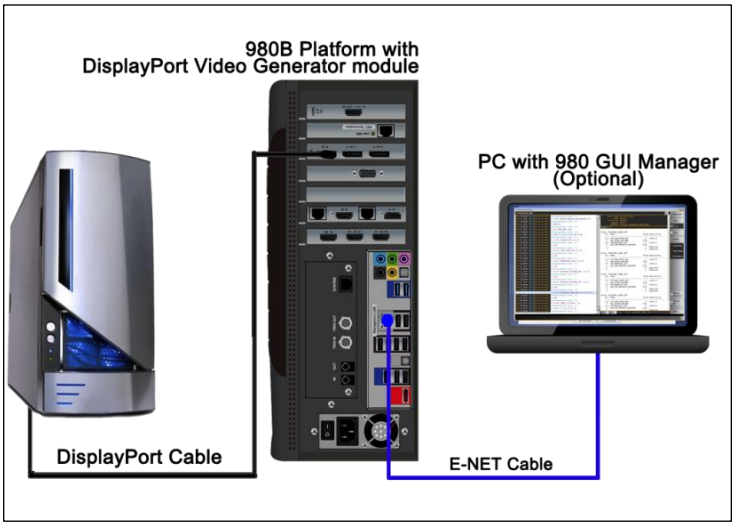
quantumdata

980 DP 1.2 VIDEO GENERATOR / ANALYZER MODULE
DP 1.2 RX ANALYZER OPTIONS



OVERVIEW

The 980 DisplayPort 1.2 Video Generator / Analyzer module supports video generation for functional testing of a DP 1.2 display devices and analysis testing for DP 1.2 source devices. The module's Rx port supports up to HBR2 data rates including 1.63, 2.70 & 5.40 Gbps on 1, 2 & 4 lanes.

The DP 1.2 module's optional Rx analyzer port emulates a DisplayPort 1.2 display device including EDID and DPCD emulation, Rx Link Training function and MST Rx function.

There are two options for the analysis function for testing DP 1.2 source devices:

1) Basic Analyzer – Provides real time viewing of video and metadata for functional testing.
2) Protocol Analyzer – Provides capture and store of the main link including main stream attributes and secondary data. The Basic Analyzer must be purchased for this Protocol Analyzer option to be installed.

BASIC ANALYZER OPTION

The module's basic Rx analyzer port enables you to view the incoming video, lanes and lane rate, timing colorimetry and various other metadata in real time at a glance. This feature provides a basic confidence test to verify that the incoming video is essentially correct. The Basic Analyzer also enables you to emulate any EDID on the Rx port to test a source devices handling of various EDIDs. You can also configure DPCD registers for emulating on the DP Rx port.

PROTOCOL ANALYZER

The module's Protocol Analyzer option enables you to verify the capture the main link attributes and diagnose interoperability issues related to them. The Protocol Analyzer captures and stores main link data and provides visibility into main stream attributes, secondary data elements, K-Characters and protocol errors. The Protocol Analyzer presents these elements on a graphical timeline and in a table. You can select any transaction in the table and view its details. The capture utility enables you to capture specific MST streams from the source.

AUXILIARY CHANNEL ANALYZER

The module's Rx analyzer port supports the Quantum Data Auxiliary Channel Analyzer (ACA) utility supports monitoring of hot plug events, EDID exchanges, HDCP authentication, DPCD register reads, link training transactions and MST negotiations between a DP source and the DP module's Rx port. The ACA logs these events and assigns precise timestamps to them. Once captured you can view the details of each transaction. The ACA enables you to pinpoint various failures on the DisplayPort link. These ACA can be saved and disseminated for further analysis by colleagues and other subject matter experts.

980 GUI MANAGER

The DP 1.2 Video Generator / Analyzer module can be controlled either through the PC-based 980 GUI Manager or through the embedded 980 GUI Manager running on the 980 platform itself. The 980's built-in color touch screen provides a graphical user interface (GUI) to control the module and view its status.

