ENGLISH TRANSLATION

SPECIFIED RADIO MICROPHONE FOR LAND MOBILE RADIO STATION (TV WHITE SPACE BAND, EXCLUSIVE BAND, 1.2GHz BAND)

ARIB STANDARD

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Association of Radio Industries and Businesses

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Foreword

The Association of Radio Industries and Businesses (ARIB) investigates and summarizes the basic technical requirements for various radio systems in the form of "ARIB Standards". These standards are developed with the participation of and through discussions amongst radio equipment manufacturers, telecommunication operators, broadcasting equipment manufacturers, broadcasters and users.

ARIB Standards include "government technical regulations" (mandatory standard) that are set for the purpose of encouraging effective use of frequency and preventing interference with other spectrum users, and "private technical standards" (voluntary standards) that are defined in order to ensure compatibility and adequate quality of radio equipment and broadcasting equipment as well as to offer greater convenience to radio equipment manufacturers, telecommunication operators, broadcasting equipment manufacturers, broadcasters and users.

This ARIB Standard is developed for "SPECIFIED RADIO MICROPHONE FOR LAND MOBILE RADIO STATION (TV WHITE SPACE BAND, EXCLUSIVE BAND, 1.2GHz BAND)". In order to ensure fairness and transparency in the defining stage, the standard was set by consensus at the ARIB Standard Assembly with the participation of both domestic and foreign interested parties from radio equipment manufacturers, telecommunication operators, broadcasting equipment manufacturers, broadcasters and users.

ARIB sincerely hopes that this ARIB Standard will be widely used by radio equipment manufacturers, telecommunication operators, broadcasting equipment manufacturers, broadcasters and users.

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Attachment 1 (selection of option 1)

(N/A)

Attachment 2 (selection of option 2)

PATENT HOLDER	NAME OF PATENT	REGISTRATION NO./ APPLICATION NO.	REMARKS
日本放送協会 NHK エンジニアリングサービス	ワイヤレスマイク用ＯＦＤＭ送信装置及び受信装置	5745959(RN)/ 2011-152273(AN)	JP
Sony Corporation	Submitted comprehensive confirmation of patents for ARIB STD-T112 Ver1.2		
Sony Corporation	Submitted comprehensive confirmation of patents for ARIB STD-T112 Ver1.3		

Contents

Chapter 1 General Items

1.1 Outline

This standard specifies the radio equipment of specified radio microphone for land mobile radio station regulated in the Article 49.16 of "Ordinance Regulating Radio Equipment" and the radio equipment of digital specified radio microphone for land mobile radio station regulated in the Article 49.16.2 of "Ordinance Regulating Radio Equipment".

Hereafter 'Analog Specified Radio Microphone' refers to specified radio microphone regulated in the Article 49.16 and 'Digital Specified Radio Microphone' refers to specified radio-microphone regulated in the Article 49.16.2. 'Specified Radio Microphone' (without analog/digital notation) refers to both of 'Analog Specified Radio Microphone' and 'Digital Specified Radio Microphone'.

1.2 Scope of the Standard

Radio equipment of Specified Radio Microphone for Land Mobile Radio Station consists of transmitter as shown in Figure 1.1, receiver as shown in Figure 1.2, and transmitter for ear monitoring as shown in Figure 1.3. This standard specifies the scope of application as shown in Figure 1.1, 1.2 and 1.3.

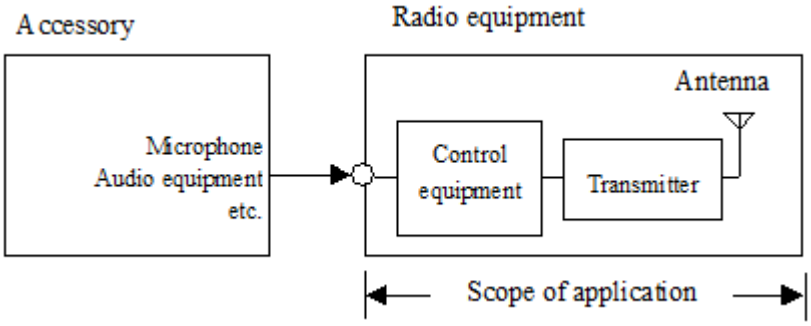


Figure 1.1 Transmitter

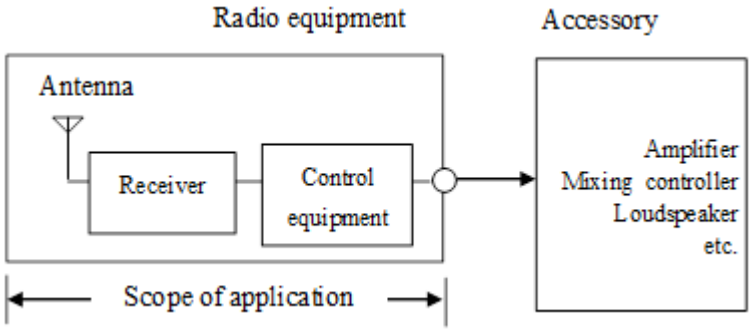


Figure 1.2 Receiver

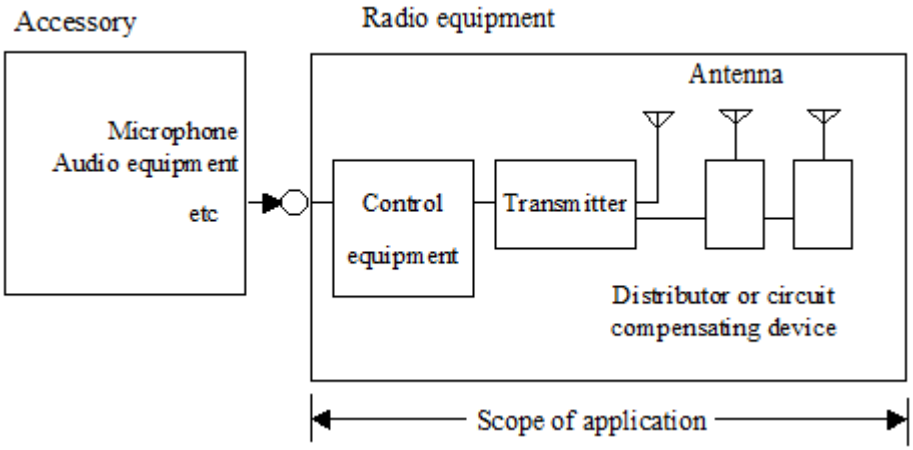


Figure 1.3 Transmitter of radio microphone for ear monitoring

1.3 Reference regulations

In this standard, “RL” refers to Radio Law, “RERL” refers to Regulations for Enforcement of the Radio Law, “ORE” refers to “Ordinance Regulating Radio Equipment, “OTRCC” refers to Ordinance Concerning Technical Regulations Conformity Certification etc. of Specified Radio Equipment, “RPORSL” refers to Regulations for Procedure for Obtaining a Radio Station License, and “NT” refers to a Notification of the Ministry of Posts and Telecommunications if issued in 2000 or earlier, and a Notification of the Ministry of Internal Affairs and Communications if issued in 2001 or later.

Chapter 2 Reference Systems

Reference Systems of radio equipment of Specified Radio Microphone for Land Mobile Radio Station are shown in Figure2.1 and Figure2.2, and its abstracts are as follows.

Actual systems of radio equipment of Specified Radio Microphone for Land Mobile Radio Station, however, may be expanded or combined from these Reference Systems, specifically to consist of multiple receivers with the identical frequencies, multiple transmitters with the identical frequencies transmitting alternatively, or multiple receiver antennas.

(1) Basic system

(i) One-way communication system which consists of one transmitter and one receiver

(ii) Broadcast communication system which consists of one transmitter and 2 or more receivers

(2) Multi-channel system

Multi-channel system constitutes multiple one-way communication systems by means of radiating radio wave from N transmitters, receiving by one receiving antennas and distributing to N receivers.

(3) Diversity receiver system

Diversity system is the single channel receiving system that adopts the diversity reception technology in the receiver.

(4) Multi-channel diversity system

Multi-channel diversity system is the multi-channel receiving system that adopts the diversity reception technology in the receivers.

(5) Induction Loop coaxial cable system

Induction Loop coaxial cable system uses Induction Loop coaxial cable instead of receiving antenna.

(6) Multi-channel Induction Loop coaxial cable system

Multi-channel Induction Loop coaxial cable system is composed of “multi-channel system”, whose receivers use Induction Loop coaxial cable instead of receiving antenna.

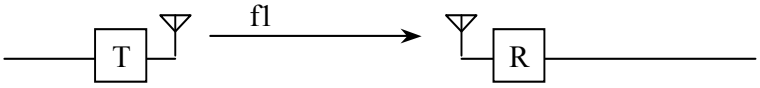
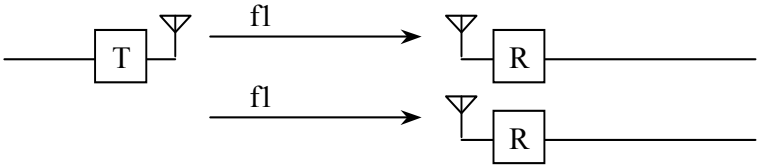
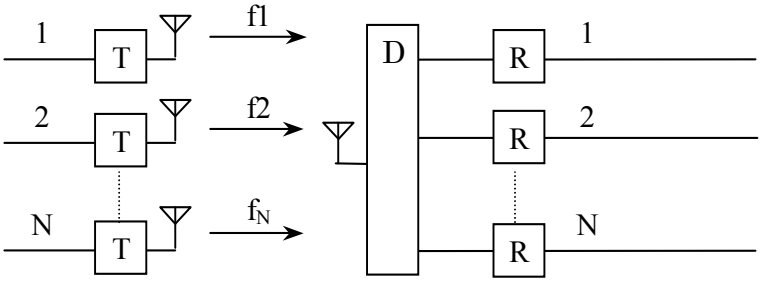
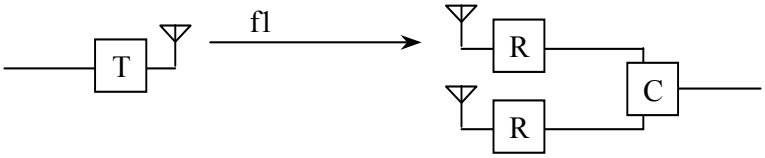
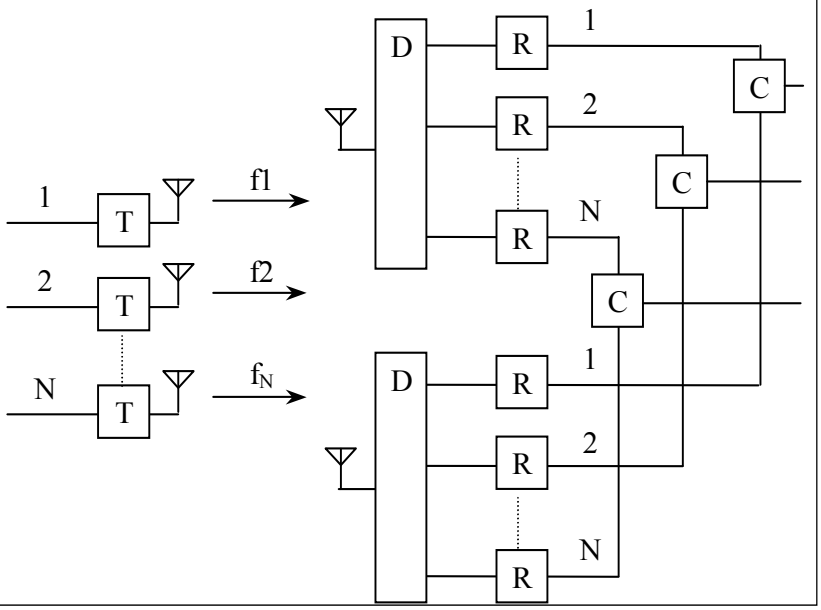
(7) Radio Microphone for ear monitoring (stereo system) dedicated system

(i) System constructed by connecting a circuit compensating device to transmitter

(ii) System constructed by connecting a distributor and a circuit compensating device to transmitter

(iii) Multi-channel system constructed by connecting to a mixing distributor and a circuit compensating device to transmitter

(iv) Induction Loop coaxial cable system uses Induction Loop coaxial cable instead of receiving antenna.

System	System Structure
Basic system (one-way communication system)	
Basic system (broadcast communication system)	
Multi-channel system	
Diversity system	
Multi-channel diversity system	

[legend] T (Transmitter) R (Receiver) D (Distributor) C (Comparator)

Figure 2.1 Reference Systems

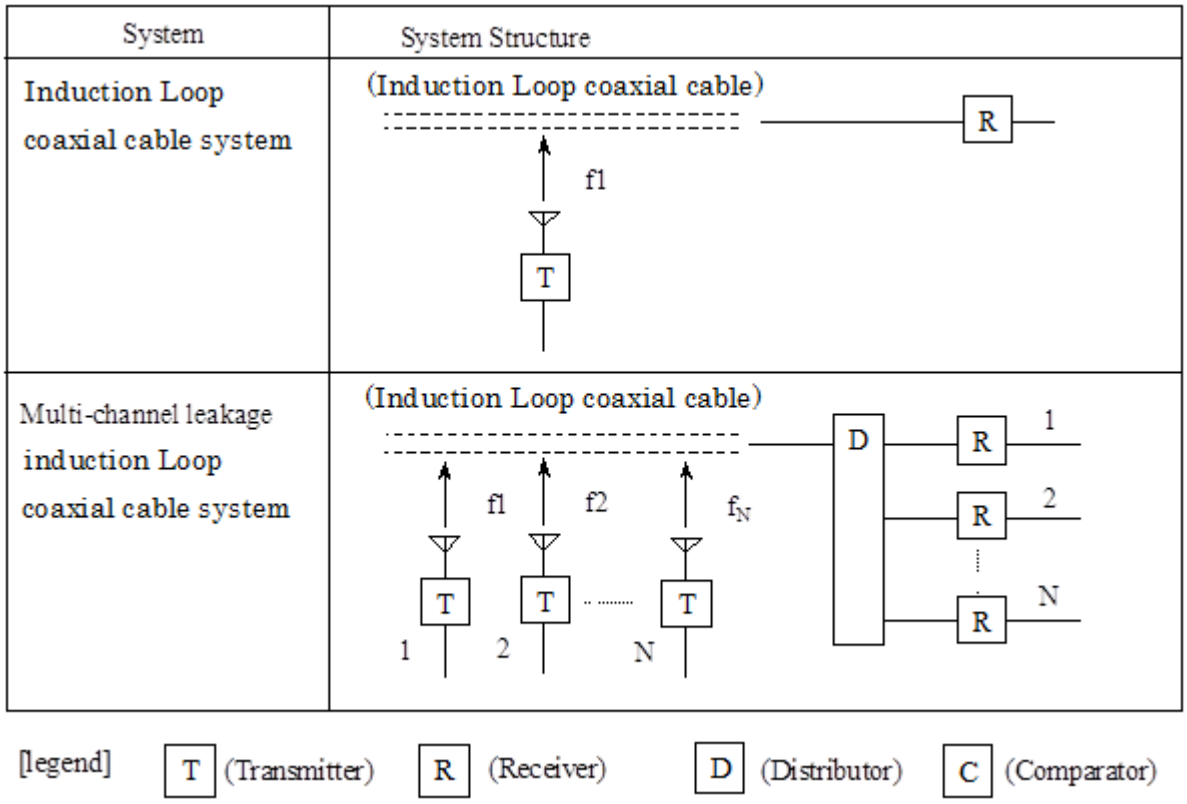


Figure 2.1 Reference Systems (Continued)

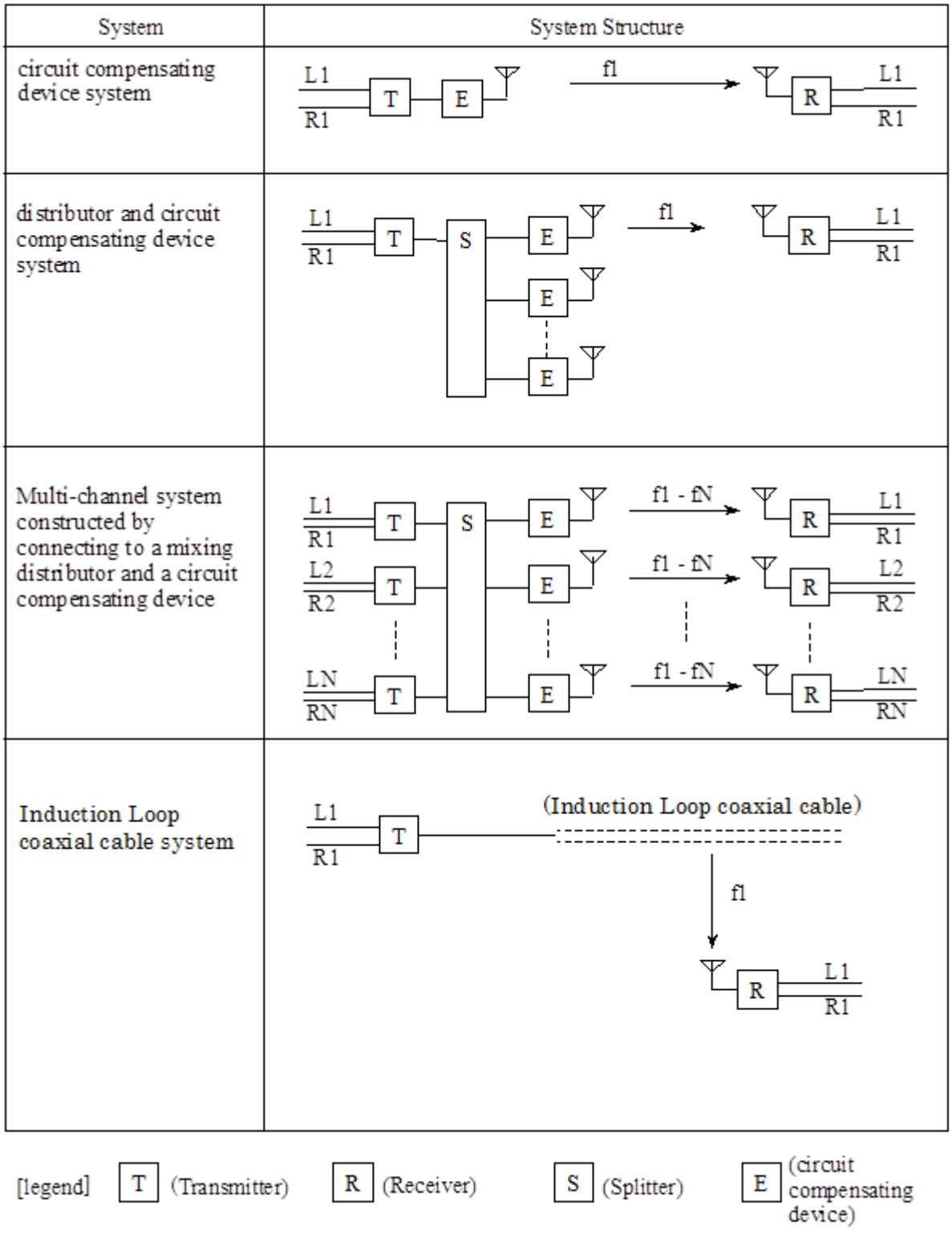


Figure 2.2 Reference Systems for radio microphone for ear monitoring dedicated system

(Intentionally left blank)

Chapter 3 Technical requirements for radio equipment of Analog Specified Radio Microphone for Land Mobile Radio Station

3.1 General conditions

(1) Communication system

(TV white space band, exclusive band, 1.2GHz band) (ORE: Article 49.16)

The communication method shall be one-way communication or broadcast communication.

(2) Assigned frequency band

(TV white space band, exclusive band) (ORE: Article 49.16)

Assigned frequency band shall be from 470MHz to 714MHz. (frequency band from 470MHz to 710MHz refers to 'TV white space band', frequency band from 710MHz to 714MHz refers to 'exclusive band' for Specified Radio Microphone)

(1.2GHz band) (ORE: Article 49.16)

Assigned frequency band shall be from 1240MHz to 1260MHz, except from 1252MHz to 1253MHz. (frequency band from 1240MHz to 1260MHz, except from 1252MHz to 1253MHz, refers to '1.2GHz band')

(3) Type of modulation

(TV white space band, exclusive band, 1.2GHz band) (ORE: Article 49.16)

Modulation method shall be frequency modulation.

3.2 Transmitter

(1) Antenna power

(TV white space band, exclusive band) (OTRCC: Article 2)

Designated value of transmitter antenna power shall be 10mW or less.

(1.2GHz band) (OTRCC: Article 2)

Designated value of transmitter antenna power shall be 50mW or less.

(2) Tolerance of antenna power

(TV white space band, exclusive band) (ORE: Article 14)

Tolerance of antenna power shall be within +20% (upper value) and –50% (lower value).

(1.2GHz band) (ORE: Article 14)

Tolerance of antenna power shall be within +20% (upper value) and –50% (lower value).

(3) Absolute gain of transmission antenna

(TV white space band, exclusive band, 1.2GHz band) (ORE: Article 49.16)
(NT: No. 241, 2012)

Absolute gain of transmission antenna shall be 2.14dB or less, except the following.

- Transmission antenna for ear monitoring shall be 7dB or less.

(4) Structure of transmission antenna

(TV white space band, exclusive band, 1.2GHz band) (ORE: Article 49.16)
(NT: No. 316, 2012)

Neither feeder cable for power supplying nor wire for grounding shall be equipped, except the following.

- Radio Microphone for ear monitoring

(5) Tolerance of frequency

(TV white space band, exclusive band, 1.2GHz band) (ORE: Article 5, attached table 1)

The tolerance of transmit frequency shall be $\pm 20 \times 10^{-6}$.

(6) Oscillation method

(TV white space band, exclusive band, 1.2GHz band) (ORE: Article 49.16)

The oscillation method of the transmitter shall be the crystal oscillation method or the synthesizer method, which uses crystal oscillation to control the oscillation frequency.

(7) Modulation frequency

(TV white space band, exclusive band, 1.2GHz band) (ORE: Article 49.16)
(NT: No. 694, 1989)

Modulation frequency shall be basically within 20kHz, while it shall be within 53kHz for stereo system, except the followings:

- System, which uses the tone signal with frequency higher than 15kHz and lower than or equal to 40kHz, and its frequency deviation is within ±2kHz.

(8) Adjacent channel leakage power

(TV white space band, exclusive band, 1.2GHz band) (ORE: Article 49.16)

(a) For the system with occupied bandwidth within 110kHz, when voltage impressed 36dB higher than voltage necessary to modulate ±5kHz frequency shift with 1kHz frequency, the power radiated into the ±55kHz band of the frequency 250kHz distant from the carrier frequency shall be lower than the carrier power by 60dB or more.

(b) For the system with occupied bandwidth between 110kHz and 160kHz, when voltage impressed

36dB higher than voltage necessary to modulate ±7.5kHz band of the frequency shift with 1kHz frequency, the power radiated into the ±80kHz band of the frequency 500kHz distant from the carrier frequency shall be lower than the carrier power by 60dB or more.

(c) For the system with occupied bandwidth between 160kHz and 330kHz, when voltage impressed 36dB higher than voltage necessary to modulate ±2.4kHz band of the frequency shift with 1kHz frequency, the power radiated into the ±165kHz band of the frequency 500kHz distant from the carrier frequency shall be lower than the carrier power by 60dB or more.

(d) In the case of the frequency shift in a stereo transmission method, when voltage impressed 25dB higher than voltage necessary to modulate ±28.5kHz band of the frequency shift with 1kHz frequency, the power radiated into the ±125kHz band of the frequency 500kHz distant from the carrier frequency shall be lower than the carrier power by 60dB or more.

(9) Tolerance of occupied bandwidth

(TV white space band, exclusive band, 1.2GHz band) (ORE: Article 6, attached table 2)

The tolerance of occupied bandwidths shall be as follows depending on different frequency deviations. For the designation, the tolerance value of occupied bandwidth precedes the type of radio wave.

- Within ±40kHz of frequency deviation: 110kHz
- Between ±40kHz and ±60kHz of frequency deviation: 160kHz
- Between ±60kHz and ±150kHz of frequency deviation: 330kHz
- Stereo system: 250kHz

(10) Limits of spurious emission intensity and out-of-band emission intensity

(TV white space band, exclusive band) (ORE: Article 7, attached table 3)
(NT: No. 243, 2012)

- Frequency at domain boundaries within out-of-band domain and spurious domain:

2.5 times width of occupied frequency bandwidth around center frequency

- Limit of spurious emission intensity within out-of-band domain:

2.5μW or less

- Limit of unwanted emission intensity within spurious domain:

4nW or less. However, for within ±1MHz band around center frequency, and bands of 470MHz or less and over 710MHz, it shall be 2.5μW or less

Reference bandwidths for limit of unwanted emission intensity within spurious domain are shown below.

Frequency band of spurious domain	Reference bandwidth
9kHz < f <= 150kHz	1kHz
150kHz < f <= 30MHz	10kHz
30MHz < f <= 1GHz	100kHz
1GHz < f	1MHz

(1.2GHz band) (ORE: Article 7, attached table 3)

- Limit of spurious emission intensity within out-of-band domain and limit of unwanted emission intensity within spurious domain:

  2.5μW or less

Reference bandwidths for limit of unwanted emission intensity within spurious domain are shown below.

Frequency band of spurious domain	Reference bandwidth
9kHz < f <= 150kHz	1kHz
150kHz < f <= 30MHz	10kHz
30MHz < f <= 1GHz	100kHz
1GHz < f	1MHz

(11) Frequency deviation

(TV white space band, exclusive band, 1.2GHz band) (ORE: Article 49.16)

a) Maximum frequency deviation

Maximum frequency deviation shall be different values corresponding to each of following different occupied bandwidths.

- 110kHz or less: within ±40kHz
- More than 110kHz and 160kHz or less: within ±60kHz
- More than 160kHz and 330kHz or less: within ±150kHz
- For the stereo system: within ±75kHz

b) Reference frequency deviation

Reference frequency deviation (Frequency shift in the transmitter, when the 1000Hz signal with average input sound pressure level, i.e. average sound pressure of audio input to microphone, is inputted) shall be different values corresponding to each of following different maximum frequency deviations.

- within ±40kHz: within ±5kHz
- more than ±40kHz and ±60kHz or less: within ±7.5kHz
- more than ±60kHz and ±150kHz or less: within ±2.45kHz
- Stereo system: within ±28.5kHz

3.3 Receiver

(1) Characteristics

(TV white space band, exclusive band, 1.2GHz band) (NT: No. 395, 1986)

a) Receiver equipment for transmitter with occupied bandwidth within 110kHz

- Sensitivity

Reference sensitivity level shall be 10μV or less.

When the desired signal, modulated by 1kHz frequency with ±5kHz frequency deviation, is applied, reference sensitivity is defined as receiver input voltage necessary to gain 25dB of the ratio of sum of signal and noise output signals to noise output signal of receiver.

- Spurious response for effective selectivity

Spurious response for effective selectivity shall be 50dB or more.

When the receiver input voltage is 3dB higher than reference sensitivity, and when interference signal, modulated by the 400Hz frequency with 60% of maximum frequency deviation, is applied, spurious response for effective selectivity is defined as the ratio of interference receiver input voltage, where ratio of sum of signal and noise output to noise output is 25dB, to reference sensitivity.

- Adjacent channels selectivity for effective selectivity

Adjacent channels selectivity for effective selectivity shall be 50dB or more.

When the receiver input voltage is 3dB higher than reference sensitivity, and when interference signal, whose signal is 250kHz distant from desired signal and modulated by the 400Hz frequency with 60% of maximum frequency deviation, is applied, adjacent channels selectivity for effective selectivity is defined as the ratio of interference receiver input voltage, where ratio of sum of signal and noise output to noise output is 25dB, to reference sensitivity.

- Intermodulation characteristic for effective selectivity

Intermodulation characteristic for effective selectivity shall be 50dB or more.

When the receiver input voltage is 3dB higher than reference sensitivity, and when interference signal, whose signal is sum of interference signals those are related to intermodulation, is applied, intermodulation characteristic for effective selectivity is defined as the ratio of interference receiver input voltage, where ratio of sum of signal and noise output to

noise output is 25dB, to reference sensitivity.

b) Receiver equipment for transmitter with occupied bandwidth wider than 110kHz and within 160kHz

- Sensitivity

Reference sensitivity level shall be 10μV or less.

When the desired signal, modulated by 1kHz frequency with ±7.5kHz frequency deviation, is applied, reference sensitivity is defined as receiver input voltage necessary to gain 25dB of the ratio of sum of signal and noise output signals to noise output signal of receiver.

- Spurious response for effective selectivity

Spurious response for effective selectivity shall be 50dB or more.

When the receiver input voltage is 3dB higher than reference sensitivity, and when interference signal, modulated by the 400Hz frequency with 60% of maximum frequency deviation, is applied, spurious response for effective selectivity is defined as the ratio of interference receiver input voltage, where ratio of sum of signal and noise output to noise output is 25dB, to reference sensitivity.

- Adjacent channels selectivity for effective selectivity

Adjacent channels selectivity for effective selectivity shall be 50dB or more.

When the receiver input voltage is 3dB higher than reference sensitivity, and when interference signal, whose signal is 500kHz distant from desired signal and modulated by the 400Hz frequency with 60% of maximum frequency deviation, is applied, adjacent channels selectivity for effective selectivity is defined as the ratio of interference receiver input voltage, where ratio of sum of signal and noise output to noise output is 25dB, to reference sensitivity.

- Intermodulation characteristic for effective selectivity

Intermodulation characteristic for effective selectivity shall be 50dB or more.

When the receiver input voltage is 3dB higher than reference sensitivity, and when interference signal, whose signal is sum of interference signals those are related to intermodulation, is applied, intermodulation characteristic for effective selectivity is defined as the ratio of interference receiver input voltage, where ratio of sum of signal and noise output to noise output is 25dB, to reference sensitivity.

c) Receiver equipment for transmitter with occupied bandwidth wider than 160kHz and within 330kHz

- Sensitivity

Reference sensitivity level shall be 10μV or less.

When the desired signal, modulated by 1kHz frequency with ±2.4kHz frequency deviation, is applied, reference sensitivity is defined as receiver input voltage necessary to gain 25dB of the

ratio of sum of signal and noise output signals to noise output signal of receiver.

- Spurious response for effective selectivity

Spurious response for effective selectivity shall be 50dB or more.

When the receiver input voltage is 3dB higher than reference sensitivity, and when interference signal, modulated by the 400Hz frequency with 60% of maximum frequency deviation, is applied, spurious response for effective selectivity is defined as the ratio of interference receiver input voltage, where ratio of sum of signal and noise output to noise output is 25dB, to reference sensitivity.

- Adjacent channels selectivity for effective selectivity

Adjacent channels selectivity for effective selectivity shall be 50dB or more.

When the receiver input voltage is 3dB higher than reference sensitivity, and when interference signal, whose signal is 500kHz distant from desired signal and modulated by the 400Hz frequency with 60% of maximum frequency deviation, is applied, adjacent channels selectivity for effective selectivity is defined as the ratio of interference receiver input voltage, where ratio of sum of signal and noise output to noise output is 25dB, to reference sensitivity.

- Intermodulation characteristic for effective selectivity

Intermodulation characteristic for effective selectivity shall be 50dB or more.

When the receiver input voltage is 3dB higher than reference sensitivity, and when interference signal, whose signal is sum of interference signals those are related to intermodulation, is applied, intermodulation characteristic for effective selectivity is defined as the ratio of interference receiver input voltage, where ratio of sum of signal and noise output to noise output is 25dB, to reference sensitivity.

d) Receiver equipment for the stereo system

- Sensitivity

Reference sensitivity level shall be 100μV or less.

When the desired signal, modulated by 1kHz frequency with ±28.5kHz frequency deviation, is applied, reference sensitivity is defined as receiver input voltage necessary to gain 25dB of the ratio of sum of signal and noise output signals to noise output signal of receiver.

- Spurious response for effective selectivity

Spurious response for effective selectivity shall be 50dB or more.

When the receiver input voltage is 3dB higher than reference sensitivity, and when interference signal, modulated by the 400Hz frequency with 60% of maximum frequency deviation, is applied, spurious response for effective selectivity is defined as the ratio of interference receiver input voltage, where ratio of sum of signal and noise output to noise output is 25dB, to reference sensitivity.

- Adjacent channels selectivity for effective selectivity

Adjacent channels selectivity for effective selectivity shall be 50dB or more.

When the receiver input voltage is 3dB higher than reference sensitivity, and when interference signal, whose signal is 500kHz distant from desired signal and modulated by the 400Hz frequency with 60% of maximum frequency deviation, is applied, adjacent channels selectivity for effective selectivity is defined as the ratio of interference receiver input voltage, where ratio of sum of signal and noise output to noise output is 25dB, to reference sensitivity.

- Intermodulation characteristic for effective selectivity

Intermodulation characteristic for effective selectivity shall be 50dB or more.

When the receiver input voltage is 3dB higher than reference sensitivity, and when interference signal, whose signal is sum of interference signals those are related to intermodulation, is applied, intermodulation characteristic for effective selectivity is defined as the ratio of interference receiver input voltage, where ratio of sum of signal and noise output to noise output is 25dB, to reference sensitivity.

(2) Limit of secondarily radiated emissions

(TV white space band, exclusive band, 1.2GHz band) (ORE: Article 24)

The limit on secondary emissions radiated from the receiving equipment shall be 4nW or lower as measured using the circuit.

3.4 Cabinet

(TV white space band, exclusive band, 1.2GHz band) (ORE: Article 49.16)
(NT: No. 315, 2000)

The radio equipment shall be housed in a single cabinet, and the cabinet shall not be capable of being opened easily. However, this shall not apply to power supply equipment and so forth announced separately as follows.

- Antenna

- Accessory equipment and their equivalents

- Antenna, distributor, and circuit compensating device for ear monitoring, where distributor and circuit compensating device power supplied to respective antenna shall be 0.01W or less, and spurious emission intensity within out-of-band domain and unwanted emission intensity within spurious domain shall be 2.5μW or less.

3.5 Channel name

(TV white space band, exclusive band, 1.2GHz band)

The radio equipment shall be equipped with display function for channel name or frequency.

(Intentionally left blank)

Chapter 4 Technical requirements for radio equipment of Digital Specified Radio Microphone for Land Mobile Radio Station

4.1 General conditions

(1) Communication system

(TV white space band, exclusive band, 1.2GHz band) (ORE: Article 49.16.2)

The communication method shall be one-way communication or broadcast communication.

(2) Assigned frequency band

(TV white space band, exclusive band) (ORE: Article 49.16)

Assigned frequency band shall be from 470MHz to 714MHz. (frequency band from 470MHz to 710MHz refers to 'TV white space band', frequency band from 710MHz to 714MHz refers to 'exclusive band' for Specified Radio Microphone')

(1.2GHz band) (ORE: Article 49.16)

Assigned frequency band shall be from 1240MHz to 1260MHz, except from 1252MHz to 1253MHz. (frequency band from 1240MHz to 1260MHz, except from 1252MHz to 1253MHz, refers to '1.2GHz band')

(3) Type of modulation

(TV white space band, exclusive band, 1.2GHz band)

Modulation method shall be phase shift keying, frequency modulation, quadrature amplitude modulation, or orthogonal frequency division multiplexing modulation.

(ORE: Article 49.16.2)

- System of occupied bandwidth 288kHz or less shall be one of phase shift keying, frequency modulation, quadrature amplitude modulation, or Orthogonal Frequency Division Multiplexing, hereinafter referred as 'OFDM', modulation.
- System of occupied bandwidth from 288kHz to 600kHz shall be OFDM modulation.

OFDM modulation shall be implemented according to modulation method defined in Annex 3.

4.2 Transmitter

(1) Antenna power

(TV white space band, exclusive band, 1.2GHz band) (OTRCC: Article 2)

Designated value of transmitter antenna power shall be 50mW or less.

(2) Tolerance of antenna power

(TV white space band, exclusive band) (ORE: Article 14)

Tolerance of antenna power shall be within +20% (upper value) and –50% (lower value).

(1.2GHz band) (ORE: Article 14)

Tolerance of antenna power shall be within +20% (upper value) and –50% (lower value).

(3) Absolute gain of transmission antenna

(TV white space band, exclusive band, 1.2GHz band) (ORE: Article 49.16.2)
(NT: No. 317, 2013)

Absolute gain of transmission antenna shall be within 2.14 dB, except the following.

- Transmission antenna for ear monitoring, using radio frequency from 1240MHz to 1260MHz, shall be within 7dB.

(4) Structure of transmission antenna

(TV white space band, exclusive band, 1.2GHz band) (ORE: Article 49.16.2)
(NT: No. 130, 2009)

Neither feeder cable for power supplying nor wire for grounding shall be equipped, except the following.

- Radio Microphone for ear monitoring

(5) Tolerance of frequency

(TV white space band, exclusive band, 1.2GHz band) (ORE: article 5, attached table 1)

The tolerance of transmit frequency shall be 20×10^{-6}.

(6) Adjacent channel leakage power

(TV white space band, exclusive band, 1.2GHz band) (ORE: article 49.16.2)

(a) For the system with occupied bandwidth within 288kHz, the power radiated into the ±144kHz band of the frequency 500kHz distant from the carrier frequency shall be lower than the carrier power by 40dB or more.

(b) For the system with occupied bandwidth wider than 288kHz, the power radiated into the ±300kHz band of the frequency 800kHz distant from the carrier frequency shall be lower than the carrier power by 40dB or more.

(7) Tolerance of occupied bandwidth

(TV white space band, exclusive band, 1.2GHz band)

The tolerance of occupied bandwidths shall be as follows. For the designation, the tolerance value of occupied bandwidth precedes the type of radio wave.

a) System using frequency from 1240MHz to 1260MHz with occupied bandwidth wider than 288kHz: 600kHz

b) Systems other than described in a): 288kHz

(ORE: Article 6, attached table 2)

Among systems listed in (b), for systems with occupied bandwidth within 192kHz, the designation preceding the type of radio wave can be '192kHz'.

(8) Limits of spurious emission intensity and out-of-band emission intensity

(TV white space band, exclusive band) (ORE: Article 7, attached table 3)

(NT: No. 243, 2012)

- Frequency at domain boundaries within out-of-band domain and spurious domain

  2.5 times width of occupied frequency bandwidth around center frequency

- Limit of spurious emission intensity within out-of-band domain

  2.5μW or less

- Limit of unwanted emission intensity within spurious domain

  4nW or less. However, for within ±1MHz band around center frequency, band of 470MHz or lower, and band over 710MHz, it shall be 2.5μW or less

Reference bandwidths for limit of unwanted emission intensity within spurious domain are shown below.

Frequency band of spurious domain	Reference bandwidth
9kHz < f <= 150kHz	1kHz
150kHz < f <= 30MHz	10kHz
30MHz < f <= 1GHz	100kHz
1GHz < f	1MHz

(1.2GHz band) (ORE: Article 7, attached table 3)

- Limit of spurious emission intensity within out-of-band domain and limit of unwanted emission intensity within spurious domain

  2.5μW or less

Reference bandwidths for limit of unwanted emission intensity within spurious domain are shown below.

Frequency band of spurious domain	Reference bandwidth
9kHz < f <= 150kHz	1kHz
150kHz < f <= 30MHz	10kHz
30MHz < f <= 1GHz	100kHz
1GHz < f	1MHz

4.3 Receiver

(1) Characteristics

(TV white space band, exclusive band, 1.2GHz band) (NT: No. 395, 1986)

- Sensitivity

Receiver input voltage necessary to suppress bit error rate to $1x10^{-5}$ shall be 32μV or less.

- Spurious response for effective selectivity

Spurious response for effective selectivity shall be 50dB or more.

When the receiver input voltage is 3dB higher than reference sensitivity, and when interference signal without modulation is applied, spurious response for effective selectivity is defined as the ratio of interference receiver input voltage to reference sensitivity to get bit error rate down to 1×10^{-5} or less.

- Adjacent channels selectivity for effective selectivity

Adjacent channels selectivity for effective selectivity shall be 30dB or more.

When the receiver input voltage is 3dB higher than reference sensitivity, and when interference signal, 500kHz distant from desired signal and modulated by the pseudo noise repeating 32767-long binary code, is applied, adjacent channels selectivity for effective selectivity is defined as the ratio of interference receiver input voltage to reference sensitivity to get bit error rate down to 1×10^{-5} or less.

- Intermodulation characteristic for effective selectivity

Intermodulation characteristic for effective selectivity shall be 30dB or more.

When the receiver input voltage is 3dB higher than reference sensitivity, and when interference signals related to intermodulation is applied, intermodulation characteristic for effective selectivity is defined as the ratio of interference receiver input voltage, where ratio of sum of signal and noise output to noise output is 25dB, to reference sensitivity to get bit error rate down to 1×10^{-5} or less.

(2) Limit of secondarily radiated emissions

(TV white space band, exclusive band, 1.2GHz band) (ORE: Article 24)

The limit on secondary emissions radiated from the receiving equipment shall be 4nW or lower as measured using the circuit.

4.4 Cabinet

(TV white space band, exclusive band, 1.2GHz band) (ORE: Article 49.16)

(NT: No. 315, 2000)

The radio equipment shall be housed in a single cabinet, and the cabinet shall not be capable of being opened easily. However, this shall not apply to power supply equipment and so forth announced separately as follows.

- Antenna

- Accessory equipment and their equivalents

- Antenna, distributor, and circuit compensating device for ear monitoring, where distributor and circuit compensating device power supplied to respective antenna shall be 0.05W or less, and spurious emission intensity within out-of-band domain and unwanted emission intensity within spurious domain shall be 2.5μW or less.

4.5 Channel name

(TV white space band, exclusive band, 1.2GHz band)

The radio equipment shall be equipped with display function for channel name or frequency.

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Chapter 5 Measurement method

Measurement methods shall be in accordance with NT No. 88 in 2004 related with paragraph 1-(3) of Table No.1 of 'OTRCC'. However, measurement methods of items that are not specified in the NT shall be based on conventionally practiced methods.

(For reference)

In addition, TELEC-T209 ("Characteristic test method for radio equipment used for specified radio microphone for land mobile radio station using radio frequencies from 470MHz to 714MHz or radio frequencies from 1240MHz to 1260MHz (Analog Specified Radio Microphone)") and TELEC-T250 ("Characteristic test method for radio equipment used for digital specified radio microphone for land mobile radio station using radio frequencies from 470MHz to 714MHz or radio frequencies from 1240MHz to 1260MHz (Digital Specified Radio Microphone)") were issued by Telecom Engineering Center (TELEC) Foundation commissioned by paragraph 2 of NT No. 88 in 2004 related with paragraph 1-(3) of Table No.1 of OTRCC.

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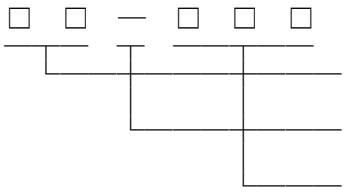
Annex 1 Operation Guidelines for Specified Radio Microphone

1 Channel name

Indication of channel name

(TV white space band, exclusive band)

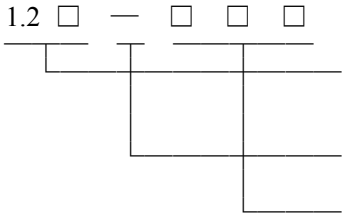


1 Digital Terrestrial Television Broadcasting channel number: 13 - 52
710 – 714MHz: 53

2 hyphen (may be omitted)

3 frequency number starting with 001 for lowest frequency +25kHz within the band, and successively numbered as 002, 003, … etc., for frequencies by 25kHz interval

(1.2GHz band)



1 1240 – 1246MHz: 1.2L (Low)
1246 – 1252MHz: 1.2M (Middle)
1253 – 1260MHz: 1.2H (High)

2 hyphen (may be omitted)

3 frequency number starting with 001 for lowest frequency +25kHz within each band, and successively numbered as 002, 003, … etc., for frequencies by 25kHz interval

Channel name and frequency mapping is shown in the following table.

