DCI Digital Cinema Initiatives, LLC

REVISION TO DCI *DIGITAL CINEMA SYSTEM SPECIFICATION COMPLIANCE TEST PLAN, VERSION 1.2*

CTP Revision items continue to be evaluated and will be posted after agreement by the DCI membership that the specific CTP Revision needs to modify the DCI *Digital Cinema System Specification, Compliance Test Plan, Version 1.2.* Suggested CTP Revision issues may be emailed to dci.info@dcimovies.com. Please include "CTP Revision" in the subject line.

DCI DCSS CTP V1.2 REVISION — 13 MARCH 2019

Revision Date	Revision Stage Type	CTP v1.2 Page No.	Sections Affected	Problem Description	Revision Description
March 13, 2019	2	284	7.2.1	Type 2 SPB physical requirements need to be expanded to include direct view display requirements. Additional changes: Item 1 now verifies hard, opaque SPB perimeter. Item 2 now requires locks.	Retitle and replace Section 7.2.1 in its entirety as indicated below.

7.2.1. Projector and Direct View Display Physical Protection

Objectives

- Verify that the projector's or direct view display's companion SPB (LDB or MB) and its plaintext image interfaces are physically inside of, or otherwise mechanically connected to, the type 2 SPB.
- Verify that SPB type 2 protection requirements are provided by the Projector or Direct View SPB.

Procedure for Projectors

1. By physical examination and using documentation provided by the manufacturer, determine the physical perimeter that provides the type 2 SPB protection for the Projector. Verify that the type 2 SPB provides a hard, opaque physical security perimeter that surrounds the electronics and prevents access to internal circuitry. Failure of this verification is cause to fail this test.

Procedures for Projectors and Direct View Displays

By physical examination and using documentation provided by the manufacturer:

2. Locate, and for each of any removable access covers and/or doors of the type 2 SPB intended for Security Servicing (i.e., openings that enable access to Security-Sensitive Signals), record whether they are protected by pick resistant mechanical locks employing physical or logical keys.

   The absence of protection as required on any of these security access covers or doors is cause to fail this test.

3. Locate the companion SPB's and type 2 SPB's Security Sensitive Signals. Verify that:

   a. Security Sensitive Signals are not accessible via (i) any removable access covers and/or doors other than those located in Step 2, (ii) any ventilation holes or other openings; and

   b. Access to Security Sensitive Signals and circuits would cause permanent and easily visible damage.

Failure of either of these verifications is cause to fail this test.

4. Locate the Companion SPB (MB or LDB). Verify that the Companion SPB is entirely enclosed within, or mechanically connected to, the SPB type 2 enclosure.

   Failure to meet this requirement is cause to fail this test.

Procedures for Direct View Displays

5. By physical examination and using documentation provided by the manufacturer, verify that:

   a. The physical intrusion barrier presented by the light emitting front surface of the display's Cabinets or Modules is not penetrate-able without permanently destroying the proper operation of a Cabinet and/or Module penetrated, and leaving permanent and easily visible damage.

   b. Cabinets and/or Modules are mechanically interlocked to each other directly and/or via the supporting frame structure such that any separation that would enable access to internal signals causes permanent and easily visible damage.

   c. Access to light emitting (pixel generating) component electrical signals from the surface of the display screen is limited to individual component pins, and there is no access to signals that would constitute a portion of the picture image beyond the pixel by pixel level.

   Failure to meet any of these requirements is cause to fail this test.

Supporting Materials

Reference Document ID	Reference Document Section(s)
[DCI-DCSS-1-2-3]	9.4.2.2, 9.4.3.6.1, 9.5.2.2, 9.5.2.4, 9.5.2.4.1

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DCI DCSS CTP V1.2 REVISION — 13 MARCH 2019

Revision Date	Revision Stage Type	CTP v1.2 Page No.	Sections Affected	Problem Description	Revision Description
March 13, 2019	2	285	7.2.2	Type 2 SPB security requirements need to be expanded to include direct view displays. Tests 5-7 are new.	Retitle and replace this section in its entirety as indicated below.

