



## SoundField UPM-1 plug-in

It's a solution to a common problem in broadcast and post when multichannel delivery needs to incorporate stereo. **ROB JAMES** reports on an upmixer that has crossed over from hardware to software.

If you can see past all the ballyhoo about 3D TV there are more interesting broadcast developments. Unnoticed by the masses and the popular press, loudness metering is finally coming of age and the requirement for programming with consistent 5.1 surround sound is increasing rapidly. Surround sound is de-rigueur for the growing body of HD TV output. This poses a number of interesting questions for programme makers and broadcasters. Not least is how to treat stereo archive material when used in a surround context. For example, in sports coverage when previous years' achievements are shown to set the scene for the coming match/race/game, it is unacceptable to simply collapse the image to stereo since this jars horribly for the audience listening in surround. Equally, whatever you do to ameliorate this must pass muster without egregious artefacts when folded back down for the audience listening in stereo.

UK based SoundField offer a number of tools to assist sound supervisors to produce high quality surround mixes. For acquisition there is an increasingly wide range of SoundField microphones with hardware and software decoders producing highly convincing surround output. To assist with situations where surround pick-up is difficult or impossible and to cope with archive material in live broadcasts the company introduced a hardware upmixer, the UPM-1, in mid 2009. This device fits seamlessly into broadcast workflows and with minimal tweaking succeeds in producing acceptable 5.1 from stereo material. Although sound supervisors have long had strategies for upmixing using delays, reverbs and sometimes matrices, the results are variable and folding back down to stereo successfully is something of a lottery. While the UPM-1 solves the problem in the gallery and OB truck it is less convenient in postproduction where non-linear editing and DAWs reign supreme. Although it is perfectly possible to interface a UPM-1 with a DAW, the connectivity features that make it ideal for live broadcast are not

commonly found in post and there is no automation. In response to this SoundField has introduced a plug-in version, the UK£675 (+VAT) UPM-1 Upmixer plug-in.

Available in VST, Audio Units and RTAS flavours, UPM-1 the plug-in is copy protected by the odious iLok dongle. While I understand perfectly the need to protect intellectual property I do find all the kerfuffle with iLok a royal PITA. Downloading and installing the plug-in took less than five minutes. Sorting out the license involved a couple of emails, digging out an iLok dongle, finding the account details and retrieving the password and took more like an hour if you include upgrading the iLok drivers, etc. Once past that obstacle UPM-1 worked first time when inserted into a Pyramix surround strip. Although the plug-in has only two inputs, it obviously outputs six channels, so a surround strip or track is the way to go.

The controls available on the 'wrapper' i.e. standard controls such as automation, presets, compare, etc. will vary depending on the host application.

In the Input section LoRo (Left Only, Right only) and Lt, Rt (Left Total, Right Total) buttons toggle between the two modes of operation. LoRo is the standard mode for upmixing stereo material and, when selected, only ambient sound is sent to the rear channels unless the width control is turned up to the point where it creates a 'wrap around effect'. LtRt is used when the source may contain matrix encoded material. In this mode the process analyses the material looking for matrix encoding and, when this is detected, sends any direct sound intended for the rear to the surround channels. The horizontal Input Trim control offers +/-10dB of adjustment.

L/R swap and the L/R balance pot do what they say. Correct balance is vital to the process and checking this first is a wise move.

Clicking on the little blue 'I' pops up a settings panel with the SoundField UPM-1 logo, version information and a choice of Pot control method and Output mode.

Two Output Modes are available, SMPTE i.e. [L R C LFE LS RS] and EBU [L C R LS RS LFE]. The mode selected currently has a tick in a blue box while the other has a cross in a grey box. Clicking either box toggles between modes. There are other mappings in use, e.g. L R LS RS C LFE, and it would have been nice to see them here. Clicking on the Pot control method graphic toggles between arc and an up, down, left, right cross. In the output section to the right, three buttons select the output format from a choice of 3.0, 5.0 or 5.1. Four level sliders adjust the output levels of the L/R pair, Centre, LFE and the Surround pair. Each output slider has separate mute buttons for each channel it affects and input and output sliders have bargraph meters for the individual channels.

In the Upmix section Direct Sound gives +/-6dB of variation. In the majority of cases this control only affects the front channels. Front Ambience varies the ambience contribution to the left and right front channels by +/-6dB and similarly Rear Ambience varies the ambience contribution to the left and right surround channels by the same amount. The Width control has an on/off switch as well as a 'pot'. At extreme settings direct sound will go to the rear channels. I would use this with caution since it is possible to create some fairly nasty results.

Centre Divergence also has an on/off toggle. As the name implies this control sends some of the centre channel to the front left and right. With no divergence mono source material will go to the centre channel only and at the other extreme mono material will go equally to left and right with no centre contribution. In other words, the control goes from hard centre to phantom centre. Four buttons vary delay of the rear channels by 10ms, 15ms, 20ms or 25ms. Some delay to the back is desirable to avoid the listener locating sounds to the rear speakers. It also adds an enhanced sense of space.

As with the hardware version I used a wide variety of material to stretch the UPM-1. From memory, the results are very similar, although I suspect the algorithm has been updated to reduce the slight harshness I perceived before. LFE generated in this way should be used judiciously, if at all. Otherwise, this is a great tool for upmixing and should find applications in film as well as broadcast. ■

**PROS** Very easy to use; produces convincing surround for little effort; output folds down to stereo without problems.

**CONS** Would be nice to have more Output mapping Modes; nothing else.

**EXTRAS** The portable, battery-powered ST450 is aimed at location recording film and TV sound and builds on the previous ST250 and ST350 portable microphones. The electronics in the ST450 have been completely redesigned, it weighs just 290g and may be used at a distance of up to 200m from its control unit. Like its predecessors, the ST450 generates audio in any format and will generate surround and stereo simultaneously. It incorporates a new approach to converting the information captured by its four-capsule array into surround and stereo.

### Contact

**SOUNDFIELD, UK:**  
Website: [www.soundfield.co.uk](http://www.soundfield.co.uk)