Software Component Available for Licensing

Video Flash Pattern Analysis

FLICKER CHECK

Lighten your video production workload with the automatic detection of Flashing, Patterned, and Subliminal Images

Advantages

- Protecting audiences has become more important for broadcasters
- FLICKER CHECK helps to prevent Photosensitive Epilepsy in video streams
- Automatically detects suspected harmful effects in video

  Supports ITU guidelines (*1) and JBA (The Japan Commercial Broadcasters Association) guidelines (*2)

Automatic Detection of Harmful Scenes

Degrees of risk for video and audio are displayed in a timeline

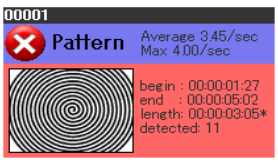
Clicking in the graph leads to the suspected harmful segment where the video can be viewed for verification

Guideline violations are categorized and shown with icons

You can easily recognize which violation is suspected and where

Flashing

Contrast Change



Patterned Image

Subliminal Image

Loudness (*3) Measurement adopted by U.S. CALM Act

*1 RECOMMENDATION ITU-R BT.1702 Guidance for the reduction of photosensitive epileptic seizures caused by television

*2 "Guideline for video effects of animation etc" (April 1, 2006 revised) is constituted jointly by NHK(Japan Broadcasting Corporation) and JBA. See detail of the guideline at http://j-ba.or.jp/.

*3 Recommendation ITU-R BS.1770-2 Algorithms to measure audio programme loudness and true-peak audio level and ARIB TR-B32 OPERATIONAL GUIDELINES FOR LOUDNESS OF DIGITAL TELEVISION PROGRAMS

Features

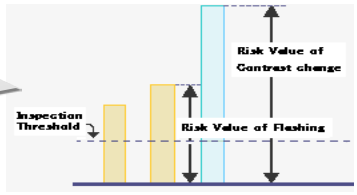
- Hitachi has been developing video processing solutions for broadcasters since 1995
- Harmful effects are automatically detected and easily verified

Risk Graph and Timeline

◆**Risk graph**

The magnitude of flashing, change of brightness, area, and frequency exceeding the thresholds are all visualized in the bar graph

Customizable detection thresholds:
Basis for problem segment highlighting



◆**Timeline**

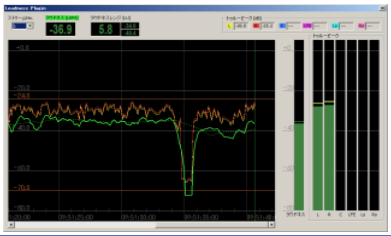
- Suspected scenes are displayed on a timeline for each pattern
- Detailed information is shown by clicking on the bar

Loudness*1 Measurement

◆(Option) Loudness and true peak measurement are supported
- Graph and level of loudness with true peak is displayed
- The loudness measurement includes momentary, short term and integrated

◆Other regulations for loudness detection can be supported such as the U.S. CALM Act (Commercial Advertisement Loudness Mitigation)

*1:ITU-R BS.1770-2, ARIB TR-B32



The screen shot is as of the development version. Screen images are subject to change in product version.

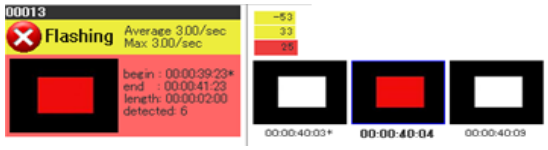
Simple User Interface

◆You just click “Start” and “Stop” for verification

Details for Suspected Scenes

◆**Flashing**

Screenshots of start of flash, change and end and values of brightness change, area and area of red are displayed



◆**Contrast Change**

Screenshots of the contrast change, values of brightness change and area of contrast change are displayed

◆**Patterned Image**

Screenshots of patterned image and degree of matching to ITU pattern

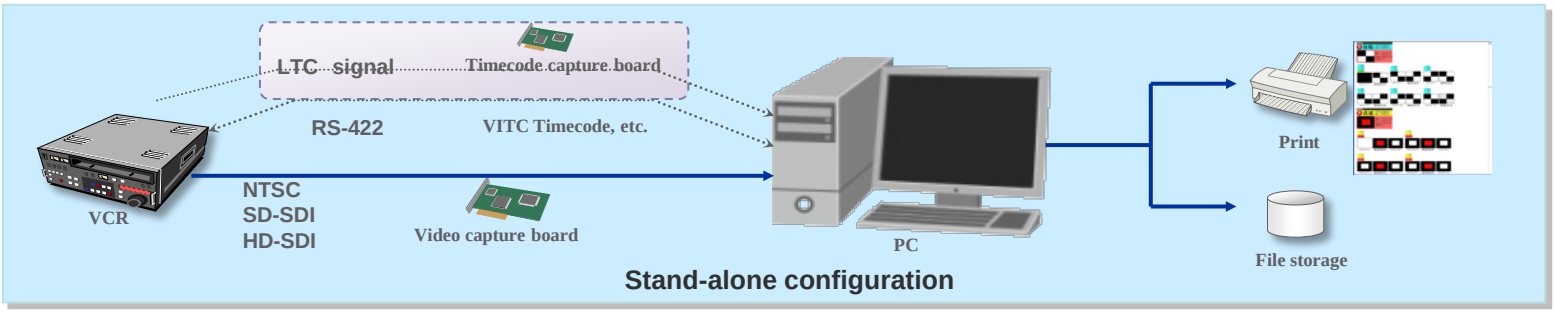
◆**Subliminal Image**

Screenshots from before and after the subliminal image and the time duration of the subliminal image are displayed

HD-SDI Input Support

◆HD-SDI direct input is supported (standard input formats are NTSC and HD/SD-SDI). Embedded TC SDI is also supported

*To input HD video, a PC with an HD capture board is required.



Patent in Japan: Patent # 3622527, 3685208, 3595871, 3543491, 4184402, etc. are pending

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