Diamond Engineering
Automated Measurement Systems

DAMS Antenna Measurement Systems

Features and Specifications

DAMS 7000

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

360º continuous or sweeping horizontal movement with up to ± 45º vertical tilt.

High Resolution

Capable of .0625º steps azimuth and .10º steps elevation.

Weight Capacity

Able to carry a payload of up to 20 lbs.

Precision Rotary Joint

The rotary joint is constructed from carbon-based material suited for noiseless measurements of up to 40 GHz.

Includes All Accessories

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

Deluxe Measurement Software

Comes with DAMS Measurement Studio Pro featuring special plots and functions.

Complete Warranty

Comes complete with our 3-year warranty covering all parts, labor and technical support.

Included RF Cables

System includes two ultra-high quality, high-precision, low-loss cables with 2.92mm “K” connectors certified to 40 GHz.

Precision Drive Train

Equipped with a precision stepper motor, and Kevlar® belt transmission.

Advanced Measurement Calculator

Enables users to performs detailed and complex mathematical computations.

Spherical Plot Module

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

Positioner Specifications

Platform Operating Specifications

Frequency Ranges:	DC to 40 GHz
Platform Movement:	Horizontal 1.8 degree precision stepper motor with low-noise belts Up to .0625° azimuth resolution 360° continuous azimuth range ± 45° elevation range at .10° per step Vertical precision hybrid linear actuator
Platform Max Speed:	30 R.P.M. azimuth 120° per minute elevation
Platform Mounting:	Velbon® tripod with fluid pan head Standard 1/4-20 tripod threads (horizontal or vertical)
Platform Composition:	85% acrylic / Delrin® construction for limited reflection
Weight Capacity:	20 lbs. maximum at level position (capacity decreases with angle)
Drivetrain:	Azimuth: stepper motor with belt transmission Elevation: stepper hybrid non-captive lead screw
Cable Interface:	Ultra-high quality 40 GHz cables w/ SMA connectors (all 2.92mm "K" connectors) Ultra-precision, ultra-low noise rotary joint with SMA (female)
Included Options:	Acrylic or aluminum thrust plate (additional cost may apply) Digital level for precise setup Ultra-high resolution option Positioning laser for long range alignment Vertical alignment tool ± 90° pivot for spherical measurements DAMS Software Studio Pro Advanced processing module Up to 3-year warranty on parts and labor Technical support

Controller Operating Specifications

Control Methods:	DAMS Antenna Measurement Studio (or any software with serial communication*) *(* requires Platform Development Kit)*
Interface:	Hybrid USB/serial
Input Power:	24V 1.6A switched power supply
Analyzer Interface:	GPIB controller card (not included)

Physical Properties

Width:	12″ (30.5 cm) without tripod
Height:	5″ (12.5 cm) turntable only Min: 35″ (88.9 cm) with vertical movement assembly and tripod Max: 72″ (182.88 cm) with vertical movement assembly and tripod
Weight:	5 lbs. (2.2 kg) (*without* tripod and vertical assembly) 9 lbs. (4.1 kg) (*with* tripod and vertical assembly)
Positioner Composition:	Acrylic 87% Stainless steel 5% Aluminum 5% Misc. plastics/metals 3%
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