
Product Data Sheet – CCSTESTSä – E84 ENHANCED PIO Unit

Type	Test Section
Part #	11106
Description	CCSTESTS E84 EPIO Test Section is used to verify requirements as defined by SEMI® in its Equipment Automation/Software volume for the E84 Enhanced Parallel IO standard. This test section contains a set of automated, as well as manual test cases, to create positive and negative test conditions. Requires CCSEnVOY™ for run-time.
User	<p><i>Device Manufacturer:</i> Primarily uses CCSTESTS E84 EPIO Test Section for source inspection acceptance tests or as part of delivery audit for E84 requirements.</p> <p><i>Equipment Supplier:</i> Used by the Test Engineer who is responsible for supplier internal system and QA testing of an equipment E84 communication interface. Development Engineers may also utilize this during development integration test phases.</p> <p><i>Systems Integrator:</i> A qualified Systems Integrator engineer would use this test section as part of the CCSPARTNERä program for performing CCSCERTIFYä services or during dry-run and integration tests.</p>
Test Groups	CCSTESTS E84 EPIO Test Section contains approximately 50 automated test cases. The following are the test groups for the <i>E84 EPIO Test Section</i> .
Group Outline	<ol style="list-style-type: none"> 1. TG-7223 Clear E84 EPIO signals 2. TG-7225 Load/Unload Sequences - Valid (E84) <ol style="list-style-type: none"> 2. 1. TG-7226 Load - Single Carrier - Valid (E84) 2. 2. TG-7237 Unload - Single Carrier - Valid (E84) 2. 3. TG-7237 Continuous Mode - Load/Unload Single Carrier - Valid (E84) 3. TG-7247 Load/Unload Sequences - Invalid (E84) <ol style="list-style-type: none"> 3. 1. TG-7248 Load - Single Carrier - Pod Placed Before Valid 3. 2. TG-7251 Load - Single Carrier - Pod Placed Before Ready 3. 3. TG-7257 Unload - Single Carrier - Pod Removed Before Ready
Licensing	End-User License Agreement (EULA) required.

**Full
Outline**

1. TG-7223 Clear E84 EPIO signals
 1. 1. TC-7224 Clear all E84 Active signals
2. TG-7225 Load/Unload Sequences - Valid (E84)
 2. 1. TG-7226 Load - Single Carrier - Valid (E84)
 2. 1. 1. TC-7227 AMHS arrives at the Equipment, Asserts VALID signal.
 2. 1. 2. TC-7228 Equipment Asserts L_REQ.
 2. 1. 3. TC-7229 AMHS Asserts TR_REQ.
 2. 1. 4. TC-7230 Equipment Asserts READY.
 2. 1. 5. TC-7231 AMHS Asserts BUSY.
 2. 1. 6. TC-7232 Equipment senses carrier placement on load port and Drops L_REQ.
 2. 1. 7. TC-7233 AMHS Asserts COMPT, Drops TR_REQ and BUSY.
 2. 1. 8. TC-7234 Equipment Drops READY.
 2. 1. 9. TC-7235 AMHS Drops COMPT and VALID.
 2. 2. TG-7237 Unload - Single Carrier - Valid (E84)
 2. 2. 1. TC-7238 AMHS arrives at the Equipment, Asserts VALID signal.
 2. 2. 2. TC-7239 Equipment Asserts U_REQ.
 2. 2. 3. TC-7240 AMHS Asserts TR_REQ.
 2. 2. 4. TC-7241 Equipment Asserts READY.
 2. 2. 5. TC-7242 AMHS Asserts BUSY.
 2. 2. 6. TC-7243 Equipment senses carrier removal from load port and Drops U_REQ.
 2. 2. 7. TC-7244 AMHS Asserts COMPT, Drops TR_REQ and BUSY.
 2. 2. 8. TC-7245 Equipment Drops READY.
 2. 2. 9. TC-7246 AMHS Drops COMPT and VALID.
2. 3. TG-7237 Continuous Mode - Load/Unload Single Carrier - Valid (E84)
 2. 3. 1. TC-7227 AMHS arrives at the Equipment, Asserts VALID signal.
 2. 3. 2. TC-7228 Equipment Asserts L_REQ.
 2. 3. 3. TC-7229 AMHS Asserts TR_REQ.
 2. 3. 4. TC-7230 Equipment Asserts READY.
 2. 3. 5. TC-7265 AMHS Asserts BUSY and CONT
 2. 3. 6. TC-7232 Equipment senses carrier placement on load port and Drops L_REQ.
 2. 3. 7. TC-7266 AMHS Asserts COMPT, Drops TR_REQ and BUSY (CONT is High)
 2. 3. 8. TC-7234 Equipment Drops READY.
 2. 3. 9. TC-7267 AMHS Drops COMPT and VALID (CONT is High)
 2. 3.10. TC-7296 AMHS arrives at the Equipment, Asserts VALID signal (CONT is High).
 2. 3.11. TC-7239 Equipment Asserts U_REQ.
 2. 3.12. TC-7297 AMHS Asserts TR_REQ (CONT is High)
 2. 3.13. TC-7241 Equipment Asserts READY.
 2. 3.14. TC-7298 AMHS Asserts BUSY, Drops CONT.
 2. 3.15. TC-7243 Equipment senses carrier removal from load port and Drops U_REQ.
 2. 3.16. TC-7244 AMHS Asserts COMPT, Drops TR_REQ and BUSY.
 2. 3.17. TC-7245 Equipment Drops READY.
 2. 3.18. TC-7246 AMHS Drops COMPT and VALID.

**Full
Outline**

3. TG-7247 Load/Unload Sequences - Invalid (E84)
 3. 1. TG-7248 Load - Single Carrier - Pod Placed Before Valid
 3. 1. 1. TC-7263 AMHS arrives at the Equipment, Asserts VALID signal with pod pre-loaded.
 3. 1. 2. TC-7250 Equipment does NOT assert L_REQ within timeout. Load sequence aborted.
 3. 2. TG-7251 Load - Single Carrier - Pod Placed Before Ready
 3. 2. 1. TC-7227 AMHS arrives at the Equipment, Asserts VALID signal.
 3. 2. 2. TC-7253 Equipment Asserts L_REQ (then pod loaded).
 3. 2. 3. TC-7229 AMHS Asserts TR_REQ.
 3. 2. 4. TC-7255 Equipment does NOT assert READY. Load sequence aborted.
 3. 3. TG-7257 Unload - Single Carrier - Pod Removed Before Ready
 3. 3. 1. TC-7238 AMHS arrives at the Equipment, Asserts VALID signal.
 3. 3. 2. TC-7262 Equipment Asserts U_REQ (pod then unloaded).
 3. 3. 3. TC-7240 AMHS Asserts TR_REQ.
 3. 3. 4. TC-7261 Equipment does NOT assert READY. Unload sequence aborted