Production, Test and Calibration of PT8611 Tri-level module

August 1st 2005 – Thomas Holm Hansen

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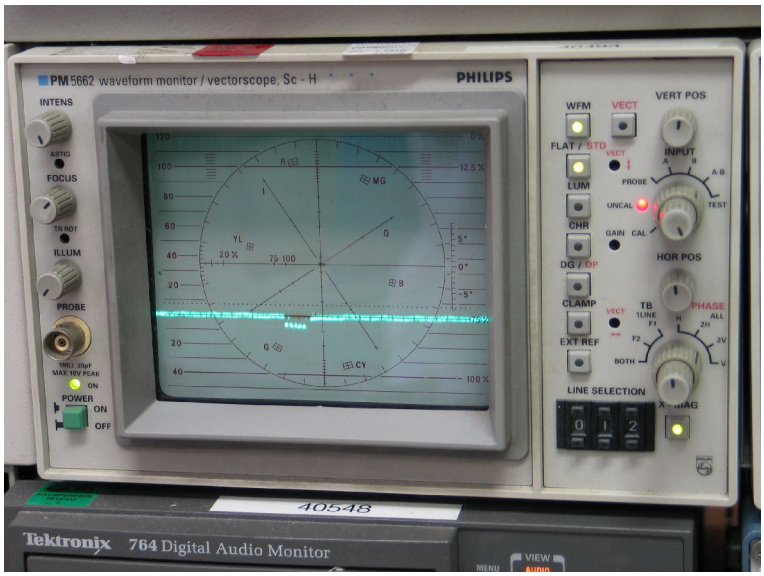
1. Mount PT8611 in 5300 mainframe
Mount the PT8611 module in a PT5300 mainframe while the power is turned off. The mainframe must have a calibrated Black Burst output which is used as reference for the tri-level amplitude calibration.

2. Program the microprocessor

3. Program the FPGA Prom

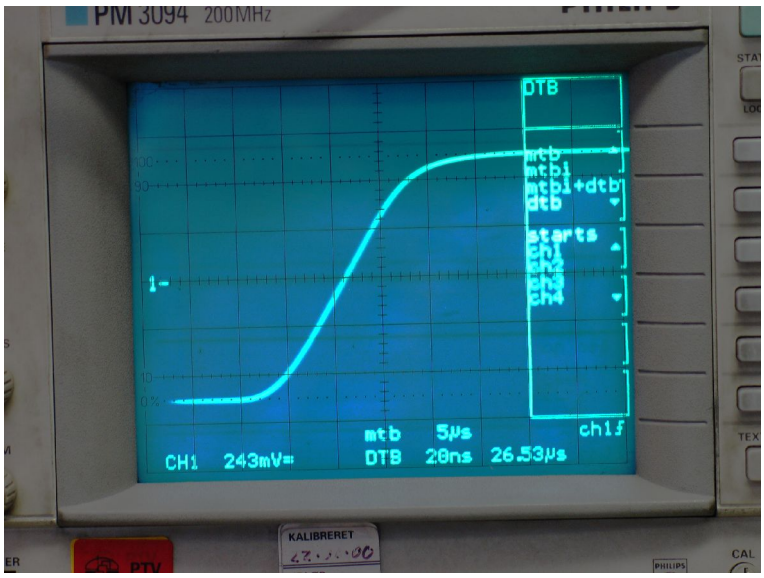
4. Reset the 5300 mainframe
Reset the mainframe by pressing and holding the left and right keys while powering on.

5. Adjust the output signal level of the tri-level signals
Via the 5300 front panel, change the system on all the tri-level channels to 1280x720/50P. Connect the calibrated Black Burst output from the mainframe to Channel A on the PM5662 Waveform monitor. Connect the tri-level channel to adjust to Channel B. The PM5662 is configured as show on the picture. Adjust the potentiometer on the tri-level module to one of the ends and turn the HOR POS knob on the PM5662 to bring the frame pulses on the screen. Adjust the potentiometer until the waveform is as close to zero as possible. Repeat for all channels.



6. Inspect the -300mV to 300mV transition

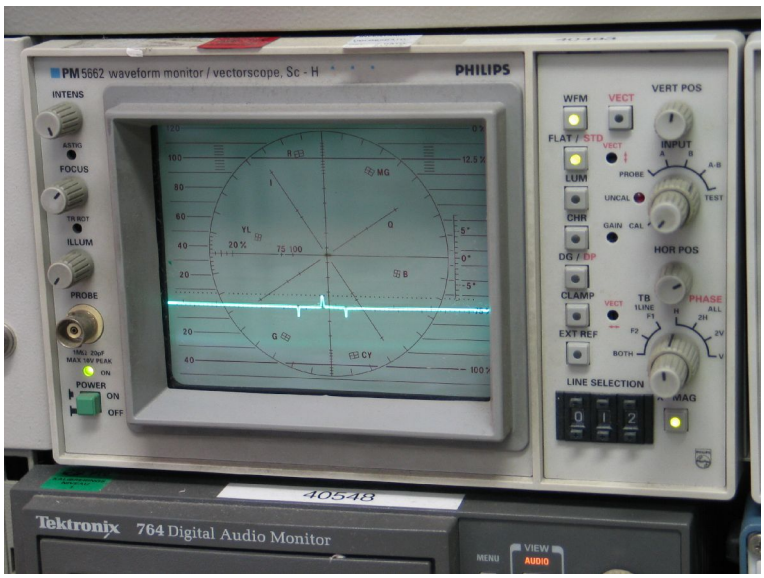
Connect the tri-level output to the oscilloscope. Configure the scope as shown on the picture. Visually inspect that the transition is smooth and linear. Verify that the rise time (10% to 90%) is 54 ± 6ns. Repeat for all channels.



7. Compare Channel 1 against Channel 2-4

Connect Channel 1 on the tri-level module to Channel A on the PM5662 and connect Channels 2-4 to Channel B. Configure the PM5662 as on the picture. Turn the HOR POS knob to bring the 3 pulses on the screen. Verify that the amplitude of the pulses are below 70mV (10% mark).

Note: Due to the delay matching, it is important that the two BNC cables are of similar length.



9. Control level error detector

Connect the tri-level outputs to the variable load box. For each channel check that no error is reported for 56,2Ω and that error is reported for 30,1Ω.