# Anritsu EduPack Bundle

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Providing Today's Industry-Leading Technology to Tomorrow's Industry-Changing Engineers

Today's universities play a vital role in developing next-generation technologies. Many amazing innovations – such as rocket fuel, Yagi-Uda antenna, solar power, the CAT scan, and ultrasound – were the product of professors and students working at universities around the world. Anritsu is a leading provider of test and measurement solutions that enable these ground-breaking innovations. For years, Anritsu has worked with universities and professors to better understand the functionality and options needed to conduct their research. These solutions become critical in enabling the crucial research and development being done by educational institutes – and often become industry standards that then go on to benefit development in the public and private sector.

Enabling the Next-Generation of Innovation

Making Anritsu's leading test and measurement solutions readily available to universities ensures they have the state-of-the-art resources they need to train students and continue their ground-breaking research using the latest technologies. The Anritsu EduPack Bundle provides these students, instructors, and researchers with just that – a modular, flexible solution that is customizable based on the unique needs of the institution. The EduPack Bundle comes standard with a modular VectorStar™ MS4644B 40 GHz vector network analyzer, calibration kit, active measurement suite, and Cadence AWR lite software. From there, configure the EduPack Bundle to meet your lab's specific design needs by selecting from the various options available. Whether you are designing a 5G solution, microstrip, antenna, or making material measurements, the Anritsu EduPack Bundle can power your innovation with the industry's leading technologies.

Anritsu EduPack Bundle
Standard Features
VectorStar MS4644B vector network analyzer providing: • Frequency coverage of 70 kHz to 40 GHz • Industry-standard AWR software (lite version)
40 GHz high-precision manual calibration kit
Active measurement suite (includes: step attenuators, bias tees, direct access loops, and gain compression and efficiency measurement capabilities)
Time domain analysis for measuring your devices in time domain rather than frequency domain
IMD measurement wizard that characterizes your amplifiers for various parameters like IMD, TOI, IPn, etc.
Gain compression measurements to check active amplifier characteristics
Receiver offset for mixer and scaler measurements
Standard 3 year warranty
Available Options
Anritsu Universal Test Fixture (UTF)
Anritsu Spectrum Master™ MS2760A ultraportable spectrum analyzer
MilliBox anechoic chambers, 3D positioner, and control software
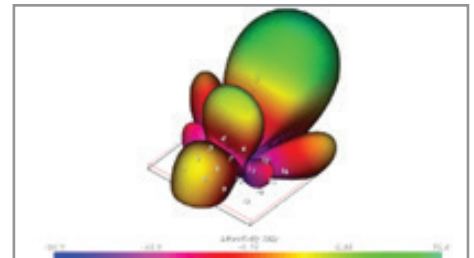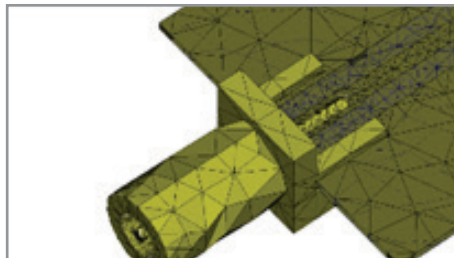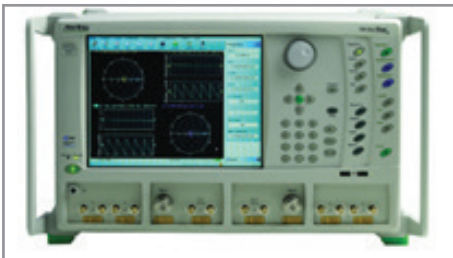
Integrating High-Performance VNAs with High-Frequency Design Tools

VectorStar MS4644B Vector Network Analyzer – Coverage from 70 kHz to 40 GHz

Your students, teachers, and researchers need access to industry-leading solutions that will help bring their projects to fruition while giving them valuable experience and training. By equipping your engineering lab with an industry-leading VectorStar MS4644B VNA, you are providing them with the next-level of performance, accuracy, and reliability needed to conduct the necessary measurements of any active or passive device or system – from characterization and design to manufacturing and verification.