Digital Terrestrial Television Broadcasting Channel number : 13 (470~476MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		471.250	13-050	472.500	13-100	473.750	13-150	475.000	13-200
470.025	13-001	471.275	13-051	472.525	13-101	473.775	13-151	475.025	13-201
470.050	13-002	471.300	13-052	472.550	13-102	473.800	13-152	475.050	13-202
470.075	13-003	471.325	13-053	472.575	13-103	473.825	13-153	475.075	13-203
470.100	13-004	471.350	13-054	472.600	13-104	473.850	13-154	475.100	13-204
470.125	13-005	471.375	13-055	472.625	13-105	473.875	13-155	475.125	13-205
470.150	13-006	471.400	13-056	472.650	13-106	473.900	13-156	475.150	13-206
470.175	13-007	471.425	13-057	472.675	13-107	473.925	13-157	475.175	13-207
470.200	13-008	471.450	13-058	472.700	13-108	473.950	13-158	475.200	13-208
470.225	13-009	471.475	13-059	472.725	13-109	473.975	13-159	475.225	13-209
470.250	13-010	471.500	13-060	472.750	13-110	474.000	13-160	475.250	13-210
470.275	13-011	471.525	13-061	472.775	13-111	474.025	13-161	475.275	13-211
470.300	13-012	471.550	13-062	472.800	13-112	474.050	13-162	475.300	13-212
470.325	13-013	471.575	13-063	472.825	13-113	474.075	13-163	475.325	13-213
470.350	13-014	471.600	13-064	472.850	13-114	474.100	13-164	475.350	13-214
470.375	13-015	471.625	13-065	472.875	13-115	474.125	13-165	475.375	13-215
470.400	13-016	471.650	13-066	472.900	13-116	474.150	13-166	475.400	13-216
470.425	13-017	471.675	13-067	472.925	13-117	474.175	13-167	475.425	13-217
470.450	13-018	471.700	13-068	472.950	13-118	474.200	13-168	475.450	13-218
470.475	13-019	471.725	13-069	472.975	13-119	474.225	13-169	475.475	13-219
470.500	13-020	471.750	13-070	473.000	13-120	474.250	13-170	475.500	13-220
470.525	13-021	471.775	13-071	473.025	13-121	474.275	13-171	475.525	13-221
470.550	13-022	471.800	13-072	473.050	13-122	474.300	13-172	475.550	13-222
470.575	13-023	471.825	13-073	473.075	13-123	474.325	13-173	475.575	13-223
470.600	13-024	471.850	13-074	473.100	13-124	474.350	13-174	475.600	13-224
470.625	13-025	471.875	13-075	473.125	13-125	474.375	13-175	475.625	13-225
470.650	13-026	471.900	13-076	473.150	13-126	474.400	13-176	475.650	13-226
470.675	13-027	471.925	13-077	473.175	13-127	474.425	13-177	475.675	13-227
470.700	13-028	471.950	13-078	473.200	13-128	474.450	13-178	475.700	13-228
470.725	13-029	471.975	13-079	473.225	13-129	474.475	13-179	475.725	13-229
470.750	13-030	472.000	13-080	473.250	13-130	474.500	13-180	475.750	13-230
470.775	13-031	472.025	13-081	473.275	13-131	474.525	13-181	475.775	13-231
470.800	13-032	472.050	13-082	473.300	13-132	474.550	13-182	475.800	13-232
470.825	13-033	472.075	13-083	473.325	13-133	474.575	13-183	475.825	13-233
470.850	13-034	472.100	13-084	473.350	13-134	474.600	13-184	475.850	13-234
470.875	13-035	472.125	13-085	473.375	13-135	474.625	13-185	475.875	13-235
470.900	13-036	472.150	13-086	473.400	13-136	474.650	13-186	475.900	13-236
470.925	13-037	472.175	13-087	473.425	13-137	474.675	13-187	475.925	13-237
470.950	13-038	472.200	13-088	473.450	13-138	474.700	13-188	475.950	13-238
470.975	13-039	472.225	13-089	473.475	13-139	474.725	13-189	475.975	13-239
471.000	13-040	472.250	13-090	473.500	13-140	474.750	13-190	476.000	13-240
471.025	13-041	472.275	13-091	473.525	13-141	474.775	13-191		
471.050	13-042	472.300	13-092	473.550	13-142	474.800	13-192		
471.075	13-043	472.325	13-093	473.575	13-143	474.825	13-193		
471.100	13-044	472.350	13-094	473.600	13-144	474.850	13-194		
471.125	13-045	472.375	13-095	473.625	13-145	474.875	13-195		
471.150	13-046	472.400	13-096	473.650	13-146	474.900	13-196		
471.175	13-047	472.425	13-097	473.675	13-147	474.925	13-197		
471.200	13-048	472.450	13-098	473.700	13-148	474.950	13-198		
471.225	13-049	472.475	13-099	473.725	13-149	474.975	13-199		

Digital Terrestrial Television Broadcasting Channel number : 14 (476~482MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		477.250	14-050	478.500	14-100	479.750	14-150	481.000	14-200
476.025	14-001	477.275	14-051	478.525	14-101	479.775	14-151	481.025	14-201
476.050	14-002	477.300	14-052	478.550	14-102	479.800	14-152	481.050	14-202
476.075	14-003	477.325	14-053	478.575	14-103	479.825	14-153	481.075	14-203
476.100	14-004	477.350	14-054	478.600	14-104	479.850	14-154	481.100	14-204
476.125	14-005	477.375	14-055	478.625	14-105	479.875	14-155	481.125	14-205
476.150	14-006	477.400	14-056	478.650	14-106	479.900	14-156	481.150	14-206
476.175	14-007	477.425	14-057	478.675	14-107	479.925	14-157	481.175	14-207
476.200	14-008	477.450	14-058	478.700	14-108	479.950	14-158	481.200	14-208
476.225	14-009	477.475	14-059	478.725	14-109	479.975	14-159	481.225	14-209
476.250	14-010	477.500	14-060	478.750	14-110	480.000	14-160	481.250	14-210
476.275	14-011	477.525	14-061	478.775	14-111	480.025	14-161	481.275	14-211
476.300	14-012	477.550	14-062	478.800	14-112	480.050	14-162	481.300	14-212
476.325	14-013	477.575	14-063	478.825	14-113	480.075	14-163	481.325	14-213
476.350	14-014	477.600	14-064	478.850	14-114	480.100	14-164	481.350	14-214
476.375	14-015	477.625	14-065	478.875	14-115	480.125	14-165	481.375	14-215
476.400	14-016	477.650	14-066	478.900	14-116	480.150	14-166	481.400	14-216
476.425	14-017	477.675	14-067	478.925	14-117	480.175	14-167	481.425	14-217
476.450	14-018	477.700	14-068	478.950	14-118	480.200	14-168	481.450	14-218
476.475	14-019	477.725	14-069	478.975	14-119	480.225	14-169	481.475	14-219
476.500	14-020	477.750	14-070	479.000	14-120	480.250	14-170	481.500	14-220
476.525	14-021	477.775	14-071	479.025	14-121	480.275	14-171	481.525	14-221
476.550	14-022	477.800	14-072	479.050	14-122	480.300	14-172	481.550	14-222
476.575	14-023	477.825	14-073	479.075	14-123	480.325	14-173	481.575	14-223
476.600	14-024	477.850	14-074	479.100	14-124	480.350	14-174	481.600	14-224
476.625	14-025	477.875	14-075	479.125	14-125	480.375	14-175	481.625	14-225
476.650	14-026	477.900	14-076	479.150	14-126	480.400	14-176	481.650	14-226
476.675	14-027	477.925	14-077	479.175	14-127	480.425	14-177	481.675	14-227
476.700	14-028	477.950	14-078	479.200	14-128	480.450	14-178	481.700	14-228
476.725	14-029	477.975	14-079	479.225	14-129	480.475	14-179	481.725	14-229
476.750	14-030	478.000	14-080	479.250	14-130	480.500	14-180	481.750	14-230
476.775	14-031	478.025	14-081	479.275	14-131	480.525	14-181	481.775	14-231
476.800	14-032	478.050	14-082	479.300	14-132	480.550	14-182	481.800	14-232
476.825	14-033	478.075	14-083	479.325	14-133	480.575	14-183	481.825	14-233
476.850	14-034	478.100	14-084	479.350	14-134	480.600	14-184	481.850	14-234
476.875	14-035	478.125	14-085	479.375	14-135	480.625	14-185	481.875	14-235
476.900	14-036	478.150	14-086	479.400	14-136	480.650	14-186	481.900	14-236
476.925	14-037	478.175	14-087	479.425	14-137	480.675	14-187	481.925	14-237
476.950	14-038	478.200	14-088	479.450	14-138	480.700	14-188	481.950	14-238
476.975	14-039	478.225	14-089	479.475	14-139	480.725	14-189	481.975	14-239
477.000	14-040	478.250	14-090	479.500	14-140	480.750	14-190	482.000	14-240
477.025	14-041	478.275	14-091	479.525	14-141	480.775	14-191		
477.050	14-042	478.300	14-092	479.550	14-142	480.800	14-192		
477.075	14-043	478.325	14-093	479.575	14-143	480.825	14-193		
477.100	14-044	478.350	14-094	479.600	14-144	480.850	14-194		
477.125	14-045	478.375	14-095	479.625	14-145	480.875	14-195		
477.150	14-046	478.400	14-096	479.650	14-146	480.900	14-196		
477.175	14-047	478.425	14-097	479.675	14-147	480.925	14-197		
477.200	14-048	478.450	14-098	479.700	14-148	480.950	14-198		
477.225	14-049	478.475	14-099	479.725	14-149	480.975	14-199		

Digital Terrestrial Television Broadcasting Channel number : 15 (482~488MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		483.250	15-050	484.500	15-100	485.750	15-150	487.000	15-200
482.025	15-001	483.275	15-051	484.525	15-101	485.775	15-151	487.025	15-201
482.050	15-002	483.300	15-052	484.550	15-102	485.800	15-152	487.050	15-202
482.075	15-003	483.325	15-053	484.575	15-103	485.825	15-153	487.075	15-203
482.100	15-004	483.350	15-054	484.600	15-104	485.850	15-154	487.100	15-204
482.125	15-005	483.375	15-055	484.625	15-105	485.875	15-155	487.125	15-205
482.150	15-006	483.400	15-056	484.650	15-106	485.900	15-156	487.150	15-206
482.175	15-007	483.425	15-057	484.675	15-107	485.925	15-157	487.175	15-207
482.200	15-008	483.450	15-058	484.700	15-108	485.950	15-158	487.200	15-208
482.225	15-009	483.475	15-059	484.725	15-109	485.975	15-159	487.225	15-209
482.250	15-010	483.500	15-060	484.750	15-110	486.000	15-160	487.250	15-210
482.275	15-011	483.525	15-061	484.775	15-111	486.025	15-161	487.275	15-211
482.300	15-012	483.550	15-062	484.800	15-112	486.050	15-162	487.300	15-212
482.325	15-013	483.575	15-063	484.825	15-113	486.075	15-163	487.325	15-213
482.350	15-014	483.600	15-064	484.850	15-114	486.100	15-164	487.350	15-214
482.375	15-015	483.625	15-065	484.875	15-115	486.125	15-165	487.375	15-215
482.400	15-016	483.650	15-066	484.900	15-116	486.150	15-166	487.400	15-216
482.425	15-017	483.675	15-067	484.925	15-117	486.175	15-167	487.425	15-217
482.450	15-018	483.700	15-068	484.950	15-118	486.200	15-168	487.450	15-218
482.475	15-019	483.725	15-069	484.975	15-119	486.225	15-169	487.475	15-219
482.500	15-020	483.750	15-070	485.000	15-120	486.250	15-170	487.500	15-220
482.525	15-021	483.775	15-071	485.025	15-121	486.275	15-171	487.525	15-221
482.550	15-022	483.800	15-072	485.050	15-122	486.300	15-172	487.550	15-222
482.575	15-023	483.825	15-073	485.075	15-123	486.325	15-173	487.575	15-223
482.600	15-024	483.850	15-074	485.100	15-124	486.350	15-174	487.600	15-224
482.625	15-025	483.875	15-075	485.125	15-125	486.375	15-175	487.625	15-225
482.650	15-026	483.900	15-076	485.150	15-126	486.400	15-176	487.650	15-226
482.675	15-027	483.925	15-077	485.175	15-127	486.425	15-177	487.675	15-227
482.700	15-028	483.950	15-078	485.200	15-128	486.450	15-178	487.700	15-228
482.725	15-029	483.975	15-079	485.225	15-129	486.475	15-179	487.725	15-229
482.750	15-030	484.000	15-080	485.250	15-130	486.500	15-180	487.750	15-230
482.775	15-031	484.025	15-081	485.275	15-131	486.525	15-181	487.775	15-231
482.800	15-032	484.050	15-082	485.300	15-132	486.550	15-182	487.800	15-232
482.825	15-033	484.075	15-083	485.325	15-133	486.575	15-183	487.825	15-233
482.850	15-034	484.100	15-084	485.350	15-134	486.600	15-184	487.850	15-234
482.875	15-035	484.125	15-085	485.375	15-135	486.625	15-185	487.875	15-235
482.900	15-036	484.150	15-086	485.400	15-136	486.650	15-186	487.900	15-236
482.925	15-037	484.175	15-087	485.425	15-137	486.675	15-187	487.925	15-237
482.950	15-038	484.200	15-088	485.450	15-138	486.700	15-188	487.950	15-238
482.975	15-039	484.225	15-089	485.475	15-139	486.725	15-189	487.975	15-239
483.000	15-040	484.250	15-090	485.500	15-140	486.750	15-190	488.000	15-240
483.025	15-041	484.275	15-091	485.525	15-141	486.775	15-191		
483.050	15-042	484.300	15-092	485.550	15-142	486.800	15-192		
483.075	15-043	484.325	15-093	485.575	15-143	486.825	15-193		
483.100	15-044	484.350	15-094	485.600	15-144	486.850	15-194		
483.125	15-045	484.375	15-095	485.625	15-145	486.875	15-195		
483.150	15-046	484.400	15-096	485.650	15-146	486.900	15-196		
483.175	15-047	484.425	15-097	485.675	15-147	486.925	15-197		
483.200	15-048	484.450	15-098	485.700	15-148	486.950	15-198		
483.225	15-049	484.475	15-099	485.725	15-149	486.975	15-199		

Digital Terrestrial Television Broadcasting Channel number : 16 (488~494MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		489.250	16-050	490.500	16-100	491.750	16-150	493.000	16-200
488.025	16-001	489.275	16-051	490.525	16-101	491.775	16-151	493.025	16-201
488.050	16-002	489.300	16-052	490.550	16-102	491.800	16-152	493.050	16-202
488.075	16-003	489.325	16-053	490.575	16-103	491.825	16-153	493.075	16-203
488.100	16-004	489.350	16-054	490.600	16-104	491.850	16-154	493.100	16-204
488.125	16-005	489.375	16-055	490.625	16-105	491.875	16-155	493.125	16-205
488.150	16-006	489.400	16-056	490.650	16-106	491.900	16-156	493.150	16-206
488.175	16-007	489.425	16-057	490.675	16-107	491.925	16-157	493.175	16-207
488.200	16-008	489.450	16-058	490.700	16-108	491.950	16-158	493.200	16-208
488.225	16-009	489.475	16-059	490.725	16-109	491.975	16-159	493.225	16-209
488.250	16-010	489.500	16-060	490.750	16-110	492.000	16-160	493.250	16-210
488.275	16-011	489.525	16-061	490.775	16-111	492.025	16-161	493.275	16-211
488.300	16-012	489.550	16-062	490.800	16-112	492.050	16-162	493.300	16-212
488.325	16-013	489.575	16-063	490.825	16-113	492.075	16-163	493.325	16-213
488.350	16-014	489.600	16-064	490.850	16-114	492.100	16-164	493.350	16-214
488.375	16-015	489.625	16-065	490.875	16-115	492.125	16-165	493.375	16-215
488.400	16-016	489.650	16-066	490.900	16-116	492.150	16-166	493.400	16-216
488.425	16-017	489.675	16-067	490.925	16-117	492.175	16-167	493.425	16-217
488.450	16-018	489.700	16-068	490.950	16-118	492.200	16-168	493.450	16-218
488.475	16-019	489.725	16-069	490.975	16-119	492.225	16-169	493.475	16-219
488.500	16-020	489.750	16-070	491.000	16-120	492.250	16-170	493.500	16-220
488.525	16-021	489.775	16-071	491.025	16-121	492.275	16-171	493.525	16-221
488.550	16-022	489.800	16-072	491.050	16-122	492.300	16-172	493.550	16-222
488.575	16-023	489.825	16-073	491.075	16-123	492.325	16-173	493.575	16-223
488.600	16-024	489.850	16-074	491.100	16-124	492.350	16-174	493.600	16-224
488.625	16-025	489.875	16-075	491.125	16-125	492.375	16-175	493.625	16-225
488.650	16-026	489.900	16-076	491.150	16-126	492.400	16-176	493.650	16-226
488.675	16-027	489.925	16-077	491.175	16-127	492.425	16-177	493.675	16-227
488.700	16-028	489.950	16-078	491.200	16-128	492.450	16-178	493.700	16-228
488.725	16-029	489.975	16-079	491.225	16-129	492.475	16-179	493.725	16-229
488.750	16-030	490.000	16-080	491.250	16-130	492.500	16-180	493.750	16-230
488.775	16-031	490.025	16-081	491.275	16-131	492.525	16-181	493.775	16-231
488.800	16-032	490.050	16-082	491.300	16-132	492.550	16-182	493.800	16-232
488.825	16-033	490.075	16-083	491.325	16-133	492.575	16-183	493.825	16-233
488.850	16-034	490.100	16-084	491.350	16-134	492.600	16-184	493.850	16-234
488.875	16-035	490.125	16-085	491.375	16-135	492.625	16-185	493.875	16-235
488.900	16-036	490.150	16-086	491.400	16-136	492.650	16-186	493.900	16-236
488.925	16-037	490.175	16-087	491.425	16-137	492.675	16-187	493.925	16-237
488.950	16-038	490.200	16-088	491.450	16-138	492.700	16-188	493.950	16-238
488.975	16-039	490.225	16-089	491.475	16-139	492.725	16-189	493.975	16-239
489.000	16-040	490.250	16-090	491.500	16-140	492.750	16-190	494.000	16-240
489.025	16-041	490.275	16-091	491.525	16-141	492.775	16-191		
489.050	16-042	490.300	16-092	491.550	16-142	492.800	16-192		
489.075	16-043	490.325	16-093	491.575	16-143	492.825	16-193		
489.100	16-044	490.350	16-094	491.600	16-144	492.850	16-194		
489.125	16-045	490.375	16-095	491.625	16-145	492.875	16-195		
489.150	16-046	490.400	16-096	491.650	16-146	492.900	16-196		
489.175	16-047	490.425	16-097	491.675	16-147	492.925	16-197		
489.200	16-048	490.450	16-098	491.700	16-148	492.950	16-198		
489.225	16-049	490.475	16-099	491.725	16-149	492.975	16-199		

Digital Terrestrial Television Broadcasting Channel number : 17 (494~500MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		495.250	17-050	496.500	17-100	497.750	17-150	499.000	17-200
494.025	17-001	495.275	17-051	496.525	17-101	497.775	17-151	499.025	17-201
494.050	17-002	495.300	17-052	496.550	17-102	497.800	17-152	499.050	17-202
494.075	17-003	495.325	17-053	496.575	17-103	497.825	17-153	499.075	17-203
494.100	17-004	495.350	17-054	496.600	17-104	497.850	17-154	499.100	17-204
494.125	17-005	495.375	17-055	496.625	17-105	497.875	17-155	499.125	17-205
494.150	17-006	495.400	17-056	496.650	17-106	497.900	17-156	499.150	17-206
494.175	17-007	495.425	17-057	496.675	17-107	497.925	17-157	499.175	17-207
494.200	17-008	495.450	17-058	496.700	17-108	497.950	17-158	499.200	17-208
494.225	17-009	495.475	17-059	496.725	17-109	497.975	17-159	499.225	17-209
494.250	17-010	495.500	17-060	496.750	17-110	498.000	17-160	499.250	17-210
494.275	17-011	495.525	17-061	496.775	17-111	498.025	17-161	499.275	17-211
494.300	17-012	495.550	17-062	496.800	17-112	498.050	17-162	499.300	17-212
494.325	17-013	495.575	17-063	496.825	17-113	498.075	17-163	499.325	17-213
494.350	17-014	495.600	17-064	496.850	17-114	498.100	17-164	499.350	17-214
494.375	17-015	495.625	17-065	496.875	17-115	498.125	17-165	499.375	17-215
494.400	17-016	495.650	17-066	496.900	17-116	498.150	17-166	499.400	17-216
494.425	17-017	495.675	17-067	496.925	17-117	498.175	17-167	499.425	17-217
494.450	17-018	495.700	17-068	496.950	17-118	498.200	17-168	499.450	17-218
494.475	17-019	495.725	17-069	496.975	17-119	498.225	17-169	499.475	17-219
494.500	17-020	495.750	17-070	497.000	17-120	498.250	17-170	499.500	17-220
494.525	17-021	495.775	17-071	497.025	17-121	498.275	17-171	499.525	17-221
494.550	17-022	495.800	17-072	497.050	17-122	498.300	17-172	499.550	17-222
494.575	17-023	495.825	17-073	497.075	17-123	498.325	17-173	499.575	17-223
494.600	17-024	495.850	17-074	497.100	17-124	498.350	17-174	499.600	17-224
494.625	17-025	495.875	17-075	497.125	17-125	498.375	17-175	499.625	17-225
494.650	17-026	495.900	17-076	497.150	17-126	498.400	17-176	499.650	17-226
494.675	17-027	495.925	17-077	497.175	17-127	498.425	17-177	499.675	17-227
494.700	17-028	495.950	17-078	497.200	17-128	498.450	17-178	499.700	17-228
494.725	17-029	495.975	17-079	497.225	17-129	498.475	17-179	499.725	17-229
494.750	17-030	496.000	17-080	497.250	17-130	498.500	17-180	499.750	17-230
494.775	17-031	496.025	17-081	497.275	17-131	498.525	17-181	499.775	17-231
494.800	17-032	496.050	17-082	497.300	17-132	498.550	17-182	499.800	17-232
494.825	17-033	496.075	17-083	497.325	17-133	498.575	17-183	499.825	17-233
494.850	17-034	496.100	17-084	497.350	17-134	498.600	17-184	499.850	17-234
494.875	17-035	496.125	17-085	497.375	17-135	498.625	17-185	499.875	17-235
494.900	17-036	496.150	17-086	497.400	17-136	498.650	17-186	499.900	17-236
494.925	17-037	496.175	17-087	497.425	17-137	498.675	17-187	499.925	17-237
494.950	17-038	496.200	17-088	497.450	17-138	498.700	17-188	499.950	17-238
494.975	17-039	496.225	17-089	497.475	17-139	498.725	17-189	499.975	17-239
495.000	17-040	496.250	17-090	497.500	17-140	498.750	17-190	500.000	17-240
495.025	17-041	496.275	17-091	497.525	17-141	498.775	17-191		
495.050	17-042	496.300	17-092	497.550	17-142	498.800	17-192		
495.075	17-043	496.325	17-093	497.575	17-143	498.825	17-193		
495.100	17-044	496.350	17-094	497.600	17-144	498.850	17-194		
495.125	17-045	496.375	17-095	497.625	17-145	498.875	17-195		
495.150	17-046	496.400	17-096	497.650	17-146	498.900	17-196		
495.175	17-047	496.425	17-097	497.675	17-147	498.925	17-197		
495.200	17-048	496.450	17-098	497.700	17-148	498.950	17-198		
495.225	17-049	496.475	17-099	497.725	17-149	498.975	17-199		

Digital Terrestrial Television Broadcasting Channel number : 18 (500~506MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		501.250	18-050	502.500	18-100	503.750	18-150	505.000	18-200
500.025	18-001	501.275	18-051	502.525	18-101	503.775	18-151	505.025	18-201
500.050	18-002	501.300	18-052	502.550	18-102	503.800	18-152	505.050	18-202
500.075	18-003	501.325	18-053	502.575	18-103	503.825	18-153	505.075	18-203
500.100	18-004	501.350	18-054	502.600	18-104	503.850	18-154	505.100	18-204
500.125	18-005	501.375	18-055	502.625	18-105	503.875	18-155	505.125	18-205
500.150	18-006	501.400	18-056	502.650	18-106	503.900	18-156	505.150	18-206
500.175	18-007	501.425	18-057	502.675	18-107	503.925	18-157	505.175	18-207
500.200	18-008	501.450	18-058	502.700	18-108	503.950	18-158	505.200	18-208
500.225	18-009	501.475	18-059	502.725	18-109	503.975	18-159	505.225	18-209
500.250	18-010	501.500	18-060	502.750	18-110	504.000	18-160	505.250	18-210
500.275	18-011	501.525	18-061	502.775	18-111	504.025	18-161	505.275	18-211
500.300	18-012	501.550	18-062	502.800	18-112	504.050	18-162	505.300	18-212
500.325	18-013	501.575	18-063	502.825	18-113	504.075	18-163	505.325	18-213
500.350	18-014	501.600	18-064	502.850	18-114	504.100	18-164	505.350	18-214
500.375	18-015	501.625	18-065	502.875	18-115	504.125	18-165	505.375	18-215
500.400	18-016	501.650	18-066	502.900	18-116	504.150	18-166	505.400	18-216
500.425	18-017	501.675	18-067	502.925	18-117	504.175	18-167	505.425	18-217
500.450	18-018	501.700	18-068	502.950	18-118	504.200	18-168	505.450	18-218
500.475	18-019	501.725	18-069	502.975	18-119	504.225	18-169	505.475	18-219
500.500	18-020	501.750	18-070	503.000	18-120	504.250	18-170	505.500	18-220
500.525	18-021	501.775	18-071	503.025	18-121	504.275	18-171	505.525	18-221
500.550	18-022	501.800	18-072	503.050	18-122	504.300	18-172	505.550	18-222
500.575	18-023	501.825	18-073	503.075	18-123	504.325	18-173	505.575	18-223
500.600	18-024	501.850	18-074	503.100	18-124	504.350	18-174	505.600	18-224
500.625	18-025	501.875	18-075	503.125	18-125	504.375	18-175	505.625	18-225
500.650	18-026	501.900	18-076	503.150	18-126	504.400	18-176	505.650	18-226
500.675	18-027	501.925	18-077	503.175	18-127	504.425	18-177	505.675	18-227
500.700	18-028	501.950	18-078	503.200	18-128	504.450	18-178	505.700	18-228
500.725	18-029	501.975	18-079	503.225	18-129	504.475	18-179	505.725	18-229
500.750	18-030	502.000	18-080	503.250	18-130	504.500	18-180	505.750	18-230
500.775	18-031	502.025	18-081	503.275	18-131	504.525	18-181	505.775	18-231
500.800	18-032	502.050	18-082	503.300	18-132	504.550	18-182	505.800	18-232
500.825	18-033	502.075	18-083	503.325	18-133	504.575	18-183	505.825	18-233
500.850	18-034	502.100	18-084	503.350	18-134	504.600	18-184	505.850	18-234
500.875	18-035	502.125	18-085	503.375	18-135	504.625	18-185	505.875	18-235
500.900	18-036	502.150	18-086	503.400	18-136	504.650	18-186	505.900	18-236
500.925	18-037	502.175	18-087	503.425	18-137	504.675	18-187	505.925	18-237
500.950	18-038	502.200	18-088	503.450	18-138	504.700	18-188	505.950	18-238
500.975	18-039	502.225	18-089	503.475	18-139	504.725	18-189	505.975	18-239
501.000	18-040	502.250	18-090	503.500	18-140	504.750	18-190	506.000	18-240
501.025	18-041	502.275	18-091	503.525	18-141	504.775	18-191		
501.050	18-042	502.300	18-092	503.550	18-142	504.800	18-192		
501.075	18-043	502.325	18-093	503.575	18-143	504.825	18-193		
501.100	18-044	502.350	18-094	503.600	18-144	504.850	18-194		
501.125	18-045	502.375	18-095	503.625	18-145	504.875	18-195		
501.150	18-046	502.400	18-096	503.650	18-146	504.900	18-196		
501.175	18-047	502.425	18-097	503.675	18-147	504.925	18-197		
501.200	18-048	502.450	18-098	503.700	18-148	504.950	18-198		
501.225	18-049	502.475	18-099	503.725	18-149	504.975	18-199		

Digital Terrestrial Television Broadcasting Channel number : 19 (506~512MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		507.250	19-050	508.500	19-100	509.750	19-150	511.000	19-200
506.025	19-001	507.275	19-051	508.525	19-101	509.775	19-151	511.025	19-201
506.050	19-002	507.300	19-052	508.550	19-102	509.800	19-152	511.050	19-202
506.075	19-003	507.325	19-053	508.575	19-103	509.825	19-153	511.075	19-203
506.100	19-004	507.350	19-054	508.600	19-104	509.850	19-154	511.100	19-204
506.125	19-005	507.375	19-055	508.625	19-105	509.875	19-155	511.125	19-205
506.150	19-006	507.400	19-056	508.650	19-106	509.900	19-156	511.150	19-206
506.175	19-007	507.425	19-057	508.675	19-107	509.925	19-157	511.175	19-207
506.200	19-008	507.450	19-058	508.700	19-108	509.950	19-158	511.200	19-208
506.225	19-009	507.475	19-059	508.725	19-109	509.975	19-159	511.225	19-209
506.250	19-010	507.500	19-060	508.750	19-110	510.000	19-160	511.250	19-210
506.275	19-011	507.525	19-061	508.775	19-111	510.025	19-161	511.275	19-211
506.300	19-012	507.550	19-062	508.800	19-112	510.050	19-162	511.300	19-212
506.325	19-013	507.575	19-063	508.825	19-113	510.075	19-163	511.325	19-213
506.350	19-014	507.600	19-064	508.850	19-114	510.100	19-164	511.350	19-214
506.375	19-015	507.625	19-065	508.875	19-115	510.125	19-165	511.375	19-215
506.400	19-016	507.650	19-066	508.900	19-116	510.150	19-166	511.400	19-216
506.425	19-017	507.675	19-067	508.925	19-117	510.175	19-167	511.425	19-217
506.450	19-018	507.700	19-068	508.950	19-118	510.200	19-168	511.450	19-218
506.475	19-019	507.725	19-069	508.975	19-119	510.225	19-169	511.475	19-219
506.500	19-020	507.750	19-070	509.000	19-120	510.250	19-170	511.500	19-220
506.525	19-021	507.775	19-071	509.025	19-121	510.275	19-171	511.525	19-221
506.550	19-022	507.800	19-072	509.050	19-122	510.300	19-172	511.550	19-222
506.575	19-023	507.825	19-073	509.075	19-123	510.325	19-173	511.575	19-223
506.600	19-024	507.850	19-074	509.100	19-124	510.350	19-174	511.600	19-224
506.625	19-025	507.875	19-075	509.125	19-125	510.375	19-175	511.625	19-225
506.650	19-026	507.900	19-076	509.150	19-126	510.400	19-176	511.650	19-226
506.675	19-027	507.925	19-077	509.175	19-127	510.425	19-177	511.675	19-227
506.700	19-028	507.950	19-078	509.200	19-128	510.450	19-178	511.700	19-228
506.725	19-029	507.975	19-079	509.225	19-129	510.475	19-179	511.725	19-229
506.750	19-030	508.000	19-080	509.250	19-130	510.500	19-180	511.750	19-230
506.775	19-031	508.025	19-081	509.275	19-131	510.525	19-181	511.775	19-231
506.800	19-032	508.050	19-082	509.300	19-132	510.550	19-182	511.800	19-232
506.825	19-033	508.075	19-083	509.325	19-133	510.575	19-183	511.825	19-233
506.850	19-034	508.100	19-084	509.350	19-134	510.600	19-184	511.850	19-234
506.875	19-035	508.125	19-085	509.375	19-135	510.625	19-185	511.875	19-235
506.900	19-036	508.150	19-086	509.400	19-136	510.650	19-186	511.900	19-236
506.925	19-037	508.175	19-087	509.425	19-137	510.675	19-187	511.925	19-237
506.950	19-038	508.200	19-088	509.450	19-138	510.700	19-188	511.950	19-238
506.975	19-039	508.225	19-089	509.475	19-139	510.725	19-189	511.975	19-239
507.000	19-040	508.250	19-090	509.500	19-140	510.750	19-190	512.000	19-240
507.025	19-041	508.275	19-091	509.525	19-141	510.775	19-191		
507.050	19-042	508.300	19-092	509.550	19-142	510.800	19-192		
507.075	19-043	508.325	19-093	509.575	19-143	510.825	19-193		
507.100	19-044	508.350	19-094	509.600	19-144	510.850	19-194		
507.125	19-045	508.375	19-095	509.625	19-145	510.875	19-195		
507.150	19-046	508.400	19-096	509.650	19-146	510.900	19-196		
507.175	19-047	508.425	19-097	509.675	19-147	510.925	19-197		
507.200	19-048	508.450	19-098	509.700	19-148	510.950	19-198		
507.225	19-049	508.475	19-099	509.725	19-149	510.975	19-199		

Digital Terrestrial Television Broadcasting Channel number : 20 (512~518MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		513.250	20-050	514.500	20-100	515.750	20-150	517.000	20-200
512.025	20-001	513.275	20-051	514.525	20-101	515.775	20-151	517.025	20-201
512.050	20-002	513.300	20-052	514.550	20-102	515.800	20-152	517.050	20-202
512.075	20-003	513.325	20-053	514.575	20-103	515.825	20-153	517.075	20-203
512.100	20-004	513.350	20-054	514.600	20-104	515.850	20-154	517.100	20-204
512.125	20-005	513.375	20-055	514.625	20-105	515.875	20-155	517.125	20-205
512.150	20-006	513.400	20-056	514.650	20-106	515.900	20-156	517.150	20-206
512.175	20-007	513.425	20-057	514.675	20-107	515.925	20-157	517.175	20-207
512.200	20-008	513.450	20-058	514.700	20-108	515.950	20-158	517.200	20-208
512.225	20-009	513.475	20-059	514.725	20-109	515.975	20-159	517.225	20-209
512.250	20-010	513.500	20-060	514.750	20-110	516.000	20-160	517.250	20-210
512.275	20-011	513.525	20-061	514.775	20-111	516.025	20-161	517.275	20-211
512.300	20-012	513.550	20-062	514.800	20-112	516.050	20-162	517.300	20-212
512.325	20-013	513.575	20-063	514.825	20-113	516.075	20-163	517.325	20-213
512.350	20-014	513.600	20-064	514.850	20-114	516.100	20-164	517.350	20-214
512.375	20-015	513.625	20-065	514.875	20-115	516.125	20-165	517.375	20-215
512.400	20-016	513.650	20-066	514.900	20-116	516.150	20-166	517.400	20-216
512.425	20-017	513.675	20-067	514.925	20-117	516.175	20-167	517.425	20-217
512.450	20-018	513.700	20-068	514.950	20-118	516.200	20-168	517.450	20-218
512.475	20-019	513.725	20-069	514.975	20-119	516.225	20-169	517.475	20-219
512.500	20-020	513.750	20-070	515.000	20-120	516.250	20-170	517.500	20-220
512.525	20-021	513.775	20-071	515.025	20-121	516.275	20-171	517.525	20-221
512.550	20-022	513.800	20-072	515.050	20-122	516.300	20-172	517.550	20-222
512.575	20-023	513.825	20-073	515.075	20-123	516.325	20-173	517.575	20-223
512.600	20-024	513.850	20-074	515.100	20-124	516.350	20-174	517.600	20-224
512.625	20-025	513.875	20-075	515.125	20-125	516.375	20-175	517.625	20-225
512.650	20-026	513.900	20-076	515.150	20-126	516.400	20-176	517.650	20-226
512.675	20-027	513.925	20-077	515.175	20-127	516.425	20-177	517.675	20-227
512.700	20-028	513.950	20-078	515.200	20-128	516.450	20-178	517.700	20-228
512.725	20-029	513.975	20-079	515.225	20-129	516.475	20-179	517.725	20-229
512.750	20-030	514.000	20-080	515.250	20-130	516.500	20-180	517.750	20-230
512.775	20-031	514.025	20-081	515.275	20-131	516.525	20-181	517.775	20-231
512.800	20-032	514.050	20-082	515.300	20-132	516.550	20-182	517.800	20-232
512.825	20-033	514.075	20-083	515.325	20-133	516.575	20-183	517.825	20-233
512.850	20-034	514.100	20-084	515.350	20-134	516.600	20-184	517.850	20-234
512.875	20-035	514.125	20-085	515.375	20-135	516.625	20-185	517.875	20-235
512.900	20-036	514.150	20-086	515.400	20-136	516.650	20-186	517.900	20-236
512.925	20-037	514.175	20-087	515.425	20-137	516.675	20-187	517.925	20-237
512.950	20-038	514.200	20-088	515.450	20-138	516.700	20-188	517.950	20-238
512.975	20-039	514.225	20-089	515.475	20-139	516.725	20-189	517.975	20-239
513.000	20-040	514.250	20-090	515.500	20-140	516.750	20-190	518.000	20-240
513.025	20-041	514.275	20-091	515.525	20-141	516.775	20-191		
513.050	20-042	514.300	20-092	515.550	20-142	516.800	20-192		
513.075	20-043	514.325	20-093	515.575	20-143	516.825	20-193		
513.100	20-044	514.350	20-094	515.600	20-144	516.850	20-194		
513.125	20-045	514.375	20-095	515.625	20-145	516.875	20-195		
513.150	20-046	514.400	20-096	515.650	20-146	516.900	20-196		
513.175	20-047	514.425	20-097	515.675	20-147	516.925	20-197		
513.200	20-048	514.450	20-098	515.700	20-148	516.950	20-198		
513.225	20-049	514.475	20-099	515.725	20-149	516.975	20-199		

Digital Terrestrial Television Broadcasting Channel number : 21 (518~524MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		519.250	21-050	520.500	21-100	521.750	21-150	523.000	21-200
518.025	21-001	519.275	21-051	520.525	21-101	521.775	21-151	523.025	21-201
518.050	21-002	519.300	21-052	520.550	21-102	521.800	21-152	523.050	21-202
518.075	21-003	519.325	21-053	520.575	21-103	521.825	21-153	523.075	21-203
518.100	21-004	519.350	21-054	520.600	21-104	521.850	21-154	523.100	21-204
518.125	21-005	519.375	21-055	520.625	21-105	521.875	21-155	523.125	21-205
518.150	21-006	519.400	21-056	520.650	21-106	521.900	21-156	523.150	21-206
518.175	21-007	519.425	21-057	520.675	21-107	521.925	21-157	523.175	21-207
518.200	21-008	519.450	21-058	520.700	21-108	521.950	21-158	523.200	21-208
518.225	21-009	519.475	21-059	520.725	21-109	521.975	21-159	523.225	21-209
518.250	21-010	519.500	21-060	520.750	21-110	522.000	21-160	523.250	21-210
518.275	21-011	519.525	21-061	520.775	21-111	522.025	21-161	523.275	21-211
518.300	21-012	519.550	21-062	520.800	21-112	522.050	21-162	523.300	21-212
518.325	21-013	519.575	21-063	520.825	21-113	522.075	21-163	523.325	21-213
518.350	21-014	519.600	21-064	520.850	21-114	522.100	21-164	523.350	21-214
518.375	21-015	519.625	21-065	520.875	21-115	522.125	21-165	523.375	21-215
518.400	21-016	519.650	21-066	520.900	21-116	522.150	21-166	523.400	21-216
518.425	21-017	519.675	21-067	520.925	21-117	522.175	21-167	523.425	21-217
518.450	21-018	519.700	21-068	520.950	21-118	522.200	21-168	523.450	21-218
518.475	21-019	519.725	21-069	520.975	21-119	522.225	21-169	523.475	21-219
518.500	21-020	519.750	21-070	521.000	21-120	522.250	21-170	523.500	21-220
518.525	21-021	519.775	21-071	521.025	21-121	522.275	21-171	523.525	21-221
518.550	21-022	519.800	21-072	521.050	21-122	522.300	21-172	523.550	21-222
518.575	21-023	519.825	21-073	521.075	21-123	522.325	21-173	523.575	21-223
518.600	21-024	519.850	21-074	521.100	21-124	522.350	21-174	523.600	21-224
518.625	21-025	519.875	21-075	521.125	21-125	522.375	21-175	523.625	21-225
518.650	21-026	519.900	21-076	521.150	21-126	522.400	21-176	523.650	21-226
518.675	21-027	519.925	21-077	521.175	21-127	522.425	21-177	523.675	21-227
518.700	21-028	519.950	21-078	521.200	21-128	522.450	21-178	523.700	21-228
518.725	21-029	519.975	21-079	521.225	21-129	522.475	21-179	523.725	21-229
518.750	21-030	520.000	21-080	521.250	21-130	522.500	21-180	523.750	21-230
518.775	21-031	520.025	21-081	521.275	21-131	522.525	21-181	523.775	21-231
518.800	21-032	520.050	21-082	521.300	21-132	522.550	21-182	523.800	21-232
518.825	21-033	520.075	21-083	521.325	21-133	522.575	21-183	523.825	21-233
518.850	21-034	520.100	21-084	521.350	21-134	522.600	21-184	523.850	21-234
518.875	21-035	520.125	21-085	521.375	21-135	522.625	21-185	523.875	21-235
518.900	21-036	520.150	21-086	521.400	21-136	522.650	21-186	523.900	21-236
518.925	21-037	520.175	21-087	521.425	21-137	522.675	21-187	523.925	21-237
518.950	21-038	520.200	21-088	521.450	21-138	522.700	21-188	523.950	21-238
518.975	21-039	520.225	21-089	521.475	21-139	522.725	21-189	523.975	21-239
519.000	21-040	520.250	21-090	521.500	21-140	522.750	21-190	524.000	21-240
519.025	21-041	520.275	21-091	521.525	21-141	522.775	21-191		
519.050	21-042	520.300	21-092	521.550	21-142	522.800	21-192		
519.075	21-043	520.325	21-093	521.575	21-143	522.825	21-193		
519.100	21-044	520.350	21-094	521.600	21-144	522.850	21-194		
519.125	21-045	520.375	21-095	521.625	21-145	522.875	21-195		
519.150	21-046	520.400	21-096	521.650	21-146	522.900	21-196		
519.175	21-047	520.425	21-097	521.675	21-147	522.925	21-197		
519.200	21-048	520.450	21-098	521.700	21-148	522.950	21-198		
519.225	21-049	520.475	21-099	521.725	21-149	522.975	21-199		

