**SKMM SRSP–502M**
**TRS**
**16 JULY 2010**

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**Standard Radio System Plan**

# REQUIREMENTS FOR TRUNK RADIO SYSTEMS (TRS) OPERATING IN THE FREQUENCY BAND 806 MHz TO 821 MHz AND 851 MHz TO 866 MHz

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## TABLE OF CONTENTS PAGE

## 1. 0 GLOSSARY

1.1 The terms used in this document may be found in the document SRSP Glossary which can be downloaded from the SKMM website.
(http://skmm.gov.my/link_file/what_we_do/spectrum/pdf/srsp/SRSPGlossary.pdf)

**REQUIREMENTS FOR TRUNKED RADIO SYSTEMS (TRS) OPERATING IN THE FREQUENCY BAND 806 MHz TO 821 MHz AND 851 MHz TO 866 MHz**

## 2.0 INTENT

2.1. This Standard Radio System Plan (SRSP) states the requirements for the utilisation of the frequency bands between 806 MHz to 821 MHz and 851 MHz to 866 MHz for Trunked Radio Systems (TRS) in Malaysia.

2.2. TRS are two-way mobile radio systems consisting of mobile terminals, multiple-channel base stations and control stations. Trunking is the pooling of radio channels of a TRS, whereby users have automatic access to all channels of the system. TRS may also have roaming capabilities and may have Direct Mode Operation between mobile terminals.

2.3. The intended services include transmission of voice, data, image, paging, short messaging, facsimile and PSTN interconnection for such users as transport companies, service and maintenance companies, airline services and Government agencies. Users of these frequencies may be operators of public TRS networks as well as private organisations/corporation or government agencies. Operation of TRS may be area based or nation-wide with roaming capabilities.

2.4. In general, this SRSP is designed to provide information on the minimum requirements in the use of the frequency bands as described in the Malaysian Table of Frequency Allocation (see **Appendix A**). It provides information on technical characteristics of radio systems, frequency channelling, coordination initiatives in order to maximise the utilisation, minimise interference and optimise the usage of the band. It is intended to regulate the usage of spectrum and does not attempt to establish any detailed equipment standards.

## 3.0 GENERAL

3.1. Technical characteristics of equipment used in TRS shall conform to all applicable Malaysian standards, international standards, International Telecommunications Union (ITU) and its radio regulations as agreed and adopted by Malaysia.

3.2. All TRS installations must comply with safety rules as defined by applicable standards.

3.3. The equipment used shall be certified under the Communications and Multimedia (Technical Standards) Regulations 2000.

3.4. The allocation and allotment of these frequency bands and this SRSP are subject to review from time to time in tune with new industry developments, technical or non-

technical for more efficient utilisation and management of spectrum, or for the improvement of the services offered by such systems.

3.5. TRS operating in the frequency bands 806-821 MHz and 851-866 MHz were first introduced in Malaysia in 1990. Prior its introduction, earlier two-way radio repeater systems known as Leased Channel Systems consist of radio channels working independently of one another. A mobile terminal using such a system does not have access to channels other than the channel to which it is assigned. Traffic throughput per channel of such systems is much lower than that of TRS and spectral efficiency is lower.

3.6. Leased Channel Systems in Malaysia operate in the 200 MHz and 400 MHz frequency bands. These systems are gradually being replaced by the more spectrally and functionally efficient TRS.

3.7. With the advent of digital TRS, Malaysia now has a complimentary set of public system technologies, from single-frequency repeaters to digital trunking, such as iDEN, TETRA, APCO25, GSM-R, GSM-T and Go Ta CDMA. SKMM, has laid out in the Spectrum Plan, and expects operators to migrate toward digital solutions in the congested areas, and re-deploy the older technologies to provide niche market service and service in the remote areas that might not otherwise receive adequate TRS coverage.

3.8. The following sections will give an overview of some digital TRS technologies available in the industry.

### 3.8.1 TETRA

TETRA (Terrestrial Trunked Radio) is a set of technology solution developed by the ETSI that describes a common mobile radio communications infrastructure throughout Europe. It is targeted primarily at the mobile radio needs of public safety groups (such as police and fire departments), utility companies, and other enterprises that provide voice and data communications services. All of these groups have been high-end users of private/professional mobile radio (PMR) or public access mobile radio (PAMR) technology.

Employing TDMA digital trunked radio technology, TETRA is one of the next-generation digital standards for two way radio communications. TETRA actually takes its features from several different communications fields: mobile radio, digital cellular telephone, paging, and wireless data. TETRA-based products are available with options for encryption to ensure the privacy and confidentiality of sensitive data/voice communications.

The TETRA market is segmented into three distinct categories - Emergency Services, Private Systems, and Public Network Services. ETSI is developing an enhanced family of TETRA standards generally referred to as TETRA Release 2. This is expected to provide data rates of up to 130 kbps (kilobits per second), compared to current TETRA data rates of 7.2 kbps.

### 3.8.2 iDEN

iDEN (Integrated Digital Enhanced Network) is digital trunked radio technology for wide area despatch from Motorola that operates in the traditional 800 MHz band and is based on time division multiple access (TDMA). The technology allows for very effective use of the spectrum – with a usage improvement of almost 6 to 12 times the current analogue despatch network.

iDEN network and handsets are designed to provide the trunked radio user with digital wireless technology that feature robust applications and integrated solutions. Users on the iDEN network have the ability to do wide area secure private despatch (effectively covering Malaysian land mass), group despatch amongst pre-defined clusters, telephone interconnect, SMS and packet data applications.

### 3.8.3 APCO25

The Association of Public-Safety Communications Officials International Inc. (APCO) has completed a standard for digital trunked radio systems. This is an open standard and based on FDMA modulation. The Standard defines both trunked and conventional modes of operation, and requires equipment to be backward compatible to analogue 25 kHz and 12.5 kHz channel spaced systems. Options are included for encryption to ensure voice security

APCO Project 25 ensures that equipment built to the Standard will communicate with other equipment from different manufacturers. By building an APCO Project 25 standards based system, it assures inter-operability, allows for more potential equipment suppliers which in turn increases the competition, which in turn helps drive equipment costs down.

APCO 25 is co-chaired by APCO International and the National Association of State Telecommunications Directors (NASTD). The steering committee, which makes the decisions, consists of APCO International and NASTD representatives, along with federal representatives from the National Telecommunications and Information Administration (NTIA), National Communications System (NCS), and the Department of Defence (DoD).

### 3.8.4 NXDN

NXDN is a digital air interface protocol for mobile communication. It was developed jointly by Icom Incorporated and Kenwood Corporation. This standard is based on FDMA (Frequency Division Multiple Access) and defines both trunked and conventional modes of operation. NXDN is a digital radio communications protocol using 4-Level FSK (4LFSK) modulation capable of fitting into both 12.5 kHz and 6.25 kHz physical radio channel bandwidth (9600 bps and 4800 bps respectively).

### 3.8.5 GSM-R

GSM-R technology was developed in an European Union - funded MORANE (Mobile Radio for Railways Networks in Europe) project. The project's goal is to develop a uniform digital radio system for European railroad traffic. GSM-R is a

platform for voice and data communications as well as for traffic control system (ETCS, Electronic Train Control System).

After comparing the different digital technologies, Global System for Mobile (GSM) technology was chosen by the 32 railway companies involved in the project. GSM was extended with special features developed for rail traffic. As they are closed networks, it is possible to build special applications needed for the railroad environment.

GSM-R is used for traffic control, serving amongst others engine drivers as well as personnel working on railroad works both along the rail network and in railway stations. The system ensures a more secure and smooth flow of train traffic.

GSM-R is currently being introduced as the European standard for railway communications and is already in commercial use in several European countries. This allows for a single international communication standard for train communication and also improves interoperability between the various railway companies at international level.

### 3.8.6 GSM-T

The GSM Trunking system (GSM-T) operating at 800MHz is a Huawei solution in expanding the GSM-R platform to the land-based trunked radio and is oriented to addressing industry specific dispatching requirements. It is applicable to both private and public networks.

### 3.8.7 Go Ta CDMA

The Go Ta CDMA system which operates in 800MHz band is a CDMA-based digital trunking system. The GoTa or "Global Open Trunking Architecture" was developed independently by ZTE to meet the requirements of both private and public trunking network applications.

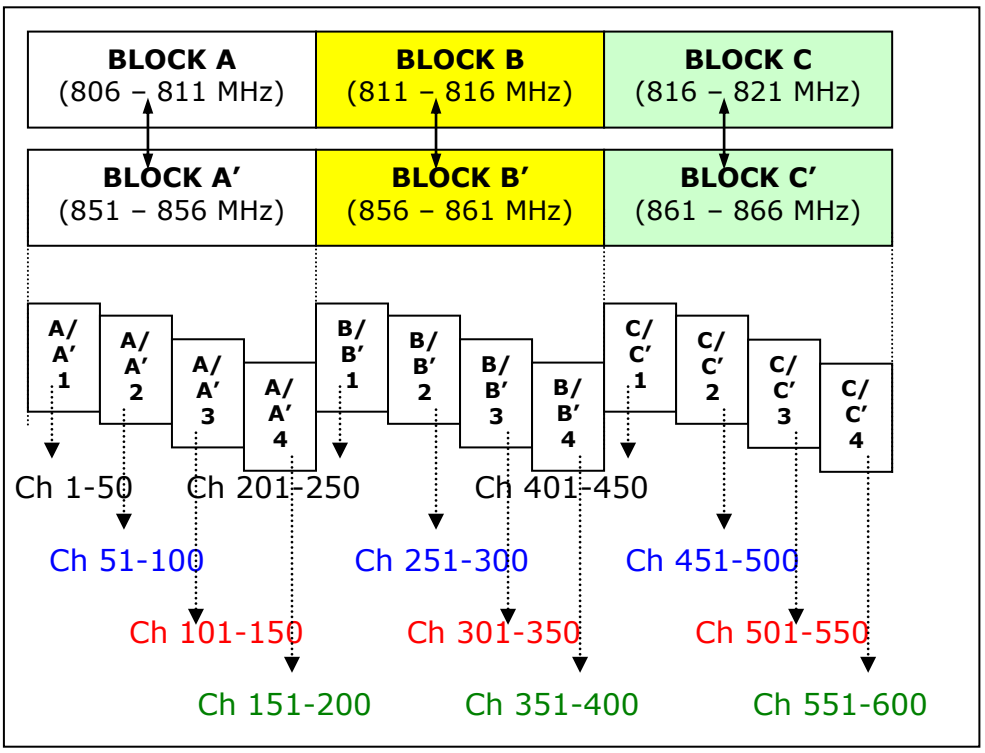
3.9. With the advent of digital trunked radio technologies with roaming capabilities and applications such as transmission of data, image, paging, short messaging, facsimile and PSTN interconnect, provisions have been made by SKMM to address the current and future numbering and electronic addressing needs of such trunked radio networks. The numbering and electronic addressing plan has included mobile numbers for assignment to terminals of such digital trunked radio networks to ensure that digital trunked radio networks are part of a ubiquitous national infrastructure.

