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ISAAC:
COAX CABLES PERFORMANCE

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Summary

We present measurement data on commercially available automotive coaxial cables:

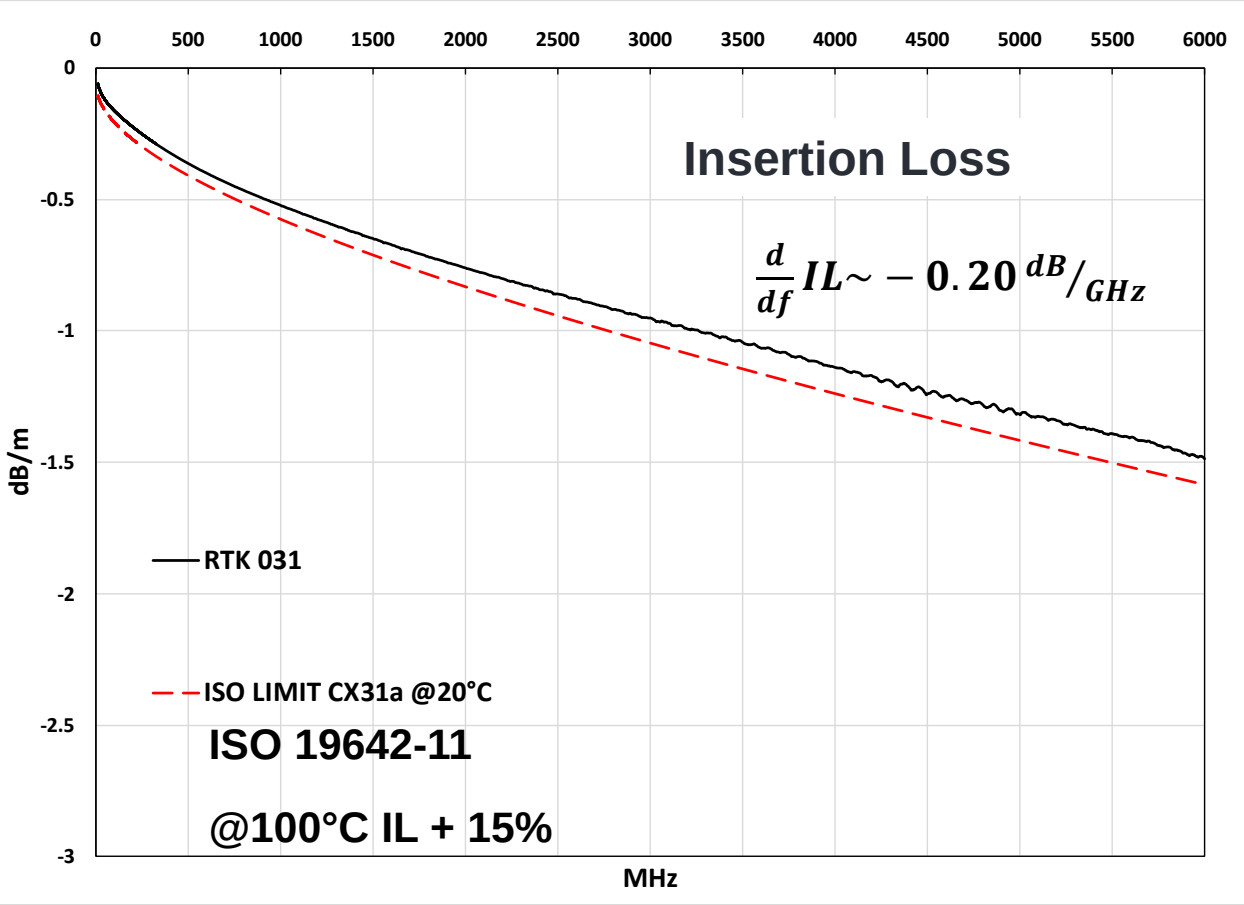
- Standard Case – RTK 031 (CX031a*)
- And Flexible Case – RG174 (CX174d*)

- Types of Measurement:
  - Insertion Loss (IL)
  - Shielding Attenuation (SA)
  - Impedance
- Comparisons of delivery state and after long term ageing (**ISO19642-11**) are made

