The Outline of Proposed Amendment to Ministerial Ordinance

1 Item

Partial amendment of Regulations for Radio Equipment

2 Amendment to ministerial ordinance

Regulations for Radio Equipment

3 Reasons for amendment

Needs of high-definition transmission and long-range transmission by wireless robot equipment are increasing because the robots are expected to be useful in various scenes. Responding to these needs, current regulation related to radio equipment will amended to add the channels and arrange the technical regulations of the WIRELESS SYSTEM for the new use by robots.

4 Outline of the amendment

Technical requirements of radio equipment

Item	
Name	WIRELESS SYSTEM for robots
Usage	Wireless system mainly for transmitting the images from robots, or for monitoring or controlling by users.
Frequency band	【169MHz band】 169.050MHz~169.3975MHz and 169.8075MHz~170.000MHz 【2.4GHz band】 2483.5MHz~2494MHz ・5MHz system：2486MHz and 2491MHz ・10MHzsystem：2489MHz 【5.7GHz band】 5650MHz~5755MHz ・5MHz system：21 frequencies of 5MHz channel spacing from 5652.5MHz to 5752.5MHz ・10MHz system：8 frequencies of 10MHz channel spacing from 5655MHz to 5725MHz, 5740MHz and 5750MHz ・20MHz system：4 frequencies of 20MHz channel spacing from 5660MHz to 5720MHz and 5745MHz

Communication Systems	Unidirectional, Broadcast, Simplex and Duplex
Tolerance of OBW	【169MHz band】 100kHz, 200kHz, 300kHz 【2.4GHz band】 ・5MHz system：4.5MHz ・10MHz system：9MHz 【5.7GHz band】 ・5MHz system：4.5MHz ・10MHz system：9MHz ・20MHz system：19.7MHz
Allowable deviation of frequency	【169MHz band】 $\pm 3.0 \times 10^{-6}$ 【2.4GHz band】 $\pm 50 \times 10^{-6}$ 【5.7GHz band】 $\pm 20 \times 10^{-6}$
Antenna Power	【169MHz band】 less than 1W (EIRP: less than 3.25W) 【2.4GHz band】 less than 1W (EIRP: less than 4W) 【5.7GHz band】 less than 1W (EIRP: less than 4W)
Allowable deviation of Antenna Power	【169MHz band】 -50 to +20 % 【2.4GHz band】 -80 to +20% 【5.7GHz band】 -50 to +50%

Spurious	【169MHz band】 Out of band region：100μW Spurious region：50μW 【2.4GHz band】 ・5MHz system Less than 2478.5MHz and from 2498.5MHz to 2500MHz：20μW From 2478.5MHz to 2481MHz and from 2496MHz to 2498.5MHz：300μW From 2481MHz to 2483.25MHz and from 2493.75MHz to 2496MHz：2mW From 2500MHz to 2510MHz：10μW More than 2510MHz：1μW ・10MHz system Less than 2473.5MHz and from 2500MHz to 2510MHz：10μW From 2473.5MHz to 2478.5MHz and from 2498.5MHz to 2500MHz：150μW From 2478.5MHz to 2483MHz and from 2494.5MHz to 2498.5MHz：1mW More than 2510MHz：1μW 【5.7GHz band】 ・5MHz system Less than 5590MHz and more than 5815MHz：0.63μW From 5590MHz to 5630MHz and from 5775MHz to 5815MHz：3μW From 5630MHz to 5640MHz and from 5765MHz to 5775MHz：6.3μW ・10MHz system and 20MHz system Less than 5590MHz and more than 5815MHz：0.63μW From 5590MHz to 5630MHz and from 5775MHz to 5815MHz：3μW

<table>
<tr>
<td>Leakage power to the next channel</td>
<td>【169MHz band】
OBW is less than 100kHz：Less than 45dBc within the ± 50kHz region of 100kHz separation from the carrier frequency
OBW is from 100kHz to 200kHz：Less than 45dBc within the ± 100kHz region of 200kHz separation from the carrier frequency
OBW is from 200kHz to 300kHz：Less than 45dBc within the ± 150kHz region of 200kHz separation from the carrier frequency
【2.4GHz band】
No requirements
【5.7GHz band】
Less than 25dBc (or 40dBc) within the ± F3MHz region of F1MHz (or F2MHz) separation from the carrier frequency
<table>
<tr><th>SYSTEM</th><th>F1</th><th>F2</th><th>F3</th></tr>
<tr><td>20MHz system</td><td>20</td><td>40</td><td>9.5</td></tr>
<tr><td>10MHz system</td><td>10</td><td>20</td><td>4.5</td></tr>
<tr><td>5MHz system</td><td>5</td><td>10</td><td>2.25</td></tr>
</table>
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</tr>
<tr>
<td>Transmission Antenna Gain</td>
<td>【169MHz band】
less than 5.12dBi
【2.4GHz band】
less than 6dBi
【5.7GHz band】
less than 6dBi</td>
</tr>
<tr>
<td>Leak radiation from receiver circuit</td>
<td>【169MHz band】
4nW
【2.4GHz band】
Less than 1GHz：4nW
More than 1GHz：20nW
【5.7GHz band】
Less than 1GHz：4nW
More than 1GHz：20nW</td>
</tr>
</table>

5 Proposed date of entry into force

August, 2016