TATA-340-PP40 MCU PCB TESTING PROCEDURE & INWARD QC

AARTECH SOLONICS LIMITED

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1. Visual Check

To ensure that the PCB has no visible defects/damages during fabrication or assembly. Look for any visible damage, such as scratches, cracks, or burn marks.

2. Component Placements

To verify that all components are placed according to the design specifications.

1. Cross-check the PCB with the BOM (Bill of Materials) and the schematic diagram.
2. Check each component's position and ensure it matches the design layout.
3. Verify orientation and confirm that polarity of the critical components (e.g., diodes, electrolytic capacitors, ICs) are oriented correctly.

3. Soldered Components

To ensure that all components are properly soldered to the PCB.

1. Check solder joints : Check that each solder joint is properly formed, with no cold joints, bridges, or insufficient solder.
2. Check for shorts: Look for solder bridges/joints between adjacent pads, use magnifying glass or some other equipment to closely verify isolated solder masks and joints.

4. Power rail Integrity

To verify the Power rail integrity. Perform the continuity test to test the integrity of supply buses. Use the multimeter and test on below listed TP (Test Points)

Input Supply :	**Isolated Step-Down Supply :**	**Isolated CAN Bus IO supply :**
TP1 : TP_+28	TP4 : TP_GND	TP8 : TP_+5V_ISO
TP2 : TP_28_GND	TP5 : TP_+5	TP9 : TP_GND1

5. Power Supply Test

To confirm the power supply is healthy & intact, Connect 24-28 VDC supply at input via DB09 Connector Pin 9 - VCC and Pin 3 - GND.

1. Input supply test : Test voltage on TP1 with respect to TP2 to validate input supply. It should be the same as the input voltage supplied via the DB09 connector.

2. +15VDC supply test : Test voltage at INPUT of U9, this is hidden under step down converter so, tester can test the input voltage at C4 with respect to TP4 to validate 15V step-down supply. The 15V supply will vary from 15V to 19V based on the trimming pot used or not. This is fine as this will again step down in 5V.

3. +5VDC supply test : Test voltage at TP5 with respect to TP4 to validate 5V step-down supply. Please note +15V and +5V are on the same GND plane.

4. +5VDC Isolated supply : Test voltage at TP8 with respect to TP9. Please note that TP9 is an isolated GND, Measure +5V Isolated with TP9-TP_GND1 only.

6. Test Points details

TP1 : TP_+28
TP2 : TP_28_GND
TP4 : TP_GND
TP5 : TP_+5
TP6 : TP_CH
TP7 : TP_CL
TP8 : TP_+5V_ISO
TP9 : TP_GND1

Note : Safety precaution, Always follow proper safety procedures, including ESD (Electrostatic Discharge) precautions.

References :

1. TATA340PP40 MCU V.0.3 Schematic
2. TATA340PP40 MCU FABRICATION BOM