

APPENDIX 10

Powered plug-ins

One advantage of Pro Tools HD systems is that they include digital signal processors on one or more PCI cards. You can't put this kind of card into a laptop, but you can put an ExpressCard 34 or 54 into a slot on some models of laptop, so Universal Audio offers its UAD-2 SOLO processor card in this format for laptop users.

Figure A10.1
UAD-2 SOLO/Laptop.



As Universal Audio explains, 'This ExpressCard-based DSP accelerator package includes several of Universal Audio's most popular "analog classic" plug-ins – the LA-2A and 1176 Compressor/Limiters, and the Pultec EQ – and provides a significant processing boost for those who mix music on Mac or PC laptops, thanks to its onboard SHARC processor'.

Although you cannot run third-party plug-ins on the UAD-2 SOLO/Laptop, it has a great selection of plug-ins that Universal Audio has developed, often in collaboration with or with the approval of manufacturers of classic studio equipment. So, for example, it will let you use most of the popular UAD plug-in titles from Manley, Empirical Labs, Neve, Roland, BOSS, EMT, Fairchild, Harrison, Helios, Little Labs, Pultec, SPL, Teletronix, and others.

Using the UAD-2 SOLO/Laptop card frees up your laptop's internal processor for other mixing duties and having access to these Universal Audio plug-ins is a lot like having a rack full of vintage analogue gear to play with!

Support for RTAS, VST, and Audio Units plug-in types means that you can use Pro Tools, Logic, Cubase, Nuendo, Digital Performer – or any other software applications on Mac or PC that use these plug-in formats – to host the Universal Audio plug-ins.

NOTE

The UAD SOLO series provides the entry-point into the world of UAD-powered plug-in hardware, each having a single Analogue Devices SHARC floating-point processor. Duo and Quad versions are also available – but for these you will need a desktop computer with PCIe or FireWire or a laptop with FireWire – see www.uaudio.com/uad-plug-ins.html for more info.

Universal Audio Plug-ins

Available plug-ins from Universal Audio naturally fall into categories according to the type of signal processing they provide. So, for example, reverberation devices include the Dreamverb Room Modeler, the EMT 250 Classic Electronic Reverberator, and my favourite, the EMT 140 Classic Plate Reverberator.



Figure A10.2
Plate 140 EMT.

There are plenty of classic chorus and delay effects to choose from, including the Roland RE201 Space Echo Tape Delay and Spring Reverb, the Cooper Time Cube Mk II Delay, the Roland Dimension D, the Boss CE1 Chorus Ensemble, and a special version of the Echoplex that includes all the features of the original version plus some enhancements – the EP34 Tape Echo.

Figure A10.3
EP34 Tape Echo.



Compressors and limiters include the SSL G-Series Bus Compressor, dbx 160 Compressor/Limiter, Fairchild 670 Compressor, Teletronix LA-3A Classic Audio Leveler, Neve 33609 Compressor, Teletronix LA-2A Classic Levelling Amplifier, and 1176LN Classic Limiting Amplifier.

Figure A10.4
Fairchild 670
compressor.



For mastering, Universal Audio offers a suite of tools including the Precision Limiter, the Precision Equalizer stereo or dual mono four-band Equalizer and high-pass filter, the Precision Maximizer, which increases apparent loudness

without reduction in dynamic range, and the Precision Multiband – which features five bands of Compression, Expansion, or Gate dynamics processing.

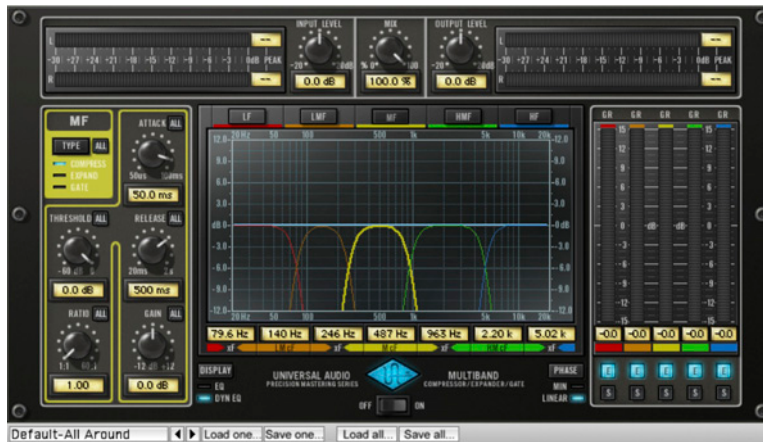


Figure A10.5
Precision multiband.

