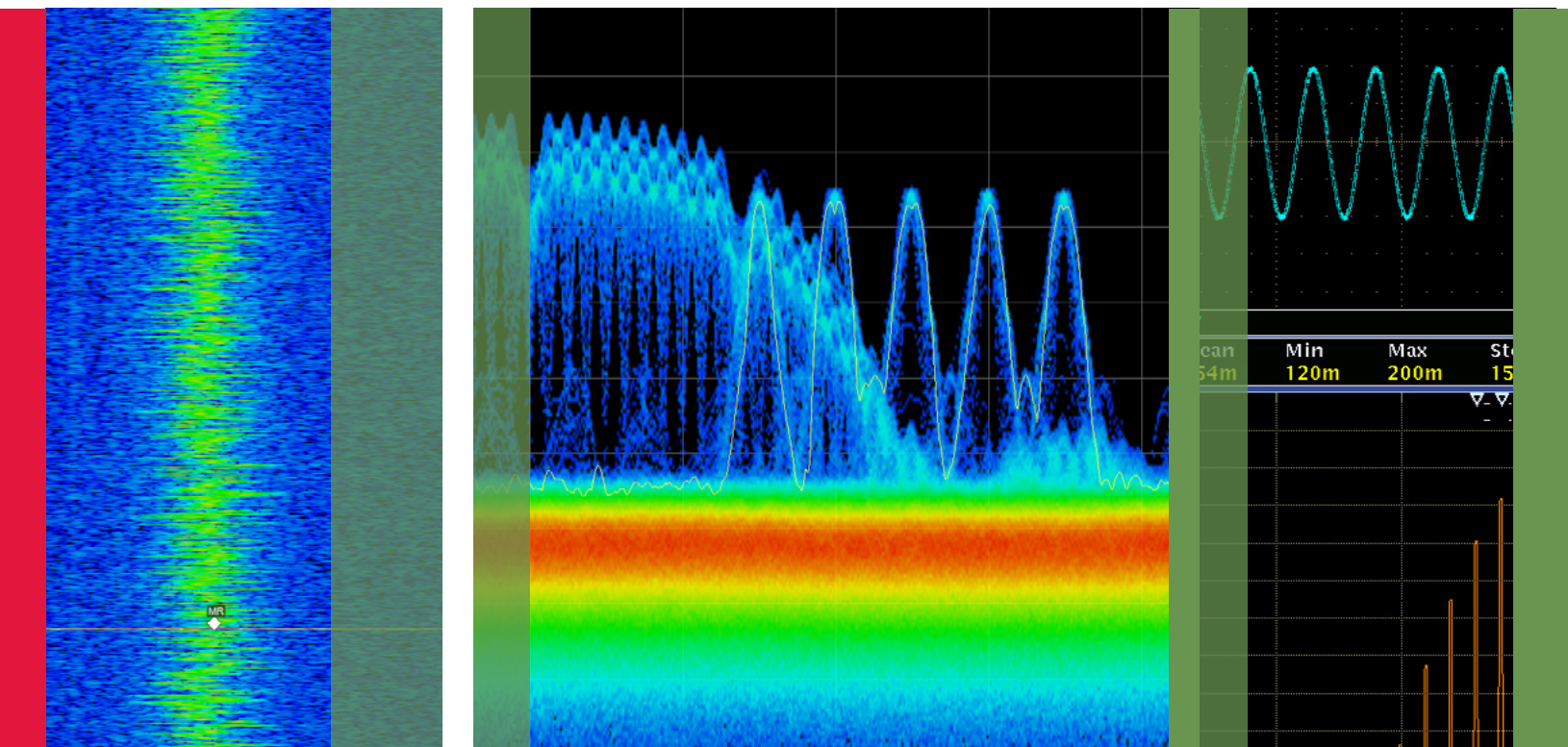# Wireless/RF Test

Selection Guide
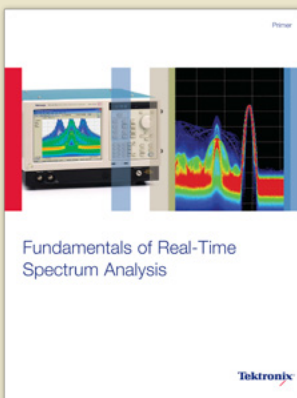

Tektronix®

Choosing your Wireless/RF Test Solution

See an RF world others can't with affordable real-time performance. This guide gives an overview of the signal analysis capabilities required to overcome the most challenging wireless and RF design challenges with confidence. Spend your time fixing the problem, not looking for it.

