



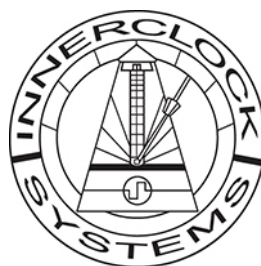
### Version 1.0.0 - June 2014

Grid-Lock is compatible with Mac OSX 10.4 (32 bit - Intel/PPC) and later, Mac OSX 10.6 (64 bit - Intel) and later, Windows XP, Vista, Windows 7 and 8.

Grid-Lock runs in VST, AU, and RTAS and AAX formats in 32 and 64 bit hosts.

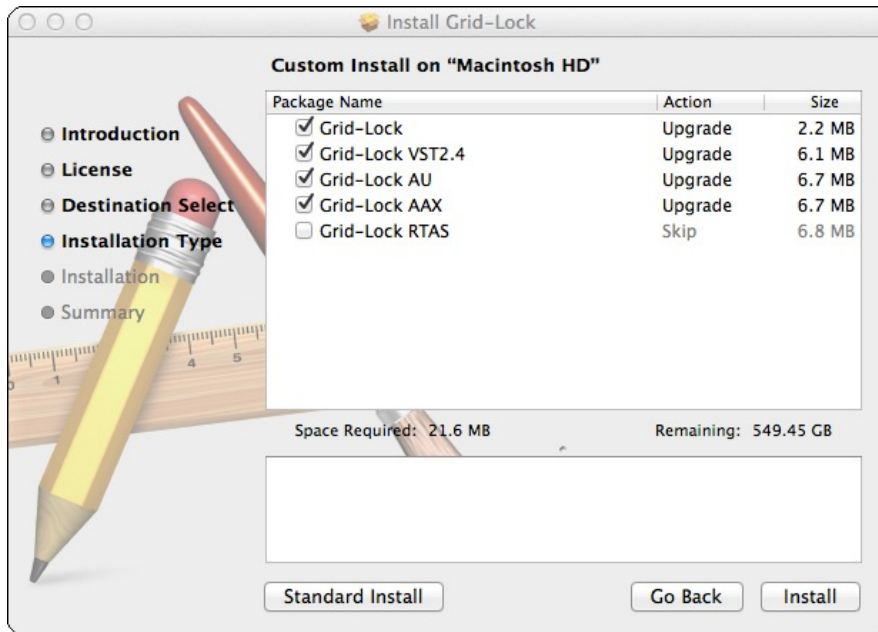
RTAS Support: Pro Tools 7.0 and later.

Grid-Lock serial number protection is automatically linked to your Sync-Gen II Install.



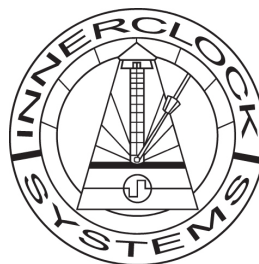
## MAC-OSX Installation

- (1) Open [Grid-Lock\_OSX\_Setup\_V100.dmg] and follow the installer instructions on screen.
- (2) For new User-Select Install Options including RTAS - Select [Customize]
- (3) Select the components you wish to install.



## Windows Installation

- (1) Open the [gridlock\_setup\_V100.exe] installer and follow instructions on screen.



**Grid-Lock** is a useful utility when used in conjunction with **Sync-Gen II** allowing accurate delay/offset calculation between your externally synchronised hardware and the DAW quantise grid with minimal fuss.

There are two separate causes of this delay:-

**1: External Hardware Start Lag** - Slave Sync External Start Lag is the time it takes for any hardware sequencing device to respond to external tempo-sync and begin playback.

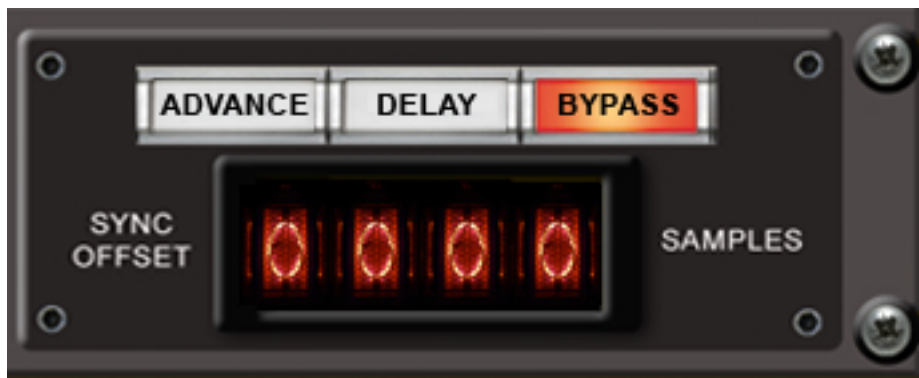
**2: DAW/Audio Interface Driver Processing Delay** - All computer audio interfaces and audio software processing applications take a certain amount of time to get sound in and out of the computer. Depending on the computer specification and hardware audio interface driver design, you will have various options to adjust this processing time using the audio driver buffer value - less means faster real-time I/O processing but this pushes the computer to prioritise audio throughput above other tasks and it will eventually trip over itself and start to glitch and drop audio. Larger Buffer settings work well for mix down where real-time soft synth playing latency is less of an issue. It also means large track counts and heavy plug-in use will not compromise the audio playback. However, there will always be some DAW I/O processing delay and getting an accurate value is indispensable for creating rhythmically tight productions.