For tracking and mixing, the UA's Precision De-Esser and Precision Bus Compressor offer the same high quality as its mastering tools.



Figure A10.6
Precision De-Esser.



Figure A10.7
Precision buss
compressor.

The Precision Enhancer kHz lets you bring dull or poorly recorded tracks back to life. In contrast to other enhancers that use frequency delay or filtered clipping methods, the Precision Enhancer kHz uses specialized equalization and dynamic expansion techniques. With its five Enhancement Modes, it can be used to minimally massage the middle and upper frequencies of a mix or drastically alter the presence or dynamics of individual tracks or groups.



Figure A10.8
Precision Enhancer
kHz.

The Precision Enhancer Hz allows the user to selectively add upper harmonics to bass fundamentals, sometimes referred to as 'phantom bass'. This significantly enhances the perception of low-end energy beyond the conventional frequency response of small speakers. These harmonics stimulate a psychoacoustic bass-enhancing effect in the listener, giving even the smallest speakers greater translation of low-frequency sources.

Figure A10.9
Precision Enhancer Hz.



Equalizers include UA's own Cambridge EQ plug-in along with authentic recreations of the Trident A-Range Classic Console EQ, Neve 31102 Classic Console EQ, Harrison 32C Channel EQ, Neve 1073 Classic Console EQ, Neve 1081 Classic Console EQ, and the Helios Type 69 EQ. And as if this list of classic console EQ's is not enough to satisfy, one of UA's most recent EQ offerings is an incredibly impressive recreation of the Manley Massive Passive!

Figure A10.10
Manley massive
passive EQ.



Special effects include the SPL Transient Designer and, more recently, the Moog Multimode Filter. According to UA: 'The Moog Multimode Filter represents the first truly analog-sounding VCF (voltage controlled filter) emulation made for mixing, performing, creating, or destroying. The Multimode Filter combines the best of Bob Moog's classic designs with select features from his final Voyager instrument. UA meticulously modeled the analog behavior of the historical 4-pole ladder filter including all of the non-linearities of the original. UA takes this analog marvel to the next level by combining a Lowpass, Bandpass, and Highpass filter in one unit, and allowing Moog's signature self oscillation and extreme resonance in any of the filter modes'.

But why stop at recreating the outboard gear? Why not go for the mixing console? This is exactly what UA has started doing, with channel strips now available as Universal Audio Powered Plug-ins including the Neve 88RS Channel Strip and the SSL 4000 E-Series Channel Strip.



Figure A10.11

Moog multimode filter.

As UA explains: 'The Neve 88RS Channel Strip captures the EQ and dynamics section from Neve's flagship console. The controls comprise 12 dB per octave high and low cut filters, a four-band EQ plus limiting, compression, gate and expansion. The middle EQ bands are fully parametric, while the flexible high and low bands provide the user with two fixed-Q types and the ability to switch to shelving EQ.

The VCA-type Limit/Comp provides a 0.01 to 3s release, Auto Release, and a continuously variable ratio control with a fixed fast or slow attack time. The Gate/Exp provides 0.01 to 3s release times, fast or slow attack times plus Threshold, Range and Hysteresis to tailor your gate or expansion effect to the perfect response for any source.

Additionally, the user may engage the P-DYN button to reorder the signal chain so that the EQ is first. With the SC-EQ button, the user may engage a sidechain feature to achieve frequency-dependent compression for such useful tasks as de-essing.'

Based on the legendary SSL 4000 series, the UA SSL 4000 E-Series Console Channel Strip plug-in provides an exacting circuit emulation of this. As UA describes it: 'The SSL E Series Channel Strip plug-in allows UAD-2 users on Mac and PC to apply classic SSL 4000 EQ curves and dynamics control to their music. This unique plug-in is distinguished by its remarkably authentic sound, and its inclusion of both the Type E "black knob" and "brown knob" four-band EQ and filters, long considered favorites in SSL lineage. Other features include high and low cut filters, independent Expander/Gate, and bespoke Compressor/Limiter.

The E Series' middle EQ bands are fully parametric, while the high and low bands provide the user with switchable bell or shelving filters. The Comp/Limiter provides Threshold, fast or slow Attack time, a .1 to 4 sec Release, and a

Figure A10.12
Neve 88RS channel
strip.



continuously variable Ratio control. The Exp/Gate offers Threshold, fast or slow Attack time, a .1 to 4 sec Release time, and a Range control to tailor the Gate or Expansion effect. In addition, the SSL E Series Channel Strip plug-in adds a second Gate setting, featuring a “no-chatter” circuit borrowed from later SSL designs.

