TIDA-00352 SDI Video Aggregation Test Report

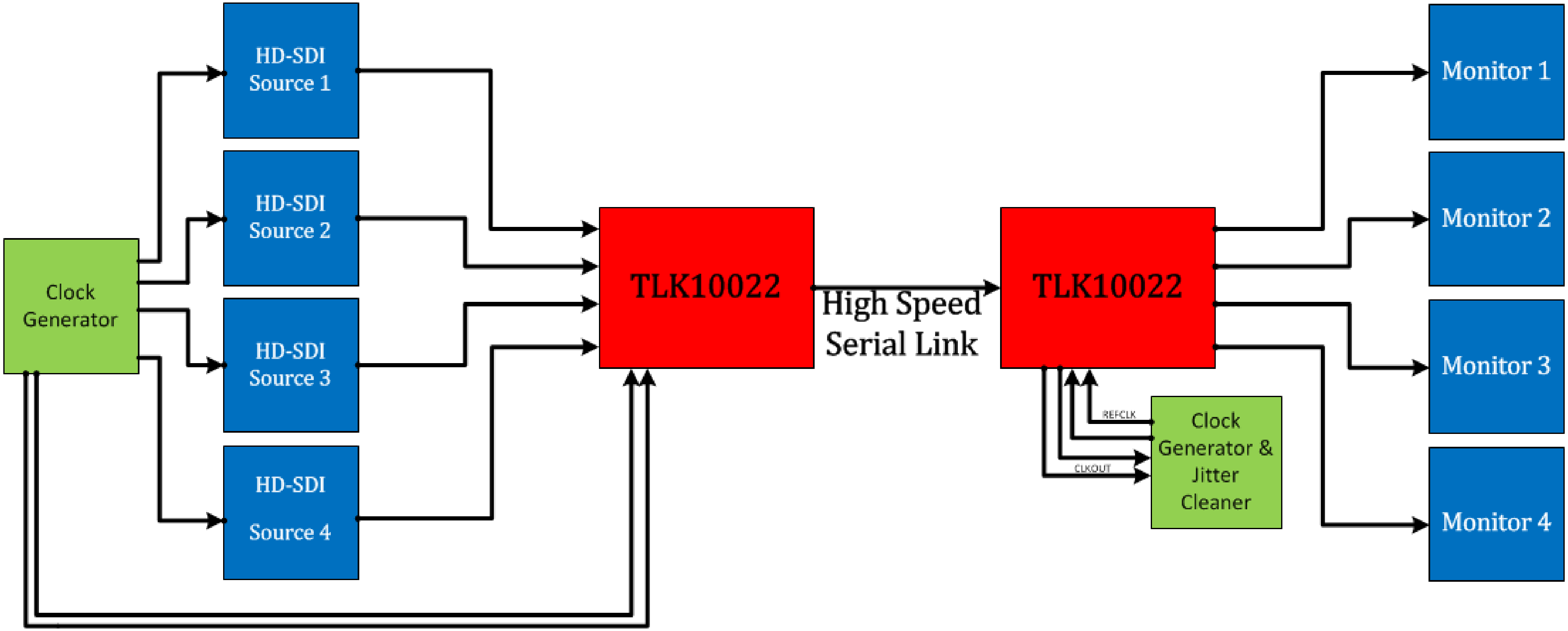
Communication Interface – CIF

December 2014

HD-SDI Test Setup

- The TLK10022 is used to aggregate four synchronous HD-SDI sources together into one high speed serial link.
- The high speed serial link is then de-aggregated by an additional TLK10022 and the original HD-SDI source signals are displayed via four monitors.
- The HD-SDI data sources used during testing put out a resolution of 720p and have an individual line rate of 1.485Gbps.
- The data is a raw un-encoded format and will make up the four low speed inputs and outputs of the two TLK10022s.
- The high speed differential link from the aggregating TLK10022 puts out the combined HD-SDI sources at a rate of 6Gbps which is transmitted via an optical fiber to the de-aggregating TLK10022.

