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| A picture containing sketch, circle, drawing, clipart  Description automatically generated | ASIA-PACIFIC TELECOMMUNITY |  |
| **The 32rd Meeting of the APT Wireless Group** **(AWG-32)** |  |
| 4–8 March 2024, Pattaya, Thailand | 8 March 2024 |

Source: AWG-32/OUT-11

**questionnaire ON the technical standarDs and regulations for MILLIMETer WAVE Radar/Sensor technologies for ITS in**

**Asia pacific region countries**

# Section 1: Elementary Part

# Introduction

In the last AWG-31 meeting, the TG ITS of APT Wireless Group (AWG) has approved to develop a new APT/AWG Report on “Millimeter wave radar/sensor technologies for ITS in Asia-Pacific region countries" (AWG-31/TMP-64). TG ITS has started to study on radars and sensors operating in the 24 GHz, 60 GHz, and 76/79 GHz bands, and carryforward the outlines of contents of a new report. In TG ITS meeting at the AWG-31, it was suggested that a questionnaire to APT countries would be useful for the preparation of the new report.

# Objectives

The objective of this questionnaire is to collect information on the status of utilization, standard technologies, and regulations for millimeter wave radar/sensor technologies in the three frequency bands of 24, 60, and 76/79 GHz.

# Responsible Group

TG ITS / Working Group Terrestrial

# Rapporteur of the Questionnaire

Dr. Kazuaki TAKAHASHI (Japan); email: takahashi.kazu@jp.panasonic.com

# Meeting in which the Questionnaire was approved

The 32nd meeting of APT Wireless Group (AWG-32)

# Target Responder

APT Members

# Deadline for Responses

Until the 33rd meeting of APT Wireless Group

**Attachment:** Questions -- Example of answer – Based on Japanese technical standard

**Section 2: Questionnaire Part**

**1 – 24GHz Band Technical requirements**

1. Is the 24.05-24.25GHz band allowed for radars in your country? If “Yes”, please select the allowed applications or specify not allowed ones.

**<Answer>**

[ ] No

[ ] Yes

[ ]  OK to use for external automotive radars

[ ]  OK to use for internal automotive radars

[ ]  OK to use for infrastructure / road traffic radars

[ ]  No limitation on the application, all of the above are acceptable

[ ]  Following is not allowed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Please provide the name / reference of the technical requirements document (standard) if available.

**<Answer>**

Document = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What is the power limit definition? Please put “Not defined” if there is no definition. If there are different limits depending on condition, please put the details in No. 5.

**<Answer>**

[ ]  Maximum EIRP, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Average EIRP, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Maximum conducted power, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Average conducted power, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Maximum power density, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Average power density, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Is there different power level depending on condition? If “yes” please provide the details

E.g.: vehicle moving and vehicle stopped (please specify the definition of “moving”).

**<Answer>**

[ ]  Yes, details = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  No

1. Is there a definition of antenna gain?

**<Answer>**

[ ]  Yes. Value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  No

1. Please provide the limits of out-of-band emission.

**<Answer>**

Details = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What are limits for Occupied Bandwidth (OBW).

**<Answer>**

Max. = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Min.(empty or “NONE” if not defined) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Are there special requirements?

E.g.: Limit on the continuous emission time.

**<Answer>**

[ ]  Yes. Details = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  No

(End of Section 1 – Continue on next page with Section 2)

**2 – 60GHz Band Technical requirements**

1. Is the 60GHz wide band allowed for radars in your country? If “Yes”, please select the allowed applications or specify not allowed ones.

**<Answer>**

[ ] No

[ ] Yes

[ ]  OK to use for external automotive radars

[ ]  OK to use for internal automotive radars

[ ]  OK to use for infrastructure / road traffic radars

[ ]  No limitation on the application, all of the above are acceptable

[ ]  Following is not allowed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. If the answer to the question No.2.1 is “Yes”, please confirm the possible band usage from the choice below. Please check all the options.

**<Answer>**

[ ]  57-64GHz

[ ]  57-71GHz

[ ]  Others, please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Please provide the name / reference of the technical requirements document (standard) if available.

**<Answer>**

Document = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What is the power limit definition? Please put “Not defined” if there is no definition. If there are different limits depending on condition, please put the details in No. 5.

