



MFH. Moj-e
Fannavari-e
Houshmand

■ Inertial Guidance Test System & Hardware In The Loop Motion Simulator Model MFH-3DD-S7-HD

Modes of operation:

1. Relative & Absolute Positioning
2. Rate – absolute, excellent instantaneous rate stability.
3. Track Mode - for real time simulation of motion profiles.
4. Synthesis mode-Sinusoidal motion, command amplitude and frequency.
5. Local or remote control via touch sensitive operator panel or digital interface.



MFH-3DD-S7-HD

Feature

Large, high torque, direct drive, brushless motors produce high acceleration and rate power all axes.
The rigid structural design caters for high bandwidth applications and high fidelity real time motion simulation.

Description

The Series MFH-3DD-S7-HD Motion Simulator has three degrees-of-freedom.

The middle gimbal (Pitch Axis) has an open design allowing unobstructed optical access to the tabletop.

The model allows testing of several medium Inertial Measurement Units (IMU's) or Microelectromechanical Systems (MEMS) sensors simultaneously.

The MFH-3DD-S7-HD provides a comprehensive platform for Hardware-in-the Loop (HWIL) simulation of guided missiles, munitions and other inertial systems.

The simulator is capable of simulating the roll, pitch and yaw motion of a vehicle in space.

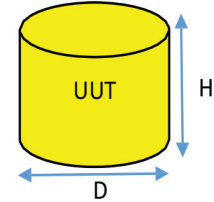


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MFH-3DD-S7-HD Parameter

UUT Specifications

Payload	Up to 50 Kg
UUT dimension	H: 500 mm, D: 400 mm
Electrical lines to UUT	52 Lines 2A (optional)



Simulator Specifications

		ROLL (inner axis)	PITCH (middle axis)	YAW (outer axis)
Angular freedom		continuous	continuous	continuous
		Direct / AC Brushless Motors		
Position				
Accuracy	arcsec	< 3 or < 10	< 3 or < 10	< 3 or < 10
Resolution	arcsec	0.01 or 0.04	0.01 or 0.04	0.01 or 0.04
Repeatability	arcsec	< 1 or < 3	< 1 or < 3	< 1 or < 3
Rate				
Range	deg/s	± 3000	± 1000	± 800
Resolution	deg/s	0.00001 or 0.0001	0.00001 or 0.0001	0.00001 or 0.0001
Stability (Rate-Cmd 1 °/s)	over 360 deg	Up to % 0.0001	Up to % 0.0001	Up to % 0.0001
Accuracy (Rate-Cmd 1 °/s)	over 360 deg	%0.1 to % 0.0005	%0.1 to % 0.0005	%0.1 to % 0.0005
Dynamic				
Bandwidth (-3db or -90°)	Hz	Up to 100	Up to 30	Up to 25
Transparency (-10° phase shift)	Hz	Up to 20	Up to 12	Up to 10
Acceleration (no load)	deg/s ²	Up to 12000	Up to 1500	Up to 500
Orientation error				
Wobble	arcsec	<5 or < 10	<5 or < 10	<5 or < 10
Orthogonality	arcsec	<5 or < 15	<5 or < 15	

The specification identified in this data sheet are representative of standard system
To satisfy customer specific requirements MFH-3DD-S6 is able to design systems with specifications that are
increased or decreased relative to standard systems

MFH-3DD-S7-HD