SPECIFICATIONS

The following is a list of key specifications for the 980 DP 1.2 Video Generator module - Analyzer features.

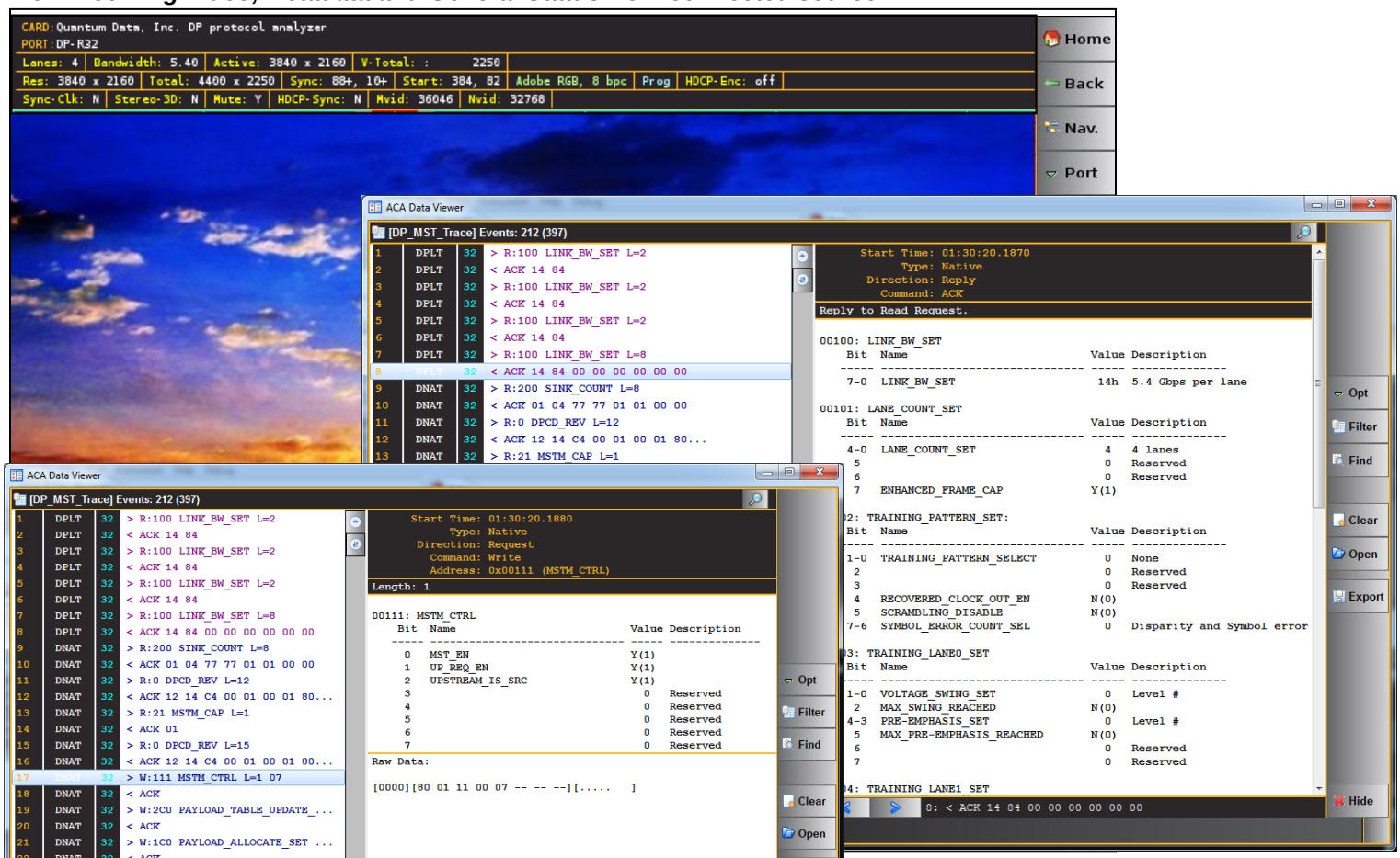
DP 1.2 INPUT - ITEM	SPECIFICATION
Version	DisplayPort 1.2
HDCP	Version 1.3
DP Rx Connector	(1) DP Standard
Data Rates	1.62, 2.70, 5.40 Gbps Lane rates
Lanes	1, 2, 4
Color Depths	8, 10, 12, 16 bits/component
Video Encoding	RGB, YCbCr
Video Sampling Modes	4:4:4, 4:2:2

