

Failure Analysis Report



TI Information - Selective Disclosure

Device Analysis Services

FA QEM-CCR-2404-01399

ACTION-0874274

Customer:	ARROW(CHINA) ELECTRONICS TRADING CO., LTD.SHENZHEN	Assy Site:	
Customer Tracking ID:		Fab Site:	
Customer Part ID:		Technology:	
Customer Contact:	Andy Jin	Analyst:	Thomas Chen
Device Type:	LP8860AQVFPQR1	TI Contact:	Frank Hou(China CQE)
Flow Type:	Customer Return	Qty Submitted:	2
Reviewer:	Frank Zhang	Date Submitted:	2024-05-22
		Approval:	Frank Zhang

Summary

Failure Analysis	Results
Customer Reported Failure Mode	Issue type: Electrical Issue type details: The ICs will be failed under room temperature. Please find the detailed FA in the attached report. Add the resistance table. The resistance is OK.
TI Failure Description	customer don't accept triage report, need FA No open/short was detected. Bench pass.
What effect does the defect or damage cause?	/
Where and what is the defect/damage?	/
Did the identified physical defect/damage explain the TI reported failure mode?	/

TI Unit #	Cust. Unit #	Lot Trace Code	Symbolization	Wafer Fab Lot #	Assembly Lot #
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The information conveyed in these reports does not alter TI's warranty or other terms and conditions of sale. Unless otherwise specifically noted, the report is not an authorization to return products. Application advice is provided "AS IS." The information provided herein may change if additional facts are discovered.

1		39ANZTT			
2		36A4JKT		2299049	3392244TW3

- **Customer Reported Problem Description:**

Issue type: Electrical | Issue type details: The ICs will be failed under room temperature. Please find the detailed FA in the attached report. Add the resistance table. The resistance is OK.

- **TI Problem Description:**

customer don't accept triage report, need FA

No open/short was detected.

Bench pass.

- **Package Analysis:**

- **External Package Examination:**

The returned unit was inspected under optical microscope. No obvious anomaly was observed from external package.

