

ROHDE & SCHWARZ

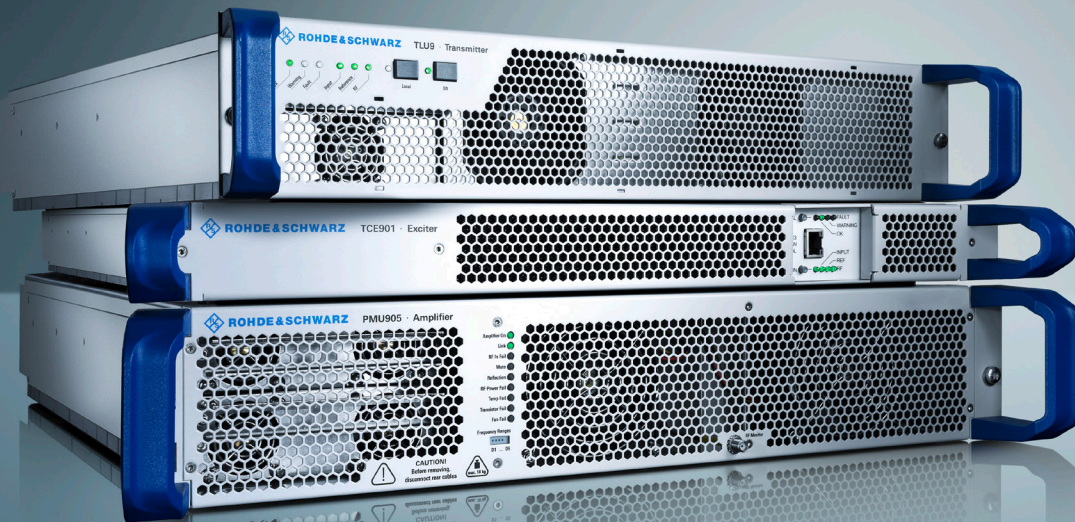
Make ideas real



REDEFINING THE FUTURE OF MOBILE DELIVERY

5G broadcast/multicast R&S[®]Tx9/R&S[®]Tx9evo

Product Flyer | Version 01.00



5G BROADCAST/MULTICAST – THE FUTURE OF CONTENT DISTRIBUTION

5G broadcast/multicast solutions enable high-quality, reliable video playback and much more. For broadcasters and service providers, they offer the potential to open up new revenue streams and entirely new business models.

Using broadcast and/or multicast over 5G, network operators can deliver premium content to mobile consumers via an overlay concept while they are still attached to cellular networks and with consistent high quality of service (QoS) and higher quality of experience (QoE).

5G broadcast/multicast is one of the main pillars of the 5G ecosystem. It consists of a broadcast/multicast radio access network (RAN) and a broadcast/multicast core network (CN).

BROADCAST/MULTICAST RADIO ACCESS NETWORK (RAN)

5G broadcast/multicast R&S[®]Tx9 transmitter setups allow network operators to deliver more services such as OTA updates/upgrades, multimedia streaming on demand and public warning. This creates new use cases and diversified business cases.

The 5G broadcast/multicast radio access network (RAN) solution compliant with 3GPP Rel. 14/16 is mainly based on the R&S[®]Tx9 and R&S[®]Tx9evo transmitter generations with all output powers.

Users who already have an existing solution only need a software and/or hardware upgrade to acquire the new 3GPP specifications. The RAN features specified in 3GPP Rel. 16 are listed in the table below.

RAN features specified in 3GPP Rel. 16

Feature	Description
Subcarrier spacing $\Delta f = 370 \text{ Hz}$	Implemented with CP = 300 μs , allowing fixed reception
Subcarrier spacing $\Delta f = 1.25 \text{ kHz}$	Implemented with CP = 200 μs , allowing mobile reception in urban areas (inner city)
Subcarrier spacing $\Delta f = 2.5 \text{ kHz}$	Implemented with CP = 100 μs , allowing mobile reception in suburban areas (outer city, highways)
Subcarrier spacing $\Delta f = 7.5 \text{ kHz}$	Implemented with CP = 33.3 μs , allowing mobile reception in rural areas (highways, high speed trains)
Improved CAS	Allows the receiver to be synchronized with the transmitter and ensures mobile and robust reception

TRANSMITTERS FROM ROHDE & SCHWARZ

In the past few decades, incredible innovations have taken place with TV moving from analog transmission to digital broadcasting, enabling thousands of unique channels to deliver premium content to consumers. TV is now ready for the next challenge, but this time with mobile connectivity firmly in mind.

Most terrestrial transmitter networks around the world have been upgraded to digital transmission technology. Transmitters from the Munich based market leader have earned the reputation of being the most advanced, energy-efficient transmitters on the market and account for a large share of nationwide installations on all continents.

Rohde&Schwarz is also one of the world's leading manufacturers of electronic test and measurement and communications equipment. Network operators use this equipment to successfully install, maintain and optimize broadcast networks.

Rohde&Schwarz transmitters set the benchmark for power efficiency. With some of the largest installations worldwide and a history in RF transmission going back to 1933, we have the experience required for your transmission needs. A wide range of highly innovative broadcast transmitters provide a content distribution system that is ideal for one-to-many content distribution. Supporting our customers with great products is only one way Rohde&Schwarz supports this form of distribution. We also offer great long-term service level agreements to keep your network up and running.



R&S® THU9evo high-power transmitter

The high-power transmitter family comes with the market-leading liquid cooling system and ensures trouble-free operation during its lifetime.

- ▶ Liquid-cooled
- ▶ Up to 106 kW in the UHF band
- ▶ Unique Rohde&Schwarz Doherty technology – up to 43% energy efficiency



R&S® TMU9evo medium-power transmitter

The medium-power transmitter stands for simplicity and endurance. Transmission has never been as effortless and cost-efficient.

- ▶ Air-cooled
- ▶ Up to 3 kW
- ▶ Unique Rohde&Schwarz Doherty technology – up to 40% energy efficiency



R&S® TLU9 low-power transmitter

The unique low-power transmitter/gap filler offers maximum reliability, ensuring trouble-free operation during its lifetime with minimum footprint.

- ▶ Air-cooled
- ▶ Single-box design
- ▶ 1 W to 200 W

Rohde & Schwarz

The Rohde & Schwarz electronics group offers innovative solutions in the following business fields: test and measurement, broadcast and media, secure communications, cybersecurity, monitoring and network testing. Founded more than 80 years ago, the independent company which is headquartered in Munich, Germany, has an extensive sales and service network with locations in more than 70 countries.

www.rohde-schwarz.com

Service that adds value

- ▶ Worldwide
- ▶ Local and personalized
- ▶ Customized and flexible
- ▶ Uncompromising quality
- ▶ Long-term dependability

Sustainable product design

- ▶ Environmental compatibility and eco-footprint
- ▶ Energy efficiency and low emissions
- ▶ Longevity and optimized total cost of ownership

Certified Quality Management

ISO 9001

Certified Environmental Management

ISO 14001

Rohde & Schwarz training

www.training.rohde-schwarz.com

Rohde & Schwarz customer support

www.rohde-schwarz.com/support

