

Transmitted by the expert from Japan

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agenda item 5)

Presentation to support ECE/TRANS/WP.29/GRBP/2024/20

Clarification for UN-R 138.02

2024/9/17-20



JAPAN AUTOMOBILE STANDARDS INTERNATIONALIZATION CENTER

<Original intent agreed by TF-QRTV>

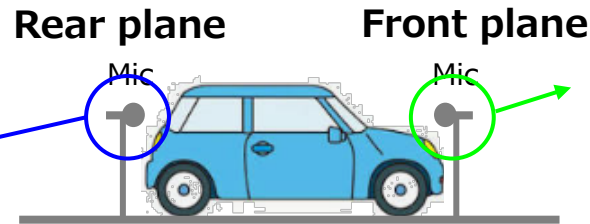
Through the discussion in TF-QRTV, the stakeholders had agreed the following definition for the maximum sound pressure level at the front plane in reverse condition.

Comply with Table.2b

Table 2b ^{e1}

AVAS Minimum and Maximum Overall Sound Pressure Levels for Reverse Driving (e.g., "R")^{e2}

Vehicle Speed v in km/h ^{e3}	Minimum Overall SPL in dB(A) ^{e4}		Maximum Overall SPL in dB(A) ^{e5}	
	Reverse Driving ^{e6} (e.g., "R") ^{e7}	Vehicle movement blocked (e.g., Position "P") ^{e8}	Reverse Driving ^{e9}	Vehicle movement blocked (e.g., Position "P") ^{e10}
0 Standstill	47	∞ ^{e11}	69	
$0 < v \leq 6$ ^{e12}	47 ^{e13}		75 ^{e14}	
6	47		75	
$6 < v \leq 20$ ^{e15}	47 ^{e16}		75 ^{e17}	



shall not exceed 75dB(A)
 "R" range standstill
 "R" range driving

Fig. Reverse condition

● #10 TF-QRTV conclusion (Nov. 2023)

During measurement in reverse the maximum level requirement in the frontline of the vehicle has to be fulfilled. The opposite side of the vehicle direction shall not exceed 75 dB(A). This test can be stated by manufacturer declaration.

● TF-QRTV-10-07 Draft Report update Secretary

5.1. Main changes in the R138.02 draft

Inside the group the majority decided to have no mandatory sound at stationary condition in forward.

For reverse has been decided to have a mandatory sound at standstill condition, starting when the gear selector is in reverse position.

This sound is mandatory, regardless the break is released or not. **The required minimum sound level is 47 dB(A), while the maximum sound is limited to 69 dB(A) at the rear plane of the vehicle. At the front plane the maximum is limited to 75 dB(A).**

<https://wiki.unece.org/display/trans/TF-QRTV+%28UN-R138-02%29+-+10th+session+hybrid>

<Concern Description>

Regarding when reversing (e.g., position “R”) the maximum sound pressure requirement at the front plane of the vehicle, the current description is not coherent with TF-QRTV which has defined the limit value of 75dB(A) for both stand still and reverse driving. It may cause mis-understanding during type approval.

Document: WP29-2024-066

6.2.8. Specifications on **minimum and maximum sound level for AVAS sound**^{e1}

When tested under the conditions of Annex 3 paragraph 3.3.2, a vehicle which is equipped with an AVAS, ~~shall not emit an overall sound level of more than 75 dB(A), if driving in forward direction³.~~ shall fulfil the requirements of Table 2a, Table 2b and Table 3. ^{e1}

The sound emission of the vehicle under typical on-road driving conditions, which are different from those under which the type approval test set out in Annex 3 was carried out, shall not deviate from the test result in a significant manner. ^{e1}

In the speed range of Table 2a and Table 2b and when tested under the conditions of Annex 3 paragraph 3.3.2, a vehicle which is equipped with an AVAS, shall not emit an AVAS overall sound level of more than 75 dB(A), if driving in forward direction. This test can be stated by manufacturer declaration. ^{e1}

During measurement in reverse the maximum level requirement in the frontline of the vehicle for forward driving has to be fulfilled in addition. This can be stated by manufacturer declaration. ^{e1}

The sound levels measured and reported shall be mathematically rounded to the nearest integer value. ^{e1}

≠ Original intent
shall not exceed 75dB(A)
“R” range standstill
“R” range driving

<Proposal for R138.02 amendment>

Paragraph 6.2.8., amend to read:

"6.2.8. Specifications on minimum and maximum sound level for AVAS sound

When tested under the conditions of Annex 3 paragraph 3.3.2., a vehicle which is equipped with an AVAS shall fulfil the requirements of Table 2a, Table 2b and Table 3.

The sound emission of the vehicle under typical on-road driving conditions, which are different from those under which the type approval test set out in Annex 3 was carried out, shall not deviate from the test result in a significant manner.

In the speed range of Table 2a and Table 2b and when tested under the conditions of Annex 3 paragraph 3.3.2., a vehicle which is equipped with an AVAS, shall not emit an AVAS overall sound level of more than 75 dB(A), if driving in forward direction. This test can be stated by manufacturer declaration.

During measurement in reverse the maximum level requirement ~~in the frontline at the front plane~~ of the vehicle for forward driving ~~has to~~ shall be fulfilled in addition to the requirement at the rear plane. The maximum level requirement at the front plane of the vehicle at standstill condition in reverse shall be equal to the maximum level requirement in motion. This can be stated by manufacturer declaration.

The sound levels measured and reported shall be mathematically rounded to the nearest integer value."

Table.2b

Maximum	Reverse	
	Rear plane	Front plane
Standstill (0km/h)	69dB(A)	75dB(A)
Driving (motion)	75dB(A)	75dB(A)

II. Justification ←

Regarding when reversing (e.g., position "R") the maximum sound pressure requirement at the front plane of the vehicle, the current description is not coherent with TF-QRTV which has defined the limit value of 75dB(A) for both stand still and reverse driving. A text has been added to reflect the original intent and clarify the limit value agreed by TF-QRTV. ←