Diamond Engineering

Automated Measurement Systems

Antenna Measurement Systems - x100B Series

Features and Specifications

DAMS 5100B - DC to 6 GHz

DAMS 6100B - DC to 18 GHz

DAMS 7100B - DC to 40 GHz

http://www.DiamondEng.net · 6051 Enterprise Drive, Suite 101 · Diamond Springs, CA 95619 · (530) 626-3857

System Features

Wide Frequency Ranges

Capable of measuring ranges from DC to 6 GHz *(DAMS 5100B)*, DC to 18 GHz *(DAMS 6100B)* or DC to 40 GHz *(DAMS 7100B)*.

Dual-Axis Movement

360º azimuth range with up to ± 90º of elevation tilt.

High Resolution

Capable of 0.01º steps azimuth and elevation with equally high resolution encoders.

Weight Capacity

Able to carry payloads of up to 100 lbs.

Precision Rotary Joint

The rotary joint is constructed from a special carbon based material that allows noiseless measurements up to 6 GHz *(DAMS 5100B)*, 18 GHz *(DAMS 6100B)* or 40 GHz *(DAMS 7100B)*.

Deluxe Measurement Software

All systems come complete with DAMS Measurement Studio Pro, which features many automated basic and advanced protocols for testing. For visualization of your data, it includes an array of basic and advanced processing modules - everything from basic polar plots to advanced concepts such as the spherical plot module, efficiency, and more.

Spherical Plot Module

Map measured antenna data over a sphere or an ideal isotropic sphere.

Complete Warranty

Our 3-year warranty covers all parts, labor and technical support.

Included RF Cables

All systems include two 10' calibrated measurement cables. Precision low-loss SMA cables *(DAMS 5100B)*, precision ultra-low-loss SMA cables certified to 18 GHz *(DAMS 6100B)* or precision low-loss cables with 2.92mm "K" connectors certified to 40 GHz *(DAMS 7100B)*.

Includes All Accessories

This is the complete measurement solution and includes everything besides the VNA and computer.

Precision Drive Train

Steel gear and worm, with ball and tapered roller bearings.

Advanced Measurement Calculator

Performs detailed and complex computations.

Positioner Specifications

Platform Operating Specifications

Frequency Ranges:	DC to 6 GHz (DAMS 5100B) DC to 18 GHz (DAMS 6100B) DC to 40 GHz (DAMS 7100B)
Platform Movement:	Up to 0.01º azimuth and elevation resolutions 360º continuous azimuth range ± 90º elevation range at 0.1º per step
Drivetrain:	1.8º stepper motors Hardened steel worm drive geartrain
Positioner Feedback:	9000 Line Encoder (az and el) 0.01º resolution
Platform Max Speeds:	4.2 R.P.M. azimuth 480º per minute elevation
Platform Mounting:	24" aluminum thrust plate (variations available upon request) Extra heavy-duty tripod
Weight Capacity:	100 lbs. maximum
Cable Interface:	Ultra high-quality cable with SMA connectors Ultra-precision, low-noise rotary joint with SMA connectors ("K" connectors on DAMS 7100B)
Included Options:	Digital level for precise setup Positioning laser for long range alignment DAMS Software Studio Pro Advanced processing module 3-year warranty on parts and labor Technical support

Controller Operating Specifications

Control Methods:	DAMS Antenna Measurement Software (or any software with serial communication, which requires the free Platform Development Kit)
Interface:	USB 1.1 (RS232 available upon request)
Input Power:	24vDC 5.0A
Analyzer Interface:	GPIB controller card *(not included)*

Physical Properties

Dimensions w/o Tripod:	12" wide (30.5 cm) 12" deep (30.5 cm) 14" tall (35.5 cm)
Height:	5" (12.5 cm) WITHOUT vertical movement assembly or tripod 35" (35.6 cm) MIN, 72" (182.88 cm) w/ vertical movement assembly and tripod
Weight:	45 lbs. (20.4 kg) (without tripod and vertical assembly) 68 lbs. (30.8 kg) (with tripod and vertical assembly)
Positioner Composition:	85% Aluminum 10% Stainless steel 5% Misc. plastics/metals
Tripod Composition:	Aluminum and plastic

