Introducing

The MotionMaster™

New

Model EDR-6DOF











Self-contained sensor/recorder measures and records 3-axis linear acceleration and 3-axis roll, pitch & yaw

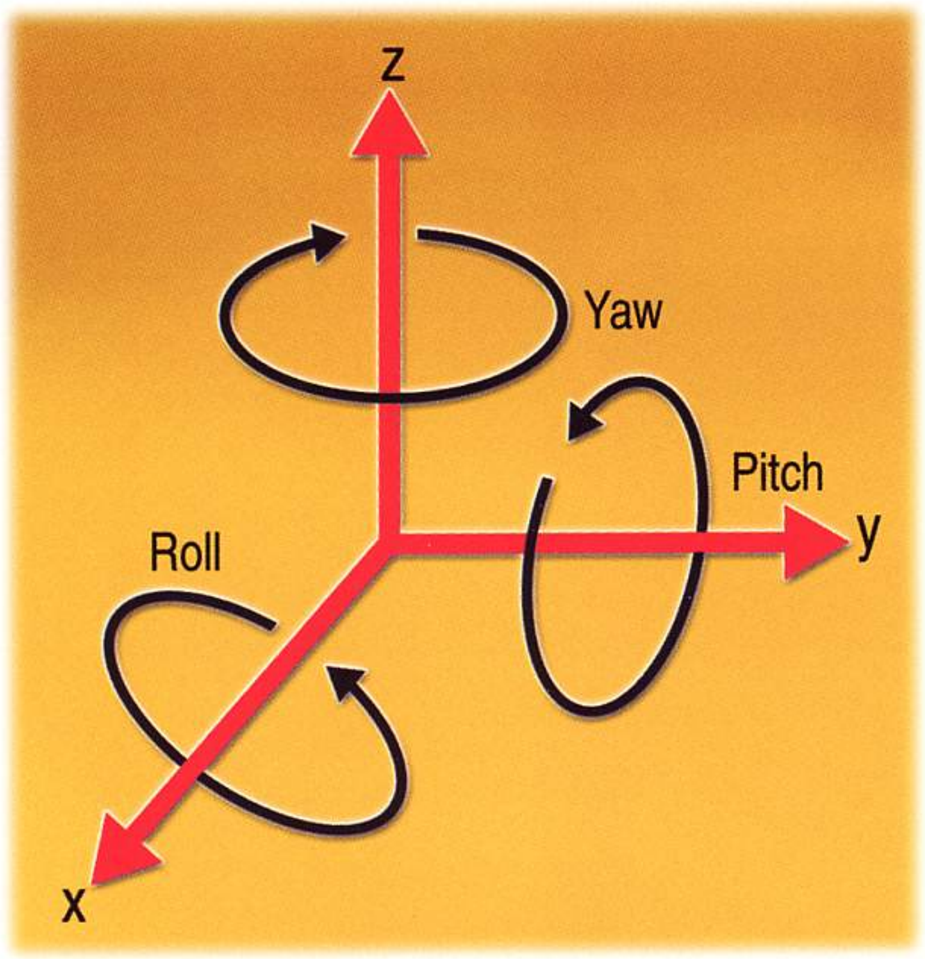
Use IST's New MotionMaster™ to characterize 6DOF motion environments of amusement rides, airborne vehicles, watercraft, underwater vehicles, vehicular crashes, shipping environments and more!

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MotionMaster™

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Model EDR-6DOF



Self-contained sensor/recorder measures and records 3-axis linear acceleration and 3-axis roll, pitch & yaw



The EDR-6DOF is a stand alone, battery operated, 6-axis measurement and recording system that incorporates the power source, digital electronics, analog electronics, and all sensors into a single, robust package. It is capable of measuring and recording six axes of linear acceleration and angular rate data over time periods of up to ten days under battery power. It is capable of withstanding harsh environments where other, less robust systems might not. With 8 MB of installed memory the MotionMaster™ is capable of recording up to nearly ninety minutes of continuous 100 Hz bandwidth data, making it ideal for measuring motion on unattended vehicles during short term tests.