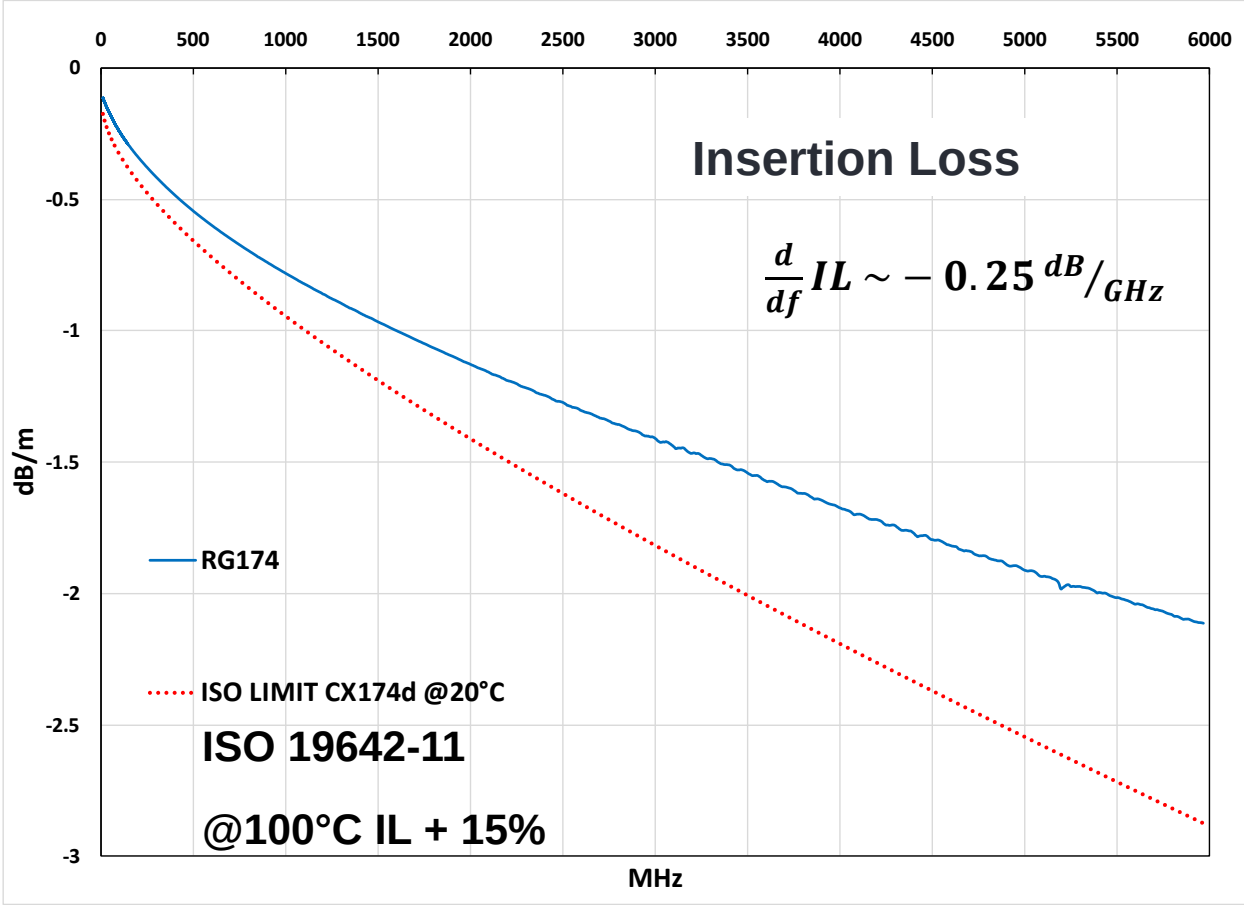
* Cable definitions according to tables 12 and 13 p.21/22 in **ISO19642-11**

