



## Soundfield UPM-1

The wider implementation of 5.1 in broadcast with HD brings with it the problem of how you integrate all that legacy stereo playback material. The answer, says **ROB JAMES**, is this stereo to 5.1 convertor.

After a period of apathy, surround sound is back in the broadcast news. Thanks to HD, a 5.1 soundtrack is becoming essential and as a result, a lot of problems are arising. What to do about archive stereo material, such as sports replays from previous events? These really jar when inserted into the middle of a surround broadcast. How do you deal with fast moving live broadcasts where surround mics are impractical? How do you give other stereo material a new lease of life? And what do you do to ensure that whatever you do to satisfy the surround audience it all folds down satisfactorily for the mono and stereo audience? Most sound supervisors will have formulated strategies to deal with these situations but the routes are often rather tortuous and with no guarantee of compatibility. A number of plug-ins and expensive hardware/software combinations from the reverb camp offer reasonable solutions to the problem but these are not particularly suitable or convenient for live use. Wouldn't it be good if there was a simple hardware box that accepted a stereo input and output a fair simulacrum of 5.1 surround while retaining stereo compatibility? This is the premise of the UK£2475 (+VAT) Soundfield UPM-1 stereo to 5.1 convertor.

The UPM-1 is presented as a 1u box, the front panel is discrete black and all the knobs and buttons are alloy with an interesting, almost abrasive, finish. The knobs have neatly milled slots as position indicators; all very smart. Since the unit is aimed pretty squarely at broadcasting, all audio connections are AES3id. This means 750ohm unbalanced with standard BNC connectors. Impedance matching transformers are readily available to convert AES3id to the more familiar AES3 110ohm (also known by the catchy title of IEC 60958 Type I) with the usual XLR 3 connectors. In my experience AES3id is an extremely robust and convenient interconnect and for outside broadcast especially it makes a great deal of sense. Back in 1992 we used this technology along with a conventional video router for the first all-digital dubbing theatre on the simple grounds of cost. The results were outstanding.

Around the back of the unit you will find a total of six BNC sockets, one for stereo audio in, three for LR, CLfe and LsRs out and two more for Word clock input and output. In the absence of external Word clock the UPM-1 uses its own internal generator. The front panel is divided into three logical sections, input, upmix and 5.1 output levels.

In the input section the largest knob on the device controls input level from infinity to +10dB. Since it

is important to the process that anything meant to be central in the image should be evenly distributed between left and right, the other knob is a Balance control for correcting lop-sided inputs. A button with indicator LED swaps the left and right inputs and above this are a pair of 5-segment bargraph meters. On the left, three LEDs indicate the current synchronisation state — Locked, Internal or External. In the centre section, the most important adjustment controls are Front Direct Sound, Front Ambient Sound, and Rear ambient sound. Careful adjustment of these pots rewards with better intelligibility and crucially can improve the experience for the majority of the audience who will be listening to a stereo mixdown of the 5.1. Two further pots control width and centre divergence. Both have Active buttons and indicator LEDs. On the left, a button switches between normal Upmix mode and Matrix Decode. The latter can be used where there is reason to suppose that the stereo input material is actually matrix encoded surround, such as Dolby ProLogic. In Upmix mode little or no direct sound is sent to the surrounds. In Matrix mode anything intended for the rear in previously encoded material is routed there. The final section offers level controls for the LR front, Centre, LR surround and LFE channel outputs. Each of the four knobs has an associated pair of LEDs to indicate signal present and clip. Finally a button with indicator LED bypasses the entire process.

The stated objective of the UPM-1 is 'to produce a very stable and natural sounding 5.1 without destroying the original stereo image. Key to achieving this are: good extraction of mono sources to feed the centre channel, such as dialogue, commentary, etc.; maintaining the frontal stereo image by keeping the direct sound sources of the stereo mix at the front; and only the extracted natural ambience is fed to the rear surround sound channels.

I had two versions of the UPM-1 software during the review period. Listening to the individual outputs with the first version the effect was a little less impressive than I was hoping for. Even on material with a true phantom centre the centre sound was still clearly evident in left and right and Ls Rs outputs. However, this is not a real world test since the whole point is to listen in 5.1 and then to the folded down stereo from that. Notwithstanding, the second version, tweaked in the light of comments from a number of broadcasters, demonstrated markedly better separation and a much more convincing effect.

I experimented with a wide variety of material. Even on TV drama the effect is never less than an enhancement. Current pop music is interesting, but

not so effective due to the way it is mixed. The unit is undoubtedly at its best with sports and events.

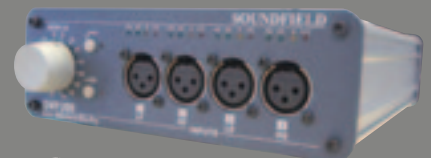
With minimal tweaking of the UPM-1 controls it is possible to produce a mix that is consistent for both the 5.1 audience and the majority still listening in stereo. With most, if not all, of the alternative methods of up-mixing the 5.1 results can be very good but folding down to stereo is a different matter. That said, I felt the unit tended towards a slightly harsh sound especially with original material already on the sibilant side of perfection. The other potential issue for sports coverage is the practice, in vogue with several broadcasters, of panning commentators a few dB left and right when there are two or more of them. Personally, I've never been keen on this style but in practice the unit rose to the challenge.

The UPM-1 is a perfect example of a broadcast device. It does one job and does it quickly and efficiently without fussy setting up. There are cheaper software alternatives (and more expensive hardware ones) but all the ones I've encountered are not really suitable for the high pressure world of live TV. If your workflow includes stereo material destined for 5.1 broadcast then this device must be auditioned. ■

**PROS** Minimal tweaking for optimal results; few artefacts; excellent fold down.

**CONS** Price; coaxial AES may not suit everybody.

**EXTRAS** The SMP200 is a 4-channel mic preamp, designed to complement the SPS200



software-controlled microphone. The four-capsule SPS200 is SoundField's most affordable product, and achieves this by offering software-based decoding and processing, rather than shipping with a hardware processor and control unit. For preamplification purposes, the SPS200's four capsules still needs to be gain-matched, and the SMP200 is designed as a one-box solution to address this need. The SMP200 differs from other multichannel preamps by offering a ganged master gain control, 48V phantom power and a low-pass filter that can be applied simultaneously across all four channels.

### Contact

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