



**MCMC SRSP FS 17.70**  
**5 January 2023**

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**Standard Radio System Plan**

**REQUIREMENTS FOR FIXED WIRELESS  
SYSTEMS**

**OPERATING IN THE FREQUENCY BAND OF**

**17.70 GHz to 19.70 GHz**

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Malaysian Communications and Multimedia Commission  
Suruhanjaya Komunikasi dan Multimedia Malaysia  
MCMC HQ Tower 1, Jalan Impact, Cyber 6  
63000 Cyberjaya, Selangor Darul Ehsan, Malaysia  
Tel: +60 3 8688 8000 Fax: +60 3 8688 1000  
Website: <http://www.mcmc.gov.my>

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## 1. FOREWORD

- 1.1 This Standard Radio System Plan (“**SRSP**”) is prepared by the Malaysian Communications and Multimedia Commission (“**MCMC**”) pursuant to the Communications and Multimedia Act 1998 (“**Act**”) and the Spectrum Plan (“**Spectrum Plan**”) to provide information on the minimum technical and regulatory requirements for the efficient use of the **17.70 GHz to 19.70 GHz** frequency band.
- 1.2 This SRSP does not attempt to establish any detailed equipment standards.
- 1.3 In the event there are any inconsistencies between this SRSP and the Act or any subsidiary legislation made under the Act, the Act or the subsidiary legislation shall prevail.

## 2. ABBREVIATIONS

<b>AA</b>	Apparatus Assignment
<b>EESS</b>	Earth Exploration-Satellite Service
<b>FACSMAB</b>	Frequency Assignment Committee of Singapore, Malaysia and Brunei Darussalam
<b>FS</b>	Fixed Service
<b>FSS</b>	Fixed Satellite Service
<b>FWS</b>	Fixed Wireless System
<b>GHz</b>	Gigahertz
<b>ITU</b>	International Telecommunication Union
<b>ITU-R</b>	ITU Radiocommunication Sector
<b>JCC</b>	Joint Committee on Communications between the Republic of Indonesia and Malaysia
<b>JTC</b>	Joint Technical Committee on Coordination and Assignment of Frequencies along Malaysia – Thailand Common Border
<b>MHz</b>	Megahertz
<b>MS</b>	Mobile Service
<b>NFP(I)</b>	Network Facilities Provider (Individual)
<b>RF</b>	Radio-frequency
<b>SRSP</b>	Standard Radio System Plan
<b>STM</b>	Synchronous transport module
<b>Trilateral</b>	Trilateral Coordination Meeting between the Republic of Indonesia, Malaysia and Singapore

### **3. INTENT**

- 3.1 This SRSP is intended to ensure efficient provision of FWS in Malaysia with minimal service disruption and radio frequency interference among the service providers.
- 3.2 This SRSP provides the minimum requirements for the utilisation of FWS in the frequency band of **17.70 GHz to 19.70 GHz** (“**said band**”) for the digital transmission of FWS in Malaysia.
- 3.3 FWS may be used for high, medium and low-capacity fixed service applications including mobile infrastructure on case-by-case basis.

### **4. GENERAL**

- 4.1 Technical characteristics of the FWS communications equipment shall conform to all applicable Malaysian standards, international standards, ITU and its radio regulations as agreed and adopted by Malaysia.
- 4.2 Although the system shall conform to the requirements of this SRSP, MCMC may require that modifications be made to the system whenever interference is caused or is likely to be caused to other radio stations or systems of services as listed in the Spectrum Plan.
- 4.3 For the avoidance of doubt, MCMC shall not be responsible for any costs incurred as a result of the system modifications made pursuant to subsection 4.2 above. The cost of such modifications shall be fully borne by the assignment holder.
- 4.4 All FWS communications equipment installations must comply with the safety rules and other requirements as specified in the applicable standards.
- 4.5 The FWS communications equipment used shall be certified as required under

regulation 14 of the Communications and Multimedia (Technical Standards) Regulations 2000.

- 4.6 The allocation and assignment of the said band and the information in this SRSP are subject to review by MCMC from time to time to reflect new developments in the communications and multimedia industry.

## 5. CHANNEL ARRANGEMENT

- 5.1 The RF channel arrangement is based on the RF channel arrangement in the ITU-R **Recommendation F.595**. Users are encouraged to refer to the latest issue of the recommendation document(s) published at the ITU-R website.
- 5.2 For this SRSP, the RF channel arrangement for system operating in the said band, is derived as follows:

Let:

$f_0$  be the frequency of the centre of the band of frequencies occupied (MHz), where  $f_0 = 18\,700$  MHz,

$f_n$  be the centre frequency of one RF channel in the lower half of the frequency band (MHz),

$f'_n$  be the centre frequency of one RF channel in the upper half of the frequency band (MHz),

The RF channel arrangements are illustrated in **Figure 1 of Appendix A**.

