DELTA noiseLAB Wind System
Hardware

Turbine Ana. Interface/4 Chs. per NI 9215 → Data Acquisition Computer → Turbine Dig. Interface/RS-232, custom

WiFi Receiver

Microphone Digitizer 2 or 4 Chs. per NI 9215* → WiFi Transmitter

Met. Analog Interface/4 Chs. per NI 9215 → WiFi Transmitter

Multiple Microphone or Met Stations possible.

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## Software

<table>
<thead>
<tr>
<th>PC</th>
<th>noiseLAB Wind Data Acquisition</th>
<th>Measurement Uncertainty Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows XP-Win7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Results:
- Excel Tables
- .jpg Graphs
- .tdms waveforms

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Configuration Info

• Turbine analog interface
  – Up to four analog channels per module (NI USB-9215)
    • AC, DC, or Frequency Pulse train

• Turbine Digital Interface
  – RS-232, 485: Standard driver for some Vestas and Siemens Turbines.
  – Custom drivers for other interface types and turbine types.

• USB or WiFi Connections to Data Acquisition Computer
Microphone Station

• Microphone, pre-amp
• Primary, Secondary Wind Screen, Ground Board
• Digitizer (NI USB-9234) two to four channels
  – (two channels if microphone pre-amp with gain)
• Wi-Fi or USB connection.
Met Station

• Met Mast analog interface
  – Up to four analog channels per module (NI USB-9215)
    • AC, DC, or Frequency Pulse train

• USB or WiFi Connections to Data Acquisition Computer
PC

• PC
  – Laptop or Desktop acceptable.
  – Windows XP to Windows 7
  – 1600 x 1280 Screen
  – i5 Processor 2 GHz, 8 Gbyte RAM, 500 GB disk
    • High channel count: Inquire about configurations
    • SSD Disk and USB 3 External Disk for higher capacity, speed
  – Clean PC without excess software to ensure real time performance. Inquire for details.
Basic Software

– Microsoft Office 2010 or later.
– Internet Explorer
– National Instruments NI-DAQ (provided by DELTA)
Applications Software (1)

- noiseLAB Wind
  - Data acquisition of acoustic, met, and turbine data
  - Wind Binning
  - FFT, Sound Level, and 1/3 octave analysis
  - Saves raw waveforms as .tdms
  - Save analysis results as delimited text and Excel files

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Applications Software (2)

• Data Validation/Sound Power/Sound Level
  – Data validation
    • Listen, View spectra of analyzed blocks
    • Remove invalid blocks (due to unwanted signals)

• Compute Sound Power and Sound Level to IEC 61400-11

• Output results to Excel.
Applications Software (3)