Compute Express Link™ (CXL™)

Engineering Change Notice to the Specification 2.0

September 2021

Compliance tests for Viral Error Injection

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CXL ENGINEERING CHANGE NOTICE

TITLE:	Compliance tests for Viral Error Injection
DATE:	Introduced date (02/18/2021) Updated date (05/27/2021)
AFFECTED DOCUMENT:	CXL Specifications Rev. 2.0
SPONSOR:	Kamlesh Hujwant - Compliance Workgroup

Part I

1. **Summary of Functional Changes**
   Viral error indication is an additional error containment mechanism. The detector of the error is responsible for reporting the error through AER and generating a Viral indication. Any entity that is capable of reporting Uncorrected_Fatal errors must also be capable of generating a Viral indication. This ECN defines additional compliance tests to address interoperability verification for Viral error reporting.

2. **Benefits as a Result of the Changes**
   Interoperability for Viral Error reporting.

3. **Assessment of the Impact**
   2 new tests added to compliance section.

4. **Analysis of the Hardware Implications**
   N/A.

5. **Analysis of the Software Implications**
   N/A.

6. **Analysis of the Compliance and Test Implications**
   This ECN affects compliance Tests. New tests added to compliance specifications.

Part II

Detailed Description of the change

14.9.10 Device to Host Cache Viral Injection

Required Capabilities:

- Device must support Compliance Mode DOE
- Device must support Algorithm 1a

Test Steps:

1. Host software will setup Device and Host for Algorithm 1a: Multiple Write Streaming.

2. Host software decides test run time and runs test for that period.
3. While test is running, software will perform the following steps to Device registers
   Write Compliance Mode DOE Request Register with
   - Request Code (offset 08h) = 0Ch, Inject Viral
   - Protocol (offset 0Ch):1 cxl.cache
4. Host software waits for Poll Compliance Mode DOE Response Viral Injection Response until following is returned from Device
   - Request Code (offset 08h) = 0Ch
   - Status (offset 0Bh) = 0

Pass Criteria
- Host logs AER -Fatal Error

Fail Criteria
- Host does not log AER -Fatal Error

14.9.11 Device to Host Mem Viral Injection

Required Capabilities:
- Device must support Compliance Mode DOE
- Device must support Algorithm 1a

Test Steps:
1. Host software will setup Device and Host for Algorithm 1a: Multiple Write Streaming.
2. Host software decides test run time and runs test for that period.
3. While test is running, software will perform the following steps to Device registers
   Write Compliance Mode DOE Request Register with
   - Request Code (offset 08h) = 0Ch, Inject Viral
   - Protocol (offset 0Ch):2 cxl.mem
4. Host software waits for Poll Compliance Mode DOE Response Viral Injection Response until following is returned from Device
   - Request Code (offset 08h) = 0Ch
   - Status (offset 0Bh) = 0

Pass Criteria
- Host logs AER -Fatal Error

Fail Criteria
- Host does not log AER -Fatal Error