**<Answer>**

[ ]  Maximum EIRP, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Average EIRP, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Maximum conducted power, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Average conducted power, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Maximum power density, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Average power density, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Is there different power level depending on condition? If “yes” please provide the details

E.g.: vehicle moving and vehicle stopped (please specify the definition of “moving”).

**<Answer>**

[ ]  Yes, details = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  No

1. Is there a definition of antenna gain?

**<Answer>**

[ ]  Yes. Value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  No

1. Please provide the limits of out-of-band emission.

**<Answer>**

Details = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What are limits for Occupied Bandwidth (OBW).

**<Answer>**

Max. = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Min.(empty or “NONE” if not defined) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Are there special requirements?

E.g.: Limit on the continuous emission time.

**<Answer>**

[ ]  Yes. Details = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  No

(End of Section 2 – Continue on next page with Section 3)

**3 – 76~81GHz Band Technical requirements**

1. Is the 76-77GHz band allowed for radars in your country? If “Yes”, please select the allowed applications or specify not allowed ones.

**<Answer>**

[ ] No

[ ] Yes

[ ]  OK to use for external automotive radars

[ ]  OK to use for internal automotive radars

[ ]  OK to use for infrastructure / road traffic radars

[ ]  No limitation on the application, all of the above are acceptable

[ ]  Following is not allowed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Is the 77-81GHz band allowed for radars in your country? If “Yes”, please select the allowed applications or specify not allowed ones.

**<Answer>**

[ ] No

[ ] Yes

[ ]  OK to use for external automotive radars

[ ]  OK to use for internal automotive radars

[ ]  OK to use for infrastructure / road traffic radars

[ ]  No limitation on the application, all of the above are acceptable

[ ]  Following is not allowed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. If the answer to the question No.3.1 or No. 3.2 is “Yes”, please confirm the possible band usage from the choice below. Please check all the options.

**<Answer>**

[ ]  76-77GHz and 77-81GHz with no overlap possible

[ ]  76-81GHz with overlap possible

[ ]  Only 76-77GHz

[ ]  Only 77-81GHz

[ ]  Others, please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Please provide the name / reference of the technical requirements document (standard) if available.

**<Answer>**

Document = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What is the power limit definition? Please put “Not defined” if there is no definition. If there are different limits depending on condition, please put the details in No. 5.

**<Answer>**

[ ]  Maximum EIRP, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Average EIRP, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Maximum conducted power, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Average conducted power, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Maximum power density, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Average power density, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Is there different power level depending on condition? If “yes” please provide the details

E.g.: vehicle moving and vehicle stopped (please specify the definition of “moving”).

**<Answer>**

[ ]  Yes, details = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  No

1. Is there a definition of antenna gain?

**<Answer>**

[ ]  Yes. Value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  No

1. Please provide the limits of out-of-band emission.

**<Answer>**

Details = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What are limits for Occupied Bandwidth (OBW).

**<Answer>**

Max. = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Min.(empty or “NONE” if not defined) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Are there special requirements?

E.g.: Limit on the continuous emission time.

**<Answer>**

[ ]  Yes. Details = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  No

(End of Section 3 – Continue on next page with Section 4)

**4 – Practical aspects of regulation application**

Note: This section is considered as optional in this questionnaire. It contains several questions on the practical aspects of the regulation application.

1. Are test reports from FCC or EU radio approval are accepted for approval in your country (“Yes”), or are specific tests and report required (“No”)?

**<Answer>**

[ ]  Yes

[ ]  No

1. If the answer to question No. 4.1 is “No” can you provide the list of accredited laboratories that can perform the tests, or reference to this list if available.?

**<Answer>**

[ ]  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Are there specific modes needed for the regulatory tests?

**<Answer>**

[ ]  Switch between individual Tx if there are several used in one cycle

[ ]  Switch between different modulations if there are several used in one cycle

[ ]  Put the sensor in CW mode

[ ]  Stop Tx emission

[ ]  Other, please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Is the certification plant dependent or common to all plants?

E.g.: If the product is manufactured in 2 different plants, are 2 different radio approvals and number required?