HD-SDI Aggregation Block Diagram



Clock Generator

HD-SDI Source 1

HD-SDI Source 2

HD-SDI Source 3

HD-SDI Source 4

TLK10022

High Speed Serial Link

TLK10022

REFCLK

CLKOUT

Clock Generator & Jitter Cleaner

Monitor 1

Monitor 2

Monitor 3

Monitor 4

HD-SDI Aggregation Test Results

HD-SDI Sources

HD-SDI Data After De-Aggregation

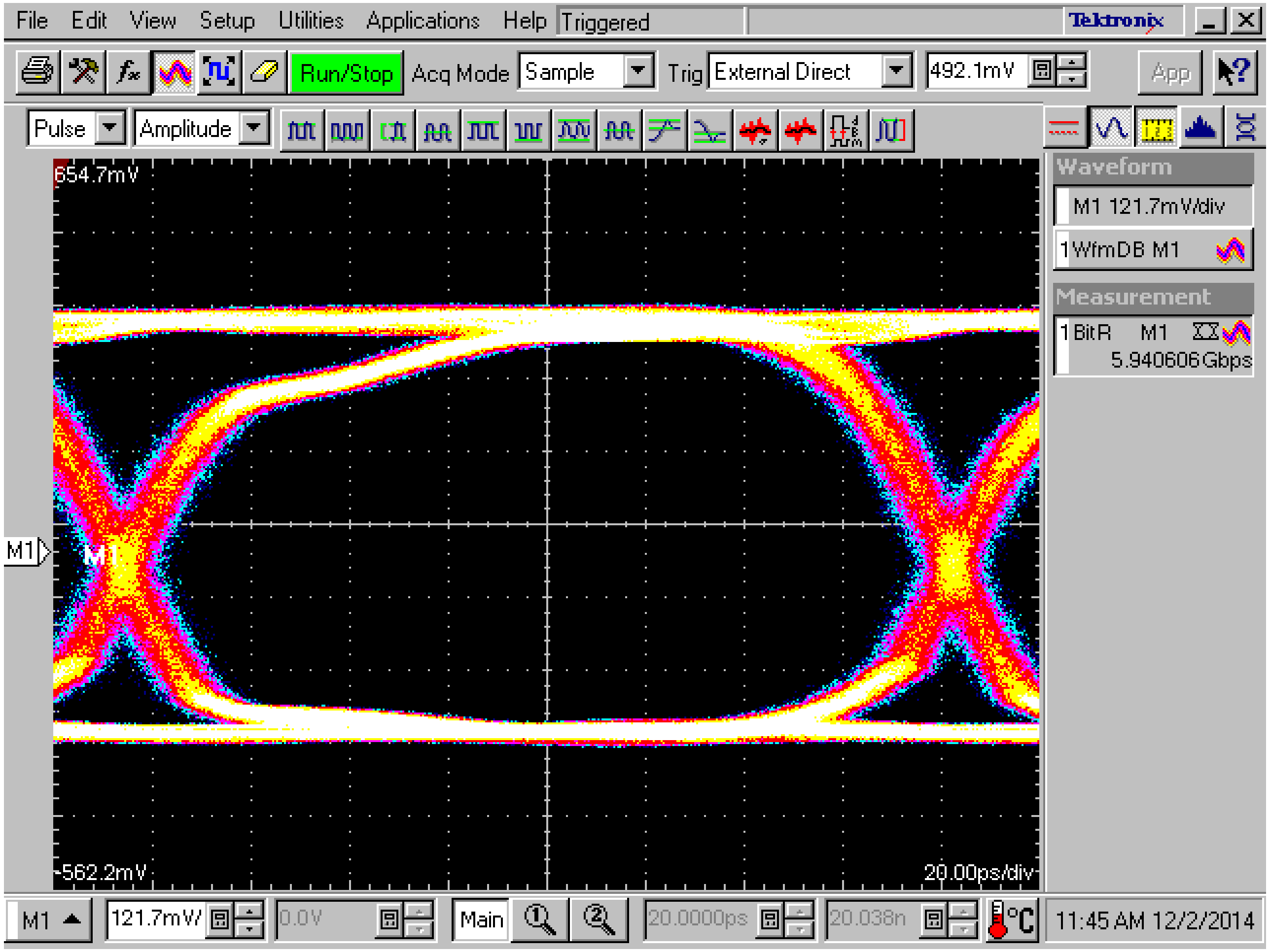
6Gbps HS Optical Link

Transmitter Performance Report

Test Setup

- TLK10022 is configured to aggregate 4 lanes of HD-SDI data:
  - Low Speed Data Rate: 1.485 Gbps
  - High Speed Data Rate: 5.94 Gbps
  - Output Swing: 1050mV
  - Data Type: Aggregated HD-SDI data scrambled together by the TLK10022