- 5.3 The frequencies of individual channels are expressed by the following relationship:

- 5.3.1 For systems (capacity of the order of 280 Mbit/s) with a channel bandwidth of **220 MHz**:

lower half of the frequency band:	$f_n = f_0 - 1110 + 220 n$ MHz	$n = 1, 2, 3$ or $4$
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upper half of the frequency band:	$f_{n'} = f_0 + 10 + 220 n \text{ MHz}$	
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The RF channel arrangement is illustrated in **Figure 1(a)** of **Appendix A** and the centre frequencies of the RF channels are listed in **Table 1** of **Appendix A**.

5.3.2 For systems (capacity of the order of 140 Mbit/s) with a channel bandwidth of **110 MHz**:

lower half of the frequency band:	$f_n = f_0 - 1000 + 110 n \text{ MHz}$	$n = 1, 2, \dots, 8$
upper half of the frequency band:	$f_{n'} = f_0 + 10 + 110 n \text{ MHz}$	

The RF channel arrangement is illustrated in **Figure 1(b)** of **Appendix A** and the centre frequencies of the RF channels are listed in **Table 2** of **Appendix A**.

5.3.3 For systems (capacity of the order of 140 Mbit/s or STM-1 with multi-state modulation formats) with a channel bandwidth of **55 MHz**:

lower half of the frequency band:	$f_n = f_0 - 1000 + 55 n \text{ MHz}$	$n = 1, 2, \dots, 17$
upper half of the frequency band:	$f_{n'} = f_0 + 10 + 55 n \text{ MHz}$	

The RF channel arrangement is illustrated in **Figure 1(d)** of **Appendix A** and the centre frequencies of the RF channels are listed in **Table 3** of **Appendix A**.

5.3.4 For systems (capacity of the order of 34 Mbit/s) with a channel bandwidth of **27.5 MHz**:

lower half of the frequency band:	$f_n = f_0 - 1000 + 27.5 n$ MHz	$n = 1, 2, \dots, 35$
upper half of the frequency band:	$f_{n'} = f_0 + 10 + 27.5 n$ MHz	

The RF channel arrangement is illustrated in **Figure 1(c)** of **Appendix A** and the centre frequencies of the RF channels are listed in **Table 4** of **Appendix A**.

5.3.5 For medium capacity systems with a channel bandwidth of **13.75 MHz**:

lower half of the frequency band:	$f_n = f_0 - 1000 + 13.75 n$ MHz	$n = 1, 2, \dots, 70$
upper half of the frequency band:	$f_{n'} = f_0 + 10 + 13.75 n$ MHz	

The RF channel arrangement is illustrated in **Figure 2** of **Appendix A** and the centre frequencies of the RF channels are listed in **Table 5** of **Appendix A**.

5.3.6 For low capacity systems with a channel bandwidth of **7.5 MHz**:

lower half of the frequency band:	$f_n = f_0 - 997.5 + 7.5 n$ MHz	$n = 1, 2, \dots, 131$
upper half of the frequency band:	$f_{n'} = f_0 + 12.5 + 7.5 n$ MHz	

The frequency arrangement is illustrated in **Figure 3** of **Appendix A** and the centre frequencies of the RF channels are listed in **Table 6** of **Appendix A**.



## 6. REQUIREMENTS FOR USAGE OF SPECTRUM

- 6.1 This SRSP covers the minimum key characteristics for the use of the said band.
- 6.2 The use of the said band shall comply with the transmit and receive channel arrangements as shown in **Table 1 to Table 6 of Appendix A.**
- 6.3 The above channel arrangements primarily provide for six (6) basic homogeneous arrangements for FWS with bandwidth of 220 MHz, 110 MHz, 55 MHz, 27.5 MHz, 13.75 MHz and 7.5 MHz.
- 6.4 In a digital radio system, both horizontal and vertical polarisation shall be used, where possible, for each radio frequency channel, as shown in **Figure 1, Figure 2 and Figure 3 of Appendix A.**
- 6.5 Protection channel may be permitted for multi- channel systems provided that it is duly approved by MCMC with the issuance of AA.
- 6.6 To maximise the use of frequency, the frequencies assigned to a main route are also assigned for spur routes and vice versa, where possible, without causing interference to each other.
- 6.7 Allocation of FS, FSS and MS in the said band including EESS (passive) in the frequency band of 18.60 GHz to 18.80 GHz are on primary status. Sharing conditions for FS and FSS in the said band is as stipulated in the table below:

No.	Frequency Band	Sharing conditions
1.	17.70 GHz to 19.70 GHz	<ul style="list-style-type: none"> <li>• Priority accorded to FSS at designated hub stations below:               <ol style="list-style-type: none"> <li>i. Cyberjaya, Selangor (GPS: Latitude 2°56'5.00" N, Longitude 101°39'29.00" E)</li> <li>ii. Rawang, Selangor (GPS: Latitude 3°18'17.32" N, Longitude 101°33'20.35"E)</li> <li>iii. Kuching, Sarawak (GPS: Latitude 1°31'38.8092" N, Longitude: 110°23'56.5404" E)</li> <li>iv. Lundu, Sarawak (GPS: Latitude 1°29'36.654" N, Longitude 109°59'44.898" E)</li> </ol> </li> <li>• No new FWS is allowed within 3.0 kilometre radius from the above hub stations.</li> </ul>

6.8 MCMC may review this priority, considering the market and technological developments.

6.9 The FWS of FS shall not interfere with the earth stations of the FSS and EESS (passive) and shall comply with **Recommendation ITU-R SF.746, Recommendation ITU-R SM. 1540 and Article 21** of the ITU Radio Regulations.