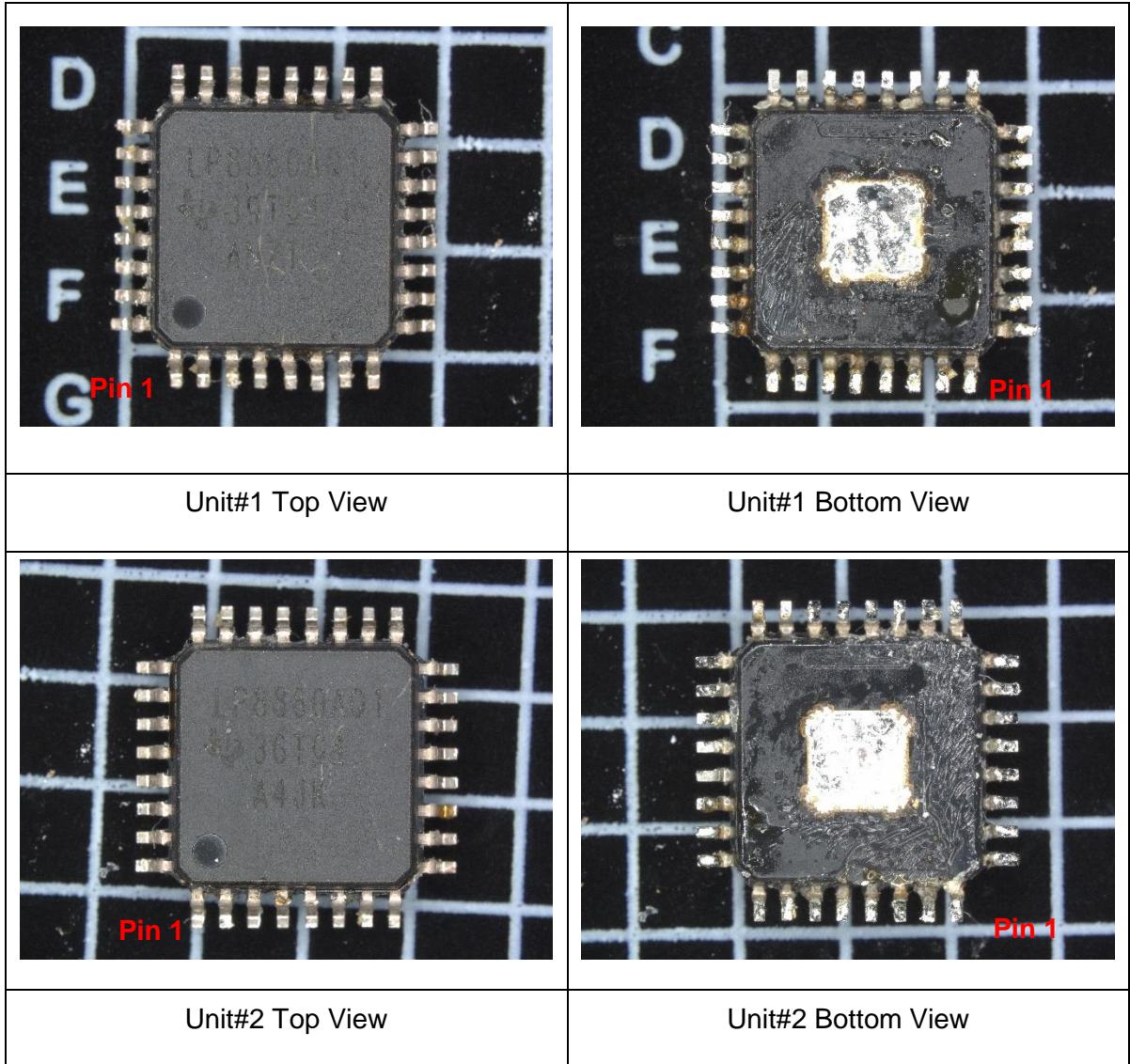


Figure 1: Optical view of the returned unit.

- **X-Ray Analysis:**

The returned unit was inspected by X-ray. No obvious anomaly was observed from internal package.

