MAHINDRA & MAHINDRA (M&M) - CDMM QUALITY STANDARD

VENDOR: SPARK MINDA (INSTRUMENT CLUSTER DIV)

COMPONENT: DUAL 10.25" WIDESCREEN COCKPIT (ADRENOX)

MODEL: W601 (XUV700) / THAR (EARTH EDITION)

DOC NO: MM-SOP-W601-DIGITAL | **REV:** 3.0

1.0 STATION A: MAINBOARD & THERMAL MANAGEMENT

- **1.1 ESD Safety:** Strict Mandate. Verify Wrist Strap Resistance is < 10 Mega-Ohms.
- **1.2 Processor Assembly:**
  - This unit uses a Qualcomm Snapdragon Auto Chipset.
  - **Thermal Paste:** Apply exactly 2.0g of High-Conductivity Thermal Paste (Grey) on the SoC using the automated dispenser.
  - **Thermal Throttling:** If the thermal paste is applied unevenly, it causes "Thermal Throttling" which leads to a laggy screen in the field.
- **1.3 Heat Sink:**
  - Install the heavy-duty Aluminum Heat Sink.
  - **Heat Sink Torque:** The torque setting for the Aluminum Heat Sink is strictly 0.8 Nm. Higher torque is required for vibration resistance.

2.0 STATION B: DISPLAY PANEL BONDING (OPTICAL BONDING)

- **2.1 Gorilla Glass Handling:**
  - Inspect the 10.25" Cover Glass for "Hairline Scratches" under Green Light. Use an IPA (Isopropyl Alcohol) wipe for cleanliness before bonding.
- **2.2 FPC Insertion (Dual Display):**
  - **Cable A (Cluster):** Insert 50-Pin LVDS into Port 1 and lock the Black Flap.
  - **Cable B (Infotainment):** Insert 60-Pin LVDS into Port 2 and lock the Blue Flap.
  - **Pull Test:** Perform a gentle tug (< 0.5N) on both cables.
  - **Defect:** If Cable B is loose, the touchscreen will freeze during maps navigation.

3.0 STATION C: RUGGED HOUSING & IP RATING

- **3.1 Waterproofing (IP67 Check):**
  - For IP67 Waterproofing, you must inspect the Orange Silicone Gasket around the rear housing groove. Any cuts, twists, or dust on the Orange Silicone Gasket creates a water entry risk.
- **3.2 Screw Fastening:**
  - Fasten the rear housing using eight M4 Stainless Steel Screws in a "Star Pattern" to ensure even pressure on the gasket.
  - **Housing Torque:** The torque setting for the M4 Stainless Steel Screws is 1.0 Nm.

4.0 STATION D: EOL (END OF LINE) SOFTWARE FLASHING

- **4.1 Boot-Up Test:**
  - Power ON (12V). The "Adrenox" Logo must appear within 2 seconds.
  - **Idle Current Limit:** The idle current limit must be < 1.2A.
- **4.2 Software Version (QNX OS):**
  - Connect OBD-II Tool. Verify OS Version is QNX Hypervisor v2.1.
  - Verify App Version is Mahindra_Maps_v9.0.
- **4.3 Touch & Haptics:**
  - Perform "Swipe Test" across both screens. The line must follow the finger without latency or lag.

5.0 TROUBLESHOOTING (DIGITAL DEFECTS)

- **Blue Screen Issue:** If the unit exhibits a "Blue Screen" or System Reboot loop, the root cause is Corrupted Flash Memory during Station D. The action is to re-flash the Firmware via USB Port 1.
- **Ghost Touch Issue:** If the screen exhibits a "Ghost Touch" defect (where the screen clicks itself), the root cause is a grounding issue on the Metal Bezel. To fix the Ghost Touch, check the Ground Screw (GND) at Station C.