

Semiconductor Factory Automation

AMHS VIBRATION ANALYSIS



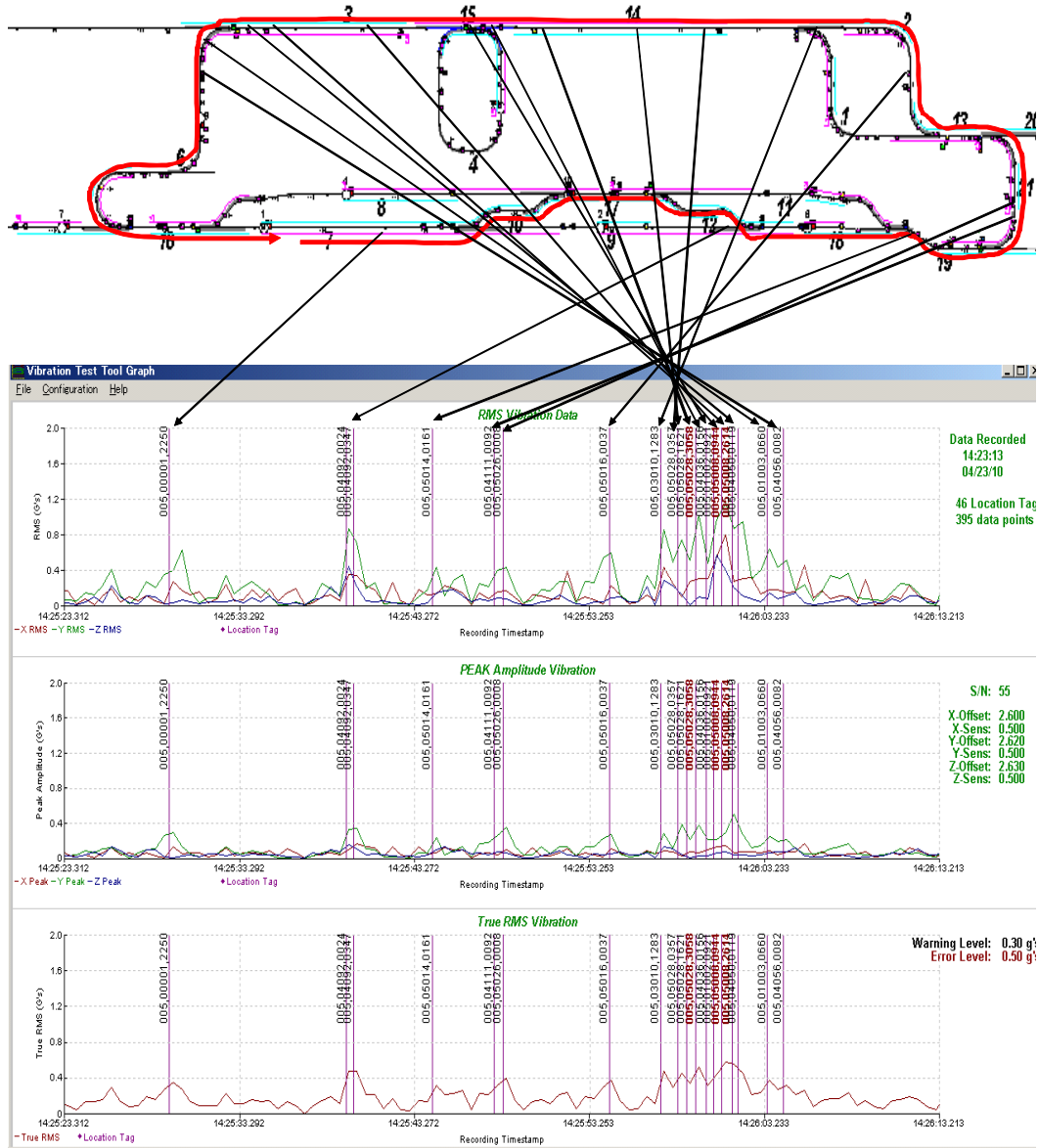
VIBCOM add on for Vib Tool

INT02001-VIBCOM

GCI's VIBCOM adds detailed location tracking capabilities to our Tri-Accelerometer Test Tool (Vib Tool).