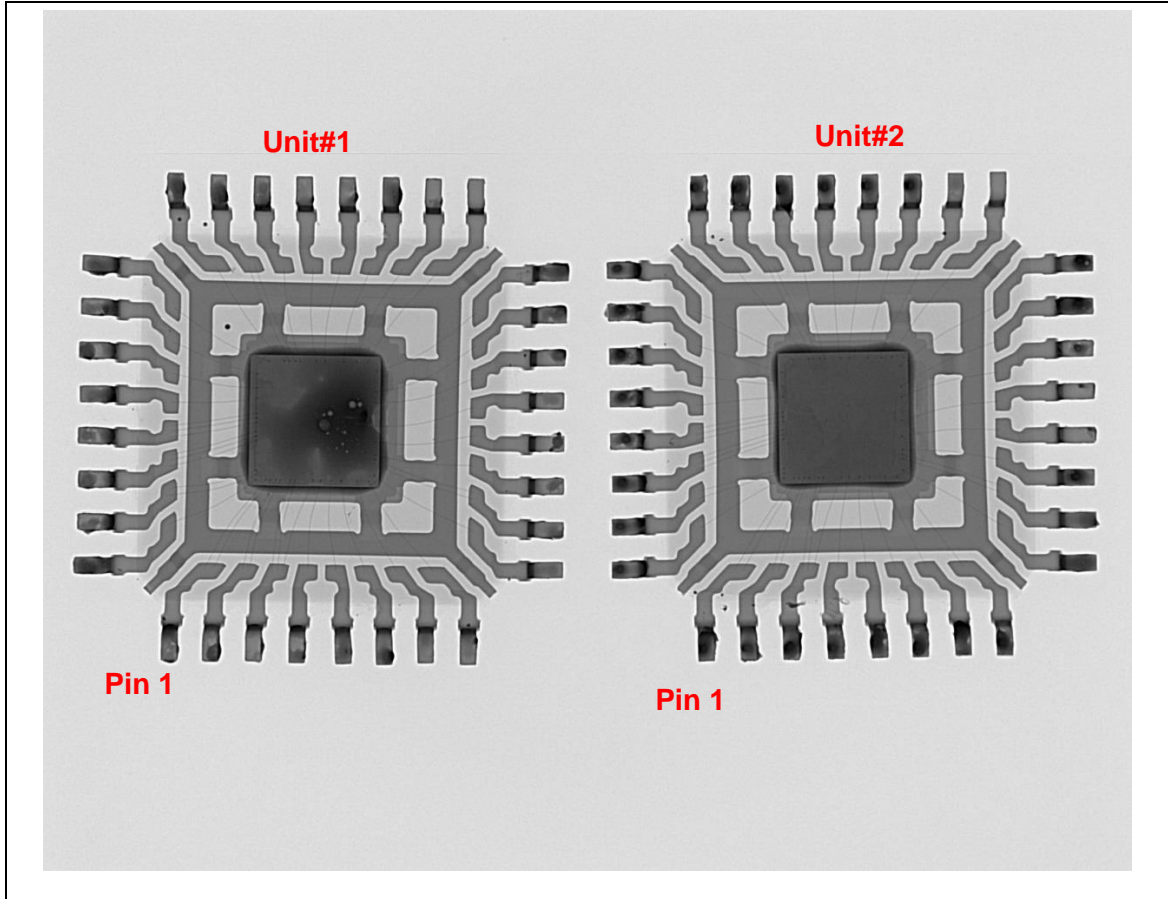


Figure 2: X-Ray images.

- **Scanning Acoustic Microscopy (SAM):**

SAM was performed on returned unit. No obvious delamination was observed over the die surface.

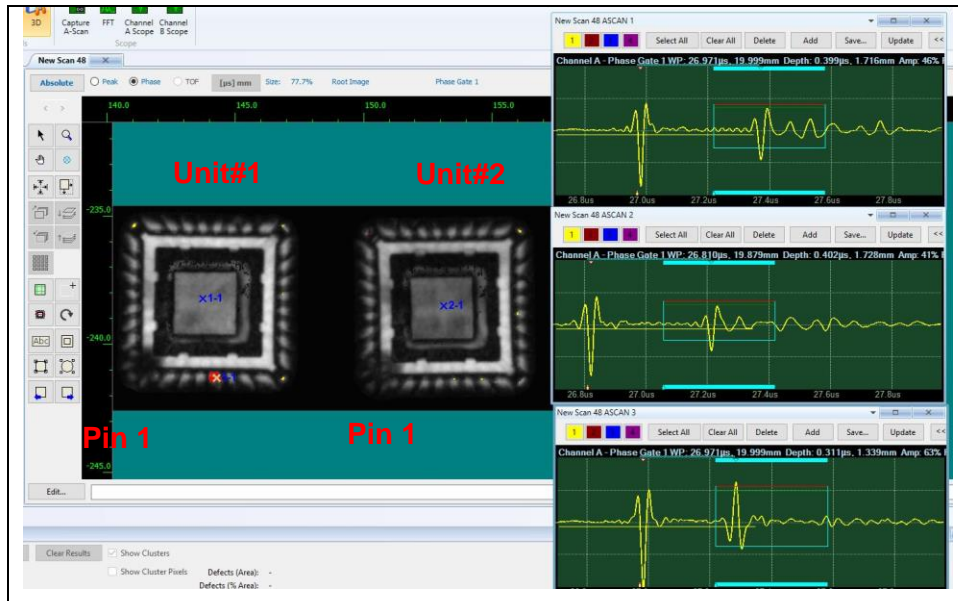


Figure 3: SAM image of returned unit.

- Electrical Characterization:**

Curve trace analysis was performed on the returned unit. No open/short was detected.