IL and Screening Attenuation of Coax Cables

RTK 031



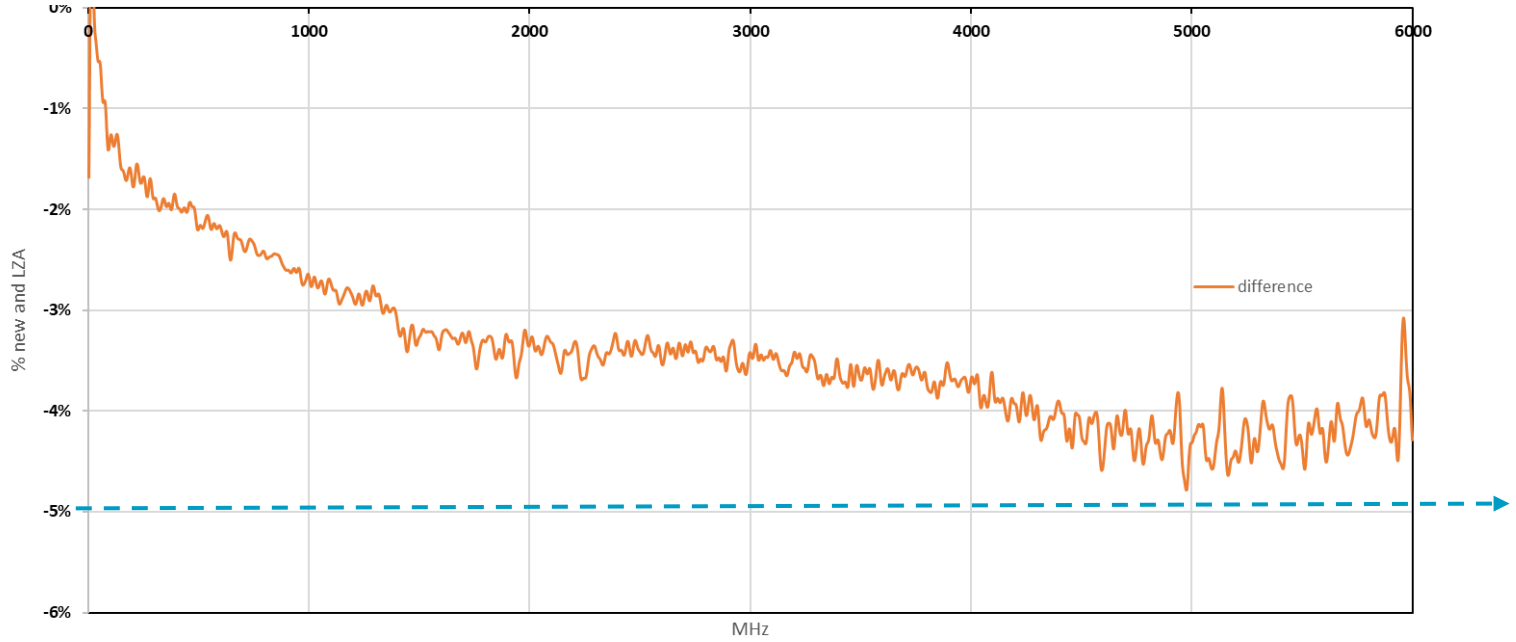
RG 174 with foil + braid shielding



Ageing Effects (3000hs storage @105°C) in the IL of the RG 174*

Measured IL Degradation after Ageing Process

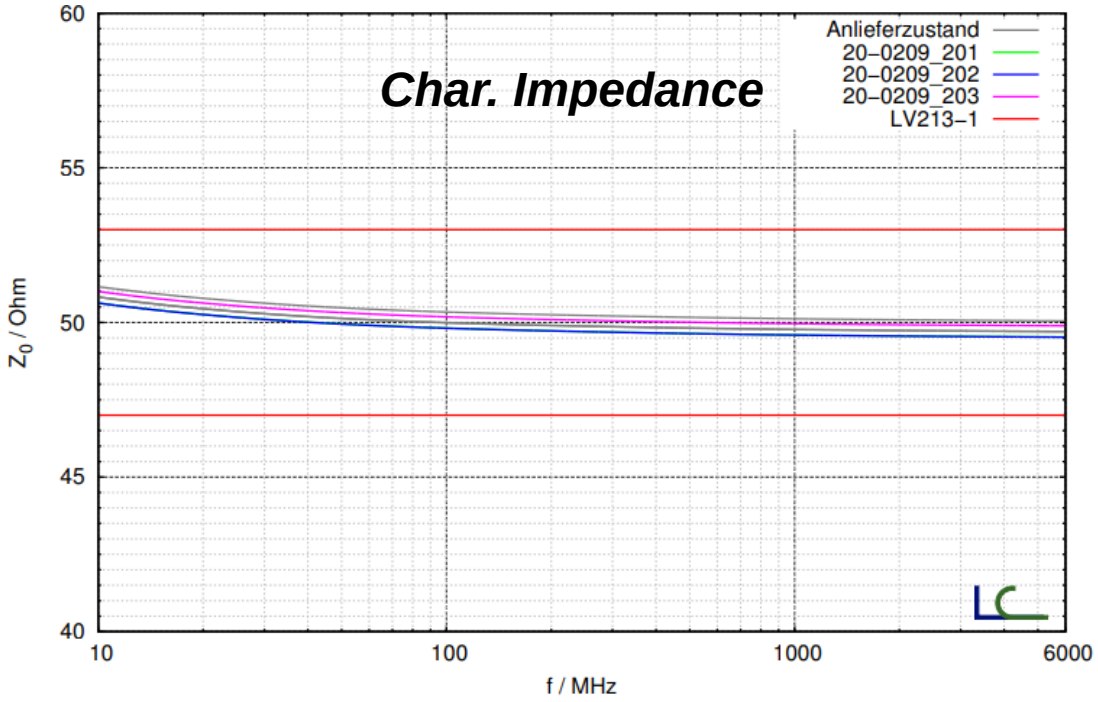
