

SYSTEM TEST PLAN LASER CORDLESS MOUSE

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SYSTEM TEST PLAN LASER CORDLESS MOUSE

1. SCOPE

This document describes the test plan for verifying the design of the Laser Cordless Mouse as described in LCMFD.01. It provides the necessary procedures for the validation test of the device.

2. REASON FOR RE-ISSUE

ISSUE

1 MR #LCMxxxxxx

REASON FOR RE-ISSUE

This is the first time the plan has been issued

3. INTRODUCTION

3.1. Description

The following tests will be performed:

Test Case	Direct Requirement	Test
		Communications Channel Requirements
110	LCMFD.01 section 4.2 [R110]	Channel Frequencies
120	LCMFD.01 section 4.2 [R120]	Channel Protocol
130	LCMFD.01 section 4.2 [R130]	Channel Speed and Encryption
140	LCMFD.01 section 4.2 [R140]	Transmission Distance
		Laser Cordless Mouse Receiver
210	LCMFD.01 section 4.3 [R210]	Receiver Interface
220	LCMFD.01 section 4.3 [R220]	Automatic Software Driver Exchange
230	LCMFD.01 section 4.3 [R230]	Receiver Compatibility
240	LCMFD.01 section 4.3 [R240]	Receiver Precision
250	LCMFD.01 section 4.3 [R250]	Configuration Data
		Laser Cordless Mouse Module
310	LCMFD.01 section 4.4 [R310]	Operational Voltage
320	LCMFD.01 section 4.4 [R320]	Operational Sensitivity

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3.2. Strategy

1. The LCM is a new product. All tests will be conducted.

4. APPLICABLE DOCUMENTS

This plan is based on requirements from LCMFD.01 Laser Cordless Mouse Functional Requirements.

5. DEFINITIONS

LCM – Laser Cordless Mouse
 LCMM – Laser Cordless Mouse Module
 LCMR – Laser Cordless Mouse Receiver

6. SETUP

This testing requires the following units as a minimum: A Laser Cordless Mouse Module and its Receiver.

7. EQUIPMENT RECORD

The following test equipment, or equivalent, is needed to execute the tests in this plan.

Item	Model Number(s)	Calibration Required?
Wireless Protocol Analyzer	TBD	Yes
Wireless Frequency Analyzer	TBD	Yes
VOM	Hewlett Packard TBD	Yes
Software Data Analyzer	TBD	
Graphic Mouse Pad		

SYSTEM TEST PLAN LASER CORDLESS MOUSE**8. TEST CASES****[Test Case 110] Channel Frequencies**

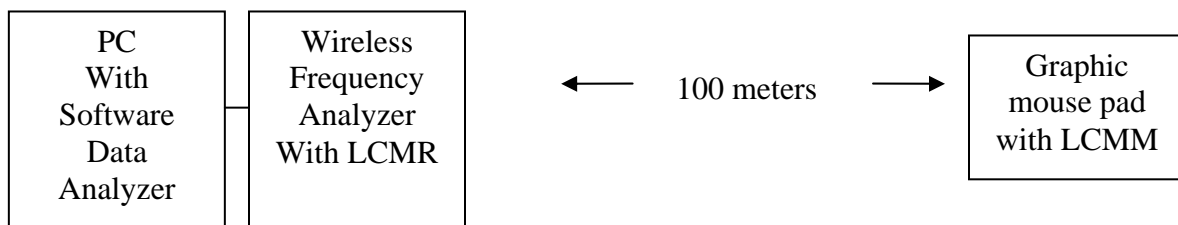
Purpose: To verify that the LCMM and LCMR satisfy the Channel Frequency specification. This is a core test.

Specification:

Direct Specification Source: LCMFD.01 section 4.2 [R110]

Bluetooth and WiFi Specifications TBD

LCMDD.01 section XX [R-TBD]

Test Architecture:**Equipment:**

1. PC with the Software Data Analyzer installed
2. LCMM with graphic mouse pad
3. Wireless Frequency Analyzer With LCMR installed

Test Procedure:

1. Connect the Wireless Frequency Analyzer to the USB port of the computer
2. Connect the LCMR into the Wireless Frequency Analyzer
3. Launch the Software Data Analyzer on the PC
4. Configure the Software Data Analyzer to display mouse output data
5. Set the LCMM and graphic mouse pad at a distance of 100 meters
6. Move the LCMM on the graphic mouse pad 1 cm horizontal
7. Record the frequency at the Wireless Frequency Analyzer
8. Move the LCMM on the graphic mouse pad 1 cm vertical
9. Record the frequency at the Wireless Frequency Analyzer
10. Move the LCMM on the graphic mouse pad 1 cm diagonally.
11. Record the frequency at the Wireless Frequency Analyzer
12. Move the LCMM and graphic at a distance of 50 meters and repeat steps 6-11.

