dbSAFE RME

DVTEST™
Best Isolation. Better Results.

The only true Rackmount Enclosure on the market

The dbSAFE RME is the only true fully compatible rackmount enclosure. The RME features a full double wall design that offers the best RF shielding in its class, 100 dB isolation measured adjacent to each seam.

With a wide operable frequency range between 300 MHz and 18 GHz, the RME provides the necessary industry performance that is required for testing emerging 5G wireless devices. An optional FR2 frequency extension kit to 60 GHz is available.

The RME is ideal for performing device characterization, reliability as well as full speed datathroughput testing, where campaign test times for 5G devices may last hours.

In addition to having three standard 19" rackmount sizes, the RME is also available in a 23" wide configuration, increasing your DUT capacity by up to 35%. The dbSAFE RME can be zero stacked in a standard rack allowing up to 3, 10U high units.

Adapt the dbSAFE RME to your test requirements with its unique I/O panels. The I/O panels can be customized so the exterior panel connectors are optimised for the test equipment anf interior panels can be chosen for a specific DUT. I/O panels can be separated and co-located by, minimizing crosstalk.

The dbSAFE RME can also be equipped with a long list of options including, thermal testing, roll out trays, shelves, antenna mounts, cameras, microphones, lighting, DUT positioners.

Industry Requirements

Top industries impacted by wireless technologies
- Transporation
- Manufacturing
- Healthcare
- Energy
- Smart Cities

The technology trend is to squeeze higher frequency and more functionality into a lower power and smaller chip area, making the device more susceptible to interference.

A higher data rate in communication between new wireless devices mandates improved shielding for RF test enclosures.

Testing in RF shielded rooms can be expensive, while a cost effective and portable RF test enclosure is an ideal solution.

Different wireless standards exist today and strict shielding regulations are dictated by industry and government. Wireless technologies coexist on the same device, requiring multiple access points to the DUT.

Products have shorter and shorter life spans so the test equipment used must be flexible, adaptable, and reused whenever possible.

dbSAFE RME

- True 19" or 23" rackmount optimized design available in 4U, 7U, & 10U sizes
- Full Double Wall construction provides the most stable and repeatable RF environment available in a portable enclosure
- Superior craftsmanship and attention to detail
- Unmatched performance and flexability at a cost effective price
- 100 dB isolation (measured at each seam)
- Tri-Shield© passivation process eliminates surface oxidation; ensuring no degradation in isolation performance over the life of the enclosure
- High-quality nickel fabric over urethane foam gaskets with epoxied mitered edges
- Customizable offset I/O panels for enhanced isolation
- Operating frequency 300 MHz - 18 GHz with extension options to 60 GHz
- Choose from our standard sizes or customize to meet your exact needs
- Additional testing accessories, such as antenna positioners and mounting brackets can be added to accommodate different test setups.
- The flexible custom I/O panel choices allows for multiple technology grouping options for RF, ethernet, data, power, fiber optics, and waveguides
- Industry leading 3 Year warranty

RF Absorber Foam Liner

The dbSAFE RME minimizes reflections across its interior with the use of an RF absorbing foam liner, which is precision cut and fitted to the exact interior dimensions. This allows the DUT to be positioned anywhere with virtually no effect on attenuation caused by reflections or leaks.

RF Gaskets

Multiple RF gaskets are used in all seams and I/O connections to eliminate leakage.

High quality nickel fabric over urethane foam gaskets with mitered and sleeved edge installation, resist compression set and are rated for a minimum 50,000 cycles.

Full Double Wall Construction

The dbSAFE RME is composed of two layers of aluminum treated by DVTEST's proprietary **Tri-Shield©** passivation process to eliminate oxidation; ensuring no degradation in isolation performance over the life of the enclosure.

This form of construction not only improves the structural strength, but provides an additional 20 dB of RF isolation.

User Defined Inner and Outer I/O Panels

The dbSafe RME has co-cating I/O panels that can be connectorized by technology depending on the use case. The outer connectors may be more suitable for your test equipment while the inner panel(s) may be adapted to the DUT.

