

Re: Currently–Available Highest–Quality Linear PCM Video?

Source: <http://sci.tech–archive.net/Archive/sci.electronics.basics/2006–10/msg00931.html>

- *From:* "Radium" <glucegen1@xxxxxxxxxx>
 - *Date:* 18 Oct 2006 16:45:34 –0700
-

Bob Myers wrote:

"Radium" <glucegen1@xxxxxxxxxx> wrote in message
news:1161195158.574261.9580@xx

Bob Myers wrote:

You still don't seem to have any clue at all how "linear
PCM"
plays into all this...

I asked a question about linear PCM video 3 years ago. Here was my
response:

<http://groups.google.com/group/rec.video.satellite.dbs/msg/ea53276bc07855cd?hl=en>

Quotes from the above link:

"There is uncompressed PCM for video. The data rate is 270 Mbit/sec for

Note that the sentence "there is uncompressed PCM for video"
does not equate to "all digital video is PCM" or "PCM is required
for high–quality digital video."

I am well aware of that. Most digital video uses — MPEG–layer or some
other form of compression — not linear PCM. I don't know why?

PCM is simply one possible encoding
and transmission scheme, nothing more – and it is not the one used
in most digital video systems.

Re: Currently–Available Highest–Quality Linear PCM Video?

Why isn't linear–PCM used in video?

My question is what are the sample rate and color–resolution for the "Hi def" mentioned above with 1920 X 1080? And why is it interlaced? I want it progressive.

The sample rate can be determined from the pixel format (in this case, 1920 x 1080), the frame or field rate (60 Hz, typically, in the U.S.), and the amount of overhead time required for horizontal and vertical blanking. If you didn't need ANY blanking time, then the minimum sample rate is simply

1920 pixels/line x 1080 lines/frame x 30 frames/sec (it's interlaced)

Note that if you work the units out as well, it comes out in terms of pixels/second, exactly as it should.

Are you sure that isn't that the bit–rate? There is a world of difference between bit–rate and sample–rate.

For example, CD audio has a sample rate of 44,100 hz but a bit rate of 1,411,200 bps.

Linear–PCM is uncompressed digital info. If linear–pcm is used for audio [e.g. WAV files], then why not for video??

It can be; it simply doesn't HAVE to be, so there is no need to be dragging that question in at this point.

Linear–PCM doesn't have to be used but what harm is caused by using it?

Here is my insane type of premium video:

Re: Currently–Available Highest–Quality Linear PCM Video?

You've got that right – it's insane. Here's why:

Linear PCM video [with at least 320–bit color resolution,

OK, now I see what you mean by "color resolution" – you are talking about what's more commonly referred to as "color depth" or "dynamic range." 320 bits/pixel (presumably, something over 100 bits/color) is absurd; there is no display device that can provide this range, nor can the human eye deal with it. Somewhere around 10–12 bits/color, properly encoded, is about the maximum required, and most systems reduce the effective data rate by limiting the spatial resolution in the chroma channel (i.e., you don't really get as many bits PER PIXEL for color as you think you need).

109,200x100,800 pixel progressive [non–interlaced]
picture resolution,

Again, absurd numbers. The eye cannot resolve detail beyond a certain point (approx. 60 black/white cycles per visual degree is a good rule of thumb for the maximum), and anything above that is a waste. But this means that you can't just concern yourself with the number of pixels in the image – the image size as displayed to the viewer and the expected viewing distance also come into play.

with a sample rate of at least 1,350 THz sampling rate

Sample rate is never a system requirement, except in terms of a maximum permissible sample rate to fit within system bandwidth constraints. The sample rate **REQUIRED** for a given pixel format and frame rate is driven by those parameters, and then you just see whether or not it's going to fit in the available bandwidth.

As usual, it seems you haven't learned anything at all about the field you're trolling in before making up absurdities.

Bob M.