Wireless Vibration Measurement

Vibration Sensing System

Nowadays, the robots are widely used in the semiconductor industries as the transportation of wafers and masks. After a period of time of operating, the elastic fatigue of belts and the wearing and backlash of mechanisms cause the robots vibrate abnormally. It should be avoid in semiconductor fabrication process. There should be a procedure to determine when and how to maintain the robots in order to keep the accuracy. The Vibration Sensing System developed Chief SI is the solution of measuring the vibration of the robots transporting the wafers and masks. The different models with specific dimensions are designed to match with wafer, mask and cube. With the build-in high accuracy 3-axial accelerometer, the Vibration Sensing System is capable of high speed logging the vibration and the angular velocity of the entire transporting process. The data can be real-time transfer by Wi-Fi or logging by SD card with 4 hours logging time. The Vibration Sensing System can be applied at the monitoring of automatic guided vehicle, wafer stocker and wafer robot.

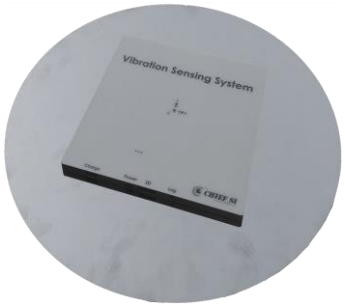
System feature:

- Wireless measuring with 4hrs logs。
- Slim and customized size.
- Built-in sensor for measuring 3-axial vibration and angular velocity.
- Spectrum, angular and trend analysis.

Models :

VSS-8

VSS-12



VSS-Mask

VSS-Cub

Model	VSS-8	VSS-12	VSS-Mask	VSS-Cub
Size (mm)	ϕ203(8″)×6.7(T)	ϕ305(12″)×7.0(T)	152(W)×152(D)×6.5(H)	82(W)×77(D)×31(H)
Weight (g)	180	260	320	250
Working hours (hr)	4hrs	4hrs	4hrs	4hrs*

*VSS-Cub can option external power module for long time operation。

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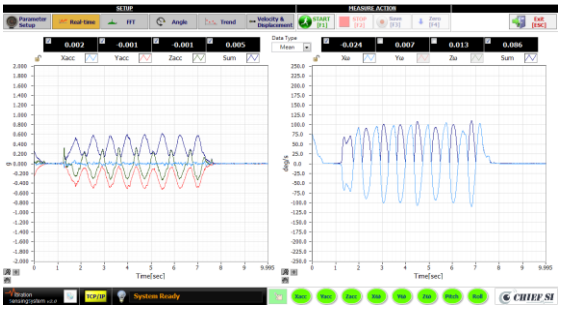
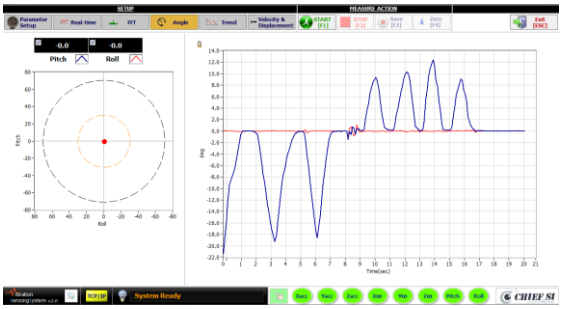
Specification :

Measure signals		Acceleration & angular velocity	**Measure mode**	Continuous、Trigger
Sampling rate (S/s)		10、20、50、100、200、500、1000	**Data storage**	Hard Disk (WiFi)、SD Card
Range	**Acceleration**	±2, ±4, ±8, ±16 (g)	**Analysis function**	YT waveform、Spectrum、Calculate、Angle、Vector sum、Event mark
	Angular velocity	±250, ±500, ±1000, ±2000 (°/sec)	**Filter**	Low pass、High pass、Band pass、Band stop
	Roll angle	±80 (°)		
	Pitch angle	±80 (°)	**Spectrum analysis**	FFT、Power Spectrum、Power Spectrum density
Resolution	**Acceleration**	16 (bit)		
	Angular velocity	16 (bit)	**Calculation**	Max、Min、RMS、Mean、P-P
Communication		WiFi	**FFT Average**	Vector、RMS、Peak hold、None
Storage (Capacity)		SD Card (Max. 16G)	**Data playback**	Single step、Continuous play
Power		Built-in Battery	**Data output**	CSV / Excel Format
Working hours		>4 hrs	**Language**	English

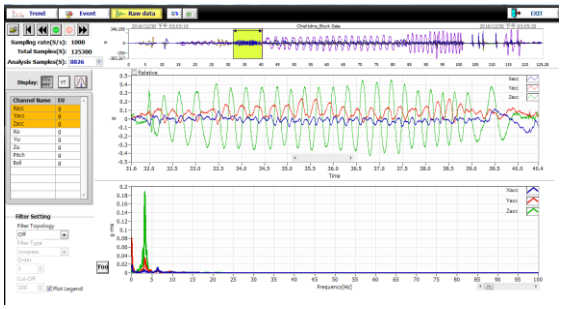
Software :



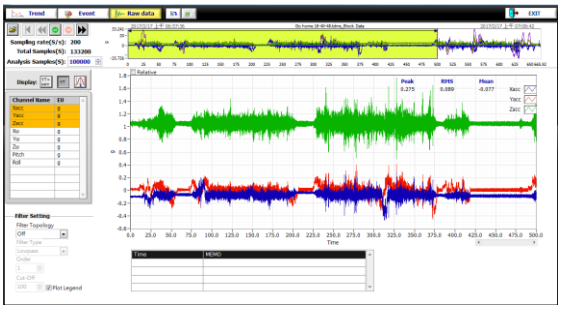
Real-Time waveform



Angle



FFT



Report-YT

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