

HANIWA

REAL 3D AUDIO

THE QUEST FOR TRUE STEREO MUSIC



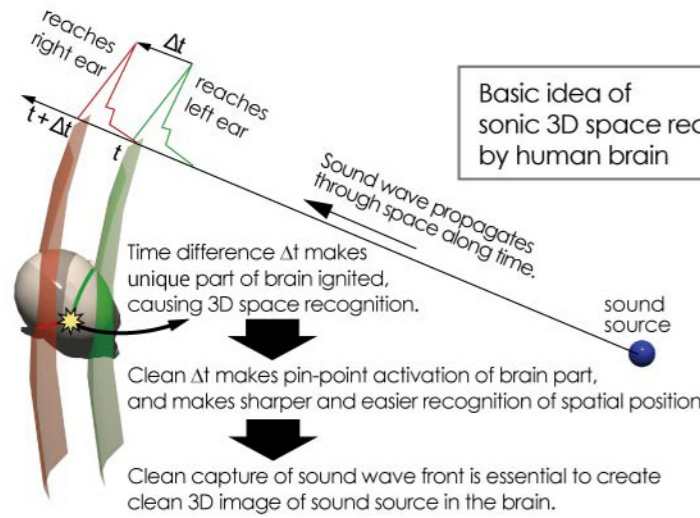
KUBOTEK

The Quest for REAL 3D AUDIO by Dr. Kubo



The Quest for the Best Stereo Music by Mr. Harry Pearson

**Question : The new audio technologies are not providing better music than old analog technologies: WHY?
Restart from the basics idea of STEREO sound from scratch.**



Basic idea of sonic 3D space recognition by human brain

- Conditions On Audio Equipments For Vital 3D Space Presentation
- Capture Δt precisely. Human brain can resolve $5\mu s$ of Δt , equivalent to 200kHz sample rate.
 - Keep the signal wave form all through the signal-to-sound process.
 - In frequency domain, keep frequency AND phase curves flat.
 - Compensation of physically-caused distortion in speaker is essential.
 - Speaker should not emit resonant sound.

Ultimate audio should make listeners feel the music in Real 3D space.
The key technology is to present the sound with the wave form closest to that of recorded music. 4 quests should be pursued to realize this vision.

- Quest 1 : Pick up all information from the vinyl grooves.**
The best stereo sound is still kept in the grooves of vinyl LPs. The highest tracking performance of cartridge is needed to pick them all.
- Quest 2 : The same sound waveform as the input signal.**
Compensation of the physical characteristics of speakers by the digital signal processing technology is mandatory.
- Quest 3 : The sharp focus of the sound.**
Single-cone unit in an air-tight and compact cabinet makes reliable speaker system, presenting nothing but the sound of input signal with sharp focus.
- Quest 4 : The ideal sound source for the Real 3D Audio.**
Recording with two omni-directional microphones provides realistic 3D stereo sound. No additional "mixing" nor "filtering" should be applied. They confuse the waveform, and contaminates crisp spatial expressions.

Findings : The sound of newer audio technologies did not presented him the better charm of music. He was convinced that old vinyl LPs preserved much more attractive music.

BELIEF : Commercial messages of audio industry was not necessarily telling the truth that Harry's ears and sense was recognizing.
He believed in his own sense, and started Absolute Sound to share his view with real music lovers.