6.10 Special care shall be taken by FS and FSS providers during the network planning stage and installation of their communications equipment to avoid any interference with each other. FS and FSS providers shall take full advantage of interference mitigation techniques such as antenna discrimination, antenna tilt, antenna polarization, frequency discrimination, shielding/blocking (introduce

diffraction loss), site selection, and/or power control to facilitate the coordination of systems.

- 6.11 FWS receiving stations operating in the said band should avoid directing their antennas towards the geostationary-satellite orbit and earth stations. It is recommended to maintain a minimum separation angle as recommended in **Article 21** of the ITU Radio Regulation.
- 6.12 In the event of any interference and the affected party files a written report to MCMC for a resolution, MCMC will decide the necessary modifications and schedule of modifications to resolve the interference dispute. MCMC will be guided by the interference resolution process as shown in **Appendix B**.

## **7. PRINCIPLES OF ASSIGNMENT**

- 7.1 Authorisation to use the said band for FWS station is by way of AA. Priority will be given to the use of a station for trunk or main link.
- 7.2 The eligibilities of applicants for the submission of AA applications are as follows:
- i. NFP(I) licence holder, which owns or provides radiocommunications transmitters and links; or
  - ii. Private network facility (Government and private corporations or companies) for private use only.
- 7.3 For use by private network facilities other than offshore, an applicant shall provide proof that the existing NFP(I) licence holders are not able to provide FWS station to the said applicant.

7.4 Applicants are required to submit:

7.4.1 AA application for the apparatus on the prescribed AA form in accordance with the Act, the relevant subsidiary legislations including the Communications and Multimedia (Spectrum) Regulations 2000 (“**Spectrum Regulations**”) and any relevant instruments issued by MCMC from time to time; and

7.4.2 any other documents and/or information that may be requested by MCMC.

7.5 The assignment shall be subject to all conditions as specified in regulations 9, 10 and 22 of the Spectrum Regulations and any further conditions as may be imposed by MCMC from time to time.

7.6 The issuance of AA will be subject to technical analysis by MCMC. If necessary, operator-to-operator coordination at defined geographic boundaries may be required to reduce interference.

7.7 An applicant is also encouraged to coordinate among existing operators of FWS stations in the same frequency band prior to the submission of the AA application.

7.8 The AA shall be assigned based on a first come, first-serve basis.

## **8. IMPLEMENTATION**

8.1 This SRSP shall be effective on its date of issuance.

8.2 AA application for FWS operating in the said band shall comply with this SRSP, the Act, relevant subsidiary legislations including the Spectrum Regulations and any relevant instruments issued by MCMC from time to time.

## **9. COORDINATION REQUIREMENT**

- 9.1 The use of the said band shall require coordination at the common border areas with the neighbouring countries within the coordination zones. The coordination zones are based on agreements reached at border committees, namely FACSMAB, JCC, JTC and Trilateral. Agreement on the use of the said band may differ from one neighbouring country to another, subject to the requirements of the respective country.
- 9.2 In the event there is no agreement on coordination zone, a zone within 50 km from the border of the neighbouring countries will be used.
- 9.3 It shall be noted that the coordination zones and other coordination parameters between Malaysia and neighbouring countries may be reviewed and updated from time to time.
- 9.4 Issuance of AA is also subject to successful coordination with the above neighbouring countries, where applicable.
- 9.5 The technical mitigation guide as mentioned in subsections 6.10 and 6.12 above shall be applied if operator-to-operator coordination is required.
- 9.6 In the event of any interference, the affected users shall carry out an operator-to-operator coordination. In the event that the interference remains unresolved after 24 hours, the affected parties may escalate the matter to MCMC for a resolution. MCMC will decide the necessary modifications and schedule of modifications to resolve the interference dispute. MCMC will be guided by the interference resolution process as shown in **Appendix B**.

