

REAL-TIME FILTER TUNING FLOW

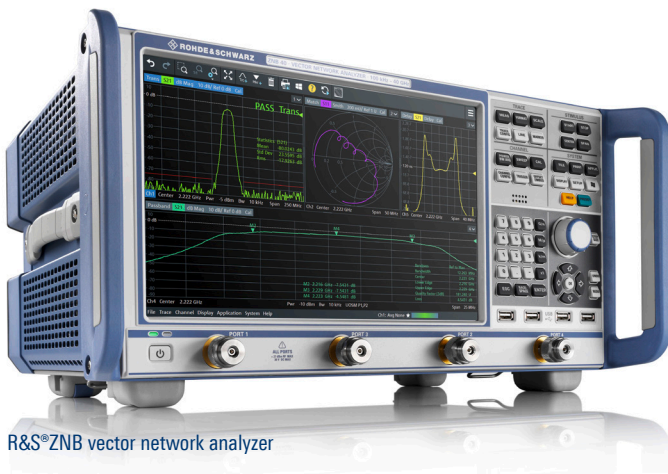
Filter tuning has never been easier and faster. SynMatrix advanced computer-aided tuning enables real-time filter optimization in an easy guided process using the R&S®ZNB, R&S®ZND and R&S®ZNL vector network analyzer from Rohde & Schwarz. The SynMatrix solution provides a feature-rich GUI for R&D and lab use, as well as a simplified version for production applications.

Your task

You are working on high frequency applications, and designing and tuning a filter has become more challenging. Using traditional design and verification techniques limits R&D processes.

5G and mmWave market growth is increasing volume production demands with better yields, dramatically exceeding the expectations from previous design generations.

Tuning microwave filters requires specialized technicians, which can be very expensive and time consuming. Using a tool that enables non-specialized technicians to perform this task could be the key to accelerating design and manufacturing processes and maintaining high-quality performance.



R&S®ZNB vector network analyzer

Solution from Rohde & Schwarz and SynMatrix

The workflow from Rohde & Schwarz and SynMatrix offers a complete test and tuning solution for 5G and mmWave microwave filters. This powerful solution allows RF engineers and technicians to test and tune their designs quickly and accurately.

The R&S®ZNB vector network analyzer provides outstanding performance, including a wide frequency application range and a large dynamic range up to 140 dB. The R&S®ZND and R&S®ZNL are also supported, offering cost-effective alternatives. The short sweep times (4 ms for 401 points) enable a fast and accurate measurement response. The Rohde & Schwarz and SynMatrix workflow has been validated by many users with high frequency requirements.



SynMatrix tuning platform

Application Card
Version 02.00

ROHDE & SCHWARZ
Make ideas real



KEY FEATURES OF THE ROHDE & SCHWARZ AND SYNMATRIX SOLUTION

One-button connection with plug & play setup

- ▶ Full vector network analyzer (VNA) sync connection
- ▶ Currently compatible with the R&S®ZNB, R&S®ZND and R&S®ZNL
- ▶ Further Rohde&Schwarz VNA models in preparation

Full VNA control with the application software using a single front panel simplifies the design flow

- ▶ Access to all VNA configuration and setup controls from a user-friendly SynMatrix interface
- ▶ Includes marker, trace, diagram and measurement formatting

Real-time display

- ▶ With pass/fail status monitoring and tuning margin analysis

Advanced noise smoothing function

- ▶ Eliminates test uncertainties and enhances tuning accuracy

Testing and tuning reporting

- ▶ Report exports include tuning performance and instruction records
- ▶ Reports can be imported by manufacturing users during volume production (planned feature)

Real-time tuning mode

- ▶ Offers real-time tuning instructions and tuning error display in various formats

Manual tuning mode

- ▶ Offers a step-by-step debug and diagnosis user experience to help identify problem areas quickly and easily

SynMatrix and Rohde&Schwarz now offer a fully integrated filter design solution – from EM software simulation to test and measurement tuning. Enhanced workflows and more precise simulation and measurement tools eliminate costly prototype build cycles. Users benefit from faster and more efficient R&D cycles, saving valuable time and effort.

Using the simplified version together with network analyzers from Rohde&Schwarz streamlines manufacturing processes in production.

See also

www.rohde-schwarz.com/product/znb

www.synmatrixtech.com

Testing and tuning process



Rohde & Schwarz and SynMatrix tuning solution setup



Rohde & Schwarz GmbH & Co. KG
www.rohde-schwarz.com

Rohde & Schwarz training
www.training.rohde-schwarz.com
Rohde & Schwarz customer support
www.rohde-schwarz.com/support

R&S® is a registered trademark of Rohde&Schwarz GmbH & Co. KG
Trade names are trademarks of the owners
PD 3608.9501.92 | Version 02.00 | April 2024 (as)
Real-time filter tuning flow
Data without tolerance limits is not binding | Subject to change
© 2020 - 2024 Rohde&Schwarz GmbH & Co. KG | 81671 Munich, Germany

