The Outline of Proposed Amendment to Ministerial Ordinance

1 Item

Partial revision of Regulations for Enforcement of the Radio Act etc

2 Amendment to ministerial ordinance

Regulations for Enforcement of the Radio Act

Regulations for Radio Equipment

Concerning Technical Regulations Conformity Certification of Specified Radio Equipment

3 Reasons for amendment

Japan will make necessary amendments of technical regulations for the local 5G system to enable various players (ex. SMEs, farmers or local governments) excluding national mobile operators to establish and use private 5G network mainly in their property based on regional or industrial needs.

4 Outline of the amendment

Technical requirements of the local 5G system

Item	Description
Frequency band	28.2 GHz – 28.3 GHz
Communication System	TDD
Multiplexing and Multiple access method	(1)Base Station: OFDM/TDM (2)Mobile Station: OFDMA/SC-FDMA
Modulation method	(1)Base Station: QPSK/16QAM/64QAM/256QAM (2)Mobile Station: π/2-BPSK/QPSK /16QAM/64QAM/256QAM
Allowable deviation of occupied band width	(1)Base Station: 50 MHz / 100 MHz (2)Mobile Station: 50 MHz / 100 MHz
Allowable deviation of frequency	(1)Base Station: ≦± (0.1 ppm＋12 Hz) (2)Mobile Station: ≦±0.105 ppm
Antenna Power	(1) Base station: ≦5 dBm/MHz (outside), ≦0 dBm/MHz (inside) (2) Mobile station: Maximum of Rated antenna power ≦ 23 dBm

Allowable deviation of Antenna Power	(1) Base Station: ≦Rated antenna power ±5.1 dB (2) Mobile Station: ≦Rated antenna power + 3.6 dB
Allowable deviation of absolute antenna gain	(1) Base Station: ≦23 dBi (2) Mobile Station: ≦ 20 dBi
Spurious emission	Appendix 1
Spectrum Mask	Appendix 2
Adjacent channel leakage ratio	Appendix 3
Secondary Radiated Emission Strength	Appendix 4

Appendix 1（Spurious emission）

(1) Base station

Frequency bands	Limit value	Measurement bandwidth
30 MHz – 1,000 MHz	-13 dBm	100 kHz
From 1,000 MHz to less than twice from the top frequency excluding between 25.5 GHz and 31.0 GHz	-13 dBm	1 MHz

(2) Mobile station

Frequency bands	Limit value	Measurement bandwidth
6 GHz – 12.75 GHz	- 30 dBm	1 MHz
From 12.75 GHz to less than twice from the top frequency	- 13 dBm	1 MHz

Appendix 2 (Spectrum Mask)

(1) Base Station

Frequency offset, f_offset (MHz)	Spectrum Mask	Measurement bandwidth
0.5MHz≤ f_offset <0.1bandwidth+0.5MHz	- 2.3 dBm	1 MHz
0.1bandwidth+0.5MHz ≤ f_offset	- 13 dBm	1 MHz

(2) Mobile Station

Frequency offset	Spectrum Mask (dBm)/ Cannel bandwidth		Measurement bandwidth
	50 MHz	100 MHz	
± 0 MHz – 5 MHz	1.5	1.5	1 MHz
± 5 MHz – 10 MHz	-6.5	1.5	1 MHz
± 10 MHz – 100 MHz	-6.5	-6.5	1 MHz
± 100 MHz – 200 MHz		-6.5	1 MHz

Appendix 3 (Adjacent channel leakage ratio)

(1) Base Station

Channel bandwidth		Frequency detuning	Limit value	Channel measurement bandwidth
50 MHz	Absolute value	50 MHz	-10.3 dBm/MHz	47.52 MHz
	Relative value	50 MHz	-25.7 dBc	47.52 MHz
100 MHz	Absolute value	100 MHz	-10.3 dBm/MHz	95.04 MHz
	Relative value	100 MHz	-25.7 dBc	95.04 MHz

(2) Mobile Station

Channel bandwidth		Frequency detuning	Limit value	Channel measurement bandwidth
50 MHz	Absolute value	50 MHz	-35 dBm	47.52 MHz
	Relative value	50 MHz	-10.7 dBc	47.52 MHz
100 MHz	Absolute value	100 MHz	-35 dBm	95.04 MHz

Appendix 4(Secondary Radiated Emission Strength)

(1) Base station

Frequency bands	Limit value	Measurement bandwidth
30MHz – 1,000 MHz	-54.5 dBm	100 kHz
1,000 MHz – 12.75 GHz	-44.3 dBm	1 MHz
From 12.75 MHz to less than twice from the top frequency excluding between 25.5 GHz and 31 GHz	-36 dBm	1 MHz

(2) Mobile station

Frequency bands	Limit value	Measurement bandwidth
6 GHz – 20 GHz	-36.8 dBm	1 MHz
20 GHz – 40GHz	-29.8 dBm	1 MHz
Over 40 GHz less than twice from the top frequency	-13.9 dBm	1 MHz

5 Proposed date of entry into force

December, 2019