## **10. REVOCATION**

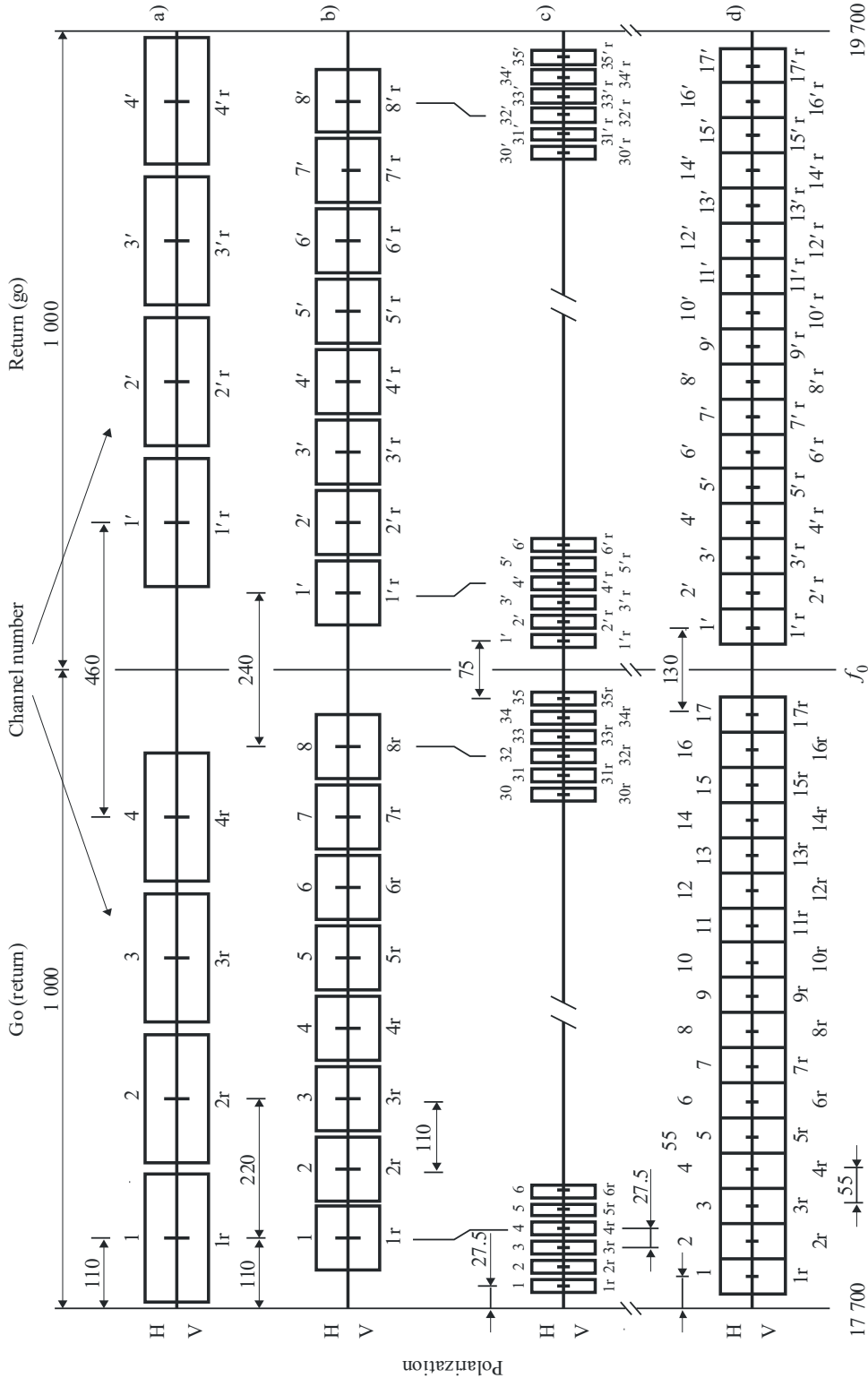
- 10.1 SKMM SRSP – 527 FS Issue 4 dated 15 October 2009 is hereby revoked.

## 11. REFERENCES

- i. **Spectrum Plan.**
- ii. **ITU-R F.595** Radio-frequency channel arrangements for fixed wireless systems operating in the 17.7 - 19.7 GHz frequency band.
- iii. **ITU-R F.746** Radio-frequency arrangements for fixed service systems
- iv. **ITU-R SM.1540** Unwanted emissions in the out-of-band domain falling into adjacent allocated bands
- v. **ITU Radio Regulations Article 21** Terrestrial and space services sharing frequency bands above 1 GHz.

# APPENDIX A: CHANNEL ARRANGEMENT

**Figure 1**  
 RF channel arrangements for FWS operating  
 in the 17.70 to 19.70 GHz frequency band  
 (Co-channel arrangement)  
 (All frequencies in MHz)



F.0595-01

**Table 1**  
 RF Carrier Centre Frequencies  
 (bandwidth = 220 MHz, 4x4' channels)

<b>Channel No.</b>	<b>Frequency (MHz)</b>	<b>Channel No.</b>	<b>Frequency (MHz)</b>
1	17810.00	1'	18930.00
2	18030.00	2'	19150.00
3	18250.00	3'	19370.00
4	18470.00	4'	19590.00

**Table 2**  
 RF Carrier Centre Frequencies  
 (bandwidth = 110 MHz, 8x8' channels)

<b>Channel No.</b>	<b>Frequency (MHz)</b>	<b>Channel No.</b>	<b>Frequency (MHz)</b>
1	17810.00	1'	18820.00
2	17920.00	2'	18930.00
3	18030.00	3'	19040.00
4	18140.00	4'	19150.00
5	18250.00	5'	19260.00
6	18360.00	6'	19370.00
7	18470.00	7'	19480.00
8	18580.00	8'	19590.00