**<Answer>**

[ ]  Yes

[ ]  No (common to all plants)

1. Is a local legal representative is required to have the certification?

**<Answer>**

[ ]  Yes

[ ]  No

1. What form of a marking is required? Please provide a reference text.

E.g.: For Japan, the MIC mark and number are required on the product.

**<Answer>**

[ ]  No specific marking

[ ]  Marking on device only

[ ]  Marking on device only OR in vehicle owner’s manual

[ ]  Marking in vehicle owner’s manual

[ ]  Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Reference Text: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What is the policy for minor changes on the product? Please provide a reference text.

**<Answer>**

[ ]  Changes of part is accepted if there is no PCB changes (e.g.: discontinued part or second sourcing)

[ ]  Changes of part is accepted with PCB changes if it’s not related to the RF transmission and the packaging do not change (e.g.: discontinued part or second sourcing, or adding one CAN channel)

[ ]  Changes of part and/or packaging if it’s not related to the RF transmission (e.g.: change of connector)

[ ]  No change accepted.

[ ]  Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Reference Text: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

End of the questionnaire.

Thank you for your cooperation.

# ATTACHMENT

**Questions -- Example of answer – Based on Japanese technical standard**

**Section 1 – 24GHz Band Technical requirements**

1. Is the 24.05-24.25GHz band allowed for radars in your country? If “Yes”, please select the allowed applications or specify not allowed ones.

**<Answer>**

[ ] No

[x] Yes

[ ]  OK to use for external automotive radars

[ ]  OK to use for internal automotive radars

[ ]  OK to use for infrastructure / road traffic radars

[x]  No limitation on the application, all of the above are acceptable

[ ]  Following is not allowed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Please provide the name / reference of the technical requirements document (standard) if available.

**<Answer>**

Document = ARIB STD T-73 Ver 3.0, Sensors for Detecting or Measuring Mobile Objects for Specified Low Power Radio Station

1. What is the power limit definition? Please put “Not defined” if there is no definition. If there are different limits depending on condition, please put the details in No. 5.

**<Answer>**

[ ]  Maximum EIRP, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Average EIRP, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[x]  Maximum conducted power, value = 0.02W

[ ]  Average conducted power, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Maximum power density, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Average power density, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Is there different power level depending on condition? If “yes” please provide the details

E.g.: vehicle moving and vehicle stopped (please specify the definition of “moving”).

**<Answer>**

[ ]  Yes, details = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[x]  No

1. Is there a definition of antenna gain?

**<Answer>**

[x]  Yes. Value = Less than 24dBi, or can be higher as long as the EIRP is less than 37dBm

[ ]  No

1. Please provide the limits of out-of-band emission.

**<Answer>**

Details = Less than 2.5uW \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What are limits for Occupied Bandwidth (OBW).

**<Answer>**

Max. = \_200MHz \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Min.(empty or “NONE” if not defined) = \_NONE \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Are there special requirements?

E.g.: Limit on the continuous emission time.

**<Answer>**

[x]  Yes. Details = Anti-interference function as one of the following.

1. Radio equipment of a radio station used mainly in the same premises that automatically transmits or receives an identification code.
2. A device that allows a user to easily switch frequencies or stop the emission of radio waves.
3. By identifying the modulation method and other characteristics of the received radio wave, it is possible to distinguish the reflected wave of the radio wave transmitted by its own station from the radio wave transmitted by another radio station.

[ ]  No

(End of Section 1 – Continue on next page with Section 2)

**Section 2 – 60GHz Band Technical requirements**

1. Is the 60GHz wide band allowed for radars in your country? If “Yes”, please select the allowed applications or specify not allowed ones.

**<Answer>**

[ ] No

[x] Yes

[ ]  OK to use for external automotive radars

[ ]  OK to use for internal automotive radars

[ ]  OK to use for infrastructure / road traffic radars

[x]  No limitation on the application, all of the above are acceptable

[ ]  Following is not allowed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. If the answer to the question No.2.1 is “Yes”, please confirm the possible band usage from the choice below. Please check all the options.

**<Answer>**

[x]  57-64GHz

[ ]  57-71GHz

[ ]  Others, please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Please provide the name / reference of the technical requirements document (standard) if available.

