AS-250 SpectralMon™

REAL-TIME DYNAMIC MONITORING AND ANALYSIS SYSTEM

RESULT TREE VIEW
Normal/Alarm
Conditions,
Diagnosis Results,
and Criterion Values

MACHINE STATUS
Normal or Alarm Status

GRAPHICAL BARMETER
Channel Amplitude

HISTORICAL ALARM LOG
Time, Date, Tag, and
and Description

Screenshot content

AS-250 SpectralMon - CPO.tst

File Edit Setting View Help

Monitor | Summary | Overlay Peakhold

Continuous Combustion Dynamics Monitoring System

ALARM

Overall Amplitude (PSI)

Amplitude: 5.000 / 3.750 / 2.500 / 1.250 / 0.000

Channels: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Results List
- Low frequency rumble
- Mid frequency noise
- **High frequency noise**
  - Hi freq peak combustor 1 NORMAL (0.729 PSI @ 175.000 Hz)
  - Hi freq peak combustor 2 NORMAL (0.630 PSI @ 175.000 Hz)
  - Hi freq peak combustor 3 NORMAL (0.393 PSI @ 175.000 Hz)
  - Hi freq peak combustor 4 NORMAL (0.363 PSI @ 180.000 Hz)
  - Hi freq peak combustor 5 NORMAL (0.545 PSI @ 172.500 Hz)
  - Hi freq peak combustor 6 NORMAL (0.537 PSI @ 172.500 Hz)
  - Hi freq peak combustor 7 NORMAL (0.421 PSI @ 171.250 Hz)
  - Hi freq peak combustor 8 NORMAL (0.332 PSI @ 178.750 Hz)
  - Hi freq peak combustor 9 NORMAL (0.282 PSI @ 177.500 Hz)
  - Hi freq peak combustor 10 NORMAL (0.523 PSI @ 172.500 Hz)
  - Hi freq peak combustor 11 NORMAL (0.785 PSI @ 176.250 Hz)
  - **Hi freq peak combustor 12 ALARM (1.588 PSI @ 176.250 Hz)**
  - Hi freq peak combustor 13 NORMAL (0.618 PSI @ 176.250 Hz)
  - Hi freq peak combustor 14 NORMAL (1.203 PSI @ 172.500 Hz)
  - Hi freq peak combustor 15 NORMAL (0.429 PSI @ 170.000 Hz)
  - Hi freq peak combustor 16 NORMAL (0.577 PSI @ 175.000 Hz)

Alarm Log

Date and Time	Result	Tag	Description
2003-01-28 10:54:53	ALARM	HSW12	Hi freq peak combustor 12 ALARM (1.588 PSI @ 176.250 Hz)
2003-01-28 10:54:44	ALARM	HSW12	Hi freq peak combustor 12 ALARM (1.511 PSI @ 175.000 Hz)
2003-01-28 10:54:33	ALARM	HSW12	Hi freq peak combustor 12 ALARM (1.649 PSI @ 178.750 Hz)
2003-01-28 10:54:29	ALARM	HSW14	Hi freq peak combustor 14 ALARM (1.608 PSI @ 173.750 Hz)
2003-01-28 10:54:25	ALARM	HSW14	Hi freq peak combustor 14 ALARM (1.601 PSI @ 162.500 Hz)
2003-01-28 10:54:25	ALARM	HSW12	Hi freq peak combustor 12 ALARM (1.644 PSI @ 173.750 Hz)
2003-01-28 10:54:20	ALARM	HSW14	Hi freq peak combustor 14 ALARM (1.506 PSI @ 165.000 Hz)
2003-01-28 10:54:12	ALARM	HSW12	Hi freq peak combustor 12 ALARM (1.691 PSI @ 176.250 Hz)
2003-01-28 10:54:06	ALARM	HSW12	Hi freq peak combustor 12 ALARM (1.963 PSI @ 177.500 Hz)
2003-01-28 10:54:04	ALARM	HSW12	Hi freq peak combustor 12 ALARM (1.769 PSI @ 176.250 Hz)
2003-01-28 10:54:03	ALARM	HSW12	Hi freq peak combustor 12 ALARM (1.532 PSI @ 177.500 Hz)
2003-01-28 10:54:01	ALARM	HSW14	Hi freq peak combustor 14 ALARM (1.506 PSI @ 178.750 Hz)
2003-01-28 10:53:55	ALARM	HSW12	Hi freq peak combustor 12 ALARM (1.554 PSI @ 180.000 Hz)

Ready   NUM

In many industrial applications, there is a need to monitor the dynamic characteristics of large machinery (such as turbines and compressors) or processes (such as steel and paper production).

To meet this need, Alta Solutions has designed **SpectralMon™** to provide round-the-clock dynamic monitoring. It uses powerful spectral and time analyses to detect changes in the dynamic signature of your machinery or process.

The system has a rich set of alarm criteria to catch a wide range of problems. User-defined and rpm-based energy bands and spectrum windows can be configured to identify the presence of significant frequencies. Time thresholds and statistical criteria detect spikes and changes in the time waveform.

Once a dynamic event is detected, the system instantly informs the control system or other external devices. This information can be used to alert the operator to change process settings or schedule maintenance.

