

Avalon Design

VT-747SP

The VT-747SP combines a twin path compressor, and six bands of passive equalisation. Adam McElnea puts his seat in an upright position.

Avalon Design was founded in 1986 by company head and designer Wynton Morro. The inspiration for the company's name came from a nearby north Sydney beach of such beauty that Baywatch put in a bid to buy it. Avalon Design soon garnered a solid reputation for some of the most pristine sounding mic preamps available. Their cause wasn't hindered by Prince falling in love with Avalon's devices while recording in Sydney and bundling a good quantity into his purple hand luggage for use at his Paisley Park Studios. Avalon's range of signal processors now include high-end, pure class A equalisers, mastering equalisers and opto-compressors, and their reputation for lovely looking, transparent and superb sounding gear persists.

Traditionally Avalon's designs solely utilised class A transistor-based architecture, so the more recent release of the VT-737(SP) mono class-A tube voice channel was met with considerable interest. The highly regarded and extremely successful unit gave plenty of engineers new to Avalon's handiwork a taste of high end audio processing at a realistic price tag. Hot on the heels of the VT-737 comes the release of the much anticipated VT-747SP stereo signal processor. Incorporating a frequency-dependent opto-compressor with a six-band passive program equaliser and an innovative TSP (twin signal path) facility, which allows users to choose between Avalon's familiar pure class A discrete transistor output stage or a tube-based output stage.

First Impressions

My previous experience with Avalon Design equipment

came via a pair of VT 737s and the AD 2044 class A opto-compressor. They both sounded superb, so my expectations of the VT-747SP were high. The VT-747SP is housed in a two rack space, steel construction with a 6mm anodised aluminium front panel. The unit is impeccably styled (like the rest of the Avalon range), with backlit push button switches, and a very large, very sexy, oval VU meter. Solid machined aluminium knobs with knurled sides imbues the unit with a solid and luxurious appearance. Speaking of solid construction, the unit's innards inspires similar confidence – more on that later. The unit weighs in at around 10kgs and looks like it would survive a thermonuclear blast! Very rarely have I felt such a 'value for money' satisfaction with a processor's craftsmanship as when I unboxed the VT 747SP. All too often thin rack ears, plastic knobs, cheap cases, and dodgy power supplies have let my expectations down, but not here.

The VT-747SP has ventilation slots cut into the upper and lower panels of the case, and a substantial heat sink located on the rear panel. With a pop of the bonnet it becomes obvious why such heat dissipation measures are necessary. Inside you'll find three Russian made Sovtek 6922 valves, a massive sub-enclosed discrete toroidal power supply and a multitude of printed circuit boards – the VT-747SP could quite literally warm up more than just the sound! Audio input and output connections are made via electronically balanced XLR connectors. The maximum input level is +36dB, with a maximum output of +30dB. The outputs are DC coupled while the inputs are fully balanced class A. Sealed silver relays are used throughout for all signal routing and bypass facilities.



Ground Control

The VT-747SP has one set of controls for processing both the left and right signals – it is a dedicated stereo device with no option for processing two discrete signals. Avalon Design has incorporated an extensive amount of control into what seems a relatively small amount of space. The physical layout is informative and uncluttered. On the left hand section of the control panel we find the controls for the input amplifier. The input level operates through the range of -20dB to +8dB, however, for additional tube overdrive you can press the adjacent switch which boosts the input amplifier by an extra 10dB. The compression section precedes the input module. The threshold control above which compression takes place can be varied from -30dB to +20dB, while the variable make-up gain on the opto-compressor is from 0dB to +10dB. The attack time for the compressor ranges from 2ms to 200ms, while the variable release time for the compressor ranges from 100ms to five seconds. However, it should be noted that on the front panel these controls simply offer a fast to slow description (no numbers). The compression ratio is variable from 1:1 to 20:1 and the compressor can be bypassed if desired. More interestingly, though, the VT-747SP offers the user a spectral opto-compression mode. This mode incorporates a dual band spectral equaliser and promises enhanced frequency dependent compression. A low frequency shelving filter (sweeping through 70Hz to 1kHz) and a high frequency selected Q filter (with a frequency range from 500Hz to 9kHz) can be switched in or out of the side-chain path. With up to 15dB of cut or boost per band and a side-chain listen facility for real-time monitoring of the side-chain signal, users can audition the effect of the equaliser on the compressed signal – definitely an invaluable addition to the VT-747SP's feature list. A very large backlit analogue VU meter, a feature consistent with the rest of the Avalon range, monitors gain reduction. Completing the input/compressor section on the front panel is Avalon Design's answer to audio hedonism – the TSP (Twin Signal Path) facility. The TSP button gives users the best of both worlds. If you're of the purists' camp, bypassing the TSP facility will place discrete class A transistor-based amplifier in the primary output stage. However, by pressing the TSP switch the warmth of three high-voltage dual triode tubes is introduced into the audio path. This is definitely a flexible option.