## 4.0 CHANNELLING PLAN

4.1 The SRSP defines the frequency bands 806 to 821 MHz paired with 851 to 866 MHz providing a total bandwidth of 2 x 15MHz for Trunked Radio Systems (TRS). The channel arrangements are divided into 3 pairs of frequency blocks (blocks A/A', blocks B/B', and blocks C/C') with transmit/receive separation of 45 MHz as shown in Figure 1.

4.2 The frequency channelling plans of blocks A/A', B/B' and C/C' are given in **Figure 1** below.

**Figure 1**: Show the frequency band for Base Transmit/Receive




4.2.1 For 25 kHz channel spacing

$$f_n = (N+0.0125) + (n-1)*(0.025)$$

$n$ = 1 to 200

| For Transmit Channels | For Receive Channels |
|---|---|
| N = 806 for Block A | N = 851 for Block A |
| N = 811 for Block B | N = 856 for Block B |
| N = 816 for Block C | N = 861 for Block C |

4.3 Each block (Block A/A', B/B' and C/C') is divided into 4 sub blocks. Each sub block consists of 2 x 50 contiguous 25 kHz channels.

4.4 The channelling plan is developed based on 25 kHz channel spacing. However, the usage of channel spacing shall not be restricted to 25 kHz. The use of channel spacing less than or more than 25 kHz shall be allowed for broadband TRS systems but SKMM shall assign a single channel based on channel spacing 25 kHz or combination of multiple channels of 25 kHz channel spacing as was developed in the channelling plan above (Figure 1);

4.4 Flexible use of channel spacing will help spectrum users to manage their network in a more efficient manner that fit their requirement. Bigger channel spacing used will cause less channel number available and vice-versa; smaller channel spacing used will allow a spectrum user to have more channel number.

4.5 Currently, most of the channels in Block A, B and C (except Block C3/C3') is assigned to public operators and private network for analogue and digital trunked radio systems throughout the nation.

4.6 The spectrum covered by this SRSP has been channelised to accommodate TR**S that can use e**ither contiguous channels or non-contiguous channels that require separation between channels. This flexible arrangement is adopted to provide users with a wide choice of trunked radio solutions. However, based on whatever technology solution the service provider chooses, operation must be within the allocated channel bandwidth (including guard bands) without causing any interference to adjacent services.

## 5.0 REQUIREMENTS FOR USAGE OF SPECTRUM

5.1 This SRSP covers the minimum key characteristics considered necessary in order to make the best use of the available frequencies.

5.2 This SRSP is intended for the operation of analogue and digital TRS (see paragraph 4.5). Digital TRS are normally divided into Wide Area or National Coverage systems.

5.3 Capacity enhancing techniques are continually being developed. This SRSP allows for adoption of such techniques for more efficient use of spectrum, without reducing quality of service. Good cell-planning practice and frequency reuse should be adopted to maximise spectrum usage.

5.4 As technology allows for modulation schemes allowing wider (1.25 MHz) and narrower (6.25 kHz) carrier bandwidth from the existing 25 kHz channels, the number of available channels will vary.

5.5 Channel loading of TRS systems should be such that the maximum use is made of the available spectrum while providing reasonable grade of service. This SRSP requires the loading of public and private systems to be such as to provide a Grade of Service (GOS) not exceeding five percent (5%).

5.6 The GOS can be modelled on traffic theory and makes use of the Erlang C model. This model assumes that the system will queue a certain number of blocked calls. The Grade of Service will be defined by a specified delay, in message lengths, such that calls delayed will not exceed the specified delay with a probability P(t) of 0.05 (5%). That is, 95% of the calls placed will not be delayed by greater than the specified delay.

5.7 The GOS is critical for emergency services like Police, Fire and Ambulances as well for local government agencies. The corresponding figure for public safety systems (e.g., police, ambulance and fire department) is 2.5 percent. However, the level of GOS may be changed if deemed necessary by SKMM based on specific service requirements.

5.8 Public safety services (services involving safety of life and property) will continue, if possible, to have access to exclusive channels and any eventual sharing of channels by public safety services will be with other public safety services.

5.9 Please refer to **Appendix F** for a summary of spectrum allocation for various mobile radio services.

5.10 In operations within 50km from border areas, power limitation criteria shall be applicable for the following:

- Base Transmitter - Less than 50 Watts ERP
- Mobile Transmitter - Less than 25 Watts ERP

5.11 The future plans and strategic issues of spectrum usage is as laid out in the Spectrum Plan and should be taken into account in the implementation of services.

5.12 The allocations of spectrum and shared services within these bands are found in the Spectrum Plan shown in **Appendix A**.

## 6.0 PRINCIPLES OF ASSIGNMENT

6.1 Authorisation to use the trunked radio spectrum for the **base station** apparatus is by way of Apparatus Assignment (AA) and the **trunked radio access device** is by way of Class Assignment (CA). Please refer to www.skmm.gov.my for the conditions of use in the Notification of Issuance of Class Assignment for the trunked radio access device.

6.2 The paragraphs below contain the eligibility, information and documents to be submitted for the AA application.

### 6.2.1 Spectrum Blocks A and B

6.2.1.1 The eligibility criteria for the service providers in spectrum Blocks A and B is that the applicant must be a holder of a valid Network Facilities Provider Individual (NFP(I)) licence that provides radiocommunication transmitters and links (Note: spectrum Blocks A and B are set aside for the current analogue service providers listed in Appendix G).

6.2.1.2 The applicant shall:

6.2.1.2.1 submit a Detailed Business Plan including details of the roll out and digital migration plan acceptable by the Commission (Due to the closure of this band to TRS as indicated in paragraph 7.5, no new Detailed Business Plan shall be considered by SKMM);

6.2.1.2.2 upon the approval of the Detailed Business Plan by the Commission, submit application for an AA in accordance with the geographic areas specified in the Detailed Business Plan; and

6.2.1.2.3 prior to the issuance of the AA, provide to the Commission an Irrevocable Bank Guarantee to guarantee performance and compliance with the conditions of the AA and the Detailed Business Plan, payable on demand, either in part or in full, for the amount of RM2,600,000 (Ringgit Malaysia Two Million Six Hundred Thousand) per defined geographic area from a licensed financial institution in Malaysia in the form and substance agreed by the Commission, which shall be valid for the period of the AA ((Due to the closure of this band to TRS as indicated in paragraph 7.5 and IBG submitted before the effective date of this SRSP will be returned).

6.2.1.3 The finalised size of spectrum make available on nationwide basis to the groups/consortiums shall be based on the principle of:

6.2.1.3.1 the percentage total of analogue TRS AA held as at 31 July 2006;

6.2.1.3.2 the needs of the technology of choice; and

6.2.1.3.3 spectrum allocation efficiency.

6.2.1.4 The application for an AA shall be based on the committed roll out plan as specified in the Detailed Business Plan. For spectrum which are not utilised or under utilised or not covered by the roll out plan, SKMM may allow other NFP(I) licensees to apply for an AA.

6.2.1.5 AA issued to successful applicant shall be subject to further additional conditions specified in Appendix H.

**6.2.2 Spectrum Block C**

6.2.2.1 For Private and Government users, the application for AA shall be considered on a first come first served basis. In the event of unavailability of spectrum, applicants will be placed in a queue that will be reviewed periodically. Expired AA where no re-application has been made within the time specified in paragraph 6.5 will be re-assigned to others in the queue.

6.3 Applicants are required to:

6.3.1 Submit AA application for the apparatus on the prescribed AA forms.

6.4 The AA for these bands shall be valid for a period of five years or such lesser period as specified in the AA. AA holders may re-apply for a new assignment at least 60 days before the expiry date.

6.5 Issuance of an AA is also subject to successful co-ordination among assigned stations and with neighbouring countries where it applies.

## 7.0 IMPLEMENTATION PLAN

7.1 This SRSP shall be effective from the date of issuance of this document.

7.2 Further to paragraph 4.5 above, the current holders of AA under the analogue TRS service (as listed in Appendix G) shall facilitate the migration to digital service as follows:-

7.2.1 Current holders of AA under the Private and Government users are to move out of the Blocks A and B into C to be facilitated and implemented by the NFP(I) (from the existing analogue service providers as in the list in Appendix G);

7.2.2 Current analogue service providers are encouraged to form groups/consortiums and apply for the NFP(I) license to facilitate migration to digital service into the spectrum blocks A and B by **31 December 2008**; and

7.2.3 SKMM may make available the spectrum to facilitate the migration from analogue to digital, digital service planning and for the issuance of AA.

7.3 Installations before the effective date of this SRSP are allowed to operate without causing any interference to new installations complying with this SRSP.

7.4 No assignment shall be issued to TRS service providers, private and government users after **31 December 2015** in these bands.

7.5 Current analogue and digital trunked radio service providers and users are required to migrate out from these frequency bands to the 410-430MHz band or other identified bands by **31 December 2015**. SKMM will coordinate the process of migration, to be facilitated and implemented by the migrating current analogue and digital service providers and users.

## 8.0 CO-ORDINATION REQUIREMENT

8.1 Use of these frequency bands shall require coordination with the neighbouring countries within the coordination zones of 50 kilometres from our neighbouring countries. Note that the above coordination distance is continuously being reviewed with our neighbouring countries and may be updated from time to time.

8.2 Technical analysis is carried out by SKMM before an assignment is issued. Operator-to-operator coordination may be required to avoid interference.

8.3 In the event of any interference, SKMM will require affected users to carry out an operator-to-operator coordination. In the event that the interference remained unresolved after 24 hours by the operators, the affected parties may escalate the matter to SKMM for a resolution. SKMM will decide the necessary modifications and schedule of modifications to resolve the interference.