Digital Terrestrial Television Broadcasting Channel number : 22 (524~530MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		525.250	22-050	526.500	22-100	527.750	22-150	529.000	22-200
524.025	22-001	525.275	22-051	526.525	22-101	527.775	22-151	529.025	22-201
524.050	22-002	525.300	22-052	526.550	22-102	527.800	22-152	529.050	22-202
524.075	22-003	525.325	22-053	526.575	22-103	527.825	22-153	529.075	22-203
524.100	22-004	525.350	22-054	526.600	22-104	527.850	22-154	529.100	22-204
524.125	22-005	525.375	22-055	526.625	22-105	527.875	22-155	529.125	22-205
524.150	22-006	525.400	22-056	526.650	22-106	527.900	22-156	529.150	22-206
524.175	22-007	525.425	22-057	526.675	22-107	527.925	22-157	529.175	22-207
524.200	22-008	525.450	22-058	526.700	22-108	527.950	22-158	529.200	22-208
524.225	22-009	525.475	22-059	526.725	22-109	527.975	22-159	529.225	22-209
524.250	22-010	525.500	22-060	526.750	22-110	528.000	22-160	529.250	22-210
524.275	22-011	525.525	22-061	526.775	22-111	528.025	22-161	529.275	22-211
524.300	22-012	525.550	22-062	526.800	22-112	528.050	22-162	529.300	22-212
524.325	22-013	525.575	22-063	526.825	22-113	528.075	22-163	529.325	22-213
524.350	22-014	525.600	22-064	526.850	22-114	528.100	22-164	529.350	22-214
524.375	22-015	525.625	22-065	526.875	22-115	528.125	22-165	529.375	22-215
524.400	22-016	525.650	22-066	526.900	22-116	528.150	22-166	529.400	22-216
524.425	22-017	525.675	22-067	526.925	22-117	528.175	22-167	529.425	22-217
524.450	22-018	525.700	22-068	526.950	22-118	528.200	22-168	529.450	22-218
524.475	22-019	525.725	22-069	526.975	22-119	528.225	22-169	529.475	22-219
524.500	22-020	525.750	22-070	527.000	22-120	528.250	22-170	529.500	22-220
524.525	22-021	525.775	22-071	527.025	22-121	528.275	22-171	529.525	22-221
524.550	22-022	525.800	22-072	527.050	22-122	528.300	22-172	529.550	22-222
524.575	22-023	525.825	22-073	527.075	22-123	528.325	22-173	529.575	22-223
524.600	22-024	525.850	22-074	527.100	22-124	528.350	22-174	529.600	22-224
524.625	22-025	525.875	22-075	527.125	22-125	528.375	22-175	529.625	22-225
524.650	22-026	525.900	22-076	527.150	22-126	528.400	22-176	529.650	22-226
524.675	22-027	525.925	22-077	527.175	22-127	528.425	22-177	529.675	22-227
524.700	22-028	525.950	22-078	527.200	22-128	528.450	22-178	529.700	22-228
524.725	22-029	525.975	22-079	527.225	22-129	528.475	22-179	529.725	22-229
524.750	22-030	526.000	22-080	527.250	22-130	528.500	22-180	529.750	22-230
524.775	22-031	526.025	22-081	527.275	22-131	528.525	22-181	529.775	22-231
524.800	22-032	526.050	22-082	527.300	22-132	528.550	22-182	529.800	22-232
524.825	22-033	526.075	22-083	527.325	22-133	528.575	22-183	529.825	22-233
524.850	22-034	526.100	22-084	527.350	22-134	528.600	22-184	529.850	22-234
524.875	22-035	526.125	22-085	527.375	22-135	528.625	22-185	529.875	22-235
524.900	22-036	526.150	22-086	527.400	22-136	528.650	22-186	529.900	22-236
524.925	22-037	526.175	22-087	527.425	22-137	528.675	22-187	529.925	22-237
524.950	22-038	526.200	22-088	527.450	22-138	528.700	22-188	529.950	22-238
524.975	22-039	526.225	22-089	527.475	22-139	528.725	22-189	529.975	22-239
525.000	22-040	526.250	22-090	527.500	22-140	528.750	22-190	530.000	22-240
525.025	22-041	526.275	22-091	527.525	22-141	528.775	22-191		
525.050	22-042	526.300	22-092	527.550	22-142	528.800	22-192		
525.075	22-043	526.325	22-093	527.575	22-143	528.825	22-193		
525.100	22-044	526.350	22-094	527.600	22-144	528.850	22-194		
525.125	22-045	526.375	22-095	527.625	22-145	528.875	22-195		
525.150	22-046	526.400	22-096	527.650	22-146	528.900	22-196		
525.175	22-047	526.425	22-097	527.675	22-147	528.925	22-197		
525.200	22-048	526.450	22-098	527.700	22-148	528.950	22-198		
525.225	22-049	526.475	22-099	527.725	22-149	528.975	22-199		

Digital Terrestrial Television Broadcasting Channel number : 23 (530~536MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		531.250	23-050	532.500	23-100	533.750	23-150	535.000	23-200
530.025	23-001	531.275	23-051	532.525	23-101	533.775	23-151	535.025	23-201
530.050	23-002	531.300	23-052	532.550	23-102	533.800	23-152	535.050	23-202
530.075	23-003	531.325	23-053	532.575	23-103	533.825	23-153	535.075	23-203
530.100	23-004	531.350	23-054	532.600	23-104	533.850	23-154	535.100	23-204
530.125	23-005	531.375	23-055	532.625	23-105	533.875	23-155	535.125	23-205
530.150	23-006	531.400	23-056	532.650	23-106	533.900	23-156	535.150	23-206
530.175	23-007	531.425	23-057	532.675	23-107	533.925	23-157	535.175	23-207
530.200	23-008	531.450	23-058	532.700	23-108	533.950	23-158	535.200	23-208
530.225	23-009	531.475	23-059	532.725	23-109	533.975	23-159	535.225	23-209
530.250	23-010	531.500	23-060	532.750	23-110	534.000	23-160	535.250	23-210
530.275	23-011	531.525	23-061	532.775	23-111	534.025	23-161	535.275	23-211
530.300	23-012	531.550	23-062	532.800	23-112	534.050	23-162	535.300	23-212
530.325	23-013	531.575	23-063	532.825	23-113	534.075	23-163	535.325	23-213
530.350	23-014	531.600	23-064	532.850	23-114	534.100	23-164	535.350	23-214
530.375	23-015	531.625	23-065	532.875	23-115	534.125	23-165	535.375	23-215
530.400	23-016	531.650	23-066	532.900	23-116	534.150	23-166	535.400	23-216
530.425	23-017	531.675	23-067	532.925	23-117	534.175	23-167	535.425	23-217
530.450	23-018	531.700	23-068	532.950	23-118	534.200	23-168	535.450	23-218
530.475	23-019	531.725	23-069	532.975	23-119	534.225	23-169	535.475	23-219
530.500	23-020	531.750	23-070	533.000	23-120	534.250	23-170	535.500	23-220
530.525	23-021	531.775	23-071	533.025	23-121	534.275	23-171	535.525	23-221
530.550	23-022	531.800	23-072	533.050	23-122	534.300	23-172	535.550	23-222
530.575	23-023	531.825	23-073	533.075	23-123	534.325	23-173	535.575	23-223
530.600	23-024	531.850	23-074	533.100	23-124	534.350	23-174	535.600	23-224
530.625	23-025	531.875	23-075	533.125	23-125	534.375	23-175	535.625	23-225
530.650	23-026	531.900	23-076	533.150	23-126	534.400	23-176	535.650	23-226
530.675	23-027	531.925	23-077	533.175	23-127	534.425	23-177	535.675	23-227
530.700	23-028	531.950	23-078	533.200	23-128	534.450	23-178	535.700	23-228
530.725	23-029	531.975	23-079	533.225	23-129	534.475	23-179	535.725	23-229
530.750	23-030	532.000	23-080	533.250	23-130	534.500	23-180	535.750	23-230
530.775	23-031	532.025	23-081	533.275	23-131	534.525	23-181	535.775	23-231
530.800	23-032	532.050	23-082	533.300	23-132	534.550	23-182	535.800	23-232
530.825	23-033	532.075	23-083	533.325	23-133	534.575	23-183	535.825	23-233
530.850	23-034	532.100	23-084	533.350	23-134	534.600	23-184	535.850	23-234
530.875	23-035	532.125	23-085	533.375	23-135	534.625	23-185	535.875	23-235
530.900	23-036	532.150	23-086	533.400	23-136	534.650	23-186	535.900	23-236
530.925	23-037	532.175	23-087	533.425	23-137	534.675	23-187	535.925	23-237
530.950	23-038	532.200	23-088	533.450	23-138	534.700	23-188	535.950	23-238
530.975	23-039	532.225	23-089	533.475	23-139	534.725	23-189	535.975	23-239
531.000	23-040	532.250	23-090	533.500	23-140	534.750	23-190	536.000	23-240
531.025	23-041	532.275	23-091	533.525	23-141	534.775	23-191		
531.050	23-042	532.300	23-092	533.550	23-142	534.800	23-192		
531.075	23-043	532.325	23-093	533.575	23-143	534.825	23-193		
531.100	23-044	532.350	23-094	533.600	23-144	534.850	23-194		
531.125	23-045	532.375	23-095	533.625	23-145	534.875	23-195		
531.150	23-046	532.400	23-096	533.650	23-146	534.900	23-196		
531.175	23-047	532.425	23-097	533.675	23-147	534.925	23-197		
531.200	23-048	532.450	23-098	533.700	23-148	534.950	23-198		
531.225	23-049	532.475	23-099	533.725	23-149	534.975	23-199		

Digital Terrestrial Television Broadcasting Channel number : 24 (536～542MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		537.250	24-050	538.500	24-100	539.750	24-150	541.000	24-200
536.025	24-001	537.275	24-051	538.525	24-101	539.775	24-151	541.025	24-201
536.050	24-002	537.300	24-052	538.550	24-102	539.800	24-152	541.050	24-202
536.075	24-003	537.325	24-053	538.575	24-103	539.825	24-153	541.075	24-203
536.100	24-004	537.350	24-054	538.600	24-104	539.850	24-154	541.100	24-204
536.125	24-005	537.375	24-055	538.625	24-105	539.875	24-155	541.125	24-205
536.150	24-006	537.400	24-056	538.650	24-106	539.900	24-156	541.150	24-206
536.175	24-007	537.425	24-057	538.675	24-107	539.925	24-157	541.175	24-207
536.200	24-008	537.450	24-058	538.700	24-108	539.950	24-158	541.200	24-208
536.225	24-009	537.475	24-059	538.725	24-109	539.975	24-159	541.225	24-209
536.250	24-010	537.500	24-060	538.750	24-110	540.000	24-160	541.250	24-210
536.275	24-011	537.525	24-061	538.775	24-111	540.025	24-161	541.275	24-211
536.300	24-012	537.550	24-062	538.800	24-112	540.050	24-162	541.300	24-212
536.325	24-013	537.575	24-063	538.825	24-113	540.075	24-163	541.325	24-213
536.350	24-014	537.600	24-064	538.850	24-114	540.100	24-164	541.350	24-214
536.375	24-015	537.625	24-065	538.875	24-115	540.125	24-165	541.375	24-215
536.400	24-016	537.650	24-066	538.900	24-116	540.150	24-166	541.400	24-216
536.425	24-017	537.675	24-067	538.925	24-117	540.175	24-167	541.425	24-217
536.450	24-018	537.700	24-068	538.950	24-118	540.200	24-168	541.450	24-218
536.475	24-019	537.725	24-069	538.975	24-119	540.225	24-169	541.475	24-219
536.500	24-020	537.750	24-070	539.000	24-120	540.250	24-170	541.500	24-220
536.525	24-021	537.775	24-071	539.025	24-121	540.275	24-171	541.525	24-221
536.550	24-022	537.800	24-072	539.050	24-122	540.300	24-172	541.550	24-222
536.575	24-023	537.825	24-073	539.075	24-123	540.325	24-173	541.575	24-223
536.600	24-024	537.850	24-074	539.100	24-124	540.350	24-174	541.600	24-224
536.625	24-025	537.875	24-075	539.125	24-125	540.375	24-175	541.625	24-225
536.650	24-026	537.900	24-076	539.150	24-126	540.400	24-176	541.650	24-226
536.675	24-027	537.925	24-077	539.175	24-127	540.425	24-177	541.675	24-227
536.700	24-028	537.950	24-078	539.200	24-128	540.450	24-178	541.700	24-228
536.725	24-029	537.975	24-079	539.225	24-129	540.475	24-179	541.725	24-229
536.750	24-030	538.000	24-080	539.250	24-130	540.500	24-180	541.750	24-230
536.775	24-031	538.025	24-081	539.275	24-131	540.525	24-181	541.775	24-231
536.800	24-032	538.050	24-082	539.300	24-132	540.550	24-182	541.800	24-232
536.825	24-033	538.075	24-083	539.325	24-133	540.575	24-183	541.825	24-233
536.850	24-034	538.100	24-084	539.350	24-134	540.600	24-184	541.850	24-234
536.875	24-035	538.125	24-085	539.375	24-135	540.625	24-185	541.875	24-235
536.900	24-036	538.150	24-086	539.400	24-136	540.650	24-186	541.900	24-236
536.925	24-037	538.175	24-087	539.425	24-137	540.675	24-187	541.925	24-237
536.950	24-038	538.200	24-088	539.450	24-138	540.700	24-188	541.950	24-238
536.975	24-039	538.225	24-089	539.475	24-139	540.725	24-189	541.975	24-239
537.000	24-040	538.250	24-090	539.500	24-140	540.750	24-190	542.000	24-240
537.025	24-041	538.275	24-091	539.525	24-141	540.775	24-191		
537.050	24-042	538.300	24-092	539.550	24-142	540.800	24-192		
537.075	24-043	538.325	24-093	539.575	24-143	540.825	24-193		
537.100	24-044	538.350	24-094	539.600	24-144	540.850	24-194		
537.125	24-045	538.375	24-095	539.625	24-145	540.875	24-195		
537.150	24-046	538.400	24-096	539.650	24-146	540.900	24-196		
537.175	24-047	538.425	24-097	539.675	24-147	540.925	24-197		
537.200	24-048	538.450	24-098	539.700	24-148	540.950	24-198		
537.225	24-049	538.475	24-099	539.725	24-149	540.975	24-199		

Digital Terrestrial Television Broadcasting Channel number : 25 (542~548MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		543.250	25-050	544.500	25-100	545.750	25-150	547.000	25-200
542.025	25-001	543.275	25-051	544.525	25-101	545.775	25-151	547.025	25-201
542.050	25-002	543.300	25-052	544.550	25-102	545.800	25-152	547.050	25-202
542.075	25-003	543.325	25-053	544.575	25-103	545.825	25-153	547.075	25-203
542.100	25-004	543.350	25-054	544.600	25-104	545.850	25-154	547.100	25-204
542.125	25-005	543.375	25-055	544.625	25-105	545.875	25-155	547.125	25-205
542.150	25-006	543.400	25-056	544.650	25-106	545.900	25-156	547.150	25-206
542.175	25-007	543.425	25-057	544.675	25-107	545.925	25-157	547.175	25-207
542.200	25-008	543.450	25-058	544.700	25-108	545.950	25-158	547.200	25-208
542.225	25-009	543.475	25-059	544.725	25-109	545.975	25-159	547.225	25-209
542.250	25-010	543.500	25-060	544.750	25-110	546.000	25-160	547.250	25-210
542.275	25-011	543.525	25-061	544.775	25-111	546.025	25-161	547.275	25-211
542.300	25-012	543.550	25-062	544.800	25-112	546.050	25-162	547.300	25-212
542.325	25-013	543.575	25-063	544.825	25-113	546.075	25-163	547.325	25-213
542.350	25-014	543.600	25-064	544.850	25-114	546.100	25-164	547.350	25-214
542.375	25-015	543.625	25-065	544.875	25-115	546.125	25-165	547.375	25-215
542.400	25-016	543.650	25-066	544.900	25-116	546.150	25-166	547.400	25-216
542.425	25-017	543.675	25-067	544.925	25-117	546.175	25-167	547.425	25-217
542.450	25-018	543.700	25-068	544.950	25-118	546.200	25-168	547.450	25-218
542.475	25-019	543.725	25-069	544.975	25-119	546.225	25-169	547.475	25-219
542.500	25-020	543.750	25-070	545.000	25-120	546.250	25-170	547.500	25-220
542.525	25-021	543.775	25-071	545.025	25-121	546.275	25-171	547.525	25-221
542.550	25-022	543.800	25-072	545.050	25-122	546.300	25-172	547.550	25-222
542.575	25-023	543.825	25-073	545.075	25-123	546.325	25-173	547.575	25-223
542.600	25-024	543.850	25-074	545.100	25-124	546.350	25-174	547.600	25-224
542.625	25-025	543.875	25-075	545.125	25-125	546.375	25-175	547.625	25-225
542.650	25-026	543.900	25-076	545.150	25-126	546.400	25-176	547.650	25-226
542.675	25-027	543.925	25-077	545.175	25-127	546.425	25-177	547.675	25-227
542.700	25-028	543.950	25-078	545.200	25-128	546.450	25-178	547.700	25-228
542.725	25-029	543.975	25-079	545.225	25-129	546.475	25-179	547.725	25-229
542.750	25-030	544.000	25-080	545.250	25-130	546.500	25-180	547.750	25-230
542.775	25-031	544.025	25-081	545.275	25-131	546.525	25-181	547.775	25-231
542.800	25-032	544.050	25-082	545.300	25-132	546.550	25-182	547.800	25-232
542.825	25-033	544.075	25-083	545.325	25-133	546.575	25-183	547.825	25-233
542.850	25-034	544.100	25-084	545.350	25-134	546.600	25-184	547.850	25-234
542.875	25-035	544.125	25-085	545.375	25-135	546.625	25-185	547.875	25-235
542.900	25-036	544.150	25-086	545.400	25-136	546.650	25-186	547.900	25-236
542.925	25-037	544.175	25-087	545.425	25-137	546.675	25-187	547.925	25-237
542.950	25-038	544.200	25-088	545.450	25-138	546.700	25-188	547.950	25-238
542.975	25-039	544.225	25-089	545.475	25-139	546.725	25-189	547.975	25-239
543.000	25-040	544.250	25-090	545.500	25-140	546.750	25-190	548.000	25-240
543.025	25-041	544.275	25-091	545.525	25-141	546.775	25-191		
543.050	25-042	544.300	25-092	545.550	25-142	546.800	25-192		
543.075	25-043	544.325	25-093	545.575	25-143	546.825	25-193		
543.100	25-044	544.350	25-094	545.600	25-144	546.850	25-194		
543.125	25-045	544.375	25-095	545.625	25-145	546.875	25-195		
543.150	25-046	544.400	25-096	545.650	25-146	546.900	25-196		
543.175	25-047	544.425	25-097	545.675	25-147	546.925	25-197		
543.200	25-048	544.450	25-098	545.700	25-148	546.950	25-198		
543.225	25-049	544.475	25-099	545.725	25-149	546.975	25-199		

Digital Terrestrial Television Broadcasting Channel number : 26 (548~554MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		549.250	26-050	550.500	26-100	551.750	26-150	553.000	26-200
548.025	26-001	549.275	26-051	550.525	26-101	551.775	26-151	553.025	26-201
548.050	26-002	549.300	26-052	550.550	26-102	551.800	26-152	553.050	26-202
548.075	26-003	549.325	26-053	550.575	26-103	551.825	26-153	553.075	26-203
548.100	26-004	549.350	26-054	550.600	26-104	551.850	26-154	553.100	26-204
548.125	26-005	549.375	26-055	550.625	26-105	551.875	26-155	553.125	26-205
548.150	26-006	549.400	26-056	550.650	26-106	551.900	26-156	553.150	26-206
548.175	26-007	549.425	26-057	550.675	26-107	551.925	26-157	553.175	26-207
548.200	26-008	549.450	26-058	550.700	26-108	551.950	26-158	553.200	26-208
548.225	26-009	549.475	26-059	550.725	26-109	551.975	26-159	553.225	26-209
548.250	26-010	549.500	26-060	550.750	26-110	552.000	26-160	553.250	26-210
548.275	26-011	549.525	26-061	550.775	26-111	552.025	26-161	553.275	26-211
548.300	26-012	549.550	26-062	550.800	26-112	552.050	26-162	553.300	26-212
548.325	26-013	549.575	26-063	550.825	26-113	552.075	26-163	553.325	26-213
548.350	26-014	549.600	26-064	550.850	26-114	552.100	26-164	553.350	26-214
548.375	26-015	549.625	26-065	550.875	26-115	552.125	26-165	553.375	26-215
548.400	26-016	549.650	26-066	550.900	26-116	552.150	26-166	553.400	26-216
548.425	26-017	549.675	26-067	550.925	26-117	552.175	26-167	553.425	26-217
548.450	26-018	549.700	26-068	550.950	26-118	552.200	26-168	553.450	26-218
548.475	26-019	549.725	26-069	550.975	26-119	552.225	26-169	553.475	26-219
548.500	26-020	549.750	26-070	551.000	26-120	552.250	26-170	553.500	26-220
548.525	26-021	549.775	26-071	551.025	26-121	552.275	26-171	553.525	26-221
548.550	26-022	549.800	26-072	551.050	26-122	552.300	26-172	553.550	26-222
548.575	26-023	549.825	26-073	551.075	26-123	552.325	26-173	553.575	26-223
548.600	26-024	549.850	26-074	551.100	26-124	552.350	26-174	553.600	26-224
548.625	26-025	549.875	26-075	551.125	26-125	552.375	26-175	553.625	26-225
548.650	26-026	549.900	26-076	551.150	26-126	552.400	26-176	553.650	26-226
548.675	26-027	549.925	26-077	551.175	26-127	552.425	26-177	553.675	26-227
548.700	26-028	549.950	26-078	551.200	26-128	552.450	26-178	553.700	26-228
548.725	26-029	549.975	26-079	551.225	26-129	552.475	26-179	553.725	26-229
548.750	26-030	550.000	26-080	551.250	26-130	552.500	26-180	553.750	26-230
548.775	26-031	550.025	26-081	551.275	26-131	552.525	26-181	553.775	26-231
548.800	26-032	550.050	26-082	551.300	26-132	552.550	26-182	553.800	26-232
548.825	26-033	550.075	26-083	551.325	26-133	552.575	26-183	553.825	26-233
548.850	26-034	550.100	26-084	551.350	26-134	552.600	26-184	553.850	26-234
548.875	26-035	550.125	26-085	551.375	26-135	552.625	26-185	553.875	26-235
548.900	26-036	550.150	26-086	551.400	26-136	552.650	26-186	553.900	26-236
548.925	26-037	550.175	26-087	551.425	26-137	552.675	26-187	553.925	26-237
548.950	26-038	550.200	26-088	551.450	26-138	552.700	26-188	553.950	26-238
548.975	26-039	550.225	26-089	551.475	26-139	552.725	26-189	553.975	26-239
549.000	26-040	550.250	26-090	551.500	26-140	552.750	26-190	554.000	26-240
549.025	26-041	550.275	26-091	551.525	26-141	552.775	26-191		
549.050	26-042	550.300	26-092	551.550	26-142	552.800	26-192		
549.075	26-043	550.325	26-093	551.575	26-143	552.825	26-193		
549.100	26-044	550.350	26-094	551.600	26-144	552.850	26-194		
549.125	26-045	550.375	26-095	551.625	26-145	552.875	26-195		
549.150	26-046	550.400	26-096	551.650	26-146	552.900	26-196		
549.175	26-047	550.425	26-097	551.675	26-147	552.925	26-197		
549.200	26-048	550.450	26-098	551.700	26-148	552.950	26-198		
549.225	26-049	550.475	26-099	551.725	26-149	552.975	26-199		

Digital Terrestrial Television Broadcasting Channel number : 27 (554~560MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		555.250	27-050	556.500	27-100	557.750	27-150	559.000	27-200
554.025	27-001	555.275	27-051	556.525	27-101	557.775	27-151	559.025	27-201
554.050	27-002	555.300	27-052	556.550	27-102	557.800	27-152	559.050	27-202
554.075	27-003	555.325	27-053	556.575	27-103	557.825	27-153	559.075	27-203
554.100	27-004	555.350	27-054	556.600	27-104	557.850	27-154	559.100	27-204
554.125	27-005	555.375	27-055	556.625	27-105	557.875	27-155	559.125	27-205
554.150	27-006	555.400	27-056	556.650	27-106	557.900	27-156	559.150	27-206
554.175	27-007	555.425	27-057	556.675	27-107	557.925	27-157	559.175	27-207
554.200	27-008	555.450	27-058	556.700	27-108	557.950	27-158	559.200	27-208
554.225	27-009	555.475	27-059	556.725	27-109	557.975	27-159	559.225	27-209
554.250	27-010	555.500	27-060	556.750	27-110	558.000	27-160	559.250	27-210
554.275	27-011	555.525	27-061	556.775	27-111	558.025	27-161	559.275	27-211
554.300	27-012	555.550	27-062	556.800	27-112	558.050	27-162	559.300	27-212
554.325	27-013	555.575	27-063	556.825	27-113	558.075	27-163	559.325	27-213
554.350	27-014	555.600	27-064	556.850	27-114	558.100	27-164	559.350	27-214
554.375	27-015	555.625	27-065	556.875	27-115	558.125	27-165	559.375	27-215
554.400	27-016	555.650	27-066	556.900	27-116	558.150	27-166	559.400	27-216
554.425	27-017	555.675	27-067	556.925	27-117	558.175	27-167	559.425	27-217
554.450	27-018	555.700	27-068	556.950	27-118	558.200	27-168	559.450	27-218
554.475	27-019	555.725	27-069	556.975	27-119	558.225	27-169	559.475	27-219
554.500	27-020	555.750	27-070	557.000	27-120	558.250	27-170	559.500	27-220
554.525	27-021	555.775	27-071	557.025	27-121	558.275	27-171	559.525	27-221
554.550	27-022	555.800	27-072	557.050	27-122	558.300	27-172	559.550	27-222
554.575	27-023	555.825	27-073	557.075	27-123	558.325	27-173	559.575	27-223
554.600	27-024	555.850	27-074	557.100	27-124	558.350	27-174	559.600	27-224
554.625	27-025	555.875	27-075	557.125	27-125	558.375	27-175	559.625	27-225
554.650	27-026	555.900	27-076	557.150	27-126	558.400	27-176	559.650	27-226
554.675	27-027	555.925	27-077	557.175	27-127	558.425	27-177	559.675	27-227
554.700	27-028	555.950	27-078	557.200	27-128	558.450	27-178	559.700	27-228
554.725	27-029	555.975	27-079	557.225	27-129	558.475	27-179	559.725	27-229
554.750	27-030	556.000	27-080	557.250	27-130	558.500	27-180	559.750	27-230
554.775	27-031	556.025	27-081	557.275	27-131	558.525	27-181	559.775	27-231
554.800	27-032	556.050	27-082	557.300	27-132	558.550	27-182	559.800	27-232
554.825	27-033	556.075	27-083	557.325	27-133	558.575	27-183	559.825	27-233
554.850	27-034	556.100	27-084	557.350	27-134	558.600	27-184	559.850	27-234
554.875	27-035	556.125	27-085	557.375	27-135	558.625	27-185	559.875	27-235
554.900	27-036	556.150	27-086	557.400	27-136	558.650	27-186	559.900	27-236
554.925	27-037	556.175	27-087	557.425	27-137	558.675	27-187	559.925	27-237
554.950	27-038	556.200	27-088	557.450	27-138	558.700	27-188	559.950	27-238
554.975	27-039	556.225	27-089	557.475	27-139	558.725	27-189	559.975	27-239
555.000	27-040	556.250	27-090	557.500	27-140	558.750	27-190	560.000	27-240
555.025	27-041	556.275	27-091	557.525	27-141	558.775	27-191		
555.050	27-042	556.300	27-092	557.550	27-142	558.800	27-192		
555.075	27-043	556.325	27-093	557.575	27-143	558.825	27-193		
555.100	27-044	556.350	27-094	557.600	27-144	558.850	27-194		
555.125	27-045	556.375	27-095	557.625	27-145	558.875	27-195		
555.150	27-046	556.400	27-096	557.650	27-146	558.900	27-196		
555.175	27-047	556.425	27-097	557.675	27-147	558.925	27-197		
555.200	27-048	556.450	27-098	557.700	27-148	558.950	27-198		
555.225	27-049	556.475	27-099	557.725	27-149	558.975	27-199		

Digital Terrestrial Television Broadcasting Channel number : 28 (560~566MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		561.250	28-050	562.500	28-100	563.750	28-150	565.000	28-200
560.025	28-001	561.275	28-051	562.525	28-101	563.775	28-151	565.025	28-201
560.050	28-002	561.300	28-052	562.550	28-102	563.800	28-152	565.050	28-202
560.075	28-003	561.325	28-053	562.575	28-103	563.825	28-153	565.075	28-203
560.100	28-004	561.350	28-054	562.600	28-104	563.850	28-154	565.100	28-204
560.125	28-005	561.375	28-055	562.625	28-105	563.875	28-155	565.125	28-205
560.150	28-006	561.400	28-056	562.650	28-106	563.900	28-156	565.150	28-206
560.175	28-007	561.425	28-057	562.675	28-107	563.925	28-157	565.175	28-207
560.200	28-008	561.450	28-058	562.700	28-108	563.950	28-158	565.200	28-208
560.225	28-009	561.475	28-059	562.725	28-109	563.975	28-159	565.225	28-209
560.250	28-010	561.500	28-060	562.750	28-110	564.000	28-160	565.250	28-210
560.275	28-011	561.525	28-061	562.775	28-111	564.025	28-161	565.275	28-211
560.300	28-012	561.550	28-062	562.800	28-112	564.050	28-162	565.300	28-212
560.325	28-013	561.575	28-063	562.825	28-113	564.075	28-163	565.325	28-213
560.350	28-014	561.600	28-064	562.850	28-114	564.100	28-164	565.350	28-214
560.375	28-015	561.625	28-065	562.875	28-115	564.125	28-165	565.375	28-215
560.400	28-016	561.650	28-066	562.900	28-116	564.150	28-166	565.400	28-216
560.425	28-017	561.675	28-067	562.925	28-117	564.175	28-167	565.425	28-217
560.450	28-018	561.700	28-068	562.950	28-118	564.200	28-168	565.450	28-218
560.475	28-019	561.725	28-069	562.975	28-119	564.225	28-169	565.475	28-219
560.500	28-020	561.750	28-070	563.000	28-120	564.250	28-170	565.500	28-220
560.525	28-021	561.775	28-071	563.025	28-121	564.275	28-171	565.525	28-221
560.550	28-022	561.800	28-072	563.050	28-122	564.300	28-172	565.550	28-222
560.575	28-023	561.825	28-073	563.075	28-123	564.325	28-173	565.575	28-223
560.600	28-024	561.850	28-074	563.100	28-124	564.350	28-174	565.600	28-224
560.625	28-025	561.875	28-075	563.125	28-125	564.375	28-175	565.625	28-225
560.650	28-026	561.900	28-076	563.150	28-126	564.400	28-176	565.650	28-226
560.675	28-027	561.925	28-077	563.175	28-127	564.425	28-177	565.675	28-227
560.700	28-028	561.950	28-078	563.200	28-128	564.450	28-178	565.700	28-228
560.725	28-029	561.975	28-079	563.225	28-129	564.475	28-179	565.725	28-229
560.750	28-030	562.000	28-080	563.250	28-130	564.500	28-180	565.750	28-230
560.775	28-031	562.025	28-081	563.275	28-131	564.525	28-181	565.775	28-231
560.800	28-032	562.050	28-082	563.300	28-132	564.550	28-182	565.800	28-232
560.825	28-033	562.075	28-083	563.325	28-133	564.575	28-183	565.825	28-233
560.850	28-034	562.100	28-084	563.350	28-134	564.600	28-184	565.850	28-234
560.875	28-035	562.125	28-085	563.375	28-135	564.625	28-185	565.875	28-235
560.900	28-036	562.150	28-086	563.400	28-136	564.650	28-186	565.900	28-236
560.925	28-037	562.175	28-087	563.425	28-137	564.675	28-187	565.925	28-237
560.950	28-038	562.200	28-088	563.450	28-138	564.700	28-188	565.950	28-238
560.975	28-039	562.225	28-089	563.475	28-139	564.725	28-189	565.975	28-239
561.000	28-040	562.250	28-090	563.500	28-140	564.750	28-190	566.000	28-240
561.025	28-041	562.275	28-091	563.525	28-141	564.775	28-191		
561.050	28-042	562.300	28-092	563.550	28-142	564.800	28-192		
561.075	28-043	562.325	28-093	563.575	28-143	564.825	28-193		
561.100	28-044	562.350	28-094	563.600	28-144	564.850	28-194		
561.125	28-045	562.375	28-095	563.625	28-145	564.875	28-195		
561.150	28-046	562.400	28-096	563.650	28-146	564.900	28-196		
561.175	28-047	562.425	28-097	563.675	28-147	564.925	28-197		
561.200	28-048	562.450	28-098	563.700	28-148	564.950	28-198		
561.225	28-049	562.475	28-099	563.725	28-149	564.975	28-199		

Digital Terrestrial Television Broadcasting Channel number : 29 (566~572MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		567.250	29-050	568.500	29-100	569.750	29-150	571.000	29-200
566.025	29-001	567.275	29-051	568.525	29-101	569.775	29-151	571.025	29-201
566.050	29-002	567.300	29-052	568.550	29-102	569.800	29-152	571.050	29-202
566.075	29-003	567.325	29-053	568.575	29-103	569.825	29-153	571.075	29-203
566.100	29-004	567.350	29-054	568.600	29-104	569.850	29-154	571.100	29-204
566.125	29-005	567.375	29-055	568.625	29-105	569.875	29-155	571.125	29-205
566.150	29-006	567.400	29-056	568.650	29-106	569.900	29-156	571.150	29-206
566.175	29-007	567.425	29-057	568.675	29-107	569.925	29-157	571.175	29-207
566.200	29-008	567.450	29-058	568.700	29-108	569.950	29-158	571.200	29-208
566.225	29-009	567.475	29-059	568.725	29-109	569.975	29-159	571.225	29-209
566.250	29-010	567.500	29-060	568.750	29-110	570.000	29-160	571.250	29-210
566.275	29-011	567.525	29-061	568.775	29-111	570.025	29-161	571.275	29-211
566.300	29-012	567.550	29-062	568.800	29-112	570.050	29-162	571.300	29-212
566.325	29-013	567.575	29-063	568.825	29-113	570.075	29-163	571.325	29-213
566.350	29-014	567.600	29-064	568.850	29-114	570.100	29-164	571.350	29-214
566.375	29-015	567.625	29-065	568.875	29-115	570.125	29-165	571.375	29-215
566.400	29-016	567.650	29-066	568.900	29-116	570.150	29-166	571.400	29-216
566.425	29-017	567.675	29-067	568.925	29-117	570.175	29-167	571.425	29-217
566.450	29-018	567.700	29-068	568.950	29-118	570.200	29-168	571.450	29-218
566.475	29-019	567.725	29-069	568.975	29-119	570.225	29-169	571.475	29-219
566.500	29-020	567.750	29-070	569.000	29-120	570.250	29-170	571.500	29-220
566.525	29-021	567.775	29-071	569.025	29-121	570.275	29-171	571.525	29-221
566.550	29-022	567.800	29-072	569.050	29-122	570.300	29-172	571.550	29-222
566.575	29-023	567.825	29-073	569.075	29-123	570.325	29-173	571.575	29-223
566.600	29-024	567.850	29-074	569.100	29-124	570.350	29-174	571.600	29-224
566.625	29-025	567.875	29-075	569.125	29-125	570.375	29-175	571.625	29-225
566.650	29-026	567.900	29-076	569.150	29-126	570.400	29-176	571.650	29-226
566.675	29-027	567.925	29-077	569.175	29-127	570.425	29-177	571.675	29-227
566.700	29-028	567.950	29-078	569.200	29-128	570.450	29-178	571.700	29-228
566.725	29-029	567.975	29-079	569.225	29-129	570.475	29-179	571.725	29-229
566.750	29-030	568.000	29-080	569.250	29-130	570.500	29-180	571.750	29-230
566.775	29-031	568.025	29-081	569.275	29-131	570.525	29-181	571.775	29-231
566.800	29-032	568.050	29-082	569.300	29-132	570.550	29-182	571.800	29-232
566.825	29-033	568.075	29-083	569.325	29-133	570.575	29-183	571.825	29-233
566.850	29-034	568.100	29-084	569.350	29-134	570.600	29-184	571.850	29-234
566.875	29-035	568.125	29-085	569.375	29-135	570.625	29-185	571.875	29-235
566.900	29-036	568.150	29-086	569.400	29-136	570.650	29-186	571.900	29-236
566.925	29-037	568.175	29-087	569.425	29-137	570.675	29-187	571.925	29-237
566.950	29-038	568.200	29-088	569.450	29-138	570.700	29-188	571.950	29-238
566.975	29-039	568.225	29-089	569.475	29-139	570.725	29-189	571.975	29-239
567.000	29-040	568.250	29-090	569.500	29-140	570.750	29-190	572.000	29-240
567.025	29-041	568.275	29-091	569.525	29-141	570.775	29-191		
567.050	29-042	568.300	29-092	569.550	29-142	570.800	29-192		
567.075	29-043	568.325	29-093	569.575	29-143	570.825	29-193		
567.100	29-044	568.350	29-094	569.600	29-144	570.850	29-194		
567.125	29-045	568.375	29-095	569.625	29-145	570.875	29-195		
567.150	29-046	568.400	29-096	569.650	29-146	570.900	29-196		
567.175	29-047	568.425	29-097	569.675	29-147	570.925	29-197		
567.200	29-048	568.450	29-098	569.700	29-148	570.950	29-198		
567.225	29-049	568.475	29-099	569.725	29-149	570.975	29-199		

Digital Terrestrial Television Broadcasting Channel number : 30 (572~578MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		573.250	30-050	574.500	30-100	575.750	30-150	577.000	30-200
572.025	30-001	573.275	30-051	574.525	30-101	575.775	30-151	577.025	30-201
572.050	30-002	573.300	30-052	574.550	30-102	575.800	30-152	577.050	30-202
572.075	30-003	573.325	30-053	574.575	30-103	575.825	30-153	577.075	30-203
572.100	30-004	573.350	30-054	574.600	30-104	575.850	30-154	577.100	30-204
572.125	30-005	573.375	30-055	574.625	30-105	575.875	30-155	577.125	30-205
572.150	30-006	573.400	30-056	574.650	30-106	575.900	30-156	577.150	30-206
572.175	30-007	573.425	30-057	574.675	30-107	575.925	30-157	577.175	30-207
572.200	30-008	573.450	30-058	574.700	30-108	575.950	30-158	577.200	30-208
572.225	30-009	573.475	30-059	574.725	30-109	575.975	30-159	577.225	30-209
572.250	30-010	573.500	30-060	574.750	30-110	576.000	30-160	577.250	30-210
572.275	30-011	573.525	30-061	574.775	30-111	576.025	30-161	577.275	30-211
572.300	30-012	573.550	30-062	574.800	30-112	576.050	30-162	577.300	30-212
572.325	30-013	573.575	30-063	574.825	30-113	576.075	30-163	577.325	30-213
572.350	30-014	573.600	30-064	574.850	30-114	576.100	30-164	577.350	30-214
572.375	30-015	573.625	30-065	574.875	30-115	576.125	30-165	577.375	30-215
572.400	30-016	573.650	30-066	574.900	30-116	576.150	30-166	577.400	30-216
572.425	30-017	573.675	30-067	574.925	30-117	576.175	30-167	577.425	30-217
572.450	30-018	573.700	30-068	574.950	30-118	576.200	30-168	577.450	30-218
572.475	30-019	573.725	30-069	574.975	30-119	576.225	30-169	577.475	30-219
572.500	30-020	573.750	30-070	575.000	30-120	576.250	30-170	577.500	30-220
572.525	30-021	573.775	30-071	575.025	30-121	576.275	30-171	577.525	30-221
572.550	30-022	573.800	30-072	575.050	30-122	576.300	30-172	577.550	30-222
572.575	30-023	573.825	30-073	575.075	30-123	576.325	30-173	577.575	30-223
572.600	30-024	573.850	30-074	575.100	30-124	576.350	30-174	577.600	30-224
572.625	30-025	573.875	30-075	575.125	30-125	576.375	30-175	577.625	30-225
572.650	30-026	573.900	30-076	575.150	30-126	576.400	30-176	577.650	30-226
572.675	30-027	573.925	30-077	575.175	30-127	576.425	30-177	577.675	30-227
572.700	30-028	573.950	30-078	575.200	30-128	576.450	30-178	577.700	30-228
572.725	30-029	573.975	30-079	575.225	30-129	576.475	30-179	577.725	30-229
572.750	30-030	574.000	30-080	575.250	30-130	576.500	30-180	577.750	30-230
572.775	30-031	574.025	30-081	575.275	30-131	576.525	30-181	577.775	30-231
572.800	30-032	574.050	30-082	575.300	30-132	576.550	30-182	577.800	30-232
572.825	30-033	574.075	30-083	575.325	30-133	576.575	30-183	577.825	30-233
572.850	30-034	574.100	30-084	575.350	30-134	576.600	30-184	577.850	30-234
572.875	30-035	574.125	30-085	575.375	30-135	576.625	30-185	577.875	30-235
572.900	30-036	574.150	30-086	575.400	30-136	576.650	30-186	577.900	30-236
572.925	30-037	574.175	30-087	575.425	30-137	576.675	30-187	577.925	30-237
572.950	30-038	574.200	30-088	575.450	30-138	576.700	30-188	577.950	30-238
572.975	30-039	574.225	30-089	575.475	30-139	576.725	30-189	577.975	30-239
573.000	30-040	574.250	30-090	575.500	30-140	576.750	30-190	578.000	30-240
573.025	30-041	574.275	30-091	575.525	30-141	576.775	30-191		
573.050	30-042	574.300	30-092	575.550	30-142	576.800	30-192		
573.075	30-043	574.325	30-093	575.575	30-143	576.825	30-193		
573.100	30-044	574.350	30-094	575.600	30-144	576.850	30-194		
573.125	30-045	574.375	30-095	575.625	30-145	576.875	30-195		
573.150	30-046	574.400	30-096	575.650	30-146	576.900	30-196		
573.175	30-047	574.425	30-097	575.675	30-147	576.925	30-197		
573.200	30-048	574.450	30-098	575.700	30-148	576.950	30-198		
573.225	30-049	574.475	30-099	575.725	30-149	576.975	30-199		

Digital Terrestrial Television Broadcasting Channel number : 31 (578~584MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		579.250	31-050	580.500	31-100	581.750	31-150	583.000	31-200
578.025	31-001	579.275	31-051	580.525	31-101	581.775	31-151	583.025	31-201
578.050	31-002	579.300	31-052	580.550	31-102	581.800	31-152	583.050	31-202
578.075	31-003	579.325	31-053	580.575	31-103	581.825	31-153	583.075	31-203
578.100	31-004	579.350	31-054	580.600	31-104	581.850	31-154	583.100	31-204
578.125	31-005	579.375	31-055	580.625	31-105	581.875	31-155	583.125	31-205
578.150	31-006	579.400	31-056	580.650	31-106	581.900	31-156	583.150	31-206
578.175	31-007	579.425	31-057	580.675	31-107	581.925	31-157	583.175	31-207
578.200	31-008	579.450	31-058	580.700	31-108	581.950	31-158	583.200	31-208
578.225	31-009	579.475	31-059	580.725	31-109	581.975	31-159	583.225	31-209
578.250	31-010	579.500	31-060	580.750	31-110	582.000	31-160	583.250	31-210
578.275	31-011	579.525	31-061	580.775	31-111	582.025	31-161	583.275	31-211
578.300	31-012	579.550	31-062	580.800	31-112	582.050	31-162	583.300	31-212
578.325	31-013	579.575	31-063	580.825	31-113	582.075	31-163	583.325	31-213
578.350	31-014	579.600	31-064	580.850	31-114	582.100	31-164	583.350	31-214
578.375	31-015	579.625	31-065	580.875	31-115	582.125	31-165	583.375	31-215
578.400	31-016	579.650	31-066	580.900	31-116	582.150	31-166	583.400	31-216
578.425	31-017	579.675	31-067	580.925	31-117	582.175	31-167	583.425	31-217
578.450	31-018	579.700	31-068	580.950	31-118	582.200	31-168	583.450	31-218
578.475	31-019	579.725	31-069	580.975	31-119	582.225	31-169	583.475	31-219
578.500	31-020	579.750	31-070	581.000	31-120	582.250	31-170	583.500	31-220
578.525	31-021	579.775	31-071	581.025	31-121	582.275	31-171	583.525	31-221
578.550	31-022	579.800	31-072	581.050	31-122	582.300	31-172	583.550	31-222
578.575	31-023	579.825	31-073	581.075	31-123	582.325	31-173	583.575	31-223
578.600	31-024	579.850	31-074	581.100	31-124	582.350	31-174	583.600	31-224
578.625	31-025	579.875	31-075	581.125	31-125	582.375	31-175	583.625	31-225
578.650	31-026	579.900	31-076	581.150	31-126	582.400	31-176	583.650	31-226
578.675	31-027	579.925	31-077	581.175	31-127	582.425	31-177	583.675	31-227
578.700	31-028	579.950	31-078	581.200	31-128	582.450	31-178	583.700	31-228
578.725	31-029	579.975	31-079	581.225	31-129	582.475	31-179	583.725	31-229
578.750	31-030	580.000	31-080	581.250	31-130	582.500	31-180	583.750	31-230
578.775	31-031	580.025	31-081	581.275	31-131	582.525	31-181	583.775	31-231
578.800	31-032	580.050	31-082	581.300	31-132	582.550	31-182	583.800	31-232
578.825	31-033	580.075	31-083	581.325	31-133	582.575	31-183	583.825	31-233
578.850	31-034	580.100	31-084	581.350	31-134	582.600	31-184	583.850	31-234
578.875	31-035	580.125	31-085	581.375	31-135	582.625	31-185	583.875	31-235
578.900	31-036	580.150	31-086	581.400	31-136	582.650	31-186	583.900	31-236
578.925	31-037	580.175	31-087	581.425	31-137	582.675	31-187	583.925	31-237
578.950	31-038	580.200	31-088	581.450	31-138	582.700	31-188	583.950	31-238
578.975	31-039	580.225	31-089	581.475	31-139	582.725	31-189	583.975	31-239
579.000	31-040	580.250	31-090	581.500	31-140	582.750	31-190	584.000	31-240
579.025	31-041	580.275	31-091	581.525	31-141	582.775	31-191		
579.050	31-042	580.300	31-092	581.550	31-142	582.800	31-192		
579.075	31-043	580.325	31-093	581.575	31-143	582.825	31-193		
579.100	31-044	580.350	31-094	581.600	31-144	582.850	31-194		
579.125	31-045	580.375	31-095	581.625	31-145	582.875	31-195		
579.150	31-046	580.400	31-096	581.650	31-146	582.900	31-196		
579.175	31-047	580.425	31-097	581.675	31-147	582.925	31-197		
579.200	31-048	580.450	31-098	581.700	31-148	582.950	31-198		
579.225	31-049	580.475	31-099	581.725	31-149	582.975	31-199		