**Table 3**  
 RF Carrier Centre Frequencies  
 (bandwidth = 55 MHz, 17x17' channels)

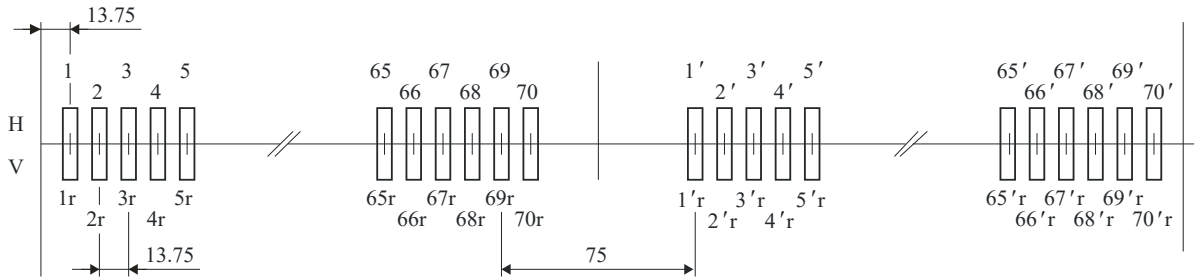
<b>Channel No.</b>	<b>Frequency (MHz)</b>	<b>Channel No.</b>	<b>Frequency (MHz)</b>
1	17755.00	1'	18765.00
2	17810.00	2'	18820.00
3	17865.00	3'	18875.00
4	17920.00	4'	18930.00
5	17975.00	5'	18985.00
6	18030.00	6'	19040.00
7	18085.00	7'	19095.00
8	18140.00	8'	19150.00
9	18195.00	9'	19205.00
10	18250.00	10'	19260.00
11	18305.00	11'	19315.00
12	18360.00	12'	19370.00
13	18415.00	13'	19425.00
14	18470.00	14'	19480.00
15	18525.00	15'	19535.00
16	18580.00	16'	19590.00
17	18635.00	17'	19645.00

**Table 4**  
 RF Carrier Centre Frequencies  
 (bandwidth = 27.5 MHz, 35x35' channels)

Ch. No.	Freq. (MHz)	Ch. No.	Freq. (MHz)	Ch. No.	Freq. (MHz)	Ch. No.	Freq. (MHz)
1	17727.50	1'	18737.50	19	18222.50	19'	19232.50
2	17755.00	2'	18765.00	20	18250.00	20'	19260.00
3	17782.50	3'	18792.50	21	18277.50	21'	19287.50
4	17810.00	4'	18820.00	22	18305.00	22'	19315.00
5	17837.50	5'	18847.50	23	18332.50	23'	19342.50
6	17865.00	6'	18875.00	24	18360.00	24'	19370.00
7	17892.50	7'	18902.50	25	18387.50	25'	19397.50
8	17920.00	8'	18930.00	26	18415.00	26'	19425.00
9	17947.50	9'	18957.50	27	18442.50	27'	19452.50
10	17975.00	10'	18985.00	28	18470.00	28'	19480.00
11	18002.50	11'	19012.50	29	18497.50	29'	19507.50
12	18030.00	12'	19040.00	30	18525.00	30'	19535.00
13	18057.50	13'	19067.50	31	18552.50	31'	19562.50
14	18085.00	14'	19095.00	32	18580.00	32'	19590.00
15	18112.50	15'	19122.50	33	18607.50	33'	19617.50
16	18140.00	16'	19150.00	34	18635.00	34'	19645.00
17	18167.50	17'	19177.50	35	18662.50	35'	19672.50
18	18195.00	18'	19205.00				

**Figure 2**

RF channel arrangements for medium capacity FWS with 13.75 MHz channel bandwidth in co-channel arrangement  
(All frequencies in MHz)



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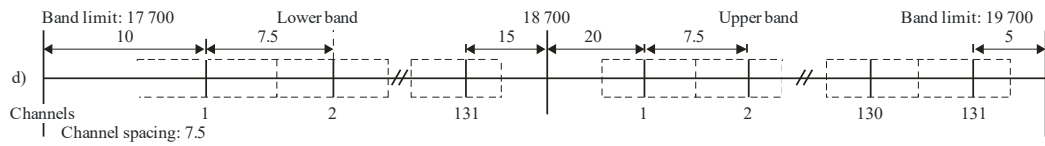
**Table 5**  
RF Carrier Centre Frequencies  
(bandwidth = 13.75 MHz, 70x70' channels)