8.4 Assignment holders are expected to take full advantage of interference mitigation techniques such as antenna discrimination, tilt, polarization, frequency discrimination, shielding/blocking (introduce diffraction loss), site selection, and/or power control to facilitate the coordination of systems.

8.5 Coordination requirement may be required with reference to the potential interference problems as depicted in Appendix I.

## 9.0 REVOCATION

9.1 MCMC SRSP-502M, 5 September 2006 Issue is hereby revoked.

## 10.0 REFERENCES

[1] CETS-R/SPC/001 Radio Performance Specifications which prescribes the minimum performance for radio communication transmitters and receivers operating primarily in a voice or data modulated mode with maximum frequency deviation of +/- 5 kHz in the allocated VHF/UHF bands in the frequency range 27.41 MHz - 866 MHz and 928 MHz - 953 MHz. It is intended to be applicable for mobile stations, base and/or repeater stations.

[2] RSS 121 (Radio Standard Specifications): Mobile stations - Voice and data modulated FM or PM Radiotelephone transceivers operating in the allocated VHF/UHF bands in the frequency range 27.41 - 866 MHz with RF power output not exceeding 10 Watts

[3] Spectrum Plan

[4] SRSP-502 (Canadian) (10/1999) Technical Requirements for Land Mobile and Fixed Radio Services Operating in the Bands 806-821/851-866 MHz and 821-824/866-869 MHz

[5] RALI: LM8 (12/2000) Frequency Assignment Requirement for the Land Mobile Service

**Issued by:**


**Suruhanjaya Komunikasi dan Multimedia Malaysia**
Malaysian Communications and Multimedia Commission

## APPENDIX A: EXTRACT OF MALAYSIAN SPECTRUM PLAN

(This Appendix forms an integral part of the SRSP document)

### Radio Services Sharing the Frequency Band 806 to 821 MHz and 851 to 866 MHz

<table>
<tr><th rowspan="2">Frequency Band (MHz)</th><th colspan="3">ITU Allocations</th><th rowspan="2">Malaysian Allocations</th></tr>
<tr><th>Region 1</th><th>Region 2</th><th>Region 3</th></tr>
<tr><td>470 - 512</td><td rowspan="6">470 -790<br>BROADCASTING<br><br>5.149 5.291A 5.294 5.296 5.300 5.302 5.304 5.306 5.311A 5.312</td><td>BROADCASTING<br>Fixed<br>Mobile<br>5.292 5.293</td><td>470-585<br>FIXED<br>MOBILE<br>BROADCASTING<br>5.291 5.298</td><td>FIXED<br>MOBILE<br>BROADCASTING MLA29<br><br>MLA3 MLA86 MLA87</td></tr>
<tr><td>512 - 585</td><td>512-608<br>BROADCASTING<br>5.297</td><td rowspan="2">585-610<br>FIXED<br>MOBILE<br>BROADCASTING<br>RADIONAVIGATION<br>5.149 5.305 5.306 5.307</td><td rowspan="2">FIXED<br>MOBILE<br>BROADCASTING MLA29<br>RADIONAVIGATION<br>5.149 5.306 MLA3 MLA87 MLA88</td></tr>
<tr><td>585 – 608</td><td rowspan="2">608-614<br>RADIO ASTRONOMY<br>Mobile-satellite except aeronautical mobile-satellite (Earth-to-space)</td></tr>
<tr><td>608 – 610</td><td rowspan="2">610-862<br>FIXED<br>MOBILE 5.313A 5.317A<br>BROADCASTING<br><br>5.149 5.305 5.306 5.307 5.311A 5.320</td><td rowspan="2">FIXED<br>MOBILE 5.317A<br>BROADCASTING MLA29<br><br>5.149 5.306 5.311A 5.320 MLA3 MLA14 MLA86 MLA87 MLA88</td></tr>
<tr><td>610 – 614</td></tr>
<tr><td>614 – 698</td><td>BROADCASTING<br>Fixed<br>Mobile<br>5.293 5.309 5.311A</td></tr>
<tr><td>698 – 790</td><td>698-806<br>BROADCASTING<br>MOBILE 5.313B 5.317A<br>Fixed<br>5.293 5.309 5.311A</td></tr>
<tr><td>790 – 806</td><td>790 – 862<br>FIXED<br>BROADCASTING<br>MOBILE except aeronautical mobile 5.316B 5.317A<br><br>5.312 5.314 5.315 5.316 5.316A 5.319</td><td rowspan="2">806-890<br>FIXED<br>MOBILE 5.317A<br>BROADCASTING<br>5.317 5.318</td></tr>
<tr><td>806 – 862</td></tr>
</table>

| Frequency Band (MHz) | ITU Allocations | | | Malaysian Allocations |
|---|---|---|---|---|
| | Region 1 | Region 2 | Region 3 | |
| 862 - 890 | FIXED<br>MOBILE except aeronautical mobile 5.317A<br>BROADCASTING 5.322<br>5.319 5.323 | FIXED<br>MOBILE 5.317A<br>BROADCASTING<br>5.317 5.318 | FIXED<br>MOBILE 5.313A 5.317A<br>BROADCASTING<br>5.149 5.305 5.306 5.307 5.311A 5.320 | FIXED<br>MOBILE MLA79 MLA80<br>BROADCASTING<br>MLA3 MLA14 MLA 44 MLA84 |

5.149 In making assignments to stations of other services to which the bands:

13 360-13 410 kHz,
25 550-25 670 kHz,
37.5-38.25 MHz,
73-74.6 MHz in Regions 1 and 3,
150.05-153 MHz in Region 1,
322-328.6 MHz,
406.1-410 MHz,
608-614 MHz in Regions 1 and 3,
1 330-1 400 MHz,
1 610.6-1 613.8 MHz,
1 660-1 670 MHz,
1 718.8-1 722.2 MHz,
2 655-2 690 MHz,
3 260-3 267 MHz,
3 332-3 339 MHz,
3 345.8-3 352.5 MHz,
4 825-4 835 MHz,
4 950-4 990 MHz,
4 990-5 000 MHz,
6 650-6 675.2 MHz,
10.6-10.68 GHz,
14.47-14.5 GHz,
22.01-22.21 GHz,
22.21-22.5 GHz,
22.81-22.86 GHz,
23.07-23.12 GHz,
31.2-31.3 GHz,
31.5-31.8 GHz in Regions 1 and 3,
36.43-36.5 GHz,
42.5-43.5 GHz,
48.94-49.04 GHz,
76-86 GHz,
92-94 GHz,
94.1-100 GHz,
102-109.5 GHz,
111.8-114.25 GHz,
128.33-128.59 GHz,
129.23-129.49 GHz,
130-134 GHz,
136-148.5 GHz,
151.5-158.5 GHz,
168.59-168.93 GHz,
171.11-171.45 GHz,
172.31-172.65 GHz,
173.52-173.85 GHz,
195.75-196.15 GHz,
209-226 GHz,
241-250 GHz,
252-275 GHz

are allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from spaceborne or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. 4.5 and 4.6 and Article 29). (WRC-07)

5.306 *Additional allocation:* in Region 1, except in the African Broadcasting Area (see Nos. 5.10 to 5.13), and in Region 3, the band 608-614 MHz is also allocated to the radio astronomy service on a secondary basis.

5.311A For the frequency band 620-790 MHz, see also Resolution 549 (WRC-07). (WRC-07)

5.320 *Additional allocation*: in Region 3, the bands 806-890 MHz and 942-960 MHz are also allocated to the mobile-satellite, except aeronautical mobile-satellite (R), service on a primary basis, subject to agreement obtained under No. 9.21. The use of this service is limited to operation within national boundaries. In seeking such agreement, appropriate protection shall be afforded to services operating in accordance with the Table, to ensure that no harmful interference is caused to such services.

MLA3 Notification of Issuance of Class Assignment.
MLA14 The following frequency bands are exclusively use by the Government of Malaysia:
30 kHz to 70 kHz; 70 kHz to 90 kHz;
110 kHz to 160 kHz; 1985 kHz to 3000 kHz;

| | |
|---|---|
| 3025 kHz to 3155 kHz; | 4700 kHz to 4750 kHz; |
| 5680 kHz to 5730 kHz; | 6685 kHz to 6765 kHz; |
| 8965 kHz to 9040 kHz; | 11175 kHz to 11275 kHz; |
| 13200 kHz to 13260 kHz; | 13360 kHz to 13410 kHz; |
| 14500 kHz to 14900 kHz, | 15010 kHz to 15100 kHz; |
| 17970 kHz to 18030 kHz; | 23200 kHz to 23350 kHz; |
| 25550 kHz to 25670 kHz; | 30.010 MHz to 37.500 MHz; |
| 41.015 MHz to 44.000 MHz; | 44.000 MHz to 47.000 MHz; |
| 47.000 MHz to 50.000 MHz; | 54.000 MHz to 68.000 MHz; |
| 72.800 MHz to 74.800 MHz; | 75.200 MHz to 75.400 MHz; |
| 75.400 MHz to 87.000 MHz; | 165.000 MHz to 167.000 MHz |
| 170.000 MHz to 172.000 MHz, | 230.000 MHz to 235.000 MHz; |
| 235.000 MHz to 267.000 MHz; | 267.000 MHz to 272.000 MHz; |
| 272.000 MHz to 273.000 MHz; | 273.000 MHz to 312.000 MHz; |
| 312.000 MHz to 315.000 MHz; | 315.000 MHz to 322.000 MHz; |
| 322.000 MHz to 328.600 MHz; | 335.400 MHz to 380.000 MHz; |
| 380.000 MHz to 399.900 MHz; | 444.000 MHz to 445.000 MHz |
| 449.000 MHz to 450.000 MHz, | 457.000 MHz to 458.000 MHz; |
| 458.000 MHz to 459.000 MHz; | 467.000 MHz to 468.000 MHz; |
| 468.000 MHz to 469.000 MHz; | 798.000 MHz to 806.000 MHz; |
| 816.000 MHz to 821.000 MHz, | 861.000 MHz to 866.000 MHz |
| 960.000 MHz to 1215.000 MHz; | 1400.000 MHz to 1427.000 MHz; |
| 2040.000 MHz to 2072.000 MHz | 2035.000 MHz to 2036.000 MHz |
| 2232.000 MHz to 2233.000 MHz; | 2700.000 MHz to 2900.000 MHz; |
| 2900.000 MHz to 3100.000 MHz; | 3100.000 MHz to 3300.000 MHz; |
| 3300.000 MHz to 3400.000 MHz; | 4940.000 MHz to 4990.000 MHz; |
| 5460.000 MHz to 5470.000 MHz; | 5470.000 MHz to 5650.000 MHz; |
| 8146.000 MHz to 8275.000 MHz; | 9500.000 MHz to 9800.000 MHz; |
| 9800.000 MHz to 10000.000 MHz. | |

