



Pimento Solutions

P-4220 Formula Plug-in

The Pimento formula plug-in adds a new dimension to the standard signal processing functionality that is embedded in all Pimento application domains (formula editor).

The Pimento application domains offers a broad range of measurement and analysis tools, from a general Noise and Vibration tool, over Spectral Acquisition and Analyses based on either frequency or real-time octave measurements to a dedicated Rotating Machinery module.

With the Formula Plug-in you can make a dedicated algorithm in Visual Basic, Visual C++ or any other COM enabled software, compile it and insert it in the Pimento Formula Editor. The Pimento formula plug-in contains a library of pre-defined processing functions for data analysis such as FFT analysis, order tracking formulas, octave filter, data manipulation algorithms, etc. The formula plug-in extends the standard formula editor with non-basic processing functions.

Company specific measurement analysis or decision criteria, complex routines for data processing, dedicated algorithms developed in-house can now be integrated in the standard measurement software. There is no need to export your data to external analysis packages anymore. You can simply import your algorithm in Pimento for data processing and display, process, analyze and plot the data in your standard measurement software

Typical procedures to use external algorithms in the standard software are:

Step 1: use an algorithm in Visual Basic, Visual C++ or any other COM enabled software and compiled it as *.dll

Step 2: provide user support by means of a help file in html format (optional)

Step 3: link the *.dll to the formula editor in Pimento via a pfd file (Pimento Formula Definition file) for parameter passing and description

Note that these files need to be copied to the Pimento {Plug-in} directory. Example code and projects for Visual Basic and Visual C++ are included

This is an example of a plugin algorithm for the formula editor in pimento software.

penv - pseudo envelope
penv calculates a raw envelope of a time series. The time constant 'tau' is adjustable.

Description
The level is estimated by full wave rectifying the input wave and smoothing with a simple first order lowpass filter.

```
p := p + (x_in - p) * alpha
q := q + (p - q) * alpha
L_new := q
a := 1 - 1/exp(2-Delta / tau)
critical frequency:
E := 1 / (2 * pi * tau)
```

Key features

- Full access to internal data structures of measured data (header info)
- Algorithms may read several channels and produce a new channel
- Seamless integration in Pimento's Formula editor and MOP-Files

Product Requirement

- Pimento Front-end Driver (P-4400 / P-4410) and
- Pimento FFT analyzer (P-4000) or
- Pimento Octave analyzer (P-4040) or
- Pimento Order analyzer (P-4060) or
- Pimento Recorder (P-44070) or
- Pimento DSP Post-processing Toolbox (P-4260)