

CMS Continuous Data Acquisition

CMS is a comprehensive, easy to use PC based data acquisition and graphics system which can be used to acquire and analyze continuous test data.

Data recording is direct to your hard disk drive which provides a large storage capacity for even high speed signals.

The software has been designed with the user in mind and is easy to use with even the most complex functions taking only minutes to master

CMS is an essential tool for any industrial, scientific or engineering measurement. No special computer knowledge is required and the system can be used as a cost effective replacement for tape recorders, memory recorders and chart recorders.

CMS is locally developed and supported and can be customized to suit user applications.

The screenshot displays the CMS software interface, which includes several windows and a table of channel settings.

Continuous Monitoring System Settings

Ch #	Description	Active	Conversion	Calibration	Units	Reading
1	Geophone Ax	<input checked="" type="checkbox"/>	1.773	0.000	mm/s	
2	Accelerometer Ay	<input type="checkbox"/>	7.23	0.000	mm/s ²	
3	Pressure Sensor Az	<input type="checkbox"/>	10.9	0.000	kPa	
4	Temperature q1	<input type="checkbox"/>	14.7	0.000	°C	
5	Temperature q2	<input checked="" type="checkbox"/>	14.7	0.000	°C	
6	Supply Voltage	<input checked="" type="checkbox"/>	20.9	0.000	kV	
7	Supply Current	<input type="checkbox"/>	12	0.000	kA	
8		<input type="checkbox"/>	1.000	0.000		
9		<input type="checkbox"/>	1.000	0.000		
10		<input type="checkbox"/>	1.000	0.000		
11		<input type="checkbox"/>	1.000	0.000		
12		<input type="checkbox"/>				
13		<input type="checkbox"/>				
14		<input type="checkbox"/>				

MDI Application - [1]

The graph shows a signal with a high-frequency oscillation (around 20 kHz) superimposed on a lower-frequency signal. The y-axis ranges from -4,000 to 10,000.

Test File Details

Test Filename: C:\TLCWIN\GEOPHONE.CMW
Description:
Test Engineer:
Job Number:
Data Points: 300000
Number of Channels: 1
Test Frequency: 20.000 kHz

MDI Application

The graph shows a signal with a high-frequency oscillation (around 20 kHz) superimposed on a lower-frequency signal. The y-axis ranges from -6.00 to 6.00. The x-axis shows time points: 15.131, 15.248, 15.365, 15.482. A red circle highlights a point on the signal.

Features Overview

User Interface

- ✓ MS Windows Graphical User Interface (GUI) with drop down windows
- ✓ Short cut keys
- ✓ Context sensitive help
- ✓ Built in cueing (prompting)
- ✓ User manual on-line

Acquisition System

- ✓ Supports National Instruments acquisition cards including PCMCIA (notebook)
- ✓ Up to 128 simultaneous input channels
- ✓ Data resolution up to 24 bit
- ✓ Input voltage range depends on card chosen but includes ± 5 and ± 10 volts
- ✓ Acquisition can be viewed or stored in a disk file. Data length only limited by hard disk capacity
- ✓ Any combination of channels can be enabled
- ✓ Real-time multichannel voltmeter read channel prior to acquisition
- ✓ Real-time display of data vs time or frequency during acquisition
- ✓ Test descriptions and comments can be entered for each test
- ✓ A comprehensive channel information sheet is provided to convert the input signal to the correct engineering units. Channel description, conversion factor, calibration factor and units can be specified for each channel

Data Display

- ✓ Data can be plotted from a previously saved data file
- ✓ The entire data set can be plotted on the screen. Zoom into the area of interest
- ✓ Three user defined plotting windows can be selected
- ✓ Select manual, user or auto axis scaling with linear or logarithmic x and y axes
- ✓ Screen grid and zero line can be selected
- ✓ Window titles can be specified

Analysis Options

- ✓ Rainflow counting of channels with cumulative fatigue damage
- ✓ Spectral analysis of data
- ✓ Strain rosette calculation
- ✓ Digital filtering
- ✓ Peak detection
- ✓ Statistics and Data decimation
- ✓ Arithmetic manipulation

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