Digital Terrestrial Television Broadcasting Channel number : 32 (584~590MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		585.250	32-050	586.500	32-100	587.750	32-150	589.000	32-200
584.025	32-001	585.275	32-051	586.525	32-101	587.775	32-151	589.025	32-201
584.050	32-002	585.300	32-052	586.550	32-102	587.800	32-152	589.050	32-202
584.075	32-003	585.325	32-053	586.575	32-103	587.825	32-153	589.075	32-203
584.100	32-004	585.350	32-054	586.600	32-104	587.850	32-154	589.100	32-204
584.125	32-005	585.375	32-055	586.625	32-105	587.875	32-155	589.125	32-205
584.150	32-006	585.400	32-056	586.650	32-106	587.900	32-156	589.150	32-206
584.175	32-007	585.425	32-057	586.675	32-107	587.925	32-157	589.175	32-207
584.200	32-008	585.450	32-058	586.700	32-108	587.950	32-158	589.200	32-208
584.225	32-009	585.475	32-059	586.725	32-109	587.975	32-159	589.225	32-209
584.250	32-010	585.500	32-060	586.750	32-110	588.000	32-160	589.250	32-210
584.275	32-011	585.525	32-061	586.775	32-111	588.025	32-161	589.275	32-211
584.300	32-012	585.550	32-062	586.800	32-112	588.050	32-162	589.300	32-212
584.325	32-013	585.575	32-063	586.825	32-113	588.075	32-163	589.325	32-213
584.350	32-014	585.600	32-064	586.850	32-114	588.100	32-164	589.350	32-214
584.375	32-015	585.625	32-065	586.875	32-115	588.125	32-165	589.375	32-215
584.400	32-016	585.650	32-066	586.900	32-116	588.150	32-166	589.400	32-216
584.425	32-017	585.675	32-067	586.925	32-117	588.175	32-167	589.425	32-217
584.450	32-018	585.700	32-068	586.950	32-118	588.200	32-168	589.450	32-218
584.475	32-019	585.725	32-069	586.975	32-119	588.225	32-169	589.475	32-219
584.500	32-020	585.750	32-070	587.000	32-120	588.250	32-170	589.500	32-220
584.525	32-021	585.775	32-071	587.025	32-121	588.275	32-171	589.525	32-221
584.550	32-022	585.800	32-072	587.050	32-122	588.300	32-172	589.550	32-222
584.575	32-023	585.825	32-073	587.075	32-123	588.325	32-173	589.575	32-223
584.600	32-024	585.850	32-074	587.100	32-124	588.350	32-174	589.600	32-224
584.625	32-025	585.875	32-075	587.125	32-125	588.375	32-175	589.625	32-225
584.650	32-026	585.900	32-076	587.150	32-126	588.400	32-176	589.650	32-226
584.675	32-027	585.925	32-077	587.175	32-127	588.425	32-177	589.675	32-227
584.700	32-028	585.950	32-078	587.200	32-128	588.450	32-178	589.700	32-228
584.725	32-029	585.975	32-079	587.225	32-129	588.475	32-179	589.725	32-229
584.750	32-030	586.000	32-080	587.250	32-130	588.500	32-180	589.750	32-230
584.775	32-031	586.025	32-081	587.275	32-131	588.525	32-181	589.775	32-231
584.800	32-032	586.050	32-082	587.300	32-132	588.550	32-182	589.800	32-232
584.825	32-033	586.075	32-083	587.325	32-133	588.575	32-183	589.825	32-233
584.850	32-034	586.100	32-084	587.350	32-134	588.600	32-184	589.850	32-234
584.875	32-035	586.125	32-085	587.375	32-135	588.625	32-185	589.875	32-235
584.900	32-036	586.150	32-086	587.400	32-136	588.650	32-186	589.900	32-236
584.925	32-037	586.175	32-087	587.425	32-137	588.675	32-187	589.925	32-237
584.950	32-038	586.200	32-088	587.450	32-138	588.700	32-188	589.950	32-238
584.975	32-039	586.225	32-089	587.475	32-139	588.725	32-189	589.975	32-239
585.000	32-040	586.250	32-090	587.500	32-140	588.750	32-190	590.000	32-240
585.025	32-041	586.275	32-091	587.525	32-141	588.775	32-191		
585.050	32-042	586.300	32-092	587.550	32-142	588.800	32-192		
585.075	32-043	586.325	32-093	587.575	32-143	588.825	32-193		
585.100	32-044	586.350	32-094	587.600	32-144	588.850	32-194		
585.125	32-045	586.375	32-095	587.625	32-145	588.875	32-195		
585.150	32-046	586.400	32-096	587.650	32-146	588.900	32-196		
585.175	32-047	586.425	32-097	587.675	32-147	588.925	32-197		
585.200	32-048	586.450	32-098	587.700	32-148	588.950	32-198		
585.225	32-049	586.475	32-099	587.725	32-149	588.975	32-199		

Digital Terrestrial Television Broadcasting Channel number : 33 (590~596MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		591.250	33-050	592.500	33-100	593.750	33-150	595.000	33-200
590.025	33-001	591.275	33-051	592.525	33-101	593.775	33-151	595.025	33-201
590.050	33-002	591.300	33-052	592.550	33-102	593.800	33-152	595.050	33-202
590.075	33-003	591.325	33-053	592.575	33-103	593.825	33-153	595.075	33-203
590.100	33-004	591.350	33-054	592.600	33-104	593.850	33-154	595.100	33-204
590.125	33-005	591.375	33-055	592.625	33-105	593.875	33-155	595.125	33-205
590.150	33-006	591.400	33-056	592.650	33-106	593.900	33-156	595.150	33-206
590.175	33-007	591.425	33-057	592.675	33-107	593.925	33-157	595.175	33-207
590.200	33-008	591.450	33-058	592.700	33-108	593.950	33-158	595.200	33-208
590.225	33-009	591.475	33-059	592.725	33-109	593.975	33-159	595.225	33-209
590.250	33-010	591.500	33-060	592.750	33-110	594.000	33-160	595.250	33-210
590.275	33-011	591.525	33-061	592.775	33-111	594.025	33-161	595.275	33-211
590.300	33-012	591.550	33-062	592.800	33-112	594.050	33-162	595.300	33-212
590.325	33-013	591.575	33-063	592.825	33-113	594.075	33-163	595.325	33-213
590.350	33-014	591.600	33-064	592.850	33-114	594.100	33-164	595.350	33-214
590.375	33-015	591.625	33-065	592.875	33-115	594.125	33-165	595.375	33-215
590.400	33-016	591.650	33-066	592.900	33-116	594.150	33-166	595.400	33-216
590.425	33-017	591.675	33-067	592.925	33-117	594.175	33-167	595.425	33-217
590.450	33-018	591.700	33-068	592.950	33-118	594.200	33-168	595.450	33-218
590.475	33-019	591.725	33-069	592.975	33-119	594.225	33-169	595.475	33-219
590.500	33-020	591.750	33-070	593.000	33-120	594.250	33-170	595.500	33-220
590.525	33-021	591.775	33-071	593.025	33-121	594.275	33-171	595.525	33-221
590.550	33-022	591.800	33-072	593.050	33-122	594.300	33-172	595.550	33-222
590.575	33-023	591.825	33-073	593.075	33-123	594.325	33-173	595.575	33-223
590.600	33-024	591.850	33-074	593.100	33-124	594.350	33-174	595.600	33-224
590.625	33-025	591.875	33-075	593.125	33-125	594.375	33-175	595.625	33-225
590.650	33-026	591.900	33-076	593.150	33-126	594.400	33-176	595.650	33-226
590.675	33-027	591.925	33-077	593.175	33-127	594.425	33-177	595.675	33-227
590.700	33-028	591.950	33-078	593.200	33-128	594.450	33-178	595.700	33-228
590.725	33-029	591.975	33-079	593.225	33-129	594.475	33-179	595.725	33-229
590.750	33-030	592.000	33-080	593.250	33-130	594.500	33-180	595.750	33-230
590.775	33-031	592.025	33-081	593.275	33-131	594.525	33-181	595.775	33-231
590.800	33-032	592.050	33-082	593.300	33-132	594.550	33-182	595.800	33-232
590.825	33-033	592.075	33-083	593.325	33-133	594.575	33-183	595.825	33-233
590.850	33-034	592.100	33-084	593.350	33-134	594.600	33-184	595.850	33-234
590.875	33-035	592.125	33-085	593.375	33-135	594.625	33-185	595.875	33-235
590.900	33-036	592.150	33-086	593.400	33-136	594.650	33-186	595.900	33-236
590.925	33-037	592.175	33-087	593.425	33-137	594.675	33-187	595.925	33-237
590.950	33-038	592.200	33-088	593.450	33-138	594.700	33-188	595.950	33-238
590.975	33-039	592.225	33-089	593.475	33-139	594.725	33-189	595.975	33-239
591.000	33-040	592.250	33-090	593.500	33-140	594.750	33-190	596.000	33-240
591.025	33-041	592.275	33-091	593.525	33-141	594.775	33-191		
591.050	33-042	592.300	33-092	593.550	33-142	594.800	33-192		
591.075	33-043	592.325	33-093	593.575	33-143	594.825	33-193		
591.100	33-044	592.350	33-094	593.600	33-144	594.850	33-194		
591.125	33-045	592.375	33-095	593.625	33-145	594.875	33-195		
591.150	33-046	592.400	33-096	593.650	33-146	594.900	33-196		
591.175	33-047	592.425	33-097	593.675	33-147	594.925	33-197		
591.200	33-048	592.450	33-098	593.700	33-148	594.950	33-198		
591.225	33-049	592.475	33-099	593.725	33-149	594.975	33-199		

Digital Terrestrial Television Broadcasting Channel number : 34 (596~602MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		597.250	34-050	598.500	34-100	599.750	34-150	601.000	34-200
596.025	34-001	597.275	34-051	598.525	34-101	599.775	34-151	601.025	34-201
596.050	34-002	597.300	34-052	598.550	34-102	599.800	34-152	601.050	34-202
596.075	34-003	597.325	34-053	598.575	34-103	599.825	34-153	601.075	34-203
596.100	34-004	597.350	34-054	598.600	34-104	599.850	34-154	601.100	34-204
596.125	34-005	597.375	34-055	598.625	34-105	599.875	34-155	601.125	34-205
596.150	34-006	597.400	34-056	598.650	34-106	599.900	34-156	601.150	34-206
596.175	34-007	597.425	34-057	598.675	34-107	599.925	34-157	601.175	34-207
596.200	34-008	597.450	34-058	598.700	34-108	599.950	34-158	601.200	34-208
596.225	34-009	597.475	34-059	598.725	34-109	599.975	34-159	601.225	34-209
596.250	34-010	597.500	34-060	598.750	34-110	600.000	34-160	601.250	34-210
596.275	34-011	597.525	34-061	598.775	34-111	600.025	34-161	601.275	34-211
596.300	34-012	597.550	34-062	598.800	34-112	600.050	34-162	601.300	34-212
596.325	34-013	597.575	34-063	598.825	34-113	600.075	34-163	601.325	34-213
596.350	34-014	597.600	34-064	598.850	34-114	600.100	34-164	601.350	34-214
596.375	34-015	597.625	34-065	598.875	34-115	600.125	34-165	601.375	34-215
596.400	34-016	597.650	34-066	598.900	34-116	600.150	34-166	601.400	34-216
596.425	34-017	597.675	34-067	598.925	34-117	600.175	34-167	601.425	34-217
596.450	34-018	597.700	34-068	598.950	34-118	600.200	34-168	601.450	34-218
596.475	34-019	597.725	34-069	598.975	34-119	600.225	34-169	601.475	34-219
596.500	34-020	597.750	34-070	599.000	34-120	600.250	34-170	601.500	34-220
596.525	34-021	597.775	34-071	599.025	34-121	600.275	34-171	601.525	34-221
596.550	34-022	597.800	34-072	599.050	34-122	600.300	34-172	601.550	34-222
596.575	34-023	597.825	34-073	599.075	34-123	600.325	34-173	601.575	34-223
596.600	34-024	597.850	34-074	599.100	34-124	600.350	34-174	601.600	34-224
596.625	34-025	597.875	34-075	599.125	34-125	600.375	34-175	601.625	34-225
596.650	34-026	597.900	34-076	599.150	34-126	600.400	34-176	601.650	34-226
596.675	34-027	597.925	34-077	599.175	34-127	600.425	34-177	601.675	34-227
596.700	34-028	597.950	34-078	599.200	34-128	600.450	34-178	601.700	34-228
596.725	34-029	597.975	34-079	599.225	34-129	600.475	34-179	601.725	34-229
596.750	34-030	598.000	34-080	599.250	34-130	600.500	34-180	601.750	34-230
596.775	34-031	598.025	34-081	599.275	34-131	600.525	34-181	601.775	34-231
596.800	34-032	598.050	34-082	599.300	34-132	600.550	34-182	601.800	34-232
596.825	34-033	598.075	34-083	599.325	34-133	600.575	34-183	601.825	34-233
596.850	34-034	598.100	34-084	599.350	34-134	600.600	34-184	601.850	34-234
596.875	34-035	598.125	34-085	599.375	34-135	600.625	34-185	601.875	34-235
596.900	34-036	598.150	34-086	599.400	34-136	600.650	34-186	601.900	34-236
596.925	34-037	598.175	34-087	599.425	34-137	600.675	34-187	601.925	34-237
596.950	34-038	598.200	34-088	599.450	34-138	600.700	34-188	601.950	34-238
596.975	34-039	598.225	34-089	599.475	34-139	600.725	34-189	601.975	34-239
597.000	34-040	598.250	34-090	599.500	34-140	600.750	34-190	602.000	34-240
597.025	34-041	598.275	34-091	599.525	34-141	600.775	34-191		
597.050	34-042	598.300	34-092	599.550	34-142	600.800	34-192		
597.075	34-043	598.325	34-093	599.575	34-143	600.825	34-193		
597.100	34-044	598.350	34-094	599.600	34-144	600.850	34-194		
597.125	34-045	598.375	34-095	599.625	34-145	600.875	34-195		
597.150	34-046	598.400	34-096	599.650	34-146	600.900	34-196		
597.175	34-047	598.425	34-097	599.675	34-147	600.925	34-197		
597.200	34-048	598.450	34-098	599.700	34-148	600.950	34-198		
597.225	34-049	598.475	34-099	599.725	34-149	600.975	34-199		

Digital Terrestrial Television Broadcasting Channel number : 35 (602~608MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		603.250	35-050	604.500	35-100	605.750	35-150	607.000	35-200
602.025	35-001	603.275	35-051	604.525	35-101	605.775	35-151	607.025	35-201
602.050	35-002	603.300	35-052	604.550	35-102	605.800	35-152	607.050	35-202
602.075	35-003	603.325	35-053	604.575	35-103	605.825	35-153	607.075	35-203
602.100	35-004	603.350	35-054	604.600	35-104	605.850	35-154	607.100	35-204
602.125	35-005	603.375	35-055	604.625	35-105	605.875	35-155	607.125	35-205
602.150	35-006	603.400	35-056	604.650	35-106	605.900	35-156	607.150	35-206
602.175	35-007	603.425	35-057	604.675	35-107	605.925	35-157	607.175	35-207
602.200	35-008	603.450	35-058	604.700	35-108	605.950	35-158	607.200	35-208
602.225	35-009	603.475	35-059	604.725	35-109	605.975	35-159	607.225	35-209
602.250	35-010	603.500	35-060	604.750	35-110	606.000	35-160	607.250	35-210
602.275	35-011	603.525	35-061	604.775	35-111	606.025	35-161	607.275	35-211
602.300	35-012	603.550	35-062	604.800	35-112	606.050	35-162	607.300	35-212
602.325	35-013	603.575	35-063	604.825	35-113	606.075	35-163	607.325	35-213
602.350	35-014	603.600	35-064	604.850	35-114	606.100	35-164	607.350	35-214
602.375	35-015	603.625	35-065	604.875	35-115	606.125	35-165	607.375	35-215
602.400	35-016	603.650	35-066	604.900	35-116	606.150	35-166	607.400	35-216
602.425	35-017	603.675	35-067	604.925	35-117	606.175	35-167	607.425	35-217
602.450	35-018	603.700	35-068	604.950	35-118	606.200	35-168	607.450	35-218
602.475	35-019	603.725	35-069	604.975	35-119	606.225	35-169	607.475	35-219
602.500	35-020	603.750	35-070	605.000	35-120	606.250	35-170	607.500	35-220
602.525	35-021	603.775	35-071	605.025	35-121	606.275	35-171	607.525	35-221
602.550	35-022	603.800	35-072	605.050	35-122	606.300	35-172	607.550	35-222
602.575	35-023	603.825	35-073	605.075	35-123	606.325	35-173	607.575	35-223
602.600	35-024	603.850	35-074	605.100	35-124	606.350	35-174	607.600	35-224
602.625	35-025	603.875	35-075	605.125	35-125	606.375	35-175	607.625	35-225
602.650	35-026	603.900	35-076	605.150	35-126	606.400	35-176	607.650	35-226
602.675	35-027	603.925	35-077	605.175	35-127	606.425	35-177	607.675	35-227
602.700	35-028	603.950	35-078	605.200	35-128	606.450	35-178	607.700	35-228
602.725	35-029	603.975	35-079	605.225	35-129	606.475	35-179	607.725	35-229
602.750	35-030	604.000	35-080	605.250	35-130	606.500	35-180	607.750	35-230
602.775	35-031	604.025	35-081	605.275	35-131	606.525	35-181	607.775	35-231
602.800	35-032	604.050	35-082	605.300	35-132	606.550	35-182	607.800	35-232
602.825	35-033	604.075	35-083	605.325	35-133	606.575	35-183	607.825	35-233
602.850	35-034	604.100	35-084	605.350	35-134	606.600	35-184	607.850	35-234
602.875	35-035	604.125	35-085	605.375	35-135	606.625	35-185	607.875	35-235
602.900	35-036	604.150	35-086	605.400	35-136	606.650	35-186	607.900	35-236
602.925	35-037	604.175	35-087	605.425	35-137	606.675	35-187	607.925	35-237
602.950	35-038	604.200	35-088	605.450	35-138	606.700	35-188	607.950	35-238
602.975	35-039	604.225	35-089	605.475	35-139	606.725	35-189	607.975	35-239
603.000	35-040	604.250	35-090	605.500	35-140	606.750	35-190	608.000	35-240
603.025	35-041	604.275	35-091	605.525	35-141	606.775	35-191		
603.050	35-042	604.300	35-092	605.550	35-142	606.800	35-192		
603.075	35-043	604.325	35-093	605.575	35-143	606.825	35-193		
603.100	35-044	604.350	35-094	605.600	35-144	606.850	35-194		
603.125	35-045	604.375	35-095	605.625	35-145	606.875	35-195		
603.150	35-046	604.400	35-096	605.650	35-146	606.900	35-196		
603.175	35-047	604.425	35-097	605.675	35-147	606.925	35-197		
603.200	35-048	604.450	35-098	605.700	35-148	606.950	35-198		
603.225	35-049	604.475	35-099	605.725	35-149	606.975	35-199		

Digital Terrestrial Television Broadcasting Channel number : 36 (608~614MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		609.250	36-050	610.500	36-100	611.750	36-150	613.000	36-200
608.025	36-001	609.275	36-051	610.525	36-101	611.775	36-151	613.025	36-201
608.050	36-002	609.300	36-052	610.550	36-102	611.800	36-152	613.050	36-202
608.075	36-003	609.325	36-053	610.575	36-103	611.825	36-153	613.075	36-203
608.100	36-004	609.350	36-054	610.600	36-104	611.850	36-154	613.100	36-204
608.125	36-005	609.375	36-055	610.625	36-105	611.875	36-155	613.125	36-205
608.150	36-006	609.400	36-056	610.650	36-106	611.900	36-156	613.150	36-206
608.175	36-007	609.425	36-057	610.675	36-107	611.925	36-157	613.175	36-207
608.200	36-008	609.450	36-058	610.700	36-108	611.950	36-158	613.200	36-208
608.225	36-009	609.475	36-059	610.725	36-109	611.975	36-159	613.225	36-209
608.250	36-010	609.500	36-060	610.750	36-110	612.000	36-160	613.250	36-210
608.275	36-011	609.525	36-061	610.775	36-111	612.025	36-161	613.275	36-211
608.300	36-012	609.550	36-062	610.800	36-112	612.050	36-162	613.300	36-212
608.325	36-013	609.575	36-063	610.825	36-113	612.075	36-163	613.325	36-213
608.350	36-014	609.600	36-064	610.850	36-114	612.100	36-164	613.350	36-214
608.375	36-015	609.625	36-065	610.875	36-115	612.125	36-165	613.375	36-215
608.400	36-016	609.650	36-066	610.900	36-116	612.150	36-166	613.400	36-216
608.425	36-017	609.675	36-067	610.925	36-117	612.175	36-167	613.425	36-217
608.450	36-018	609.700	36-068	610.950	36-118	612.200	36-168	613.450	36-218
608.475	36-019	609.725	36-069	610.975	36-119	612.225	36-169	613.475	36-219
608.500	36-020	609.750	36-070	611.000	36-120	612.250	36-170	613.500	36-220
608.525	36-021	609.775	36-071	611.025	36-121	612.275	36-171	613.525	36-221
608.550	36-022	609.800	36-072	611.050	36-122	612.300	36-172	613.550	36-222
608.575	36-023	609.825	36-073	611.075	36-123	612.325	36-173	613.575	36-223
608.600	36-024	609.850	36-074	611.100	36-124	612.350	36-174	613.600	36-224
608.625	36-025	609.875	36-075	611.125	36-125	612.375	36-175	613.625	36-225
608.650	36-026	609.900	36-076	611.150	36-126	612.400	36-176	613.650	36-226
608.675	36-027	609.925	36-077	611.175	36-127	612.425	36-177	613.675	36-227
608.700	36-028	609.950	36-078	611.200	36-128	612.450	36-178	613.700	36-228
608.725	36-029	609.975	36-079	611.225	36-129	612.475	36-179	613.725	36-229
608.750	36-030	610.000	36-080	611.250	36-130	612.500	36-180	613.750	36-230
608.775	36-031	610.025	36-081	611.275	36-131	612.525	36-181	613.775	36-231
608.800	36-032	610.050	36-082	611.300	36-132	612.550	36-182	613.800	36-232
608.825	36-033	610.075	36-083	611.325	36-133	612.575	36-183	613.825	36-233
608.850	36-034	610.100	36-084	611.350	36-134	612.600	36-184	613.850	36-234
608.875	36-035	610.125	36-085	611.375	36-135	612.625	36-185	613.875	36-235
608.900	36-036	610.150	36-086	611.400	36-136	612.650	36-186	613.900	36-236
608.925	36-037	610.175	36-087	611.425	36-137	612.675	36-187	613.925	36-237
608.950	36-038	610.200	36-088	611.450	36-138	612.700	36-188	613.950	36-238
608.975	36-039	610.225	36-089	611.475	36-139	612.725	36-189	613.975	36-239
609.000	36-040	610.250	36-090	611.500	36-140	612.750	36-190	614.000	36-240
609.025	36-041	610.275	36-091	611.525	36-141	612.775	36-191		
609.050	36-042	610.300	36-092	611.550	36-142	612.800	36-192		
609.075	36-043	610.325	36-093	611.575	36-143	612.825	36-193		
609.100	36-044	610.350	36-094	611.600	36-144	612.850	36-194		
609.125	36-045	610.375	36-095	611.625	36-145	612.875	36-195		
609.150	36-046	610.400	36-096	611.650	36-146	612.900	36-196		
609.175	36-047	610.425	36-097	611.675	36-147	612.925	36-197		
609.200	36-048	610.450	36-098	611.700	36-148	612.950	36-198		
609.225	36-049	610.475	36-099	611.725	36-149	612.975	36-199		

Digital Terrestrial Television Broadcasting Channel number : 37 (614~620MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		615.250	37-050	616.500	37-100	617.750	37-150	619.000	37-200
614.025	37-001	615.275	37-051	616.525	37-101	617.775	37-151	619.025	37-201
614.050	37-002	615.300	37-052	616.550	37-102	617.800	37-152	619.050	37-202
614.075	37-003	615.325	37-053	616.575	37-103	617.825	37-153	619.075	37-203
614.100	37-004	615.350	37-054	616.600	37-104	617.850	37-154	619.100	37-204
614.125	37-005	615.375	37-055	616.625	37-105	617.875	37-155	619.125	37-205
614.150	37-006	615.400	37-056	616.650	37-106	617.900	37-156	619.150	37-206
614.175	37-007	615.425	37-057	616.675	37-107	617.925	37-157	619.175	37-207
614.200	37-008	615.450	37-058	616.700	37-108	617.950	37-158	619.200	37-208
614.225	37-009	615.475	37-059	616.725	37-109	617.975	37-159	619.225	37-209
614.250	37-010	615.500	37-060	616.750	37-110	618.000	37-160	619.250	37-210
614.275	37-011	615.525	37-061	616.775	37-111	618.025	37-161	619.275	37-211
614.300	37-012	615.550	37-062	616.800	37-112	618.050	37-162	619.300	37-212
614.325	37-013	615.575	37-063	616.825	37-113	618.075	37-163	619.325	37-213
614.350	37-014	615.600	37-064	616.850	37-114	618.100	37-164	619.350	37-214
614.375	37-015	615.625	37-065	616.875	37-115	618.125	37-165	619.375	37-215
614.400	37-016	615.650	37-066	616.900	37-116	618.150	37-166	619.400	37-216
614.425	37-017	615.675	37-067	616.925	37-117	618.175	37-167	619.425	37-217
614.450	37-018	615.700	37-068	616.950	37-118	618.200	37-168	619.450	37-218
614.475	37-019	615.725	37-069	616.975	37-119	618.225	37-169	619.475	37-219
614.500	37-020	615.750	37-070	617.000	37-120	618.250	37-170	619.500	37-220
614.525	37-021	615.775	37-071	617.025	37-121	618.275	37-171	619.525	37-221
614.550	37-022	615.800	37-072	617.050	37-122	618.300	37-172	619.550	37-222
614.575	37-023	615.825	37-073	617.075	37-123	618.325	37-173	619.575	37-223
614.600	37-024	615.850	37-074	617.100	37-124	618.350	37-174	619.600	37-224
614.625	37-025	615.875	37-075	617.125	37-125	618.375	37-175	619.625	37-225
614.650	37-026	615.900	37-076	617.150	37-126	618.400	37-176	619.650	37-226
614.675	37-027	615.925	37-077	617.175	37-127	618.425	37-177	619.675	37-227
614.700	37-028	615.950	37-078	617.200	37-128	618.450	37-178	619.700	37-228
614.725	37-029	615.975	37-079	617.225	37-129	618.475	37-179	619.725	37-229
614.750	37-030	616.000	37-080	617.250	37-130	618.500	37-180	619.750	37-230
614.775	37-031	616.025	37-081	617.275	37-131	618.525	37-181	619.775	37-231
614.800	37-032	616.050	37-082	617.300	37-132	618.550	37-182	619.800	37-232
614.825	37-033	616.075	37-083	617.325	37-133	618.575	37-183	619.825	37-233
614.850	37-034	616.100	37-084	617.350	37-134	618.600	37-184	619.850	37-234
614.875	37-035	616.125	37-085	617.375	37-135	618.625	37-185	619.875	37-235
614.900	37-036	616.150	37-086	617.400	37-136	618.650	37-186	619.900	37-236
614.925	37-037	616.175	37-087	617.425	37-137	618.675	37-187	619.925	37-237
614.950	37-038	616.200	37-088	617.450	37-138	618.700	37-188	619.950	37-238
614.975	37-039	616.225	37-089	617.475	37-139	618.725	37-189	619.975	37-239
615.000	37-040	616.250	37-090	617.500	37-140	618.750	37-190	620.000	37-240
615.025	37-041	616.275	37-091	617.525	37-141	618.775	37-191		
615.050	37-042	616.300	37-092	617.550	37-142	618.800	37-192		
615.075	37-043	616.325	37-093	617.575	37-143	618.825	37-193		
615.100	37-044	616.350	37-094	617.600	37-144	618.850	37-194		
615.125	37-045	616.375	37-095	617.625	37-145	618.875	37-195		
615.150	37-046	616.400	37-096	617.650	37-146	618.900	37-196		
615.175	37-047	616.425	37-097	617.675	37-147	618.925	37-197		
615.200	37-048	616.450	37-098	617.700	37-148	618.950	37-198		
615.225	37-049	616.475	37-099	617.725	37-149	618.975	37-199		

Digital Terrestrial Television Broadcasting Channel number : 38 (620~626MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		621.250	38-050	622.500	38-100	623.750	38-150	625.000	38-200
620.025	38-001	621.275	38-051	622.525	38-101	623.775	38-151	625.025	38-201
620.050	38-002	621.300	38-052	622.550	38-102	623.800	38-152	625.050	38-202
620.075	38-003	621.325	38-053	622.575	38-103	623.825	38-153	625.075	38-203
620.100	38-004	621.350	38-054	622.600	38-104	623.850	38-154	625.100	38-204
620.125	38-005	621.375	38-055	622.625	38-105	623.875	38-155	625.125	38-205
620.150	38-006	621.400	38-056	622.650	38-106	623.900	38-156	625.150	38-206
620.175	38-007	621.425	38-057	622.675	38-107	623.925	38-157	625.175	38-207
620.200	38-008	621.450	38-058	622.700	38-108	623.950	38-158	625.200	38-208
620.225	38-009	621.475	38-059	622.725	38-109	623.975	38-159	625.225	38-209
620.250	38-010	621.500	38-060	622.750	38-110	624.000	38-160	625.250	38-210
620.275	38-011	621.525	38-061	622.775	38-111	624.025	38-161	625.275	38-211
620.300	38-012	621.550	38-062	622.800	38-112	624.050	38-162	625.300	38-212
620.325	38-013	621.575	38-063	622.825	38-113	624.075	38-163	625.325	38-213
620.350	38-014	621.600	38-064	622.850	38-114	624.100	38-164	625.350	38-214
620.375	38-015	621.625	38-065	622.875	38-115	624.125	38-165	625.375	38-215
620.400	38-016	621.650	38-066	622.900	38-116	624.150	38-166	625.400	38-216
620.425	38-017	621.675	38-067	622.925	38-117	624.175	38-167	625.425	38-217
620.450	38-018	621.700	38-068	622.950	38-118	624.200	38-168	625.450	38-218
620.475	38-019	621.725	38-069	622.975	38-119	624.225	38-169	625.475	38-219
620.500	38-020	621.750	38-070	623.000	38-120	624.250	38-170	625.500	38-220
620.525	38-021	621.775	38-071	623.025	38-121	624.275	38-171	625.525	38-221
620.550	38-022	621.800	38-072	623.050	38-122	624.300	38-172	625.550	38-222
620.575	38-023	621.825	38-073	623.075	38-123	624.325	38-173	625.575	38-223
620.600	38-024	621.850	38-074	623.100	38-124	624.350	38-174	625.600	38-224
620.625	38-025	621.875	38-075	623.125	38-125	624.375	38-175	625.625	38-225
620.650	38-026	621.900	38-076	623.150	38-126	624.400	38-176	625.650	38-226
620.675	38-027	621.925	38-077	623.175	38-127	624.425	38-177	625.675	38-227
620.700	38-028	621.950	38-078	623.200	38-128	624.450	38-178	625.700	38-228
620.725	38-029	621.975	38-079	623.225	38-129	624.475	38-179	625.725	38-229
620.750	38-030	622.000	38-080	623.250	38-130	624.500	38-180	625.750	38-230
620.775	38-031	622.025	38-081	623.275	38-131	624.525	38-181	625.775	38-231
620.800	38-032	622.050	38-082	623.300	38-132	624.550	38-182	625.800	38-232
620.825	38-033	622.075	38-083	623.325	38-133	624.575	38-183	625.825	38-233
620.850	38-034	622.100	38-084	623.350	38-134	624.600	38-184	625.850	38-234
620.875	38-035	622.125	38-085	623.375	38-135	624.625	38-185	625.875	38-235
620.900	38-036	622.150	38-086	623.400	38-136	624.650	38-186	625.900	38-236
620.925	38-037	622.175	38-087	623.425	38-137	624.675	38-187	625.925	38-237
620.950	38-038	622.200	38-088	623.450	38-138	624.700	38-188	625.950	38-238
620.975	38-039	622.225	38-089	623.475	38-139	624.725	38-189	625.975	38-239
621.000	38-040	622.250	38-090	623.500	38-140	624.750	38-190	626.000	38-240
621.025	38-041	622.275	38-091	623.525	38-141	624.775	38-191		
621.050	38-042	622.300	38-092	623.550	38-142	624.800	38-192		
621.075	38-043	622.325	38-093	623.575	38-143	624.825	38-193		
621.100	38-044	622.350	38-094	623.600	38-144	624.850	38-194		
621.125	38-045	622.375	38-095	623.625	38-145	624.875	38-195		
621.150	38-046	622.400	38-096	623.650	38-146	624.900	38-196		
621.175	38-047	622.425	38-097	623.675	38-147	624.925	38-197		
621.200	38-048	622.450	38-098	623.700	38-148	624.950	38-198		
621.225	38-049	622.475	38-099	623.725	38-149	624.975	38-199		

Digital Terrestrial Television Broadcasting Channel number : 39 (626~632MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		627.250	39-050	628.500	39-100	629.750	39-150	631.000	39-200
626.025	39-001	627.275	39-051	628.525	39-101	629.775	39-151	631.025	39-201
626.050	39-002	627.300	39-052	628.550	39-102	629.800	39-152	631.050	39-202
626.075	39-003	627.325	39-053	628.575	39-103	629.825	39-153	631.075	39-203
626.100	39-004	627.350	39-054	628.600	39-104	629.850	39-154	631.100	39-204
626.125	39-005	627.375	39-055	628.625	39-105	629.875	39-155	631.125	39-205
626.150	39-006	627.400	39-056	628.650	39-106	629.900	39-156	631.150	39-206
626.175	39-007	627.425	39-057	628.675	39-107	629.925	39-157	631.175	39-207
626.200	39-008	627.450	39-058	628.700	39-108	629.950	39-158	631.200	39-208
626.225	39-009	627.475	39-059	628.725	39-109	629.975	39-159	631.225	39-209
626.250	39-010	627.500	39-060	628.750	39-110	630.000	39-160	631.250	39-210
626.275	39-011	627.525	39-061	628.775	39-111	630.025	39-161	631.275	39-211
626.300	39-012	627.550	39-062	628.800	39-112	630.050	39-162	631.300	39-212
626.325	39-013	627.575	39-063	628.825	39-113	630.075	39-163	631.325	39-213
626.350	39-014	627.600	39-064	628.850	39-114	630.100	39-164	631.350	39-214
626.375	39-015	627.625	39-065	628.875	39-115	630.125	39-165	631.375	39-215
626.400	39-016	627.650	39-066	628.900	39-116	630.150	39-166	631.400	39-216
626.425	39-017	627.675	39-067	628.925	39-117	630.175	39-167	631.425	39-217
626.450	39-018	627.700	39-068	628.950	39-118	630.200	39-168	631.450	39-218
626.475	39-019	627.725	39-069	628.975	39-119	630.225	39-169	631.475	39-219
626.500	39-020	627.750	39-070	629.000	39-120	630.250	39-170	631.500	39-220
626.525	39-021	627.775	39-071	629.025	39-121	630.275	39-171	631.525	39-221
626.550	39-022	627.800	39-072	629.050	39-122	630.300	39-172	631.550	39-222
626.575	39-023	627.825	39-073	629.075	39-123	630.325	39-173	631.575	39-223
626.600	39-024	627.850	39-074	629.100	39-124	630.350	39-174	631.600	39-224
626.625	39-025	627.875	39-075	629.125	39-125	630.375	39-175	631.625	39-225
626.650	39-026	627.900	39-076	629.150	39-126	630.400	39-176	631.650	39-226
626.675	39-027	627.925	39-077	629.175	39-127	630.425	39-177	631.675	39-227
626.700	39-028	627.950	39-078	629.200	39-128	630.450	39-178	631.700	39-228
626.725	39-029	627.975	39-079	629.225	39-129	630.475	39-179	631.725	39-229
626.750	39-030	628.000	39-080	629.250	39-130	630.500	39-180	631.750	39-230
626.775	39-031	628.025	39-081	629.275	39-131	630.525	39-181	631.775	39-231
626.800	39-032	628.050	39-082	629.300	39-132	630.550	39-182	631.800	39-232
626.825	39-033	628.075	39-083	629.325	39-133	630.575	39-183	631.825	39-233
626.850	39-034	628.100	39-084	629.350	39-134	630.600	39-184	631.850	39-234
626.875	39-035	628.125	39-085	629.375	39-135	630.625	39-185	631.875	39-235
626.900	39-036	628.150	39-086	629.400	39-136	630.650	39-186	631.900	39-236
626.925	39-037	628.175	39-087	629.425	39-137	630.675	39-187	631.925	39-237
626.950	39-038	628.200	39-088	629.450	39-138	630.700	39-188	631.950	39-238
626.975	39-039	628.225	39-089	629.475	39-139	630.725	39-189	631.975	39-239
627.000	39-040	628.250	39-090	629.500	39-140	630.750	39-190	632.000	39-240
627.025	39-041	628.275	39-091	629.525	39-141	630.775	39-191		
627.050	39-042	628.300	39-092	629.550	39-142	630.800	39-192		
627.075	39-043	628.325	39-093	629.575	39-143	630.825	39-193		
627.100	39-044	628.350	39-094	629.600	39-144	630.850	39-194		
627.125	39-045	628.375	39-095	629.625	39-145	630.875	39-195		
627.150	39-046	628.400	39-096	629.650	39-146	630.900	39-196		
627.175	39-047	628.425	39-097	629.675	39-147	630.925	39-197		
627.200	39-048	628.450	39-098	629.700	39-148	630.950	39-198		
627.225	39-049	628.475	39-099	629.725	39-149	630.975	39-199		

Digital Terrestrial Television Broadcasting Channel number : 40 (632~638MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		633.250	40-050	634.500	40-100	635.750	40-150	637.000	40-200
632.025	40-001	633.275	40-051	634.525	40-101	635.775	40-151	637.025	40-201
632.050	40-002	633.300	40-052	634.550	40-102	635.800	40-152	637.050	40-202
632.075	40-003	633.325	40-053	634.575	40-103	635.825	40-153	637.075	40-203
632.100	40-004	633.350	40-054	634.600	40-104	635.850	40-154	637.100	40-204
632.125	40-005	633.375	40-055	634.625	40-105	635.875	40-155	637.125	40-205
632.150	40-006	633.400	40-056	634.650	40-106	635.900	40-156	637.150	40-206
632.175	40-007	633.425	40-057	634.675	40-107	635.925	40-157	637.175	40-207
632.200	40-008	633.450	40-058	634.700	40-108	635.950	40-158	637.200	40-208
632.225	40-009	633.475	40-059	634.725	40-109	635.975	40-159	637.225	40-209
632.250	40-010	633.500	40-060	634.750	40-110	636.000	40-160	637.250	40-210
632.275	40-011	633.525	40-061	634.775	40-111	636.025	40-161	637.275	40-211
632.300	40-012	633.550	40-062	634.800	40-112	636.050	40-162	637.300	40-212
632.325	40-013	633.575	40-063	634.825	40-113	636.075	40-163	637.325	40-213
632.350	40-014	633.600	40-064	634.850	40-114	636.100	40-164	637.350	40-214
632.375	40-015	633.625	40-065	634.875	40-115	636.125	40-165	637.375	40-215
632.400	40-016	633.650	40-066	634.900	40-116	636.150	40-166	637.400	40-216
632.425	40-017	633.675	40-067	634.925	40-117	636.175	40-167	637.425	40-217
632.450	40-018	633.700	40-068	634.950	40-118	636.200	40-168	637.450	40-218
632.475	40-019	633.725	40-069	634.975	40-119	636.225	40-169	637.475	40-219
632.500	40-020	633.750	40-070	635.000	40-120	636.250	40-170	637.500	40-220
632.525	40-021	633.775	40-071	635.025	40-121	636.275	40-171	637.525	40-221
632.550	40-022	633.800	40-072	635.050	40-122	636.300	40-172	637.550	40-222
632.575	40-023	633.825	40-073	635.075	40-123	636.325	40-173	637.575	40-223
632.600	40-024	633.850	40-074	635.100	40-124	636.350	40-174	637.600	40-224
632.625	40-025	633.875	40-075	635.125	40-125	636.375	40-175	637.625	40-225
632.650	40-026	633.900	40-076	635.150	40-126	636.400	40-176	637.650	40-226
632.675	40-027	633.925	40-077	635.175	40-127	636.425	40-177	637.675	40-227
632.700	40-028	633.950	40-078	635.200	40-128	636.450	40-178	637.700	40-228
632.725	40-029	633.975	40-079	635.225	40-129	636.475	40-179	637.725	40-229
632.750	40-030	634.000	40-080	635.250	40-130	636.500	40-180	637.750	40-230
632.775	40-031	634.025	40-081	635.275	40-131	636.525	40-181	637.775	40-231
632.800	40-032	634.050	40-082	635.300	40-132	636.550	40-182	637.800	40-232
632.825	40-033	634.075	40-083	635.325	40-133	636.575	40-183	637.825	40-233
632.850	40-034	634.100	40-084	635.350	40-134	636.600	40-184	637.850	40-234
632.875	40-035	634.125	40-085	635.375	40-135	636.625	40-185	637.875	40-235
632.900	40-036	634.150	40-086	635.400	40-136	636.650	40-186	637.900	40-236
632.925	40-037	634.175	40-087	635.425	40-137	636.675	40-187	637.925	40-237
632.950	40-038	634.200	40-088	635.450	40-138	636.700	40-188	637.950	40-238
632.975	40-039	634.225	40-089	635.475	40-139	636.725	40-189	637.975	40-239
633.000	40-040	634.250	40-090	635.500	40-140	636.750	40-190	638.000	40-240
633.025	40-041	634.275	40-091	635.525	40-141	636.775	40-191		
633.050	40-042	634.300	40-092	635.550	40-142	636.800	40-192		
633.075	40-043	634.325	40-093	635.575	40-143	636.825	40-193		
633.100	40-044	634.350	40-094	635.600	40-144	636.850	40-194		
633.125	40-045	634.375	40-095	635.625	40-145	636.875	40-195		
633.150	40-046	634.400	40-096	635.650	40-146	636.900	40-196		
633.175	40-047	634.425	40-097	635.675	40-147	636.925	40-197		
633.200	40-048	634.450	40-098	635.700	40-148	636.950	40-198		
633.225	40-049	634.475	40-099	635.725	40-149	636.975	40-199		