- ✔ 6-channel, 6-axis acceleration sensor/recorder
- ✔ Onboard 3-axis linear accelerometers - x, y, z
- ✔ Onboard 3-axis angular rate sensors - roll, pitch, yaw
- ✔ Eight (8) MB onboard data storage
- ✔ Simultaneous 6-ch digitization to 3200 sps/ch
- ✔ Completely user programmable
- ✔ High speed RS-232 & USB communications interface to PC
- ✔ Completely self-contained, battery powered, rugged
- ✔ Comprehensive user interface software for setup, data download and time & frequency domain analysis
- ✔ Flight qualified, intrinsically safe
- ✔ Patent Pending

*Use IST's New **MotionMaster**™ to characterize 6DOF motion environments of amusement rides, airborne vehicles, watercraft, underwater vehicles, vehicular crashes, shipping environments and more!*

TOTAL EQUIVALENT 6 Channel RECORDING TIME (EDR-6DOF)

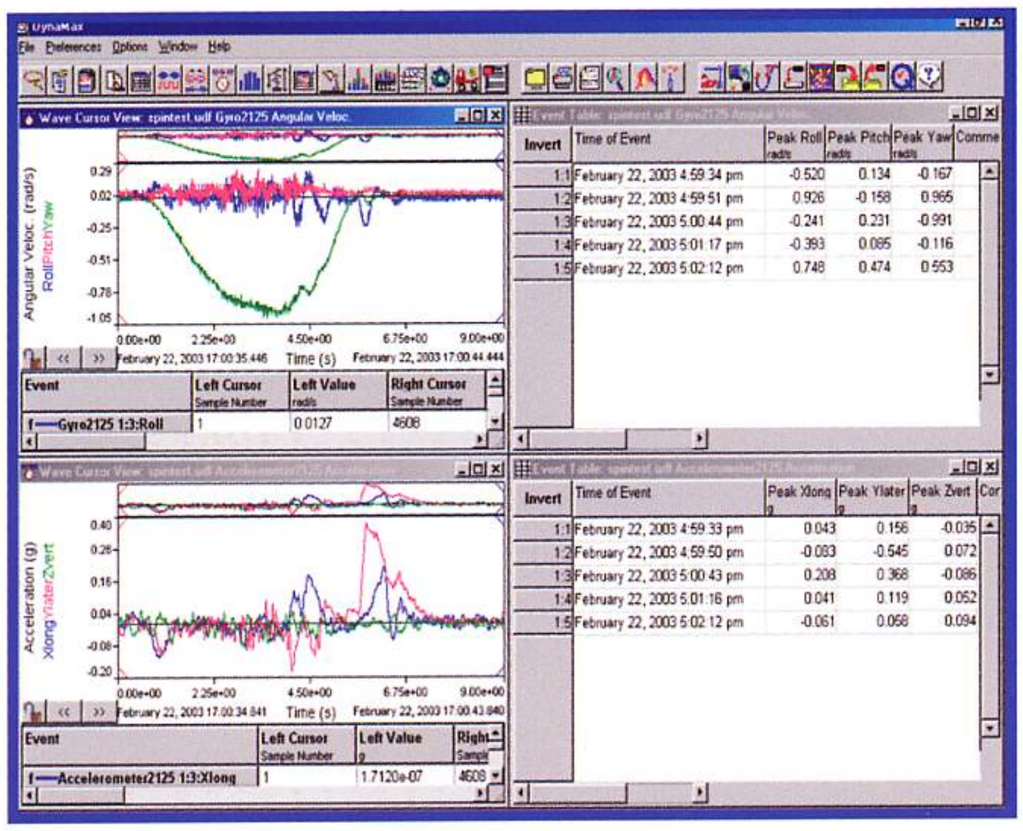
Analysis Band Width: Hz \ MB	Total Onboard Memory: 8
60	144 min., (*)
100	87 min.
500	17 min.
1,000	8 min.