## In Use

- Setup your external sequencer or drum machine as you would using **Sync-Gen II** as your method of DAW External Tempo-Sync. Make sure all **Sync-Gen II** settings are set to Factory Default.
- Create a simple pattern of continuous [16th] or [8th] identical rhythmic sounds in your external device - Rim Shot, Clave or Cow Bell are usually a great place to start - short, sharp, tight percussive transients work best. Make certain any samples are start-trimmed accurately and any applied output amplifier EG attack stage values are set to fastest/instant.
- Arm a new audio track in your DAW project and record a minute of your continuous 16th or 8th quantised rhythmic pattern.
- Stop DAW recording and insert **Grid-Lock** over your new test track. If you have recorded an 8th Interval Pattern select **[8ths]** on the Grid-Lock GUI. If you have recorded a 16ths Interval Pattern select **[16ths]** on the Grid-Lock GUI.
- Press **[Reset]** once on the **Grid-Lock** GUI to clear the counter and then press play on your DAW transport.
- You will now see the two numerical values start to change.
- **[Spot]** value is the timing offset between the actual DAW quantise grid and the recorded audio test track at that specific time location.

- **[Average]** value is the average offset between the DAW quantise grid and the recorded audio test track over the duration of the playback period. This is the most useful number as it smooths out any cumulative push-pull tempo-jitter that may exist in the external hardware device and provides an accurate mean/mid point so that your final recordings will sound neither excessively 'pushed' or 'dragged' against the DAW quantise grid.
- Press **[Reset]** any time during playback if you wish to reset the counters.
- **Transient Locator** - In the centre of the Innerclock Systems metronome logo there is a bright green dot. Move this dot using your mouse within the window to 'find' the attack transient of your test audio recording if needed - the changes will be heard during playback as you make any adjustments. Horizontal adjustment changes the mask time between successive transients if you are working with 16ths at very fast tempos. Vertical adjustment is for level.

## Sync-Gen II - Sync Offset



Now take your **Grid-Lock** average offset value and set the **Sync-Gen II** sync-offset value to the same number. This is the number of samples **Sync-Gen II** may be 'pushed' **[Advance]** or 'dragged' **[Delay]** against the DAW quantise grid.

You have now accurately compensated for the total delay/offset between your DAW quantise grid and your externally sequenced audio playback.

Now set your external sequencer or drum machine to the pattern/sound you like and record.

**NB:** All sequencers and drum machines have slightly different external start lag times depending on design. Prior to recording do the same test again if you use different external hardware. Likewise, a change in audio interface buffer values will change the DAW quantise grid to recorded audio offset.

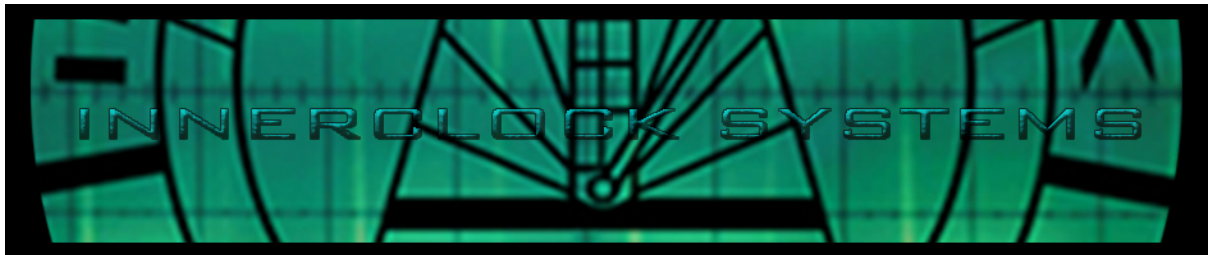
**Thanks:** To all our supporters and customers for your positivity and enthusiasm for all that we do.

Respect to you for knowing the difference and to the original Friend-Chip GmbH Berlin team, Garfield Electronics USA and Roger Nichols (RIP) for blazing the sync-trail back in the day.

**Design:** David Lackey and Warren McAlister for Innerclock Systems Pty Ltd

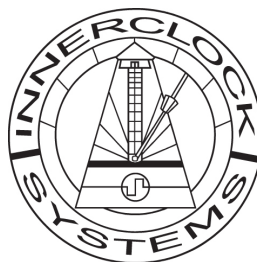
**Code:** Xavier Oudin for Xils Lab

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