Digital Terrestrial Television Broadcasting Channel number : 41 (638~644MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		639.250	41-050	640.500	41-100	641.750	41-150	643.000	41-200
638.025	41-001	639.275	41-051	640.525	41-101	641.775	41-151	643.025	41-201
638.050	41-002	639.300	41-052	640.550	41-102	641.800	41-152	643.050	41-202
638.075	41-003	639.325	41-053	640.575	41-103	641.825	41-153	643.075	41-203
638.100	41-004	639.350	41-054	640.600	41-104	641.850	41-154	643.100	41-204
638.125	41-005	639.375	41-055	640.625	41-105	641.875	41-155	643.125	41-205
638.150	41-006	639.400	41-056	640.650	41-106	641.900	41-156	643.150	41-206
638.175	41-007	639.425	41-057	640.675	41-107	641.925	41-157	643.175	41-207
638.200	41-008	639.450	41-058	640.700	41-108	641.950	41-158	643.200	41-208
638.225	41-009	639.475	41-059	640.725	41-109	641.975	41-159	643.225	41-209
638.250	41-010	639.500	41-060	640.750	41-110	642.000	41-160	643.250	41-210
638.275	41-011	639.525	41-061	640.775	41-111	642.025	41-161	643.275	41-211
638.300	41-012	639.550	41-062	640.800	41-112	642.050	41-162	643.300	41-212
638.325	41-013	639.575	41-063	640.825	41-113	642.075	41-163	643.325	41-213
638.350	41-014	639.600	41-064	640.850	41-114	642.100	41-164	643.350	41-214
638.375	41-015	639.625	41-065	640.875	41-115	642.125	41-165	643.375	41-215
638.400	41-016	639.650	41-066	640.900	41-116	642.150	41-166	643.400	41-216
638.425	41-017	639.675	41-067	640.925	41-117	642.175	41-167	643.425	41-217
638.450	41-018	639.700	41-068	640.950	41-118	642.200	41-168	643.450	41-218
638.475	41-019	639.725	41-069	640.975	41-119	642.225	41-169	643.475	41-219
638.500	41-020	639.750	41-070	641.000	41-120	642.250	41-170	643.500	41-220
638.525	41-021	639.775	41-071	641.025	41-121	642.275	41-171	643.525	41-221
638.550	41-022	639.800	41-072	641.050	41-122	642.300	41-172	643.550	41-222
638.575	41-023	639.825	41-073	641.075	41-123	642.325	41-173	643.575	41-223
638.600	41-024	639.850	41-074	641.100	41-124	642.350	41-174	643.600	41-224
638.625	41-025	639.875	41-075	641.125	41-125	642.375	41-175	643.625	41-225
638.650	41-026	639.900	41-076	641.150	41-126	642.400	41-176	643.650	41-226
638.675	41-027	639.925	41-077	641.175	41-127	642.425	41-177	643.675	41-227
638.700	41-028	639.950	41-078	641.200	41-128	642.450	41-178	643.700	41-228
638.725	41-029	639.975	41-079	641.225	41-129	642.475	41-179	643.725	41-229
638.750	41-030	640.000	41-080	641.250	41-130	642.500	41-180	643.750	41-230
638.775	41-031	640.025	41-081	641.275	41-131	642.525	41-181	643.775	41-231
638.800	41-032	640.050	41-082	641.300	41-132	642.550	41-182	643.800	41-232
638.825	41-033	640.075	41-083	641.325	41-133	642.575	41-183	643.825	41-233
638.850	41-034	640.100	41-084	641.350	41-134	642.600	41-184	643.850	41-234
638.875	41-035	640.125	41-085	641.375	41-135	642.625	41-185	643.875	41-235
638.900	41-036	640.150	41-086	641.400	41-136	642.650	41-186	643.900	41-236
638.925	41-037	640.175	41-087	641.425	41-137	642.675	41-187	643.925	41-237
638.950	41-038	640.200	41-088	641.450	41-138	642.700	41-188	643.950	41-238
638.975	41-039	640.225	41-089	641.475	41-139	642.725	41-189	643.975	41-239
639.000	41-040	640.250	41-090	641.500	41-140	642.750	41-190	644.000	41-240
639.025	41-041	640.275	41-091	641.525	41-141	642.775	41-191		
639.050	41-042	640.300	41-092	641.550	41-142	642.800	41-192		
639.075	41-043	640.325	41-093	641.575	41-143	642.825	41-193		
639.100	41-044	640.350	41-094	641.600	41-144	642.850	41-194		
639.125	41-045	640.375	41-095	641.625	41-145	642.875	41-195		
639.150	41-046	640.400	41-096	641.650	41-146	642.900	41-196		
639.175	41-047	640.425	41-097	641.675	41-147	642.925	41-197		
639.200	41-048	640.450	41-098	641.700	41-148	642.950	41-198		
639.225	41-049	640.475	41-099	641.725	41-149	642.975	41-199		

Digital Terrestrial Television Broadcasting Channel number : 42 (644~650MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		645.250	42-050	646.500	42-100	647.750	42-150	649.000	42-200
644.025	42-001	645.275	42-051	646.525	42-101	647.775	42-151	649.025	42-201
644.050	42-002	645.300	42-052	646.550	42-102	647.800	42-152	649.050	42-202
644.075	42-003	645.325	42-053	646.575	42-103	647.825	42-153	649.075	42-203
644.100	42-004	645.350	42-054	646.600	42-104	647.850	42-154	649.100	42-204
644.125	42-005	645.375	42-055	646.625	42-105	647.875	42-155	649.125	42-205
644.150	42-006	645.400	42-056	646.650	42-106	647.900	42-156	649.150	42-206
644.175	42-007	645.425	42-057	646.675	42-107	647.925	42-157	649.175	42-207
644.200	42-008	645.450	42-058	646.700	42-108	647.950	42-158	649.200	42-208
644.225	42-009	645.475	42-059	646.725	42-109	647.975	42-159	649.225	42-209
644.250	42-010	645.500	42-060	646.750	42-110	648.000	42-160	649.250	42-210
644.275	42-011	645.525	42-061	646.775	42-111	648.025	42-161	649.275	42-211
644.300	42-012	645.550	42-062	646.800	42-112	648.050	42-162	649.300	42-212
644.325	42-013	645.575	42-063	646.825	42-113	648.075	42-163	649.325	42-213
644.350	42-014	645.600	42-064	646.850	42-114	648.100	42-164	649.350	42-214
644.375	42-015	645.625	42-065	646.875	42-115	648.125	42-165	649.375	42-215
644.400	42-016	645.650	42-066	646.900	42-116	648.150	42-166	649.400	42-216
644.425	42-017	645.675	42-067	646.925	42-117	648.175	42-167	649.425	42-217
644.450	42-018	645.700	42-068	646.950	42-118	648.200	42-168	649.450	42-218
644.475	42-019	645.725	42-069	646.975	42-119	648.225	42-169	649.475	42-219
644.500	42-020	645.750	42-070	647.000	42-120	648.250	42-170	649.500	42-220
644.525	42-021	645.775	42-071	647.025	42-121	648.275	42-171	649.525	42-221
644.550	42-022	645.800	42-072	647.050	42-122	648.300	42-172	649.550	42-222
644.575	42-023	645.825	42-073	647.075	42-123	648.325	42-173	649.575	42-223
644.600	42-024	645.850	42-074	647.100	42-124	648.350	42-174	649.600	42-224
644.625	42-025	645.875	42-075	647.125	42-125	648.375	42-175	649.625	42-225
644.650	42-026	645.900	42-076	647.150	42-126	648.400	42-176	649.650	42-226
644.675	42-027	645.925	42-077	647.175	42-127	648.425	42-177	649.675	42-227
644.700	42-028	645.950	42-078	647.200	42-128	648.450	42-178	649.700	42-228
644.725	42-029	645.975	42-079	647.225	42-129	648.475	42-179	649.725	42-229
644.750	42-030	646.000	42-080	647.250	42-130	648.500	42-180	649.750	42-230
644.775	42-031	646.025	42-081	647.275	42-131	648.525	42-181	649.775	42-231
644.800	42-032	646.050	42-082	647.300	42-132	648.550	42-182	649.800	42-232
644.825	42-033	646.075	42-083	647.325	42-133	648.575	42-183	649.825	42-233
644.850	42-034	646.100	42-084	647.350	42-134	648.600	42-184	649.850	42-234
644.875	42-035	646.125	42-085	647.375	42-135	648.625	42-185	649.875	42-235
644.900	42-036	646.150	42-086	647.400	42-136	648.650	42-186	649.900	42-236
644.925	42-037	646.175	42-087	647.425	42-137	648.675	42-187	649.925	42-237
644.950	42-038	646.200	42-088	647.450	42-138	648.700	42-188	649.950	42-238
644.975	42-039	646.225	42-089	647.475	42-139	648.725	42-189	649.975	42-239
645.000	42-040	646.250	42-090	647.500	42-140	648.750	42-190	650.000	42-240
645.025	42-041	646.275	42-091	647.525	42-141	648.775	42-191		
645.050	42-042	646.300	42-092	647.550	42-142	648.800	42-192		
645.075	42-043	646.325	42-093	647.575	42-143	648.825	42-193		
645.100	42-044	646.350	42-094	647.600	42-144	648.850	42-194		
645.125	42-045	646.375	42-095	647.625	42-145	648.875	42-195		
645.150	42-046	646.400	42-096	647.650	42-146	648.900	42-196		
645.175	42-047	646.425	42-097	647.675	42-147	648.925	42-197		
645.200	42-048	646.450	42-098	647.700	42-148	648.950	42-198		
645.225	42-049	646.475	42-099	647.725	42-149	648.975	42-199		

Digital Terrestrial Television Broadcasting Channel number : 43 (650~656MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		651.250	43-050	652.500	43-100	653.750	43-150	655.000	43-200
650.025	43-001	651.275	43-051	652.525	43-101	653.775	43-151	655.025	43-201
650.050	43-002	651.300	43-052	652.550	43-102	653.800	43-152	655.050	43-202
650.075	43-003	651.325	43-053	652.575	43-103	653.825	43-153	655.075	43-203
650.100	43-004	651.350	43-054	652.600	43-104	653.850	43-154	655.100	43-204
650.125	43-005	651.375	43-055	652.625	43-105	653.875	43-155	655.125	43-205
650.150	43-006	651.400	43-056	652.650	43-106	653.900	43-156	655.150	43-206
650.175	43-007	651.425	43-057	652.675	43-107	653.925	43-157	655.175	43-207
650.200	43-008	651.450	43-058	652.700	43-108	653.950	43-158	655.200	43-208
650.225	43-009	651.475	43-059	652.725	43-109	653.975	43-159	655.225	43-209
650.250	43-010	651.500	43-060	652.750	43-110	654.000	43-160	655.250	43-210
650.275	43-011	651.525	43-061	652.775	43-111	654.025	43-161	655.275	43-211
650.300	43-012	651.550	43-062	652.800	43-112	654.050	43-162	655.300	43-212
650.325	43-013	651.575	43-063	652.825	43-113	654.075	43-163	655.325	43-213
650.350	43-014	651.600	43-064	652.850	43-114	654.100	43-164	655.350	43-214
650.375	43-015	651.625	43-065	652.875	43-115	654.125	43-165	655.375	43-215
650.400	43-016	651.650	43-066	652.900	43-116	654.150	43-166	655.400	43-216
650.425	43-017	651.675	43-067	652.925	43-117	654.175	43-167	655.425	43-217
650.450	43-018	651.700	43-068	652.950	43-118	654.200	43-168	655.450	43-218
650.475	43-019	651.725	43-069	652.975	43-119	654.225	43-169	655.475	43-219
650.500	43-020	651.750	43-070	653.000	43-120	654.250	43-170	655.500	43-220
650.525	43-021	651.775	43-071	653.025	43-121	654.275	43-171	655.525	43-221
650.550	43-022	651.800	43-072	653.050	43-122	654.300	43-172	655.550	43-222
650.575	43-023	651.825	43-073	653.075	43-123	654.325	43-173	655.575	43-223
650.600	43-024	651.850	43-074	653.100	43-124	654.350	43-174	655.600	43-224
650.625	43-025	651.875	43-075	653.125	43-125	654.375	43-175	655.625	43-225
650.650	43-026	651.900	43-076	653.150	43-126	654.400	43-176	655.650	43-226
650.675	43-027	651.925	43-077	653.175	43-127	654.425	43-177	655.675	43-227
650.700	43-028	651.950	43-078	653.200	43-128	654.450	43-178	655.700	43-228
650.725	43-029	651.975	43-079	653.225	43-129	654.475	43-179	655.725	43-229
650.750	43-030	652.000	43-080	653.250	43-130	654.500	43-180	655.750	43-230
650.775	43-031	652.025	43-081	653.275	43-131	654.525	43-181	655.775	43-231
650.800	43-032	652.050	43-082	653.300	43-132	654.550	43-182	655.800	43-232
650.825	43-033	652.075	43-083	653.325	43-133	654.575	43-183	655.825	43-233
650.850	43-034	652.100	43-084	653.350	43-134	654.600	43-184	655.850	43-234
650.875	43-035	652.125	43-085	653.375	43-135	654.625	43-185	655.875	43-235
650.900	43-036	652.150	43-086	653.400	43-136	654.650	43-186	655.900	43-236
650.925	43-037	652.175	43-087	653.425	43-137	654.675	43-187	655.925	43-237
650.950	43-038	652.200	43-088	653.450	43-138	654.700	43-188	655.950	43-238
650.975	43-039	652.225	43-089	653.475	43-139	654.725	43-189	655.975	43-239
651.000	43-040	652.250	43-090	653.500	43-140	654.750	43-190	656.000	43-240
651.025	43-041	652.275	43-091	653.525	43-141	654.775	43-191		
651.050	43-042	652.300	43-092	653.550	43-142	654.800	43-192		
651.075	43-043	652.325	43-093	653.575	43-143	654.825	43-193		
651.100	43-044	652.350	43-094	653.600	43-144	654.850	43-194		
651.125	43-045	652.375	43-095	653.625	43-145	654.875	43-195		
651.150	43-046	652.400	43-096	653.650	43-146	654.900	43-196		
651.175	43-047	652.425	43-097	653.675	43-147	654.925	43-197		
651.200	43-048	652.450	43-098	653.700	43-148	654.950	43-198		
651.225	43-049	652.475	43-099	653.725	43-149	654.975	43-199		

Digital Terrestrial Television Broadcasting Channel number : 44 (656~662MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		657.250	44-050	658.500	44-100	659.750	44-150	661.000	44-200
656.025	44-001	657.275	44-051	658.525	44-101	659.775	44-151	661.025	44-201
656.050	44-002	657.300	44-052	658.550	44-102	659.800	44-152	661.050	44-202
656.075	44-003	657.325	44-053	658.575	44-103	659.825	44-153	661.075	44-203
656.100	44-004	657.350	44-054	658.600	44-104	659.850	44-154	661.100	44-204
656.125	44-005	657.375	44-055	658.625	44-105	659.875	44-155	661.125	44-205
656.150	44-006	657.400	44-056	658.650	44-106	659.900	44-156	661.150	44-206
656.175	44-007	657.425	44-057	658.675	44-107	659.925	44-157	661.175	44-207
656.200	44-008	657.450	44-058	658.700	44-108	659.950	44-158	661.200	44-208
656.225	44-009	657.475	44-059	658.725	44-109	659.975	44-159	661.225	44-209
656.250	44-010	657.500	44-060	658.750	44-110	660.000	44-160	661.250	44-210
656.275	44-011	657.525	44-061	658.775	44-111	660.025	44-161	661.275	44-211
656.300	44-012	657.550	44-062	658.800	44-112	660.050	44-162	661.300	44-212
656.325	44-013	657.575	44-063	658.825	44-113	660.075	44-163	661.325	44-213
656.350	44-014	657.600	44-064	658.850	44-114	660.100	44-164	661.350	44-214
656.375	44-015	657.625	44-065	658.875	44-115	660.125	44-165	661.375	44-215
656.400	44-016	657.650	44-066	658.900	44-116	660.150	44-166	661.400	44-216
656.425	44-017	657.675	44-067	658.925	44-117	660.175	44-167	661.425	44-217
656.450	44-018	657.700	44-068	658.950	44-118	660.200	44-168	661.450	44-218
656.475	44-019	657.725	44-069	658.975	44-119	660.225	44-169	661.475	44-219
656.500	44-020	657.750	44-070	659.000	44-120	660.250	44-170	661.500	44-220
656.525	44-021	657.775	44-071	659.025	44-121	660.275	44-171	661.525	44-221
656.550	44-022	657.800	44-072	659.050	44-122	660.300	44-172	661.550	44-222
656.575	44-023	657.825	44-073	659.075	44-123	660.325	44-173	661.575	44-223
656.600	44-024	657.850	44-074	659.100	44-124	660.350	44-174	661.600	44-224
656.625	44-025	657.875	44-075	659.125	44-125	660.375	44-175	661.625	44-225
656.650	44-026	657.900	44-076	659.150	44-126	660.400	44-176	661.650	44-226
656.675	44-027	657.925	44-077	659.175	44-127	660.425	44-177	661.675	44-227
656.700	44-028	657.950	44-078	659.200	44-128	660.450	44-178	661.700	44-228
656.725	44-029	657.975	44-079	659.225	44-129	660.475	44-179	661.725	44-229
656.750	44-030	658.000	44-080	659.250	44-130	660.500	44-180	661.750	44-230
656.775	44-031	658.025	44-081	659.275	44-131	660.525	44-181	661.775	44-231
656.800	44-032	658.050	44-082	659.300	44-132	660.550	44-182	661.800	44-232
656.825	44-033	658.075	44-083	659.325	44-133	660.575	44-183	661.825	44-233
656.850	44-034	658.100	44-084	659.350	44-134	660.600	44-184	661.850	44-234
656.875	44-035	658.125	44-085	659.375	44-135	660.625	44-185	661.875	44-235
656.900	44-036	658.150	44-086	659.400	44-136	660.650	44-186	661.900	44-236
656.925	44-037	658.175	44-087	659.425	44-137	660.675	44-187	661.925	44-237
656.950	44-038	658.200	44-088	659.450	44-138	660.700	44-188	661.950	44-238
656.975	44-039	658.225	44-089	659.475	44-139	660.725	44-189	661.975	44-239
657.000	44-040	658.250	44-090	659.500	44-140	660.750	44-190	662.000	44-240
657.025	44-041	658.275	44-091	659.525	44-141	660.775	44-191		
657.050	44-042	658.300	44-092	659.550	44-142	660.800	44-192		
657.075	44-043	658.325	44-093	659.575	44-143	660.825	44-193		
657.100	44-044	658.350	44-094	659.600	44-144	660.850	44-194		
657.125	44-045	658.375	44-095	659.625	44-145	660.875	44-195		
657.150	44-046	658.400	44-096	659.650	44-146	660.900	44-196		
657.175	44-047	658.425	44-097	659.675	44-147	660.925	44-197		
657.200	44-048	658.450	44-098	659.700	44-148	660.950	44-198		
657.225	44-049	658.475	44-099	659.725	44-149	660.975	44-199		

Digital Terrestrial Television Broadcasting Channel number : 45 (662~668MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		663.250	45-050	664.500	45-100	665.750	45-150	667.000	45-200
662.025	45-001	663.275	45-051	664.525	45-101	665.775	45-151	667.025	45-201
662.050	45-002	663.300	45-052	664.550	45-102	665.800	45-152	667.050	45-202
662.075	45-003	663.325	45-053	664.575	45-103	665.825	45-153	667.075	45-203
662.100	45-004	663.350	45-054	664.600	45-104	665.850	45-154	667.100	45-204
662.125	45-005	663.375	45-055	664.625	45-105	665.875	45-155	667.125	45-205
662.150	45-006	663.400	45-056	664.650	45-106	665.900	45-156	667.150	45-206
662.175	45-007	663.425	45-057	664.675	45-107	665.925	45-157	667.175	45-207
662.200	45-008	663.450	45-058	664.700	45-108	665.950	45-158	667.200	45-208
662.225	45-009	663.475	45-059	664.725	45-109	665.975	45-159	667.225	45-209
662.250	45-010	663.500	45-060	664.750	45-110	666.000	45-160	667.250	45-210
662.275	45-011	663.525	45-061	664.775	45-111	666.025	45-161	667.275	45-211
662.300	45-012	663.550	45-062	664.800	45-112	666.050	45-162	667.300	45-212
662.325	45-013	663.575	45-063	664.825	45-113	666.075	45-163	667.325	45-213
662.350	45-014	663.600	45-064	664.850	45-114	666.100	45-164	667.350	45-214
662.375	45-015	663.625	45-065	664.875	45-115	666.125	45-165	667.375	45-215
662.400	45-016	663.650	45-066	664.900	45-116	666.150	45-166	667.400	45-216
662.425	45-017	663.675	45-067	664.925	45-117	666.175	45-167	667.425	45-217
662.450	45-018	663.700	45-068	664.950	45-118	666.200	45-168	667.450	45-218
662.475	45-019	663.725	45-069	664.975	45-119	666.225	45-169	667.475	45-219
662.500	45-020	663.750	45-070	665.000	45-120	666.250	45-170	667.500	45-220
662.525	45-021	663.775	45-071	665.025	45-121	666.275	45-171	667.525	45-221
662.550	45-022	663.800	45-072	665.050	45-122	666.300	45-172	667.550	45-222
662.575	45-023	663.825	45-073	665.075	45-123	666.325	45-173	667.575	45-223
662.600	45-024	663.850	45-074	665.100	45-124	666.350	45-174	667.600	45-224
662.625	45-025	663.875	45-075	665.125	45-125	666.375	45-175	667.625	45-225
662.650	45-026	663.900	45-076	665.150	45-126	666.400	45-176	667.650	45-226
662.675	45-027	663.925	45-077	665.175	45-127	666.425	45-177	667.675	45-227
662.700	45-028	663.950	45-078	665.200	45-128	666.450	45-178	667.700	45-228
662.725	45-029	663.975	45-079	665.225	45-129	666.475	45-179	667.725	45-229
662.750	45-030	664.000	45-080	665.250	45-130	666.500	45-180	667.750	45-230
662.775	45-031	664.025	45-081	665.275	45-131	666.525	45-181	667.775	45-231
662.800	45-032	664.050	45-082	665.300	45-132	666.550	45-182	667.800	45-232
662.825	45-033	664.075	45-083	665.325	45-133	666.575	45-183	667.825	45-233
662.850	45-034	664.100	45-084	665.350	45-134	666.600	45-184	667.850	45-234
662.875	45-035	664.125	45-085	665.375	45-135	666.625	45-185	667.875	45-235
662.900	45-036	664.150	45-086	665.400	45-136	666.650	45-186	667.900	45-236
662.925	45-037	664.175	45-087	665.425	45-137	666.675	45-187	667.925	45-237
662.950	45-038	664.200	45-088	665.450	45-138	666.700	45-188	667.950	45-238
662.975	45-039	664.225	45-089	665.475	45-139	666.725	45-189	667.975	45-239
663.000	45-040	664.250	45-090	665.500	45-140	666.750	45-190	668.000	45-240
663.025	45-041	664.275	45-091	665.525	45-141	666.775	45-191		
663.050	45-042	664.300	45-092	665.550	45-142	666.800	45-192		
663.075	45-043	664.325	45-093	665.575	45-143	666.825	45-193		
663.100	45-044	664.350	45-094	665.600	45-144	666.850	45-194		
663.125	45-045	664.375	45-095	665.625	45-145	666.875	45-195		
663.150	45-046	664.400	45-096	665.650	45-146	666.900	45-196		
663.175	45-047	664.425	45-097	665.675	45-147	666.925	45-197		
663.200	45-048	664.450	45-098	665.700	45-148	666.950	45-198		
663.225	45-049	664.475	45-099	665.725	45-149	666.975	45-199		

Digital Terrestrial Television Broadcasting Channel number : 46 (668~674MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		669.250	46-050	670.500	46-100	671.750	46-150	673.000	46-200
668.025	46-001	669.275	46-051	670.525	46-101	671.775	46-151	673.025	46-201
668.050	46-002	669.300	46-052	670.550	46-102	671.800	46-152	673.050	46-202
668.075	46-003	669.325	46-053	670.575	46-103	671.825	46-153	673.075	46-203
668.100	46-004	669.350	46-054	670.600	46-104	671.850	46-154	673.100	46-204
668.125	46-005	669.375	46-055	670.625	46-105	671.875	46-155	673.125	46-205
668.150	46-006	669.400	46-056	670.650	46-106	671.900	46-156	673.150	46-206
668.175	46-007	669.425	46-057	670.675	46-107	671.925	46-157	673.175	46-207
668.200	46-008	669.450	46-058	670.700	46-108	671.950	46-158	673.200	46-208
668.225	46-009	669.475	46-059	670.725	46-109	671.975	46-159	673.225	46-209
668.250	46-010	669.500	46-060	670.750	46-110	672.000	46-160	673.250	46-210
668.275	46-011	669.525	46-061	670.775	46-111	672.025	46-161	673.275	46-211
668.300	46-012	669.550	46-062	670.800	46-112	672.050	46-162	673.300	46-212
668.325	46-013	669.575	46-063	670.825	46-113	672.075	46-163	673.325	46-213
668.350	46-014	669.600	46-064	670.850	46-114	672.100	46-164	673.350	46-214
668.375	46-015	669.625	46-065	670.875	46-115	672.125	46-165	673.375	46-215
668.400	46-016	669.650	46-066	670.900	46-116	672.150	46-166	673.400	46-216
668.425	46-017	669.675	46-067	670.925	46-117	672.175	46-167	673.425	46-217
668.450	46-018	669.700	46-068	670.950	46-118	672.200	46-168	673.450	46-218
668.475	46-019	669.725	46-069	670.975	46-119	672.225	46-169	673.475	46-219
668.500	46-020	669.750	46-070	671.000	46-120	672.250	46-170	673.500	46-220
668.525	46-021	669.775	46-071	671.025	46-121	672.275	46-171	673.525	46-221
668.550	46-022	669.800	46-072	671.050	46-122	672.300	46-172	673.550	46-222
668.575	46-023	669.825	46-073	671.075	46-123	672.325	46-173	673.575	46-223
668.600	46-024	669.850	46-074	671.100	46-124	672.350	46-174	673.600	46-224
668.625	46-025	669.875	46-075	671.125	46-125	672.375	46-175	673.625	46-225
668.650	46-026	669.900	46-076	671.150	46-126	672.400	46-176	673.650	46-226
668.675	46-027	669.925	46-077	671.175	46-127	672.425	46-177	673.675	46-227
668.700	46-028	669.950	46-078	671.200	46-128	672.450	46-178	673.700	46-228
668.725	46-029	669.975	46-079	671.225	46-129	672.475	46-179	673.725	46-229
668.750	46-030	670.000	46-080	671.250	46-130	672.500	46-180	673.750	46-230
668.775	46-031	670.025	46-081	671.275	46-131	672.525	46-181	673.775	46-231
668.800	46-032	670.050	46-082	671.300	46-132	672.550	46-182	673.800	46-232
668.825	46-033	670.075	46-083	671.325	46-133	672.575	46-183	673.825	46-233
668.850	46-034	670.100	46-084	671.350	46-134	672.600	46-184	673.850	46-234
668.875	46-035	670.125	46-085	671.375	46-135	672.625	46-185	673.875	46-235
668.900	46-036	670.150	46-086	671.400	46-136	672.650	46-186	673.900	46-236
668.925	46-037	670.175	46-087	671.425	46-137	672.675	46-187	673.925	46-237
668.950	46-038	670.200	46-088	671.450	46-138	672.700	46-188	673.950	46-238
668.975	46-039	670.225	46-089	671.475	46-139	672.725	46-189	673.975	46-239
669.000	46-040	670.250	46-090	671.500	46-140	672.750	46-190	674.000	46-240
669.025	46-041	670.275	46-091	671.525	46-141	672.775	46-191		
669.050	46-042	670.300	46-092	671.550	46-142	672.800	46-192		
669.075	46-043	670.325	46-093	671.575	46-143	672.825	46-193		
669.100	46-044	670.350	46-094	671.600	46-144	672.850	46-194		
669.125	46-045	670.375	46-095	671.625	46-145	672.875	46-195		
669.150	46-046	670.400	46-096	671.650	46-146	672.900	46-196		
669.175	46-047	670.425	46-097	671.675	46-147	672.925	46-197		
669.200	46-048	670.450	46-098	671.700	46-148	672.950	46-198		
669.225	46-049	670.475	46-099	671.725	46-149	672.975	46-199		

Digital Terrestrial Television Broadcasting Channel number : 47 (674~680MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		675.250	47-050	676.500	47-100	677.750	47-150	679.000	47-200
674.025	47-001	675.275	47-051	676.525	47-101	677.775	47-151	679.025	47-201
674.050	47-002	675.300	47-052	676.550	47-102	677.800	47-152	679.050	47-202
674.075	47-003	675.325	47-053	676.575	47-103	677.825	47-153	679.075	47-203
674.100	47-004	675.350	47-054	676.600	47-104	677.850	47-154	679.100	47-204
674.125	47-005	675.375	47-055	676.625	47-105	677.875	47-155	679.125	47-205
674.150	47-006	675.400	47-056	676.650	47-106	677.900	47-156	679.150	47-206
674.175	47-007	675.425	47-057	676.675	47-107	677.925	47-157	679.175	47-207
674.200	47-008	675.450	47-058	676.700	47-108	677.950	47-158	679.200	47-208
674.225	47-009	675.475	47-059	676.725	47-109	677.975	47-159	679.225	47-209
674.250	47-010	675.500	47-060	676.750	47-110	678.000	47-160	679.250	47-210
674.275	47-011	675.525	47-061	676.775	47-111	678.025	47-161	679.275	47-211
674.300	47-012	675.550	47-062	676.800	47-112	678.050	47-162	679.300	47-212
674.325	47-013	675.575	47-063	676.825	47-113	678.075	47-163	679.325	47-213
674.350	47-014	675.600	47-064	676.850	47-114	678.100	47-164	679.350	47-214
674.375	47-015	675.625	47-065	676.875	47-115	678.125	47-165	679.375	47-215
674.400	47-016	675.650	47-066	676.900	47-116	678.150	47-166	679.400	47-216
674.425	47-017	675.675	47-067	676.925	47-117	678.175	47-167	679.425	47-217
674.450	47-018	675.700	47-068	676.950	47-118	678.200	47-168	679.450	47-218
674.475	47-019	675.725	47-069	676.975	47-119	678.225	47-169	679.475	47-219
674.500	47-020	675.750	47-070	677.000	47-120	678.250	47-170	679.500	47-220
674.525	47-021	675.775	47-071	677.025	47-121	678.275	47-171	679.525	47-221
674.550	47-022	675.800	47-072	677.050	47-122	678.300	47-172	679.550	47-222
674.575	47-023	675.825	47-073	677.075	47-123	678.325	47-173	679.575	47-223
674.600	47-024	675.850	47-074	677.100	47-124	678.350	47-174	679.600	47-224
674.625	47-025	675.875	47-075	677.125	47-125	678.375	47-175	679.625	47-225
674.650	47-026	675.900	47-076	677.150	47-126	678.400	47-176	679.650	47-226
674.675	47-027	675.925	47-077	677.175	47-127	678.425	47-177	679.675	47-227
674.700	47-028	675.950	47-078	677.200	47-128	678.450	47-178	679.700	47-228
674.725	47-029	675.975	47-079	677.225	47-129	678.475	47-179	679.725	47-229
674.750	47-030	676.000	47-080	677.250	47-130	678.500	47-180	679.750	47-230
674.775	47-031	676.025	47-081	677.275	47-131	678.525	47-181	679.775	47-231
674.800	47-032	676.050	47-082	677.300	47-132	678.550	47-182	679.800	47-232
674.825	47-033	676.075	47-083	677.325	47-133	678.575	47-183	679.825	47-233
674.850	47-034	676.100	47-084	677.350	47-134	678.600	47-184	679.850	47-234
674.875	47-035	676.125	47-085	677.375	47-135	678.625	47-185	679.875	47-235
674.900	47-036	676.150	47-086	677.400	47-136	678.650	47-186	679.900	47-236
674.925	47-037	676.175	47-087	677.425	47-137	678.675	47-187	679.925	47-237
674.950	47-038	676.200	47-088	677.450	47-138	678.700	47-188	679.950	47-238
674.975	47-039	676.225	47-089	677.475	47-139	678.725	47-189	679.975	47-239
675.000	47-040	676.250	47-090	677.500	47-140	678.750	47-190	680.000	47-240
675.025	47-041	676.275	47-091	677.525	47-141	678.775	47-191		
675.050	47-042	676.300	47-092	677.550	47-142	678.800	47-192		
675.075	47-043	676.325	47-093	677.575	47-143	678.825	47-193		
675.100	47-044	676.350	47-094	677.600	47-144	678.850	47-194		
675.125	47-045	676.375	47-095	677.625	47-145	678.875	47-195		
675.150	47-046	676.400	47-096	677.650	47-146	678.900	47-196		
675.175	47-047	676.425	47-097	677.675	47-147	678.925	47-197		
675.200	47-048	676.450	47-098	677.700	47-148	678.950	47-198		
675.225	47-049	676.475	47-099	677.725	47-149	678.975	47-199		

Digital Terrestrial Television Broadcasting Channel number : 48 (680~686MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		681.250	48-050	682.500	48-100	683.750	48-150	685.000	48-200
680.025	48-001	681.275	48-051	682.525	48-101	683.775	48-151	685.025	48-201
680.050	48-002	681.300	48-052	682.550	48-102	683.800	48-152	685.050	48-202
680.075	48-003	681.325	48-053	682.575	48-103	683.825	48-153	685.075	48-203
680.100	48-004	681.350	48-054	682.600	48-104	683.850	48-154	685.100	48-204
680.125	48-005	681.375	48-055	682.625	48-105	683.875	48-155	685.125	48-205
680.150	48-006	681.400	48-056	682.650	48-106	683.900	48-156	685.150	48-206
680.175	48-007	681.425	48-057	682.675	48-107	683.925	48-157	685.175	48-207
680.200	48-008	681.450	48-058	682.700	48-108	683.950	48-158	685.200	48-208
680.225	48-009	681.475	48-059	682.725	48-109	683.975	48-159	685.225	48-209
680.250	48-010	681.500	48-060	682.750	48-110	684.000	48-160	685.250	48-210
680.275	48-011	681.525	48-061	682.775	48-111	684.025	48-161	685.275	48-211
680.300	48-012	681.550	48-062	682.800	48-112	684.050	48-162	685.300	48-212
680.325	48-013	681.575	48-063	682.825	48-113	684.075	48-163	685.325	48-213
680.350	48-014	681.600	48-064	682.850	48-114	684.100	48-164	685.350	48-214
680.375	48-015	681.625	48-065	682.875	48-115	684.125	48-165	685.375	48-215
680.400	48-016	681.650	48-066	682.900	48-116	684.150	48-166	685.400	48-216
680.425	48-017	681.675	48-067	682.925	48-117	684.175	48-167	685.425	48-217
680.450	48-018	681.700	48-068	682.950	48-118	684.200	48-168	685.450	48-218
680.475	48-019	681.725	48-069	682.975	48-119	684.225	48-169	685.475	48-219
680.500	48-020	681.750	48-070	683.000	48-120	684.250	48-170	685.500	48-220
680.525	48-021	681.775	48-071	683.025	48-121	684.275	48-171	685.525	48-221
680.550	48-022	681.800	48-072	683.050	48-122	684.300	48-172	685.550	48-222
680.575	48-023	681.825	48-073	683.075	48-123	684.325	48-173	685.575	48-223
680.600	48-024	681.850	48-074	683.100	48-124	684.350	48-174	685.600	48-224
680.625	48-025	681.875	48-075	683.125	48-125	684.375	48-175	685.625	48-225
680.650	48-026	681.900	48-076	683.150	48-126	684.400	48-176	685.650	48-226
680.675	48-027	681.925	48-077	683.175	48-127	684.425	48-177	685.675	48-227
680.700	48-028	681.950	48-078	683.200	48-128	684.450	48-178	685.700	48-228
680.725	48-029	681.975	48-079	683.225	48-129	684.475	48-179	685.725	48-229
680.750	48-030	682.000	48-080	683.250	48-130	684.500	48-180	685.750	48-230
680.775	48-031	682.025	48-081	683.275	48-131	684.525	48-181	685.775	48-231
680.800	48-032	682.050	48-082	683.300	48-132	684.550	48-182	685.800	48-232
680.825	48-033	682.075	48-083	683.325	48-133	684.575	48-183	685.825	48-233
680.850	48-034	682.100	48-084	683.350	48-134	684.600	48-184	685.850	48-234
680.875	48-035	682.125	48-085	683.375	48-135	684.625	48-185	685.875	48-235
680.900	48-036	682.150	48-086	683.400	48-136	684.650	48-186	685.900	48-236
680.925	48-037	682.175	48-087	683.425	48-137	684.675	48-187	685.925	48-237
680.950	48-038	682.200	48-088	683.450	48-138	684.700	48-188	685.950	48-238
680.975	48-039	682.225	48-089	683.475	48-139	684.725	48-189	685.975	48-239
681.000	48-040	682.250	48-090	683.500	48-140	684.750	48-190	686.000	48-240
681.025	48-041	682.275	48-091	683.525	48-141	684.775	48-191		
681.050	48-042	682.300	48-092	683.550	48-142	684.800	48-192		
681.075	48-043	682.325	48-093	683.575	48-143	684.825	48-193		
681.100	48-044	682.350	48-094	683.600	48-144	684.850	48-194		
681.125	48-045	682.375	48-095	683.625	48-145	684.875	48-195		
681.150	48-046	682.400	48-096	683.650	48-146	684.900	48-196		
681.175	48-047	682.425	48-097	683.675	48-147	684.925	48-197		
681.200	48-048	682.450	48-098	683.700	48-148	684.950	48-198		
681.225	48-049	682.475	48-099	683.725	48-149	684.975	48-199		

Digital Terrestrial Television Broadcasting Channel number : 49 (686~692MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		687.250	49-050	688.500	49-100	689.750	49-150	691.000	49-200
686.025	49-001	687.275	49-051	688.525	49-101	689.775	49-151	691.025	49-201
686.050	49-002	687.300	49-052	688.550	49-102	689.800	49-152	691.050	49-202
686.075	49-003	687.325	49-053	688.575	49-103	689.825	49-153	691.075	49-203
686.100	49-004	687.350	49-054	688.600	49-104	689.850	49-154	691.100	49-204
686.125	49-005	687.375	49-055	688.625	49-105	689.875	49-155	691.125	49-205
686.150	49-006	687.400	49-056	688.650	49-106	689.900	49-156	691.150	49-206
686.175	49-007	687.425	49-057	688.675	49-107	689.925	49-157	691.175	49-207
686.200	49-008	687.450	49-058	688.700	49-108	689.950	49-158	691.200	49-208
686.225	49-009	687.475	49-059	688.725	49-109	689.975	49-159	691.225	49-209
686.250	49-010	687.500	49-060	688.750	49-110	690.000	49-160	691.250	49-210
686.275	49-011	687.525	49-061	688.775	49-111	690.025	49-161	691.275	49-211
686.300	49-012	687.550	49-062	688.800	49-112	690.050	49-162	691.300	49-212
686.325	49-013	687.575	49-063	688.825	49-113	690.075	49-163	691.325	49-213
686.350	49-014	687.600	49-064	688.850	49-114	690.100	49-164	691.350	49-214
686.375	49-015	687.625	49-065	688.875	49-115	690.125	49-165	691.375	49-215
686.400	49-016	687.650	49-066	688.900	49-116	690.150	49-166	691.400	49-216
686.425	49-017	687.675	49-067	688.925	49-117	690.175	49-167	691.425	49-217
686.450	49-018	687.700	49-068	688.950	49-118	690.200	49-168	691.450	49-218
686.475	49-019	687.725	49-069	688.975	49-119	690.225	49-169	691.475	49-219
686.500	49-020	687.750	49-070	689.000	49-120	690.250	49-170	691.500	49-220
686.525	49-021	687.775	49-071	689.025	49-121	690.275	49-171	691.525	49-221
686.550	49-022	687.800	49-072	689.050	49-122	690.300	49-172	691.550	49-222
686.575	49-023	687.825	49-073	689.075	49-123	690.325	49-173	691.575	49-223
686.600	49-024	687.850	49-074	689.100	49-124	690.350	49-174	691.600	49-224
686.625	49-025	687.875	49-075	689.125	49-125	690.375	49-175	691.625	49-225
686.650	49-026	687.900	49-076	689.150	49-126	690.400	49-176	691.650	49-226
686.675	49-027	687.925	49-077	689.175	49-127	690.425	49-177	691.675	49-227
686.700	49-028	687.950	49-078	689.200	49-128	690.450	49-178	691.700	49-228
686.725	49-029	687.975	49-079	689.225	49-129	690.475	49-179	691.725	49-229
686.750	49-030	688.000	49-080	689.250	49-130	690.500	49-180	691.750	49-230
686.775	49-031	688.025	49-081	689.275	49-131	690.525	49-181	691.775	49-231
686.800	49-032	688.050	49-082	689.300	49-132	690.550	49-182	691.800	49-232
686.825	49-033	688.075	49-083	689.325	49-133	690.575	49-183	691.825	49-233
686.850	49-034	688.100	49-084	689.350	49-134	690.600	49-184	691.850	49-234
686.875	49-035	688.125	49-085	689.375	49-135	690.625	49-185	691.875	49-235
686.900	49-036	688.150	49-086	689.400	49-136	690.650	49-186	691.900	49-236
686.925	49-037	688.175	49-087	689.425	49-137	690.675	49-187	691.925	49-237
686.950	49-038	688.200	49-088	689.450	49-138	690.700	49-188	691.950	49-238
686.975	49-039	688.225	49-089	689.475	49-139	690.725	49-189	691.975	49-239
687.000	49-040	688.250	49-090	689.500	49-140	690.750	49-190	692.000	49-240
687.025	49-041	688.275	49-091	689.525	49-141	690.775	49-191		
687.050	49-042	688.300	49-092	689.550	49-142	690.800	49-192		
687.075	49-043	688.325	49-093	689.575	49-143	690.825	49-193		
687.100	49-044	688.350	49-094	689.600	49-144	690.850	49-194		
687.125	49-045	688.375	49-095	689.625	49-145	690.875	49-195		
687.150	49-046	688.400	49-096	689.650	49-146	690.900	49-196		
687.175	49-047	688.425	49-097	689.675	49-147	690.925	49-197		
687.200	49-048	688.450	49-098	689.700	49-148	690.950	49-198		
687.225	49-049	688.475	49-099	689.725	49-149	690.975	49-199		

