



## Using the SMPTE 299M for Embedding and De-embedding of AES digital audio data

### Problem

We have found that several manufacturers of audio and video equipment do not comply to the SMPTE 299M requirements for the embedding and de-embedding of the AES digital audio data packets.

*The implementation of DK-Technologies embedded and de-embedded circuitry found in our complete product range comply to the SMPTE 299 M standards and will exhibit erroneous encoded AES audio signals. The error result in distorted audio or clicks due to corrupted audio data stream.*

### Requirement in the SMPTE 299M

The range of formats and frame rates in HD encoded video signals is wide together with a flexible use of the embedded AES audio data packets. The sampling point of each of audio data packets is controlled by a CLK (audio clock phase data) field described on page 4 to 9 in the SMPTE 299M standard.

### Verification

Capture and analyse the Audio Clock Phase Data ck(0-12) as described in Table 2 and verify that the sampling points correctly located in respect to the HANC. Correctly calculated ck values and its use is shown as an example on Figure 3 of the SMPTE 299M page 7.

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