



# ELECTRICAL DOUBLE DECKER MULTIPLE UNIT SBB IR-KISS

Swiss Federal Railway (SBB), Switzerland

In April 2021, SBB acquired a further 60 intercity double decker multiple units (RABe 512) from Stadler, strengthening its existing fleet with an established vehicle type. Forty-one of the vehicles will replace the old fleet, bring them in line with the requirements set out in the Disability Discrimination Act (DDA) for long-distance travel. Among other things, the changes will see barrier-free entrances on the trains to make getting on and off easier, especially for people with reduced mobility. Nineteen of the vehicles will be used in regional traffic, around Zurich and western Switzerland. This will reduce bottlenecks, allowing offer expansion and create more comfort for the passengers. The first vehicles will be introduced with the timetable for 2024.

Currently, SBB operates 93 IR- resp. RE-KISS vehicles (RABe 511), which the IR-KISS is based on. The IR-KISS is an electrical multiple unit, which is 152 metres' long and has 466 seats. The interior meets long-distance traffic standards and offers a 2/1- seating arrangement in the first-class. Sockets, easily-accessible bicycle areas, multi-functional compartments with space for push-chairs, five toilets, as well as a modern information system, all feature throughout the train. Stadler refers to this IR double-decker as the KISS, which is a German acronym for comfortable innovative speedy express train («komfortabler innovativer spurtstarker S-Bahn-Zug», KISS).

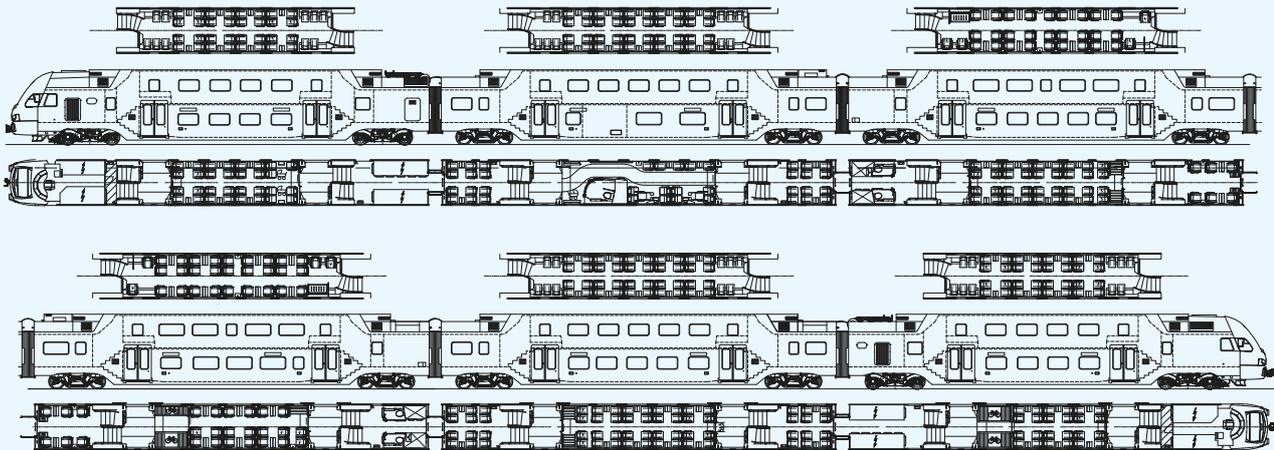
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## Technical features

### Technology

- Interoperable vehicle according to TSI
- ETCS- train protection system «Guardia» level 3
- Air suspended engine- and trailer bogie
- Multiple steering up to four multiple units

### Comfort

- Interior meets long-distance standards, eg 2/1- seating in the first-class, sockets at every seat
- Easy accessible multi-functional areas for the transport of bicycles, winter sport devices, prams or the like
- Multi-functional compartments with tip-up seats for travelling with prams
- Five toilets with closed WC-systems per vehicle, one of them is wheelchair-accessible according to TSI-PRM
- Modern passenger information system
- Barrier-free entrances (low-floor)
- Generous entrance areas to enable passengers to get on and off easily
- Mobile communication transparent panes for improved mobile phone reception

### Personnel

- Ergonomic designed driver desk
- Conductor cupboard with sockets and storage possibilities for personal items
- Improved conditions for cleaning staff in areas of high dirt collection

### Reliability/Availability/Maintainability/Safety

- Redundant drive unit, consisting of four power trains with water-cooled IGBT- power converter
- Vehicle process control technique with train bus and diagnose computer (CAN-open BUS)

## Vehicle data

<b>Customer</b>	SBB AG
<b>Operated networks</b>	Interoperable network from SBB, GBT, LBT, CBT Routes neighbouring to Germany CEVA-route to Annemasse (F)
<b>Gauge</b>	1435 mm
<b>Designation</b>	RABe 512
<b>Supply voltage</b>	15 kVAC/ 16.7 Hz
<b>Axle arrangement</b>	Bo'Bo'+2'2'+2'2'+2'2'+2'2'+ Bo'Bo'
<b>Number of vehicles</b>	60
<b>Delivery</b>	From 2023
<b>Seats</b>	466
1. Class	94
2. Class	372
<b>Tip-up seats</b>	15
<b>Standing spaces</b>	838
<b>Floor height</b>	
Low-floor at entrance	495 mm
Upper-deck	2527 mm
Lower-deck	443 mm
<b>Entrance width</b>	1400 mm
<b>Longitudinal force</b>	1500 kN
<b>Length over coupling</b>	151 880 mm
<b>Vehicle width</b>	2800 mm
<b>Vehicle height</b>	4595 mm
<b>Bogie wheelbase</b>	
Motor bogie	2700 mm
Trailer bogie	2500 mm
<b>Continuous power at wheel</b>	4000 W
<b>Max. power at wheel</b>	6000 W
<b>Starting tractive effort</b>	400 kN
<b>Maximum speed</b>	160 km/h