U3851A: RF Microwave Circuit Design, Simulation and Measurement Courseware, 5G NR n3

RF circuit design, with elements of 5G New Radio n3

RF and microwave engineering covers the physical layer of wireless communication, and is incorporated into almost everything that transmits or receives a radio wave, such as mobile phones, radios and WLAN. Emerging trends such as 5G and microwave sensing imaging drive rapid innovations in the technology landscape and imposes new requirements on RF components, resulting in design challenges such as increased integration and exponential demands on performance. The increasing complexity brought about by these trends means many companies will need additional expertise to execute the technology in the design of their devices.

To prepare industry-ready students, Keysight's RF Microwave Teaching Solution focuses on the complete RF circuit design flow, from design specifications and simulation to prototype building and validation, operating on the 5G New Radio Band n3 downlink frequency. This gives students a solid foundation in RF microwave fundamentals and paves the way for them to specialize in more advanced wireless applications in areas such as 5G and IoT.

Designed to work hand-in-hand with industry-standard test and measurement instruments and electronic design automation (EDA) software, the RF Microwave Teaching Solution provides students the engineering essentials, practical skills and real-world application knowledge that will make them highly sought after by the industry.

Courseware Contents

- Training Kit
  - RF education hardware kit (1)
  - Kit controller (2)
  - RF adapters, splitter
  - Cables (RF, power, LAN, BNC)
  - Power adapter and carry case
- Editable lab sheets and model answers (3)
  - Problem-based assignments
- Covers 50 hours of lab sessions

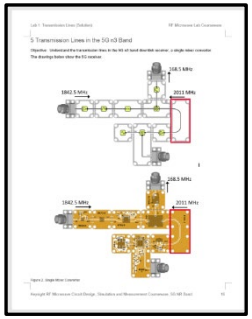
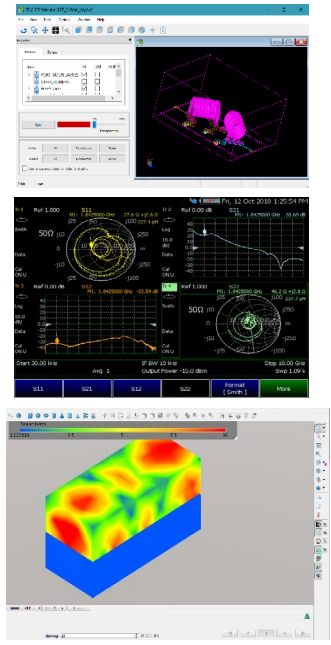
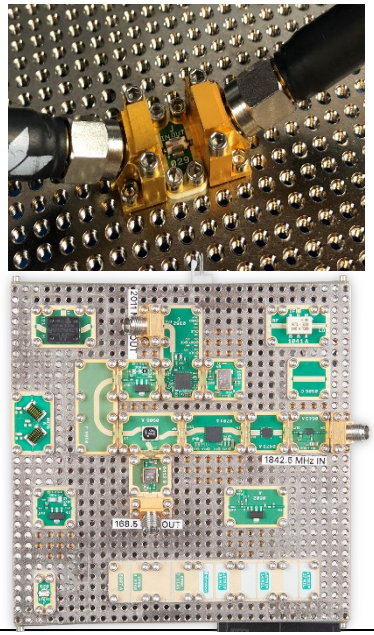
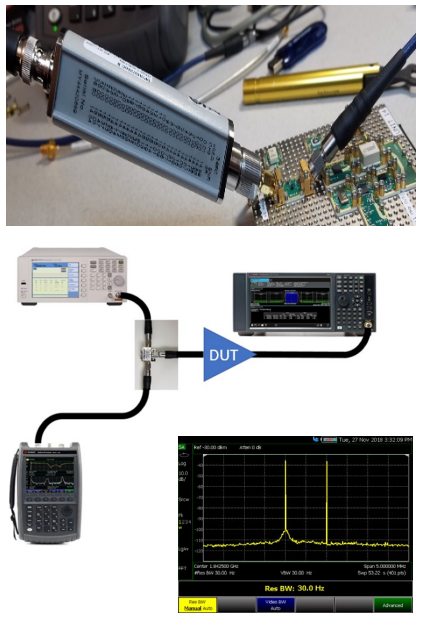
RF Microwave Teaching Solution	
Lab Courseware	**Reference Lab Solutions**
List of Lab Sheets: • Lab 1 - Transmission Lines • Lab 2 - Filter • Lab 3 - Low Noise Amplifiers • Lab 4 - Driver and Power Amplifiers • Lab 5 - Oscillator and Synthesizers • Lab 6 - Mixers • Lab 7 - 5G Receiver Design, Simulation and Measurement	**Required Keysight Instruments:** • Signal Generator: N9310A • Spectrum Analyzer: N9000B CXA Analyzer • Network Analyzer: N9917A FieldFox VNA • Noise Source: 346B Noise Source • Power Supply: E36312A • Oscilloscope: DSOX1102G • Calibration Kit: 85521A **Required Design and Automation Software:** • PathWave ADS, Genesys, EMPro and SystemVue • FieldFox Data Link software **Optional Software:** • PathWave BenchVue

(1) (2) (3)

More Information: www.keysight.com/find/rfuw

KEYSIGHT TECHNOLOGIES

Learning outcomes: Industrial experience

Design Specifications	Design and Simulation	Prototype Building	Design Verification
 			
Learn and understand the fundamentals of the transmission specification, which is crucial for component design	Design and simulate using industrial design and automation software such as PathWave ADS, PathWave Genesys, PathWave EMPro, PathWave SystemVue and FieldFox Data Link software	Experience the prototype building of RF receiver system at the 5G New Radio band	Evaluate system design and validate the 5G receiver design module with Keysight instruments

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at:
www.keysight.com/find/contactus

Learn more at: www.keysight.com