7.2.2. Projector and Direct View Display Security Servicing

Objectives

- Verify that the projector or direct view display SPB implements a "security access opening" event signal to the companion SPB.
- Verify that playback terminates and/or is not permitted if the security access opening event is active, or a front removable module has been removed.

Procedures for Projectors and Direct View Displays

By physical examination and using documentation provided by the manufacturer, locate each of the type 2 SPB access door and/or panel openings intended for Security Servicing (i.e., openings that enable access to Security-Sensitive Signals). Execute the following steps 1-4 for each opening found, and record the results.

1. Play back the DCP *DCI 2K StEM*.
2. Open the SPB access door/panel and observe that playback terminates. If playback does not terminate, this is cause to fail this test.
3. Attempt to start playback with the door/panel open. If playback starts, this is cause to fail this test.
4. Close the opening and examine the logs from the SPB's companion SPB and verify that an "SPBOpen" event was created for each time a door/panel was opened, and an "SPBClose" event was created for each closure. If any log record is missing, this is cause to fail this test.

Additional Procedures for Direct View Displays

With the exception of test 6(c), the following tests may be verified by physical examination of the direct view display's type 2 SPB and using documentation provided by the manufacturer:

5. Noting the servicing method exception defined for test #6 below: Identify and document each distinct method that can be used for replacing (disassembly and reassembly, etc.) a Cabinet or Module. For each method that exposes Security-Sensitive Signals, verify that:

a. a security access opening event is triggered, and

b. playback is prevented while the security access opening event is active.

Failure of either of the above requirements is cause to fail this test. (It is allowed for one security access opening event to be triggered in the course of simultaneously replacing multiple Cabinets and/or Modules as part of a single servicing event.)

6. For Cabinets having **front removable Modules** designed for non-security servicing (i.e., designed for Module replacement without triggering a security access opening event), verify that the removal of any front-serviceable Module:

    a. exposes only those pixel signals accessible via the electrical connection(s) associated with the Module removed and does not otherwise expose Security-Sensitive Signals or compromise the SPB type 2 perimeter. Note that signaling multiplexing may have a multiplier effect that exposes signals associated with other Modules via the connection(s); this is allowed, but must be considered in step (c) below.

        Failure to meet this requirement is cause to fail this test.

    b. is detected and prevents playback of an encrypted composition.

        Failure to meet this requirement is cause to fail this test.

    c. Quantity over 15 (i.e., removal of more than 15 modules), or a quantity that exposes pixel signals constituting more than 5% of the display screen area, whichever is less within any 8 hour period, shall trigger a security access opening event.

        To execute this test:

        i. calculate the minimum number of Modules required to expose pixel signals constituting more than 5% of the screen area, considering the multiplier effect noted in (a). If the number is less than 16, record this number as MaxNumber, otherwise set MaxNumber to 16.

        ii. determine a Module removal selection sequence for removing a quantity of (MaxNumber +1) of Modules which are most likely to stress the display opening detection design.

        iii. Recording a test start time as “T0”, begin removing and replacing Modules in the sequence order determined in step (ii) until an access opening event has been triggered, or 16 Modules have been removed and replaced. Record this quantity.

        iv. Following the manufacturers requirements, clear (reset) the access opening event. After 7 hours and 55 minutes from T0 of step (iii), remove and replace the next Module in sequence. Verify that a security access opening event has been triggered.

        A quantity recorded in step (iii) of not less than MaxNumber is cause to fail this test. Failure of a security access opening event to trigger for step (iv) is cause to fail this test.

7. For each occurrence of a security access opening event of tests 4, 5 and 6, verify that:

    a. clearing (resetting) of the alarm event requires the use of a physical key or entry of a code,

    b. SPBOpen and SPBClose events are logged for each occurrence.

    Failure of either of the above requirements is cause to fail this test.

Supporting Materials

Reference Document ID	Reference Document Section(s)
[DCI-DCSS-1-2-3]	9.4.3.6.1, 9.5.2.4, 9.5.2.4.1

Test Material
DCI 2K StEM