

The Outline of Proposed Amendment to Ministerial Ordinance

1 Item

Partial revision of Regulations for Radio Equipment

2 Amendment to ministerial ordinance

Regulations for Radio Equipment

3 Reasons for amendment

Considering the situation that the traffic of the mobile communications is increasing every year, it is necessary to make easy connection of Wireless LAN in Japan. To meet these demands, we arrange the technical standards of the Wireless LAN System for the expansion of use of the 5.2GHz band.

4 Outline of the amendment

Technical requirements of radio equipment

Item	
Name	Wireless LAN System (5.2GHz)
Frequency band	5150MHz to 5250MHz <ul style="list-style-type: none"> ▪ 20MHz system : 5180MHz, 5200MHz, 5220MHz and 5240MHz ▪ 40MHz system : 5190MHz, 5230MHz ▪ 80MHz system : 5210MHz
Communication Systems	Unidirectional, Simplex, Half-Duplex and Duplex
Modulation	DS-SS, Amplitude Modulation, Phase Modulation, Frequency Modulation, Pulse Modulation or these combination, and OFDM
Max Bit-rate	<ul style="list-style-type: none"> ▪ 20MHz system : more than 20 Mbps ▪ 40MHz system : more than 40 Mbps ▪ 80MHz system : more than 80 Mbps
OBW	<ul style="list-style-type: none"> ▪ 20MHz system : 19 MHz (OFDM), 18 MHz (other modulations) ▪ 40MHz system : 38 MHz ▪ 80MHz system : 78 MHz
Allowable deviation of	$\pm 20 \times 10^{-6}$

frequency																															
Antenna Power	<p>OFDM</p> <ul style="list-style-type: none"> ▪ 20MHz system : 10 mW/MHz ▪ 40MHz system : 5 mW/MHz ▪ 80MHz system : 2.5 mW/MHz <p>DS-SS: 10 mW/MHz</p> <p>other modulations: 10mW</p>																														
EIRP	<p>License system (Fixed-AP)</p> <table border="1"> <thead> <tr> <th></th> <th>elevation angle θ (degree)</th> <th>Max EIRP (dBW/MHz)</th> </tr> </thead> <tbody> <tr> <td rowspan="4">20MHz system</td> <td>< 8</td> <td>-13</td> </tr> <tr> <td>8 to 40</td> <td>$-13 - 0.716(\theta - 8)$</td> </tr> <tr> <td>40 to 45</td> <td>$-35.9 - 1.22(\theta - 40)$</td> </tr> <tr> <td>45 <</td> <td>-42</td> </tr> <tr> <td rowspan="4">40MHz system</td> <td>< 8</td> <td>-16</td> </tr> <tr> <td>8 to 40</td> <td>$-16 - 0.716(\theta - 8)$</td> </tr> <tr> <td>40 to 45</td> <td>$-38.9 - 1.22(\theta - 40)$</td> </tr> <tr> <td>45 <</td> <td>-45</td> </tr> <tr> <td rowspan="4">80MHz system</td> <td>< 8</td> <td>-19</td> </tr> <tr> <td>8 to 40</td> <td>$-19 - 0.716(\theta - 8)$</td> </tr> <tr> <td>40 to 45</td> <td>$-41.9 - 1.22(\theta - 40)$</td> </tr> <tr> <td>45 <</td> <td>-48</td> </tr> </tbody> </table> <p>Un-license system (STA)</p> <ul style="list-style-type: none"> ▪ 20MHz system : 10 mW/MHz ▪ 40MHz system : 5 mW/MHz ▪ 80MHz system : 2.5 mW/MHz 		elevation angle θ (degree)	Max EIRP (dBW/MHz)	20MHz system	< 8	-13	8 to 40	$-13 - 0.716(\theta - 8)$	40 to 45	$-35.9 - 1.22(\theta - 40)$	45 <	-42	40MHz system	< 8	-16	8 to 40	$-16 - 0.716(\theta - 8)$	40 to 45	$-38.9 - 1.22(\theta - 40)$	45 <	-45	80MHz system	< 8	-19	8 to 40	$-19 - 0.716(\theta - 8)$	40 to 45	$-41.9 - 1.22(\theta - 40)$	45 <	-48
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Allowable deviation of Antenna Power	-80 to +20%																														
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	78MHz	and more than 5480MHz		
Spectrum Mask (2)	<p>OBW is less than 18MHz : Average powers within the ± 9MHz regions of 20MHz and 40MHz separations from the carrier frequency are respectively 25dB and 40dB less than the average power of the carrier frequency.</p> <p>OBW is 18MHz to 19MHz : Average powers within the ± 9.5MHz regions of 20MHz and 40MHz separations from the carrier frequency are respectively 25dB and 40dB less than the average power of the carrier frequency.</p> <p>OBW is 19MHz to 38MHz : Average powers within the ± 19MHz regions of 40MHz and 80MHz separations from the carrier frequency are respectively 25dB and 40dB less than the average power of the carrier frequency.</p> <p>OBW is 38MHz to 78MHz : Average power within the ± 39MHz region of 80MHz separation from the carrier frequency are 25dB less than the average power of the carrier frequency.</p>			
Spectrum Mask (3)	License system (Fixed-AP)			
	OBW	reference channel	applied frequency region	Allowable unwanted emission level (EIRP)
	< 18MHz	5240MHz	5140MHz - 5142MHz	12.5 μ W/MHz
			5142MHz - 5150MHz	75 μ W/MHz
			5250MHz - 5251MHz	$10^{1+\log(5)-(f-9)}$ mW/MHz
			5251MHz - 5260MHz	$10^{-1+\log(5)-(8/90)(f-11)}$ mW/MHz
			5260MHz - 5266.7MHz	$10^{-1.8+\log(5)-(6/50)(f-20)}$ mW/MHz
			5266.7MHz - 5360MHz	12.5 μ W/MHz
	18MHz to 19MHz	5180MHz	5135MHz - 5142MHz	12.5 μ W/MHz
			5142MHz - 5150MHz	75 μ W/MHz
		5240MHz	5250MHz - 5251MHz	$10^{1+\log(5)-(f-9)}$ mW/MHz
			5251MHz - 5260MHz	$10^{-1+\log(5)-(8/90)(f-11)}$ mW/MHz
			5260MHz - 5266.7MHz	$10^{-1.8+\log(5)-(6/50)(f-20)}$ mW/MHz
			5266.7MHz - 5365MHz	12.5 μ W/MHz
	19MHz to 38MHz	5190MHz	5100MHz - 5141.6MHz	12.5 μ W/MHz
			5141.6MHz - 5150MHz	75 μ W/MHz
		5230MHz	5250MHz - 5251MHz	$10^{\log(5)-(f-20)+\log(1/2)}$ mW/MHz
			5251MHz - 5270MHz	$10^{\log(5)-(8/190)(f-21)-1+\log(1/2)}$ mW/MHz