Environmental Specifications

Operating Temp:	0º C to 45º C (32º F to 104º F) (with no condensation)
Transport Temp:	-40º C to 60º C (-40º F to 140º F) (no condensation within 72 hours)

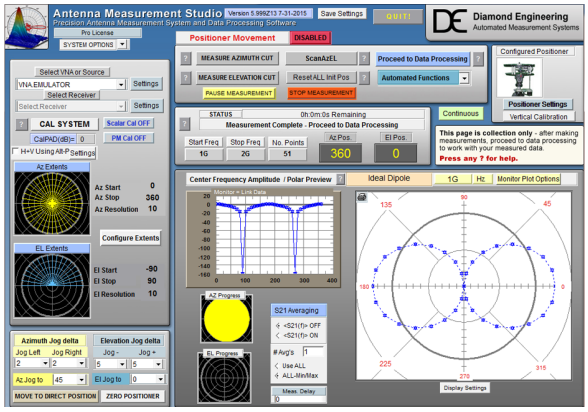
DAMS Antenna Measurement Studio *(included!)*

Overview

The DAMS Antenna Measurement Studio is an advanced data collection platform for both passive and active measurements. Includes several built-in semi-automatic modules for post-processing DUT data. The DAMS Studio is also capable of generating various reports and visual data representations ranging from 3D spherical plots, gain over frequency plots, Smith charts and more. The unlimited viewing license permits installation on multiple computers for post-processing or data-analysis.

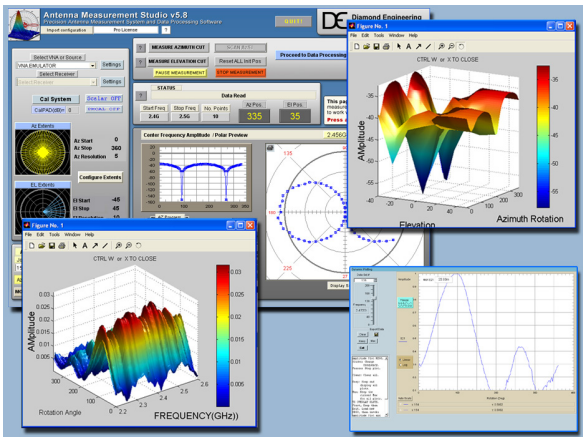
Measurement Features

- Support for vector network analyzers (VNA/PNA/ENA), spectrum analyzers, signal generators, power meters and even voltmeters.
- Extensive post-processing modules
- Export data with variable formatting options
- Measure up to 1600 frequency points @ every position
- Variable speed
- Move to max signal position
- Vertical / horizontal scan measurements
- CW/CCW antenna rotation



Data Processing and Visualization

- **Process 500,000 data points**
- Quad-trace polar plots
- Dual-trace amplitude plots
- Compliance overlay
- 3D AZ/EL over freq
- 3D AZ over El
- Spherical plots
- Calibrated ref antenna import
- Path loss calculator
- Excel or .TXT export
- Complete data manipulation
- Multiple storage registers for convenience



For more information about our software, including screen shots, full specifications of capabilities and the ability to download a demo version, please visit:

http://www.DiamondEng.net/PDF/software_specs.pdf

More Information

Software

For more information about our software, including screen shots, full specifications of capabilities and the ability to download a demo version, please visit:

http://www.DiamondEng.net/PDF/software_specs.pdf

Broadband Reference Horns

For more information about our broadband reference horns, please visit:

http://www.DiamondEng.net/PDF/de0726_datasheet.pdf

Power Amplifiers

For more information about our broadband power amplifiers, please visit:

http://www.DiamondEng.net/power-amplifiers

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