| | |
|---|---|
| MLA 44 | Frequency Spectrum 806 MHz to 960 MHz, 1710 MHz to 1885 MHz, 2504 MHz to 2688 MHz planned for IMT 2000 extension band. |
| MLA84 | The following bands have been identified for Public Protection and Disaster Relief (PPDR) use in Malaysia:<br>380 MHz to 400 MHz;<br>816 MHz to 821 MHz / 861 MHz to 866 MHz;<br>4940 MHz to 4990 MHz |
| MLA86 | Use of the band 477 MHz to 478 MHz for short range communication devices such as personal radio service is not allowed after year 2020. This band will be re-allocated to the Digital TV Broadcasting (DTT) Service. [477 MH – 478 MHz]. |
| MLA87 | Existing analogue TV transmission operating in the Bands 174 MHz to 230 MHz and 470 MHz to 798 MHz may continue their service until the year 2015. However, they shall shut down their analogue transmission after year 2015. [174 MHz – 230 MHz & 470 MHz – 798 MHz] |
| MLA88 | Use of frequency bands 223 MHz to 230 MHz and 606 MHz to 614 MHz by the existing assignment for Airport Tower operations and Radar by Aeronautical Service are not allowed after year 2020. [223 MHz – 230 MHz & 606 MHz – 614 MHz**]** |

## APPENDIX B: 25 kHz Channel Spacing

TRUNKED RADIO SYSTEM FREQUENCY CHANNELLING PLAN (BLOCK A/A' 25 kHz)

| CH. | FREQ. (MHz) | | CH. | FREQ. (MHz) | | CH. | FREQ. (MHz) | | CH. | FREQ. (MHz) | | CH. | FREQ. (MHz) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NO. | Base Tx | Base Rx | NO. | Base Tx | Base Rx | NO. | Base Tx | Base Rx | NO. | Base Tx | Base Rx | NO. | Base Tx | Base Rx |
| 1 | 806.0125 | 851.0125 | 41 | 807.0125 | 852.0125 | 81 | 808.0125 | 853.0125 | 121 | 809.0125 | 854.0125 | 161 | 810.0125 | 855.0125 |
| 2 | 806.0375 | 851.0375 | 42 | 807.0375 | 852.0375 | 82 | 808.0375 | 853.0375 | 122 | 809.0375 | 854.0375 | 162 | 810.0375 | 855.0375 |
| 3 | 806.0625 | 851.0625 | 43 | 807.0625 | 852.0625 | 83 | 808.0625 | 853.0625 | 123 | 809.0625 | 854.0625 | 163 | 810.0625 | 855.0625 |
| 4 | 806.0875 | 851.0875 | 44 | 807.0875 | 852.0875 | 84 | 808.0875 | 853.0875 | 124 | 809.0875 | 854.0875 | 164 | 810.0875 | 855.0875 |
| 5 | 806.1125 | 851.1125 | 45 | 807.1125 | 852.1125 | 85 | 808.1125 | 853.1125 | 125 | 809.1125 | 854.1125 | 165 | 810.1125 | 855.1125 |
| 6 | 806.1375 | 851.1375 | 46 | 807.1375 | 852.1375 | 86 | 808.1375 | 853.1375 | 126 | 809.1375 | 854.1375 | 166 | 810.1375 | 855.1375 |
| 7 | 806.1625 | 851.1625 | 47 | 807.1625 | 852.1625 | 87 | 808.1625 | 853.1625 | 127 | 809.1625 | 854.1625 | 167 | 810.1625 | 855.1625 |
| 8 | 806.1875 | 851.1875 | 48 | 807.1875 | 852.1875 | 88 | 808.1875 | 853.1875 | 128 | 809.1875 | 854.1875 | 168 | 810.1875 | 855.1875 |
| 9 | 806.2125 | 851.2125 | 49 | 807.2125 | 852.2125 | 89 | 808.2125 | 853.2125 | 129 | 809.2125 | 854.2125 | 169 | 810.2125 | 855.2125 |
| 10 | 806.2375 | 851.2375 | 50 | 807.2375 | 852.2375 | 90 | 808.2375 | 853.2375 | 130 | 809.2375 | 854.2375 | 170 | 810.2375 | 855.2375 |
| 11 | 806.2625 | 851.2625 | 51 | 807.2625 | 852.2625 | 91 | 808.2625 | 853.2625 | 131 | 809.2625 | 854.2625 | 171 | 810.2625 | 855.2625 |
| 12 | 806.2875 | 851.2875 | 52 | 807.2875 | 852.2875 | 92 | 808.2875 | 853.2875 | 132 | 809.2875 | 854.2875 | 172 | 810.2875 | 855.2875 |
| 13 | 806.3125 | 851.3125 | 53 | 807.3125 | 852.3125 | 93 | 808.3125 | 853.3125 | 133 | 809.3125 | 854.3125 | 173 | 810.3125 | 855.3125 |
| 14 | 806.3375 | 851.3375 | 54 | 807.3375 | 852.3375 | 94 | 808.3375 | 853.3375 | 134 | 809.3375 | 854.3375 | 174 | 810.3375 | 855.3375 |
| 15 | 806.3625 | 851.3625 | 55 | 807.3625 | 852.3625 | 95 | 808.3625 | 853.3625 | 135 | 809.3625 | 854.3625 | 175 | 810.3625 | 855.3625 |
| 16 | 806.3875 | 851.3875 | 56 | 807.3875 | 852.3875 | 96 | 808.3875 | 853.3875 | 136 | 809.3875 | 854.3875 | 176 | 810.3875 | 855.3875 |
| 17 | 806.4125 | 851.4125 | 57 | 807.4125 | 852.4125 | 97 | 808.4125 | 853.4125 | 137 | 809.4125 | 854.4125 | 177 | 810.4125 | 855.4125 |
| 18 | 806.4375 | 851.4375 | 58 | 807.4375 | 852.4375 | 98 | 808.4375 | 853.4375 | 138 | 809.4375 | 854.4375 | 178 | 810.4375 | 855.4375 |
| 19 | 806.4625 | 851.4625 | 59 | 807.4625 | 852.4625 | 99 | 808.4625 | 853.4625 | 139 | 809.4625 | 854.4625 | 179 | 810.4625 | 855.4625 |
| 20 | 806.4875 | 851.4875 | 60 | 807.4875 | 852.4875 | 100 | 808.4875 | 853.4875 | 140 | 809.4875 | 854.4875 | 180 | 810.4875 | 855.4875 |
| 21 | 806.5125 | 851.5125 | 61 | 807.5125 | 852.5125 | 101 | 808.5125 | 853.5125 | 141 | 809.5125 | 854.5125 | 181 | 810.5125 | 855.5125 |
| 22 | 806.5375 | 851.5375 | 62 | 807.5375 | 852.5375 | 102 | 808.5375 | 853.5375 | 142 | 809.5375 | 854.5375 | 182 | 810.5375 | 855.5375 |
| 23 | 806.5625 | 851.5625 | 63 | 807.5625 | 852.5625 | 103 | 808.5625 | 853.5625 | 143 | 809.5625 | 854.5625 | 183 | 810.5625 | 855.5625 |
| 24 | 806.5875 | 851.5875 | 64 | 807.5875 | 852.5875 | 104 | 808.5875 | 853.5875 | 144 | 809.5875 | 854.5875 | 184 | 810.5875 | 855.5875 |
| 25 | 806.6125 | 851.6125 | 65 | 807.6125 | 852.6125 | 105 | 808.6125 | 853.6125 | 145 | 809.6125 | 854.6125 | 185 | 810.6125 | 855.6125 |
| 26 | 806.6375 | 851.6375 | 66 | 807.6375 | 852.6375 | 106 | 808.6375 | 853.6375 | 146 | 809.6375 | 854.6375 | 186 | 810.6375 | 855.6375 |
| 27 | 806.6625 | 851.6625 | 67 | 807.6625 | 852.6625 | 107 | 808.6625 | 853.6625 | 147 | 809.6625 | 854.6625 | 187 | 810.6625 | 855.6625 |
| 28 | 806.6875 | 851.6875 | 68 | 807.6875 | 852.6875 | 108 | 808.6875 | 853.6875 | 148 | 809.6875 | 854.6875 | 188 | 810.6875 | 855.6875 |
| 29 | 806.7125 | 851.7125 | 69 | 807.7125 | 852.7125 | 109 | 808.7125 | 853.7125 | 149 | 809.7125 | 854.7125 | 189 | 810.7125 | 855.7125 |
| 30 | 806.7375 | 851.7375 | 70 | 807.7375 | 852.7375 | 110 | 808.7375 | 853.7375 | 150 | 809.7375 | 854.7375 | 190 | 810.7375 | 855.7375 |
| 31 | 806.7625 | 851.7625 | 71 | 807.7625 | 852.7625 | 111 | 808.7625 | 853.7625 | 151 | 809.7625 | 854.7625 | 191 | 810.7625 | 855.7625 |
| 32 | 806.7875 | 851.7875 | 72 | 807.7875 | 852.7875 | 112 | 808.7875 | 853.7875 | 152 | 809.7875 | 854.7875 | 192 | 810.7875 | 855.7875 |
| 33 | 806.8125 | 851.8125 | 73 | 807.8125 | 852.8125 | 113 | 808.8125 | 853.8125 | 153 | 809.8125 | 854.8125 | 193 | 810.8125 | 855.8125 |
| 34 | 806.8375 | 851.8375 | 74 | 807.8375 | 852.8375 | 114 | 808.8375 | 853.8375 | 154 | 809.8375 | 854.8375 | 194 | 810.8375 | 855.8375 |
| 35 | 806.8625 | 851.8625 | 75 | 807.8625 | 852.8625 | 115 | 808.8625 | 853.8625 | 155 | 809.8625 | 854.8625 | 195 | 810.8625 | 855.8625 |
| 36 | 806.8875 | 851.8875 | 76 | 807.8875 | 852.8875 | 116 | 808.8875 | 853.8875 | 156 | 809.8875 | 854.8875 | 196 | 810.8875 | 855.8875 |
| 37 | 806.9125 | 851.9125 | 77 | 807.9125 | 852.9125 | 117 | 808.9125 | 853.9125 | 157 | 809.9125 | 854.9125 | 197 | 810.9125 | 855.9125 |
| 38 | 806.9375 | 851.9375 | 78 | 807.9375 | 852.9375 | 118 | 808.9375 | 853.9375 | 158 | 809.9375 | 854.9375 | 198 | 810.9375 | 855.9375 |
| 39 | 806.9625 | 851.9625 | 79 | 807.9625 | 852.9625 | 119 | 808.9625 | 853.9625 | 159 | 809.9625 | 854.9625 | 199 | 810.9625 | 855.9625 |
| 40 | 806.9875 | 851.9875 | 80 | 807.9875 | 852.9875 | 120 | 808.9875 | 853.9875 | 160 | 809.9875 | 854.9875 | 200 | 810.9875 | 855.9875 |