Key Features

- **Upgradeable system** – the VectorStar MS4644B modular design allows you to easily upgrade your system's frequency coverage to 70/110/125/145/220 GHz as your needs and requirements grow

- **User-friendly measurements** – wizards simplify amplifier measurements (IMD, Swept IMD, P1dB, THD, spectrum view, etc.), while an optional internal combiner helps make single connection measurements

- **Industry-leading 2.5 ns resolution with 100 dB dynamic range for pulse measurements** – pulse profile (PP), point-in-pulse (PIP), pulse-to-pulse (P2P), continuous pulse profiling (Cprof), and continuous point-in-pulse (CPIP) available with easy software operations

- **4 independent, internal pulse generators available** – simple wizard included to make pulse measurements; optional 200 MHz IF bandwidth available for fast and accurate pulse measurements.

- **Fast, accurate opto-electronic measurements** – optional Anritsu O/E-E/O solution provides coverage for all 4 domains (O/E, E/O, O/O, and E/E)


Cadence AWR Software

Every VectorStar VNA solution includes a lite version of the industry-standard AWR software, enabling your students and staff to leverage a variety of tools for their high-frequency IC, PCB, and module design, including:

- Linear circuit simulators
- Electromagnetic (EM) analysis tools
- Integrated schematic and layout

Those needing access to their full software suite can register with AWR and receive a 90-day free trial.

Get started at: **www.awr.com/anritsu-vectorstar**.
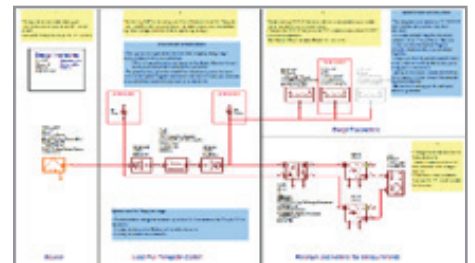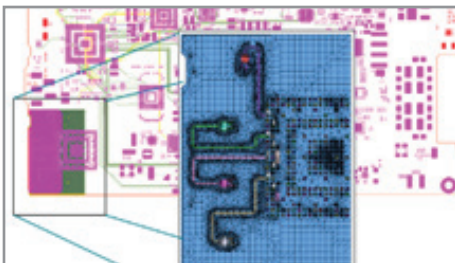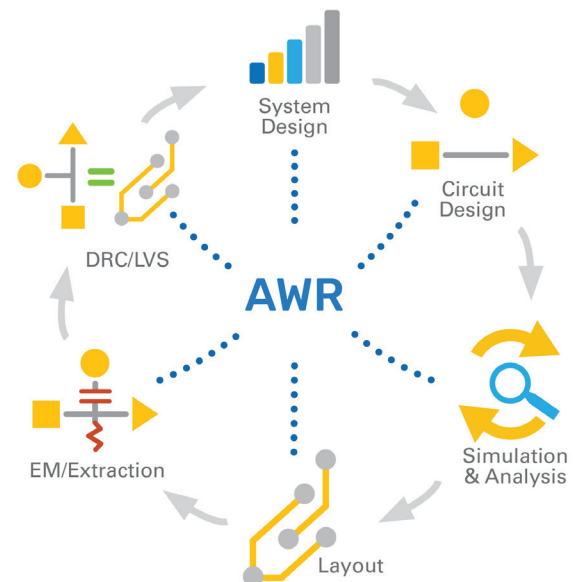
Anritsu 3680 Series Universal Test Fixture

