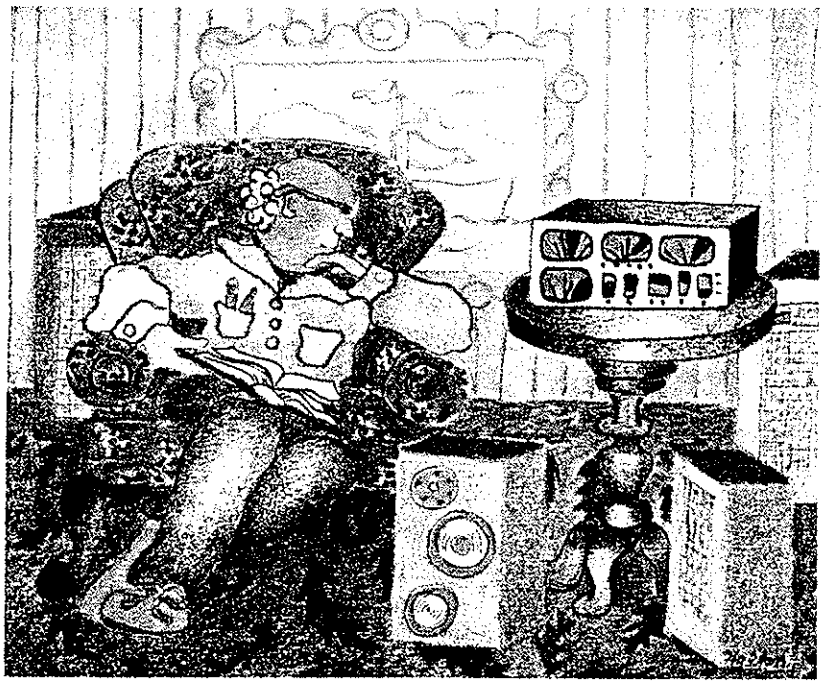
Audio etc.

Edward Tatnall Canby

Peter Scheiber's cost-no-object 360° Spatial Decoder, selling for thousands, has been sitting in my living room for several months, acting transparent. Though it is perhaps the final decisive word of the SQ sort and the end of an era, half the time I don't even know I have the thing in my system. Two signals go in and four come out, variously, yet this unobtrusive rack-sized black box with chrome handles and four meters is the very embodiment of that ancient observance that an amplifier should be a wire with gain. This one doesn't even have gain, though it does have internal amps. It acts like a wire, period.



And yet—as I discovered at last autumn's AES meetings in New York, where I attended the Scheiber lecture on this ultra-decoder, his device has about the most complex insides of anything in electronics short of a space vehicle. Picture after picture was thrown onto the screen, diagrams section by section as we followed the signals from the dual input to the four-way outputs, Scheiber meanwhile apologetically remarking that he'd just have to skip from page 8 to 19 in his prepared text and then to page 25, so sorry. Some people are really absent-minded perfessers! But the message came over: This is an incredibly sophisticated converter of two audio channels into four, with dozens of sensors (speaking non-technically) attuned at every point to the real demands of musical space and, more particularly, to the requirements and abilities of the human ear. I was duly impressed. If genius, as has been said, is the infinite capacity for taking pains, then Peter Scheiber has taken them.

But first of all, Scheiber keeps emphasizing, this is a device to provide near-absolute transparency in a most unlikely situation. I won't bother to cite the details, in the millions, but everything is done in the most ingeniously expensive manner possible and after plenty of listening I can vouch for the result . . . astonishing. Through all those thousands of densely packed circuit elements the over-all figures come out fabulous: IM for the entire unit, in to out, is less than 0.05 per cent, of which less than 0.01 per cent is contributed by the numerous op-amps in various segments of the signal path, this with a tactful passive, upper-end filter to limit the response to a mere 50 kHz all the way through. The entire machine is made up of junction FET and IC op-amp elements and, naturally, the switching and controls are of the finest, with LEDs, click stops, and what have you.