## APPENDIX C: 25 kHz Channel Spacing

TRUNKED RADIO SYSTEM FREQUENCY CHANNELLING PLAN (BLOCK B/B' 25 kHz)

| CH. | FREQ. (MHz) | | CH. | FREQ. (MHz) | | CH. | FREQ. (MHz) | | CH. | FREQ. (MHz) | | CH. | FREQ. (MHz) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NO. | Base Tx | Base Rx | NO. | Base Tx | Base Rx | NO. | Base Tx | Base Rx | NO. | Base Tx | Base Rx | NO. | Base Tx | Base Rx |
| 201 | 811.0125 | 856.0125 | 241 | 812.0125 | 857.0125 | 281 | 813.0125 | 858.0125 | 321 | 814.0125 | 859.0125 | 361 | 815.0125 | 860.0125 |
| 202 | 811.0375 | 856.0375 | 242 | 812.0375 | 857.0375 | 282 | 813.0375 | 858.0375 | 322 | 814.0375 | 859.0375 | 362 | 815.0375 | 860.0375 |
| 203 | 811.0625 | 856.0625 | 243 | 812.0625 | 857.0625 | 283 | 813.0625 | 858.0625 | 323 | 814.0625 | 859.0625 | 363 | 815.0625 | 860.0625 |
| 204 | 811.0875 | 856.0875 | 244 | 812.0875 | 857.0875 | 284 | 813.0875 | 858.0875 | 324 | 814.0875 | 859.0875 | 364 | 815.0875 | 860.0875 |
| 205 | 811.1125 | 856.1125 | 245 | 812.1125 | 857.1125 | 285 | 813.1125 | 858.1125 | 325 | 814.1125 | 859.1125 | 365 | 815.1125 | 860.1125 |
| 206 | 811.1375 | 856.1375 | 246 | 812.1375 | 857.1375 | 286 | 813.1375 | 858.1375 | 326 | 814.1375 | 859.1375 | 366 | 815.1375 | 860.1375 |
| 207 | 811.1625 | 856.1625 | 247 | 812.1625 | 857.1625 | 287 | 813.1625 | 858.1625 | 327 | 814.1625 | 859.1625 | 367 | 815.1625 | 860.1625 |
| 208 | 811.1875 | 856.1875 | 248 | 812.1875 | 857.1875 | 288 | 813.1875 | 858.1875 | 328 | 814.1875 | 859.1875 | 368 | 815.1875 | 860.1875 |
| 209 | 811.2125 | 856.2125 | 249 | 812.2125 | 857.2125 | 289 | 813.2125 | 858.2125 | 329 | 814.2125 | 859.2125 | 369 | 815.2125 | 860.2125 |
| 210 | 811.2375 | 856.2375 | 250 | 812.2375 | 857.2375 | 290 | 813.2375 | 858.2375 | 330 | 814.2375 | 859.2375 | 370 | 815.2375 | 860.2375 |
| 211 | 811.2625 | 856.2625 | 251 | 812.2625 | 857.2625 | 291 | 813.2625 | 858.2625 | 331 | 814.2625 | 859.2625 | 371 | 815.2625 | 860.2625 |
| 212 | 811.2875 | 856.2875 | 252 | 812.2875 | 857.2875 | 292 | 813.2875 | 858.2875 | 332 | 814.2875 | 859.2875 | 372 | 815.2875 | 860.2875 |
| 213 | 811.3125 | 856.3125 | 253 | 812.3125 | 857.3125 | 293 | 813.3125 | 858.3125 | 333 | 814.3125 | 859.3125 | 373 | 815.3125 | 860.3125 |
| 214 | 811.3375 | 856.3375 | 254 | 812.3375 | 857.3375 | 294 | 813.3375 | 858.3375 | 334 | 814.3375 | 859.3375 | 374 | 815.3375 | 860.3375 |
| 215 | 811.3625 | 856.3625 | 255 | 812.3625 | 857.3625 | 295 | 813.3625 | 858.3625 | 335 | 814.3625 | 859.3625 | 375 | 815.3625 | 860.3625 |
| 216 | 811.3875 | 856.3875 | 256 | 812.3875 | 857.3875 | 296 | 813.3875 | 858.3875 | 336 | 814.3875 | 859.3875 | 376 | 815.3875 | 860.3875 |
| 217 | 811.4125 | 856.4125 | 257 | 812.4125 | 857.4125 | 297 | 813.4125 | 858.4125 | 337 | 814.4125 | 859.4125 | 377 | 815.4125 | 860.4125 |
| 218 | 811.4375 | 856.4375 | 258 | 812.4375 | 857.4375 | 298 | 813.4375 | 858.4375 | 338 | 814.4375 | 859.4375 | 378 | 815.4375 | 860.4375 |
| 219 | 811.4625 | 856.4625 | 259 | 812.4625 | 857.4625 | 299 | 813.4625 | 858.4625 | 339 | 814.4625 | 859.4625 | 379 | 815.4625 | 860.4625 |
| 220 | 811.4875 | 856.4875 | 260 | 812.4875 | 857.4875 | 300 | 813.4875 | 858.4875 | 340 | 814.4875 | 859.4875 | 380 | 815.4875 | 860.4875 |
| 221 | 811.5125 | 856.5125 | 261 | 812.5125 | 857.5125 | 301 | 813.5125 | 858.5125 | 341 | 814.5125 | 859.5125 | 381 | 815.5125 | 860.5125 |
| 222 | 811.5375 | 856.5375 | 262 | 812.5375 | 857.5375 | 302 | 813.5375 | 858.5375 | 342 | 814.5375 | 859.5375 | 382 | 815.5375 | 860.5375 |
| 223 | 811.5625 | 856.5625 | 263 | 812.5625 | 857.5625 | 303 | 813.5625 | 858.5625 | 343 | 814.5625 | 859.5625 | 383 | 815.5625 | 860.5625 |
| 224 | 811.5875 | 856.5875 | 264 | 812.5875 | 857.5875 | 304 | 813.5875 | 858.5875 | 344 | 814.5875 | 859.5875 | 384 | 815.5875 | 860.5875 |
| 225 | 811.6125 | 856.6125 | 265 | 812.6125 | 857.6125 | 305 | 813.6125 | 858.6125 | 345 | 814.6125 | 859.6125 | 385 | 815.6125 | 860.6125 |
| 226 | 811.6375 | 856.6375 | 266 | 812.6375 | 857.6375 | 306 | 813.6375 | 858.6375 | 346 | 814.6375 | 859.6375 | 386 | 815.6375 | 860.6375 |
| 227 | 811.6625 | 856.6625 | 267 | 812.6625 | 857.6625 | 307 | 813.6625 | 858.6625 | 347 | 814.6625 | 859.6625 | 387 | 815.6625 | 860.6625 |
| 228 | 811.6875 | 856.6875 | 268 | 812.6875 | 857.6875 | 308 | 813.6875 | 858.6875 | 348 | 814.6875 | 859.6875 | 388 | 815.6875 | 860.6875 |
| 229 | 811.7125 | 856.7125 | 269 | 812.7125 | 857.7125 | 309 | 813.7125 | 858.7125 | 349 | 814.7125 | 859.7125 | 389 | 815.7125 | 860.7125 |
| 230 | 811.7375 | 856.7375 | 270 | 812.7375 | 857.7375 | 310 | 813.7375 | 858.7375 | 350 | 814.7375 | 859.7375 | 390 | 815.7375 | 860.7375 |
| 231 | 811.7625 | 856.7625 | 271 | 812.7625 | 857.7625 | 311 | 813.7625 | 858.7625 | 351 | 814.7625 | 859.7625 | 391 | 815.7625 | 860.7625 |
| 232 | 811.7875 | 856.7875 | 272 | 812.7875 | 857.7875 | 312 | 813.7875 | 858.7875 | 352 | 814.7875 | 859.7875 | 392 | 815.7875 | 860.7875 |
| 233 | 811.8125 | 856.8125 | 273 | 812.8125 | 857.8125 | 313 | 813.8125 | 858.8125 | 353 | 814.8125 | 859.8125 | 393 | 815.8125 | 860.8125 |
| 234 | 811.8375 | 856.8375 | 274 | 812.8375 | 857.8375 | 314 | 813.8375 | 858.8375 | 354 | 814.8375 | 859.8375 | 394 | 815.8375 | 860.8375 |
| 235 | 811.8625 | 856.8625 | 275 | 812.8625 | 857.8625 | 315 | 813.8625 | 858.8625 | 355 | 814.8625 | 859.8625 | 395 | 815.8625 | 860.8625 |
| 236 | 811.8875 | 856.8875 | 276 | 812.8875 | 857.8875 | 316 | 813.8875 | 858.8875 | 356 | 814.8875 | 859.8875 | 396 | 815.8875 | 860.8875 |
| 237 | 811.9125 | 856.9125 | 277 | 812.9125 | 857.9125 | 317 | 813.9125 | 858.9125 | 357 | 814.9125 | 859.9125 | 397 | 815.9125 | 860.9125 |
| 238 | 811.9375 | 856.9375 | 278 | 812.9375 | 857.9375 | 318 | 813.9375 | 858.9375 | 358 | 814.9375 | 859.9375 | 398 | 815.9375 | 860.9375 |
| 239 | 811.9625 | 856.9625 | 279 | 812.9625 | 857.9625 | 319 | 813.9625 | 858.9625 | 359 | 814.9625 | 859.9625 | 399 | 815.9625 | 860.9625 |
| 240 | 811.9875 | 856.9875 | 280 | 812.9875 | 857.9875 | 320 | 813.9875 | 858.9875 | 360 | 814.9875 | 859.9875 | 400 | 815.9875 | 860.9875 |

