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**RadFxSat-2 Mass Properties**

## Document Change Log

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| **Revision** | **Date** | **Author** | **Change Log** |
| 1 | May 12, 2018 | R Davis | Initial release |
| 2 | July 2, 2018 | R Davis | Updated for pre-vibe and post-bakeout |

## Satellite Team Responsible Engineer

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**Purpose:** The purpose of this document is to report the mass properties of AMSAT’s RadFxSat-2 CubeSat.

**Mass:** The weight of RadFxSat-2 was measured before and after thermal vacuum bakeout, in mass units of kg.

RadFxSat-2 in launch configuration before vibration: 1.323 kg on June 17, 2018.

**RadFxSat-2 in launch configuration after bakeout: 1.323 kg on June 22, 2018.**

**Center of Mass:** The Inventor CAD model includes boards, fasteners, major components on boards (batteries, connectors, spot Tantalum shielding, Lead ballast, solar cells). Residual mass was added per board as a distributed mass with the board’s planform area. At the board level, it was originally correlated to the measured weights of each circuit board of Fox-1A, then recently updated for the modified boards of RadFxSat-2. Most of this change was the elimination of RF Shields of the old RX and TX boards, and difference of Lead ballast.

**The center of mass of RadFxSat-2 is reported at [0.1 ± 2, 0.7 ± 2, -4 ± 5] mm from geometric center.**

**Moment of Inertia:**

**The moment of inertia of RadFxSat-2 is reported at [22.4 ± 1, 22.1 ± 1, 23.9 ± 1] kg cm2, where off diagonals are <0.1 kg cm2.**

**Summary:**

RadFxSat-2 mass is 1.323 ± 0.005 kg (measured).

RadFxSat-2 center of mass is [0.1 ± 2, 0.7 **± 2**, -4 **±** 5] mm (calculated).

RadFxSat-2 moment of inertia is [22.4 ± 1, 22.1 ± 1, 23.9 ± 1] kg cm2, where off diagonals are <0.1 kg cm2 (calculated).