		5270MHz - 5278.4MHz	$10^{\log(5)-(3/50)(f-40)-1.8+\log(1/2)}$ mW/MHz
		5278.4MHz - 5400MHz	12.5μW/MHz
38MHz to 78MHz	5210MHz	5020MHz - 5123.2MHz	12.5μW/MHz
		5123.2MHz - 5150MHz	75μW/MHz
		5250MHz - 5251MHz	$10^{\log(5)-(f-40)+\log(1/4)}$ mW/MHz
		5251MHz - 5290MHz	$10^{\log(5)-(8/390)(f-41)-1+\log(1/4)}$ mW/MHz
		5290MHz - 5296.7MHz	$10^{\log(5)-(3/100)(f-80)-1.8+\log(1/4)}$ mW/MHz
		5296.7MHz - 5480MHz	12.5μW/MHz
' f ' is the separation from the carrier frequency. (unit : MHz)			
Un-license system (STA)			
OBW	reference channel	applied frequency region	Allowable unwanted emission level (EIRP)
< 18MHz	5240MHz	5140MHz - 5142MHz	2.5μW/MHz
		5142MHz - 5150MHz	15μW/MHz
		5250MHz - 5251MHz	$10^{1-(f-9)}$ mW/MHz
		5251MHz - 5260MHz	$10^{-1-(8/90)(f-11)}$ mW/MHz
		5260MHz - 5266.7MHz	$10^{-1.8-(6/50)(f-20)}$ mW/MHz
		5266.7MHz - 5360MHz	2.5μW/MHz
18MHz to 19MHz	5180MHz	5135MHz - 5142MHz	2.5μW/MHz
		5142MHz - 5150MHz	15μW/MHz
	5240MHz	5250MHz - 5251MHz	$10^{1-(f-9)}$ mW/MHz
		5251MHz - 5260MHz	$10^{-1-(8/90)(f-11)}$ mW/MHz
		5260MHz - 5266.7MHz	$10^{-1.8-(6/50)(f-20)}$ mW/MHz
		5266.7MHz - 5365MHz	2.5μW/MHz
19MHz to 38MHz	5190MHz	5100MHz - 5141.6MHz	2.5μW/MHz
		5141.6MHz - 5150MHz	15μW/MHz
	5230MHz	5250MHz - 5251MHz	$10^{-(f-20)+\log(1/2)}$ mW/MHz
		5251MHz - 5270MHz	$10^{-(8/190)(f-21)-1+\log(1/2)}$ mW/MHz
		5270MHz - 5278.4MHz	$10^{-(3/50)(f-40)-1.8+\log(1/2)}$ mW/MHz
		5278.4MHz - 5400MHz	2.5μW/MHz
38MHz to 78MHz	5210MHz	5020MHz - 5123.2MHz	2.5μW/MHz
		5123.2MHz - 5150MHz	15μW/MHz
		5250MHz - 5251MHz	$10^{-(f-40)+\log(1/4)}$ mW/MHz
		5251MHz - 5290MHz	$10^{-(8/390)(f-41)-1+\log(1/4)}$ mW/MHz
		5290MHz - 5296.7MHz	$10^{-(3/100)(f-80)-1.8+\log(1/4)}$ mW/MHz
		5296.7MHz - 5480MHz	2.5μW/MHz
' f ' is the separation from the carrier frequency. (unit : MHz)			
Leak radiation from receiver circuit	At the frequency region less than 1GHz : 4nW more than 1GHz : 20nW		

5 Proposed date of entry into force
around June or July 2018