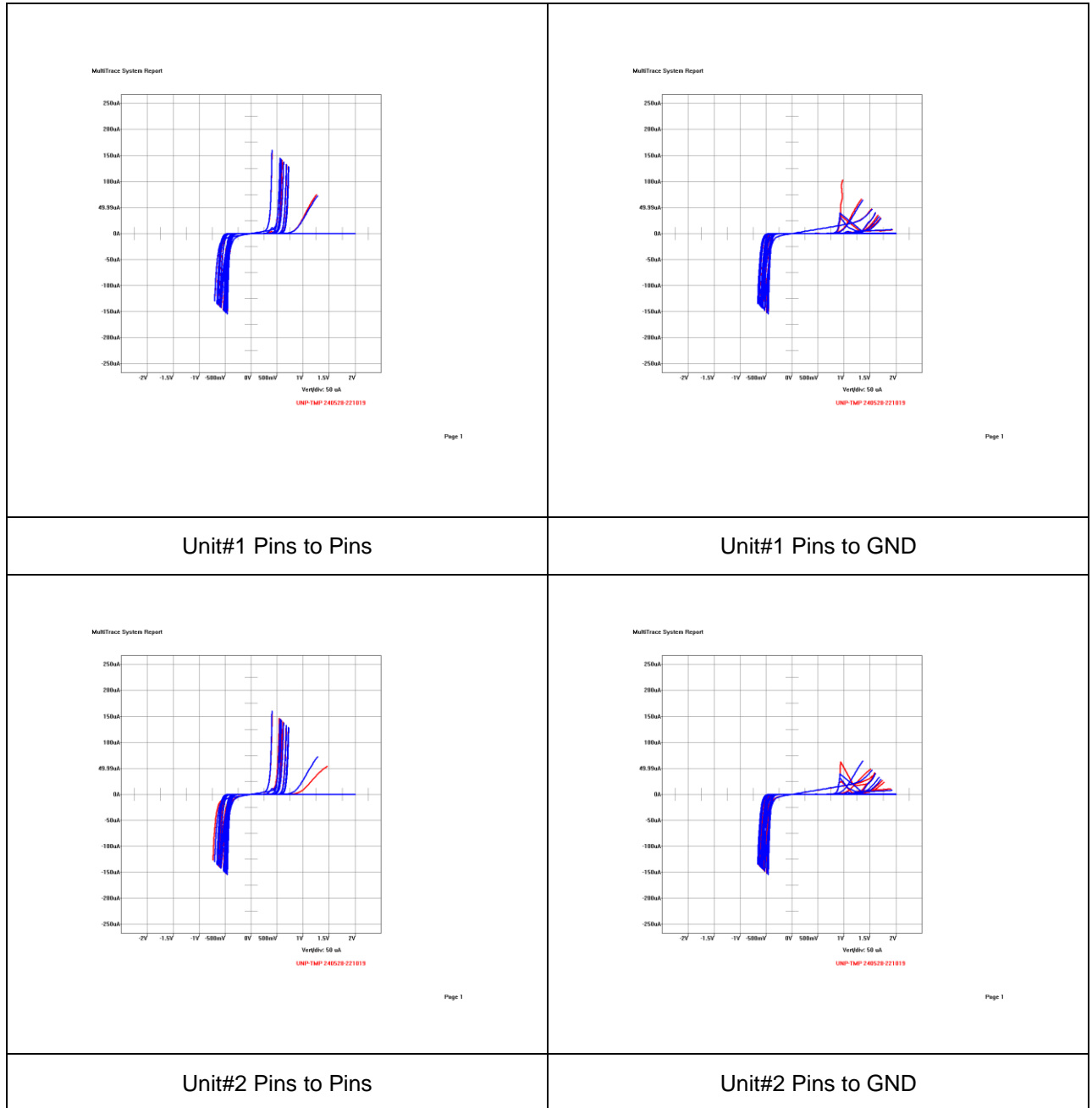
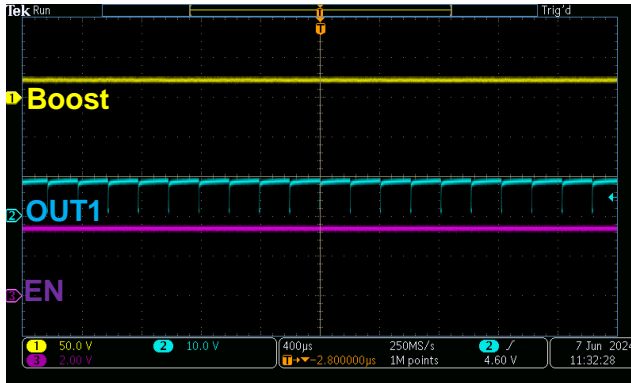