Digital Terrestrial Television Broadcasting Channel number : 50 (692~698MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		693.250	50-050	694.500	50-100	695.750	50-150	697.000	50-200
692.025	50-001	693.275	50-051	694.525	50-101	695.775	50-151	697.025	50-201
692.050	50-002	693.300	50-052	694.550	50-102	695.800	50-152	697.050	50-202
692.075	50-003	693.325	50-053	694.575	50-103	695.825	50-153	697.075	50-203
692.100	50-004	693.350	50-054	694.600	50-104	695.850	50-154	697.100	50-204
692.125	50-005	693.375	50-055	694.625	50-105	695.875	50-155	697.125	50-205
692.150	50-006	693.400	50-056	694.650	50-106	695.900	50-156	697.150	50-206
692.175	50-007	693.425	50-057	694.675	50-107	695.925	50-157	697.175	50-207
692.200	50-008	693.450	50-058	694.700	50-108	695.950	50-158	697.200	50-208
692.225	50-009	693.475	50-059	694.725	50-109	695.975	50-159	697.225	50-209
692.250	50-010	693.500	50-060	694.750	50-110	696.000	50-160	697.250	50-210
692.275	50-011	693.525	50-061	694.775	50-111	696.025	50-161	697.275	50-211
692.300	50-012	693.550	50-062	694.800	50-112	696.050	50-162	697.300	50-212
692.325	50-013	693.575	50-063	694.825	50-113	696.075	50-163	697.325	50-213
692.350	50-014	693.600	50-064	694.850	50-114	696.100	50-164	697.350	50-214
692.375	50-015	693.625	50-065	694.875	50-115	696.125	50-165	697.375	50-215
692.400	50-016	693.650	50-066	694.900	50-116	696.150	50-166	697.400	50-216
692.425	50-017	693.675	50-067	694.925	50-117	696.175	50-167	697.425	50-217
692.450	50-018	693.700	50-068	694.950	50-118	696.200	50-168	697.450	50-218
692.475	50-019	693.725	50-069	694.975	50-119	696.225	50-169	697.475	50-219
692.500	50-020	693.750	50-070	695.000	50-120	696.250	50-170	697.500	50-220
692.525	50-021	693.775	50-071	695.025	50-121	696.275	50-171	697.525	50-221
692.550	50-022	693.800	50-072	695.050	50-122	696.300	50-172	697.550	50-222
692.575	50-023	693.825	50-073	695.075	50-123	696.325	50-173	697.575	50-223
692.600	50-024	693.850	50-074	695.100	50-124	696.350	50-174	697.600	50-224
692.625	50-025	693.875	50-075	695.125	50-125	696.375	50-175	697.625	50-225
692.650	50-026	693.900	50-076	695.150	50-126	696.400	50-176	697.650	50-226
692.675	50-027	693.925	50-077	695.175	50-127	696.425	50-177	697.675	50-227
692.700	50-028	693.950	50-078	695.200	50-128	696.450	50-178	697.700	50-228
692.725	50-029	693.975	50-079	695.225	50-129	696.475	50-179	697.725	50-229
692.750	50-030	694.000	50-080	695.250	50-130	696.500	50-180	697.750	50-230
692.775	50-031	694.025	50-081	695.275	50-131	696.525	50-181	697.775	50-231
692.800	50-032	694.050	50-082	695.300	50-132	696.550	50-182	697.800	50-232
692.825	50-033	694.075	50-083	695.325	50-133	696.575	50-183	697.825	50-233
692.850	50-034	694.100	50-084	695.350	50-134	696.600	50-184	697.850	50-234
692.875	50-035	694.125	50-085	695.375	50-135	696.625	50-185	697.875	50-235
692.900	50-036	694.150	50-086	695.400	50-136	696.650	50-186	697.900	50-236
692.925	50-037	694.175	50-087	695.425	50-137	696.675	50-187	697.925	50-237
692.950	50-038	694.200	50-088	695.450	50-138	696.700	50-188	697.950	50-238
692.975	50-039	694.225	50-089	695.475	50-139	696.725	50-189	697.975	50-239
693.000	50-040	694.250	50-090	695.500	50-140	696.750	50-190	698.000	50-240
693.025	50-041	694.275	50-091	695.525	50-141	696.775	50-191		
693.050	50-042	694.300	50-092	695.550	50-142	696.800	50-192		
693.075	50-043	694.325	50-093	695.575	50-143	696.825	50-193		
693.100	50-044	694.350	50-094	695.600	50-144	696.850	50-194		
693.125	50-045	694.375	50-095	695.625	50-145	696.875	50-195		
693.150	50-046	694.400	50-096	695.650	50-146	696.900	50-196		
693.175	50-047	694.425	50-097	695.675	50-147	696.925	50-197		
693.200	50-048	694.450	50-098	695.700	50-148	696.950	50-198		
693.225	50-049	694.475	50-099	695.725	50-149	696.975	50-199		

Digital Terrestrial Television Broadcasting Channel number : 51 (698~704MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		699.250	51-050	700.500	51-100	701.750	51-150	703.000	51-200
698.025	51-001	699.275	51-051	700.525	51-101	701.775	51-151	703.025	51-201
698.050	51-002	699.300	51-052	700.550	51-102	701.800	51-152	703.050	51-202
698.075	51-003	699.325	51-053	700.575	51-103	701.825	51-153	703.075	51-203
698.100	51-004	699.350	51-054	700.600	51-104	701.850	51-154	703.100	51-204
698.125	51-005	699.375	51-055	700.625	51-105	701.875	51-155	703.125	51-205
698.150	51-006	699.400	51-056	700.650	51-106	701.900	51-156	703.150	51-206
698.175	51-007	699.425	51-057	700.675	51-107	701.925	51-157	703.175	51-207
698.200	51-008	699.450	51-058	700.700	51-108	701.950	51-158	703.200	51-208
698.225	51-009	699.475	51-059	700.725	51-109	701.975	51-159	703.225	51-209
698.250	51-010	699.500	51-060	700.750	51-110	702.000	51-160	703.250	51-210
698.275	51-011	699.525	51-061	700.775	51-111	702.025	51-161	703.275	51-211
698.300	51-012	699.550	51-062	700.800	51-112	702.050	51-162	703.300	51-212
698.325	51-013	699.575	51-063	700.825	51-113	702.075	51-163	703.325	51-213
698.350	51-014	699.600	51-064	700.850	51-114	702.100	51-164	703.350	51-214
698.375	51-015	699.625	51-065	700.875	51-115	702.125	51-165	703.375	51-215
698.400	51-016	699.650	51-066	700.900	51-116	702.150	51-166	703.400	51-216
698.425	51-017	699.675	51-067	700.925	51-117	702.175	51-167	703.425	51-217
698.450	51-018	699.700	51-068	700.950	51-118	702.200	51-168	703.450	51-218
698.475	51-019	699.725	51-069	700.975	51-119	702.225	51-169	703.475	51-219
698.500	51-020	699.750	51-070	701.000	51-120	702.250	51-170	703.500	51-220
698.525	51-021	699.775	51-071	701.025	51-121	702.275	51-171	703.525	51-221
698.550	51-022	699.800	51-072	701.050	51-122	702.300	51-172	703.550	51-222
698.575	51-023	699.825	51-073	701.075	51-123	702.325	51-173	703.575	51-223
698.600	51-024	699.850	51-074	701.100	51-124	702.350	51-174	703.600	51-224
698.625	51-025	699.875	51-075	701.125	51-125	702.375	51-175	703.625	51-225
698.650	51-026	699.900	51-076	701.150	51-126	702.400	51-176	703.650	51-226
698.675	51-027	699.925	51-077	701.175	51-127	702.425	51-177	703.675	51-227
698.700	51-028	699.950	51-078	701.200	51-128	702.450	51-178	703.700	51-228
698.725	51-029	699.975	51-079	701.225	51-129	702.475	51-179	703.725	51-229
698.750	51-030	700.000	51-080	701.250	51-130	702.500	51-180	703.750	51-230
698.775	51-031	700.025	51-081	701.275	51-131	702.525	51-181	703.775	51-231
698.800	51-032	700.050	51-082	701.300	51-132	702.550	51-182	703.800	51-232
698.825	51-033	700.075	51-083	701.325	51-133	702.575	51-183	703.825	51-233
698.850	51-034	700.100	51-084	701.350	51-134	702.600	51-184	703.850	51-234
698.875	51-035	700.125	51-085	701.375	51-135	702.625	51-185	703.875	51-235
698.900	51-036	700.150	51-086	701.400	51-136	702.650	51-186	703.900	51-236
698.925	51-037	700.175	51-087	701.425	51-137	702.675	51-187	703.925	51-237
698.950	51-038	700.200	51-088	701.450	51-138	702.700	51-188	703.950	51-238
698.975	51-039	700.225	51-089	701.475	51-139	702.725	51-189	703.975	51-239
699.000	51-040	700.250	51-090	701.500	51-140	702.750	51-190	704.000	51-240
699.025	51-041	700.275	51-091	701.525	51-141	702.775	51-191		
699.050	51-042	700.300	51-092	701.550	51-142	702.800	51-192		
699.075	51-043	700.325	51-093	701.575	51-143	702.825	51-193		
699.100	51-044	700.350	51-094	701.600	51-144	702.850	51-194		
699.125	51-045	700.375	51-095	701.625	51-145	702.875	51-195		
699.150	51-046	700.400	51-096	701.650	51-146	702.900	51-196		
699.175	51-047	700.425	51-097	701.675	51-147	702.925	51-197		
699.200	51-048	700.450	51-098	701.700	51-148	702.950	51-198		
699.225	51-049	700.475	51-099	701.725	51-149	702.975	51-199		

Digital Terrestrial Television Broadcasting Channel number : 52 (704～710MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		705.250	52-050	706.500	52-100	707.750	52-150	709.000	52-200
704.025	52-001	705.275	52-051	706.525	52-101	707.775	52-151	709.025	52-201
704.050	52-002	705.300	52-052	706.550	52-102	707.800	52-152	709.050	52-202
704.075	52-003	705.325	52-053	706.575	52-103	707.825	52-153	709.075	52-203
704.100	52-004	705.350	52-054	706.600	52-104	707.850	52-154	709.100	52-204
704.125	52-005	705.375	52-055	706.625	52-105	707.875	52-155	709.125	52-205
704.150	52-006	705.400	52-056	706.650	52-106	707.900	52-156	709.150	52-206
704.175	52-007	705.425	52-057	706.675	52-107	707.925	52-157	709.175	52-207
704.200	52-008	705.450	52-058	706.700	52-108	707.950	52-158	709.200	52-208
704.225	52-009	705.475	52-059	706.725	52-109	707.975	52-159	709.225	52-209
704.250	52-010	705.500	52-060	706.750	52-110	708.000	52-160	709.250	52-210
704.275	52-011	705.525	52-061	706.775	52-111	708.025	52-161	709.275	52-211
704.300	52-012	705.550	52-062	706.800	52-112	708.050	52-162	709.300	52-212
704.325	52-013	705.575	52-063	706.825	52-113	708.075	52-163	709.325	52-213
704.350	52-014	705.600	52-064	706.850	52-114	708.100	52-164	709.350	52-214
704.375	52-015	705.625	52-065	706.875	52-115	708.125	52-165	709.375	52-215
704.400	52-016	705.650	52-066	706.900	52-116	708.150	52-166	709.400	52-216
704.425	52-017	705.675	52-067	706.925	52-117	708.175	52-167	709.425	52-217
704.450	52-018	705.700	52-068	706.950	52-118	708.200	52-168	709.450	52-218
704.475	52-019	705.725	52-069	706.975	52-119	708.225	52-169	709.475	52-219
704.500	52-020	705.750	52-070	707.000	52-120	708.250	52-170	709.500	52-220
704.525	52-021	705.775	52-071	707.025	52-121	708.275	52-171	709.525	52-221
704.550	52-022	705.800	52-072	707.050	52-122	708.300	52-172	709.550	52-222
704.575	52-023	705.825	52-073	707.075	52-123	708.325	52-173	709.575	52-223
704.600	52-024	705.850	52-074	707.100	52-124	708.350	52-174	709.600	52-224
704.625	52-025	705.875	52-075	707.125	52-125	708.375	52-175	709.625	52-225
704.650	52-026	705.900	52-076	707.150	52-126	708.400	52-176	709.650	52-226
704.675	52-027	705.925	52-077	707.175	52-127	708.425	52-177	709.675	52-227
704.700	52-028	705.950	52-078	707.200	52-128	708.450	52-178	709.700	52-228
704.725	52-029	705.975	52-079	707.225	52-129	708.475	52-179	709.725	52-229
704.750	52-030	706.000	52-080	707.250	52-130	708.500	52-180	709.750	52-230
704.775	52-031	706.025	52-081	707.275	52-131	708.525	52-181	709.775	52-231
704.800	52-032	706.050	52-082	707.300	52-132	708.550	52-182	709.800	52-232
704.825	52-033	706.075	52-083	707.325	52-133	708.575	52-183	709.825	52-233
704.850	52-034	706.100	52-084	707.350	52-134	708.600	52-184	709.850	52-234
704.875	52-035	706.125	52-085	707.375	52-135	708.625	52-185	709.875	52-235
704.900	52-036	706.150	52-086	707.400	52-136	708.650	52-186	709.900	52-236
704.925	52-037	706.175	52-087	707.425	52-137	708.675	52-187	709.925	52-237
704.950	52-038	706.200	52-088	707.450	52-138	708.700	52-188	709.950	52-238
704.975	52-039	706.225	52-089	707.475	52-139	708.725	52-189	709.975	52-239
705.000	52-040	706.250	52-090	707.500	52-140	708.750	52-190	710.000	52-240
705.025	52-041	706.275	52-091	707.525	52-141	708.775	52-191		
705.050	52-042	706.300	52-092	707.550	52-142	708.800	52-192		
705.075	52-043	706.325	52-093	707.575	52-143	708.825	52-193		
705.100	52-044	706.350	52-094	707.600	52-144	708.850	52-194		
705.125	52-045	706.375	52-095	707.625	52-145	708.875	52-195		
705.150	52-046	706.400	52-096	707.650	52-146	708.900	52-196		
705.175	52-047	706.425	52-097	707.675	52-147	708.925	52-197		
705.200	52-048	706.450	52-098	707.700	52-148	708.950	52-198		
705.225	52-049	706.475	52-099	707.725	52-149	708.975	52-199		

53 (710~714MHz)							
frequency	name	frequency	name	frequency	name	frequency	name
		711.250	53-050	712.500	53-100	713.750	53-150
710.025	53-001	711.275	53-051	712.525	53-101	713.775	53-151
710.050	53-002	711.300	53-052	712.550	53-102	713.800	53-152
710.075	53-003	711.325	53-053	712.575	53-103	713.825	53-153
710.100	53-004	711.350	53-054	712.600	53-104	713.850	53-154
710.125	53-005	711.375	53-055	712.625	53-105	713.875	53-155
710.150	53-006	711.400	53-056	712.650	53-106	713.900	53-156
710.175	53-007	711.425	53-057	712.675	53-107	713.925	53-157
710.200	53-008	711.450	53-058	712.700	53-108	713.950	53-158
710.225	53-009	711.475	53-059	712.725	53-109	713.975	53-159
710.250	53-010	711.500	53-060	712.750	53-110		
710.275	53-011	711.525	53-061	712.775	53-111		
710.300	53-012	711.550	53-062	712.800	53-112		
710.325	53-013	711.575	53-063	712.825	53-113		
710.350	53-014	711.600	53-064	712.850	53-114		
710.375	53-015	711.625	53-065	712.875	53-115		
710.400	53-016	711.650	53-066	712.900	53-116		
710.425	53-017	711.675	53-067	712.925	53-117		
710.450	53-018	711.700	53-068	712.950	53-118		
710.475	53-019	711.725	53-069	712.975	53-119		
710.500	53-020	711.750	53-070	713.000	53-120		
710.525	53-021	711.775	53-071	713.025	53-121		
710.550	53-022	711.800	53-072	713.050	53-122		
710.575	53-023	711.825	53-073	713.075	53-123		
710.600	53-024	711.850	53-074	713.100	53-124		
710.625	53-025	711.875	53-075	713.125	53-125		
710.650	53-026	711.900	53-076	713.150	53-126		
710.675	53-027	711.925	53-077	713.175	53-127		
710.700	53-028	711.950	53-078	713.200	53-128		
710.725	53-029	711.975	53-079	713.225	53-129		
710.750	53-030	712.000	53-080	713.250	53-130		
710.775	53-031	712.025	53-081	713.275	53-131		
710.800	53-032	712.050	53-082	713.300	53-132		
710.825	53-033	712.075	53-083	713.325	53-133		
710.850	53-034	712.100	53-084	713.350	53-134		
710.875	53-035	712.125	53-085	713.375	53-135		
710.900	53-036	712.150	53-086	713.400	53-136		
710.925	53-037	712.175	53-087	713.425	53-137		
710.950	53-038	712.200	53-088	713.450	53-138		
710.975	53-039	712.225	53-089	713.475	53-139		
711.000	53-040	712.250	53-090	713.500	53-140		
711.025	53-041	712.275	53-091	713.525	53-141		
711.050	53-042	712.300	53-092	713.550	53-142		
711.075	53-043	712.325	53-093	713.575	53-143		
711.100	53-044	712.350	53-094	713.600	53-144		
711.125	53-045	712.375	53-095	713.625	53-145		
711.150	53-046	712.400	53-096	713.650	53-146		
711.175	53-047	712.425	53-097	713.675	53-147		
711.200	53-048	712.450	53-098	713.700	53-148		
711.225	53-049	712.475	53-099	713.725	53-149		

1.2L (Low) (1240~1246MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		1,241.250	1.2L-050	1242.500	1.2L-100	1243.750	1.2L-150	1245.000	1.2L-200
1240.025	1.2L-001	1,241.275	1.2L-051	1242.525	1.2L-101	1243.775	1.2L-151	1245.025	1.2L-201
1240.050	1.2L-002	1,241.300	1.2L-052	1242.550	1.2L-102	1243.800	1.2L-152	1245.050	1.2L-202
1240.075	1.2L-003	1,241.325	1.2L-053	1242.575	1.2L-103	1243.825	1.2L-153	1245.075	1.2L-203
1240.100	1.2L-004	1,241.350	1.2L-054	1242.600	1.2L-104	1243.850	1.2L-154	1245.100	1.2L-204
1240.125	1.2L-005	1,241.375	1.2L-055	1242.625	1.2L-105	1243.875	1.2L-155	1245.125	1.2L-205
1240.150	1.2L-006	1,241.400	1.2L-056	1242.650	1.2L-106	1243.900	1.2L-156	1245.150	1.2L-206
1240.175	1.2L-007	1,241.425	1.2L-057	1242.675	1.2L-107	1243.925	1.2L-157	1245.175	1.2L-207
1240.200	1.2L-008	1,241.450	1.2L-058	1242.700	1.2L-108	1243.950	1.2L-158	1245.200	1.2L-208
1240.225	1.2L-009	1,241.475	1.2L-059	1242.725	1.2L-109	1243.975	1.2L-159	1245.225	1.2L-209
1240.250	1.2L-010	1,241.500	1.2L-060	1242.750	1.2L-110	1244.000	1.2L-160	1245.250	1.2L-210
1240.275	1.2L-011	1,241.525	1.2L-061	1242.775	1.2L-111	1244.025	1.2L-161	1245.275	1.2L-211
1240.300	1.2L-012	1,241.550	1.2L-062	1242.800	1.2L-112	1244.050	1.2L-162	1245.300	1.2L-212
1240.325	1.2L-013	1,241.575	1.2L-063	1242.825	1.2L-113	1244.075	1.2L-163	1245.325	1.2L-213
1240.350	1.2L-014	1,241.600	1.2L-064	1242.850	1.2L-114	1244.100	1.2L-164	1245.350	1.2L-214
1240.375	1.2L-015	1,241.625	1.2L-065	1242.875	1.2L-115	1244.125	1.2L-165	1245.375	1.2L-215
1240.400	1.2L-016	1,241.650	1.2L-066	1242.900	1.2L-116	1244.150	1.2L-166	1245.400	1.2L-216
1240.425	1.2L-017	1,241.675	1.2L-067	1242.925	1.2L-117	1244.175	1.2L-167	1245.425	1.2L-217
1240.450	1.2L-018	1,241.700	1.2L-068	1242.950	1.2L-118	1244.200	1.2L-168	1245.450	1.2L-218
1240.475	1.2L-019	1,241.725	1.2L-069	1242.975	1.2L-119	1244.225	1.2L-169	1245.475	1.2L-219
1240.500	1.2L-020	1,241.750	1.2L-070	1243.000	1.2L-120	1244.250	1.2L-170	1245.500	1.2L-220
1240.525	1.2L-021	1,241.775	1.2L-071	1243.025	1.2L-121	1244.275	1.2L-171	1245.525	1.2L-221
1240.550	1.2L-022	1,241.800	1.2L-072	1243.050	1.2L-122	1244.300	1.2L-172	1245.550	1.2L-222
1240.575	1.2L-023	1,241.825	1.2L-073	1243.075	1.2L-123	1244.325	1.2L-173	1245.575	1.2L-223
1240.600	1.2L-024	1,241.850	1.2L-074	1243.100	1.2L-124	1244.350	1.2L-174	1245.600	1.2L-224
1240.625	1.2L-025	1,241.875	1.2L-075	1243.125	1.2L-125	1244.375	1.2L-175	1245.625	1.2L-225
1240.650	1.2L-026	1,241.900	1.2L-076	1243.150	1.2L-126	1244.400	1.2L-176	1245.650	1.2L-226
1240.675	1.2L-027	1,241.925	1.2L-077	1243.175	1.2L-127	1244.425	1.2L-177	1245.675	1.2L-227
1240.700	1.2L-028	1,241.950	1.2L-078	1243.200	1.2L-128	1244.450	1.2L-178	1245.700	1.2L-228
1240.725	1.2L-029	1,241.975	1.2L-079	1243.225	1.2L-129	1244.475	1.2L-179	1245.725	1.2L-229
1240.750	1.2L-030	1,242.000	1.2L-080	1243.250	1.2L-130	1244.500	1.2L-180	1245.750	1.2L-230
1240.775	1.2L-031	1,242.025	1.2L-081	1243.275	1.2L-131	1244.525	1.2L-181	1245.775	1.2L-231
1240.800	1.2L-032	1,242.050	1.2L-082	1243.300	1.2L-132	1244.550	1.2L-182	1245.800	1.2L-232
1240.825	1.2L-033	1,242.075	1.2L-083	1243.325	1.2L-133	1244.575	1.2L-183	1245.825	1.2L-233
1240.850	1.2L-034	1,242.100	1.2L-084	1243.350	1.2L-134	1244.600	1.2L-184	1245.850	1.2L-234
1240.875	1.2L-035	1,242.125	1.2L-085	1243.375	1.2L-135	1244.625	1.2L-185	1245.875	1.2L-235
1240.900	1.2L-036	1,242.150	1.2L-086	1243.400	1.2L-136	1244.650	1.2L-186	1245.900	1.2L-236
1240.925	1.2L-037	1,242.175	1.2L-087	1243.425	1.2L-137	1244.675	1.2L-187	1245.925	1.2L-237
1240.950	1.2L-038	1,242.200	1.2L-088	1243.450	1.2L-138	1244.700	1.2L-188	1245.950	1.2L-238
1240.975	1.2L-039	1,242.225	1.2L-089	1243.475	1.2L-139	1244.725	1.2L-189	1245.975	1.2L-239
1241.000	1.2L-040	1,242.250	1.2L-090	1243.500	1.2L-140	1244.750	1.2L-190	1246.000	1.2L-240
1241.025	1.2L-041	1,242.275	1.2L-091	1243.525	1.2L-141	1244.775	1.2L-191		
1241.050	1.2L-042	1,242.300	1.2L-092	1243.550	1.2L-142	1244.800	1.2L-192		
1241.075	1.2L-043	1,242.325	1.2L-093	1243.575	1.2L-143	1244.825	1.2L-193		
1241.100	1.2L-044	1,242.350	1.2L-094	1243.600	1.2L-144	1244.850	1.2L-194		
1241.125	1.2L-045	1,242.375	1.2L-095	1243.625	1.2L-145	1244.875	1.2L-195		
1241.150	1.2L-046	1,242.400	1.2L-096	1243.650	1.2L-146	1244.900	1.2L-196		
1241.175	1.2L-047	1,242.425	1.2L-097	1243.675	1.2L-147	1244.925	1.2L-197		
1241.200	1.2L-048	1,242.450	1.2L-098	1243.700	1.2L-148	1244.950	1.2L-198		
1241.225	1.2L-049	1,242.475	1.2L-099	1243.725	1.2L-149	1244.975	1.2L-199		

1.2M (Middle) (1246~1252MHz)									
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		1,247.250	1.2M-050	1248.500	1.2M-100	1249.750	1.2M-150	1251.000	1.2M-200
1246.025	1.2M-001	1,247.275	1.2M-051	1248.525	1.2M-101	1249.775	1.2M-151	1251.025	1.2M-201
1246.050	1.2M-002	1,247.300	1.2M-052	1248.550	1.2M-102	1249.800	1.2M-152	1251.050	1.2M-202
1246.075	1.2M-003	1,247.325	1.2M-053	1248.575	1.2M-103	1249.825	1.2M-153	1251.075	1.2M-203
1246.100	1.2M-004	1,247.350	1.2M-054	1248.600	1.2M-104	1249.850	1.2M-154	1251.100	1.2M-204
1246.125	1.2M-005	1,247.375	1.2M-055	1248.625	1.2M-105	1249.875	1.2M-155	1251.125	1.2M-205
1246.150	1.2M-006	1,247.400	1.2M-056	1248.650	1.2M-106	1249.900	1.2M-156	1251.150	1.2M-206
1246.175	1.2M-007	1,247.425	1.2M-057	1248.675	1.2M-107	1249.925	1.2M-157	1251.175	1.2M-207
1246.200	1.2M-008	1,247.450	1.2M-058	1248.700	1.2M-108	1249.950	1.2M-158	1251.200	1.2M-208
1246.225	1.2M-009	1,247.475	1.2M-059	1248.725	1.2M-109	1249.975	1.2M-159	1251.225	1.2M-209
1246.250	1.2M-010	1,247.500	1.2M-060	1248.750	1.2M-110	1250.000	1.2M-160	1251.250	1.2M-210
1246.275	1.2M-011	1,247.525	1.2M-061	1248.775	1.2M-111	1250.025	1.2M-161	1251.275	1.2M-211
1246.300	1.2M-012	1,247.550	1.2M-062	1248.800	1.2M-112	1250.050	1.2M-162	1251.300	1.2M-212
1246.325	1.2M-013	1,247.575	1.2M-063	1248.825	1.2M-113	1250.075	1.2M-163	1251.325	1.2M-213
1246.350	1.2M-014	1,247.600	1.2M-064	1248.850	1.2M-114	1250.100	1.2M-164	1251.350	1.2M-214
1246.375	1.2M-015	1,247.625	1.2M-065	1248.875	1.2M-115	1250.125	1.2M-165	1251.375	1.2M-215
1246.400	1.2M-016	1,247.650	1.2M-066	1248.900	1.2M-116	1250.150	1.2M-166	1251.400	1.2M-216
1246.425	1.2M-017	1,247.675	1.2M-067	1248.925	1.2M-117	1250.175	1.2M-167	1251.425	1.2M-217
1246.450	1.2M-018	1,247.700	1.2M-068	1248.950	1.2M-118	1250.200	1.2M-168	1251.450	1.2M-218
1246.475	1.2M-019	1,247.725	1.2M-069	1248.975	1.2M-119	1250.225	1.2M-169	1251.475	1.2M-219
1246.500	1.2M-020	1,247.750	1.2M-070	1249.000	1.2M-120	1250.250	1.2M-170	1251.500	1.2M-220
1246.525	1.2M-021	1,247.775	1.2M-071	1249.025	1.2M-121	1250.275	1.2M-171	1251.525	1.2M-221
1246.550	1.2M-022	1,247.800	1.2M-072	1249.050	1.2M-122	1250.300	1.2M-172	1251.550	1.2M-222
1246.575	1.2M-023	1,247.825	1.2M-073	1249.075	1.2M-123	1250.325	1.2M-173	1251.575	1.2M-223
1246.600	1.2M-024	1,247.850	1.2M-074	1249.100	1.2M-124	1250.350	1.2M-174	1251.600	1.2M-224
1246.625	1.2M-025	1,247.875	1.2M-075	1249.125	1.2M-125	1250.375	1.2M-175	1251.625	1.2M-225
1246.650	1.2M-026	1,247.900	1.2M-076	1249.150	1.2M-126	1250.400	1.2M-176	1251.650	1.2M-226
1246.675	1.2M-027	1,247.925	1.2M-077	1249.175	1.2M-127	1250.425	1.2M-177	1251.675	1.2M-227
1246.700	1.2M-028	1,247.950	1.2M-078	1249.200	1.2M-128	1250.450	1.2M-178	1251.700	1.2M-228
1246.725	1.2M-029	1,247.975	1.2M-079	1249.225	1.2M-129	1250.475	1.2M-179	1251.725	1.2M-229
1246.750	1.2M-030	1,248.000	1.2M-080	1249.250	1.2M-130	1250.500	1.2M-180	1251.750	1.2M-230
1246.775	1.2M-031	1,248.025	1.2M-081	1249.275	1.2M-131	1250.525	1.2M-181	1251.775	1.2M-231
1246.800	1.2M-032	1,248.050	1.2M-082	1249.300	1.2M-132	1250.550	1.2M-182	1251.800	1.2M-232
1246.825	1.2M-033	1,248.075	1.2M-083	1249.325	1.2M-133	1250.575	1.2M-183	1251.825	1.2M-233
1246.850	1.2M-034	1,248.100	1.2M-084	1249.350	1.2M-134	1250.600	1.2M-184	1251.850	1.2M-234
1246.875	1.2M-035	1,248.125	1.2M-085	1249.375	1.2M-135	1250.625	1.2M-185	1251.875	1.2M-235
1246.900	1.2M-036	1,248.150	1.2M-086	1249.400	1.2M-136	1250.650	1.2M-186	1251.900	1.2M-236
1246.925	1.2M-037	1,248.175	1.2M-087	1249.425	1.2M-137	1250.675	1.2M-187	1251.925	1.2M-237
1246.950	1.2M-038	1,248.200	1.2M-088	1249.450	1.2M-138	1250.700	1.2M-188	1251.950	1.2M-238
1246.975	1.2M-039	1,248.225	1.2M-089	1249.475	1.2M-139	1250.725	1.2M-189	1251.975	1.2M-239
1247.000	1.2M-040	1,248.250	1.2M-090	1249.500	1.2M-140	1250.750	1.2M-190		
1247.025	1.2M-041	1,248.275	1.2M-091	1249.525	1.2M-141	1250.775	1.2M-191		
1247.050	1.2M-042	1,248.300	1.2M-092	1249.550	1.2M-142	1250.800	1.2M-192		
1247.075	1.2M-043	1,248.325	1.2M-093	1249.575	1.2M-143	1250.825	1.2M-193		
1247.100	1.2M-044	1,248.350	1.2M-094	1249.600	1.2M-144	1250.850	1.2M-194		
1247.125	1.2M-045	1,248.375	1.2M-095	1249.625	1.2M-145	1250.875	1.2M-195		
1247.150	1.2M-046	1,248.400	1.2M-096	1249.650	1.2M-146	1250.900	1.2M-196		
1247.175	1.2M-047	1,248.425	1.2M-097	1249.675	1.2M-147	1250.925	1.2M-197		
1247.200	1.2M-048	1,248.450	1.2M-098	1249.700	1.2M-148	1250.950	1.2M-198		
1247.225	1.2M-049	1,248.475	1.2M-099	1249.725	1.2M-149	1250.975	1.2M-199		

1.2H (High) (1253~1260MHz)											
frequency	name	frequency	name	frequency	name	frequency	name	frequency	name	frequency	name
		1,254.250	1.2H-050	1255.500	1.2H-100	1256.750	1.2H-150	1258.000	1.2H-200	1259.250	1.2H-250
1253.025	1.2H-001	1,254.275	1.2H-051	1255.525	1.2H-101	1256.775	1.2H-151	1258.025	1.2H-201	1259.275	1.2H-251
1253.050	1.2H-002	1,254.300	1.2H-052	1255.550	1.2H-102	1256.800	1.2H-152	1258.050	1.2H-202	1259.300	1.2H-252
1253.075	1.2H-003	1,254.325	1.2H-053	1255.575	1.2H-103	1256.825	1.2H-153	1258.075	1.2H-203	1259.325	1.2H-253
1253.100	1.2H-004	1,254.350	1.2H-054	1255.600	1.2H-104	1256.850	1.2H-154	1258.100	1.2H-204	1259.350	1.2H-254
1253.125	1.2H-005	1,254.375	1.2H-055	1255.625	1.2H-105	1256.875	1.2H-155	1258.125	1.2H-205	1259.375	1.2H-255
1253.150	1.2H-006	1,254.400	1.2H-056	1255.650	1.2H-106	1256.900	1.2H-156	1258.150	1.2H-206	1259.400	1.2H-256
1253.175	1.2H-007	1,254.425	1.2H-057	1255.675	1.2H-107	1256.925	1.2H-157	1258.175	1.2H-207	1259.425	1.2H-257
1253.200	1.2H-008	1,254.450	1.2H-058	1255.700	1.2H-108	1256.950	1.2H-158	1258.200	1.2H-208	1259.450	1.2H-258
1253.225	1.2H-009	1,254.475	1.2H-059	1255.725	1.2H-109	1256.975	1.2H-159	1258.225	1.2H-209	1259.475	1.2H-259
1253.250	1.2H-010	1,254.500	1.2H-060	1255.750	1.2H-110	1257.000	1.2H-160	1258.250	1.2H-210	1259.500	1.2H-260
1253.275	1.2H-011	1,254.525	1.2H-061	1255.775	1.2H-111	1257.025	1.2H-161	1258.275	1.2H-211	1259.525	1.2H-261
1253.300	1.2H-012	1,254.550	1.2H-062	1255.800	1.2H-112	1257.050	1.2H-162	1258.300	1.2H-212	1259.550	1.2H-262
1253.325	1.2H-013	1,254.575	1.2H-063	1255.825	1.2H-113	1257.075	1.2H-163	1258.325	1.2H-213	1259.575	1.2H-263
1253.350	1.2H-014	1,254.600	1.2H-064	1255.850	1.2H-114	1257.100	1.2H-164	1258.350	1.2H-214	1259.600	1.2H-264
1253.375	1.2H-015	1,254.625	1.2H-065	1255.875	1.2H-115	1257.125	1.2H-165	1258.375	1.2H-215	1259.625	1.2H-265
1253.400	1.2H-016	1,254.650	1.2H-066	1255.900	1.2H-116	1257.150	1.2H-166	1258.400	1.2H-216	1259.650	1.2H-266
1253.425	1.2H-017	1,254.675	1.2H-067	1255.925	1.2H-117	1257.175	1.2H-167	1258.425	1.2H-217	1259.675	1.2H-267
1253.450	1.2H-018	1,254.700	1.2H-068	1255.950	1.2H-118	1257.200	1.2H-168	1258.450	1.2H-218	1259.700	1.2H-268
1253.475	1.2H-019	1,254.725	1.2H-069	1255.975	1.2H-119	1257.225	1.2H-169	1258.475	1.2H-219	1259.725	1.2H-269
1253.500	1.2H-020	1,254.750	1.2H-070	1256.000	1.2H-120	1257.250	1.2H-170	1258.500	1.2H-220	1259.750	1.2H-270
1253.525	1.2H-021	1,254.775	1.2H-071	1256.025	1.2H-121	1257.275	1.2H-171	1258.525	1.2H-221	1259.775	1.2H-271
1253.550	1.2H-022	1,254.800	1.2H-072	1256.050	1.2H-122	1257.300	1.2H-172	1258.550	1.2H-222	1259.800	1.2H-272
1253.575	1.2H-023	1,254.825	1.2H-073	1256.075	1.2H-123	1257.325	1.2H-173	1258.575	1.2H-223	1259.825	1.2H-273
1253.600	1.2H-024	1,254.850	1.2H-074	1256.100	1.2H-124	1257.350	1.2H-174	1258.600	1.2H-224	1259.850	1.2H-274
1253.625	1.2H-025	1,254.875	1.2H-075	1256.125	1.2H-125	1257.375	1.2H-175	1258.625	1.2H-225	1259.875	1.2H-275
1253.650	1.2H-026	1,254.900	1.2H-076	1256.150	1.2H-126	1257.400	1.2H-176	1258.650	1.2H-226	1259.900	1.2H-276
1253.675	1.2H-027	1,254.925	1.2H-077	1256.175	1.2H-127	1257.425	1.2H-177	1258.675	1.2H-227	1259.925	1.2H-277
1253.700	1.2H-028	1,254.950	1.2H-078	1256.200	1.2H-128	1257.450	1.2H-178	1258.700	1.2H-228	1259.950	1.2H-278
1253.725	1.2H-029	1,254.975	1.2H-079	1256.225	1.2H-129	1257.475	1.2H-179	1258.725	1.2H-229	1259.975	1.2H-279
1253.750	1.2H-030	1,255.000	1.2H-080	1256.250	1.2H-130	1257.500	1.2H-180	1258.750	1.2H-230		
1253.775	1.2H-031	1,255.025	1.2H-081	1256.275	1.2H-131	1257.525	1.2H-181	1258.775	1.2H-231		
1253.800	1.2H-032	1,255.050	1.2H-082	1256.300	1.2H-132	1257.550	1.2H-182	1258.800	1.2H-232		
1253.825	1.2H-033	1,255.075	1.2H-083	1256.325	1.2H-133	1257.575	1.2H-183	1258.825	1.2H-233		
1253.850	1.2H-034	1,255.100	1.2H-084	1256.350	1.2H-134	1257.600	1.2H-184	1258.850	1.2H-234		
1253.875	1.2H-035	1,255.125	1.2H-085	1256.375	1.2H-135	1257.625	1.2H-185	1258.875	1.2H-235		
1253.900	1.2H-036	1,255.150	1.2H-086	1256.400	1.2H-136	1257.650	1.2H-186	1258.900	1.2H-236		
1253.925	1.2H-037	1,255.175	1.2H-087	1256.425	1.2H-137	1257.675	1.2H-187	1258.925	1.2H-237		
1253.950	1.2H-038	1,255.200	1.2H-088	1256.450	1.2H-138	1257.700	1.2H-188	1258.950	1.2H-238		
1253.975	1.2H-039	1,255.225	1.2H-089	1256.475	1.2H-139	1257.725	1.2H-189	1258.975	1.2H-239		
1254.000	1.2H-040	1,255.250	1.2H-090	1256.500	1.2H-140	1257.750	1.2H-190	1259.000	1.2H-240		
1254.025	1.2H-041	1,255.275	1.2H-091	1256.525	1.2H-141	1257.775	1.2H-191	1259.025	1.2H-241		
1254.050	1.2H-042	1,255.300	1.2H-092	1256.550	1.2H-142	1257.800	1.2H-192	1259.050	1.2H-242		
1254.075	1.2H-043	1,255.325	1.2H-093	1256.575	1.2H-143	1257.825	1.2H-193	1259.075	1.2H-243		
1254.100	1.2H-044	1,255.350	1.2H-094	1256.600	1.2H-144	1257.850	1.2H-194	1259.100	1.2H-244		
1254.125	1.2H-045	1,255.375	1.2H-095	1256.625	1.2H-145	1257.875	1.2H-195	1259.125	1.2H-245		
1254.150	1.2H-046	1,255.400	1.2H-096	1256.650	1.2H-146	1257.900	1.2H-196	1259.150	1.2H-246		
1254.175	1.2H-047	1,255.425	1.2H-097	1256.675	1.2H-147	1257.925	1.2H-197	1259.175	1.2H-247		
1254.200	1.2H-048	1,255.450	1.2H-098	1256.700	1.2H-148	1257.950	1.2H-198	1259.200	1.2H-248		
1254.225	1.2L-049	1,255.475	1.2H-099	1256.725	1.2H-149	1257.975	1.2H-199	1259.225	1.2H-249		

Available channels for Analog Specified Radio Microphone are listed in Table 1-1, and for Digital Specified Radio Microphone in Table 1-2.

Table 1-1　Available channels for Analog Specified Radio Microphone

Occupied bandwidth	f < 110kHz	110kHz < f <= 160kHz	160kHz < f <= 330kHz	f <= 250kHz (stereo system)
Available channels	13-003～53-157 1.2L-003～1.2M-237 1.2H-003～1.2H-277	13-004～53-156 1.2L-004～1.2M-236 1.2H-004～1.2H-276	13-007～53-153 1.2L-007～1.2M-232 1.2H-008～1.2H-273	13-006～53-154 1.2L-006～1.2M-234 1.2H006～1.2H-274
Available frequency (center freq.)	470.075MHz～713.925MHz 1240.075MHz～1251.925MHz 1253.075MHz～1259.925MHz	470.100MHz～713.900MHz 1240.100MHz～1251.900MHz 1253.100MHz～1259.900MHz	470.175MHz～713.825MHz 1240.175MHz～1251.800MHz 1253.200MHz～1259.825MHz	470.150MHz～713.850MHz 1240.150MHz～1251.850MHz 1253.150MHz～1259.850MHz

Table 1-2　Available channels for Digital Specified Radio Microphone

Occupied bandwidth	f < 192kHz	192kHz < f <= 288kHz	288kHz < f <= 600kHz
Available channel	13-004～53-156 1.2L-004～1.2M-235 1.2H-005～1.2H-276	13-006～53-154 1.2L-006～1.2M-233 1.2H-007～1.2H-274	1.2L-013～1.2M-227 1.2H-013～1.2H-267
Available frequency (center freq.)	470.100MHz～713.900MHz 1240.100MHz～1251.875MHz 1253.125MHz～1259.900MHz	470.150MHz～713.850MHz 1240.150MHz～1251.825MHz 1253.175MHz～1259.850MHz	1240.325MHz～1251.675MHz 1253.325MHz～1259.675MHz

Among specified low power radio stations for telemetry, telecontrol, or data transmission, radio stations with occupied bandwidth within 32kHz use frequencies from 1252.000MHz to 1253.000MHz center frequency.　(NT: No. 42.1.5(2))

2 Protection for Digital Terrestrial Television Broadcasting

In TV white space band, to protect terrestrial broadcasting stations those use the same radio frequency band as primary frequency users for operating Digital Terrestrial Television Broadcasting, land mobile stations in Specified Radio Microphone shall operate observing 'TV white space channel list for Specified Radio Microphone' issued by Ministry of Internal Affairs and Communications (MIC), which indicates adaptation areas satisfying with interference protection criterion. TV white space channel list for Specified Radio Microphone is publicized at 'material' page of The Radio Use Web Site of MIC.

In case of setting center frequency of Specified Radio Microphone at TV channel marked '○' in the channel list, to satisfy with in-band interference protection criterion 'I/N = -10dB to adjacent channel, land mobile stations shall operate within 4MHz excluding 1MHz at both outside of 6MHz channel. However, in case that adjacent channel is also marked '○', 1MHz at its boundary is available for Specified Radio Microphone.

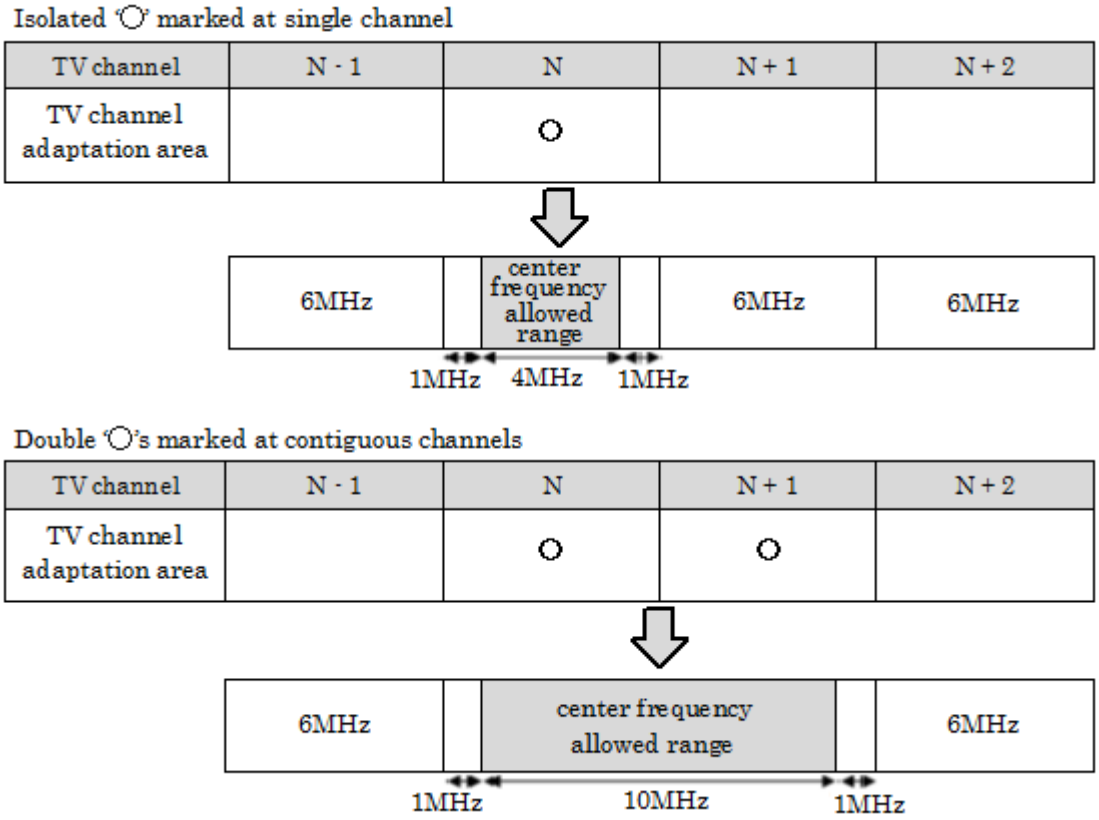


Figure 1-1 Center frequency allowed range for Specified Radio Microphone

Even when setting center frequency within 1MHz band from 710MHz to 711MHz, which is

part of exclusive band for Specified Radio Microphone from 710MHz to 714MHz, land mobile stations shall satisfy with in-band interference protection criterion for TV 52ch (from 704MHz to 710MHz).

