

EV charging DAB interference

WE
TRANSFORM
AUTOMOTIVE
MOBILITY

We transform automotive mobility

CARIAD
A VOLKSWAGEN GROUP COMPANY

Test scenario

Idea:

See the frequency spectrum for possible interference:

- At Charging place – without charging
- During charging at charging place
- Far away from charging place as reference

2 different antennas types:

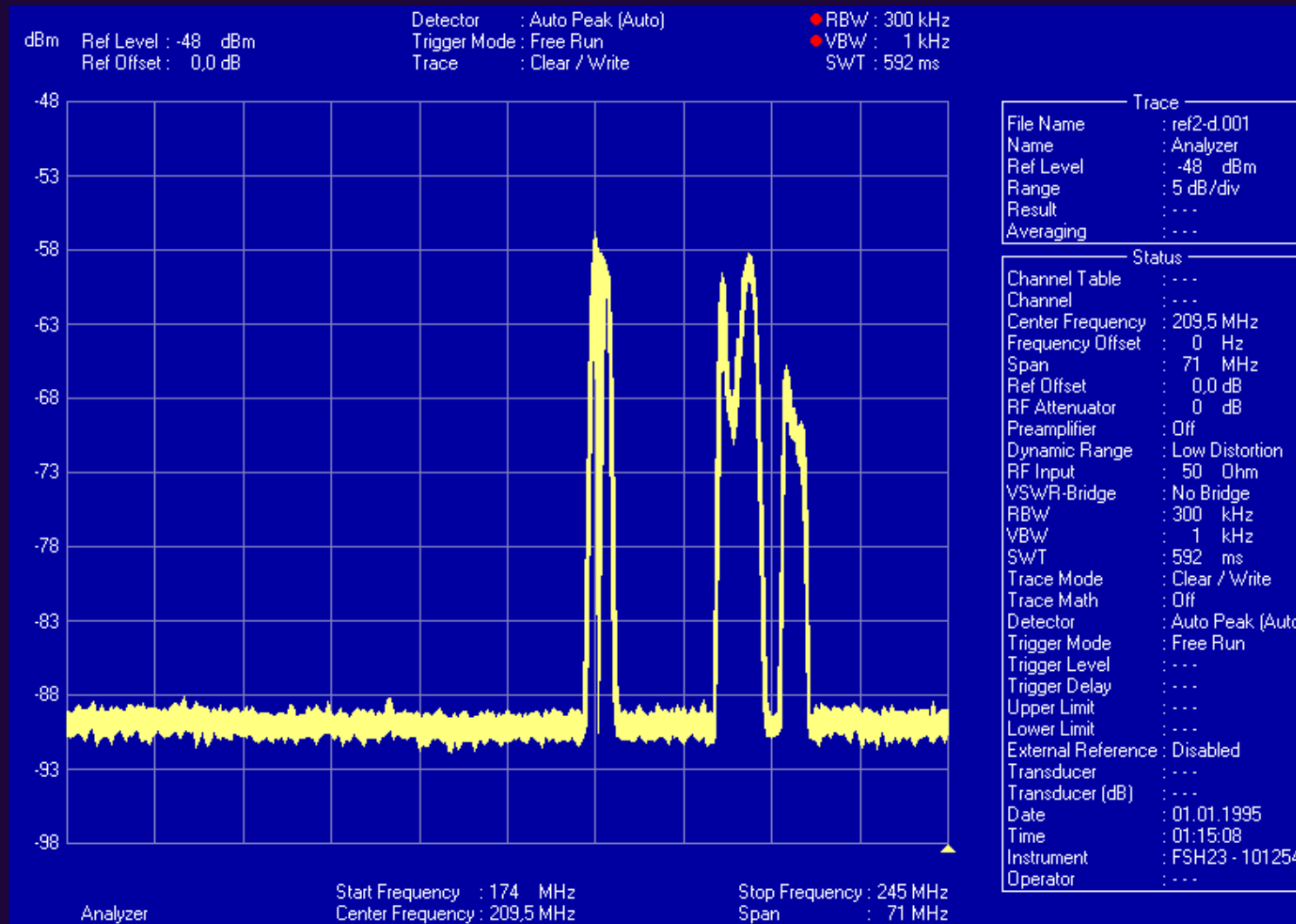
- Folded half-wave dipole – sensitive in lower band
- Monopole magnetic antenna – sensitive in higher band