## APPENDIX D: 25 kHz Channel Spacing

TRUNKED RADIO SYSTEM FREQUENCY CHANNELLING PLAN (BLOCK C/C' 25 kHz)

| CH. | FREQ. (MHz) | | CH. | FREQ. (MHz) | | CH. | FREQ. (MHz) | | CH. | FREQ. (MHz) | | CH. | FREQ. (MHz) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NO. | Base Tx | Base Rx | NO. | Base Tx | Base Rx | NO. | Base Tx | Base Rx | NO. | Base Tx | Base Rx | NO. | Base Tx | Base Rx |
| 401 | 816.0125 | 861.0125 | 441 | 817.0125 | 862.0125 | 481 | 818.0125 | 863.0125 | 521 | 819.0125 | 864.0125 | 561 | 820.0125 | 865.0125 |
| 402 | 816.0375 | 861.0375 | 442 | 817.0375 | 862.0375 | 482 | 818.0375 | 863.0375 | 522 | 819.0375 | 864.0375 | 562 | 820.0375 | 865.0375 |
| 403 | 816.0625 | 861.0625 | 443 | 817.0625 | 862.0625 | 483 | 818.0625 | 863.0625 | 523 | 819.0625 | 864.0625 | 563 | 820.0625 | 865.0625 |
| 404 | 816.0875 | 861.0875 | 444 | 817.0875 | 862.0875 | 484 | 818.0875 | 863.0875 | 524 | 819.0875 | 864.0875 | 564 | 820.0875 | 865.0875 |
| 405 | 816.1125 | 861.1125 | 445 | 817.1125 | 862.1125 | 485 | 818.1125 | 863.1125 | 525 | 819.1125 | 864.1125 | 565 | 820.1125 | 865.1125 |
| 406 | 816.1375 | 861.1375 | 446 | 817.1375 | 862.1375 | 486 | 818.1375 | 863.1375 | 526 | 819.1375 | 864.1375 | 566 | 820.1375 | 865.1375 |
| 407 | 816.1625 | 861.1625 | 447 | 817.1625 | 862.1625 | 487 | 818.1625 | 863.1625 | 527 | 819.1625 | 864.1625 | 567 | 820.1625 | 865.1625 |
| 408 | 816.1875 | 861.1875 | 448 | 817.1875 | 862.1875 | 488 | 818.1875 | 863.1875 | 528 | 819.1875 | 864.1875 | 568 | 820.1875 | 865.1875 |
| 409 | 816.2125 | 861.2125 | 449 | 817.2125 | 862.2125 | 489 | 818.2125 | 863.2125 | 529 | 819.2125 | 864.2125 | 569 | 820.2125 | 865.2125 |
| 410 | 816.2375 | 861.2375 | 450 | 817.2375 | 862.2375 | 490 | 818.2375 | 863.2375 | 530 | 819.2375 | 864.2375 | 570 | 820.2375 | 865.2375 |
| 411 | 816.2625 | 861.2625 | 451 | 817.2625 | 862.2625 | 491 | 818.2625 | 863.2625 | 531 | 819.2625 | 864.2625 | 571 | 820.2625 | 865.2625 |
| 412 | 816.2875 | 861.2875 | 452 | 817.2875 | 862.2875 | 492 | 818.2875 | 863.2875 | 532 | 819.2875 | 864.2875 | 572 | 820.2875 | 865.2875 |
| 413 | 816.3125 | 861.3125 | 453 | 817.3125 | 862.3125 | 493 | 818.3125 | 863.3125 | 533 | 819.3125 | 864.3125 | 573 | 820.3125 | 865.3125 |
| 414 | 816.3375 | 861.3375 | 454 | 817.3375 | 862.3375 | 494 | 818.3375 | 863.3375 | 534 | 819.3375 | 864.3375 | 574 | 820.3375 | 865.3375 |
| 415 | 816.3625 | 861.3625 | 455 | 817.3625 | 862.3625 | 495 | 818.3625 | 863.3625 | 535 | 819.3625 | 864.3625 | 575 | 820.3625 | 865.3625 |
| 416 | 816.3875 | 861.3875 | 456 | 817.3875 | 862.3875 | 496 | 818.3875 | 863.3875 | 536 | 819.3875 | 864.3875 | 576 | 820.3875 | 865.3875 |
| 417 | 816.4125 | 861.4125 | 457 | 817.4125 | 862.4125 | 497 | 818.4125 | 863.4125 | 537 | 819.4125 | 864.4125 | 577 | 820.4125 | 865.4125 |
| 418 | 816.4375 | 861.4375 | 458 | 817.4375 | 862.4375 | 498 | 818.4375 | 863.4375 | 538 | 819.4375 | 864.4375 | 578 | 820.4375 | 865.4375 |
| 419 | 816.4625 | 861.4625 | 459 | 817.4625 | 862.4625 | 499 | 818.4625 | 863.4625 | 539 | 819.4625 | 864.4625 | 579 | 820.4625 | 865.4625 |
| 420 | 816.4875 | 861.4875 | 460 | 817.4875 | 862.4875 | 500 | 818.4875 | 863.4875 | 540 | 819.4875 | 864.4875 | 580 | 820.4875 | 865.4875 |
| 421 | 816.5125 | 861.5125 | 461 | 817.5125 | 862.5125 | 501 | 818.5125 | 863.5125 | 541 | 819.5125 | 864.5125 | 581 | 820.5125 | 865.5125 |
| 422 | 816.5375 | 861.5375 | 462 | 817.5375 | 862.5375 | 502 | 818.5375 | 863.5375 | 542 | 819.5375 | 864.5375 | 582 | 820.5375 | 865.5375 |
| 423 | 816.5625 | 861.5625 | 463 | 817.5625 | 862.5625 | 503 | 818.5625 | 863.5625 | 543 | 819.5625 | 864.5625 | 583 | 820.5625 | 865.5625 |
| 424 | 816.5875 | 861.5875 | 464 | 817.5875 | 862.5875 | 504 | 818.5875 | 863.5875 | 544 | 819.5875 | 864.5875 | 584 | 820.5875 | 865.5875 |
| 425 | 816.6125 | 861.6125 | 465 | 817.6125 | 862.6125 | 505 | 818.6125 | 863.6125 | 545 | 819.6125 | 864.6125 | 585 | 820.6125 | 865.6125 |
| 426 | 816.6375 | 861.6375 | 466 | 817.6375 | 862.6375 | 506 | 818.6375 | 863.6375 | 546 | 819.6375 | 864.6375 | 586 | 820.6375 | 865.6375 |
| 427 | 816.6625 | 861.6625 | 467 | 817.6625 | 862.6625 | 507 | 818.6625 | 863.6625 | 547 | 819.6625 | 864.6625 | 587 | 820.6625 | 865.6625 |
| 428 | 816.6875 | 861.6875 | 468 | 817.6875 | 862.6875 | 508 | 818.6875 | 863.6875 | 548 | 819.6875 | 864.6875 | 588 | 820.6875 | 865.6875 |
| 429 | 816.7125 | 861.7125 | 469 | 817.7125 | 862.7125 | 509 | 818.7125 | 863.7125 | 549 | 819.7125 | 864.7125 | 589 | 820.7125 | 865.7125 |
| 430 | 816.7375 | 861.7375 | 470 | 817.7375 | 862.7375 | 510 | 818.7375 | 863.7375 | 550 | 819.7375 | 864.7375 | 590 | 820.7375 | 865.7375 |
| 431 | 816.7625 | 861.7625 | 471 | 817.7625 | 862.7625 | 511 | 818.7625 | 863.7625 | 551 | 819.7625 | 864.7625 | 591 | 820.7625 | 865.7625 |
| 432 | 816.7875 | 861.7875 | 472 | 817.7875 | 862.7875 | 512 | 818.7875 | 863.7875 | 552 | 819.7875 | 864.7875 | 592 | 820.7875 | 865.7875 |
| 433 | 816.8125 | 861.8125 | 473 | 817.8125 | 862.8125 | 513 | 818.8125 | 863.8125 | 553 | 819.8125 | 864.8125 | 593 | 820.8125 | 865.8125 |
| 434 | 816.8375 | 861.8375 | 474 | 817.8375 | 862.8375 | 514 | 818.8375 | 863.8375 | 554 | 819.8375 | 864.8375 | 594 | 820.8375 | 865.8375 |
| 435 | 816.8625 | 861.8625 | 475 | 817.8625 | 862.8625 | 515 | 818.8625 | 863.8625 | 555 | 819.8625 | 864.8625 | 595 | 820.8625 | 865.8625 |
| 436 | 816.8875 | 861.8875 | 476 | 817.8875 | 862.8875 | 516 | 818.8875 | 863.8875 | 556 | 819.8875 | 864.8875 | 596 | 820.8875 | 865.8875 |
| 437 | 816.9125 | 861.9125 | 477 | 817.9125 | 862.9125 | 517 | 818.9125 | 863.9125 | 557 | 819.9125 | 864.9125 | 597 | 820.9125 | 865.9125 |
| 438 | 816.9375 | 861.9375 | 478 | 817.9375 | 862.9375 | 518 | 818.9375 | 863.9375 | 558 | 819.9375 | 864.9375 | 598 | 820.9375 | 865.9375 |
| 439 | 816.9625 | 861.9625 | 479 | 817.9625 | 862.9625 | 519 | 818.9625 | 863.9625 | 559 | 819.9625 | 864.9625 | 599 | 820.9625 | 865.9625 |
| 440 | 816.9875 | 861.9875 | 480 | 817.9875 | 862.9875 | 520 | 818.9875 | 863.9875 | 560 | 819.9875 | 864.9875 | 600 | 820.9875 | 865.9875 |