Ch. No.	Freq. (MHz)	Ch. No.	Freq. (MHz)	Ch. No.	Freq. (MHz)	Ch. No.	Freq. (MHz)
1	17713.75	1'	18723.75	11	17851.25	11'	18861.25
2	17727.50	2'	18737.50	12	17865.00	12'	18875.00
3	17741.25	3'	18751.25	13	17878.75	13'	18888.75
4	17755.00	4'	18765.00	14	17892.50	14'	18902.50
5	17768.75	5'	18778.75	15	17906.25	15'	18916.25
6	17782.50	6'	18792.50	16	17920.00	16'	18930.00
7	17796.25	7'	18806.25	17	17933.75	17'	18943.75
8	17810.00	8'	18820.00	18	17947.50	18'	18957.50
9	17823.75	9'	18833.75	19	17961.25	19'	18971.25
10	17837.50	10'	18847.50	20	17975.00	20'	18985.00

**Table 5 (continued)**  
 RF Carrier Centre Frequencies  
 (bandwidth = 13.75 MHz, 70x70' channels)

Ch. No.	Freq. (MHz)	Ch. No.	Freq. (MHz)	Ch. No.	Freq. (MHz)	Ch. No.	Freq. (MHz)
21	17988.75	21'	18998.75	46	18332.50	46'	19342.50
22	18002.50	22'	19012.50	47	18346.25	47'	19356.25
23	18016.25	23'	19026.25	48	18360.00	48'	19370.00
24	18030.00	24'	19040.00	49	18373.75	49'	19383.75
25	18043.75	25'	19053.75	50	18387.50	50'	19397.50
26	18057.50	26'	19067.50	51	18401.25	51'	19411.25
27	18071.25	27'	19081.25	52	18415.00	52'	19425.00
28	18085.00	28'	19095.00	53	18428.75	53'	19438.75
29	18098.75	29'	19108.75	54	18442.50	54'	19452.50
30	18112.50	30'	19122.50	55	18456.25	55'	19466.25
31	18126.25	31'	19136.25	56	18470.00	56'	19480.00
32	18140.00	32'	19150.00	57	18483.75	57'	19493.75
33	18153.75	33'	19163.75	58	18497.50	58'	19507.50
34	18167.50	34'	19177.50	59	18511.25	59'	19521.25
35	18181.25	35'	19191.25	60	18525.00	60'	19535.00
36	18195.00	36'	19205.00	61	18538.75	61'	19548.75
37	18208.75	37'	19218.75	62	18552.50	62'	19562.50
38	18222.50	38'	19232.50	63	18566.25	63'	19576.25
39	18236.25	39'	19246.25	64	18580.00	64'	19590.00
40	18250.00	40'	19260.00	65	18593.75	65'	19603.75
41	18263.75	41'	19273.75	66	18607.50	66'	19617.50
42	18277.50	42'	19287.50	67	18621.25	67'	19631.25
43	18291.25	43'	19301.25	68	18635.00	68'	19645.00
44	18305.00	44'	19315.00	69	18648.75	69'	19658.75
45	18318.75	45'	19328.75	70	18662.50	70'	19672.50

**Figure 3**  
 RF channel arrangements for low capacity FWS with 7.5 MHz channel bandwidth in co-channel arrangement  
 (All frequencies in MHz)



F.0595-07

**Table 6**  
 RF Carrier Centre Frequencies  
 (bandwidth = 7.5 MHz, 131x131' channels)

Ch. No.	Freq. (MHz)	Ch. No.	Freq. (MHz)	Ch. No.	Freq. (MHz)	Ch. No.	Freq. (MHz)
1	17710.00	1'	18720.00	11	17785.00	11'	18795.00
2	17717.50	2'	18727.50	12	17792.50	12'	18802.50
3	17725.00	3'	18735.00	13	17800.00	13'	18810.00
4	17732.50	4'	18742.50	14	17807.50	14'	18817.50
5	17740.00	5'	18750.00	15	17815.00	15'	18825.00
6	17747.50	6'	18757.50	16	17822.50	16'	18832.50
7	17755.00	7'	18765.00	17	17830.00	17'	18840.00
8	17762.50	8'	18772.50	18	17837.50	18'	18847.50
9	17770.00	9'	18780.00	19	17845.00	19'	18855.00
10	17777.50	10'	18787.50	20	17852.50	20'	18862.50

