

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 < 10 Mega-Ohms.
- **1.2 Processor Assembly:**
 - This unit uses a **Qualcomm Snapdragon** Auto Chipset.
 - **Action:** Apply **2.0g** of High-Conductivity Thermal Paste (Grey) on the SoC.
 - **Critical:** Use the automated dispenser. Uneven paste causes "Thermal Throttling" (Laggy Screen) in field.
- **1.3 Heat Sink:**
 - Install the heavy-duty Aluminum Heat Sink.
 - **Torque:** 0.8 Nm. (Higher torque 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.
 - **Cleanliness:** Use IPA (Isopropyl Alcohol) wipe before bonding.
- **2.2 FPC Insertion (Dual Display):**
 - **Cable A (Cluster):** Insert 50-Pin LVDS into Port 1. Lock Black Flap.
 - **Cable B (Infotainment):** Insert 60-Pin LVDS into Port 2. Lock Blue Flap.
 - **Pull Test:** 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):**
 - Inspect the **Orange Silicone Gasket** around the rear housing groove.
 - **Defect:** Cuts, twists, or dust on the gasket = Water Entry Risk.
- **3.2 Screw Fastening:**
 - Use M4 Stainless Steel Screws (x8).
 - **Torque:** 1.0 Nm.
 - **Sequence:** "Star Pattern" to ensure even pressure on the gasket.

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

- **4.1 Boot-Up Test:**
 - Power ON (12V).

- **Check:** "Adrenox" Logo must appear within **2 seconds**.
- **Current Draw:** Idle current must be < 1.2A.
- **4.2 Software Version (QNX OS):**
 - Connect OBD-II Tool.
 - Verify OS Version: **QNX Hypervisor v2.1**.
 - Verify App Version: **Mahindra_Maps_v9.0**.
- **4.3 Touch & Haptics:**
 - Perform "Swipe Test" across both screens.
 - **Latency:** Line must follow finger without lag.

5.0 TROUBLESHOOTING (DIGITAL DEFECTS)

- **Issue:** "Blue Screen" or System Reboot loop.
 - **Root Cause:** Corrupted Flash Memory during Station D.
 - **Action:** Re-flash Firmware via USB Port 1.
- **Issue:** "Ghost Touch" (Screen clicks itself).
 - **Root Cause:** Grounding issue on the Metal Bezel.
 - **Action:** Check the Ground Screw (GND) at Station C.