C-Plugs for VST, Measurement Series

This is a package of 3 measurement tools for VST. They include the following:

1. C_fft, a 'lite' version of the FFT spectrum analyzer which is designed to be musically useful as well as economical in terms of CPU usage.
2. C_tuner, a very accurate instrument tuner suitable for tuning guitars, basses, and other instruments.
3. C_SuperStereo, a stereo-image meter. Just like an oscilloscope with left connected to the Y-input and right connected to the X-input.

INSTALLATION

Copy the dll files to the VST plug-in folder.

LATENCY

It is a good idea to set the latency. The same setting is shared by all of these plug-ins so you only need to set it for one. C_stereo is the best one to use for this. To allow for different soundcard drivers in each host program (ASIO in Cubase, Direct-X in wavelab, etc.), each host has its own setting so you must set the latency for each. The best way to do this is to loop a single drum hit with lots of silence and then adjust the latency until the movement of the display coincides with the sound. Press 'save' to set this value as the default for that host.

PLUG-INS

C_FFT

This is a 'lite' version of the FFT plug-in.It is designed to give a quick overview of the spectrum rather than for getting into detailed analysis of the spectrum. It is not designed to give accurate reading of single frequencies. The upside is considerably lower processor usage and an easier to read display.

CONTROLS

- Activity indicator shows when the plug-in is receiving a signal.
- L-R button simply changes the channel that is analyzed. This has no effect if the display is frozen.
- Freeze button freezes the display.
- Peeks button turns on and off the display of peeks. Double clicking on the display resets the peeks.
- '!'-button displays the options box. The controls are as follows:
  - Latency, as described above.
  - Peek hold time, which can be set to infinite by sliding all the way to the left.
  - Speed settings control the frame rate. Lower frame rates have a slightly lower CPU usage.
  - Save button, saves the options as the defaults when the plug-in is opened.
  - About/Hints button. This displays a hints and about box.

C_TUNER

This is a simple but very accurate instrument tuner.

At 44.1Khz:

Range: C-2 to D7 / 8Hz to about 5000Hz / Midi note 0 to 110

Accuracy: It can detect to an accuracy of +/-1 cent on the normal setting and of +/-0.1cent on the super accurate setting.

Timing: About half a second to show a steady reading.

Sensitivity: It will detect a -60db fundamental up to 2000Hz (~C6). The sensitivity reduces from that point until almost zero at 5000Hz.

CONTROLS

- Note and octave readings are in the middle, frequency and midi number readings are on the left. The cents readings are on the right and shown on the meter.
- Activity indicator shows when the plug-in is receiving a signal, which is loud enough to decode, and which is within the detection range of the plug-in.
- '!'-button displays the options box. The controls are as follows:
- Reference point for A3. This is set to 440Hz by default.
- Accuracy setting. This controls how accurate the detection is. The higher the accuracy the higher the CPU usage. The economy setting is still good enough for guitars and just about for basses. Use higher setting for very lower frequencies and/or higher sample-rates.
- About/Hints button. This displays a hints and about box.

These settings can not be saved as defaults but they can be saved as part of a song in cubase. Just set up a tuner in a group or rack position and then turn it on and off as needed.

To use the tuner inside cubase, you must temporarily turn on the monitoring in the audio/system settings. 'Record enable' is the best. Then press 'enable' on the channel to which the instrument is connected. You can then turn off monitoring when you've finished.

C_SUPERSTEREO

This gives an idea of the width of the stereo image and also displays phase relationships. Stereo signals create patterns according to their phase relationship. The following are produced by pure sine waves:

- In phase, equal amplitude: A straight vertical line is produced.
- In phase, unequal amplitudes (e.g. a panned mono signal): A straight line is produced, this time at an angle leaning towards the louder of the 2 channels' axis.
- Slightly out of phase (e.g. natural stereo): A narrow oval is produced.
- 90 degrees out of phase, equal amplitude: A perfect circle is produced.
- 180 degrees out of phase: A horizontal line is produced.
- Normal stereo music: This tends to produce a filled oval shape. If the oval is very wide then there is a lot of out of phase information, which might cause problems.

NEW FEATURES

Now there are a whole range of controls for adjusting the stereo field of your sound. You can use them to correct problems or you can use them creatively - it's especially good for changing the character and balance of samples.

The input section has simple phase and channel swap buttons and controls for widening and rotating the stereo image. There is also DC offset filter.

Next the signal is split into two. One path goes to the 3-way balance control. You can use this to adjust the left right and centre levels of your stereo image.

The other path goes to a low path filter with separate freq, width and boost controls. You can use this to adjust the width of the bass - the bass often seems to have a narrower stereo width for a given amount of panning than higher frequencies. Also, many of the width and balance operations can reduce the bass. You can use the boost control to compensate for this.

Next is a delay section which can be used to correct for phase problems caused by delays in drivers or converters. The delay is measured in samples. It can also be used as a to pan signals (on low settings) and there is a switch to turn it into a comb filter for pseudo stereo (even on a stereo signal).

The last section is a rotation and width control to adjust the stereo image of the output. There is a mono button for checking the mono compatibility of the signal.

There are also a pair of faders linked to a level meter. There is a switch for setting the faders to not clip at the current peek reading.

The stereoscope and phase correlation meter come after all the controls.

SHAREWARE (as in I share something with you and you share something with me:-)

There are no restricted features or time limits of any kind. It's up to you to register if and when you find the plug-ins useful. The way I see it is this:
It does take a lot of work to get these plug-ins working. But, if you are a struggling musician and you don't know where the next rent cheque is coming form then don't worry about it, register when you've got some money to spare. If you're a pro or you've got a good day job, then you can register securely using your credit-card in a matter of minutes and the price is low enough that you won't notice the difference at the end of the month.

You can register on-line at ShareIt! Online shareware registration service (as used by most shareware VST plug-in developers).
The address is www.shareit.com .

The cost is $28 for the whole package of 4 plug-ins.

DISCLAIMER

All the usual disclaimers apply. I do not guarantee that this software is error free. I do not guarantee that it will work as described on all systems. I do no accept any liability for loss caused by the use of this software. ALWAYS SAVE OFTEN.

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