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MOBILE DAB+ EMERGENCY TRANSMITTER

Bayern Digital Radio (BDR) strengthens its resilience with standby transmitters for emergency situations from Rohde&Schwarz.

AT A GLANCE

- **Customer**: Bayern Digital Radio GmbH (BDR), a DAB+ broadcaster owned by Bayerische Rundfunk (BR), Media Broadcast GmbH and Bayerische Medientechnik GmbH (BMT)
- **Task**: Develop a versatile and portable emergency transmitter system
- **Challenge**: Deliver transmitters with different output power levels that can be transported in a car and put into operation by two people
- **Solution**: R&S®TMV9evo air-cooled VHF transmitter, R&S®TLV9 low-power VHF transmitter and accessories
- **Key advantage**: A standby platform available immediately for all DAB+ transmitters in the broadcasting network that require maintenance

Emergency transmitter system for 750 W with an amplifier stage (top) and for 1450 W with two amplifier stages (bottom).

Challenge

Bayern Digital Radio (BDR) GmbH wanted to set up a contingency plan to secure the emission of its DAB+ services to various transmission locations. Although the transmitter network operator had no doubts regarding the high availability of its existing Rohde&Schwarz transmitter, it was aware that some residual risks remained, such as lightning damage or other unpredictable events. The company sought a means of getting services back on air as quickly as possible following such an accident. One additional benefit of emergency transmitters is that they can also act as standby transmitters during routine maintenance or upgrades.

An important requirement for the backup transmitter was that it should not affect audio quality or service continuity in any way. Operating parameters and functionality needed to be the same as the regular transmitter, including all DAB+ service enhancements.

It was also important for it to be possible not only to transport the entire transmitter in a car but that it could also be carried and installed by two people to make sure that it is quick to put into operation. Consequently, the requirements called for a light, compact, air-cooled and high-power transmitter.

Rohde&Schwarz solution

BDR came to Rohde&Schwarz with its request in early 2025, and the companies worked together to develop a suitable solution. In addition to selecting and configuring the transmitters, Rohde&Schwarz also had to develop and deliver complete cable sets to enable quick and secure installation. The project also required a power distribution

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unit that not only met all product and electrical safety standards but also complied with transmission protection requirements. Initial delivery of the transmitter was planned for the end of 2025.

The solution has four stages:

- Two compact R&S®TLV9 transmitters, configured for 300 W output power in a 2 HU housing
- Two R&S®TMV9evo transmitters, configured with an amplifier for 750 W output power
- Two R&S®TMV9evo transmitters, configured with two amplifiers for 1450 W output power
- One R&S®TMV9evo transmitter, configured with four amplifiers for 2900 W output power

In addition to amplifiers, the power distribution unit and cable sets, Rohde&Schwarz also delivered the accessories needed, such as storage and transport cases, trolleys and ramps.

Thanks to years of experience and expertise in designing and developing emergency solutions for broadcasting networks, Rohde&Schwarz immediately understood BDR's highly specific requirements and was able to fulfill them efficiently. The proposed and delivered solution meets the key requirements of rapid deployment in the event of disaster, such as a lightning strike causing significant damage to a transmitter. The solution uses compact and versatile equipment that can be configured and adapted perfectly to suit each application. By using the R&S®TLV9, which is only 2 HU in height, and the highly modular R&S®TMV9evo, Rohde&Schwarz was able to ensure that the entire emergency transmitter – including cable set and power distribution unit – can be transported in a car. The system can be carried by two people and is extremely quick to install, allowing BDR to resume broadcasting with complete DAB+ functionality and quality in a short amount of time.

The transmitters, which are primarily designed for emergency situations, also make it easier for BDR technicians to plan maintenance or modernization work because they can now temporarily shut down an installed transmitter and replace it with one of the emergency transmitter system. This allows any necessary work to be carried out cost-effectively.

If a BDR broadcast customer would like to add other channels or services at a transmitter site, a temporary transmitter can be installed prior to delivery of the final equipment to allow services to go live faster.

> "The German Federal Network Agency considers terrestrial broadcasting with DAB+ to be part of the country's critical infrastructure. We broadcast wide-reaching DAB+ programs both regionally and locally in Bavaria, and people rely on us. Major broadcast interruptions cannot be tolerated on any of our channels. That's why it was important for us to have a practical but also budget-friendly resilience plan. Other applications have also emerged in the ongoing maintenance of our broadcasting infrastructure. For example, we can now use the emergency transmitter system to temporarily bridge broadcasting when replacing station transmitter systems or even moving location."
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> Frank Strässle, CEO, Bayern Digital Radio GmbH

Summary

BDR required a highly mobile and quick-to-set-up emergency transmitter to support the service continuity of its broadcast customers without creating costly redundancies at every location. Thanks to the know-how of the broadcast experts at Rohde&Schwarz, these requirements were fully and cost-effectively met within a short time frame.

The DAB+ emergency transmitter systems from Rohde&Schwarz for:

- 300 W (leaning left)
- 2900 W (center)
- 750 W (right)

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Mobile DAB+ emergency transmitter
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Data without tolerance limits is not binding | Subject to change