Changes to the test and validation routines.

For the first 50 pcs of LT428 a complete test report was filed for every instrument. This was a time consuming task, but was appropriate for the first runs.
It has given valuable data for statistics, which we can benefit from.

Now, we are proposing a changed procedure.

REPORTS

In the future the full report of LT428 will be only be filed in the following cases:

1. From every batch of LT428 to Leader a number of samples are taken out for thorough test and evaluation (5-10% of units)
2. For every new batch of assembled main boards, we make a full test of at least 2 boards
3. When a new test engineer is assigned to t he job, a full test is made on 2 units.

The report performed due to the above conditions will follow previous report form.

Carefully examination of the test system and the functionality of the LT428 give reasons to skip the report for every unit.

ENHANCED TEST ROUTINES

To safeguard the product quality the following action will be taken:
- The automatic testing will be expanded to cover more parameters
- Semi-automatic testing will be improved.

The test reports have up till now been divided in following main paragraphs:

GENLOCK
TIMIMG FACILITIES and RESOLUTION
ANALOG BLACK BURST
SDI OUT
ANALOG VIDEO OUT
AES/EBU GENERATOR
ANALOG AUDIO GENERATOR.

Each item covered below:

Genlock:
Most genlock parameters already checked in test system. Until now the test report included manual ckecking of Pull-in range. Experience has shown that checking to VCO's DC-voltage is sufficient to reveal PLL problems. Recorded data shows more than adequate pull-in range when the VCO control voltage is within limits.

Added to automatic testing:
- 27MHz VCO control voltage
- Genlock checking also now with 10MHz input.

Timimg Facilities And Resolution
No changes.

Analog Black Burst
Sync amplitude:
already adjusted automatically without operator intervention.
Burst amplitude:
Calibrated in an A-B method by operator. Recorded data from the last 45 pcs. LT428 show very consistent data.
SC-H phase:
Has also shown to be very consistent, but the original test method of observing the SC-H phase on a vectorscope gave some more fluctuations. Therefore the final adjustment was done by use of a VM700.
H-jitter:
Has been measured with the VM700. Recorded data have more reflected the ability of the VM700 to measure jitter and not the real inherent jitter in the LT428.
A more stringent way to check jitter of the PLL is measuring the SDI jitter performance. This is far the most sensitive measurement.

In the future, we continue to use the VM700 for final calibration of Burst and Sc-H phase, but without recording data.

SDI Out
Return loss:
Has been checked up to now due the hardware modification on PCB. These changes have now been implemented on the new PCB eliminating this check.
Jitter.
Already now checked up automatically to a limit of 0.15 UI. (In internal genlock only).
Test to be expanded to check on other gen-lock conditions: PAL and 10MHz

Analog Video Out
Return loss:
Has been checked up to now due the hardware modification on PCB. These changes have now been implemented on the new PCB eliminating this check.

Sync, Burst and SC-H phase:
To be handled similar to the Black Burst output.

Luminance and Chrominance accuracy:
This output is generated by a Multi-media chip aimed for more general uses than test signal generators.
Test was introduced to monitor the quality of the colourbar, and recorded data has been very consistent. The tolerances are defined inherently in the chip. No further checking needed.
Jitter:
The same comments as for the Black Bursts. The SDI output is far better in evaluation of the performance of the master oscillator.

Freq. Response:
This parameter was checked due to hardware modifications. Now these changes have been implemented in the board, and thus superfluous.

Aes/Ebu Generator
Levels:
Were checked in the reports, but has always been a part of the automatic test routine.

Analog Audio Generator.

Amplitudes:

Have been recorded in the reports for frequencies of 500Hz, 1Khz and 8 kHz.
The automatic test until now only checked at 1 kHz. The automatic routines to be expanded.
Also checking of levels to be included in the implemented.

END OF DOCUMENT