Overview

- Allion DisplayPort Services
- Advanced DisplayPort Testing
- About Allion Labs, Inc.
Allion DisplayPort Services
Allion has been an DP ATC since 2009

Latest CTS version:
DP 1.4 early Certification program

- Link Training Process, Aux Eye@HBR3, AUX Slew rate, HBR3 PHY,HBR3 IOP

Future plan:
The official DP 1.4 Certification program in Q3, 2018
Figure 3-12: Link Training LANEx_CR_DONE Sequence
Link Training LANEx_EQ.Done Sequence

Figure 3-13: Link Training LANEx_CHANNEL_EQ_DONE Sequence

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DisplayPort Certification Services

- **Sink Certification Test (Monitors)**
  - The world’s **first** DP 1.4 8K Monitor Certified by Allion

- **Source Certification Test (Systems\Laptops)**
  - 2017 & 2018 DP 1.4 **Reference Design Certified** by Allion
DisplayPort Certification Services

• **Cable Certification Test**
  - The world’s **first** DP 8K (DP1.4) Cable Certified by Allion

• **DP over USB-C Certification Test**
  (All USB-C devices that support DP technology)
  - The world’s **first** Bi-direction C to DP Cable Certified by Allion
  - The world’s **first** DP alt mode USB-C cell phone Certified by Allion
  - The world’s **first** DP 1.4 USB-C dock Certified by Allion
DP Certification Test Update

- As of April 1st, HDCP 2.2 testing became part of DP compliance test program
- HDCP 1.4 is not part of DP compliance test program

- HBR Reference EQ vs Enhanced HBR CTLE EQ
  - ISI =160mUI, <=Set 25% to achieve ,<=Set 65% to achieve
  - Impact the existing Rx IC

New Logo for DP 1.4 Cable

- 8K slogan already surrounds end-user
- Help end-user to buy correct cables for home or office
● **Compliance Test Program**
  - Launched in the end of 2017
  - Allion has been an ATC for DisplayHDR since 2017
  - Focus on panel of HDR system performance, including All-in-One, laptops, and desktop monitors

● **LOGO**

![Logo 400](image)

![Logo 600](image)

![Logo 1000](image)
Advanced DisplayPort Testing
Beyond DP 1.4 CTS Testing
HDR Protocol Converter

HDR Capable
USB-C to HDMI / DVI Adapter

亮度無法達到應有的流明度

OK  NG

色彩偏差 產生色差

OK  NG
- **Poor luminance performance**
  - With the poor HDR-Capable USB-C protocol converter, the monitor cannot reach to its best luminance

The best luminance

= 600 nits
The monitor’s best Gamut performance (red triangle) can't be reached with the poor HDR-Capable USB-C protocol converter.
Advanced Testing on DP Source

- **HDR function**
  - Enabling process check
  - Packet type check
  - Time interval of HDR packet check

- **15 Meters transmission signal**
  - Perform properly at RBR
  - Data rate confirmation

- **DPCD version interoperability**
  - Flicking, no display, etc
Advanced Testing on DP Sink

- HDR function
  - Panel Performance Check
    - Color Gamut, Rise time, Maximum nits
  - DPCD Related Register Check

- 15 Meters transmission signal check
  - Perform properly at RBR

- Intra-skew tolerance test
  - 30ps for HBR3
  - 50ps for HBR2
Allion DP Advanced Test Program can help your products get both VESA DP logo & product quality at the same time.
About Allion Labs, Inc.
Our global facilities provide localized support to technology suppliers and distributors.
As an authority in standards compliance and product validation, Allion provides top-of-the-line test services and consulting engineering solutions.

**Capacity Overview**

### Compliance Test Services
- Pre-Test
- Logo Certification
- Interoperability Test
- Debugging Support

### Product Validation Services
- Scenario Simulation
- User Experience Research
- Competitive Analysis
- Interoperability Test
- Quality Requirement Specification

### Consultation Services
- Risk Evaluation
- Issue Identification
- Root Cause Analysis
- Quality Improvement
- Test Tool & Fixture Development

### Quality & Efficiency
- Project Manager
- Lead Engineer
- Test Engineer
- Technical Specialists

### Marketing Services
- First-Hand Information
- Extra Media Exposure
- Effective Networking & Advertising

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Authorized Third-Party Test Labs of 30+ Standard Alliances

Testing
- Pre-Test
- Standard Compliance
- Issue Identification

Consulting
- Root Cause Analysis
- Debugging Support
- Logo Usage Right

Schedule
- 24hr Shifts
- Schedule Management
- Quick Turn Around Time
Allion can structure **customized conditions** in **various user scenarios**, helping fully validate the functionality, performance, and interoperability of your IoT products.
Allion is the premier resources for all of your third party testing needs

Allion’s philosophy provides “reliable, speedy, and cost-effective” services, which can assist your brand equity