VIBCOM integrates with the AMHS delivery vehicle, and provides a link between the vehicle's location information and the Vib Tool. This allows the Vib Tool to record the delivery vehicle's absolute track position along with time and date stamped vibration data. VIBCOM also provides a set of tri-colored indicator lights that report real-time vibration levels based on user selectable limits. These indicators can be used during track maintenance activities to quickly verify track adjustments and repairs.

GCI works directly with the fabs AMHS supplier to integrate an AMHS VIBCOM radio into the delivery vehicle. This radio receives periodic location packets from the delivery vehicle, and transmits them to a companion radio connected to a Vib Tool. Up to ten location packets can be sent every second, which guarantees location details for every reduced data record (the Vib Tool produces two reduced data records per second, from time domain data acquired at 512 Hz).



Integrating the delivery vehicle's location details with the vibration data takes the guess work out of locating the track position causing excessive vibration.

Previous to VIBCOM, users had to analyze the time stamped vibration data to approximate the associated track location.

With VIBCOM, vibration data and track location details can be viewed together in GCI's Information Center software Application (InfoCenter App) in graphs or tabulated text.

The InfoCenter App displays RMS, Peak and True-RMS vibration levels recorded by the Vib Tool. Location details are displayed along with the vibration data, based on user selectable warning and error limits.

This allows the user to customize the strip charts to show location details associated with areas of the track that caused vibration levels that exceed set limits.

Example recording session with track locations.

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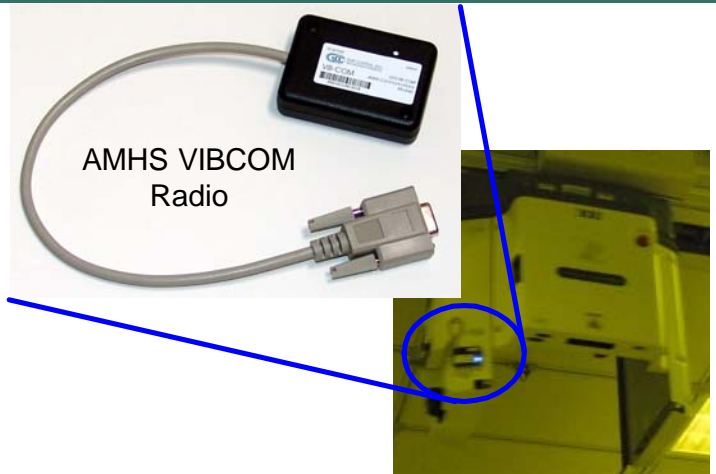
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VIBCOM is comprised of two wireless (Blue Tooth) radios.

The AMHS VIBCOM radio gets integrated into an AMHS delivery vehicle. Power is supplied by the delivery vehicle. The delivery vehicle periodically sends location details as ASCII data packets via an RS-232 connection.

Once synchronized with a companion VIB Tool VIBCOM Radio, the AMHS radio sends received location data packets to the Vib Tool for recording.



The Vib Tool VIBCOM radio is connected to a GCI Vib Tool, mounted in a standard 300mm FOUP. When a recording session is started, the Vib Tool VIBCOM radio synchronizes with the AMHS radio connected to the delivery vehicle.

The Vib Tool VIBCOM radio receives location packets from the AMHS radio, and writes them into the vibration data stream. This ensures that location details are captured along with the vibration data from the physical track location.

During the recording session, vibration levels can be monitored in real-time using the tri-colored indicator lights. These indicator lights are visible through the bottom of the FOUP. User selectable vibration levels are used to determine which indicators are illuminated.

Recorded vibration data that exceeds the "error" level will cause the RED indicators to illuminate. Data exceeding the "warning" level will illuminate the YELLOW indicators. Data below the "warning" level will illuminate the GREEN indicators.



VIBCOM Indicator Lights visible through FOUP bottom.