Active and passive device characterization, especially for microstrip-based devices like filters, couplers, and even active amplifiers, requires testing without the use of connectors as these can introduce mismatch and produce electrical deformities. The Anritsu 3680 series Universal Test Fixture (UTF) is an accurate and repeatable solution for measuring microstrip and coplanar waveguide (CPW) substrate devices, allowing your students and staff to reduce test time and eliminate errors by checking their prototype/designs before producing a final component. The Anritsu 3680 series UTF input and output connections are made to the substrate device using two spring-loaded jaws that include coax-to-microstrip/coplanar launchers. The jaws accommodate substrates with: thicknesses from 0.13 to 1.9 mm with no center section required; lengths up to 50 mm (100 mm for 3680-20); and line offsets up to 12.7 mm (25 mm for 3680-20). The 3680 series UTF includes three models: 3680-20 (DC to 20 GHz with APC-3.5 connectors), 3680K (DC to 40 GHz with K Connector), and 3680V (DC to 60 GHz with V Connector).
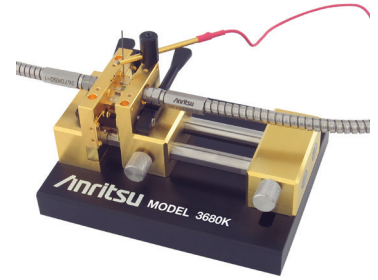
Feature of Universal Test Fixtures

- DC to 60 GHz coverage
- Microstrip and CPW measurement capability
- Offset measurements
- Right-angle measurements
- MMIC measurements
- Accommodates offset and right-angle test devices
- Calibration/verification kits (optional)
- Substrate measurement capability
- Bias can be provided

Optional calibration/verification kits

Anritsu Spectrum Master MS2760A Ultraportable Spectrum Analyzer

The Spectrum Master MS2760A spectrum analyzer is a state-of-the-art solution that provides continuous coverage from 9 kHz to 170 GHz. This ultraportable solution delivers best-in-class price/performance ratio unmatched by traditional benchtop instruments. The Spectrum Master MS2760A delivers leading dynamic range, sweep speed, and amplitude accuracy. Its small size allows it to direct connect to almost any device under test, eliminating the need for low loss, expensive cables. The Spectrum Master MS2760A series is USB-powered and controlled by a Windows-based PC, laptop, or tablet, making it uniquely flexible and easily shared within a lab environment.
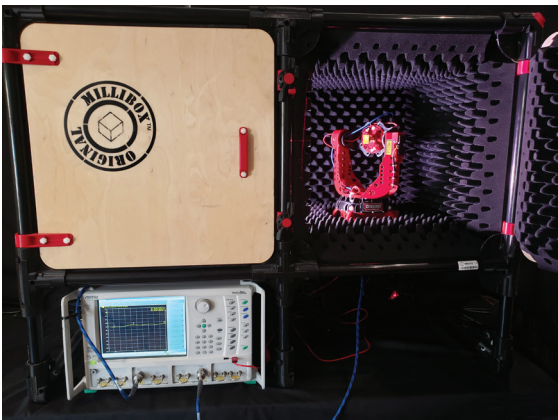
Key Features