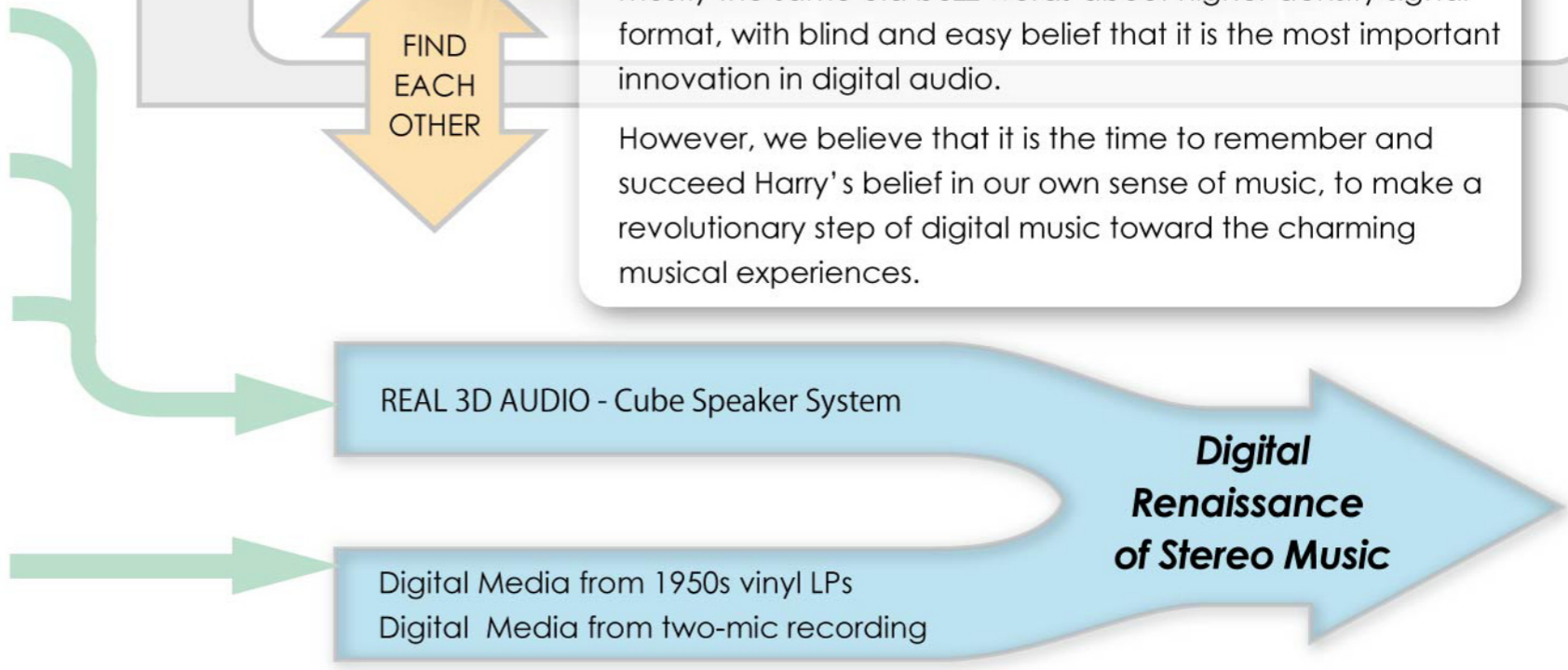
Quest 1 : Search for the most charming music sources.
He found good music in LPs of 1950s - 1960s, and accumulated the famous "Harry's Super Collection".

Quest 2 : Search for the best playback tools for his ideal stereo music.
Cartridge - Turntable - Amps - Speakers - Cables : he was frustrated in the jungle of confused and piecewise audio technologies without clear direction aiming at charming music with reality.

FIND EACH OTHER

Now the digital technology is growing further, but we hear mostly the same old buzz words about higher density signal format, with blind and easy belief that it is the most important innovation in digital audio.

However, we believe that it is the time to remember and succeed Harry's belief in our own sense of music, to make a revolutionary step of digital music toward the charming musical experiences.



HANIWA REAL 3D AUDIO

REAL 3D AUDIO SYSTEM AND COMPONENTS

The front end of the system is a cartridge to pick up all the details of the music signals recorded into the grooves of vinyl LPs. It is also true that virtuosos' masterpieces may only be well preserved in the vinyl LPs today.



The cartridge should be extremely sensitive not to miss the important peaks and their timings. In order to realize this, it is necessary to cross the boundary of established technology common sense.

The extremely sensitive cartridge has radical output characteristics.



A special equalizer amp is necessary to match it with the normal analog input terminals.

The role of control amp in REAL 3D AUDIO SYSTEM includes different level of digital signal processing capability. The digital signal format is standardized in 192kHz/24bit, not to miss the meaningful peaks and their timing differences between left and right channels.



It is also important that the digital signal processing technology is truly essential to compensate the physical characteristics of speakers in order to keep their output sound have the same wave form to the signal input to this control amp.



The speaker of REAL 3D AUDIO SYSTEM is one of the simplest available, but keeping the important nature, such as no emission of extra sound but the sound from small single cone unit. This makes the focus of the sound clear and realizes the true 3D presentation of charming musical performances appearing in front of audiences.



It should also be noted that special theory and digital technique is necessary to make this small speaker system provide rich and crisp low tone instruments' sound including good definition of all instruments' positioning, in piano or in forte.

KUBOTEK, Tokyo Office

O.S Bldg 1F

1-12-15 Kanda Izumi-cho, Chiyoda-Ku, Tokyo 101-0024
Phone: +81-3-5820-3921 Fax: +81-3-5820-3922

KUBOTEK, Osaka Office

Shinosaka-Ueno Toyo Bldg.

1-14-7 Nishinakajima, Yodogawa-ku, Osaka 532-0011
Phone: +81-6-6303-3011 Fax: +81-6-6303-3012

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KUBOTEK CORPORATION

<http://www.haniwaaudio.com>

KUBOTEK USA, Inc.

2 Mount Royal Av., Suite 500, Marlborough, MA 01752, USA
Phone: +1-508-229-2020 Fax: +1-508-229-2121

KUBOTEK Europe srl

c/o Centro Logistico e Commerciale "Il Maestrale"
S.S. Pasublo, 10H, 36030 Costabissara (VI) ITALIA
Phone: +39-0444-585556 Fax: +39-0444-909119