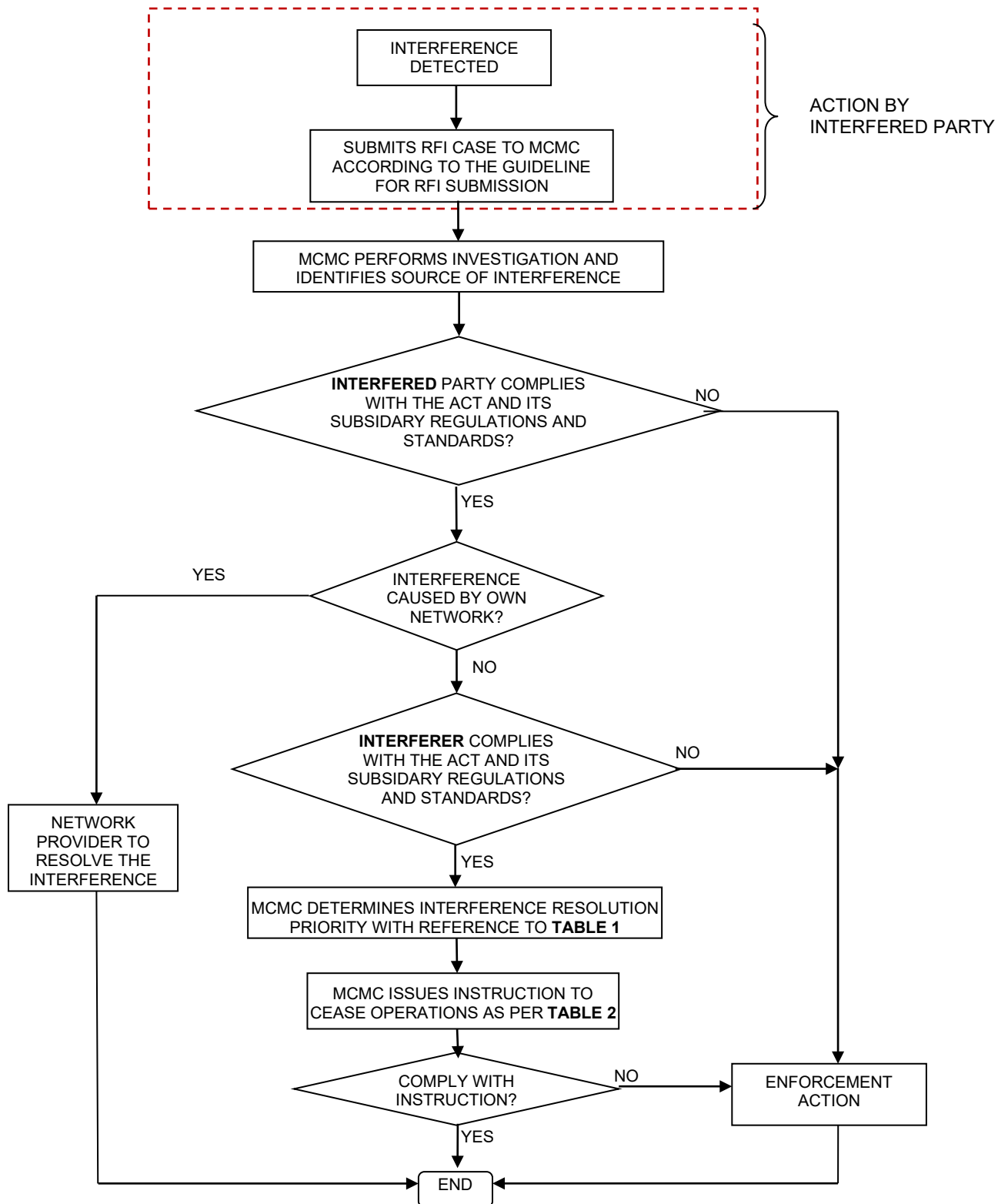
**Table 6 (continued)**  
 RF Carrier Centre Frequencies  
 (bandwidth = 7.5 MHz, 131x131' channels)

Ch. No.	Freq. (MHz)	Ch. No.	Freq. (MHz)	Ch. No.	Freq. (MHz)	Ch. No.	Freq. (MHz)
21	17860.00	21'	18870.00	51	18085.00	51'	19095.00
22	17867.50	22'	18877.50	52	18092.50	52'	19102.50
23	17875.00	23'	18885.00	53	18100.00	53'	19110.00
24	17882.50	24'	18892.50	54	18107.50	54'	19117.50
25	17890.00	25'	18900.00	55	18115.00	55'	19125.00
26	17897.50	26'	18907.50	56	18122.50	56'	19132.50
27	17905.00	27'	18915.00	57	18130.00	57'	19140.00
28	17912.50	28'	18922.50	58	18137.50	58'	19147.50
29	17920.00	29'	18930.00	59	18145.00	59'	19155.00
30	17927.50	30'	18937.50	60	18152.50	60'	19162.50
31	17935.00	31'	18945.00	61	18160.00	61'	19170.00
32	17942.50	32'	18952.50	62	18167.50	62'	19177.50
33	17950.00	33'	18960.00	63	18175.00	63'	19185.00
34	17957.50	34'	18967.50	64	18182.50	64'	19192.50
35	17965.00	35'	18975.00	65	18190.00	65'	19200.00
36	17972.50	36'	18982.50	66	18197.50	66'	19207.50
37	17980.00	37'	18990.00	67	18205.00	67'	19215.00
38	17987.50	38'	18997.50	68	18212.50	68'	19222.50
39	17995.00	39'	19005.00	69	18220.00	69'	19230.00
40	18002.50	40'	19012.50	70	18227.50	70'	19237.50
41	18010.00	41'	19020.00	71	18235.00	71'	19245.00
42	18017.50	42'	19027.50	72	18242.50	72'	19252.50
43	18025.00	43'	19035.00	73	18250.00	73'	19260.00
44	18032.50	44'	19042.50	74	18257.50	74'	19267.50
45	18040.00	45'	19050.00	75	18265.00	75'	19275.00
46	18047.50	46'	19057.50	76	18272.50	76'	19282.50
47	18055.00	47'	19065.00	77	18280.00	77'	19290.00
48	18062.50	48'	19072.50	78	18287.50	78'	19297.50
49	18070.00	49'	19080.00	79	18295.00	79'	19305.00
50	18077.50	50'	19087.50	80	18302.50	80'	19312.50

