

# JM/JL Joystick EMI Report

This document presents the results of a series of electromagnetic interference tests that was performed on a Joystick Controller, Part Number JB0M-10-06-X (hereinafter referred to as the DUT).

The DUT was identified as follows:

Part ID: JB0M-10-06-X	S/N 1
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The DUT listed above was used throughout the test series.

The test was performed to selected portions of, and in accordance with, the SAE J1113 Electromagnetic Compatibility test specification.

Test Description	Specification Section	Test Result
Electromagnetic Compatibility – Immunity to Electromagnetic Compatibility test specification.	SAE J1113-13	Compliant* (see 1.1)
Electromagnetic Compatibility – Immunity to Electrostatic Discharge, Packaging and Handling	SAE J1113-13	Compliant** (see 2.1)
Electromagnetic Compatibility – Immunity to Radiated Electromagnetic fields, Absorber-Lined Chamber	SAE J1113-21	Compliant (see 3.1)
Electromagnetic Compatibility – Immunity to Radiated Magnetic Fields	SAE J1113-22	Compliant (see 4.1)
Electromagnetic Compatibility – Immunity to Radiated Electromagnetic Fields, TEM Cell	SAE J1113-24	Compliant (see 5.1)

\* Original DUT submitted for testing was non-compliant. The DUT was returned to Sure Grip Controls, modified, and then resubmitted for ESD testing. The modified DUT complies with the test requirements. \*\* Original DUT was damaged prior to the Packaging and Handling ESD test. Only the modified DUT was subjected to Packaging and Handling ESD.

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## 1.1.SAE J1113-13 Immunity to Electrostatic Discharge, Powered Mode

TEST DETAILS	Comments
Specified Test Method	SAE J1113-13
Deviations from Specified Test Method	None
Harness Configuration	2 meters
ESC Orientation	N/A
ESC Grounding (case or harness)	Not grounded
Additional Test Specific Information	None
ESC Monitoring Information	Outputs Xmin & Ymin were monitored via Digital Voltmeters

**TEST RESULTS:** Compliant (Original DUT submitted for testing was non-compliant. The DUT was returned to Sure Grip Controls, modified, and then compliant. The DUT was returned to Sure Grip Controls, modified, and then resubmitted for ESD testing. The modified DUT complies with the test requirements.)

## 1.2.SAE J1113-13 Immunity to Electrostatic Discharge, Packaging and Handling Sensitivity

TEST DETAILS	Comments
Specified Test Method	SAE J1113-13
Deviations from Specified Test Method	None
Harness Configuration	2 meters
ESC Orientation	N/A
ESC Grounding (case or harness)	Not grounded
Additional Test Specific Information	None
ESC Monitoring Information	Xmax, Xmin, Ymax, Ymin output voltages were checked before and after test application

**TEST RESULTS:** Compliant

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## 1.3.SAE J1113-21 Immunity to Electromagnetic Fields, Absorber-Lined Chamber

TEST DETAILS	Comments
Specified Test Method	SAE J1113-21
Deviations from Specified Test Method	None
Harness Configuration	2 meters
ESC Orientation	Horizontal
ESC Grounding (case or harness)	Grounded to reference plane
Additional Test Specific Information	None
ESC Monitoring Information	Outputs Xmin & Ymin were monitored via Oscilloscope & Digital Voltmeters

**TEST RESULTS:** Compliant

## 1.4.SAE J1113-22 Immunity to Radiated Magnetic Fields

TEST DETAILS	Comments
Specified Test Method	SAE J1113-22
Deviations from Specified Test Method	None
Harness Configuration	2 meters
ESC Orientation	Horizontal
ESC Grounding (case or harness)	Power Supply Return
Additional Test Specific Information	None
ESC Monitoring Information	Outputs Xmin & Ymin were monitored via Oscilloscope & Digital Voltmeters

**TEST RESULTS:** Compliant

## 1.5.SAE J1113-24 Immunity to Radiated Electromagnetic Fields, TEM Cell

TEST DETAILS	Comments
Specified Test Method	SAE J1113-24
Deviations from Specified Test Method	None
Harness Configuration	50 centimeters
ESC Orientation	Horizontal
ESC Grounding (case or harness)	Power Supply Return
Additional Test Specific Information	None
ESC Monitoring Information	Outputs Xmin & Ymin were monitored via Oscilloscope & Digital Voltmeters

**TEST RESULTS:** Compliant