If you need a refresher on Real-Time Spectrum Analysis, download the **Fundamentals of Real-Time Spectrum Analysis Primer.**

Wireless/RF Test Instrument Types

Spectrum Analyzers: A whole new array of RF measurements is now within your reach.

- Wide capture BW (from 500 MHz to 33 GHz) and analysis capability (SignalVu-PC) at a low price point
- Up to 6 instruments in 1 delivers exceptional value
- Real-time signal analysis at a low price point
- Synchronization of RF with other analog/digital signals to debug problems faster
- Widest capture bandwidth for latest wireless standards like 802.11AC
- High probability of intercept

Signal Generators: Vector signal generation and digital modulation at an affordable cost.

- Inexpensive upgrade to vector signal generation
- Convenient software upgrade for digital modulation
- Arbitrary Waveform Generator options for generating custom and unique signals

Spectrum Analyzers

	RSA306 USB Spectrum Analyzer	MDO3000 Mixed Domain Oscilloscope	MDO4000B Mixed Domain Oscilloscope	RSA5000B/ RSA6000B
	RF Signal Analysis in your hands	**Six instruments in one**	**The only instrument that shows time-correlated analog, digital and RF signals**	**Advanced RF Performance**
Frequency Range	9 kHz to 6.2 GHz	9 kHz up to 3 GHz	9 kHz up to 6 GHz	1 Hz up to 26.5 GHz
Demod/Capture BW	40 MHz	Up to 3 GHz	Up to 3.75 GHz	Up to 165 MHz
RF Performance (DANL, Phase Noise, Accuracy)	Good	Good	Better	Best
Integrated Instruments	Spectrum Analyzer	Spectrum Analyzer Oscilloscope Logic Analyzer Function Generator Protocol Analyzer Digital Voltmeter/Counter	Spectrum Analyzer Oscilloscope Logic Analyzer Protocol Analyzer	Spectrum Analyzer
Correlation of RF with other analog/digital signals	N/A	N/A	Yes	N/A
Real-time Spectrum Analysis	Yes	N/A	N/A	Yes
Vector Signal Analysis Software	SignalVu-PC (Standard)	N/A	SignalVu-PC (Optional)	N/A
Form Factor	USB	Benchtop	Benchtop	Mainframe
Commonly Used For	General purpose RF Design Education Interference Hunting/ Spectrum Mgmt Field Installation and Maintenance	Basic Embedded Design and Debug General Purpose RF Design Education	Advanced Embedded Design and Debug General Purpose RF Design EMI Troubleshooting	Advanced RF Design Interference Hunting/ Spectrum Mgmt RADAR/EW

Signal Generators

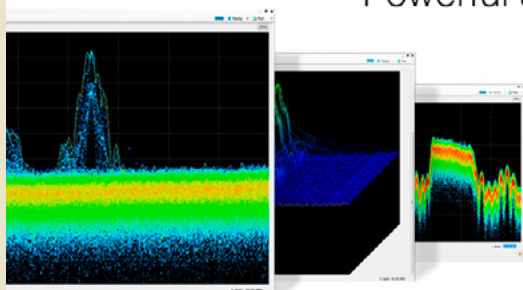|	TSG4100A Vector Signal Generator	AWG5000 Arbitrary Waveform Generator	AWG70000 Arbitrary Waveform Generator
	Comprehensive and affordable RF signal generation	High fidelity arbitrary waveform generation at a low cost per channel	Highest speed AWG for generating custom and unique signals
Frequency Range	DC up to 6 GHz	Up to 480 MHz	Up to 20 GHz
Modulation Bandwidth	6 MHz Internal/200 MHz External	Up to 300 MHz	Up to 14 GHz
Switching Speed	8 ms	Less than 2 μs	Less than 20 ps
RF Performance (Phase Noise, Frequency Resolution, Accuracy)	Better	Good	Best
Output Channels	1	Up to 4 analog, up to 28 digital	Up to 2 analog, up to 4 digital
Modulation Schemes	Basic Analog (AM/FM/PM)	Basic Analog (AM/FM/PM)	Basic Analog (AM/FM/PM)
	Basic Vector (ASK/FSK/PSK/QAM/MSK/CMP)	Basic Vector (ASK/FSK/PSK/QAM/MSK/CMP)	Basic Vector (ASK/FSK/PSK/QAM/MSK/CMP)
	Cellular (GSM/EDGE/W-CDMA/APCO25-P1)	CPM, Analog and OOK Modulation	CPM, Analog and OOK Modulation
Signal Modification Capabilities	Digital Filters (Nyquist, Gaussian, Rectangular)	Digital Filters (Nyquist, Gaussian, Rectangular)	Advanced Embedded Design and Debug General Purpose RF Design EMI Troubleshooting
Form Factor	Benchtop	Mainframe	Mainframe
Commonly Used For	General Purpose RF Design Education RF Production Test Transceiver Test	Advanced Research Electronic Warfare RADAR	Advanced Research Electronic Warfare RADAR