**Table 6 (continued)**  
 RF Carrier Centre Frequencies  
 (bandwidth = 7.5 MHz, 131x131' channels)

Ch. No.	Freq. (MHz)	Ch. No.	Freq. (MHz)	Ch. No.	Freq. (MHz)	Ch. No.	Freq. (MHz)
81	18310.00	81'	19320.00	111	18535.00	111'	19545.00
82	18317.50	82'	19327.50	112	18542.50	112'	19552.50
83	18325.00	83'	19335.00	113	18550.00	113'	19560.00
84	18332.50	84'	19342.50	114	18557.50	114'	19567.50
85	18340.00	85'	19350.00	115	18565.00	115'	19575.00
86	18347.50	86'	19357.50	116	18572.50	116'	19582.50
87	18355.00	87'	19365.00	117	18580.00	117'	19590.00
88	18362.50	88'	19372.50	118	18587.50	118'	19597.50
89	18370.00	89'	19380.00	119	18595.00	119'	19605.00
90	18377.50	90'	19387.50	120	18602.50	120'	19612.50
91	18385.00	91'	19395.00	121	18610.00	121'	19620.00
92	18392.50	92'	19402.50	122	18617.50	122'	19627.50
93	18400.00	93'	19410.00	123	18625.00	123'	19635.00
94	18407.50	94'	19417.50	124	18632.50	124'	19642.50
95	18415.00	95'	19425.00	125	18640.00	125'	19650.00
96	18422.50	96'	19432.50	126	18647.50	126'	19657.50
97	18430.00	97'	19440.00	127	18655.00	127'	19665.00
98	18437.50	98'	19447.50	128	18662.50	128'	19672.50
99	18445.00	99'	19455.00	129	18670.00	129'	19680.00
100	18452.50	100'	19462.50	130	18677.50	130'	19687.50
101	18460.00	101'	19470.00	131	18685.00	131'	19695.00
102	18467.50	102'	19477.50				
103	18475.00	103'	19485.00				
104	18482.50	104'	19492.50				
105	18490.00	105'	19500.00				
106	18497.50	106'	19507.50				
107	18505.00	107'	19515.00				
108	18512.50	108'	19522.50				
109	18520.00	109'	19530.00				
110	18527.50	110'	19537.50				

## APPENDIX B: INTERFERENCE RESOLUTION PROCESS





**TABLE 1: INTERFERENCE RESOLUTION PRIORITY**

No	Resolution Type of Priority	Description
1	Service Priority	Primary services have priority over secondary services. Among co-primary or co-secondary services, the stated priority is accorded as provided in the Spectrum Plan.
2	Assignment Type Priority	Spectrum Assignment (SA) and Apparatus Assignment (AA) have equal priority but are of higher priority than Class Assignment (CA).
3	Service Type Priority	In the event where service priority and assignment type priority are equal for affected parties, the following list will determine the priority level for the interference case (the earlier in the list is given higher priority): <ul style="list-style-type: none"> <li>i. Safety or Radionavigation service; and</li> <li>ii. Based on the Date of Apparatus Assignment - Priority is given to the earliest/first installation.</li> </ul>

**TABLE 2: INTERFERENCE RESOLUTION TIMELINE TO PARTIES**

No.	Types of interference	Description	Resolution Timeline
1.	Harmful	Interference which endangers or seriously degrades, obstructs or repeatedly interrupts the functioning of a radionavigation service or one or more safety services operating in accordance with the Spectrum Regulations.	To cease* operation immediately within 24 hours or earlier as specified in the notice issued by MCMC.
2.	Major	Electromagnetic interference - (a) rendering any apparatus or service unsuitable for its purpose; or (b) which degrades or obstructs, or repeatedly interrupts, a radiocommunications service operating in accordance with the Spectrum Regulations.	To cease* operation within 3 days or earlier as specified in the notice issued by MCMC if interference cannot be resolved.
3.	Minor	Electromagnetic interference which does not affect the overall operation of any radiocommunications transmission.	To cease* operation within 7 days or earlier as specified in the notice issued by MCMC if interference cannot be resolved.

\*Note:

Resumption of operation of the apparatus is not allowed unless the assignment holder submits an interference resolution or a mitigation plan and has completed the implementation of the mitigation plan to the satisfaction of MCMC to remove/avoid the interference.