SYSTEM TEST PLAN LASER CORDLESS MOUSE**Expected Results**

Test passes if all of the following occurs:

1. frequencies recorded for all vertical movements is within the values (TBD) described in LCMDD.01 section XX [R-TBD.
2. frequencies recorded for all vertical movements is within the values (TBD) described in LCMDD.01 section XX [R-TBD.
3. frequencies recorded for all diagonal movements is within the values (TBD) described in LCMDD.01 section XX [R-TBD.

Test Results:

Item	Test Result: frequency	Pass/Fail
100 meters Horizontal		
100 meters Vertical		
100 meters Diagonal		
50 meters Horizontal		
50 meters Vertical		
50 meters Diagonal		

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[Test Case 120] Channel Protocol

Purpose: To verify that the LCMM and LCMR satisfy the Channel Protocol specification. This is a core test.

Specification:
Direct Specification Source: LCMFD.01 section 4.2 [R120]

Test Architecture:

TBD

Equipment:

TBD

Test Procedure:

TBD

Expected Results

TBD

Test Results:

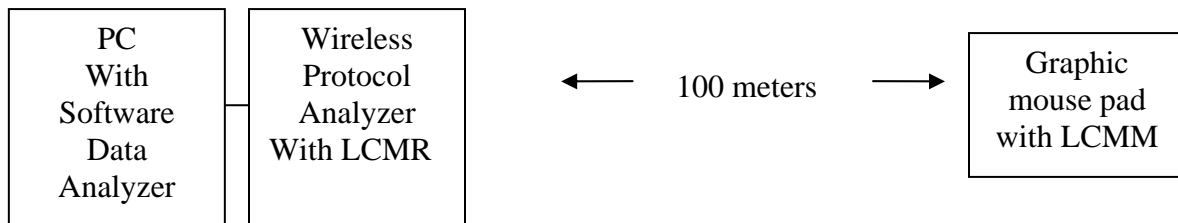
Item	Test Result	Pass/Fail

SYSTEM TEST PLAN LASER CORDLESS MOUSE**[Test Case 130] Channel Speed and Encryption**

Purpose: To verify that the LCMM and LCMR satisfy the Channel Speed and Encryption specification. This is a core test.

Specification:

Direct Specification Source: LCMFD.01 section 4.2 [R130]

Test Architecture:**Equipment:**

1. PC with the Software Data Analyzer installed
2. LCMM with graphic mouse pad
3. Wireless Protocol Analyzer With LCMR installed

Test Procedure:

1. Connect the Wireless Protocol Analyzer to the USB port of the computer
2. Connect the LCMR into the Wireless Protocol Analyzer
3. Launch the Software Data Analyzer on the PC
4. Configure the Software Data Analyzer to display mouse output data
5. Set the LCMM and graphic mouse pad at a distance of 100 meters
6. Move the LCMM on the graphic mouse pad 1 cm horizontal
7. Record the transmission rate at the Wireless Protocol Analyzer and note if the 128 bit encryption indicator on the Wireless Protocol Analyzer is set
8. Move the LCMM on the graphic mouse pad 1 cm vertical
9. Record the transmission rate at the Wireless Protocol Analyzer and note if the 128 bit encryption indicator on the Wireless Protocol Analyzer is set
10. Move the LCMM on the graphic mouse pad 1 cm diagonally.
11. Record the transmission rate at the Wireless Protocol Analyzer and note if the 128 bit encryption indicator on the Wireless Protocol Analyzer is set
12. Move the LCMM and graphic at a distance of 50 meters and repeat steps 6-11.

Expected Results

Test passes if all of the following occurs:

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- 1. transmission rate recorded for all vertical movements is 500kbps and the 128 bit encryption indicator is set
- 2. transmission rate recorded for all vertical movements is 500kbps and the 128 bit encryption indicator is set
- 3. transmission rate recorded for all diagonal movements is 500kbps and the 128 bit encryption indicator is set

Test Results:

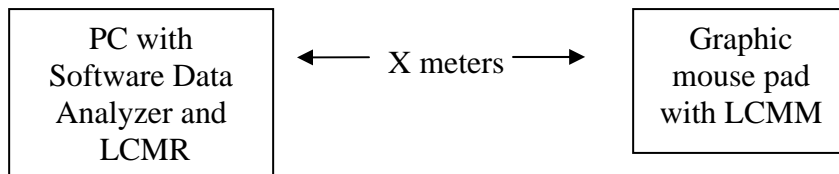
Item	Test Result: b/s	128 indicator on?	Pass/Fail
100 meters Horizontal			
100 meters Vertical			
100 meters Diagonal			
50 meters Horizontal			
50 meters Vertical			
50 meters Diagonal			

SYSTEM TEST PLAN LASER CORDLESS MOUSE**[Test Case 140] Transmission Distance**

Purpose: To verify that the LCMM and LCMR satisfy the Transmission Distance specification. This is a core test.