It is essential for Specified Radio Microphone when setting center frequency from 470MHz to 711MHz, not to affect the operation of terrestrial broadcasting base stations and to accept interference from those base stations, for Digital Terrestrial Television Broadcasting.

3 Coordination of Operation and Participation in Operation Coordination Conference for user systems sharing TV white space, etc.

Operators of Specified Radio Microphone shall collect and manage information of operating conditions and coordinate operations for interference avoidance between radio equipment sharing the same frequency band within Specified Radio Microphone.

Besides, operators shall coordinate operations with other radio systems within TV white space band. According to the conclusion by White Space Promoting Conference led by Ministry of Internal Affairs and Communications, allocation priority between systems utilizing white space is as follows.

1	Digital Terrestrial Television Broadcasting
2	Specified Radio Microphone
3	White space utilizing systems, such as Area-specific Broadcasting System [1], Sensor Network, Communication System for disaster case, etc.

(Note) Although technical measures against interference avoidance should be studied beforehand, equal treatment shall be applied to other systems planned to be introduced, such as wireless broadband system, utilizing white space.

1 Enacted as 'Area-specific Broadcasting System' valid after March, 2012

Reference: 'Final conclusion for Framework of Operation Coordination between systems utilizing white space' by White Space Promoting Conference, issued on Jan. 11, 2013.

Specified Radio Microphone, listed prior to radio systems such as Area-specific Broadcasting System, is required to secure operations by establishing framework with licensed users of Area-specific Broadcasting System, etc. for coordinating operations and resolving problems. For this purpose 'Operation Coordination Conference for systems utilizing TV white space, etc.' (hereinafter referred as 'Conference') has been organized, whose participants are operators of

Digital Terrestrial Television Broadcasting, a group of licensed users of Specified Radio Microphone, licensee of Area-specific Broadcasting System, etc., and persons in fair position with expertise, and decided to fill the role of coordinating operations and resolving problems between radio systems, including Specified Radio Microphone, Area-specific Broadcasting System, etc., and the role of contact institution at occurrence of radio interference to receivers to Digital Terrestrial Television Broadcasting.

The Conference is also in charge of operation coordination of Specified Radio Microphone within TV white space band, exclusive band and 1.2GHz band, and with FPU using 1.2GHz band, and thus every Specified Radio Microphone license user shall participate in the Conference. Consequently, for acoustic communication with Specified Radio Microphone, operators shall participate in general incorporated association Operation Coordination Organization for Specified Radio Microphone, and the Organization shall participate in the Conference as a group of operators, for broadcasting service with Specified Radio Microphone, operators shall participate in the Conference individually.

4 Observance of specified items in the ratio station license

Manufacturers of radio equipment shall implement safety structure to keep transmission frequency and transmission power within the permitted range in the license to prevent users from transmitting frequency or power accidentally outside of certificated range.

5 Caution to users

Since this standard is prepared as a guide to manufacturers who manufacture or sell, users might hardly have occasions to refer to. It is desirable that the contents of this standard would be announced to users via manufacturers and help users to operate Specified Radio Microphone properly with good understanding.

6 Classification of Specified Radio Microphone

Classification of Specified Radio Microphone is shown in Table 1-3.

Table 1-3　Classification of Specified Radio Microphone

Classifica-tion	Type A		Type B	Type C	Type D
Use type	Transmission of excellent quality for voice, sound of musical instruments, etc.		Transmission of relatively good quality	Transmissiono f minimum clearness	Transmissiono f minimum clearness
Use case	Recording of broadcasting program, stage, concert hall, large scale event space		Hotel, wedding ceremony hall, conference hall, karaoke box, schoolhouse, assembly hall	Announce-me nt on station platform, etc.	Announce-me nt in theater, concert hall, etc.
Radio station license	Required (land mobile radio station)		Not required (specified low power radio station)	Not required (specified low power radio station)	Not required (specified low power radio station)
Frequency band	TV white space band, exclusive band, 1.2GHz band	700MHz band (available until March 31, 2019)	800MHz band	300MHz band	70MHz band
Standard	ARIB STD-T112	RCR STD-22	RCR STD-15	RCR STD-15	RCR STD-15

Annex 2 Overview of OFDM Digital Specified Radio Microphone

As radio waves transmitted by Specified Radio Microphones reflect off of diverse things (such as wall, ceilings, stage settings, building, etc.), voice signals often get interrupted, and/or also get noises mixed in voice signal. This happens because of mutual interferences among reflected radio waves. This is called multipath. Under an occupied environment of specified radio microphones, frequently what happens is the direct wave is shielded by human body. Therefore radio waves become negatively influenced with multipath. OFDM method has excellent tolerance to multipath radio propagation, and this method is widely adopted in practical use for digital terrestrial television broadcasting, FPU, radio local area network, etc.

The overview of OFDM transmission system for Digital Specified Radio Microphone is shown in Figure 2-1. The transmission system comprises of two parts, source coding and channel coding. The source coding block performs conversion of analog voice signals to digital signals, compression of voice signals and multiplex of additional information. The channel coding block performs signal modulation and transmission of the digital signal output from the source coding block. Source coding can be referred to Appendix 2. Channel coding is required to conform to Annex 3. Hereunder, only transmitting side is described, as the reverse process is basically done on the receiving side.

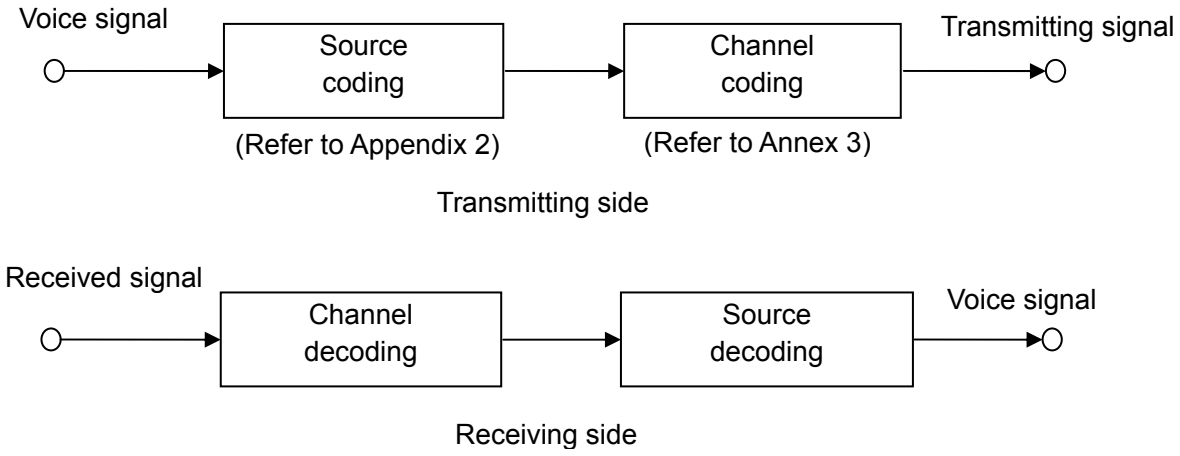


Figure 2-1 Block diagram of OFDM Transmission System for Digital Specified Radio Microphone

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Annex 3　Channel Coding of OFDM Digital Specified Radio Microphone

Channel coding of OFDM Digital Specified Radio Microphone shall conform to this Annex.

1 Parameters for channel coding

1.1　Parameters of 600kHz occupied frequency bandwidth

Parameters for channel coding of 600kHz occupied frequency bandwidth are shown in Table 3-1. Transmission synchronized with fs=48kHz of sampling frequency for the voice signal shall be done to minimize the delay. Therefore symbol length Ts is set to Ts=4/fs as to meet integer ratio between Ts and fs. The guard interval Tg is to be set Tg=Tu/16 considering delay time of multipath in the channel.

Table 3-1 Parameters for channel coding of 600kHz occupied frequency bandwidth

Transmission mode		600k－mode 4	600k－mode 3	600k－mode 2	600k－mode 1
Information bit rate [kbps]		1,248	936	624	468
Error correction code		Convolutional code			
Coding rate		2/3	1/2	2/3	1/2
Primary (carrier) modulation		16QAM	16QAM	QPSK	QPSK
Transmission bit rate [kbps]		1,872	1,872	936	936
Secondary modulation		OFDM			
FFT size　Nfft		128			
FFT Clock frequency fclk [MHz]		1.632000			
Effective symbol length Tu [μs]		78.431373			
Symbol length Ts [μs]		83.333333			
Guard interval Tg [μs]		4.901961			
Carrier interval Δf [kHz]		12.750000			
Carrier number	Total number Nc	46			
	Data Nd	39			
	SP	3			
	TMCC	3			
	CP	1			
Transmission Bandwidth BW [kHz]		586.500000			

*1: SP (Scattered pilot) and CP (Continual Pilot) are signals for synchronization and demodulation of receiver.

*2: TMCC (Transmission and Multiplexing Configuration Control) is control information.

Consequently effective symbol length Tu is calculated by Tu=Ts–Tg=(16/17)Ts. The carrier interval Δf is determined 12.75kHz by the formula Δf=1/Tu. FFT clock frequency fclk is obtained by multiplication of Δf and FFT size Nfft, and is determined by the following formula fclk=Δfx × Nfft =1.632MHz. The transmission bandwidth BW is obtained by multiplication of Δf and carrier total number Nc so that BW is determined by the following formula BW=Δf × Nc=586.5kHz.

1.2 Parameters of 288kHz occupied frequency bandwidth

Parameters for channel coding of 288kHz occupied frequency bandwidth are shown in Table 3-2. Occupied frequency bandwidth of 288kHz is acquired with changing the FFT clock frequency fclk in the system of 600kHz occupied frequency bandwidth to 1.632000MHz × (1/2) × (12/13).

Table 3-2 Parameters for channel coding of 288kHz occupied frequency bandwidth

Transmission Mode		288k－mode 4	288k－mode 3	288k－mode 2	288k－mode 1
Information bit rate [kbps]		576	432	288	216
Error correction code		Convolutional code			
Coding rate		2/3	1/2	2/3	1/2
Primary (carrier) modulation		16QAM	16QAM	QPSK	QPSK
Transmission bit rate [kbps]		864	864	432	432
Secondary Modulation		OFDM			
FFT size Nfft		128			
FFT Clock frequency fclk [MHz]		0.753231			
Effective symbol length Tu [μs]		169.934641			
Symbol length Ts [μs]		180.555556			
Guard interval Tg [μs]		10.620915			
Carrier interval Δf [kHz]		5.884615			
Carrier number	Total number Nc	46			
	Data Nd	39			
	SP	3			
	TMCC	3			
	CP	1			
Transmission Bandwidth BW [kHz]		270.692308			

*1: SP (Scattered pilot) and CP (Continual Pilot) are signals for synchronization and demodulation of receiver.

*2: TMCC (Transmission and Multiplexing Configuration Control) is control information.

1.3 Parameters of 192kHz occupied frequency bandwidth

Parameters for channel coding of 192kHz occupied frequency bandwidth are shown in Table 3-3. The occupied frequency bandwidth of 192kHz is acquired with changing FFT clock frequency fclk in the system of 600kHz occupied frequency bandwidth to 1.632000MHz × (1/3) × (12/13).

Table 3-3 Parameters for channel coding of 192kHz occupied frequency bandwidth

Transmission mode		192k－mode 4	192k－mode 3	192k－mode 2	192k－mode 1
Information bit rate [kbps]		384	288	192	144
Error correction code		Convolutional code			
Coding rate		2/3	1/2	2/3	1/2
Primary (carrier) modulation		16QAM	16QAM	QPSK	QPSK
Transmission bit rate [kbps]		576	576	288	288
Secondary Modulation		OFDM			
FFT size Nfft		128			
FFT Clock frequency fclk [MHz]		0.502154			
Effective symbol length Tu [μs]		254.901961			
Symbol length Ts [μs]		270.833333			
Guard interval Tg [μs]		15.931373			
Carrier interval Δf [kHz]		3.923077			
Carrier number	Total number Nc	46			
	Data Nd	39			
	SP	3			
	TMCC	3			
	CP	1			
Transmission Bandwidth BW [kHz]		180.461539			

*1: SP (Scattered pilot) and CP (Continual Pilot) are signals for synchronization and demodulation of receiver.

*2: TMCC (Transmission and Multiplexing Configuration Control) is control information.

2 Basic configuration of channel coding

The basic configuration of channel coding is shown on Figure 3-1. The signal coded in the source coding block is provided with energy dispersal, error correction coding on convolution code and carrier modulation. After these processes, frequency interleaving and time interleaving are performed in order to improve effective error correction coding against multipath interference and the electric field change during transmitting-and-receiving operations under moving status. Also, the TMCC signal (which carries control information transmission mode, etc. for the support of demodulation and decoding in receiver) is transmitted with using specified carrier. This TMCC signal configures OFDM frame with information data and pilot signal for synchronous regeneration. All frame-structured signals are converted into OFDM transmitting signal with the IFFT operation. Input of energy dispersal and input of bit rotation prepared separately with 15 stage PN code generators based on the formula indicated below are structures of the frames which confirm mutual compatibility between transmitting part of channel coding and receiving part.

$$g(x)=X^{15}+X^{14}+1$$

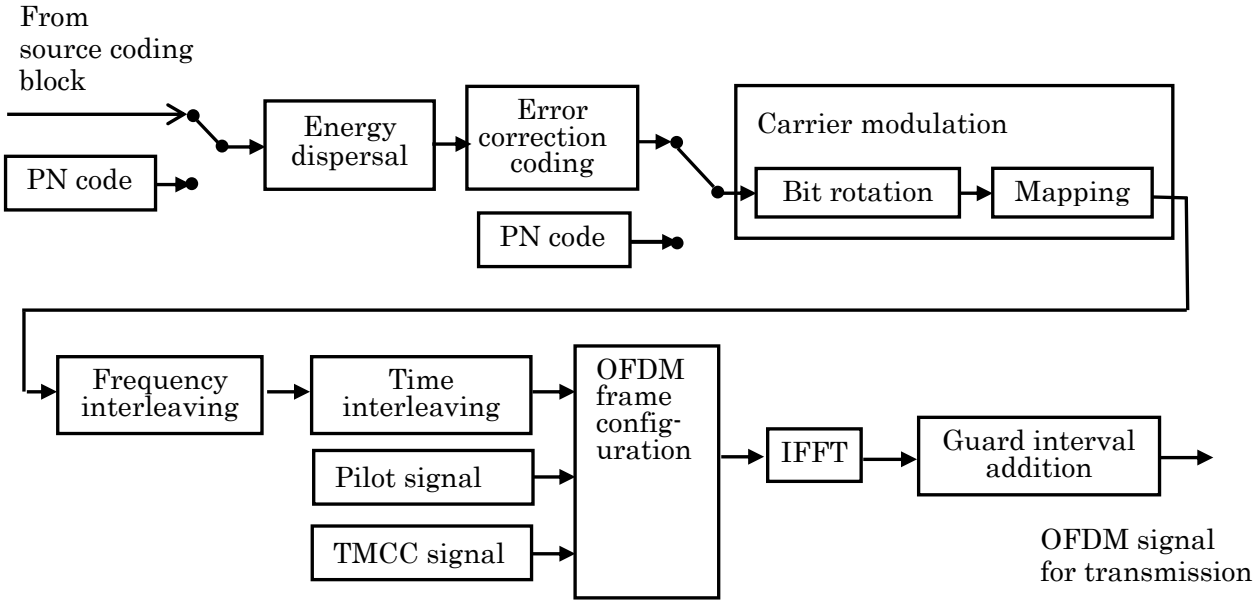


Figure 3-1 Block diagram of channel coding

3 Energy dispersal

Energy dispersal is implemented by using PRBS (Pseudo Random Binary Sequence). In addition, the initial value of PRBS generating circuit is arrayed from lower order along "101010101" and is initialized in every OFDM frame.

$$g(x)=X^{9}+X^{5}+1$$

4 Error correction coding

The error correction code consists of punctured convolution code under the mother code derived from constraint length k=7 and coding rate 1/2. Generating polynomial of mother code is fixed as G1=171oct and G2=133oct. Encoding the circuit of original code on constraint length k=7 and coding rate 1/2 is shown in Figure 3-2. And relation between coding rate of error correction code (1/2 or 2/3) and punctured transmission signal sequence is shown in Table 3-4.

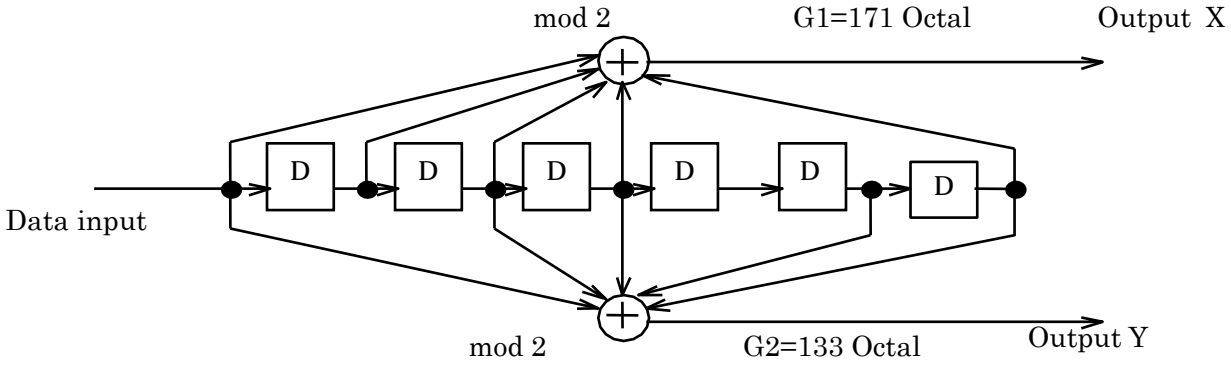


Figure 3-2 Encoding circuit of original code with constraint length k=7 and coding rate 1/2

Table 3-4 Coding rate of error correction code and transmission signal sequence

Coding rate	Puncturing pattern	Transmission signal sequence
1/2	X：1　Y：1	X_1, Y_1
2/3	X：1 0　Y：11	X_1, Y_1, Y_2

5 Carrier modulation

5.1 Configuration of carrier modulation

The input data of carrier modulation unit is bit-rotated by the prefixed method and mapped for modulation. The structure of carrier modulation unit is shown in Figure 3-3.

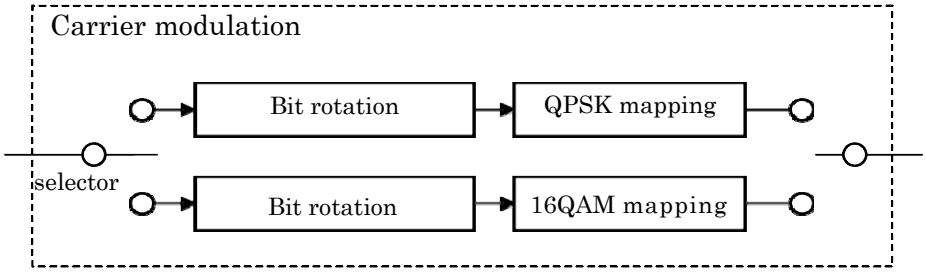
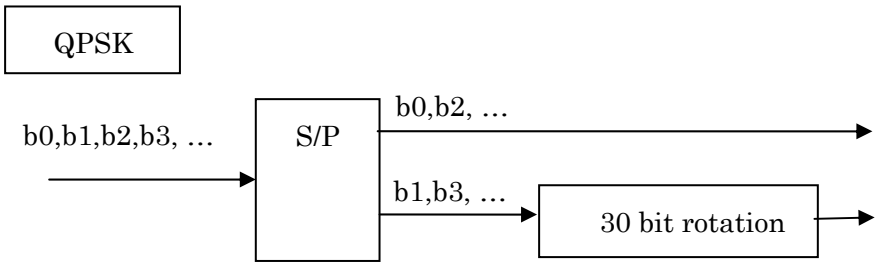


Figure 3-3 Configuration of carrier modulation unit

5.2 QPSK bit rotation and mapping

The input signal defined with 2 bits/symbol is put into process of QPSK mapping and outputs as plural bits of I axis data and Q axis data. Bit rotation is carried out in mapping process as shown in Figure 3-4. Bit rotation is executed within 1 symbol (39×2=78 bit) for the reduction of delay. Phase diagram of mapping is shown in Figure 3-5.



Input

b0, b2,…	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
b1 ,b3,…	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38

Output

b0, b2,…	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
b1, b3,…	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	0	1	2	3	4	5	6	7	8

Figure 3-4　QPSK bit rotation

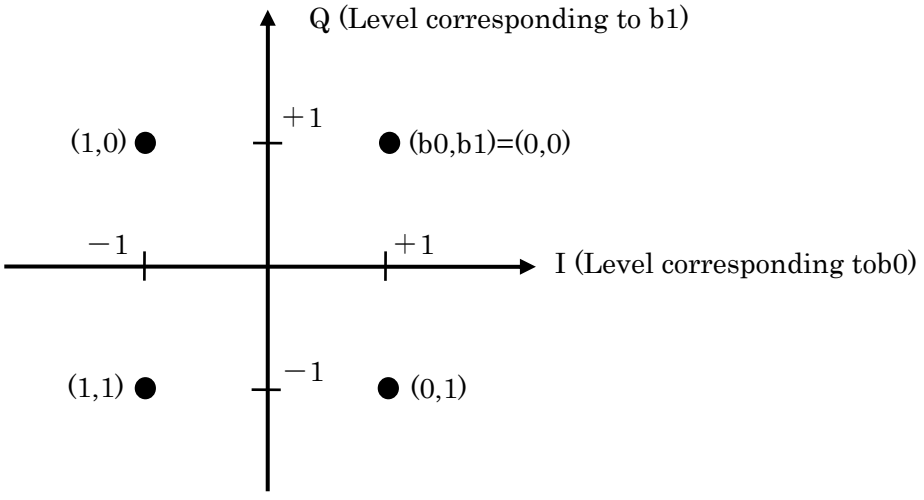
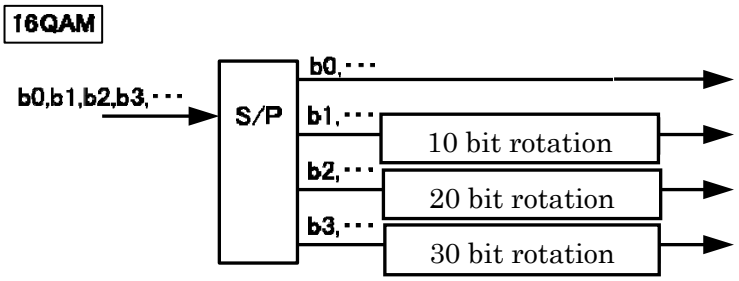


Figure 3-5　Phase diagram of QPSK mapping

5.3 Bit rotation of 16QAM and mapping

Input signal defined with 4 bits/symbol is put into process of 16QAM mapping and output as plural bits of I axis data and Q axis data. Bit rotation is carried out in mapping process as shown in Figure 3-6. Phase diagram of mapping is shown in Figure 3-7.



Input

b0・・・	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
b1・・・	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
b1・・・	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
b2・・・	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38

Output

b0・・・	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
b1・・・	29	30	31	32	33	34	35	36	37	38	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
b1・・・	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
b2・・・	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	0	1	2	3	4	5	6	7	8

Figure 3-6 16QAM bit rotation

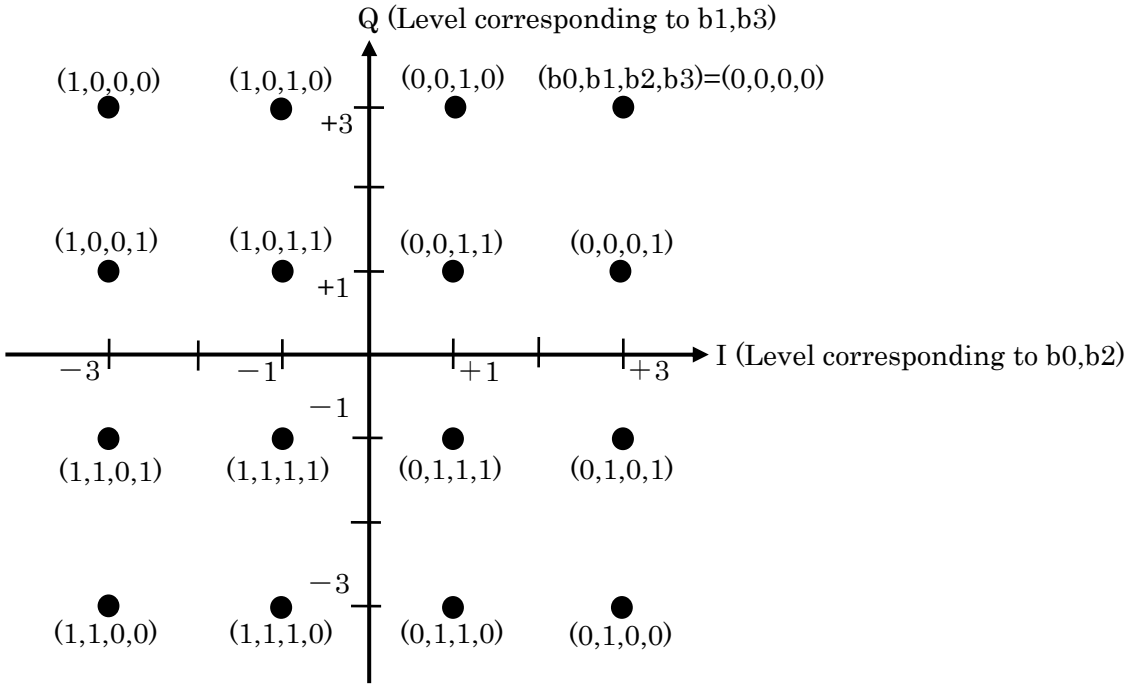


Figure 3-7 Phase diagram of 16QAM mapping

5.4 Normalization of modulation level

When the point of phase diagram of each modulation method shown in Figure 3-5 and Figure 3-7 is defined as Z (=I+jQ), level of sending signal shall be normalized with multiplying coefficient in Table 3-5. Consequently the average power of OFDM symbol is constantly 1 without depending modulation methods.

Table 3-5 Normalization of modulation level

Carrier modulation method	Normalization coefficient
QPSK	$Z/\sqrt{2}$
16QAM	$Z/\sqrt{10}$

6 Frequency interleaving

Frequency interleaving is defined by the formula of using carrier number k which is before interleaving and symbol number n. Symbol number is reset to 0 on every OFDM frame (60 symbol ; n=59). Carrier number k' after interleaving is calculated by the formula shown below. Carrier numbers after interleaving are shown in Table 3-6 based on the formula below.

Carrier number after interleaving $k'=(k\times 20+n) \bmod 39$

Table 3-6 Frequency interleaving（Carrier number after interleaving）

	Carrier number before interleaving k																																						
Symbol number n	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
0	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19
1	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20
2	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21
3	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22
4	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23
5	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24
6	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25
7	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26
8	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27
9	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28
10	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29
11	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30
12	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31
13	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32
14	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33
15	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34
16	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35
17	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36
18	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37
19	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38
20	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0
21	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1
22	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2
23	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3
24	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4
25	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5
26	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6
27	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7
28	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8
29	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9
30	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10
31	31	12	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11
32	32	13	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12
33	33	14	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13
34	34	15	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14
35	35	16	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15
36	36	17	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16
37	37	18	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17
38	38	19	0	20	1	21	2	22	3	23	4	24	5	25	6	26	7	27	8	28	9	29	10	30	11	31	12	32	13	33	14	34	15	35	16	36	17	37	18
‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥	‥

7 Time interleaving

Carriers are scattered on time axis for improving the tolerance against fading and interference. Configuration of time interleaving is shown in Figure 3-8. Length of time interleaving is selective among 6 kinds of parameters with changing the value of cell length (I) as shown in Table 3-7. After time interleaving, the beginning of OFDM frame is set to the beginning of the symbol including the most delayed data.

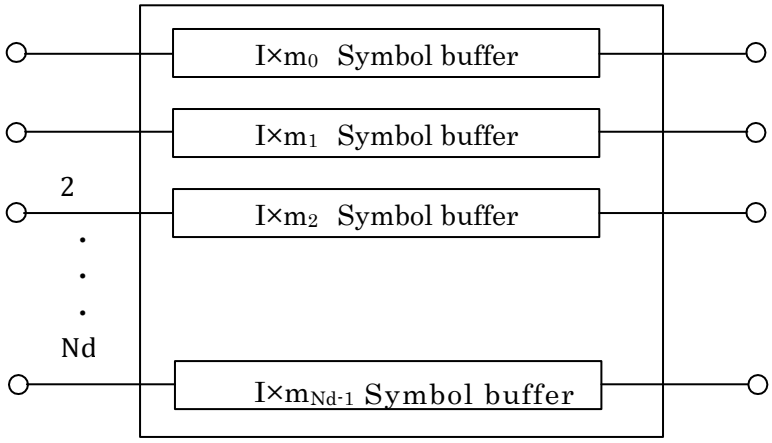


Figure 3-8 Configuration of time interleaving

Here, $m_i = (i \times 5) \bmod 39$. Nd denotes the number of data carriers (Nd = 39), and i denotes carrier number in a OFDM symbol. If the value of symbol buffer $I \times m_i$ is not integer, it shall be rounded up to the nearest integer.

Table 3-7 Length of time interleaving

Cell length (I)	Length of time interleaving			Depth of interleaving
	Occupied frequency bandwidth 600kHz	Occupied frequency bandwidth 288kHz	Occupied frequency bandwidth 192kHz	
0	Without interleaving			
3/38	0.250000ms	0.541667ms	0.812500ms	3 symbols
5/38	0.416667ms	0.902778ms	1.354167ms	5 symbols
11/38	0.916667ms	1.986111ms	2.979167ms	11 symbols
19/38	1.583333ms	3.430556ms	5.145833ms	19 symbols
29/38	2.416667ms	5.236111ms	7.854167ms	29 symbols
Reference value of symbol length	0.0833333ms	0.180556ms	0.270833ms	

8 Pilot signal

8.1 Scattered pilot signal

Scattered pilot (SP) is the BPSK signal related with W_k corresponded to OFDM carrier number k referring to W_k of output bit string from PRBS generation circuit shown in Figure 3.9. Initial value of PRBS generation circuit is set on next line below.

Initial value : 0 0 1 0 0 0 0 1 0 1 1

Correspondence between Wk and modulation signal is shown in Table 3-8.

$$G(x)=X^{11}+X^{9}+1$$

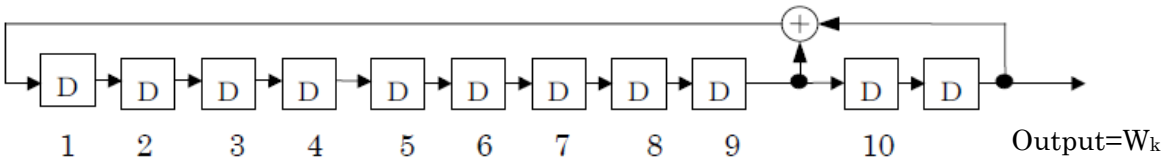


Figure 3-9 PRBS generation circuit

Table 3-8 W_k and modulation signal

W_k value	Amplitude of modulation signal (I,Q)
1	(−4/3,0)
0	(+4/3,0)

8.2 Continual pilot signal

Continual pilot (Continual pilot : CP) is BPSK signal modulated accordingly with the value of W_k which is described same as SP in previous section. Correspondence between W_k and modulation signal is same as Table 3-8. In addition, modulated phase is same in symbol direction. CP is aligned on the right end in the band.

9 TMCC signal

TMCC (Transmission and Multiplexing Configuration Control) signal is transmitted by DBPSK signal modulated with the base of TMCC information described later. Differential reference B_0 is defined with W_k described in section 8.1. Modulated signal of TMCC shall take coordinate point value of (+4/3,0) or (-4/3,0) which depends on the value 0 or 1 after differential coding. Information from B'_0 to B'_{59} after differential coding which are corresponding to information from B_0 to B_{59} before differential coding are defined as follows below.

$B'_0=W_k$ (Differential reference)

$B'_n=B'_{n-1} \oplus B_n$ (n=1, ..., 59, $\oplus$: exclusive-OR)

TMCC information consists of the cycle of 60 bits equivalent to one OFDM frame. Therefore one cycle time is 5.0ms in case of 600kHz occupied frequency bandwidth, as of 288kHz 10.833ms and of 192kHz 16.25ms. Assignment of TMCC information bit is shown in Table 3-9.

Table 3-9 TMCC information

Bit number	Description	
	Even number frame	Odd number frame
B_0	Reference for differential demodulation	Reference for differential demodulation
B_1～B_{16}	Synchronous signal W_0=0011 0101 1110 1110	Synchronous signal W_1=1100 1010 0001 0001
B_{17}～B_{18}	Carrier modulation technique 00 ：QPSK　10：undefined 01 ：16QAM　11：undefined	Error correction coding ratio 00：1/2　10：undefined 01：2/3　11 ：undefined
B_{19}～B_{21}	Time interleaving 000：no action　100：19/38 001：3/38　101：1 010：6/38　110：undefined 011：11/38　111：undefined	System identification 000：Corresponding to ARIB STD-T112 Ver.1.2 001～ undefined
B_{22}～B_{23}	Occupied frequency bandwidth 00：below 600kHz　10：below 192kHz 01：below 288kHz　11：undefined	Information identification 00：voice signal 10：PN15（without correction） 01：test signal 11：PN15（with correction）
B_{24}～B_{27}	Reserved 4bit “1111” to be added	Reserved 4bit “1111” to be added
B_{28}～B_{47}	Area for manufacturer’s definition	Area for manufacturer’s definition
B_{48}～B_{59}	Parity 12bit Shortened code (43,31), t=2 based on original code BCH(63,51) is applied. 31bits of B_{17}~B_{47} shall be allocated for the targeted area of correction. Generating polynomial is defined below. $h(x)=x^{12}+x^{10}+x^8+x^5+x^4+x^3+1$	Parity 12bit Shortened code (43,31), t=2 based on original code BCH(63,51) is applied. 31bits of B_{17}~B_{47} shall be allocated for the targeted area of correction. Generating polynomial is defined below. $h(x)=x^{12}+x^{10}+x^8+x^5+x^4+x^3+1$

The manufacturer's definition area (20 bits) of B_{28}~B_{47} is assigned for the transmission area of the information related to the microphone which is defined by the manufacturer. This area is used for transmitting various control information related to source coding, switching the sensitivity of microphone, battery remaining quantity, scramble, transmission power, alarm, etc.

10 OFDM frame structure

OFDM frame is structured with adding various pilot signals to data block. OFDM frame of QPSK and 16QAM modulation method is shown in Figure 3-10. $D_{n,k}$ signifies carrier symbol of data after interleaving. Here, k corresponds to the ordering number of carrier and n does to the ordering number of symbol.

Carrier number → k

n ← Symbol number

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	...	44	45
0	SP	$D_{0,0}$	TM	$D_{0,1}$	$D_{0,2}$	$D_{0,3}$	$D_{0,4}$	$D_{0,5}$	$D_{0,6}$	$D_{0,7}$	$D_{0,8}$	$D_{0,9}$	$D_{0,10}$	$D_{0,11}$	$D_{0,12}$	SP	$D_{0,13}$	$D_{0,14}$	$D_{0,15}$	...	$D_{0,38}$	CP
1	$D_{1,0}$	$D_{1,1}$	TM	SP	$D_{1,2}$	$D_{1,3}$	$D_{1,4}$	$D_{1,5}$	$D_{1,6}$	$D_{1,7}$	$D_{1,8}$	$D_{1,9}$	$D_{1,10}$	$D_{1,11}$	$D_{1,12}$	$D_{1,13}$	$D_{1,14}$	$D_{1,15}$	SP	...	$D_{1,38}$	CP
2			TM				SP															CP
3			TM							SP												CP
4			TM										SP									CP
5	SP		TM													SP						CP
6			TM	SP															SP			CP
7			TM				SP															CP
8			TM							SP												CP
9			TM										SP									CP
10			TM													SP						CP
11			TM																SP			CP
12			TM																			CP
13			TM																			CP
...			TM																			CP
.			TM																			CP
.			TM																			CP
.			TM																			CP
59			TM																			CP

Figure 3-10 OFDM frame structure

SP is inserted once per 15 carriers on carrier number axis and once per 5 symbols on symbol number axis. TMCC (written TM in Table 3-10) is to be inserted 3 times. OFDM carrier numbers of TMCC insertion shall be 2, 22, 34.

11 Center frequency of OFDM modulation wave

The center carrier number which is basis on frequency axis of OFDM modulation frequency is set to be k=22, as total carrier number is 46 and even. k=22 is the center of OFDM carriers except CP.

12 Addition of guard interval

Guard interval is prepared with using rear part of IFFT (Inverse Fast Fourier Transform) output data on specified time length and is to be added as it is antecedent to effective symbol. This operation is described in Figure 3-11.

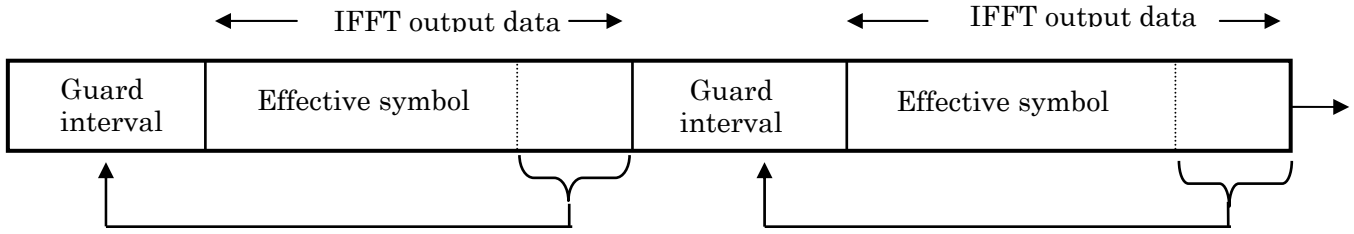


Figure 3-11 Addition of guard interval

Appendix 1　Test items for Specified Radio Equipment

1　Analog Specified Radio Microphone

(TV white space band, specified radio-microphone band, 1.2 GHz band)

(OTRCC Attached Table 1)

The test items required in the technical regulations of conformity certification for the land mobile station of Analog Specified Radio Microphone are as follows.

Transmitter

- Frequency
- Occupied frequency bandwidth
- Spurious emission or out-of-band emission intensity
- Antenna power
- Frequency deviation, frequency shift, or modulation degree
- Adjacent channel leakage power or out-band leakage power

2　Digital Specified Radio Microphone

(TV white space band, specified radio-microphone band, 1.2 GHz band)

(OTRCC Attached Table 1)

The test items required in the technical regulations of conformity certification for the land mobile station of a digital type specified radio microphone are as follows.

Transmitter

- Frequency
- Occupied frequency bandwidth
- Spurious emission or out-of-band emission intensity
- Antenna power
- Adjacent channel leakage power or out-band leakage power

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Appendix 2 Source Coding of OFDM Digital Specified Radio Microphone

This appendix may be referred for source coding of OFDM Digital Specified Radio Microphone.

1 The parameters of Source Coding

Transmission method of OFDM Digital Specified Radio Microphone is selectable among 4 mode parameters (mode 4, mode 3, mode 2, mode 1) with changing the carrier modulation method and coding rate of error correction technique according to using conditions. As transmission tolerance increases in accordance with smaller number of mode parameters, transmission capacity decreases on the contrary. There are three alternatives in occupied frequency bandwidths of 600KHz, 288kHz and 192KHz. Hereunder in this appendix, those parameters of transmission mode, information bit rate, voice bit rate etc. conducted in the transmission technique of OFDM Digital Specified Radio Microphone are disclosed.

1.1 Parameters of 600kHz occupied frequency bandwidth

Parameters for source coding of 600kHz occupied frequency bandwidth and monaural transmission are shown in Table 2-1. Linear PCM transmission is available in mode 4 and mode 3.

Table 2-1 Parameters for source coding of 600kHz occupied frequency bandwidth and monaural transmission

Transmission mode			600k - mode 4	600k - mode 3	600k - mode 2	600k - mode 1
Analog voice signal			monaural	monaural	monaural	monaural
Quantization bit number [bit]			24	24	24	24
Sampling frequency [kHz]			48	48	48	48
Information compression (compression ratio)			None	None/Instantaneous companding (19/24)	None/Instantaneous companding (13/24)	None/Instantaneous companding (9/24)
Voice bit number [bit]			24	19	13	9
Additional information [bit]			2	0.5	0	0.75
Compressed voice signal (stereophonic) bit rate [kbps]			1152	864	576	384
Additional information bit rate [kbps]			96	72	0	36
Information bit rate [kbps]			1248	936	624	468
Reference	Channel coding	Modulation method	16QAM-OFDM	16QAM-OFDM	QPSK-OFDM	QPSK-OFDM
		Coding rate	2/3	1/2	2/3	1/2
	Main use		Linear PCM microphone, Low-delay type microphone			

Instantaneous companding is the technique to compress voice information with operating input/output amplitude characteristics of voice on approximate curved line of logarithmic character digitally. This technique implements the compression with less delay, although it accompanies a few distortion in tone quality. The compression is defined as compression technique of more efficient one which is Adaptive Differential Pulse Code Modulation (hereafter so called ADPCM) than instantaneous companding. Additional information transmits the information related to voice data (parity code, etc.). Parameters for source coding of 600kHz occupied frequency bandwidth and stereo transmission are shown in Table 2-2.

Table 2-2 Parameters for source coding of 600 kHz occupied frequency bandwidth and stereophonic transmission

Transmission mode			600k - mode 4	600k - mode 3	600k - mode 2	600k - mode 1
Analog voice signal			Stereophonic	Stereophonic	Stereophonic	Stereophonic
Quantization bit number [bit]			24	24	24	24
Sampling frequency [kHz]			48	48	48	48
Information compression (compression ratio)			Instantaneous companding (1/2)	Instantaneous companding (9/24)	Compression (1/4)	Compression (1/6)
Voice bit number [bit]			12+12	9+9	6+6	4+4
Additional information [bit]			2	1.5	1	1.75
Compressed voice signal (stereophonic) bit rate [kbps]			1152 (576+576)	864 (432+432)	576 (288+288)	384 (192+192)
Additional information bit rate [kbps]			96	72	48	84
Information bit rate [kbps]			1248	936	624	468
Reference	Channel coding	Modulation method	16QAM-OFDM	16QAM-OFDM	QPSK-OFDM	QPSK-OFDM
		Coding rate	2/3	1/2	2/3	1/2
	Main use		Ear monitor, Stereophonic microphone			

1.2 Parameters of 288 kHz occupied frequency bandwidth

Parameters for source coding of 288kHz occupied frequency bandwidth are shown in Table 2-3. 288kbps voice transmission is available in mode 2 and 192kbps in mode 1.

Table 2-3 Parameters for source coding of 288KHz occupied frequency bandwidth

Transmission mode			288k - mode 4	288k - mode 3	288k - mode 2	288k - mode 1
Analog voice signal			monaural	monaural	monaural	monaural
Quantization bit number [bit]			24	24	24	24
Sampling frequency [kHz]			48	48	48	48
Information compression (compression ratio)			Instantaneous companding (1/2)	Instantaneous companding (3/8)	Compression (1/4)	Compression (1/6)
Voice bit number [bit]			12	9	6	4
Additional information [bit]			0	0	0	0.5
Compressed voice signal bit rate [kbps]			576	432	288	192
Additional information bit rate [kbps]			0	0	0	24
Information bit rate [kbps]			576	432	288	216
Reference	Channel coding	Modulation method	16QAM-OFDM	16QAM-OFDM	QPSK-OFDM	QPSK-OFDM
		Coding rate	2/3	1/2	2/3	1/2
	Main use		Multi-channel microphone, High quality sound microphone			

1.3 Parameters of 192kHz occupied frequency bandwidth

Parameters for source coding of 192kHz occupied frequency bandwidth are shown in Table 2-4. 288kbps voice transmission is available in mode 3 and 192kbps in mode 2.

