

SAE INTERNATIONAL

# LD J2954 & HD J2954/2 WPT STANDARDIZATION & 2023 HD EMC/EMF TESTING

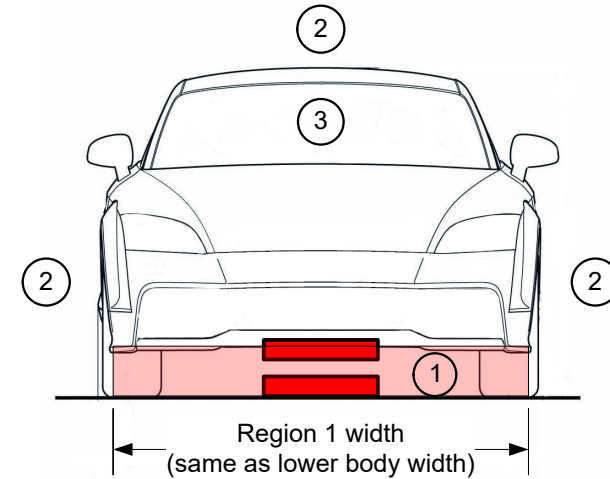
JESSE SCHNEIDER (ZEV STATION)  
SAE WPT TASKFORCE CHAIR



# Published LDV SAE J2954 Standard (Update)- (TRL-9)

## Enabling UL 2750 WPT Certification Test: Preparing Mass Market

- SAE J2954 Standard (2022 Update) defines required testing for WPT 1-4
- Goal: Allow UL 2750 to create a clear GA (Ground Assembly) certification test to help develop a safe infrastructure
- Critical to have ability to do a 3<sup>rd</sup> party of supplier system testing for WPT Safety, EMF Exposure according to SAE J2954
- Future certification enables OEMs & Suppliers to validate for mass market



SAE J2954 Standard VA/GA Test Stand (e.g. INL)



[https://www.sae.org/standards/content/j2954\\_202208/](https://www.sae.org/standards/content/j2954_202208/)

# Published SAE TIR J2954-2 Heavy Duty Wireless Power Transfer Guideline for Heavy Duty Vehicles up to 500kW- (TRL 5-7)

SAE J2954-2 TIR is a first specification for both Static & Dynamic HD WPT4 (20kW) up to WPT 9 (500kW)

## **Critical Firsts:**

- Definition of HD Static & Dynamic WPT
- Frequency ranges for static (23 & 85kHz) & Dynamic (85kHz),
- Vehicle VA/ Ground GA Locations
- Z-Heights
- EMC/EMF limits and testing procedures

An important first *worldwide first*: HD Charging system (VA/GA) worldwide.

The next big step towards standardization: testing static and dynamic systems on track & road....

## SAE TIR J2954/2 VA-GA Overview

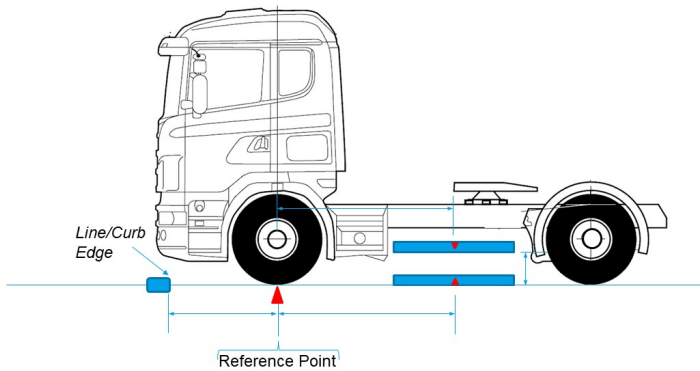


[https://www.sae.org/standards/content/j2954/2\\_202212/](https://www.sae.org/standards/content/j2954/2_202212/)

