Diamond Engineering
Automated Measurement Systems

DAMS Antenna Measurement System

Features and Specifications

DAMS 7100

DC to 40 GHz Frequency Range

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System Features

Wide Frequency Ranges
Capable of measuring frequencies ranging from DC to 40 GHz.

Dual-Axis Movement
360° azimuth range with up to ± 90° of elevation tilt.

High Resolution
Capable of .10° steps azimuth and .10° steps elevation.

Weight Capacity
Able to carry payloads of up to 150 lbs.

Precision Rotary Joint
The rotary joint is constructed from a special carbon based material that allows noiseless measurements up to 40 GHz.

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

Deluxe Measurement Software
All systems come complete with DAMS Measurement Studio Pro, which features various special plots and functions.

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

Included RF Cables
All systems include two 10' calibrated precision low-loss cables with 2.92mm "K" connectors certified to 40 GHz.

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

Precision Drive Train
Equipped with 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 40 GHz
Platform Movement:	Up to .10° azimuth resolution 360° continuous azimuth range ± 90° elevation range at 0.1° per step Precision DC Servo motor
Drivetrain:	Heavy-duty steel gear drive-train Steel gear and worm, with ball and tapered roller bearings
Positioner Feedback:	High accuracy resolver
Platform Max Speed:	30 R.P.M. azimuth 120° per minute elevation
Platform Mounting:	24" aluminum thrust plate with 150 lbs. of payload capacity Extra heavy-duty tripod
Weight Capacity:	150 lbs. maximum @ level position (capacity decreases with angle)
Cable Interface:	Ultra high-quality cable with "K" connectors Ultra-precision, low-noise rotary joint with "K" connectors
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 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:	0° C to 45° C (32° F to 104° F) (with no condensation)
Transport Temp:	-40° C to 60° C (-40° F to 140° F) (no condensation within 72 hours)

Overview of Software Features

Multi-Trace Plots (Polar/Amplitude)

- Compare multiple antennas
- Dual marker function
- Selectable linear or log (dB)
- Instant delta dB/angle marker readout
- Selectable scale
- Export option

3D and Spherical Plots

- Full 3D interface
- Map data onto a sphere
- Plot data at any frequency
- Multiple overlay and display features
- Support for power meters, voltmeters, spectrum analyzers and VNA/PNA's
- Continuous rotation or swept measurements
- Export data with variable formatting
- Measure up to 1600 frequency points per increment
- Variable speed
- Move to max signal position
- Vertical/horizontal scan measurements
- CW/CCW antenna rotation

Other Features

- Calibrated horn table import
- Path loss calculator
- Complete data manipulation
- Multiple storage registers for convenience
- Link commander (link simulator)
- Complex data calculator

Optional Extras

- Antenna Network & Measurement Simulator