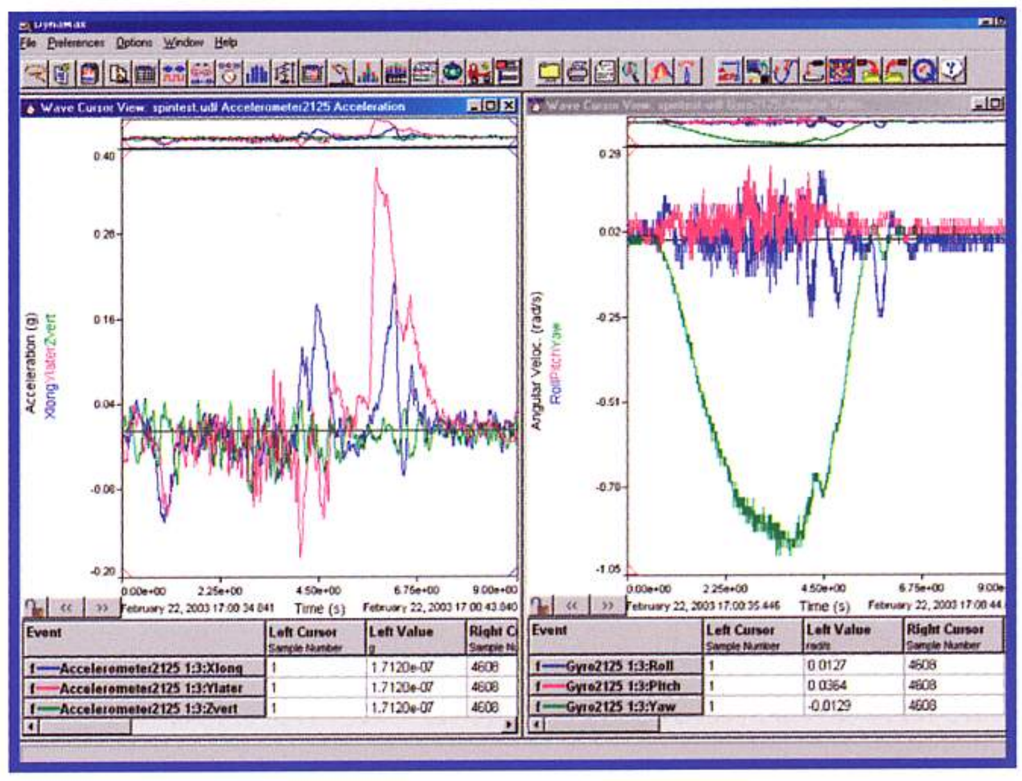
(*) Approximate-Max, Assuming Nyquist Digitization Rate











IST's new **MotionMaster**™ is fully compatible with IST's popular DynaMax™- Suite user interface and analysis software package. This analysis environment enables users to analyze linear acceleration and angular rate data within the same graphical environments. Angular rate data can also be integrated, enabling precise angular displacement measurements to be made during different portions of testing. Additionally, angular rate data can be differentiated, enabling analysis of angular acceleration. Frequency domain analysis can also be applied to any of the angular rate data in the same fashion that it can be applied to linear acceleration data, providing powerful 6DOF statistical motion analysis.

EDR-6DOF Series Recorder Specifications

	Model EDR-6DOF
DATA ACQUISITION	
#Selectable High Speed CHs	6 (6)
#Simultaneous High speed CHs	6
Digitization	10-bit
#Low Speed CHs	8
#Simultaneous Low Speed CHs	8
Temperature Sensor CHs	2 (2)
Humidity Sensor CHs	(2)
Battery Voltage CHs	2
#Trigger CHs	(2)
High Speed Digitization Rate	185-3200
Low Speed	1 sample every 15 sec to 1 sample every 166 hours
Digitization, Agreggate MAX, sps	19200
DATA STORAGE	
MegaByte-Non-volatile SRAM	8
DATA MANAGEMENT	
Fill & Stop Memory Mode	x
Overwrite Memory Mode	x
Sliding Window Overwrite Mode™	x
Sliding Window Overwrite with Event Type Partitioning	x
Sliding Window Overwrite with Channel Set Partitioning	x
Sliding Window Size	Selectable 1 min to 30 days
#Separate Time Windows	Selectable 1 to 100
DATA COMMUNICATION	
High Speed Serial RS-232	9.6 to 115kBaud
USB Compatible, Modem Compatible	