For increased flexibility, a PRE-DYN button allows users to reorder the signal chain, placing the EQ before the dynamics section. With the DYN-SC button, users may engage a sidechain feature, providing frequency-dependent compression using the EQ filters, cut filters, or both. Lastly, a Link button adds the ability to link or unlink the sidechain when using the stereo version of the plug-in.



Figure A10.13
SSL E Series Channel
Strip.

So what's left to emulate from the analogue studio? Tape, of course! Those reels of tape, each type with its own special characteristics that would 'shape' the sound recorded onto it, and those tape-machines that would further 'shape' the sound being fed to the tape and played back from the tape.

To provide these emulations as plug-ins, Universal Audio first turned its attentions to the Empirical Labs EL7 hardware unit, and developed a plug-in version of this which they have named 'FATSO Jr/Sr Analog Tape Simulator & Compressor'.

As UA explains, 'FATSO's ingenious design and creative feature set gives users the wonderfully warm and pleasing sound of magnetic recording tape, class A transformers, and tube circuits. Endorsed and scrutinized for accuracy by designer Dave Derr of Empirical Labs, Universal Audio has painstakingly recreated the FATSO Jr. in this highly anticipated UAD Powered Plug-In, capturing the sonic nuances of the original hardware. Specifically, the FATSO is designed to musically integrate frequencies and transients — and increase the apparent volume of your source material — in the same way classic analog equipment does. The FATSO's Input control gives the ability to dial in harmonic generation/distortion while "Tranny" and "Warmth" allow the user to dial in just the right amount of tape and tube tone. The FATSO also operates as a highly versatile compressor, and is useful for mixing and stereo buss compression. As part of the FATSO Powered Plug-In, UA has also worked closely with Dave Derr to model his never-before-available original concept of the FATSO, the FATSO Sr., at no additional charge.'

Figure A10.14
Empirical Labs EL7
FATSO recreates
the warm, musical
qualities of magnetic
recording tape,
tubes, and class A
transformers.



The 'holy grail' in this quest has to be the analogue tape-machines, and where better to start than with the model that was the leading choice of the world's recording studios at the height of the analogue era – the Studer A800 Multichannel Tape Recorder! Universal Audio called on the services of AES magnetic recording expert Jay McKnight who worked with UA's world-renowned team of DSP engineers to model the entire multitrack tape circuit path and electronics of an A800 machine – plus the distinct sounds of multiple tape formulas – to create the world's most accurate representation of professional analogue tape recording now available.

UA provides the following description of the plug-in's tremendous capabilities: 'The Studer A800 for UAD-2 provides all of the original unit's desirable analog sweetness; like magnetic tape, users can dial in a clean sound, or just the right

amount of harmonic saturation using the Input and Output controls. The reel deck IPS control steps through the three tape speed choices available on the original hardware (7.5, 15, or 30 IPS), each with distinct frequency shift, head bump, and distortion characteristics. The tape Type control lets users choose from four of the most popular magnetic tape formulas of the last three decades, each with their own subtle sonic variation and tape compression characteristics. The Cal control allows the user to choose between +3dB, +6dB, +7.5dB, or +9dB calibration levels, which can be used at their recommended settings, or tweaked for additional tonal options. Input, Sync and Repro paths, plus Thru (bypass) are available for authenticity, providing all available circuit options of the A800. A huge time saver, the Studer A800 plug-in features an innovative Gang Controls setting, allowing for instant global adjustment of any parameters for all Studer A800 instances in your session.

Secondary controls are hidden behind the reel deck, and can be exposed by clicking on the Studer badge or Open label of the plug-in GUI. The Equaliser control allows the user to select between the American (NAB) and European (CCIR) standardized EQs, providing regional pre-emphasis/de-emphasis filtering at 7.5 and 15 IPS, each with their own sonic qualities – plus the AES EQ at 30 IPS. The HF Bias calibration parameter allows the user to tune the HF oscillation voltage feed to the magnetic record head, striking a balance between record sensitivity and distortion. This can also be used creatively as an effect — from warm, overbiased sounds, to voltage-starved distortion and chatter. HF Record is a calibration filter that allows for HF makeup when the ideal Bias leaves a high frequency deficiency; both HF Bias and HF record are fed into the tape nonlinearity. Sync and Repro HF and LF calibration EQs allow for adjusting for a flat playback response, or can also be used creatively. All calibration controls can be automatically calibrated to the recommended manufacturer's settings via the A800's Auto Cal feature, or may be disabled. Finally, separate controls for Hiss and Hum are available – each tuned to default settings to match the hardware behavior – with a global noise bypass option.

Figure A10.15
Studer A800
multichannel tape
recorder.



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