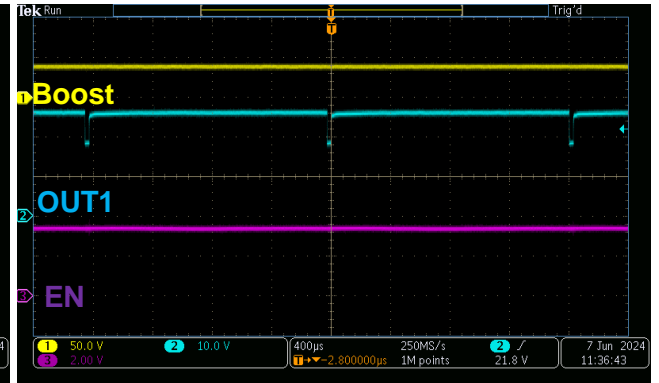
Figure 4: I/V curve image of returned unit. **Correlation unit (blue) & returned unit (red).**

- Bench:**

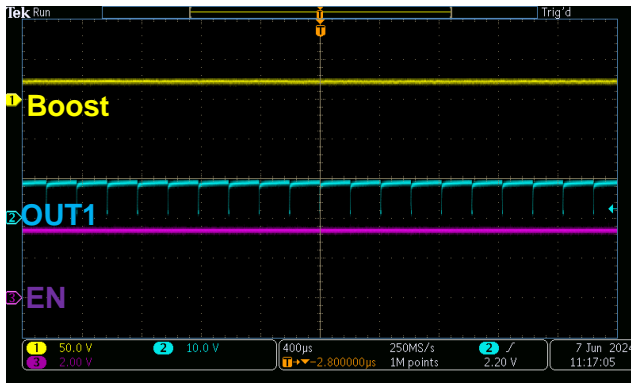
The return unit were soldered on the TI EVM board to do bench test. No obvious anomaly was observed compared to reference unit.



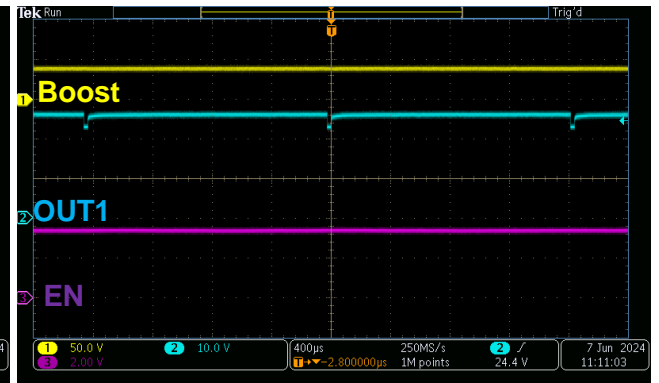
a. Reference unit with default EEPROM



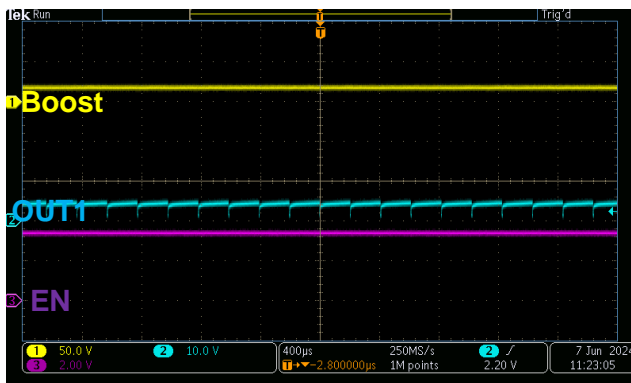
b. Reference unit with customer's EEPROM