- First portable spectrum analyzer to provide continuous frequency coverage to 170 GHz (40 GHz model included with Anritsu Ultraportable Spectrum Analyzer EduPack Bundle – for more models, please contact your Anritsu representative)
- Broadband mmWave capabilities for radio astronomy, automotive radar, wireless backhaul, 802.11ad, satcom, and more
- Able to combine VectorStar MS4644B and Spectrum Master MS2760A measurements in the same setup
- Ultraportable form factor enables measurements right at the device under test
- Measure: channel power, adjacent channel power, occupied bandwidth
- Patented nonlinear transmission line technology (NLTL) provides >100 dB dynamic range
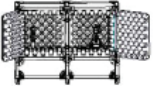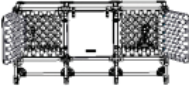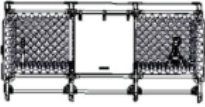- Up to 6 traces, 3 trace detectors, and 12 markers
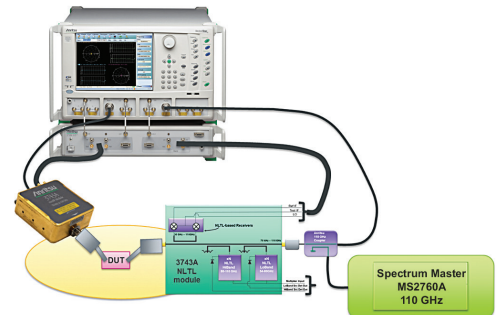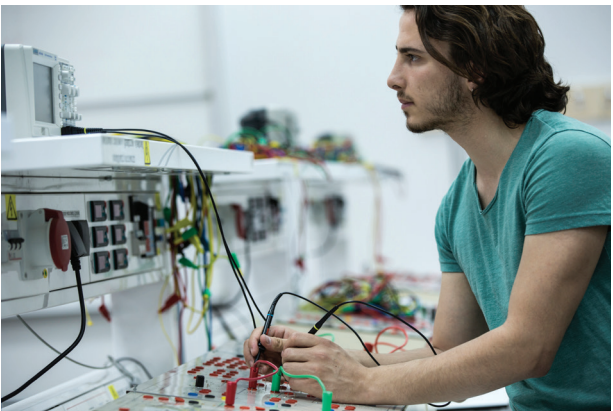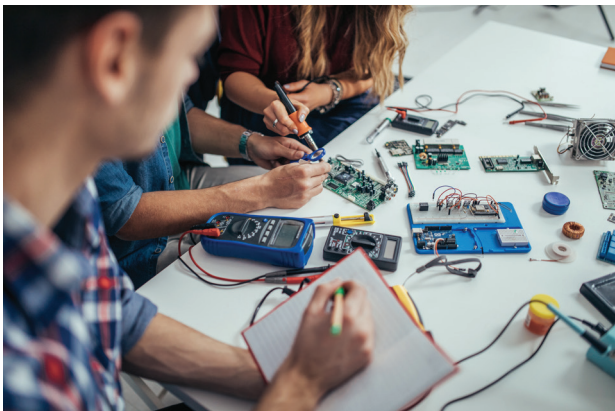
MilliBox Anechoic Chambers and Software

MilliBox products are a complete and cost-effective solution for making mmWave over-the-air (OTA) measurements. These compact, modular mini-chambers are ideal for making far-field distance measurements up to 2 meters. The device under test (DUT) antenna size and operating frequency dictates the far-field distance requirement for OTA testing and drives the chamber dimensions. At mmWave frequencies, the far-field dimension is small enough that MilliBox chambers are an ideal solution that can comfortably fit on a lab benchtop. The horn post and the DUT positioners are placed on opposite ends of the chamber deck. Access to the inside is provided through the front doors that close to seal the chamber during test.

The MilliBox Python software program for measuring the antenna radiation pattern is fully compatible with the VectorStar MS4644B VNA. Because it is open source, students and staff are able to define and code their own parameters for required measurements, providing flexibility and a skill building opportunity.

MilliBox Anechoic Chamber

	MBX02	MBX03	MBX04	MBX33
Exterior Dimensions (W x H x D)	128 x 95 x 66cm (50" x 37" x 26")	188 x 95 x 66cm (74" x 37" x 26")	245 x 95 x 66cm (96" x 37" x 26")	240 x 112 x 82cm (95" x 44" x 32")
Interior Cavity (W x H x D)	101 x 40 x 40cm (40" x 16" x 16")	161 x 40 x 40cm (63" x 16" x 16")	221 x 40 x 40cm (87" x 16" x 16")	213 x 57 x 57cm (84" x 22" x 22")
Far Field (GIM01/GIM1D)	77cm (30")	138cm (54")	198cm (78")	186cm (73")
Far Field (GIM03)	72cm (28")	133cm (52")	193cm (76")	176cm (69")
Measurement Positions	2	4	6	8
Instrument Bay Height	29cm (12")			
Absorber Performance	−50dB from 18GHz to 95GHz			
Manufacturer Warranty	1 year all parts			

Anritsu envision : ensure

Specifications are subject to change without notice.

Anritsu utilizes recycled paper and environmentally conscious inks and toner.