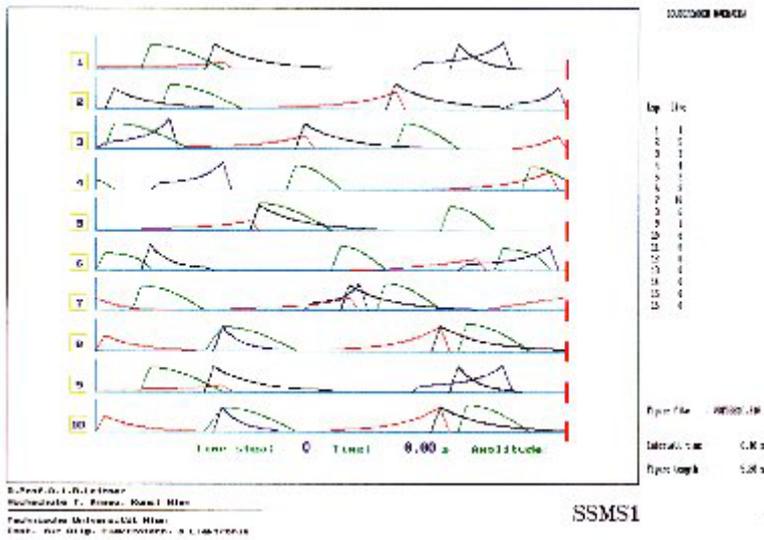


THE SEEING EAR

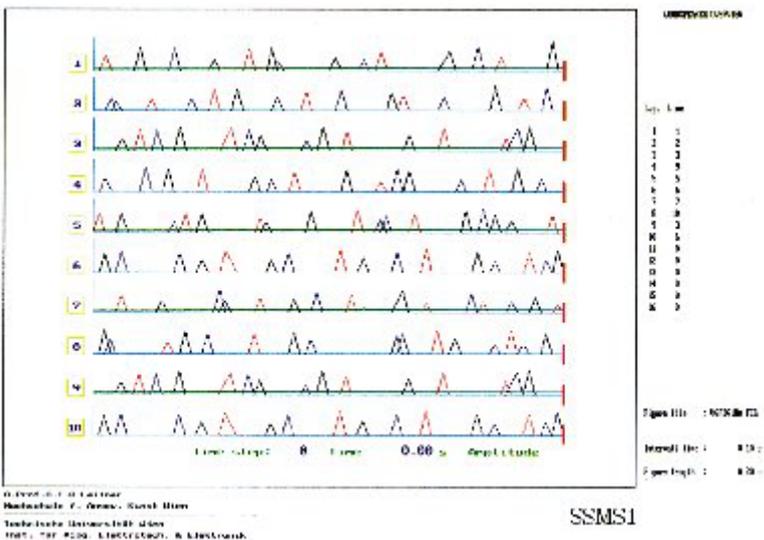
BERNHARD LEITNER

After several years of collaboration between scientists and artists, a future-orientated instrument was developed to arrange sound and space.

Bernhard Leitner
 Project Sound-Spaces P7130-TEC
 Fund for the Promotion of Scientific Research, Vienna
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4 inputs (rot, grün, blau, schwarz) mit linearen, spitzen Hullkurven auf 10 Lautsprecher verteilt (Zuckender Raum)



4 inputs, sich überlagernd, auf 10 Lautsprecher verteilt (Rhythmus-Feld)

SOUND SPACE MOTION SYSTEM 1

SSMS1 is a digital 16 bit audio system of high transmission quality, with 4 inlets and 16 power outlets. The system serves to distribute audio input signals to outlets that are independent of each other, whereby the temporal parameters can be changed. Every input and outlet has a sound regulator which can similarly be adjusted by temporally changeable parameters.

The machine is controlled via a serial data protocol from a control computer which transmits the data to the machine and the CD-player (sound-material-store) via an interface.

Parameters are drawn up with the aid of a program written in Turbo Pascal. Composing and editing with graphic surface, input possibilities in window technology. Individual figure models are put together from a library to form space-compositions and up to 10 sound-spaces can be called up simultaneously.

Sound-spaces are a physical-sensual experience, a new hearing/experiencing of shaped sound envelopes. It is only thanks to modern technology that this has become artistically conceivable and realizable. In this way, my own work and investigations in this sector have, since 1968, been inseparable from technological developments.

The SOUND SPACE MOTION SYSTEM 1 (SSMS1) is the first fully digitalized system to record and process sound movements in space and to graphically record and process space structures formed from sound. It makes possible an acoustically, immediately scrutizeable visual notation of (up to) 16 outputs (loud speakers) of the temporal evolution of a sound space by means of envelopes and sound timbres.

The human ear can read several acoustic spaces at the same time. Using this as a basis, each of the 16 sound places can replay (up to) 4 inputs simultaneously; so that every sound place can be, at one and the same time, the intersection of several sound-movements within the space or, rather, every sound-place is, at the same time, part of different sound-space figures. It is only the graphical time-space notation of SSMS1 which permits the resultant high degree of acoustic-artistic-spatial complexity to be constructed in a way that it can be duplicated, to be scrutinized in a readable listening way, and to be composed in an audible reading way.

Bernhard Leitner

In 1733, Johann Sebastian Bach spoke of the "science", with a matter-of-factness, "which I achieve in music". Even some 178 years ago when Johann PRECHTL, the first director of the present Technical University held his inauguration speech, he meant with the term "art", both art and technology, quite in keeping with the Greek ...

The extreme division of work and the strong scientific benefits enjoyed by the technicians of the 20th century have brought about a regrettable, not compelling de-coupling of art and technology and consequently robs the designer of a valuable human component of his work.

It is a rule of mental health to bring art and technology together, among other things by exhausting the potential of new technologies such as micro-electronics, with new art forms. In the project "Sound-Spaces/Control System SSMSI", the like-minded have got together: the creative artist, Bernhard LEITNER, congenial designers from the T.U. in Vienna and the

Fund for the Promotion of Scientific Research, which has rendered a pioneer achievement by financing an "art and technology" project in its field.

Fritz Paschke



Technical data:

16 bit audio system with control computer

4 inputs: asymmetrical 0.7 V level to 10 KOhm for full control

16 outlets: 60 W to 8 Ohm (100 W to 4 Ohm)

Frequency: 12 Hz—20 KHz

Disturbance interval: 86 dB

Control computer PC 486/33

20 signal processors TMS 320/33

20 controllers INTEL 8031

CD-player with control computer

4 Denon CD-player SCSI-Bus

Control computer PC386/40