Options include:
- RF Connectors: SMA, SMB, BNC, TNC, UHF, N, K
- RF filtered connectors: USB 2.0/3.0/3.1 (Single, dual, quad port)
- Ethernet 1 & 10 GigE+PoE
- HDMI 1.4 , 2.0
- Fiber optics: ST and FC
- AC filtered interface; 120/240V
- DC filtered interface; 0-100VDC, 20 A
- Data: D-Sub 9,15,25,37,50, RJ45, Audio 3.5 mm
- Waveguide with 6 or 12 ports for fiber insertion
- Air ventilation with AC or DC fan
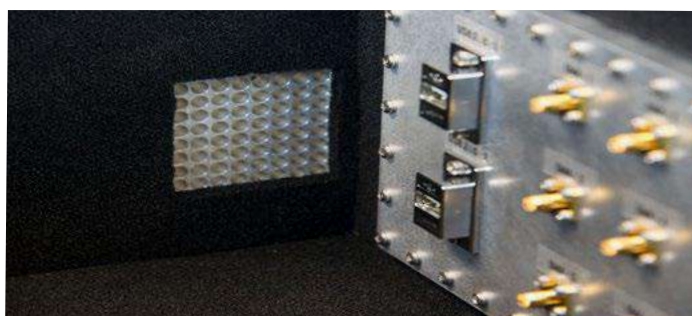
Specifications for dbSAFE RME

Isolation

Shielding Effectiveness (dB)*	300 MHz - 3 GHz 3 GHz - 6 GHz 6 GHz - 18 GHz	≥ 100 dB ≥ 90 dB ≥ 80 dB

Isolation measurements taken adjacent to each seam.

Construction

Chassis Type	Full Double Wall Welded Aluminum Structure
Surface Treatment	Tri-Shield coated to MIL-DTL-5541F
Door Style	Front Load Dual Lever Latch
RF Gasket	Braid Over Foam
Absorber	Broadband Lossy Foam Absorber

Enclosure Options

Test Equipment Rack	19" or 23" EIA Rack (not included)
Cooling	Passive Waveguide Vent Active Waveguide Ventilation Module with AC Fan (30 CFM) Optional high output airflow to 500 CFM
Waveguide Optical Data Feedthrough	6 Position Modules Available
USB to Fiber Interface	USB 2.0/3.0/3.1
Ethernet to Fiber Interface	Up to 10 Gbps
Extreme Temperature Testing	Forced Air -45°C to +90°C

Accessories

OTA Performance Verification	Noise Source and Power Sensor
Test Probe Antenna	dbDIRECT Cross Polarized Vivaldi
Calibration Antenna	dbDIRECT Series Standard Gain Horn
Antenna Couplers	dbCoupler Series (Standard, Mini)
I/O Panel Exchange Tool	PN: 09925X-OPTION 909 Torque Screwdriver

I/O Panel Options

RF Connectors	SMA, N Type, BNC, TNC
I/O Data Modules	USB 2.0/3.0/3.1*, 1 & 10 GigE+PoE, HDMI 1.4/2.0 , Audio 3.5 mm *USB single, dual, quad and high density port versions available
I/O Connectors	D-Sub DB-9, 15, 25, 37 50V/5A Per Pin
AC Power	TYPE A - 120V AC Module (IEC-320 to NEMA 5R) TYPE F - 250V AC Module (IEC-320 to Schuko) TYPE G - 230V AC Module (IEC-320 to BS 1363)
DC Power	DC - 100V/20A Module (+.- terminals)

Positioning System (Optional)

Manual	Manually Adjusted Rotational and Translational Probe and DUT Mounts

Measurement Software

(System Controller Not Included)	Antenna Under Test
	OTA DUT
	Near-Field to Far-Field
	Spherical Measurement
	3D Antenna Patterns
	Near-Field to Far-Field and Direct Far-Field

Dimensions W x D x H inches (mm)

dbSAFE RME 4U-19 251005
  Internal: 14" (355.6) x 20" (508) x 4" (101.6)
  External: 19" (482.6) x 25" (635) x 7" (177.8)

dbSAFE RME 7U-19 099126
  Internal: 14" (355.6) x 20" (508) x 9.25" (234.95)
  External: 19" (482.6) x 25" (635) x 12.25" (311.1)

dbSAFE RME 10U-19 099118
  Internal: 14" (355.6) x 20" (508) x 14" (355.6)
  External: 19" (482.6) x 25" (635) x 17" (431.8)

dbSAFE RME 10U-23 099168
  Internal: 21" (533.4) x 20" (508) x 14.5" (368)
  External: 24" (609.6) x 25" (635) x 17" (431.8)

dbSAFE RME 13U-23 099169
  Internal: 21" (533.4) x 20" (508) x 19.75" (502)
  External: 24" (609.6) x 25" (635) x 22.75" (577.9)

Warranty	3 Years, parts and labor

Please contact factory for custom sizing, additional options, and unique design application ideas.
Specifications are subject to change without notice.