Well, of course, an even better transparency would be observed by removing the machine entirely from the circuit, so we must give a thought or two to function, of which there is plenty. This is an advanced parametric decoder based on SQ encoding, but with flexibility well outside of that system so as to suit practical conditions today. Which means "decoding" a million or so standard stereo recordings every one of which contains large, if variable, amounts of useful phase-orientated diversity, for incipient directionalities and, as the sum of these, hall ambience of many sorts, both natural and synthetic. Quite aside from SQ, Scheiber has plenty to work on and, reasonably enough, he thus includes three quite different signal treatments, one being the ultimate parametric SQ decoding, in addition to plain two-channel stereo and a feed-through for extra external sources into four channels.

These alternatives are neither radical nor sensational. I found them soberly, sensibly different, the sort of difference that grows on you quietly, with familiarity over a good stretch of time. The five LED color-coded key switches are marked *STE, AMB, SYN, SQ,* and *EXT,* self-explaining more or less—but Scheiber adds an excellent booklet explaining each in terms of the two essentials, coded and non-coded recordings. What happens to an SQ disc in each playback position? A plain stereo disc, the same? (Other codings are unmentioned. CD-4 of course won't do a thing beyond the basic stereo in its major channels; QS will "decode," no doubt, in interesting ways, though not quite the ways the designers of that system intended. Indeed, for this, the QS folks have their own advanced decoder designs, quite sophisticated ones, and it seems probable that they do for QS what the Scheiber unit does for SQ.)

On the Scheiber unit's *SYN* (synthetic) position, for example, a stereo image is expanded spatially into a 270° panorama (I am quoting the Scheiber booklet) extending from left back through the front positions to right back. "This panoramic aural display permits closer observation of instrumental deployment than conventional stereo playback." On the other hand, when an *SQ*-encoded disc is played via *SYN,* there is a wholly

freakish sonic dispersal—the front center and the back center stay in place, but the corner sounds are interchanged in space. All of this corresponds very nicely with the sound I have actually experienced; *SYN* is the bold, semi-sensational option among those Scheiber offers. I often use it because it throws more sound into the back speakers, which are nearer to my kitchen work place. Why not? Anything that sounds good *is* good.

Then there is *AMB*, for ambience. This is primarily a sober and very useful treatment for stereo discs, not sensational but definitely expanding their built-in characteristics; direct sounds remain localized in front, quite reliably, while reverberant information is directed more to the sides and back, for an enhanced hall effect. As Scheiber points out, the *AMB* effects vary widely with the recordings, since there is no precise coding involved and a vast variety of ambient material (variously delayed in phase) is found from one record to another. *AMB*, however, has another usefulness. It is an alternative to the *SQ* position for encoded discs, offering a more conservative, up-front effect for those SQ records which have a pronounced "surround" encoding, putting the musical instruments, as Scheiber says, "back on the stage" where they presumably belong in a well-ordered musical world. If you really don't want the trumpets in back of you and strings in front, then this *AMB* is good.

Traditional Ambience

In some personal correspondence with Scheiber, I have gathered that he is distinctly disillusioned with surround-sound classical music, all the way around—or perhaps pop music, for that matter. After all, the man began as a professional musician, a bassoonist. A yen for the traditional sound, orientated towards a frontal focus, would be no more than natural for him, though perhaps many of our more experimental recordists will not agree. As for myself, I go along with him provisionally; in the long run I do find it easier to listen to music where music ought to be, and that is *not* behind the ears. What belongs back there is ambience—important enough. So a device which can, at will, provide frontal music with good backside ambience out of records of any sort that are "too much" surround style is bound to be a good tool in home fi.