Table 2-4 Parameters for source coding of 192 KHz occupied frequency bandwidth

Transmission mode			192k - mode 4	192k - mode 3	192k - mode 2	192k - mode 1
Analog voice signal			monaural	monaural	monaural	monaural
Quantization bit number [bit]			24	24	24	24
Sampling frequency [kHz]			48	48	48	48
Information compression (compression ratio)			Compression (1/3)	Compression (1/4)	Compression (1/6)	Compression (1/8)
Voice bit number [bit]			8	6	4	3
Additional information [bit]			0	0	0	0
Compressed voice signal (stereophonic) bit rate [kbps]			384	288	192	144
Additional information bit rate [kbps]			0	0	0	0
Information bit rate [kbps]			384	288	192	144
Reference	Channel coding	Modulation method	16QAM-OFDM	16QAM-OFDM	QPSK-OFDM	QPSK-OFDM
		Coding rate	2/3	1/2	2/3	1/2
	Main use		Multi-channel microphone			

2 Parameters endurable against pulse noise

Parameters which enable stable transmission even under pulse noise environment are shown in this section. Transmission mode endurable against pulse noise can be achieved with combination of voice compression / voice companding (Instantaneous companding, ADPCM, etc.) and time diversity which is to transmit the same information repeatedly. The concept of time diversity is shown in figure 2-1. To increase repetitions of time diversity as for twice, 3 times and 4 times, stable transmission can be also acquired against multiple impulsive noises.

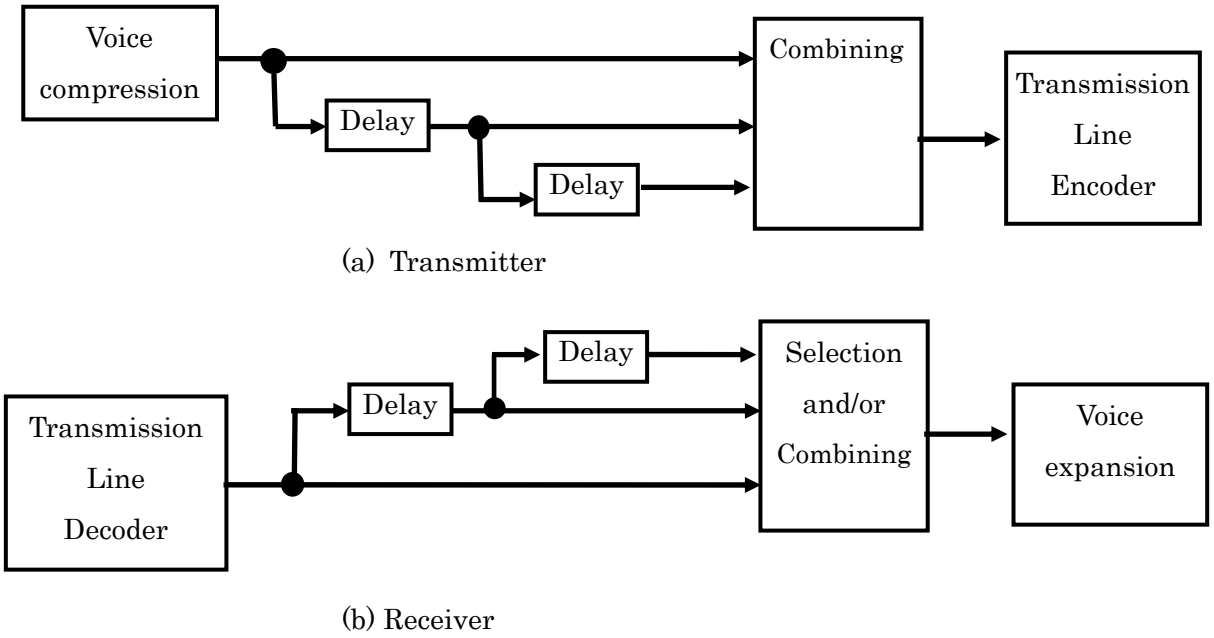

Figure 2-1 Conceptual diagram of time diversity

2.1 Parameters of 600kHz occupied frequency bandwidth

The parameters for source coding with time diversity technique on mode 4 (16QAM-OFDM, coding rate 2/3) are shown in Table 2-5. 2 times transmission is available at 576kbps voice bit rate, 3 times at 384kbps and 4 times at 288kbps.

Table 2-5 Parameters for source coding of 600KHz occupied frequency bandwidth with time diversity technique on mode 4

Transmission mode			600k-mode 4×2	600k-mode 4×3	600k-mode 4×4
Analog voice signal			monaural	monaural	monaural
Quantization bit number [bit]			24	24	24
Sampling frequency [kHz]			48	48	48
Information compression (compression ratio)			Instantaneous companding (1/2)	Compression (1/3)	Compression (1/4)
Voice bit number [bit]			12×2	8×3	6×4
Additional information [bit]			2	2	2
Compressed voice signal bit rate [kbps]			576×2	384×3	288×4
Additional information bit rate [kbps]			96	96	96
Information bit rate [kbps]			1,248	1,248	1,248
Reference	Channel coding	Modulation method	16QAM-OFDM	16QAM-OFDM	16QAM-OFDM
		Coding rate	2/3	2/3	2/3
	Remarks		2 times repetition time diversity	3 times repetition time diversity	4 times repetition time diversity

The parameters for source coding with time diversity technique on mode 3 (16QAM-OFDM, coding rate 1/2) are shown in Table 2-6. 2 times transmission is available at 384kbps voice bit rate, 3 times at 288kbps and 4 times at 192kbps.

Table 2-6 Parameters for source coding of 600KHz occupied frequency bandwidth with time diversity technique on mode 3

Transmission mode			600k-mode 3×2	600k-mode 3×3	600k-mode 3×4
Analog voice signal			monaural	monaural	monaural
Quantization bit number [bit]			24	24	24
Sampling frequency [kHz]			48	48	48
Information compression (compression ratio)			Compression (1/3)	Compression (1/4)	Compression (1/6)
Voice bit number [bit]			8×2	6×3	4×4
Additional information [bit]			3.5	1.5	3.5
Compressed voice signal bit rate [kbps]			384×2	288×3	192×4
Additional information bit rate [kbps]			168	72	168
Information bit rate [kbps]			936	936	936
Reference	Channel coding	Modulation method	16QAM-OFDM	16QAM-OFDM	16QAM-OFDM
		Code rate	1/2	1/2	1/2
	Remarks		2 times repetition time diversity	3 times repetition time diversity	4 times repetition time diversity

The parameters for source coding with time diversity technique on mode 2 (16QAM-OFDM, coding rate 1/2) are shown in Table 2-7. 2 times transmission is available at 288kbps voice bit rate, 3 times at 192kbps and 4 times at 144kbps.

Table 2-7 Parameters for source coding of 600KHz occupied frequency bandwidth with time diversity technique on mode 2

Transmission mode			600k-mode 2×2	600k-mode 2×3	600k-mode 2×4
Analog voice signal			monaural	monaural	monaural
Quantization bit number [bit]			24	24	24
Sampling frequency [kHz]			48	48	48
Information compression (compression ratio)			Compression (1/4)	Compression (1/6)	Compression (1/8)
Voice bit number [bit]			6×2	4×3	3×4
Additional information [bit]			1	1	1
Compressed voice signal bit rate [kbps]			288×2	192×3	144×4
Additional information bit rate [kbps]			48	48	48
Information bit rate [kbps]			624	624	624
Reference	Channel coding	Modulation method	QPSK-OFDM	QPSK-OFDM	QPSK-OFDM
		Coding rate	2/3	2/3	2/3
	Remarks		2 times repetition time diversity	3 times repetition time diversity	4 times repetition time diversity

The parameters for source coding with time diversity technique on mode 1 (QPSK-OFDM, coding rate 1/2) are shown in Table 2-8. 2 times transmission is available at 192kbps voice bit rate, 3 times at 144kbps and 4 times at 96kbps.

Table 2-8 Parameters for source coding of 600KHz occupied frequency bandwidth with time diversity technique on mode 1

Transmission mode			600k-mode 1×2	600k-mode 1×3	600k-mode 1×4
Analog voice signal			monaural	monaural	monaural
Quantization bit number [bit]			24	24	24
Sampling frequency [kHz]			48	48	48
Information compression (compression ratio)			Compression (1/6)	Compression (1/8)	Compression (1/12)
Voice bit number [bit]			4×2	3×3	2×4
Additional information [bit]			1.75	0.75	1.75
Compressed voice signal bit rate [kbps]			192×2	144×3	96×4
Additional information bit rate [kbps]			84	36	84
Information bit rate [kbps]			468	468	468
Reference	Channel coding	Modulation method	QPSK-OFDM	QPSK-OFDM	QPSK-OFDM
		Coding rate	1/2	1/2	1/2
	Remarks		2 times repetition time diversity	3 times repetition time diversity	4 times repetition time diversity

2.2 Parameters of 288kHz occupied frequency bandwidth

The parameters for source coding with time diversity technique on mode 4 (16QAM-OFDM, coding rate 2/3) are shown in Table 2-9. 2 times transmission is available at 288kbps voice bit rate, 3 times at 192kbps and 4 times at 144kbps.

Table 2-9 Parameters for source coding of 288kHz occupied frequency bandwidth with time diversity technique on mode 4

Transmission mode			288k-mode 4×2	288k-mode 4×3	288k-mode 4×4
Analog voice signal			monaural	monaural	monaural
Quantization bit number [bit]			24	24	24
Sampling frequency [kHz]			48	48	48
Information compression (compression ratio)			Compression (1/4)	Compression (1/6)	Compression (1/8)
Voice bit number [bit]			6×2	4×3	3×4
Additional information [bit]			0	0	0
Compressed voice signal bit rate [kbps]			288×2	192×3	144×4
Additional information bit rate [kbps]			0	0	0
Information bit rate [kbps]			576	576	576
Reference	Channel coding	Modulation method	16QAM-OFDM	16QAM-OFDM	16QAM-OFDM
		Coding rate	2/3	2/3	2/3
	Remarks		2 times repetition time diversity	3 times repetition time diversity	4 times repetition time diversity

The parameters for source coding of 288kHz occupied frequency bandwidth with time diversity technique on mode 3 (16QAM-OFDM, coding rate 1/2) are shown in Table 2-10. 2 times transmission is available at 192kbps voice bit rate, 3 times at 144kbps and 4 times at 96kbps.

Table 2-10 Parameters for source coding of 288kHz occupied frequency bandwidth with time diversity technique on mode 3

Transmission mode			288k-mode 3×2	288k-mode 3×3	288k-mode 3×4
Analog voice signal			monaural	monaural	monaural
Quantization bit number [bit]			24	24	24
Sampling frequency [kHz]			48	48	48
Information compression (compression ratio)			Compression (1/6)	Compression (1/8)	Compression (1/12)
Voice bit number [bit]			4×2	3×3	2×4
Additional information [bit]			1	0	1
Compressed voice signal bit rate [kbps]			192×2	144×3	96×4
Additional information bit rate [kbps]			48	0	48
Information bit rate [kbps]			432	432	432
Reference	Channel coding	Modulation method	16QAM-OFDM	16QAM-OFDM	16QAM-OFDM
		Coding rate	1/2	1/2	1/2
	Remarks		2 times repetition time diversity	3 times repetition time diversity	4 times repetition time diversity

The parameters for source coding with time diversity technique on mode 2 (QPSK-OFDM, coding rate 2/3) are shown in Table 2-11. 2 times transmission is available at 144kbps voice bit rate, 3 time sat 96kbps.

Table 2-11 Parameters for source coding of 288kHz occupied frequency bandwidth with time diversity technique on mode 2

Transmission mode			288k-mode 2×2	288k-mode 2×3
Analog voice signal			monaural	monaural
Quantization bit number [bit]			24	24
Sampling frequency [kHz]			48	48
Information compression (compression ratio)			Compression (1/8)	Compression (1/12)
Voice bit number [bit]			3×2	2×3
Additional information [bit]			0	0
Compressed voice signal bit rate [kbps]			144×2	96×3
Additional information bit rate [kbps]			0	0
Information bit rate [kbps]			288	288
Reference	Channel coding	Modulation method	QPSK-OFDM	QPSK-OFDM
		Coding rate	2/3	2/3
	Remarks		2 times repetition time diversity	3 times repetition time diversity

The parameters for source coding with time diversity technique on mode 1 (QPSK-OFDM, coding rate 1/2) are shown in Table 2-12. 2 times transmission is available at 96kbps voice bit rate.

Table 2-12 Parameters for source coding of 288kHz occupied frequency bandwidth with time diversity technique on mode 1

Transmission mode			288k-mode 1×2
Analog voice signal			monaural
Quantization bit number [bit]			24
Sampling frequency [kHz]			48
Information compression (compression ratio)			Compression (1/12)
Voice bit number [bit]			2×2
Additional information [bit]			1
Compressed voice signal bit rate [kbps]			96×2
Additional information bit rate [kbps]			24
Information bit rate [kbps]			216
Reference	Channel coding	Modulation method	QPSK-OFDM
		Coding rate	1/2
	Remarks		2 times repetition time diversity

Appendix 3 Rule of license application

1 Provision of license application

(RPORSL Article 2 Clause 1)

An application for a license of a radio station along with the classification of radio station raised in next shall be submitted at every location of transmitter installed (except those referring to, for mobile stations for artificial satellites stations, artificial satellite, ship stations, automatic distress report stations, aircraft stations, radio navigation mobile stations artificial satellite stations, ship earth stations and aircraft earth stations)

(RPORSL Article 2 Clause 9)

Among mobile radio stations premises radio stations which the Minister notifies particularly, amateur radio stations, radio buoy stations, convenience radio stations which the Minister notifies particularly and those radio stations which are admitted that an application of license on each transmitter is irrational, the license application may be done as a single radio station which includes more than 2 transmitters in spite of the provision of Clause 1.

2 Rule of license application for Specified Radio Microphone with frequency diversity function

A specified radio microphone with frequency diversity function in a single cabinet which is structured not to separate transmitters easily may be applied for a license as a single radio station which includes plural number of transmitters based on Radio regulatory commission rules No.15 article 2 clause 9 that is the multiple license applications are irrational Radio microphone of ear monitor shall be deemed to apply in the same procedure.

Plural radio equipment (transmitters) just fixed on racks, etc. may not be considered a single radio station as equipment are regarded easy to separate structurally. It is required to speak to the Ministry of internal affairs and communications in advance, if there is a question on the license application of a single radio station based on structural factor and others.

In addition, as technical regulations conformity certification is required to be obtained by each transmitter not by each radio station, multiple technical regulations conformity numbers according to the number of transmitters installed are necessary to be listed in the documents of license application.

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Appendix 4 Spectrum User Fee

1 Regulation

(1) Amount of the Spectrum User Fee

(RL・Appended Table No. 6)

<table>
<tr><th colspan="4">Classification of Radio Station</th><th>Amount</th></tr>
<tr><td rowspan="4">Mobile radio stations</td><td rowspan="4">Radio stations using radio waves of frequencies not exceeding 3,000MHz</td><td colspan="2">Radio stations using radio waves with a frequency bandwidth not exceeding 6MHz</td><td>600 yen</td></tr>
<tr><td>Radio stations using radio waves with a frequency bandwidth exceeding 6MHz but not exceeding 15MHz</td><td>Radio stations with antenna power not exceeding 0.05W</td><td>800 yen</td></tr>
<tr><td>Radio stations using radio waves with a frequency bandwidth exceeding 15MHz but not exceeding 30MHz</td><td>Radio stations with antenna power not exceeding 0.05W</td><td>1,800 yen</td></tr>
<tr><td>Radio stations using radio waves with a frequency bandwidth exceeding 30MHz</td><td>Radio stations with antenna power not exceeding 0.05W</td><td>3,800 yen</td></tr>
</table>

(2) Frequency bandwidth

(RERL・Article 51 Clause 9-4)

The frequency bandwidth of using radio wave in Radio Act Appended Table 6 and Appended Table 8 shall be interpreted as the bandwidth of frequency band concatenated with occupied frequency bandwidth (The frequency band of specified frequency put in the center (When determining inappropriate to put the specified frequency in the center of the band on the consideration of telecommunication services and the class of emission, the Minister of Internal Affairs and Telecommunication will announce extra frequency band.) of every specified frequency (The assigned frequency on the license as for licensed radio station and the registered frequency as for the registered station. The same shall apply hereafter.) and is equal to permissible value of occupied frequency bandwidth (Provided that permissible value exists more than two, maximum value is adopted among them.) The same shall apply hereafter.) However, radio stations of using radio waves of frequency band exceeding 470 MHz but not exceeding 710 MHz which are defined separately by the Minister as the radio stations restricted of locations, etc. to use the said radio waves by geographical, time-constraint or technical reason so that frequency bandwidth of radio waves in said frequency band shall be specified by the Minister separately.

(NT・No. 307 2014)

Based on the term of Regulations for Enforcement of Radio Act Article 51 Clause 9-4 proviso, radio stations and frequency bandwidths which the Minister of Internal Affairs and Telecommunications specifies separately are provided below.

Radio station	Frequency bandwidth
Land mobile station of Specified Radio Microphone defined with radio Equipment Regulations Article 49 Clause 16 and Digital Specified Radio Microphone defined with Radio Equipment Regulations Article 49 Clause 16-2	Frequency bandwidth is defined with bandwidth of frequencies concatenated by widths of channel division for television broadcasting (Frequency band exceeding 470MHz but not exceeding 710MHz is divided into channels of 6MHz width) corresponding to frequencies of radio waves which radio equipment of said radio stations are possible to transmit simultaneously.

(3) A radio station that is deemed to be significantly out of balance with other radio stations having the equivalent function

(RL・Appended Table No.6 Remarks 10)

With regard to a radio station in a specific radio station classification, a radio station for which the condition for granting the license or the condition for using the frequencies in the Frequency Assignment Plan permits interference and other disturbances caused by equipment utilizing high frequency current, or a radio stations specified by the applicable MIC Ordinance as a radio station that is deemed to be significantly out of balance with other radio stations having the equivalent function if this table is applied as is; in applying said table the frequency bandwidth of the radio waves used by said radio station shall be deemed to be equivalent to half the bandwidth thereof.

(RERL・Article 51 Clause 9-6)

The radio stations defined with the Ministerial Ordinance based on Radio Act Appended Table No. 6 Remarks 10 shall be listed below.

– The radio stations listed in Radio Act Appended Table 6-1 shall be applied to the stations which use radio waves of frequencies shown below (restricted only land mobile station of Specified Radio Microphone defined with ORE Article 49 Clause 16 and Digital Specified Radio Microphone defined with ORE Article 49 Clause 16-2).

- Frequency exceeding 470MHz but not exceeding 710MHz.
- Frequency exceeding 1240MHz but not exceeding 1252MHz and exceeding 1253 MHz but not exceeding 1260MHz.

2 The table of the spectrum user fee

(1) One transmitter in one cabinet

Frequency of using radio waves	Frequency bandwidth for calculating spectrum user fee	Amount
470MHz～530MHz (TV white space band)	3MHz ※1/2(*2) of 6MHz(*1)	600 yen
650MHz～710MHz (TV white space band)	3MHz ※1/2(*2) of 6MHz(*1)	600 yen
650MHz～714MHz (TV white space band and specified radio microphone band)	7MHz ※650MHz～710MHz：1/2(*2) of 6MHz(*1) + 710MHz～714MHz：4MHz	800 yen
1240MHz～1252MHz (1.2GHz band)	6MHz ※1240MHz～1252MHz：1/2(*2) of 12MHz	600 yen
1253MHz～1260MHz (1.2GHz band)	3.5MHz ※1253MHz～1260MHz：1/2(*2) of 7MHz	600 yen
1240MHz～1252MHz、 1253MHz～1260MHz (1.2GHz band)	9.5MHz ※1240MHz～1252MHz：1/2(*2) of 12MHz + 1253MHz～1260MHz：1/2(*2) of 7MHz	800 yen

*1: Width of channel division for digital ground television broadcasting corresponds to frequency of radio wave which is possible to transmit simultaneously.

*2: Frequency bandwidth shall be deemed equivalent to one half of frequency band.

(2) Two transmitters in one cabinet which transmit the same radio waves in the channel division for digital terrestrial television broadcasting simultaneously

Frequency of using radio waves	Frequency bandwidth for calculating spectrum user fee	Amount
470MHz～530MHz (TV white space band)	3MHz ※1/2(*2) of 6MHz(*1)	600 yen
650MHz～710MHz (TV white space band)	3MHz ※1/2(*2) of 6MHz(*1)	600 yen
650MHz～714MHz (TV white space band and specified radio microphone band)	7MHz ※650MHz～710MHz：1/2(*2) of 6MHz(*1) +710MHz～714MHz：4MHz	800 yen

*1: Width of channel division for digital terrestrial television broadcasting corresponds to frequency of radio wave which is possible to transmit simultaneously.

*2: Frequency bandwidth shall be deemed equivalent to one half of frequency band.

(3) Two transmitters in one cabinet which transmit different radio waves in the channel division for digital terrestrial television broadcasting simultaneously

Frequencies of using radio waves	Frequency bandwidth for calculating spectrum user fee	Amount
470MHz～530MHz (TV white space band)	6MHz ※1/2(*2) of 6MHz(*1)x2(*3)	600 yen
650MHz～710MHz (TV white space band)	6MHz ※1/2(*2) of 6MHz(*1) x2(*3)	600 yen
650MHz～714MHz (TV white space band and specified radio microphone band)	10MHz ※650MHz～710MHz： 1/2(*2) of 6MHz(*1) x2(*3) +710MHz～714MHz：4MHz	800 yen

*1: Width of channel division for digital ground television broadcasting corresponds to frequency of radio wave which is possible to transmit simultaneously.

*2: Frequency bandwidth shall be deemed equivalent to one half of frequency band.

*3: Bandwidth of frequencies concatenated with widths of channel division for ground digital television broadcasting corresponding to frequencies of radio waves which are possible to transmit simultaneously.

(4) Two transmitters in one cabinet which transmit radio waves in 1.2GHz band simultaneously

Frequencies of using radio waves	Frequency bandwidth for calculating spectrum user fee	Amount
1240MHz～1252MHz (1.2GHz band)	6MHz ※1240MHz～1252MHz：1/2(*2) of 12MHz	600 yen
1253MHz～1260MHz (1.2GHz band)	3.5MHz ※1253MHz～1260MHz：1/2(*2) of 7MHz	600 yen
1240MHz～1252MHz, 1253MHz～1260MHz (1.2GHz band)	9.5MHz ※1/2(*2) of (1240MHz to 1252MHz：12MHz +1253MHz～1260MHz：7MHz)	800 yen

*2: Frequency bandwidth shall be deemed equivalent to one half of frequency band.

Amendment History

SPECIFIED RADIO MICROPHONE FOR LAND MOBILE RADIO STATION
(TV WHITE SPACE BAND, EXCLUSIVE BAND, 1.2GHz BAND)

ARIB STANDARD

(ARIB STD-T112)

The 1.1th edition amendment history

Page	Para. no	Content of Amendment	Present	Reason
9	Chap-ter 3 3.2	(10) Limits of spurious emission intensity and out-of-band emission intensity (television white space band) -Limit of unwanted emission intensity within spurious domain: 4nW or less. However, for within ±1MHz band around center frequency, and bands of 470MHz or less and over 710MHz, it shall be 2.5μW or less.	(10) Limits of spurious emission intensity and out-of-band emission intensity (television white space band) -Limit of unwanted emission intensity within spurious domain: 4nW or less. However, for within ±1MHz band around center frequency it shall be 2.5μW or less.	Change related to amend-ment of NT
15	Chap-ter 4 4.2	(8) Limits of spurious emission intensity and out-of-band emission intensity (television white space band) -Limit of unwanted emission intensity within spurious domain: 4nW or less. However, for within ±1MHz band around center frequency, and bands of 470MHz or less and over 710MHz, it shall be 2.5μW or less.	(8) Limits of spurious emission intensity and out-of-band emission intensity (television white space band) -Limit of unwanted emission intensity within spurious domain: 4nW or less. However, for within ±1MHz band around center frequency it shall be 2.5μW or less.	Change related to amend-ment of NT
18	Chap-ter 5	Measurement methods shall be in accordance with NT No. 88 in 2004 related with paragraph 1-(3) of Table No.1 of 'OTRCC'. However, measurement methods of items that are not specified in the NT shall be based on conventionally practiced methods.	Measurement methods shall be in accordance with 'test method' (Note) related with paragraph 1-(3) of Table No.1 of 'OTRCC'. However, measurement methods of items that are not specified in the NT shall be based on conventionally practiced methods. (Note) At the time that this revision 1.0 is approved, 'test method' corresponds to NT No.88 of 2005 (issued at 26/Jan/2005). However if the NT and contents of the NT will be revised, the NT will correspond to the	Clarifica-tion of test method

		(For reference) In addition, TELEC-T209 ("Characteristic test method for radio equipment used for specified radio microphone for land mobile radio station using radio frequencies from 470MHz to 714MHz or radio frequencies from 1240MHz to 1260MHz (Analog Specified Radio Microphone)") and TELEC-T250 ("Characteristic test method for radio equipment used for digital specified radio microphone for land mobile radio station using radio frequencies from 470MHz to 714MHz or radio frequencies from 1240MHz to 1260MHz (Digital Specified Radio Microphone)") were issued by Telecom Engineering Center (TELEC) Foundation commissioned by paragraph 2 of NT No. 88 in 2004 related with paragraph 1-(3) of Table No.1 of OTRCC.	latest version.	
19	Annex 1	1 Channel name Indication of channel name (television white space band) 1 Digital Terrestrial Television Broadcasting channel number: 13 - 52 710 – 714MHz: 53 2 hyphen (may be omitted) 3 frequency number starting with 001 for lowest frequency +25kHz within the band, and successively numbered as 002, 003, … etc., for frequencies by 25kHz interval (1.2GHz band) 1 1240 – 1246MHz: 1.2L (Low) 1246 – 1252MHz: 1.2M (Middle) 1253 – 1260MHz: 1.2H (High) 2 hyphen (may be omitted) 3 frequency number starting with 001 for lowest frequency +25kHz within the band, and successively numbered as 002, 003, … etc., for frequencies by 25kHz interval	1 Channel name Indication of channel name (television white space band) 1 Digital Terrestrial Television Broadcasting channel number: 13 - 52 710 – 714MHz: 53 2 hyphen (may be omitted) 3 frequency number starting with 000 for lowest frequency +25kHz within the band, and successively numbered as 002, 003, … etc., for frequencies by 25kHz interval (1.2GHz band) 1 1240 – 1246MHz: 1.2L 1246 – 1252MHz: 1.2M 1253 – 1260MHz: 1.2H 2 hyphen (may be omitted) 3 frequency number starting with 000 for lowest frequency +25kHz within the band, and successively numbered as 002, 003, … etc., for frequencies by 25kHz interval	Change definition to match with Digital Terrestrial Television Broadcast-ing
20～63	Annex	frequency name	frequency name	Change

	1	476.000 13-240 482.000 14-240 488.000 15-240 494.000 16-240 500.000 17-240 506.000 18-240 512.000 19-240 518.000 20-240 524.000 21-240 530.000 22-240 536.000 23-240 542.000 24-240 548.000 25-240 554.000 26-240 560.000 27-240 566.000 28-240 572.000 29-240 578.000 30-240 584.000 31-240 590.000 32-240 596.000 33-240 602.000 34-240 608.000 35-240 614.000 36-240 620.000 37-240 626.000 38-240 632.000 39-240 638.000 40-240 644.000 41-240 650.000 42-240 656.000 43-240 662.000 44-240 668.000 45-240 674.000 46-240 680.000 47-240 686.000 48-240 692.000 49-240 698.000 50-240 704.000 51-240 710.000 52-240 1246.000 1.2L-240	476.000 14-000 482.000 15-000 488.000 16-000 494.000 17-000 500.000 18-000 506.000 19-000 512.000 20-000 518.000 21-000 524.000 22-000 530.000 23-000 536.000 24-000 542.000 25-000 548.000 26-000 554.000 27-000 560.000 28-000 566.000 29-000 572.000 30-000 578.000 31-000 584.000 32-000 590.000 33-000 596.000 34-000 602.000 35-000 608.000 36-000 614.000 37-000 620.000 38-000 626.000 39-000 632.000 40-000 638.000 41-000 644.000 42-000 650.000 43-000 656.000 44-000 662.000 45-000 668.000 46-000 674.000 47-000 680.000 48-000 686.000 49-000 692.000 50-000 698.000 51-000 704.000 52-000 710.000 53-000 1246.000 1.2M-000	definition to match with Digital Terrestrial Television Broadcast-ing

The 1.2th edition amendment history

Page	Para. no	Content of Amendment	Present	Reason
14	Chap-ter 4 4.1	(3) Type of modulation (television white space band, 1.2GHz band) Modulation method shall be phase shift keying, frequency modulation, quadrature amplitude modulation, or orthogonal frequency division multiplexing modulation. (ORE: Article 49.16.2) System of Orthogonal Frequency Division Multiplexing, hereinafter referred as 'OFDM', modulation shall be implemented according to modulation method defined in Annex 3.	(3) Type of modulation (television white space band, 1.2GHz band) (ORE: Article 49.16.2) Modulation method shall be phase shift keying, frequency modulation or quadrature amplitude modulation.	Change related to amend-ment of Ordinance of Ministry
15	Chap-ter 4 4.2	(6) Adjacent channel leakage power (television white space band, 1.2GHz band) (ORE: article 49.16.2) - For the system with occupied bandwidth within 288kHz, the power radiated into the ±144kHz band of the frequency 500kHz distant from the carrier frequency shall be lower than the carrier power by 40dB or more. - For the system with occupied bandwidth wider than 288kHz, the power radiated into the ±300kHz band of the frequency 800kHz distant from the carrier frequency shall be lower than the carrier power by 40dB or more.	(6) Adjacent channel leakage power (television white space band, 1.2GHz band) (ORE: article 49.16.2) The power radiated into the ±144kHz band of the frequency 500kHz distant from the carrier frequency shall be lower than the carrier power by 40dB or more.	Change related to amend-ment of Ordinance of Ministry
15	Chap-ter 4 4.2	(7) Tolerance of occupied bandwidth (television white space band, 1.2GHz band) (ORE: Article 6, attached table 2) The tolerance of occupied bandwidths shall be as follows. For the designation, the tolerance value of occupied bandwidth precedes the type of radio wave. (a) System using frequency from 1240MHz to 1260MHz with	(7) Tolerance of occupied bandwidth (television white space band, 1.2GHz band) (ORE: Article 6, attached table 2) The tolerance of occupied bandwidths shall be within 288kHz. For the designation, the tolerance value of occupied bandwidth precedes the type of radio wave.	Change related to amend-ment of Ordinance of Ministry

		occupied bandwidth wider than 288kHz: 600kHz (b) Other system than described in (a): 288kHz		
66	Annex 2	Add		Clarifica-tion of transmis-sion system
67～80	Annex 3	Add		Clarifica-tion of transmis-sion system
82～89	Appen-dix 2	Add		Clarifica-tion of transmis-sion system

The 1.3th edition amendment history

Page	Para. no	Content of Amendment	Present	Reason
7	Chap-ter 3 3.1	(2) Assigned frequency band (TV white space band, exclusive band) (ORE: Article 49.16) Assigned frequency band shall be from 470MHz to 714MHz. (frequency band from 470MHz to 710MHz refers to 'TV white space band', frequency band from 710MHz to 714MHz refers to 'exclusive band' for Specified Radio Microphone) (1.2GHz band) (ORE: Article 49.16) Assigned frequency band shall be from 1240MHz to 1260MHz, except from 1252MHz to 1253MHz. (frequency band from 1240MHz to 1260MHz, except from 1252MHz to 1253MHz, refers to '1.2GHz band')	(2) Assigned frequency band (television white space band) (ORE: Article 49.16) Assigned frequency band shall be from 470MHz to 714MHz. (frequency band from 470MHz to 710MHz refers to 'television white space band') (1.2GHz band) (ORE: Article 49.16) Assigned frequency band shall be from 1240MHz to 1260MHz, except from 1252MHz to 1253MHz.	Clarification of definition of terms
14	Chap-ter 4 4.1	(2) Assigned frequency band (TV white space band, exclusive band) (ORE: Article 49.16) Assigned frequency band shall be from 470MHz to 714MHz. (frequency band from 470MHz to 710MHz refers to 'TV white space band', frequency band from 710MHz to 714MHz refers to 'exclusive band' for Specified Radio Microphone) (1.2GHz band) (ORE: Article 49.16) Assigned frequency band shall be from 1240MHz to 1260MHz, except from 1252MHz to 1253MHz. (frequency band from 1240MHz to 1260MHz, except from 1252MHz to 1253MHz, refers to '1.2GHz band')	(2) Assigned frequency band (television white space band) (ORE: Article 49.16) Assigned frequency band shall be from 470MHz to 714MHz. (frequency band from 470MHz to 710MHz refers to 'television white space band') (1.2GHz band) (ORE: Article 49.16) Assigned frequency band shall be from 1240MHz to 1260MHz, except from 1252MHz to 1253MHz.	Clarification of definition of terms
14～15	Chap-ter 4 4.2	(3) Absolute gain of transmission antenna (TV white space band,	(3) Absolute gain of transmission antenna (television white space band,	Supplement related to

		exclusive band, 1.2GHz band) (ORE: Article 49.16.2) (NT: No. 317, 2013) Absolute gain of transmission antenna shall be within 2.14 dB, except the following. Transmission antenna for ear monitoring, using radio frequency from 1240MHz to 1260MHz, shall be within 7dB.	1.2GHz band) (ORE: Article 49.16.2) Absolute gain of transmission antenna shall be within 2.14dB.	enactment of new NT
64	Annex 1	2 Protection for Digital Terrestrial Television Broadcasting In TV white space band, to protect terrestrial broadcasting stations those use the same radio frequency band as primary frequency users for operating Digital Terrestrial Television Broadcasting, land mobile stations in Specified Radio Microphone shall operate observing 'Channel list for Specified Radio Microphone' issued by Ministry of Internal Affairs and Communications (MIC), which indicates adaptation areas satisfying with interference protection criterion. Channel list for Specified Radio Microphone is publicized at 'material' page of The Radio Use Web Site of MIC.	2 Protection for Digital Terrestrial Television Broadcasting In television white space band, to protect terrestrial broadcasting stations those use the same radio frequency band as primary frequency users for operating Digital Terrestrial Television Broadcasting, land mobile stations in Specified Radio Microphone shall operate observing 'Channel list for Specified Radio Microphone' issued by Ministry of Internal Affairs and Communications (MIC), which indicates adaptation areas satisfying with interference protection criterion.	Supple-ment
64～65	Annex 1	3 Coordination of Operation and Participation in Operation Coordination Conference for user systems sharing TV white space, etc. Operators of Specified Radio Microphone shall collect and manage information of operating conditions and coordinate operations for interference avoidance between radio equipment sharing the same frequency band within Specified Radio Microphone. Besides, operators shall coordinate operations with other radio systems within TV white space band. According to the conclusion by White Space Promoting Conference led by Ministry of Internal Affairs and Communications, allocation priority between systems	3 Coordination of Operation Operators of Specified Radio Microphone shall collect and manage information of operating conditions and coordinate operations for interference avoidance between radio equipment sharing the same frequency band within Specified Radio Microphone. Besides, operators shall coordinate operations with other radio systems within television white space band. According to the conclusion by White Space Promoting Conference led by Ministry of Internal Affairs and Communications, allocation priority between systems	Change to secure consis-tency with operation frame-work

		utilizing white space is as follows. Table (omitted) Specified Radio Microphone, listed prior to radio systems such as Area-specific Broadcasting System, is required to secure operations by establishing framework with licensed users of Area-specific Broadcasting System, etc. for coordinating operations and resolving problems. For this purpose 'Operation Coordination Conference for systems utilizing TV white space, etc.' (hereinafter referred as 'Conference') has been organized, whose participants are operators of Digital Terrestrial Television Broadcasting, a group of licensed user of Specified Radio Microphone, licensee of Area-specific Broadcasting System, etc., and persons in fair position with expertise, and decided to fill the role of coordinating operations and resolving problems between radio systems, including Specified Radio Microphone, Area-specific Broadcasting System, etc., and the role of contact institution at occurrence of radio interference to receivers to Digital Terrestrial Television Broadcasting.	utilizing white space is as follows. Table (omitted) Specified Radio Microphone, listed prior to radio systems such as Area-specific Broadcasting System, is required to secure operations by establishing framework with licensed users of Area-specific Broadcasting System for coordinating operations and resolving problems. For this purpose 'Operation Coordination Conference for systems utilizing TV white space, etc.' (hereinafter referred as 'Conference') has been established, whose participants are operators of Digital Terrestrial Television Broadcasting, a group of licensed user of Specified Radio Microphone, licensee of Area-specific Broadcasting System, etc., and persons in fair position with expertise, and supposed to fill the role of coordinating operations and resolving problems between radio systems, including Specified Radio Microphone, Area-specific Broadcasting System, etc., and the role of contact institution at occurrence of radio interference to receivers to Digital Terrestrial Television Broadcasting. As describe above it is important to coordinate operations among Specified Radio Microphone systems in television white space band and 1.2GHz band, to manage coordinating operations between Specified Radio Microphone and white space utilizing system such as Area-specific Broadcasting system in television white space band, and also to manage coordinating operations with 1.2GHz utilizing FPU, and thus new framework needs to be organized, and all the licensees of Specified Radio Microphone need to participate in this framework.	

		The Conference is also in charge of operation coordination of Specified Radio Microphone within TV white space band, exclusive band and 1.2GHz band, and with FPU using 1.2GHz band, and thus every Specified Radio Microphone license user shall participate in the Conference. Consequently, for acoustic communication with Specified Radio Microphone, operators shall participate in general incorporated association Operation Coordination Organization for Specified Radio Microphone, and the Organization shall participate in the Conference as a group of operators, for broadcasting service with Specified Radio Microphone, operators shall participate in the Conference individually.	(Note) (Note) New framework of coordinating operations is under consideration and conclusion of a settlement shall be included in the next version of this standard.	
65	Annex 1	6 Classification of Specified Radio Microphone Classification of Specified Radio Microphone is shown in Table 1-3. Table 1-1(omitted)		Clarifica-tion of channel classifica-tion
Overall		Replace term 'television white space' with terms 'TV white space band' and 'exclusive band (for Specified Radio Microphone)'.		Clarifica-tion of definition of terms

The 1.4th edition amendment history

Page	Para. no	Content of Amendment	Present	Reason
2	Chap-ter 1 1.3	In this standard, "RL" refers to Radio Law, "RERL" refers to Regulations for Enforcement of the Radio Law, "ORE" refers to "Ordinance Regulating Radio Equipment, "OTRCC" refers to Ordinance Concerning Technical Regulations Conformity Certification etc. of Specified Radio Equipment, "RPORSL" refers to Regulations for Procedure for Obtaining a Radio Station License, and "NT" refers to a Notification of the Ministry of Posts and Telecommunications if issued in 2000 or earlier, and a Notification of the Ministry of Internal Affairs and Communications if issued in 2001 or later.	In this standard, "ORE" refers to "Ordinance Regulating Radio Equipment, "OTRCC" refers to Ordinance Concerning Technical Regulations Conformity Certification etc. of Specified Radio Equipment, and "NT" refers to a Notification of the Ministry of Posts and Telecommunications if issued in 2000 or earlier, and a Notification of the Ministry of Internal Affairs and Communications if issued in 2001 or later.	Supple-ment
17	Chap-ter 4 4.1	(3) Type of modulation (TV white space band, exclusive band, 1.2GHz band) Modulation method shall be phase shift keying, frequency modulation, quadrature amplitude modulation, or orthogonal frequency division multiplexing modulation. (ORE: Article 49.16.2) - System of occupied bandwidth 288kHz or less shall be one of phase shift keying, frequency modulation, quadrature amplitude modulation, or Orthogonal Frequency Division Multiplexing, hereinafter referred as 'OFDM', modulation. - System of occupied bandwidth from 288kHz to 600kHz shall be OFDM modulation. OFDM modulation shall be implemented according to modulation method defined in Annex 3.	(3) Type of modulation (TV white space band, exclusive band, 1.2GHz band) Modulation method shall be phase shift keying, frequency modulation, quadrature amplitude modulation, or orthogonal frequency division multiplexing modulation. (ORE: Article 49.16.2) Orthogonal Frequency Division Multiplexing, hereinafter referred as 'OFDM', modulation shall be implemented according to modulation method defined in Annex 3.	Change in accor-dance with RL related examina-tion guideline
18～	Chap-t	(7) Tolerance of occupied	(7) Tolerance of occupied	Change in

19	er 4 4.2	bandwidth (TV white space band, exclusive band, 1.2GHz band) The tolerance of occupied bandwidths shall be as follows. For the designation, the tolerance value of occupied bandwidth precedes the type of radio wave. a) System using frequency from 1240MHz to 1260MHz with occupied bandwidth wider than 288kHz: 600kHz b) Systems other than described in a): 288kHz (ORE: Article 6, attached table 2) Among systems listed in b), for systems with occupied bandwidth within 192kHz, the designation preceding the type of radio wave can be '192kHz'.	bandwidth (TV white space band, exclusive band, 1.2GHz band) (ORE: Article 6, attached table 2) The tolerance of occupied bandwidths shall be as follows. For the designation, the tolerance value of occupied bandwidth precedes the type of radio wave. a) System using frequency from 1240MHz to 1260MHz with occupied bandwidth wider than 288kHz: 600kHz b) Systems other than described in a): 288kHz	accor-dance with RL related examina-tion guideline
69	Annex 1	Available channels for Analog Specified Radio Microphone are listed in Table 1-1, and for Digital Specified Radio Microphone in Table 1-2. Table 1-1 Available channels for Analog Specified Radio Microphone Table 1-2 Available channels for Digital Specified Radio Microphone Among specified low power radio stations for telemetry, telecontrol, or data transmission, radio stations with occupied bandwidth within 32kHz use frequencies from 1252.000MHz to 1253.000MHz center frequency. (NT: No. 42-1-5(2))		Change in accor-dance with RL related examina-tion guideline
70	Annex 1	2 Protection for Digital Terrestrial Television Broadcasting In case of setting center frequency of Specified Radio Microphone at TV channel marked '○' in the channel list, to satisfy with in-band interference protection criterion 'I/N = -10dB to adjacent channel, land mobile stations shall operate within 4MHz excluding 1MHz at both outside	2 Protection for Digital Terrestrial Television Broadcasting	Supple-ment

		of 6MHz channel. However, in case that adjacent channel is also marked '○', 1MHz at its boundary is available for Specified Radio Microphone. FigureA-1-1 Center frequency allowed range for Specified Radio Microphone Even when setting center frequency within 1MHz band from 710MHz to 711MHz, which is part of exclusive band for Specified Radio Microphone from 710MHz to 714MHz, land mobile stations shall satisfy with in-band interference protection criterion for TV 52ch (from 704MHz to 710MHz). It is essential for Specified Radio Microphone when setting center frequency from 470MHz to 711MHz, not to affect the operation of terrestrial broadcasting base stations and to accept interference from those base stations, for Digital Terrestrial Television Broadcasting.		
104	Appen-dix 3	Add		Informa-tion
105 ～ 109	Appen-dix 4	Add		Supple-ment related to enactment of rules

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Communication Note of ARIB Standard-related Proposals, etc.

ARIB Standard Name (No.)	**Specified radio Microphone for Land Mobile Station (TV White Space Band, Exclusive Band, 1.2GHz Band) (STD-T112)**

Sections to be completed by sender

Name:		Date	/ / /
TEL:	FAX:	E-mail:	
Company name Department name			
Page / Section	(Please describe your proposal or present your questions or comments in concrete terms.)		

(Response)		Sections to be completed by secretariat	
		Date of receipt	/ / /
Classification:		Ref. No.	—
		Remarks	

Please send your ARIB Standard-related question in this format.

If you complete this form in English, please provide Japanese translation alongside the English.

Specified Radio Microphone for Land Mobile Radio Station
(TV white space band, Specified radio microphone band, 1.2 GHz band)
ARIB STANDARD
ARIB STD-T112 Version 1.4

Version 1.0	July	3rd 2013
Version 1.1	September	26th 2013
Version 1.2	March	18th 2014
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