



# EMC LABORATORY

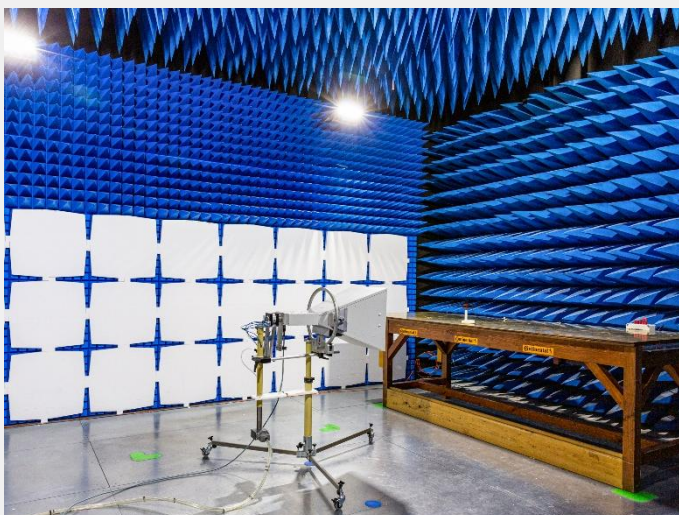
↘ EMC TEST FACILITIES FOR QUALIFICATION DURING DESIGN DEVELOPMENT AND PRODUCTION PHASES

## MAIN CUSTOMER (Original Equipment Manufacturer)

| OEMs with LAB RECOGNITION        | Standards       |
|----------------------------------|-----------------|
| FORD                             | FMC1278 Rev 4   |
| Stellantis FCA (Fiat – Chrysler) | CS.00054 (2018) |

| OEMs                         | Standards                                                                       |
|------------------------------|---------------------------------------------------------------------------------|
| Stellantis PSA (Peugeot)     | B21 7110 ind F                                                                  |
| Renault / Nissan /Mitsubishi | RNDS-C-00517 (rev3.1 2022)<br>Renault 36-00-808 ind N<br>Nissan 28401NDS02 rev8 |
| Volkswagen – Audi – Porsche  | TL 81000 (2018-03)<br>VW 80000 (Electrical 2017-10)                             |
| Mercedes Benz                | MBN_10284                                                                       |
| Volvo                        | REQ-19615v5<br>EMC –Component Requirements                                      |