# SAE J2954-2 HD Tractor & Bus VA/GA WPT Placement with EMC/EMF Testing and Limit Specification

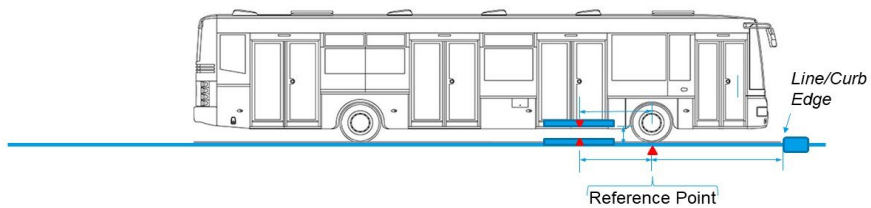
## HDV Vehicle & Ground Assembly Placement

Articulated Semi Tractor, (US class 6-8, EU 18 to 44)



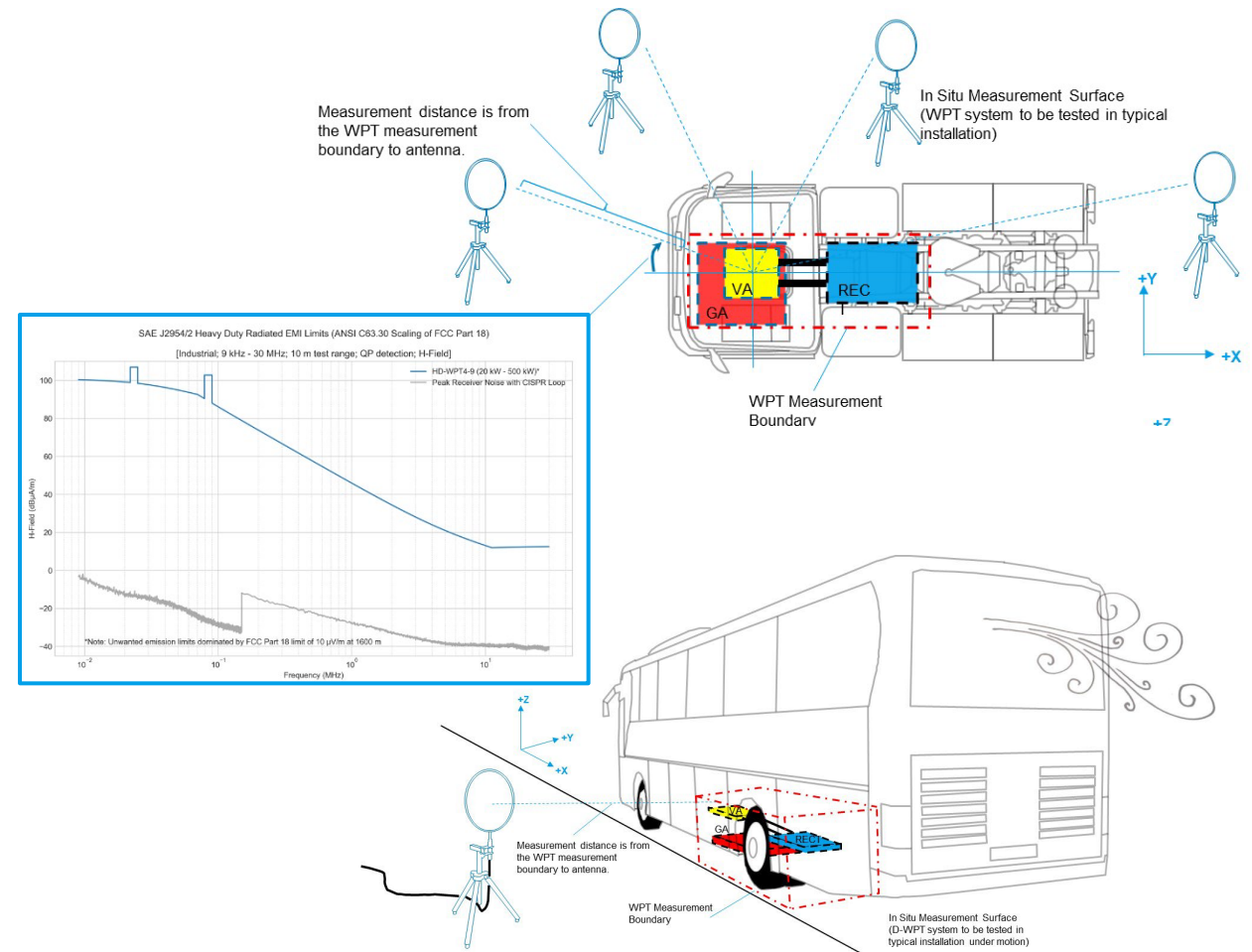
Ref: Standardised chassis and bodywork dimensions, Bodywork Exchange Parameters (BEP) according to ISO 21308 © SAE International, All Rights Reserved

