Recommendations for the use of drivers (MAC):

The SPL Crimson is ready to use without the installation of any additional drivers.

It is recommended to install the SPL Crimson driver for best audio performance.

Minimum latency

When minimum latency is required, use the Apple Class-Compliant driver, which means you should not install the SPL Crimson driver. Minimum latency is needed when playing software instruments or software guitar processors.

The minimum measured roundtrip latency at the maximum sample rate of 96kHz is 6.49ms.

Maximum audio quality

When maximum audio quality is required, install the SPL Crimson driver.

Under 10.9 Mavericks, 10.10 Yosemite and 10.11El Capitan, two drivers will be visible in the Audio MIDI setup:

• SPL Crimson (Core Audio):
For use with system audio such as iTunes, YouTube, Quicktime etc. select the loudspeaker symbol for system audio playback in the Audio MIDI setup. This driver also provides quad samples rates of 176.4kHz and 192kHz.

• SPL Crimson (Bit Accurate):
For use with sequencer programs such as Cubase, Logic, Pro Tools etc.

The Bit Accurate driver

- is a HAL (“hardware abstraction layer,” ASIO-like) driver
- is bit accurate, which is important for mastering applications
- offers quad samples rates (176.4kHz and 192kHz)
- bypasses the sample rate conversion inherent in the core audio/class-compliant driver and therefore offers a higher audio quality

From Mac OS 10.6 to 10.8 you only see one driver. Nevertheless the Core Audio and the Bit Accurate drivers are installed.

It is recommended to install the SPL_Crimson_Driver_3.3.7.dmg before installing the firmware update v1.0.9.

OS version and drivers

Mac OS 10.6, 10.7, 10.9, 10.10 and 10.11:	Install SPL_Crimson_Driver_3.3.7.dmg
Mac OS 10.8:	**It is NOT recommended to install the Crimson driver under 10.8 Mountain Lion** Please note that we DO NOT recommend installing the Crimson driver under 10.8 Mountain Lion. Apple restructured sandboxed audio applications in 10.8 causing a variety of issues. Apple's APIs (Application Programming Interfaces) are not reliable enough to issue a driver.

The following spreadsheet compares the latencies of all drivers. Make your selection according to your specific needs.

Crimson Mac driver 3.3.7 (FW 1.09): Buffer Size vs. Latency			
44.1 kHz	**SPL Crimson Bit Accurate HAL Driver**	**SPL Crimson Core Audio Driver**	**Apple Class Compliant Core Audio Driver**
Buffer	**Measured Roundtrip Latency (ms)**	**Measured Roundtrip Latency (ms)**	**Measured Roundtrip Latency (ms)**
32	N/A	16.85	11.29
64	12.98	18.3	12.74
128	15.88	21.21	15.64
192	19.78	24.11	18.54
256	23.68	27.01	21.44
384	31.5	32.82	27.25
512	39.3	38.62	33.05
768	54.9	50.23	44.66
1024	70.53	61.84	56.27
2048	N/A	108.28	102.71
96 kHz	**SPL Crimson Bit Accurate HAL Driver**	**SPL Crimson Core Audio Driver**	**Apple Class Compliant Core Audio Driver**
Buffer	**Measured Roundtrip Latency (ms)**	**Measured Roundtrip Latency (ms)**	**Measured Roundtrip Latency (ms)**
32	N/A	16.63	6.49
64	10.49	17.3	7.16
128	11.83	18.63	8.49
192	14.16	19.96	9.82
256	16.49	21.3	11.15
384	21.16	23.96	13.81
512	25.83	26.63	16.48
768	35.16	31.96	21.81
1024	44.49	37.30	27.14
2048	N/A	58.63	48.48
192 kHz	**SPL Crimson Bit Accurate HAL Driver**	**SPL Crimson Core Audio Driver**	**Apple Class Compliant Core Audio Driver**
Buffer	**Measured Roundtrip Latency (ms)**	**Measured Roundtrip Latency (ms)**	**Measured Roundtrip Latency (ms)**
32	N/A	N/A	N/A
64	9.55	15.76	N/A
128	10.21	16.42	N/A
192	11.88	17.09	N/A
256	13.55	17.76	N/A
384	16.88	19.09	N/A
512	20.21	20.42	N/A
768	26.88	23.09	N/A
1024	33.55	25.76	N/A
2048	N/A	36.42	N/A

Buffer Size and Latency explained

Buffer size

The buffer is a block of data that the system processes in bulk. The buffer size is a value defining how many samples are in one block or buffer.
Please note that buffer size is not a performance indicator. It's a parameter.
If the buffer is smaller, the application needs less time to fill it and will deliver it sooner yet more often to the driver. If the buffer is bigger the system is more stable (no crackles).

Latency

Latency is the time that a sample needs to go through the chain.