980 DP 2.0 Video Generator / Analyzer module (Analyzer)
Datasheet – Rev A2 – 5/12/2015

DP 1.2 BASIC ANALYZER OPTION

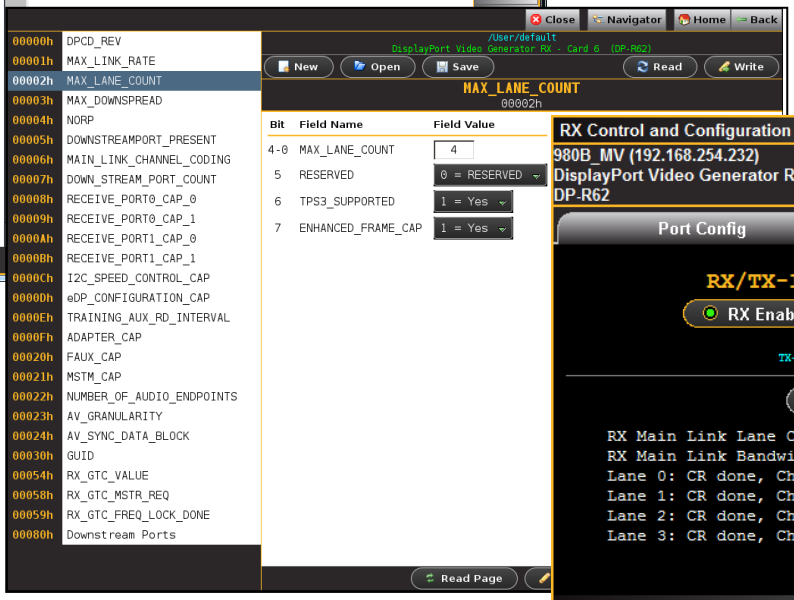
The DP 1.2 Video Generator/Analyzer module's Basic Analyzer option supports basic analysis functions for testing DP 1.2 source devices. The following screen examples depict some of the analysis functions supported.