## APPENDIX E

TRUNKED RADIO SYSTEM CHANNEL ALLOTMENT PLAN (25 kHz Channel Spacing)

| BLOCK | | CHANNEL NO. | | | | | | | | | | BLOCK | | CHANNEL NO. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MAIN | SUB | | | | | | | | | | | MAIN | SUB | | | | | | | | | | |
| A | A1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | C | C1 | 401 | 402 | 403 | 404 | 405 | 406 | 407 | 408 | 409 | 410 |
| | | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | | 411 | 412 | 413 | 414 | 415 | 416 | 417 | 418 | 419 | 420 |
| | | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | | 421 | 422 | 423 | 424 | 425 | 426 | 427 | 428 | 429 | 430 |
| | | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | | | 431 | 432 | 433 | 434 | 435 | 436 | 437 | 438 | 439 | 440 |
| | | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | | | 441 | 442 | 443 | 444 | 445 | 446 | 447 | 448 | 449 | 450 |
| A | A2 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | C | C2 | 451 | 452 | 453 | 454 | 455 | 456 | 457 | 458 | 459 | 460 |
| | | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | | | 461 | 462 | 463 | 464 | 465 | 466 | 467 | 468 | 469 | 470 |
| | | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | | | 471 | 472 | 473 | 474 | 475 | 476 | 477 | 478 | 479 | 480 |
| | | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | | | 481 | 482 | 483 | 484 | 485 | 486 | 487 | 488 | 489 | 490 |
| | | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | | | 491 | 492 | 493 | 494 | 495 | 496 | 497 | 498 | 499 | 500 |
| A | A3 | 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | C | C3 | 501 | 502 | 503 | 504 | 505 | 506 | 507 | 508 | 509 | 510 |
| | | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 | | | 511 | 512 | 513 | 514 | 515 | 516 | 517 | 518 | 519 | 520 |
| | | 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 | | | 521 | 522 | 523 | 524 | 525 | 526 | 527 | 528 | 529 | 530 |
| | | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 | | | 531 | 532 | 533 | 534 | 535 | 536 | 537 | 538 | 539 | 540 |
| | | 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | | | 541 | 542 | 543 | 544 | 545 | 546 | 547 | 548 | 549 | 550 |
| A | A4 | 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 | 160 | C | C4 | 551 | 552 | 553 | 554 | 555 | 556 | 557 | 558 | 559 | 560 |
| | | 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 | | | 561 | 562 | 563 | 564 | 565 | 566 | 567 | 568 | 569 | 570 |
| | | 171 | 172 | 173 | 174 | 175 | 176 | 177 | 178 | 179 | 180 | | | 571 | 572 | 573 | 574 | 575 | 576 | 577 | 578 | 579 | 580 |
| | | 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | | | 581 | 582 | 583 | 584 | 585 | 586 | 587 | 588 | 589 | 590 |
| | | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | | | 591 | 592 | 593 | 594 | 595 | 596 | 597 | 598 | 599 | 600 |
| B | B1 | 201 | 202 | 203 | 204 | 205 | 206 | 207 | 208 | 209 | 210 | | | | | | | | | | | | |
| | | 211 | 212 | 213 | 214 | 215 | 216 | 217 | 218 | 219 | 220 | | | | | | | | | | | | |
| | | 221 | 222 | 223 | 224 | 225 | 226 | 227 | 228 | 229 | 230 | | | | | | | | | | | | |
| | | 231 | 232 | 233 | 234 | 235 | 236 | 237 | 238 | 239 | 240 | | | | | | | | | | | | |
| | | 241 | 242 | 243 | 244 | 245 | 246 | 247 | 248 | 249 | 250 | | | | | | | | | | | | |
| B | B2 | 251 | 252 | 253 | 254 | 255 | 256 | 257 | 258 | 259 | 260 | | | | | | | | | | | | |
| | | 261 | 262 | 263 | 264 | 265 | 266 | 267 | 268 | 269 | 270 | | | | | | | | | | | | |
| | | 271 | 272 | 273 | 274 | 275 | 276 | 277 | 278 | 279 | 280 | | | | | | | | | | | | |
| | | 281 | 282 | 283 | 284 | 285 | 286 | 287 | 288 | 289 | 290 | | | | | | | | | | | | |
| | | 291 | 292 | 293 | 294 | 295 | 296 | 297 | 298 | 299 | 300 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | B2 | 301 | 302 | 303 | 304 | 305 | 306 | 307 | 308 | 309 | 310 | | | | | | | | | | | | |
| B | B3 | 311 | 312 | 313 | 314 | 315 | 316 | 317 | 318 | 319 | 320 | | | | | | | | | | | | |
| | | 321 | 322 | 323 | 324 | 325 | 326 | 327 | 328 | 329 | 330 | | | | | | | | | | | | |
| | | 331 | 332 | 333 | 334 | 335 | 336 | 337 | 338 | 339 | 340 | | | | | | | | | | | | |
| | | 341 | 342 | 343 | 344 | 345 | 346 | 347 | 348 | 349 | 350 | | | | | | | | | | | | |
| B | B4 | 351 | 352 | 353 | 354 | 355 | 356 | 357 | 358 | 359 | 360 | | | | | | | | | | | | |
| | | 361 | 362 | 363 | 364 | 365 | 366 | 367 | 368 | 369 | 370 | | | | | | | | | | | | |
| | | 371 | 372 | 373 | 374 | 375 | 376 | 377 | 378 | 379 | 380 | | | | | | | | | | | | |
| | | 381 | 382 | 383 | 384 | 385 | 386 | 387 | 388 | 389 | 390 | | | | | | | | | | | | |
| | | 391 | 392 | 393 | 394 | 395 | 396 | 397 | 398 | 399 | 400 | | | | | | | | | | | | |

## APPENDIX F
## Summary of Spectrum Allocation for Mobile Radio Services

| Service | TX-RX | Lower Frequency Limit (MHz) | Upper Frequency Limit (MHz) |
|---|---|---|---|
| DX +5 MHz (Leased Channel - Terminal) | TX | 137.000 | 138.000 |
| | RX | 142.000 | 143.000 |
| DX -5 MHz (Leased Channel - Subscriber) | TX | 142.000 | 143.000 |
| | RX | 137.000 | 138.000 |
| VHF Mobile Radio | TX | 138.000 | 139.400 |
| | RX | 142.600 | 144.000 |
| SX | | 138.025 | 141.975 |
| Walkie-Talkie VHF (point-to-point) | | 141.000 | 142.000 |
| SX | | 143.025 | 143.975 |
| SX (Amateur) | | 144.000 | 145.975 |
| DX +5 MHz (Leased Channel - Terminal) | TX | 146.000 | 146.975 |
| | RX | 151.000 | 151.975 |
| SX (amateur): 147.000 to 147.975 | | 147.000 | 149.900 |
| SX | | 150.050 | 150.975 |
| DX - 5 MHz (Leased Channel - Subscriber) | TX | 151.000 | 151.975 |
| | RX | 146.000 | 146.975 |
| SX (Contains maritime mobile) | TX | 152.000 | 162.975 |
| DX + 10 MHz (Telemetry) | TX | 163.000 | 163.125 |
| | RX | 173.000 | 173.125 |
| DX +5 MHz (Leased Channel - Terminal) 163.225-163.850 | TX | 163.150 | 163.975 |
| | RX | 168.150 | 168.975 |
| SX | | 164.000 | 164.975 |
| DX +5 MHz (Police) | TX | 165.000 | 167.975 |
| | RX | 170.000 | 172.975 |
| SX | | 168.000 | 168.125 |
| DX -5 MHz (Leased Channel - Subscriber) 168.225-168.850 | TX | 168.150 | 168.975 |
| | RX | 163.150 | 163.975 |
| SX | | 169.000 | 169.975 |
| DX -5 MHz | TX | 170.000 | 172.975 |
| | RX | 165.000 | 167.975 |
| DX -10 MHz (Telemetry) | TX | 173.000 | 173.125 |
| | RX | 163.000 | 163.125 |
| SX | | 173.150 | 174.000 |
| Trunked Radio (Digital) | TX | 380.000 | 389.975 |
| | RX | 390.000 | 400.000 |
| DX +10 MHz | TX | 404.000 | 404.975 |
| | RX | 414.000 | 414.975 |
| DX +10 MHz (Telemetry 405.525-405.975) | TX | 405.000 | 405.975 |
| | RX | 415.000 | 415.975 |
| SX | | 406.125 | 406.950 |
| DX +10 MHz (Trunking 407-408) / (Telemetry 406.975-416.975) | TX | 406.975 | 407.975 |
| | RX | 416.975 | 417.975 |
| SX | | 408 | 411.975 |
| **Service** | **TX-RX** | **Lower Frequency Limit** | **Upper Frequency Limit** |

| | | (MHz) | (MHz) |
|---|---|---|---|
| DX +10 MHz | TX | 412.000 | 413.975 |
| | RX | 422.000 | 423. 975 |
| DX -10 MHz | TX | 414.000 | 414.975 |
| | RX | 404.000 | 404.975 |
| DX -10 MHz (Telemetry 415.525-415.975) | TX | 415.000 | 415.975 |
| | RX | 405.000 | 405.975 |
| DX -10 MHz (Trunking 417-418) / (Telemetry 416.975-406.975) | TX | 416.975 | 417.975 |
| | RX | 406.975 | 407.975 |
| SX | | 418.000 | 421.975 |
| DX -10 MHz | TX | 422 | 423.975 |
| | RX | 412.000 | 413.975 |
| SX | | 424.000 | 425.975 |
| SX | | 427.000 | 430.000 |
| SX (Radiolocation) | | 430.000 | 434.975 |
| DX +10 MHz | TX | 435.000 | 439.975 |
| | RX | 445.000 | 449.975 |
| DX +10 MHz | TX | 440.000 | 440.600 |
| | RX | 450.000 | 450.600 |
| SX | | 440.625 | 444.975 |
| DX -10 MHz | TX | 445.000 | 449.975 |
| | RX | 435.000 | 439.975 |
| DX -10 MHz | TX | 450.000 | 450.600 |
| | RX | 440.000 | 440.600 |
| DX +10 MHz (Telemetry) | TX | 450.625 | 450.725 |
| | RX | 460.625 | 460.725 |
| SX | | 450.750 | 451.975 |
| DX +10 MHz (ATUR-subscriber) | TX | 452.000 | 456.275 |
| | RX | 462.000 | 466.275 |
| SX (Walkie-talkie) | | 456.300 | 456.975 |
| DX +10 MHz (Leased channel-terminal) | TX | 457.000 | 457.975 |
| | RX | 467.000 | 467.975 |
| DX +10 MHz (Police) | TX | 458.000 | 458.975 |
| | RX | 468.000 | 468.975 |
| DX +10 MHz | TX | 459.000 | 459.975 |
| | RX | 469.000 | 469.975 |
| SX | | 460.000 | 460.600 |
| DX -10 MHz (Telemetry) | TX | 460.625 | 460.725 |
| | RX | 450.625 | 450.725 |
| SX | | 460.750 | 461.975 |
| DX -10 MHz (ATUR-terminal) | TX | 462.000 | 466.275 |
| | RX | 452.000 | 456.275 |
| SX (Walkie-talkie) | | 466.300 | 466.975 |
| DX -10 MHz (Leased Channel - subscriber) | TX | 467.000 | 467.975 |
| | RX | 457.000 | 457.975 |
| DX -10 MHz | TX | 468.000 | 468.975 |
| | RX | 458.000 | 458.975 |
| DX -10 MHz | TX | 469.000 | 469.975 |
| | RX | 459.000 | 459.975 |