Transit bus



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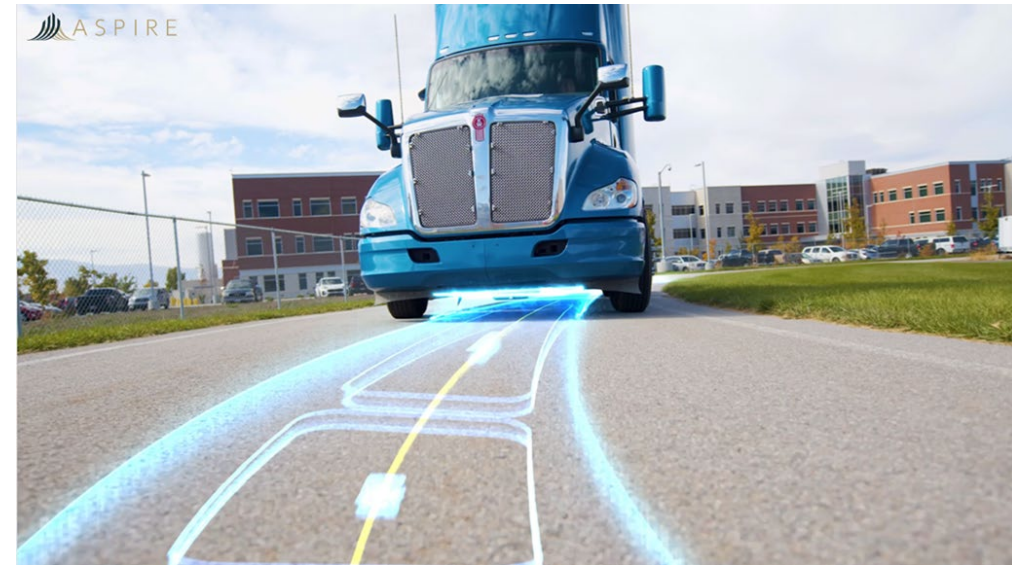
## HDV EMC/ EMF Static & Dynamic Testing



# 2023 SAE Cooperative Research Project (CRP) for HD J2954/2 testing at USU & Michigan (open for co-funding participants)

- SAE CRP is an industry/ government collaborative funding project open now for co-funding (<\$10K) in February.
- Key Data to validate Static High Power WPT & Dynamic WPT for J2954/2 standardization & commercialization.
- 2023 Testing: Heavy Duty Vehicles on Utah State University Track & Michigan Highway testing EMC, Radio Band Coexistence, EMF Safety Limits. Members Participants get access to data as well as reports.
- Make an impact, join the SAE WPT CRP!

[Dante.Rahdar@SAE.org](mailto:Dante.Rahdar@SAE.org)



**-THANK YOU-  
QUESTIONS?**

**SAE J2954 /2, WIRELESS POWER TRANSFER**

**CONTACT FOR QUESTIONS:**

**[JESSE.SCHNEIDER@WEB.DE](mailto:JESSE.SCHNEIDER@WEB.DE)**