

JAMA Proposal for DC power lines conductive disturbances limit of table 8 and table 15 in clause 7.5 and 7.13

- Background

DC conductive noise can be omitted in case of less than 30m cables as an exceptions 7.20.

Charging stations which have longer HV network cables are being deployed recently. So 30m exception will be inadequate in near future.

DC conductive disturbances limit of table 8 and 15 was derived by class B limit and CISPR25 HVAN impedance conversion.

On the other hand, most of DC charger station deployed as class A devices. DC charger can not meet class B requirement.

Most of EV can not meet this requirement, once related device such as HV compressor was activated.

JAMA considered this controversial issues between vehicle and DC chargers.

JAMA would like to propose that concerning the DC line conductive disturbances shall apply New limit that based on class A limit equivalent to DC charger.

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Vehicle requirement

7.5. Specifications concerning emission of radiofrequency conducted disturbances on AC or DC power lines from vehicles

Table 8 Maximum allowed radiofrequency conducted disturbances on DC power lines

ESA requirement

7.13. Specifications concerning emission of radiofrequency conducted disturbances on AC or DC power lines from ESA

Table 15 Maximum allowed radiofrequency conducted disturbances on DC power lines

AMENDMENTS	JUSTIFICATION
We propose the class A limits in Table 8 and 15 for DC power lines.	In CISPR11, the limit level of class A is defined. Most of DC chargers has been deployed as Class A devices

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Table 8 and 15

Maximum allowed radiofrequency conducted disturbances on DC power lines

Frequency (MHz)	Limits and detector	
	Proposed (on class A)	existing
0.15 to 0.5	92 dBuV (quasi-peak) 76 dBuV (average)	79 dBuV (quasi-peak) 66 dBuV (average)
0.5 to 30	88 dBuV (quasi-peak) 72 (average)	73 dBuV (quasi-peak) 60 (average)

Table 8 and 15 Maximum allowed radiofrequency conducted disturbances on DC power lines

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0.15 to 0.5	92 dBuV (quasi-peak) 76 dBuV (average)	79 dBuV (quasi-peak) 66 dBuV (average)
0.5 to 30	88 dBuV (quasi-peak) 72 (average)	73 dBuV (quasi-peak) 60 (average)

The differences between class A and B is based on CISPR11.

Reference: CISPR11 Ed.6 Conducted disturbances (DC), group 1

Frequency (MHz)	Limits and detector	
	Class A	Class B
0.15 to 0.5	97 to 89 dBuV (quasi-peak) 84 to 76 dBuV (average)	84 to 74 dBuV (quasi-peak) 74 to 64 dBuV (average)
0.5 to 30	89 dBuV (quasi-peak) 76 (average)	74 dBuV (quasi-peak) 64 (average)



Frequency (MHz)	Differences between class A and B
0.15 to 0.5	13 to 15 dB (quasi-peak) 10 to 12 dB (average)
0.5 to 30	15 dB (quasi-peak) 12 dB (average)