Featured Product: RSA306 USB Spectrum Analyzer

Tektronix | RSA306

Big Performance Has Never Been So Small.

New RSA306 Spectrum Analyzer - only $3,490*

RSA306 Spectrum Analyzer

The new RSA306 spectrum analyzer might be small but it packs a big punch. It's loaded with features you'd expect from spectrum analyzers twice the size and twice the price**, including real-time architecture and patented DPX® technology.

Powerful and Intuitive.

Discover the most difficult, hard-to-find events with the powerful architecture of the RSA306, featuring advanced DPX® technology to capture more data for the most accurate view of your signals.

And thanks to SignalVu® Essentials software, the RSA306 is as powerful as it is intuitive. SignalVu® Essentials delivers unlimited access to advanced measurement and analysis capabilities that you can save, customize or share peers.

Download the Datasheet for all features, including analysis options.
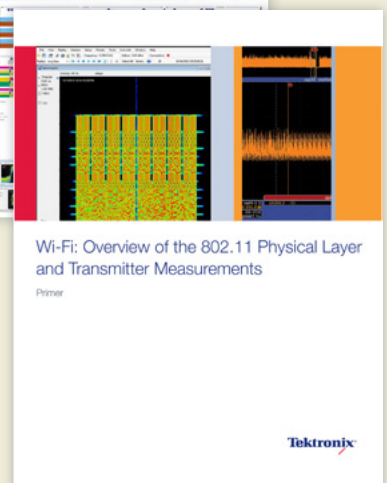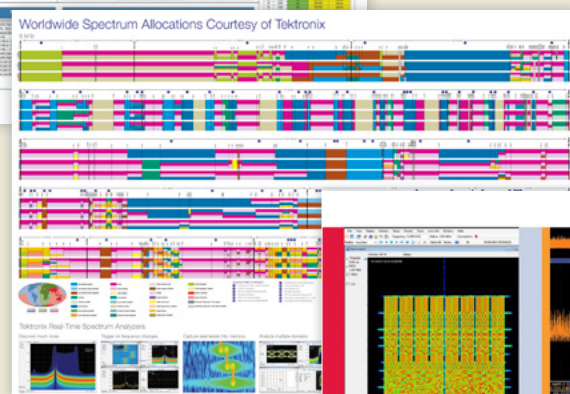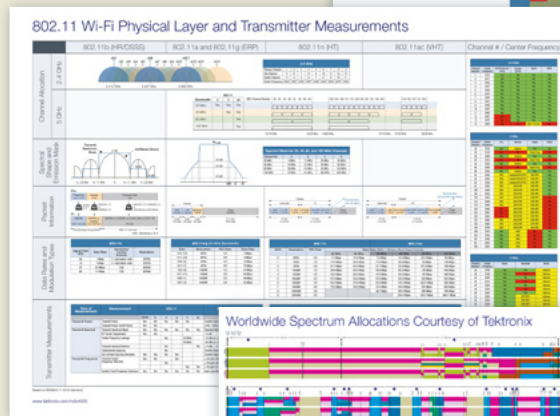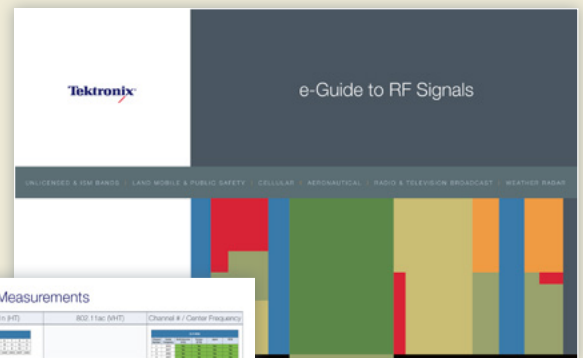
Unequaled Size. Unlimited Flexibility.