IST

EDR-6DOF Series Recorder Specifications

	Model EDR-6DOF
SENSORS	
Internal Accelerometer: Piezoresistive Triaxial	x
Internal 3-Axis Angular Rate Sensors	x
Accelerometer fs Range Choices	±2, ±5, ±10, ±20, ±50, ±100, ±200
Accelerometer Frequency Responses	
2g,5g fs	DC-250 Hz, DC-350 Hz
10g, 50g fs	DC-400 Hz, DC-1000 Hz
100g, 200g fs	DC-1500 Hz, DC-2000 Hz
Signal Filtering: 4th Order Anti-Aliasing, Accelerometer Channels	60, 80, 90, 110, 140, 170, 200, 340, 420, 510, 620, 750, 930, 1120, 1915 Hz
Standard 3dB Cutoff Choices	
Angular Rate Full Scale Range Options (range/resolution)	±150 / 0.30, ±300 / 0.60, ±1200 / 2.34 deg per sec
Angular Rate Anti-alias Filters/Frequency Response user selectable at time of order	from 40 Hz to 400 Hz
Angular Rate Sensor Frequency Response (best case)	DC-400 Hz
Automatic Auto-Zero Offset Correction	1% fs / sec
PROGRAMMABILITY	
High Speed Sample Rate	x
Trigger Selection	Internal channels and/or external trigger input
Triggering	x
Amplitude Threshold	x
Separate Channel Thresholds	x
Duration (time at level) Threshold	x
Separate Channel Thresholds	x
Trigger Duration Threshold	1 to 34463 samples
Time Trigger Delay (forced time delay between triggered recordings)	0 to 35000 seconds
Time Triggered Recording	1 sample every 15 sec to 1 sample every 166 hours
Maximum Number of Events	10582
Event Length	Fixed or Data Dependent
Pre-trigger samples	2 to 16382
Post-trigger samples	1 to 16384
Maximum Event Length Cutoff	16384 samples
Memory Modes	FS, OW, SWO, SWO-ETP, -CSP
OPERATIONAL	
Temperature Recording	Internal & external
Range/Resolution	-40 to +70˚C /±3˚C
Humidity Recording	Internal & external
Range/Resolution	0 to 100% RH /±3% RH
Usable Temperature Range	1 to 60˚C
Digital Clock	Month / Day / Year, Hour: Min: Sec
Date & Time Tagged to Each Acceleration Event Resolution/Accuracy	53 msec / +3 min/Mo
Auto ON and OFF Times	x
Connectors	DB9 for RS-232 serial or USB adapter (4-pin microdot for external RS-232, USB, aux. power)
Battery Life (Typical) Alkaline C-cell Batteries	10+ days
Data Memory Backup	12+ months
PHYSICAL	
Size	4.2" x 4.4" x 2.5"
Housing	Blue Anodized Aluminum, waterlight, gasket sealed
Weight	2.6 lb.
Operating Temperature Range	-40 to + 70˚C
Shock Fragility	500g or 20 x fs
STANDARD ANALYSIS (with DM95-BASE Software package) Windows 98, 2000, NT, XP compatible	3-Channel Acceleration and angular rate waveform graphics, histograms, temp/hum process Resultant Acceleration and angular rate waveforms Spreadsheet tabulation of max, min, peak, duration, RMS, crest factor, velocity change, angle, temperature, humidity, dew point, battery volt Data editing and sorting by selected event parameters, statistical summaries Digital filtering-low pass, high pass, bandpass
OPTIONAL ANALYSIS SOFTWARE	
	DM95-int Velocity and Displacement Waveforms DM95-psd Power Spectral Density (PSD) Calculation and Analysis DM95-srs Shock Response Spectrum (SRS) Calculation and Analysis DM95-drop Packaging Drop Height-Equivalent Impact, Zero-G Free Fall, Package Trajectory Animation, Impact Direction & Type. DM95-deriv Jerk Waveform Calculation and Display
HARDWARE OPTIONS	
Relative Humidity Sensor	internal and/or external
Auxiliary Battery Pack	x
Hand-Held Remote Trigger (HRT-1)	x
Remote Alarm Module (RALM-1)	x

IST Instrumented Sensor Technology

Portable Data Recorders For Dynamic Environments

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