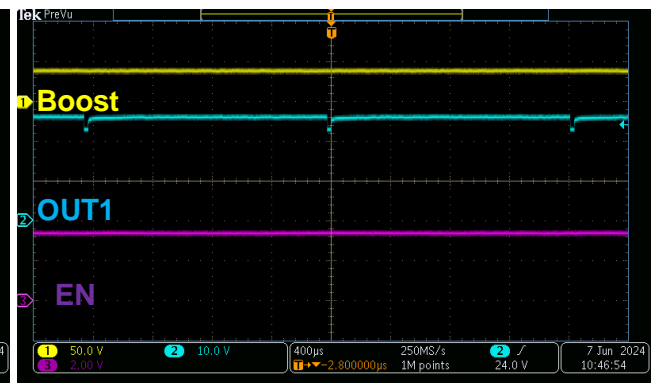
c. Unit#1 with default EEPROM



d. Unit#1 with customer's EEPROM

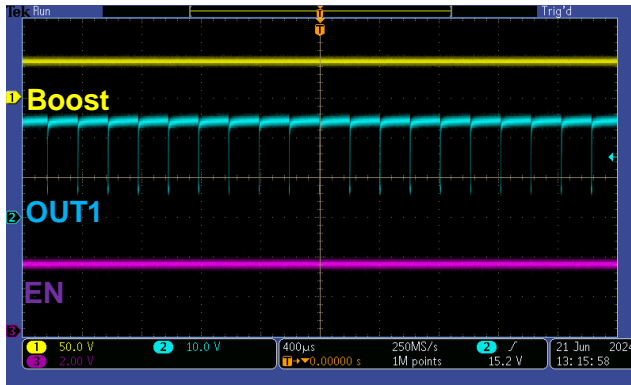


e. Unit#2 with default EEPROM

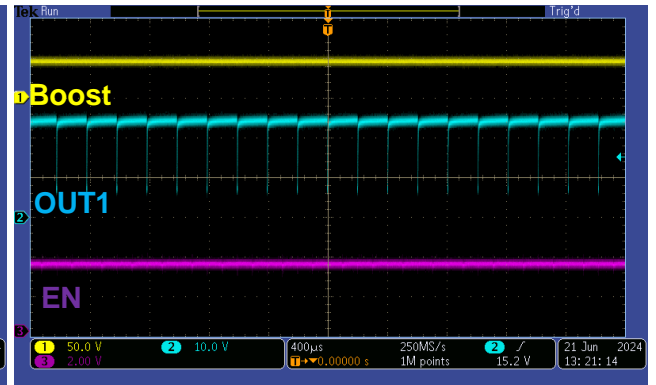


f. Unit#2 with customer's EEPROM

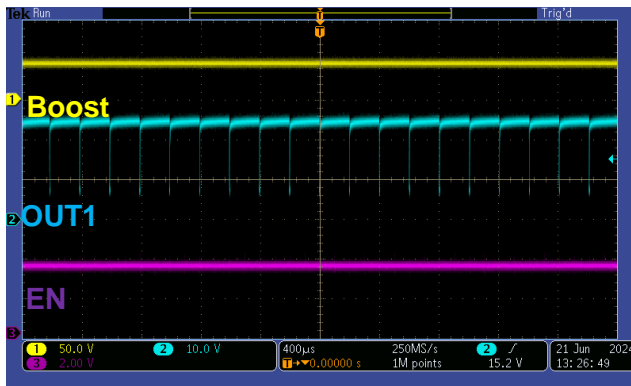
Figure 5: Bench result at room temperature.



a. Reference unit with default EEPROM



b. Unit#1



c. Unit#2

Figure 6: Bench result at low temperature (Freeze spray, the nominal lowest temperature is -60°C)

- **Observation:**

No open/short was detected.

Bench pass.

Note 1: Due to digital image capture, the magnification is not calibrated nor is the aspect ratio maintained. Not all tools provide a means recorded in the image for calibrating the measurements. When a calibration marker is supplied in the image, the measurements may be calibrated in the direction of the marker

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