1.3 lbs.

Weighing in a just 1.3 lbs., the RSA306 spectrum analyzer is conveniently sized for easy portability from your bench to the field and back. It's powered by your laptop or tablet giving you ultimate flexibility and convenience.

7"

1"

5"

Resources for You

Become RF experts with resources that provide insight into RF signal analysis, Wi-Fi, and spectrum allocation. Get our RF Resource Kit, which includes:

- **e-Guide to RF Signals:** This guide will teach you how to identify typical RF signals and give you sample waveforms for you to experience RF signal analysis for yourself. These sample waveforms can be used with SignalVu software, a free download.

- **Wi-Fi Poster:** Get your copy of this new educational standards poster which covers all aspects of 802.11 Wi-fi physical layer and transmitter measurements FREE.

- **Spectrum Allocations Poster:** New for 2014, free wall chart helps you visualize and understand Worldwide spectrum allocation.

- **Wi-Fi: Overview of the 802.11 Physical Layer and Transmitter Measurements Primer:** This primer provides a general overview for each of the 802.11 standards, including their PHY layer characteristics (spectral and modulation), their packet format and their transmitter testing requirements.

The Tektronix Service Advantage

Tektronix offers unequaled expertise, global reach and a customer-centric approach with every service option. From our full suite of Factory-Certified service plans for Tektronix equipment to our Multi-Vendor Service (MVS) calibration, we can ensure optimal performance for your entire inventory of test and measurement instruments.

Tektronix Service Highlights

- **Tektronix Factory Experts**
  Access to the engineering expertise that designed and built your products to ensure they are in peak performance. Our support engineers hold an average of 20 years of training and experience.

- **Comprehensive and Thorough Treatment**
  Software updates, safety and reliability modifications, and cosmetic enhancements are included if applicable. Products are returned to you in "like-new" condition. The Tektronix network of service centers offers worldwide support.

- **Efficiency and Convenience**
  Our team of professionals focus on getting your instruments back to you as soon as possible, minimizing your downtime and increasing your operating efficiency.

- **Flexible Repair and Calibration Service**
  Tektronix offers you the choice of a cost effective, flexible service package to meet your specific business needs.

Tektronix Factory-Certified Service Plans

Silver Care	Silver Care Packages	Gold Care
• Choose between a 3 or 5 year extended warranty plan • No purchase orders, quotes, or approval delays – one phone call away starts the repair process • Covers equipment, parts, labor and transportation • Includes applicable software, safety and reliability updates • Faster repair time than without coverage (average is 5 days faster)	• All the benefits of our popular Silver Care Plan in a convenient package the size of a DVD case • Each package includes a unique activation code to effortlessly initiate and manage your service coverage online • May be purchased any time during the original warranty period	• Choose between a 3 or 5 year extended warranty plan • Loaner product of equal or higher performance shipped within 24 hours • Priority access to Global Tektronix Customer Call Center for technical support • 30% discount on scheduled Factory-certified calibration • Coverage of user-caused EOS and ESD damage • Typical downtime of 48 hours or less

Platinum Care	Calibration
• Custom-tailored plan with a typical downtime of less than 1 hour • Identically configured spare products dedicated to your facility • On-site calibration event and repair coverage • Priority access to technical support, and flexible contract duration and payment terms	• Choose from multi-year contracts and single event calibrations • Accredited and traceable calibration • Adjustments included to restore performance • Applicable software, safety, and reliability updates • Calibration records retention

For Further Information

Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit **www.tektronix.com**

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