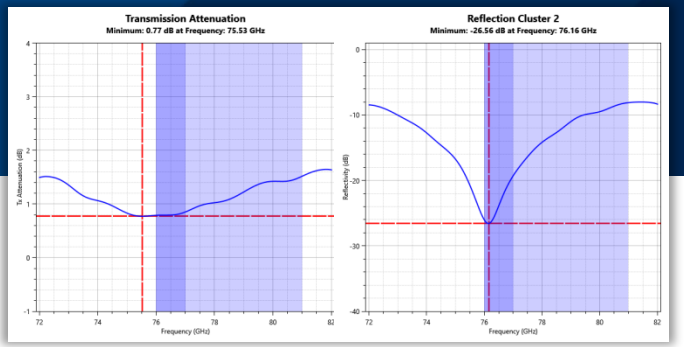
ROHDE&SCHWARZ
Make ideas real

R&S®QAR50-K10: FREQUENCY RESPONSE

For R&S®QAR50 quality automotive radome tester



Analysis and evaluation of radomes and bumpers in R&D

Testing radomes and bumpers in production (end-of-line)

Characterizing material properties of polymers for bumpers in R&D

Key specifications		
Frequency range extension[1] (measurement range)	Start frequency	72 GHz
	Stop frequency	82 GHz
	Center Frequency	77 GHz
Number of frequency steps	256	
Frequency accuracy	1 MHz	
Frequency range extension [1] (analysis range after time gating)	Start frequency	73 GHz
	Stop frequency	81 GHz
	Center Frequency	77 GHz

[1] Not standard for the R&S®QAR50-K10: 76 – 81 GHz

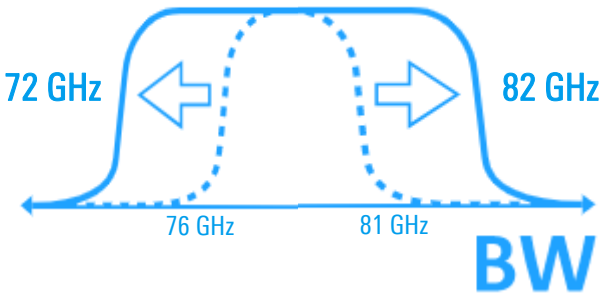
Customize your R&S®QAR50 quality automotive radome tester with the frequency response option

- ► Frequency range extension to 72 GHz – 82 GHz
- ► Frequency response shown for transmission loss and reflection measurements
- ► Detect and trace correct material frequency adaptions
- ► Adjust thickness based on reflection measurement frequency responses

Your benefit	Features
Extend your analysis bandwidth	Extend analysis bandwidth to 72 GHz – 82 GHz range for a better overall picture (standard frequency range 76 GHz to 81 GHz)
Help analyze materials in more detail To find radar sweet spots	VNA like measurement results for transmission loss and reflection ► Results are comparable to VNA free space measurements
Trace foil and paint thickness by evaluating reflection minimums	Material characterization of single layers to optimize radar transparency ► Easily understand measurement values – adapt thickness based on reflection measurement frequency responses. Time-gated displays ensure optimized products and consistent manufacturing process quality

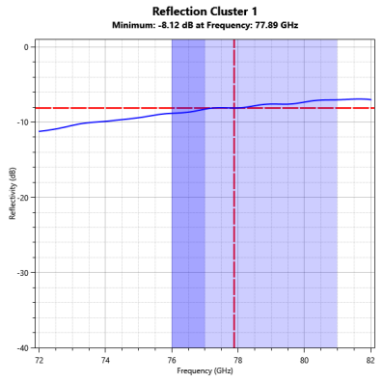
For more information, visit
www.rohde-schwarz.com/product/QAR50

Extend your frequency range from 72 GHz to 82 GHz



Some OEMs have higher requirements for inspection ranges, extending beyond the automotive radar band. The R&S®QAR50-K10 option can extend the frequency for both bands to the 72GHz – 82 GHz range.

Detect and trace correct frequency adaption of the material



Ideally, the frequency response minimum is in the operating frequency range for the radar sensor in combination with the DUT. Shifted minimums indicate issues with the electrical thickness of the DUT, requiring thickness adaptation based on frequency responses in reflection measurements

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

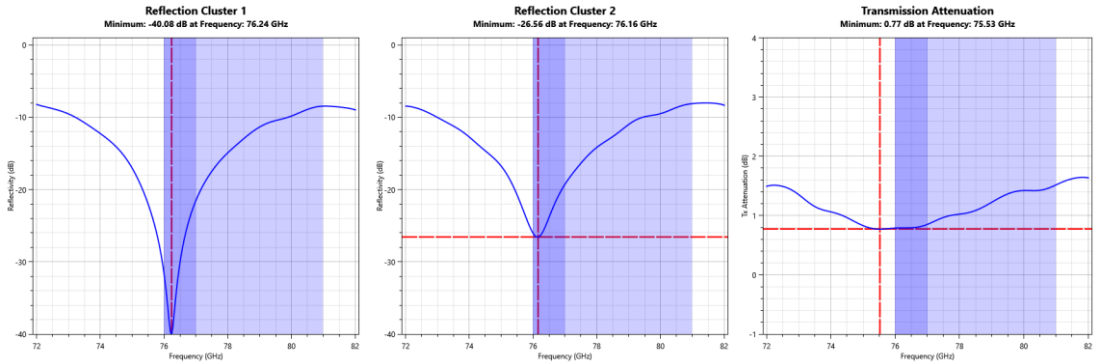
Included: All models come with a power cord, a getting started manual and a 1-year warranty

Step 2: choose your SW option 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

All options can be retrofitted

Frequency response for transmission loss & reflection



Blue line:
Trace

Red dotted line:
Trace minimum indicator

Purple area:
Radar band indicator

The result diagram shows the DUT frequency response based on the level characteristics. Results are displayed as a line trace over a certain frequency range. The R&S®QAR50 evaluates the frequency range for typical radar bands. The result diagram is available for both reflection and transmission measurements. The x-axis represents the frequency in both measurements. The y-axis represents level characteristics. The level characteristics are values in dB for both reflection and transmission measurements. You can change the scale of the x- and y-axis using a mouse.
The default value is restored after a new measurement. You can also use a mouse to determine the measured values for each pixel in the trace.

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