



R&S® QAR50 QUALITY AUTOMOTIVE RADOME TESTER

Cost-effective automotive radome testing. Fast. Precise.

The perfect choice for

Analyzing and evaluating radomes and bumpers in R&D

End-of-line testing of radomes and bumpers in production

Characterizing material properties of polymers for bumpers in R&D

The R&S®QAR50 is the ideal tool for accurate quality testing of radomes and bumpers in the automotive radar frequency range for R&D and end-of-line testing (EOL). The tester has sufficient space to easily accommodate bulky bumpers and performs spatially resolved measurements to evaluate the homogeneity of design emblems quickly and precisely.



Vector network analyzer-like measurements

Key specifications	
Frequency range	Band 1: 76 GHz to 77 GHz Band 2: 76 GHz to 81 GHz
Frequency range extension	72 GHz to 82 GHz (for both bands)
Measured quantities	<ul style="list-style-type: none"> ▶ One-way transmission loss ▶ Reflection on both sides ▶ Transmission phase
Measurement cycle	< 4 s
Polarization	Vertical/horizontal
Mechanical properties	Distance between cluster: 990 mm (39 in.)
Evaluation area (W × H)	Max.: 100 mm × 100 mm (3.9 in. × 3.9 in.)
Operating system	Windows 10 IoT
Voltage rating	100 V to 240 V AC (± 10 %)
Remote control	SCPI
Service level agreements (estimated downtimes)	Basic: > 10 working days Standard: 3 working days Advanced: 4 hours Premium: 4 hours

Your benefit	Features
High measurement accuracy and repeatability for transmission and reflection measurements	Precision, reliability and robustness are the core strengths of a measuring instrument designed for production testing. The R&S®QAR50 therefore enables state-of-the-art transmission loss and reflection measurements from both sides for customizable frequency bands.
Flexible positioning due to microwave imaging technology without mechanical movement	The R&S®QAR50 uses hundreds of receive and transmit antennas to quickly characterize materials, bumpers and emblems. The microwave imaging technology with its electronic focusing allows flexible positioning of the measurement antennas, thereby making space for the important part: your material under test. The R&S®QAR50 supports C shape and U shape assemblies.
Get results faster than with any other instrument (< 4 s)	The powerful calculation hardware of the R&S®QAR50 is capable of processing large amounts of data in a short amount of time. Resulting images and frequency plots are available in just a few seconds. Depending on the parameters selected and data saved, extremely fast cycle times can be achieved. This makes the R&S®QAR50 the ideal test solution for high-throughput production lines.
Calibrate the R&S®QAR50 on site thanks to its integrated calibration hardware	To calibrate standard T&M equipment, the instruments usually have to be detached and then set up in a special calibration procedure. That's not the case for the R&S®QAR50: using the built-in spherical reflectors, the instrument can calibrate itself in an instant and potentially even remain in place.



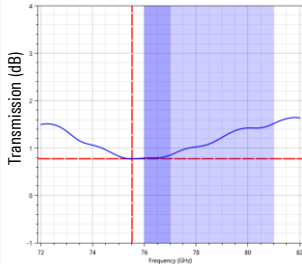
For more information, visit
www.rohde-schwarz.com/product/QAR50

R&S®QAR50-K10: frequency response

- ▶ Frequency range extension to 72 GHz to 82 GHz
- ▶ Frequency response shown for transmission loss and reflection measurements
- ▶ Detect and trace correct frequency adaption of the material
- ▶ Correct thickness adaptation can be monitored using the frequency response of the reflection measurement

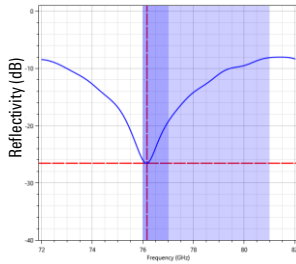
Transmission attenuation

(Minimum: 0.77 dB at a frequency of 75.53 GHz)



Reflection cluster 2

(Minimum: -26.56 dB at a frequency of 76.16 GHz)

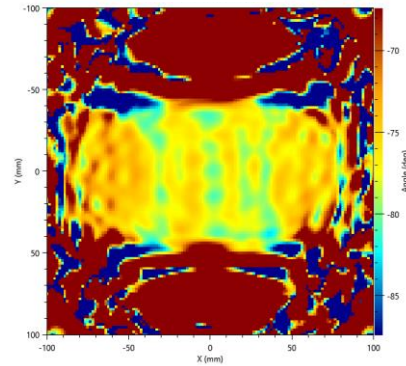


R&S®QAR50-K20: phase mask

- ▶ Measurement of transmission phase
- ▶ Enables the homogeneity analysis of the radome/bumper

Phasemask band 1

Frequency range: 76 GHz to 77 GHz

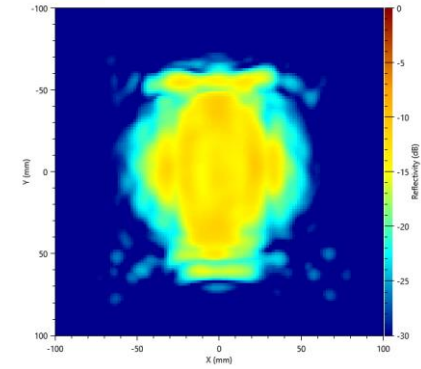


R&S®QAR50-K30: high-resolution reflection image

- ▶ High-resolution reflection image
- ▶ Quick detection of disturbances
- ▶ Makes the mounting structure of the bumper clearly visible
- ▶ Allows fast and correct position tracking of DUTs

Reflection cluster 2, high definition

Frequency range: 76 GHz to 81 GHz



R&S®QAR50-Z44: verification set



- ▶ Compliance verification set with plates for transmission loss and reflection verification
- ▶ Allows the R&S®QAR50 to verify to national and international standards
- ▶ Ensures the high accuracy and repeatability of your measurement results

Step 1: choose your R&S®QAR50 model

Model		
R&S®QAR50 vertical polarization	R&S®QAR50	1343.0099K02 1343.0099.02
R&S®QAR50 horizontal polarization	R&S®QAR50	1343.0099K03 1343.0099.03

All models include a power cord, getting started manual and one-year warranty

Step 2: choose your software options and accessories

Options		
Frequency response	R&S®QAR50-K10	1343.2091.02
Phase mask	R&S®QAR50-K20	1343.2110.02
HD reflection	R&S®QAR50-K30	1343.2133.02
Accessories		
Verification set	R&S®QAR50-Z44	1343.0082.02

Step 3: choose your service level agreement

Basic

- ▶ Repair within 10 working days

Standard

- ▶ Spare unit from Rohde & Schwarz pool is sent within 3 working days

Advanced

- ▶ Rohde & Schwarz spare unit on site
- ▶ Repair of defective panel within 10 working days

Premium

- ▶ Rohde & Schwarz spare unit on site
- ▶ Spare unit from Rohde & Schwarz pool is sent within 3 working days to avoid single point of failure

These are the key elements of the R&S®QAR50 services, which are tailored to your needs. Contact your local sales representative to learn more about what our service team can do for you.