| Service | TX-RX | Lower Frequency Limit (MHz) | Upper Frequency Limit (MHz) |
|---|---|---|---|
| UHF Mobile Radio | TX | 443.013 | 443.988 |
| | RX | 448.013 | 448.988 |
| Walkie-Talkie UHF (point-to-point) | | 456.525 | 456.975 |
| | | 466.525 | 466.975 |
| | | 477.000 | 477.250 |
| Mobile Data | TX | 478.000 | 484.000 |
| | RX | 488.000 | 494.000 |
| Trunked Radio (Analogue) | TX | 806.013 | 817.988 |
| | RX | 851.013 | 862.988 |

## APENDIX G

### List of Analogue TRS Service Providers and the numbers of AA held as at 31 July 2006

| Client Name | Northern | Eastern | Central | Southern | Sabah | Sarawak | Grand Total |
|---|---|---|---|---|---|---|---|
| ACHI JAYA COMMUNICATIONS SDN BHD | | | | | | 44 | **44** |
| CMRS TRUNK RADIO SDN. BHD. | 17 | 6 | 49 | | | | **72** |
| COMETRON SDN.BHD. | | | 25 | 43 | | | **68** |
| ELECTCOMS SDN BHD | 233 | 170 | 235 | 142 | 3 | 6 | **789** |
| HASYON TEKNIK SDN. BHD. | 15 | | 40 | 5 | | | **60** |
| MAL-TEL COMMUNICATION SDN BHD | 10 | | 39 | | | | **49** |
| PAGER COMMUNICATION SDN. BHD. | | 30 | | | | | **30** |
| SAMEN TRUNK RADIO SDN. BHD. | 5 | 8 | 34 | 30 | | | **77** |
| SEGI MAJU SDN BHD | 22 | 24 | 50 | 34 | | | **130** |
| STARS ASSOCIATED SDN BHD | | 2 | 4 | | 13 | 39 | **58** |
| STR COMMUNICATION SDN BHD | 10 | 10 | 5 | | | | **25** |
| SYARIKAT PELATUS SDN BHD | 9 | 14 | 93 | | | | **116** |
| TEXTPHON (M) SDN. BHD. | 31 | 13 | 17 | 14 | | | **75** |
| WIDENET DISTRIBUTOR SDN BHD | 55 | 30 | 10 | 35 | | | **130** |
| **Grand Total** | **407** | **307** | **601** | **303** | **16** | **89** | **1723** |

## APPENDIX H

## Conditions of AA

The issuance of the AA in the frequency bands in Blocks A and B shall be subject to the following conditions:

(a) that the AA issued shall be cancelled upon the cancellation of the Network Facility Provider Individual Licence of the AA holder;

(b) that the AA issued shall be suspended upon the suspension of the Network Facility Provider Individual Licence of the AA holder;

(c) that AA holder shall comply with the Detailed Business Plan submitted to the Commission *in toto* unless modified with the approval of the Commission;

(d) that there shall be no change in the shareholding of Network Facility Provider Individual Licence holder for a period of five years from the date of issuance of the first AA to the licensee; and

(e) that Network Facility Provider Individual Licence holder shall submit a half yearly report to the Commission outlining the steps taken to implement the Detailed Business Plan as at **30 June** and **31 December** of each year.

## APPENDIX I

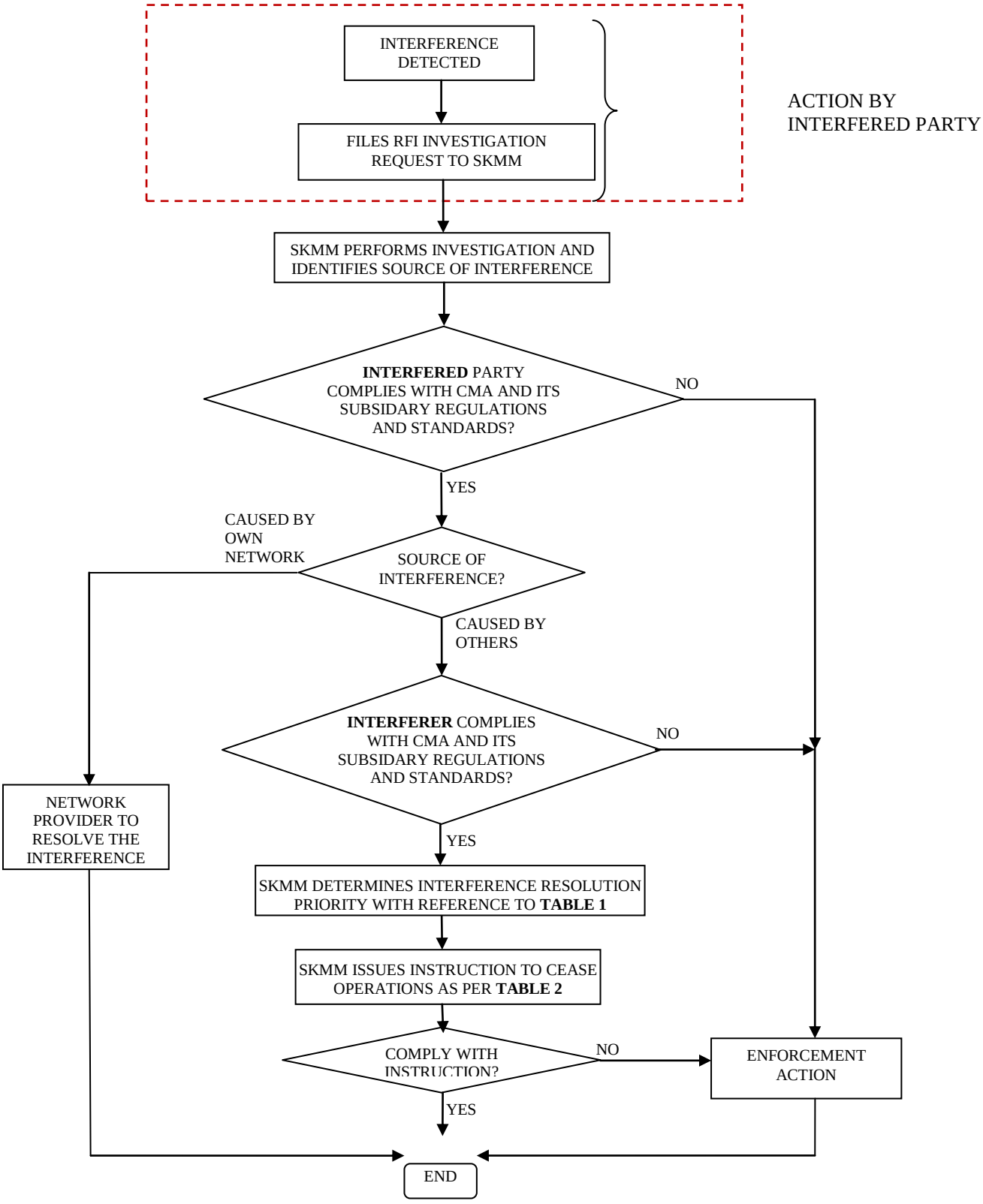

INTERFERENCE DETECTED
FILES RFI INVESTIGATION REQUEST TO SKMM
ACTION BY INTERFERED PARTY
SKMM PERFORMS INVESTIGATION AND IDENTIFIES SOURCE OF INTERFERENCE
**INTERFERED** PARTY COMPLIES WITH CMA AND ITS SUBSIDARY REGULATIONS AND STANDARDS?
NO
YES
CAUSED BY OWN NETWORK
SOURCE OF INTERFERENCE?
CAUSED BY OTHERS
**INTERFERER** COMPLIES WITH CMA AND ITS SUBSIDARY REGULATIONS AND STANDARDS?
NO
NETWORK PROVIDER TO RESOLVE THE INTERFERENCE
YES
SKMM DETERMINES INTERFERENCE RESOLUTION PRIORITY WITH REFERENCE TO **TABLE 1**
SKMM ISSUES INSTRUCTION TO CEASE OPERATIONS AS PER **TABLE 2**
COMPLY WITH INSTRUCTION?
NO
ENFORCEMENT ACTION
YES
END

**TABLE 1: INTERFERENCE RESOLUTION PRIORITY**

| | Resolution Type of Priority | Description |
|---|---|---|
| 1 | Service Priority | Primary has priority over secondary services. Among co- primary or co-secondary services, the stated priority is accorded as 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):<br>i. Safety or Radionavigation service;<br>ii. Based on the Date of Apparatus Assignment - Priority is given to the earliest/first installation |

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

| | 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 CMA (Spectrum) Regulations 2000 | To cease* operation immediately within 24 hours or earlier as specified in the notice issued by SKMM |
| 2 | Major | Electromagnetic interference rendering any apparatus or services unsuitable for their intended purpose.<br><br>For this purpose interference to public correspondence service is considered under this category | To cease* operation within 3 days or earlier as specified in notice issued by SKMM 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 SKMM if interference cannot be resolved |

*Note:
Resumption of operation of the apparatus is not allowed unless the assignment holder submit interference resolution or mitigation plan and complete implementation of the mitigation plan to the satisfaction of SKMM to remove/ avoid the interference.