View Incoming Video, Metadata and General Status from connected source

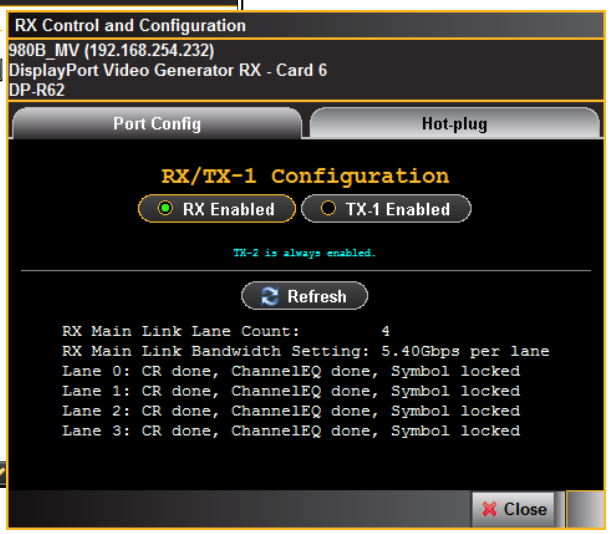


ACA Showing Link Training Transactions

ACA Showing MST Side Band Negotiations



DPCD Editor

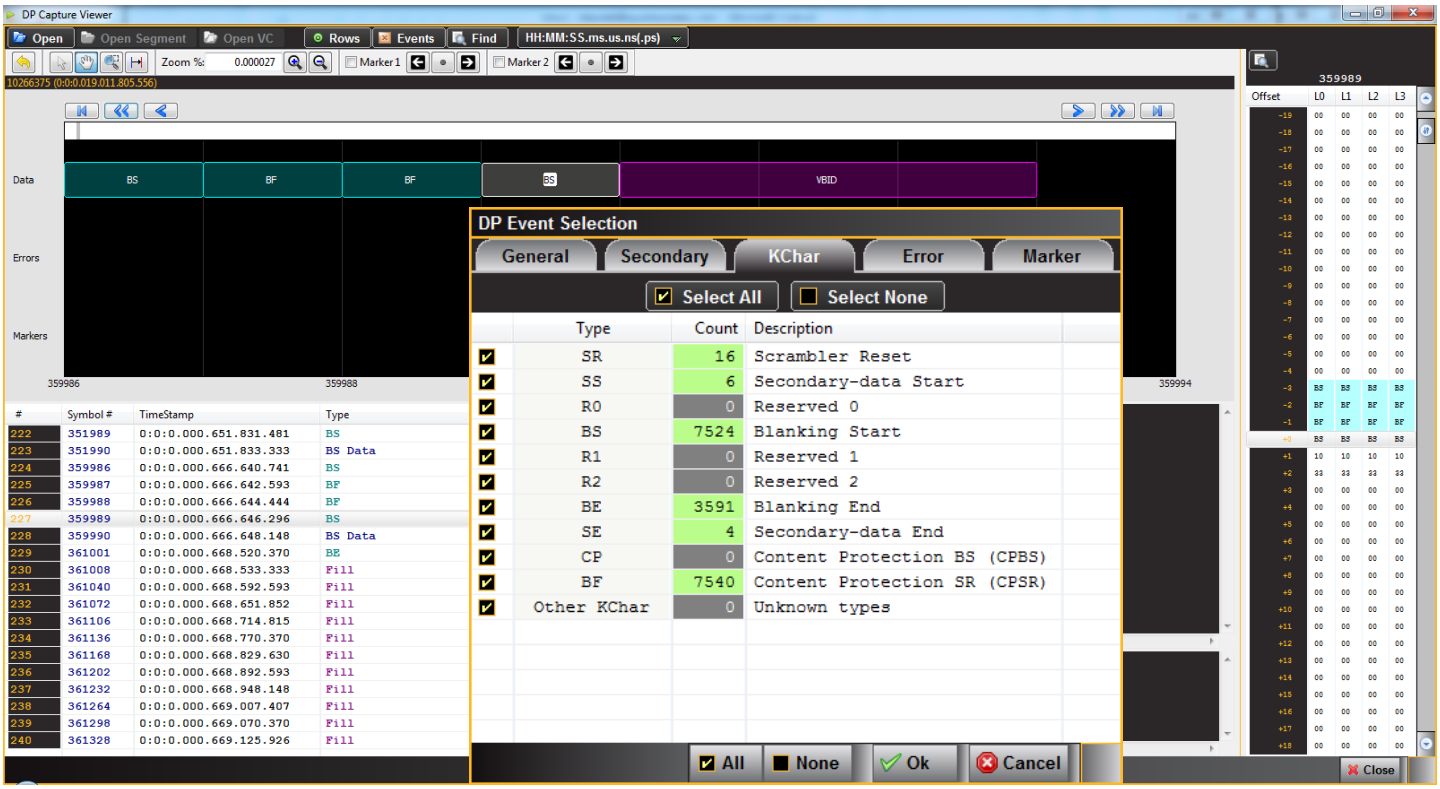


Analyzer Control and Configuration

980 DISPLAYPORT 1.2 VIDEO ANALYZER – MAIN LINK CAPTURE ANALYSIS OPTION

The DP 1.2 Video Generator/Analyzer Main Link Capture Analyzer option includes the Basic Analyzer option plus the ability to capture and store protocol data. The following screen examples depict some of these functions.

Capture Viewer depicting captured packets in graphic timeline and table – Event Selection Dialog to filter view



Capture Viewer depicting captured packets in graphic timeline and table – Event Search Dialog to locate data types