



Tests for approval of the Stadler Rail KISS on the Westbahn:

Fast project completion due to a digital measurement system

The private railway WESTBahn is operating in 2-hours-cycles from Vienna via Linz to Salzburg. The fleet consists of double deck trains of the type KISS by Stadler Rail. Henceforth, parts of the fleet will be operated by DB. For the extended approval for Germany, PJM was in charge of the type tests in the fields of brakes and acoustics. The test runs were performed on the Westbahn track between "Ybbs an der Donau" and "Kleinmünchen" (the 2 towns are situated in the northern part of Austria along the river Danube). The test runs were successfully performed in a very short time frame. The three main factors for this were:

- Due to a limited timetable, the „Corona weeks“ in March were ideal to perform the test runs.
- To a great extent, the measurement chain was digitalised. The advantages of a digital measurement system are the reduced cabling efforts and a much higher interference resistance. Within a short

period, our team had implemented a measuring system comprising 200 sensors.

- The many years' experience and great commitment of our measurement team.

Overview of the scope of testing:

The static tests, dynamic brake tests and tests of the wheel slide protection system were performed under varying conditions, such as differing conditions of the track and varying speed ranging from 80 to the maximum of 200 km/h.

The brake tests were performed by a modular, digital measuring system. The acoustics were tested according to TSI Noise 1304/2014/EU. Our PJM-experts determined stationary noise, starting noise and pass-by noise up to 200 km/h as well as driver's cab interior noise.



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Due to the digital measurement setup, the limited timetable during the "Covid19 weeks" in March and the experienced PJM team, the approval tests were performed within a short period.

The project at a glance:



Periods of the type tests: Between 9/2019 and 12/2019 and in 03/2020



Vehicle: KISS 1 by Stadler Rheintal AG



Scope of testing:

- Brake tests according to EN16185-2: static and dynamic brake tests and tests of the wheel slide protection system.
- Acoustic tests according to TSI Noise 1304/2014/EU: stationary and starting noise, driver's cab interior noise.



196 brake tests and many more simulating errors of the brake system



During the static and dynamic brake tests, more than 900 measurement files had been recorded.



A digital measurement system consisting of modular, distributed amplifiers which could record up to 200 measurement channels via PTP-network (precision time control) under conditions of chronological synchronisms.



The digital measurement system consists of modular and distributed amplifiers. Thus, it is possible to record up to 200 measuring channels with chronological synchronism via PTP-network (precision time protocol).

PJ Messtechnik GmbH



PJ Messtechnik GmbH is an accredited testing facility according to IST/IEC 17025. Approval tests were performed in more than 30 countries on 5 continents.