**<Answer>**

Document = ARIB STD T-73 Ver 3.0, Sensors for Detecting Or Measuring Mobile Objects for Specified Low Power Radio Station

1. What is the power limit definition? Please put “Not defined” if there is no definition. If there are different limits depending on condition, please put the details in No. 5.

**<Answer>**

[ ]  Maximum EIRP, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Average EIRP, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[x]  Maximum conducted power, value =

1. FMCW radar 0.01W with total EIRP less than 13dBm
2. Pulse radar 12dBm peak/ 1mW average with total EIRP less than 17dBm peak and 5dBm average

[ ]  Average conducted power, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Maximum power density, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Average power density, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Is there different power level depending on condition? If “yes” please provide the details

E.g.: vehicle moving and vehicle stopped (please specify the definition of “moving”).

**<Answer>**

[x]  Yes, details = Definition depends on the modulation scheme (see answer above)

[ ]  No

1. Is there a definition of antenna gain?

**<Answer>**

[ ]  Yes. Value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[x]  No

1. Please provide the limits of out-of-band emission.

**<Answer>**

Details =

out-of-band region -26dBm/MHz

spurious region -30dBm/MHz

1. What are limits for Occupied Bandwidth (OBW).

**<Answer>**

Max. = \_4GHz \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Min.(empty or “NONE” if not defined) = \_NONE \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Are there special requirements?

E.g.: Limit on the continuous emission time.

**<Answer>**

[x]  Yes. Details =

1. Modulation type shall be F3N or K3N
2. The total transmission time per 33 ms or more is 3.3 ms or less.

When the modulation method is pulse amplitude modulation, the transmission time is the sum of the transmission times of the consecutive pulse trains. Consecutive pulse trains are also allowed if there is more than one per 33 ms or more time.

1. Anti-interference function: To discriminate a reflected wave of a radio wave transmitted by its own station from a radio wave transmitted by another radio station by discriminating a modulation method and other characteristics of a received radio wave
2. Function to stop radio wave emission: In the case where the radio equipment for mobile object detection sensors has the function of simultaneously emitting multiple radio waves with other radio equipment housed in the same housing, it shall have the function of stopping the emission of only radio waves with a frequency exceeding 57 GHz but not exceeding 64 GHz, or of stopping the emission of multiple radio waves including radio waves with that frequency. In addition, when the radio equipment for the mobile object detection sensor has a function of independently emitting radio waves, it has a function of stopping the emission of radio waves.

[ ]  No

(End of Section 2 – Continue on next page with Section 3)

**Section 3 – 76~81GHz Band Technical requirements**

1. Is the 76-77GHz band allowed for radars in your country? If “Yes”, please select the allowed applications or specify not allowed ones.

**<Answer>**

[ ] No

[x] Yes

[ ]  OK to use for external automotive radars

[ ]  OK to use for internal automotive radars

[ ]  OK to use for infrastructure / road traffic radars

[x]  No limitation on the application, all of the above are acceptable

[ ]  Following is not allowed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Is the 77-81GHz band allowed for radars in your country? If “Yes”, please select the allowed applications or specify not allowed ones.

**<Answer>**

[ ] No

[x] Yes

[ ]  OK to use for external automotive radars

[ ]  OK to use for internal automotive radars

[ ]  OK to use for infrastructure / road traffic radars

[x]  No limitation on the application, all of the above are acceptable

[ ]  Following is not allowed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. If the answer to the question No.3.1 or No. 3.2 is “Yes”, please confirm the possible band usage from the choice below. Please check all the options.

**<Answer>**

[x]  76-77GHz and 77-81GHz with no overlap possible

[ ]  76-81GHz with overlap possible

[ ]  Only 76-77GHz

[ ]  Only 77-81GHz

[ ]  Others, please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Please provide the name / reference of the technical requirements document (standard) if available.

**<Answer>**

Document =

76-77GHz: ARIB STD T-48 V2.2, Millimeter-Wave Radar Equipment for Specified Low Power Radio Station

77-81GHz: ARIB STD T-111 V1.1, 79 GHz Band High-Resolution Radar

1. What is the power limit definition? Please put “Not defined” if there is no definition. If there are different limits depending on condition, please put the details in No. 5.