## RADIATED IMMUNITY ALSE (RI ALSE)

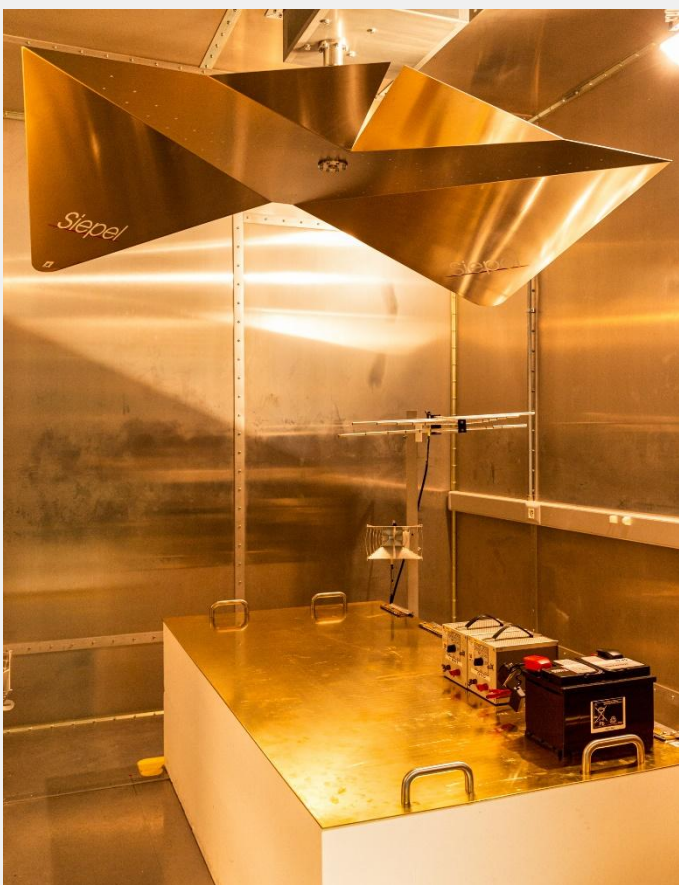


### ➤ E FIELD / ALSE : ISO 11452-2



- Frequency range: 200MHz to 6GHz
- Electric field: 200V/m
- Radar bands: Electric field: 300V/m
- Pyramidal foam absorbers
- Size: 7.4m, 4.7m, 4m

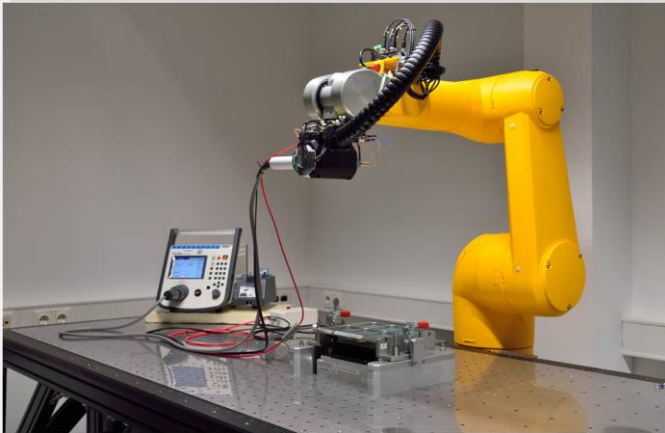
## REVERBERANT CHAMBER IMMUNITY (RI CRBM)



### ➤ E FIELD / CRBM : ISO 11452-11

- Frequency range: 200MHz to 6GHz
- Tuned or Stirred modes
- Electric field: 200V/m
- Radar bands: Electric field: 300V/m
- Size: 4m, 3.5m, 3.5m

## ELECTROSTATIC DISCHARGES (ESD)



### ➤ ESD : ISO 10605



- Manual AND robotized test stands
- Contact, air discharges, HCP
- Voltage up to 30kV
- Humidity & temperature controlled

## MAGNETIC FIELD IMMUNITY (H FIELD)



### ➤ H FIELD : ISO 11452-8



- Frequency range DC to 200kHz
- H field: 180dB $\mu$ A/m at 1kHz
- Audio amplifier DC to 250kHz
- Helmholtz Bobbin & 12cm coil
- Size: 5m, 3.8m, 2.8m

## CONDUCTED IMMUNITY (BCI)



### ➤ BCI : ISO 11452-4



- Frequency range 100kHz to 400MHz
- Current level: up to 300mA
- RF amplifier: 150W
- Ferrite tile absorber
- Size: 3.7m, 2.5m, 2.5m



## EMISSIONS: CISPR 25 & DO160



### ➤ EMISSIONS: CISPR 25 & DO160

- E field: 100kHz to 6GHz
- H field: 20Hz to 200kHz
- Voltage: 100kHz to 108MHz
- Current: 20Hz to 1GHz
- Receivers: ESW 8 (FFT / 5Hz – 8GHz)
- Hybrid absorbers (ferrite tiles + Pyramidal foam)
- Size: 7.5m, 4.7m, 4.1m





## ELECTRICAL & TRANSIENTS



### ➤ TRANSIENTS: ISO 7637

- Transient on Power Supply
- Transient on Signal Lines
- ISO7637-2 & 3



### ➤ ELECTRICAL: ISO 16750

- Overvoltage
- Superimposed alternating voltage
- Slow decrease and increase supply voltage
- Discontinuity in supply voltage
- Reverse voltage
- Ground and supply offset
- Open circuit
- Insulation resistance