(IL measurements made at RT)



Worst case scenario for IL after ageing must account for ~ 5% degradation at RT measurement.

***CX174d - Foil and braid shielding.**

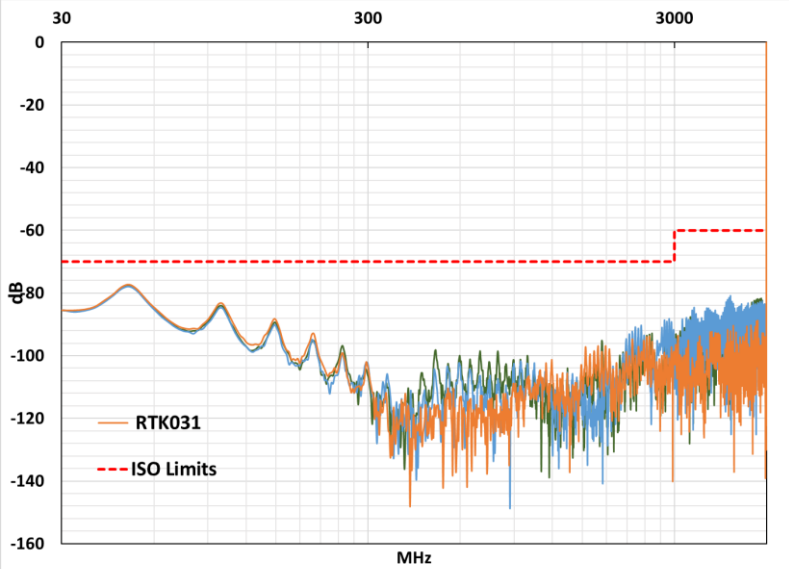
Impedance of Coax Cables RG 174 (cx174d)
After Long Term Ageing (Long Term Ageing – 3000hs @ 105°C)