Test scenario

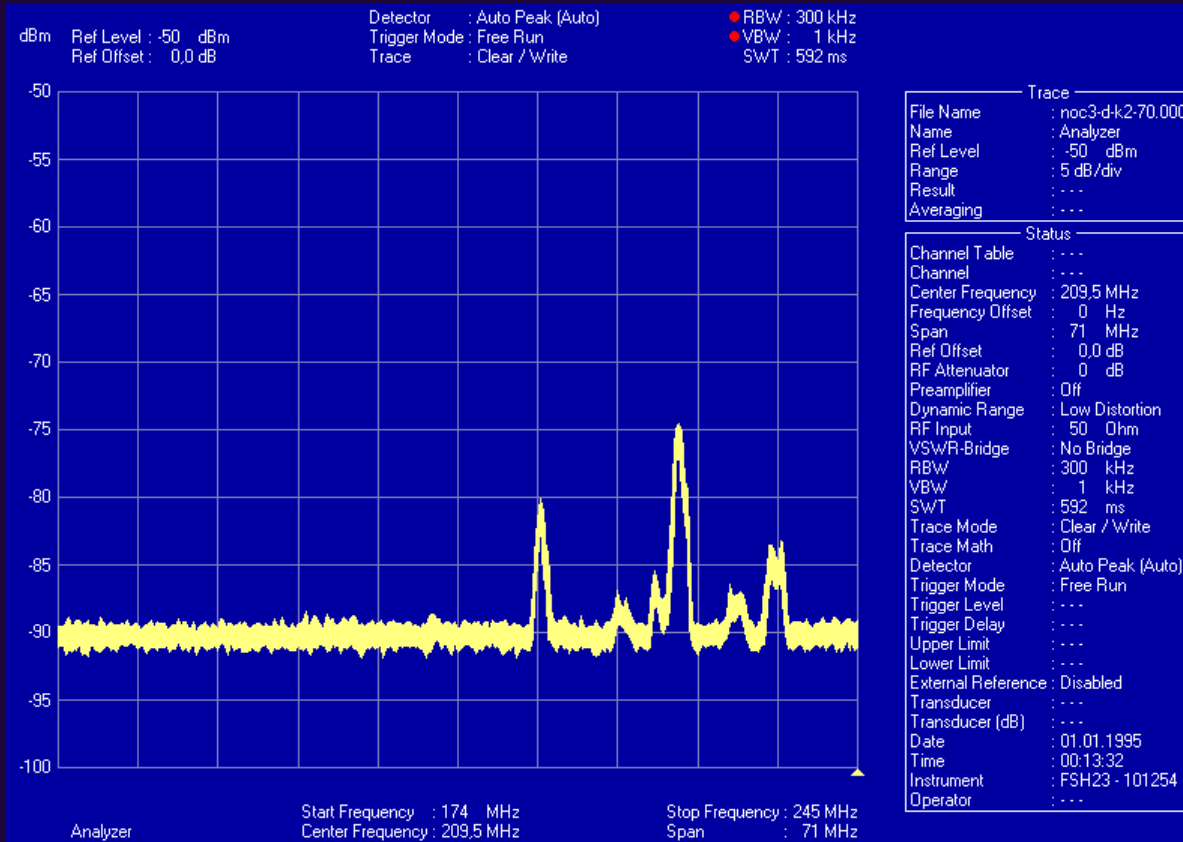


Ideal spectrum – no interference

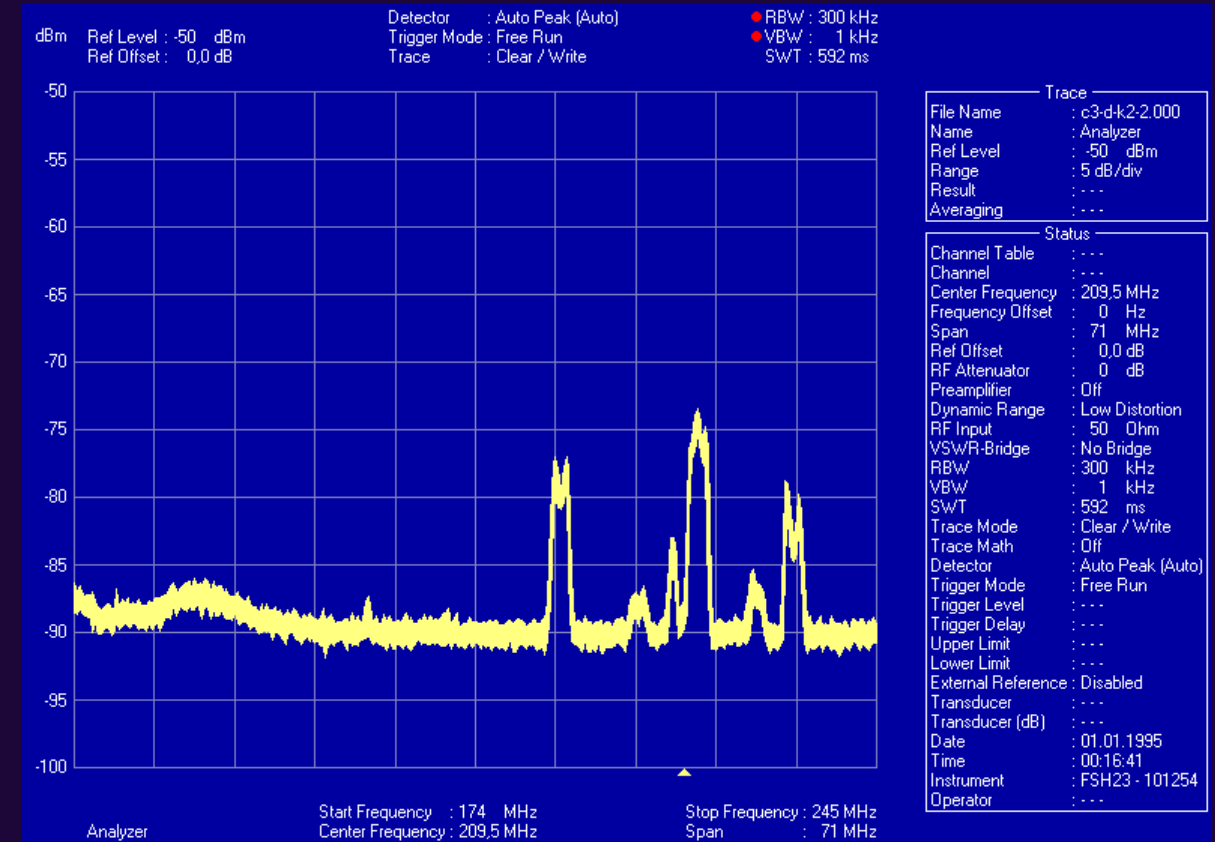


Spectrum at charging station - no other cars around

Not-Charging