As for the most essential (maybe) position, the Scheiber decoder's *SQ* circuitry, indicated with a bright red LED, it puts the sounds where the SQ recording engineers intended, perhaps more specifically and precisely than any decoder has done before. I remember, some years back, watching meters in CBS's parametric decoder, never put into commercial public distribution. (Predictably, the system was too expensive.) Amazing. Decode a signal to right back, and that meter went straight up to 0 dB, while the other three meters never so much as moved at all. Scheiber gets 35-dB separation and—a thing that has long bothered me in theory—this does NOT depend on a one-corner-only signal. The parametric circuitry allows for functional independence in four directions and points between. Moreover, the circuit localization is "20 times as fast" as earlier decoders, which still operated within the ear's "fusion" time.

In other words, we have here just about the ultimate degree of four-way separation out of two coded signals. It is not, we must remember, an objective 100 per cent discrete separation. But it comes far closer to that ideal than anyone might have imagined seven or eight years ago, when Peter Scheiber was the first to introduce the "matrix" concept of spatial sound distribution from two-channel sources.

Today being today, I myself have been using the Scheiber almost exclusively for standard stereo discs, non-encoded. What else? But I cannot and will not now try to get along without at least four channels and I will not revert under any circumstances to one-sided stereo, if there is any way I can avoid same. If there had never been an SQ or QS or CD-4 disc, I would feel the same. Indeed, I sometimes wish that quadraphonics had never been launched—but had managed somehow to donate the accumulated knowhow to our recording art! That being a contradiction, I can only say that a decoder like the Scheiber contributes so much to stereo listening, so easily, that I, for one, could not survive without the things it does. When the Scheiber goes back to its designer, I will revert to one or another of the earlier decode/enhance devices I still have on hand.

Prior to writing this, I dug out a pile of SQ discs. I have quantities of pop SQ (I received most of them), and they make a more decisive test of a system than most classical recordings. I have always been disturbed by the matrix tendency towards blurring and indecisiveness as between spatial sources, most particularly that dense feeling of mono, overhead, that results from too much overlap in the not-very discrete four channels. True ambience is *never* mono, always a subtle composite of differing reflections. To the extent that there is a mono redundancy from the four speakers of a sur-

round system, the magic effect of real ambience is damaged or destroyed. (And yet it can be synthetically simulated, as we know!) I have rarely heard really free ambience from a matrix recording. Too often, I hear that dense, closed-in effect that is the unwanted summation of too much mono. It can be in the decoder, the record itself, or even in the "original" sound—when that sound is given the synthetic reverb treatment.

So I tried a brace of pop records, just to see. The first (nameless) was most discouraging. Scheiber or no, the effect was unimpressive, with no more than stereo-style front separation, a vague mumbling from the back speakers and a distinctly oppressive mono compression of space. No real ambience spread, no real surround sources. Was Scheiber a lot of hot air? I tried another, and it was worse. Ugh. Then a third—and suddenly, space opened up and spread out! I assure you, I let out a sigh of relief. I was rooting for Scheiber. The problem, and no two ways about it, was *in the recordings.*

I do not know the ins and outs of how SQ worked during those intense times when four-way recordings were being made separately from stereo, in the mixdown and, sometimes, in the original microphoning too. All I can say now is that entirely too many of the pop records I have tried seem to me to be unimpressive in the decoding via this sophisticated ultimate decoder. Am I digging up skeletons? No, because all of a sudden—a good job, and Scheiber is vindicated! The old becomes new. As they say, better than ever. The mono density is gone, space is big and free, instruments are easily set out here and there. Good stuff. As a teaser, here are two: Dave Mason **Split Coconut,** Columbia PCQ 33698. The Manhattans **It Feels So Good,** Columbia PCQ 34450. Look in your dealer's back closet; he has 'em.

The Scheiber Spatial Decoder has a few minor eccentricities—why expand on them? Its four meters are heavily weighted and slow moving, which annoys me, an old meter reader who "reads VU" and likes to see the needles dance. It has no adequate all-mono setting with which to balance sound levels in front and back speakers (the meters read "line out" regardless of amp volume). Minor quibbling. If you want the very best and state of the art in this important and enduring area of "passive" enhancement of the two-channel recording, *and* if your equipment is up to its quality, then the Scheiber is definitely for you. One thing's for sure. It will never be your weakest link.