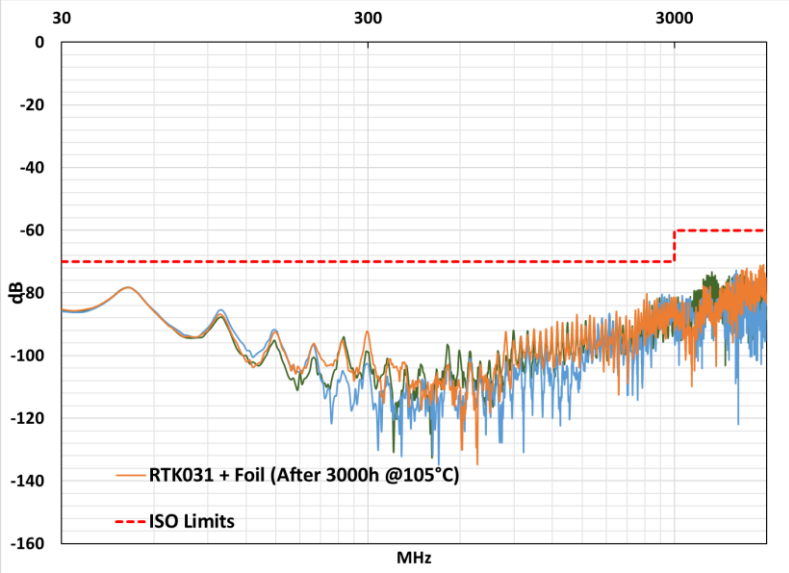


*Anlieferzustand = new condition

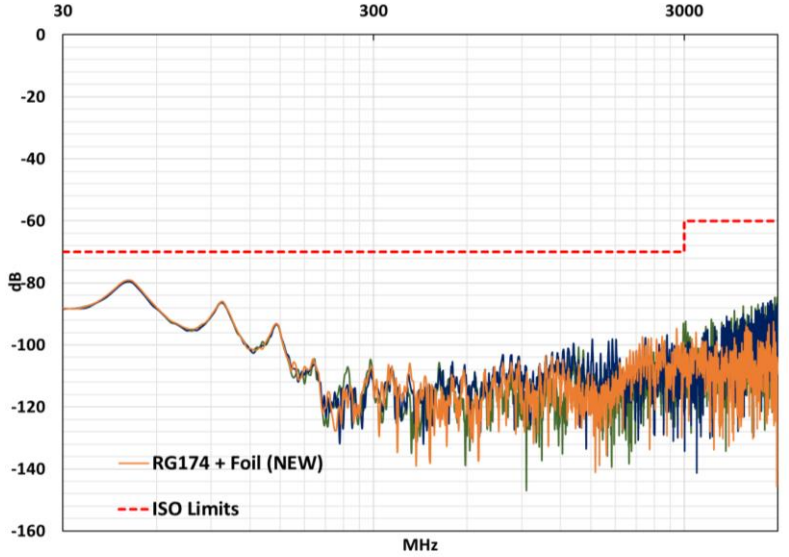
- **Impedance limits: +/- 3,00 OHM - ISO 19642-11**

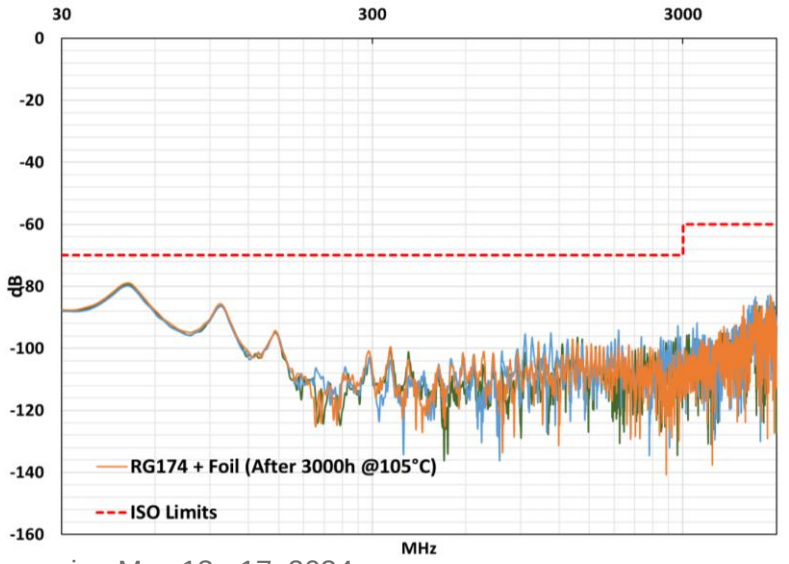
IL and Screening Attenuation of Coax Cables
RTK031 – CX31a





RG 174 - CX174d





Summary

- We showed IL, SA and Impedance data for 2 types of cables: Standard RTK 031 (CX31a) and Flexible Case RG 174 (CX174d)

- Long term ageing effects on IL and impedance for a standard coax cable were demonstrated.

- These cables comply with ISO19642-11
- Future ASA (TCE) standards (draft phase) also based on same cable measurements.

- For dynamic applications (Flex and High Flex - ex.: doors, mirrors etc.), special requirements to account for performance decay after bending stresses (flexible cable) must be introduced

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Thank you!