The system provides a detailed historical log of the events to help correlate hanges in the process or deterioration in the machinery.

Sensors including accelerometers, velometers, proximity probes, displacement sensors, pressure transducers, and microphones can easily be connected to the **SpectralMon™** system. Flexible signal conditioning provides anti-alias filtering, overload protection, AC/DC coupling and IEPE transducer power.
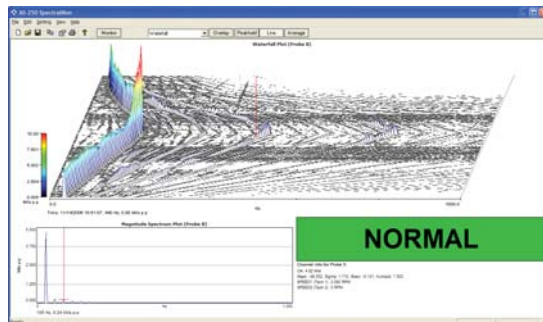
Alta Solutions
Innovative Signal Processing Solutions

AS-250 SpectralMon™

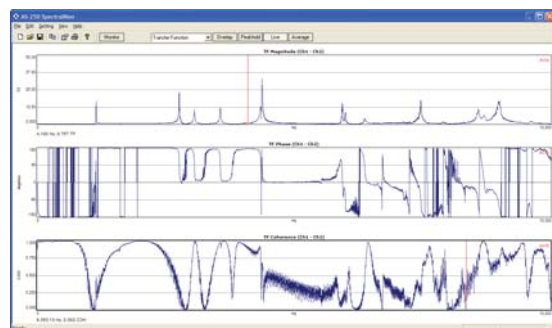### REAL-TIME DYNAMIC MONITORING AND ANALYSIS SYSTEM

REAL-TIME DATA DISPLAY

SPECTRUM PLOT
Live, Average, Peakhold Integration/ Differentiation

TIME PLOT
Time Signature

ADVANCED CRITERIA
Hilbert Envelope, Sound Pressure Level, Speed, and Wavelet

SPECTRUM CRITERIA
Overall Amplitude, Window, Energy Band, Phase, Total Harmonic Distortion,and Spectral Envelope

DATA MARKERS
Peak, Harmonic, Sideband,Order, Delta Frequency, Delta Time, and User Defined

TIME CRITERIA
Threshold, Trigger, Crossing,and Crest Factor

STATISTICAL CRITERIA
Mean, Sigma, Skew, and Kurtosis

WATERFALL

MULTI-CHANNEL
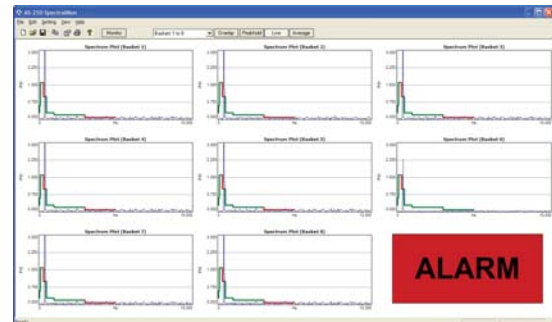
TREND

TRANSFER FUNCTION

Alta Solutions
Innovative Signal Processing Solutions
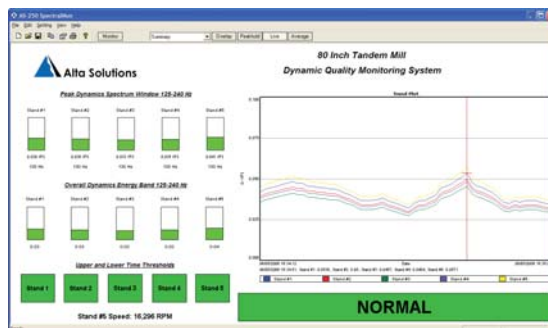
AS-250 SpectralMon™

REAL-TIME DYNAMIC MONITORING AND ANALYSIS SYSTEM

SENSOR SIGNALS
Accelerometers, Proximity Probes,
Vibrometers, Pressure Transducers,
Velocity Probes, and Tachometers

PROCESS DATA
PLC and DCS via Network Sockets,
Digital Inputs, Ethernet, and RS-232
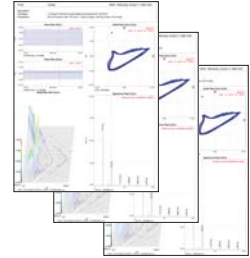
**REPORT GENERATION
AND DATA OUTPUT**
Alarm Summary, HTML Reports,
E-mail, Speadsheets, Time
and Spectrum Snapshots,
Digital Recording, Data Trending,
RA Emonitor Modbus RTU/TCP,
OSI PI Interface, and SQL Database

OUTPUT DEVICES
Electromechanical Relays,
PLC and DCS, Ethernet, RS-232, and Printers

DATA EXPORT
ASCII, Mathwork's Matlab, WAV, SQL,
Vibrant's MEScope, and UFF (Universal File Format)

Contact Alta Solutions for the latest specifications and ordering information.

Alta Solutions
Innovative Signal Processing Solutions

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