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency Bands

A wireless CCTV access device shall only utilize the following frequency bands assigned for this class assignment, amongst other uses, on a shared non-exclusive basis:

- (a) 2400 MHz to 2500 MHz;
- (b) 4940 MHz to 4990 MHz;
- (c) 5150 MHz to 5350 MHz;
- (d) 5650 MHz to 5725 MHz; or
- (e) 5725 MHz to 5875 MHz.

3. Class Assignment

This class assignment confers rights on any person to operate the wireless CCTV access device subject to the:

- (a) conditions as specified in paragraph 4;
- (b) device operating within the frequency bands as specified in item (a), (c) and (e); and

- (c) for the device operating in frequency bands specified in item (b) and (d), the operation of the CCTV hub station being authorized by an Apparatus Assignment.

#### 4. Conditions

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

TABLE P  
**Frequency Bands and Maximum EIRP**

<i>Item</i>	<i>Frequency Bands</i>	<i>Maximum EIRP</i>
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

#### (a) Operational Restrictions

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

TWENTY-SEVENTH SCHEDULE

**Class Assignment for UWB Communication Device**

1. Definition

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

2. Frequency Bands

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

3. Class Assignment

This class assignment confers rights on a person to operate a UWB communication device subject to the:

- (a) conditions as specified in paragraph 4; and
- (b) device operating within the frequency bands as specified in paragraph 2.

4. Conditions

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

TABLE Q  
**Frequency Bands and Maximum Mean EIRP Density**

<i>Item</i>	<i>Frequency Bands</i>	<i>Maximum mean EIRP (dBm/MHz)</i>	<i>Maximum peak EIRP (dBm)</i>
1.	3100 MHz to 3400 MHz	-70.00	-36.00
2.	3400 MHz to 3800 MHz	-80.00	-40.00
3.	3800 MHz to 6000 MHz	-70.00	-30.00
4.	6000 MHz to 8500 MHz	-41.30	0.00
5.	8500 MHz to 10600 MHz	-65.00	-25.00

- (2) The maximum peak of EIRP density is defined in 50 MHz bandwidth.
- (3) UWB communication device which operates in the frequency band of 3100 MHz to 10600 MHz shall only be utilized for communication purposes and shall only be used in confined areas of buildings or localized on-site operations. Use of outdoor mounted antennae is not permissible.
- (4) Emission of UWB communication device shall not be intentionally directed outside of the building in which the device is being used.
- (5) 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.
- (6) 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.

TWENTY-EIGHTH SCHEDULE

**Class Assignment for Automotive Radar Device**

1. Definition

- (1) 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.
- (2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency Bands

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

3. Class Assignment

This class assignment confers rights on a person to operate an automotive radar device subject to the:

- (a) conditions as specified in paragraph 4; and
- (b) device operating within the frequency bands as specified in paragraph 2.

4. Conditions

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

TABLE R  
**Frequency Bands and Maximum Mean EIRP Density**

<i>Item</i>	<i>Frequency Bands</i>	<i>Maximum mean EIRP</i>	<i>Maximum peak EIRP</i>
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

- (2) The maximum peak of EIRP density is defined in 50 MHz bandwidth.
- (3) For the frequency band 24 GHz to 24.25 GHz, narrow band emission with a maximum peak EIRP of 30 dBm is allowed.
- (4) 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.
- (5) The automotive radar device shall be restricted for land transportation only.
- (6) The operation of automotive radar device shall only be activated when the land transportation or vehicle is operating.



TWENTY-NINTH SCHEDULE

**Class Assignment for Inductive Applications**

1. Definition

(2) 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.

(2) Subject to subparagraph (1), all terminologies of an absolute technical nature shall have the same meaning as provided in the International Telecommunication Convention.

2. Frequency bands

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

3. Class assignment

This class assignment confers rights on any person to operate an inductive application device subject to-

- (a) the conditions as specified in paragraph 4; and
- (b) the device operating within the frequency bands as specified in paragraph 2.

4. Conditions

(1) Maximum Power

The maximum power shall not exceed the values as specified in Table S.

TABLE S  
Frequency Bands and Maximum Power

<i>Item</i>	<i>Frequency Bands</i>	<i>Maximum Power</i>
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

**Revocation**

7. The Notification of Issuance of Class Assignments No. 3 of 2015 dated 21 December 2015 is revoked.

Dated: 28 September 2017

A handwritten signature in black ink, consisting of stylized, fluid strokes that form the name 'Halim Shafie'.

**TAN SRI DR. HALIM SHAFIE**

*Chairman*

*Malaysian Communications and Multimedia Commission*