Specification:

Direct Specification Source: LCMFD.01 section 4.2 [R140]

Test Architecture:**Equipment:**

1. PC with the Software Data Analyzer and LCMR installed.
2. LCMM with graphic mouse pad

Test Procedure:

1. Launch the Software Data Analyzer on the PC
2. Configure the Software Data Analyzer to display mouse output data
3. Set the LCMM and graphic mouse pad at a distance of 1 meter
4. Move the LCMM on the graphic mouse pad 1 cm horizontal
5. Record the mouse output data
6. Move the LCMM on the graphic mouse pad 1 cm vertical
7. Record the mouse output data
8. Move the LCMM on the graphic mouse pad 1 cm diagonally.
9. Record the mouse output data
10. Move the LCMM and graphic mouse pad at a distance of 2 meters and repeat steps 4-9.
11. Repeat step 10 at distances of 5, 10, 20, 50 and 100 meters.

Expected Results

Test passes if all of the following occurs:

1. data recorded for all vertical movements are the same
2. data recorded for all horizontal movements are the same
3. data recorded for all diagonal movements are the same

Test Results:

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Item	Test Result: Horizontal	Test Result: Vertical	Test Result: Diagonal	Pass/Fail
1 meters				
2 meters				
5 meters				
10 meters				
20 meters				
50 meters				
100 meters				

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[Test Case 210] Receiver Interface

Purpose: To verify that the LCMR satisfy the Receiver Interface specification. This is a core test.

Specification:

Direct Specification Source: LCMFD.01 section 4.3 [R210]

Test Architecture:

TBD

Equipment:

TBD

Test Procedure:

TBD

Expected Results

TBD

Test Results:

Item	Test Result	Pass/Fail

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[Test Case 220] Automatic Software Driver Exchange

Purpose: To verify that the LCMR satisfy the Automatic Software Driver Exchange specification. This is a core test.

Specification:

Direct Specification Source: LCMFD.01 section 4.3 [R220]

Test Architecture:

TBD

Equipment:

TBD

Test Procedure:

TBD

Expected Results

TBD

Test Results:

Item	Test Result	Pass/Fail

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[Test Case 230] Receiver Compatibility

Purpose: To verify that the LCMR satisfy the Receiver Compatibility specification. This is a core test.

Specification:

Direct Specification Source: LCMFD.01 section 4.3 [R230]

Test Architecture:

TBD

Equipment:

TBD

Test Procedure:

TBD

Expected Results

TBD

Test Results:

Item	Test Result	Pass/Fail

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[Test Case 240] Receiver Precision

Purpose: To verify that the LCMR satisfy Receiver Precision specification. This is a core test.

Specification:

Direct Specification Source: LCMFD.01 section 4.3 [R240]

Test Architecture:

TBD

Equipment:

TBD

Test Procedure:

TBD

Expected Results

TBD

Test Results:

Item	Test Result	Pass/Fail

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[Test Case 250] Configuration Data

Purpose: To verify that the LCMR satisfy the Configuration Data specification. This is a core test.

Specification:

Direct Specification Source: LCMFD.01 section 4.3 [R250]

Test Architecture:

TBD

Equipment:

TBD

Test Procedure:

TBD

Expected Results

TBD

Test Results:

Item	Test Result	Pass/Fail

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[Test Case 310] Operational Voltage

Purpose: To verify that the LCMM satisfy the Operational Voltage specification. This is a core test.

Specification:
Direct Specification Source: LCMFD.01 section 4.4 [R310]

Test Architecture:

TBD

Equipment:

TBD

Test Procedure:

TBD

Expected Results

TBD

Test Results:

Item	Test Result	Pass/Fail

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[Test Case 320] Operational Sensitivity

Purpose: To verify that the LCMM satisfy the Operational Sensitivity specification. This is a core test.

Specification:

Direct Specification Source: LCMFD.01 section 4.4 [R320]

Test Architecture:

TBD

Equipment:

TBD

Test Procedure:

TBD

Expected Results

TBD

Test Results:

Item	Test Result	Pass/Fail

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9. ATTACHMENTS

Cover Sheet for QUALITY RECORDS

Test Plan Name	
Test Engineer	
Test Date	
Version	(HW) (SW)
System Name	
Tests covered	
MRs written?	Yes or No [see next page]
Data Attached?	Yes or No
Old Results appended?	Yes or No
Record Type	System Test Results
Date Filed	
Storage Location (Room #)	
Approval Signature(s)	

TEST STATUS

Test Case	TEST PASSED?	IT TEST FAILED MR#	IF TEST FAILED, MR NOT ENTERED REASON	COMMENT
110				
120				
130				
140				
210				
220				
230				
240				
250				
310				
320				

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