High Speed Transmitter Output Eye Diagram @ 25°C



Acq Mode Sample

Trig External Direct 492.1mV

M1 121.7mV/div

1 WfmDB M1

1 BitR M1 5.940606 Gbps

654.7mV

-562.2mV

20.00ps/div

M1 121.7mV/ 0.0V

20.0000ps 20.038n

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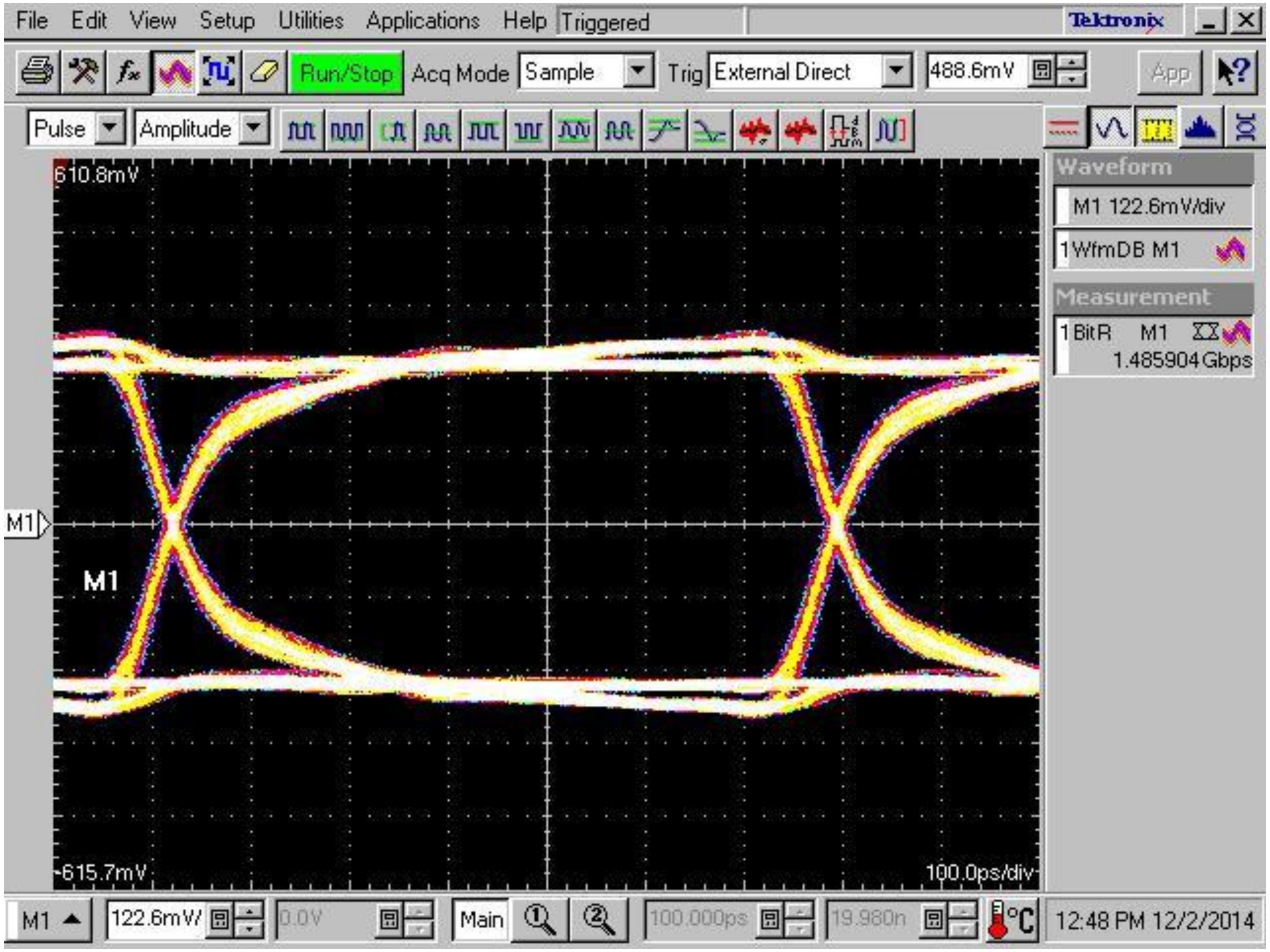
Low Speed Transmitter Output Eye Diagram @ 25°C



Acq Mode Sample

Trig External Direct

488.6mV

610.8mV

-615.7mV

100.0ps/div

Waveform

M1 122.6mV/div

1 WfmDB M1

Measurement

1 BitR M1 1.485904 Gbps

M1 122.6mV/

0.0V

100.000ps

19.980n

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For Further Information Contact:

Texas Instruments

CIF – Communication Interface

http://e2e.ti.com/support/interface/high_speed_interface/default.aspx

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