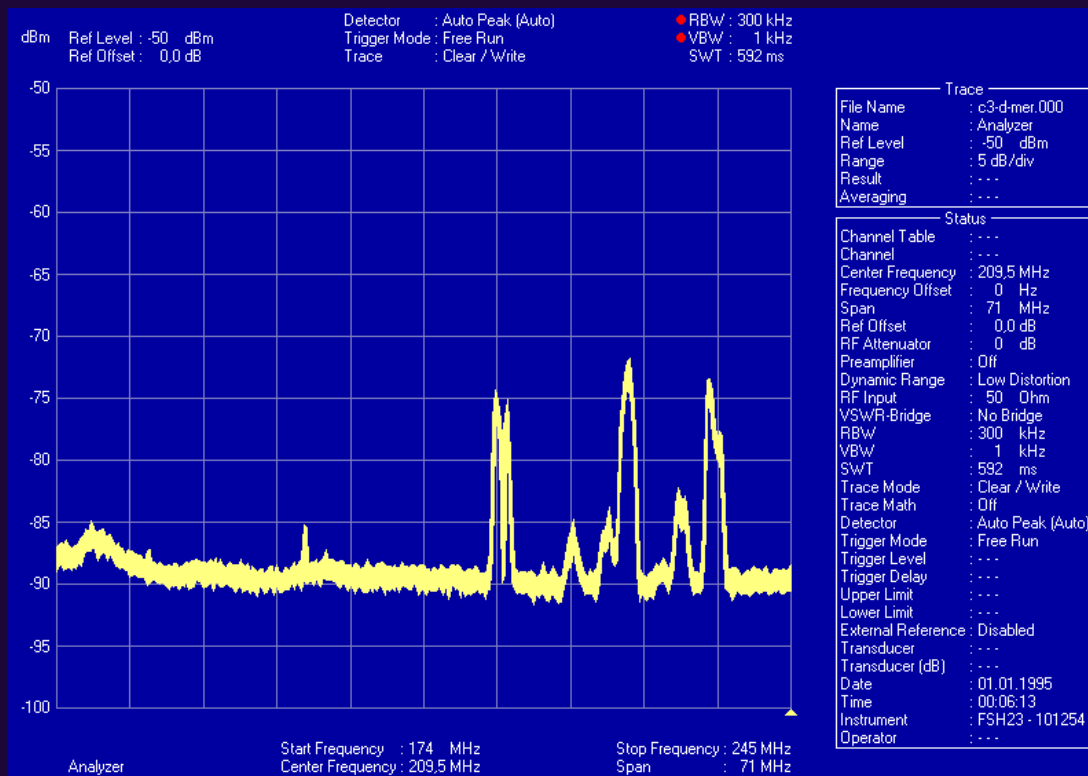


Charging

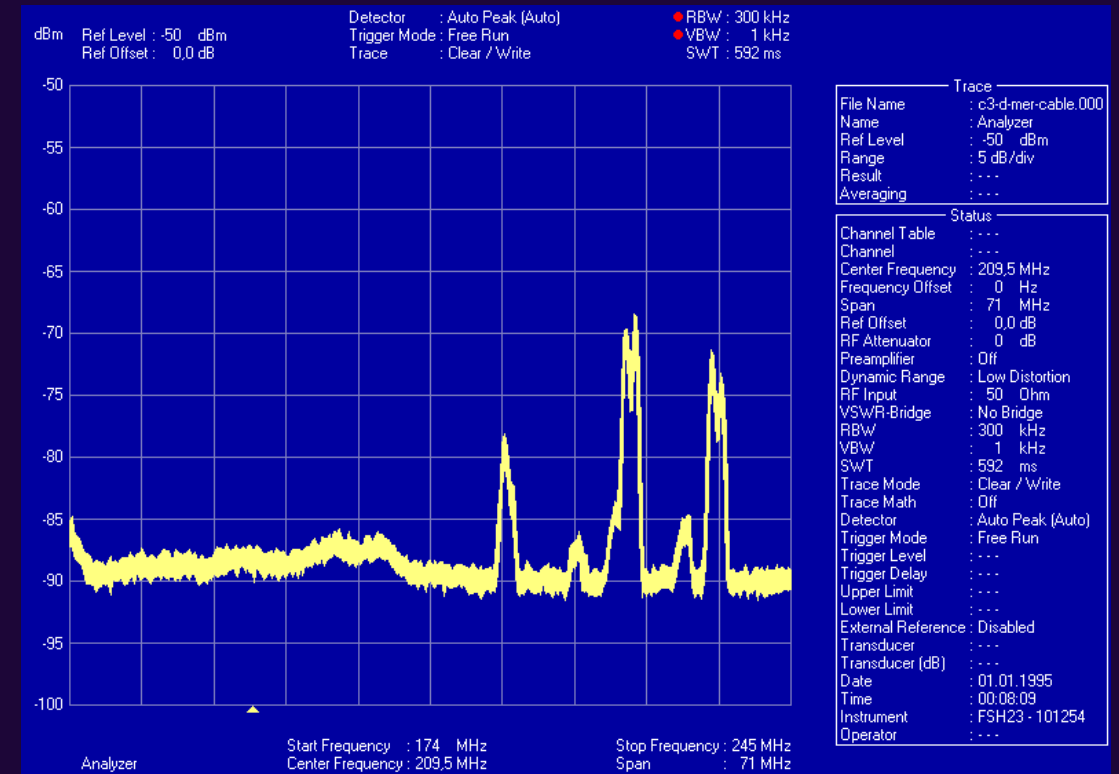


Spectrum at charging station - no other cars around

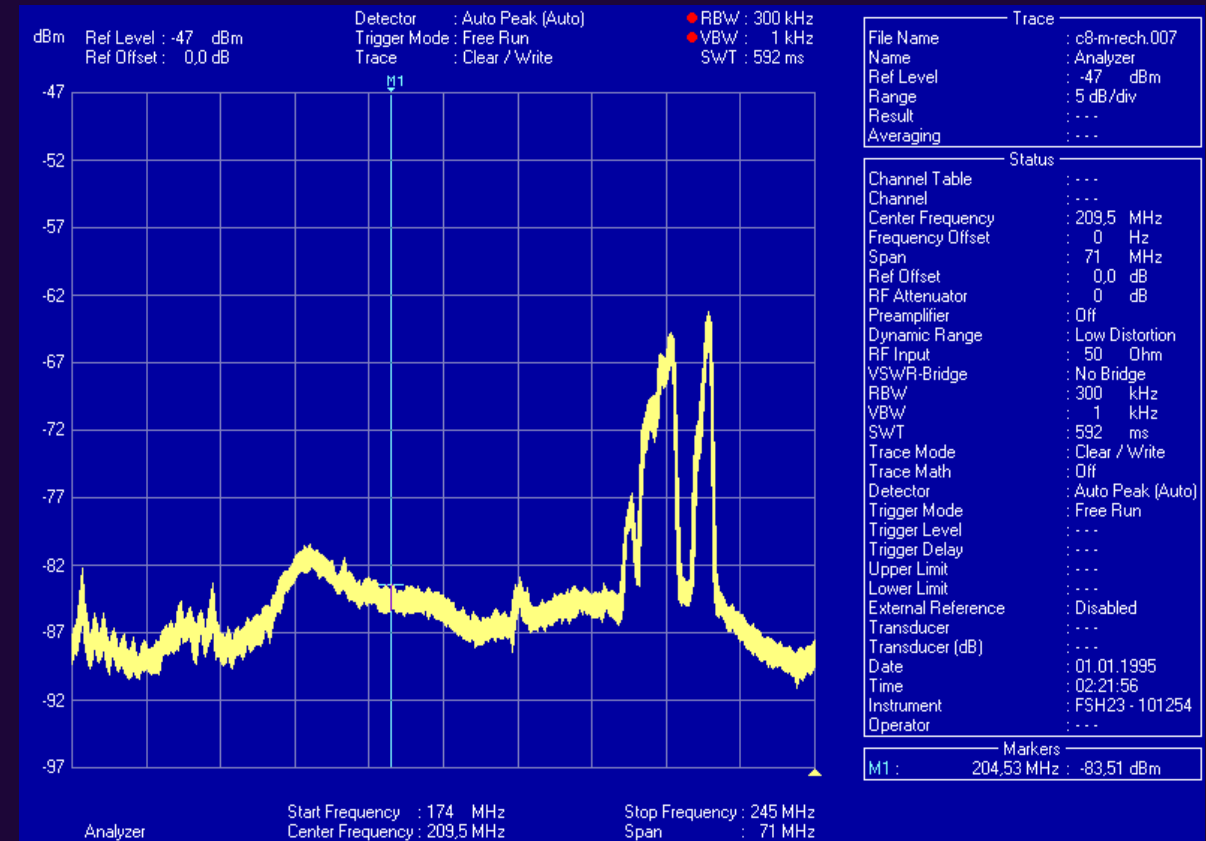
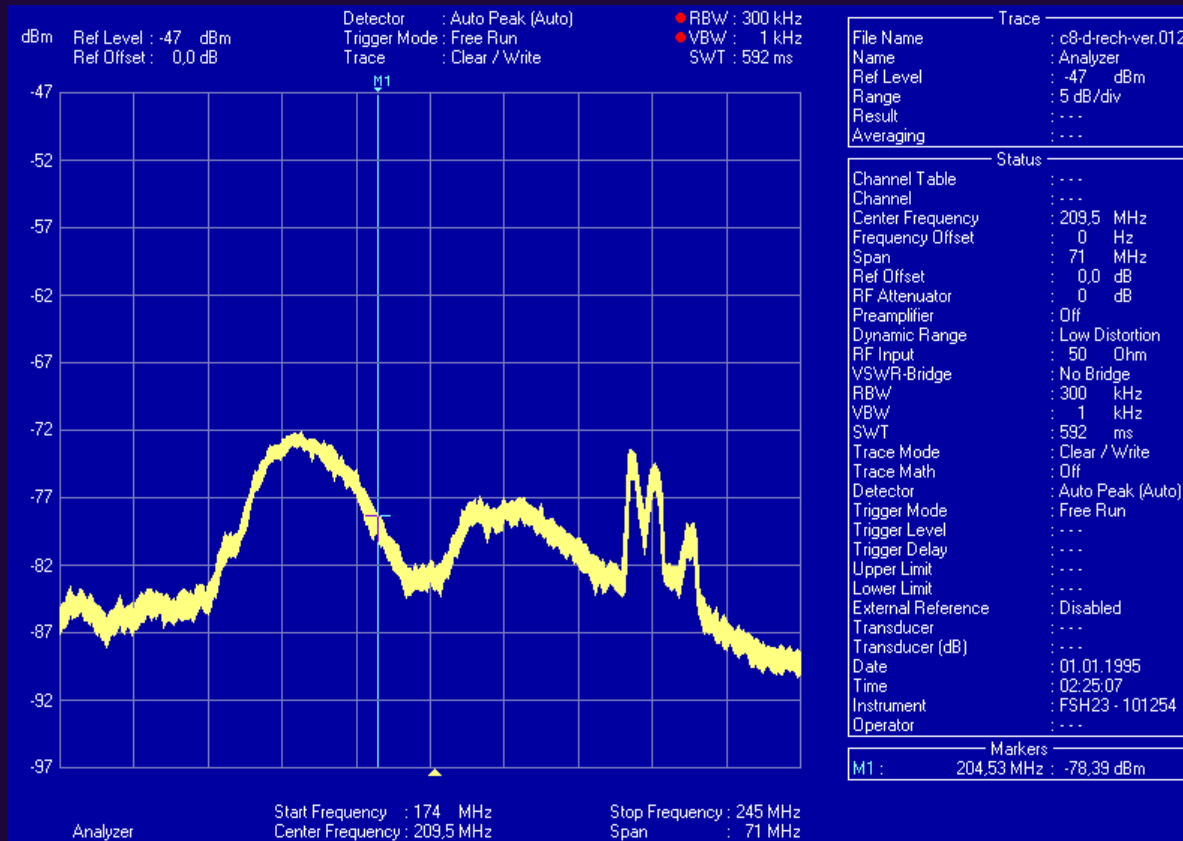
Charging



Charging – near cable



Rare observation - many other cars around



Conclusions:

1. In most cases charging creates small noise increase mostly in lower part of DAB band – this shall not be noticeable by listeners.
2. In rare situations strong noise increase can occur, probably caused by other cars around
3. Interference was observed only at or very close to charging stations or transformation buildings – at distances from 15m away we did not observe any significant distortion.
4. We did not observe significant difference in charging technologies or currents

Thank you!



Backup - distance



Backup - peaks

One place
Horizontally polarized