Moving onto the right hand side of the front panel, we find the class A program equaliser output controls (ranging from -20dB to +6dB), and a pair of 20-segment, 60dB, high resolution LED bargraph output meters. The EQ utilises a totally passive design, as opposed to an active filter topology and utilises fully discrete, class A high voltage transistors. The EQ is controlled via six sliders. This may seem a little underachieving at first, but the EQ parameters and gain structures were founded upon the premise of producing a musical sounding equaliser, and not scalpel-like sonic surgery. The predetermined frequency turnover, Q and amplitude ranges were carefully chosen so as to provide the least amount of

impact on the phase response of the signal while still ensuring its natural harmonic balance. The EQ can be bypassed if desired, or inserted prior to the compression stage – it is normally post compressor in the signal path. The VT-747SP incorporates three shelving response filters and three bell-shaped response filters. The low bass shelving type EQ boasts a massive 24dB of cut or boost at 15Hz, while the treble band fixed at 32kHz gives you up to 20dB of cut or boost. Additionally, the high mid frequency band located at 5kHz is also a shelving response filter with the option to cut or boost by up to 10dB. The three remaining filters operate at 125Hz, 500Hz and 2kHz respectively and are designed for subtle alterations with fixed cut or boost levels at 8dB, 4dB, and 4dB respectively.

Full Throttle

It should be noted that there is only minimal documentation supplied with this unit. Unlike other manufacturers who supply in-depth overviews of the fundamentals of compression, equalisation and set-up options, it's obvious Avalon Design's philosophy is founded upon the premise that 'listening is learning'. However, Avalon Design do suggest allowing at least thirty minutes tube warm up time before the unit reaches optimum sonic performance. Additionally, Avalon Design implement a 40 second soft start power-up procedure for prolonging tube life and suggest turning off the unit when it is not in use for extending the life of the electronics.

For test purposes I employed the VT-747SP in a variety of applications. Initially, I used the unit as a stereo insert on my digital desk for enhanced signal conditioning, followed by using it across the output stage of a number of digital synthesisers, and finally introduced it into my mastering rack for a touch of post enhancement. The results were all very exciting. As a general rule, the implementation of premium quality components should result in a premium quality sound – and the Avalon didn't disappoint. I processed a variety of sounds through the VT-747SP. I experimented with a variety of synth-based sounds, as well as drum kits and drum loops, brass, percussion, vocals and stereo mixdowns. The VT-747SP's sound is pristine. Without doubt there is an enhanced degree of signal clarity, integrity and imaging. Every source sound processed by the VT-747SP seemed to 'open up', allowing all the subtleties to be heard. Synth-based sounds were injected with new life while acoustic sounds had the sort of warmth and roundness normally only associated with well appointed recording facilities. The compression stage of the VT-747SP is comparable to Avalon Design's AD2044 flagship compressor. The compressor exhibited a full bodied sound. Even with heavy compression the signal integrity remained mostly transparent, full of life and with only a pleasant hint of enhanced colouration around the bottom end and low-mids. This enhancement was heightened further with the introduction of the tube output stage. The introduction of the tubes into the signal path via the TSP facility seemed to increase the perceived loudness of the sound source

by approximately 1dB – this was most noticeable when used in conjunction with the compressor.

Frequency conscious or spectral compression and de-essing was quickly set up and managed with minimal artifacts and impressive results. By implementing a degree of spectral compression, problem audio material can be effectively compressed without having to reduce the level of the entire signal once the threshold has been exceeded. For removing sibilance from vocals, tightening up uncontrollable drumloops or assisting in the final stages of mastering a stereo mix, the VT-747SP's spectral-compression option handled all the tasks very well. Furthermore, the side-chain listen facility proved invaluable in achieving the required results by providing real-time feedback.

Equalisation is one area where inexpensive outboard will generally let you down and I found the VT-747SP highlighted the gap between the 'haves' and the 'have nots' with its impressive results. The passive equalisation was a joy to use, and exceptionally easy to implement. You can't do a lot wrong with six fixed bands of premium sounding EQ – much of the fiddly parameter tweaking has been taken out of the equation. Due to the implementation of an entirely passive filter topology, the resulting sound was very smooth, and natural – it's as though the EQ I selected was already inherent within the source material and the VT-747SP just allowed me to flesh those qualities out. Even with excessive amounts of cut or boost a musical quality remained. The high and low filters, located at 15Hz and 32kHz respectively, added an unmistakable roundness to the overall mix, while lifting vocals to the front of a mix or adding silky smooth sheen

to the top end was easily achieved. This EQ sounds better than most of the best.

Outboard motoring

The Avalon Design VT-747SP is an investment in audiophile quality. It is difficult to even attempt to fault this unit. Visually it is stunning, sonically it is superb, and physically the craftsmanship and engineering suggest a price tag beyond the reach all but the Princes of this world. Happily, this is not the case. The VT-747SP is certainly competitively priced and essentially costs about half the amount of comparable competing units of a similar calibre. If I may be so bold so as to suggest any additional improvements, I would love to see a future 24-bit/96k digital I/O option for DAW stereo track sweetening and user-selectable frequency parameters on the high and low filters for enhanced EQ flexibility. Overall, Avalon Design's VT-747SP is a fine piece of tube outboard, ideal for any form of stereo signal processing/enhancing and mastering applications that don't require extensive corrective equalisation. A worthy investment in your studio's future.



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