**<Answer>**

[ ]  Maximum EIRP, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Average EIRP, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[x]  Maximum conducted power, value =

76-77GHz: 10mW

77-81GHz: 10mW if the BW is > 2GHz. If the BW is < 2GHz the power density shall be less than 5uW/MHz

[ ]  Average conducted power, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Maximum power density, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Average power density, value = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Is there different power level depending on condition? If “yes” please provide the details

E.g.: vehicle moving and vehicle stopped (please specify the definition of “moving”).

**<Answer>**

[x]  Yes, details = For 77-81GHz, depending on the BW the power density is defined. See answer above.

[ ]  No

1. Is there a definition of antenna gain?

**<Answer>**

[x]  Yes. Value =

76-77GHz: 40dBi

77-81GHz: 35dBi

[ ]  No

1. Please provide the limits of out-of-band emission.

**<Answer>**

Details =

Out-of-band: 100uW or less

Spurious: 50uW or less

(Common definition)

1. What are limits for Occupied Bandwidth (OBW).

**<Answer>**

Max. = 76-77GHz Band 🡪1GHz / 77-81GHz Band 🡪4GHz\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Min.(empty or “NONE” if not defined) = \_NONE \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Are there special requirements?

E.g.: Limit on the continuous emission time.

**<Answer>**

[x]  Yes. Details =

1. anti-interference function: To have a function capable of discriminating a reflected wave of a radio wave transmitted by its own station from a radio wave transmitted by another radio station by discriminating a modulation system and other characteristics of a received radio wave.

[ ]  No

(End of Section 3 – Continue on next page with Section 4)

**Section 4 – Practical aspects of regulation application**

Note: This section is considered as optional in this questionnaire. It contains several questions on the practical aspects of the regulation application.

1. Are test reports from FCC or EU radio approval are accepted for approval in your country (“Yes”), or are specific tests and report required (“No”)?

**<Answer>**

[ ]  Yes

[x]  No

1. If the answer to question No. 4.1 is “No” can you provide the list of accredited laboratories that can perform the tests, or reference to this list if available.?

**<Answer>**

[x]  <https://www>.tele.soumu.go.jp/e/sys/equ/tech/

1. Are there specific modes needed for the regulatory tests?

**<Answer>**

[x]  Switch between individual Tx if there are several used in one cycle

[x]  Switch between different modulations if there are several used in one cycle

[ ]  Put the sensor in CW mode

[ ]  Stop Tx emission

[ ]  Other, please specify \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Is the certification plant dependent or common to all plants?

E.g.: If the product is manufactured in 2 different plants, are 2 different radio approvals and number required?

**<Answer>**

[ ]  Yes

[x]  No (common to all plants)

1. Is a local legal representative is required to have the certification?

**<Answer>**

[ ]  Yes

[x]  No

1. What form of a marking is required? Please provide a reference text.

E.g.: For Japan, the MIC mark and number are required on the product.

**<Answer>**

[ ]  No specific marking

[x]  Marking on device only

MIC Mark + Registration number



[ ]  Marking on device only OR in vehicle owner’s manual

[ ]  Marking in vehicle owner’s manual

[ ]  Other: Owner’s manual text is optional.

[ ]  Reference Text:

Ordinance on Technical Standards Conformity Certification of Specified Radio Equipment Article 8-1

<https://www.japaneselawtranslation.go.jp/ja/laws/view/2610#je_ch2sc1at6>

Mark details:

<https://www.tele.soumu.go.jp/resource/j/equ/tech/gitekimark/07.pdf>

1. What is the policy for minor changes on the product? Please provide a reference text.

**<Answer>**

[x]  Changes of part is accepted if there is no PCB changes (e.g.: discontinued part or second sourcing)

[ ]  Changes of part is accepted with PCB changes if it’s not related to the RF transmission and the packaging do not change (e.g.: discontinued part or second sourcing, or adding one CAN channel)

[ ]  Changes of part and/or packaging if it’s not related to the RF transmission (e.g.: change of connector)

[ ]  No change accepted.

[ ]  Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Reference Text:

<https://www.tele.soumu.go.jp/resource/j/equ/tech/faq/050602.pdf>

End of the questionnaire.

Thank you for your cooperation.

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