

Test Report

LR2026-1153

Subject: IC30 (suspected) Failure on YRMMDP-163A06 (CM6-YRM00-146)
Objective: To deep analysis on the removed component of the failure unit.
Customer: Yamaha
Requestor: Surakarn Thitianan
Analyst: Thanachit Sapphawat
Date of report: June 18, 2026

Test items			
Requestor's identification	RTC's identification	Date of receipt	Date(s) of testing
Defect component	LR2026-1153-1	June 11, 2026	June 17 – 18, 2026
Raw material (TLG195720)	LR2026-1153-2	June 11, 2026	June 17 – 18, 2026
Raw material (TLG195720)	LR2026-1153-3	June 11, 2026	June 17 – 18, 2026

Description of test items

1. One sample of defect component (IC30) from SN#00-513254482.
2. Two samples of raw material for comparison (TLG195720). Component PN: YRM00000273 MPN : SN75ALS193DR

Condition of test items as received

The test items were received as shown in Figure 1 – Figure 6.

Background

The requestor needs to assure component is the failure IC30.

Test Report

Ayudhaya – RTC

Benchmark Electronics (Thailand) PCL.
94 Moo 1, Hi-Tech Industrial Estate
Banlane, Bang Pa-in, Ayudhaya 13160
Thailand
Tel. 035-276300 Ext. 6304

Test methods

1. Optical inspection and dimension measurement by microscope
 - 1.1. The sample was placed on a stage.
 - 1.2. The sample was visual inspected under appropriate magnification.
 - 1.3. Optical images were captured
 - 1.4. Dimensions were measured on images.
2. 2D X-ray inspection
 - 2.1. The sample was placed into the X-ray imaging system.
 - 2.2. Suitable KV and power was adjusted to inspect the internal structure.
 - 2.3. X-ray images were captured.
3. DMM measurement
 - 3.1. The DMM was set to resistance testing.
 - 3.2. The sample was measured.

Test Environment

1. Temperature: 23 ± 3 °C
2. Relative Humidity: 55 ± 25 %RH

Table 1: Equipment

Type	Brand/Model	Calibration Due Date
Digital microscope	KEYENCE/X1F	Feb 16, 2027
X-ray inspection system	Nordson Dage/QUADRA5	N/A
Digital multimeter	FLUCK/179	Nov 04, 2026

Table 2: Test methods

RTC's identification	Optical inspection	2D X-Ray	Digital multimeter
LR2026-1153-1	Yes	Yes	Yes
LR2026-1153-2	Yes	Yes	Yes
LR2026-1153-3	Yes	Yes	Yes

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Results

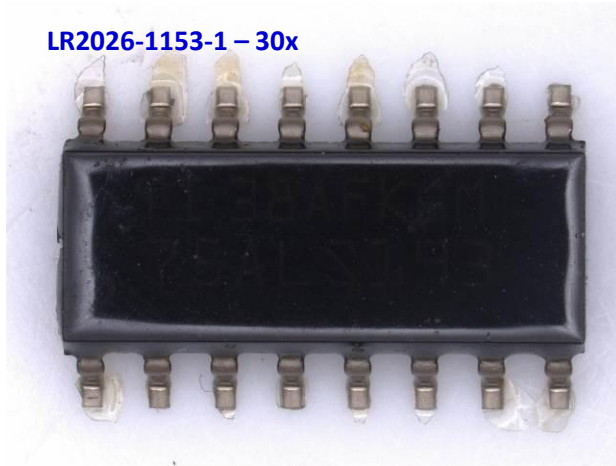
1. Optical inspection of test items between LR2026-1153-1 and LR2026-1153-2 – LR2026-1153-3 indicate **different laser markings on the bottom side, and shapes** as shown in Figure 1 – Figure 7.
2. 2D X-ray images of test items between LR2026-1153-1 and LR2026-1153-2 – LR2026-1153-3 indicate **different lead frames** in the internal structure as shown in Figure 8 – Figure 10
3. The resistance measurement of test items LR2026-1153-1 – LR2026-1153-3 are shown in Figure 11.

Conclusion

Optical inspection indicates **different laser markings on the bottom side and shapes**, and 2D X-ray indicates **different lead frames** in test item LR2026-1153-1 with comparison to test items LR2026-1153-2 – LR1153-3.

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LR2026-1153-1 – 30x



LR2026-1153-2-30x



LR2026-1153-3-30x

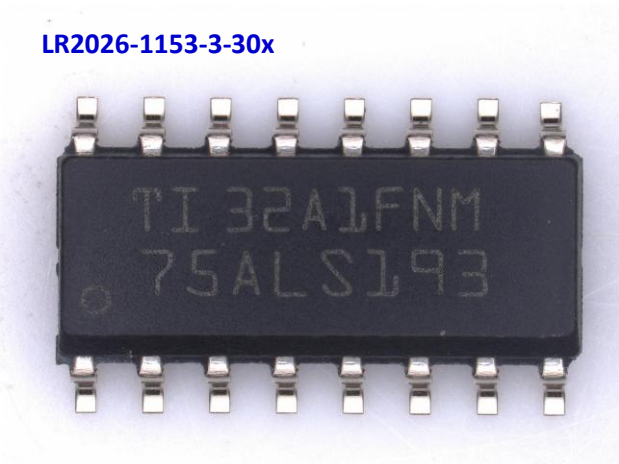
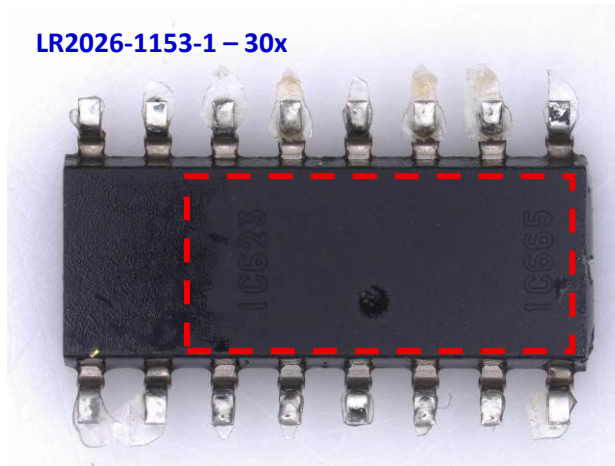


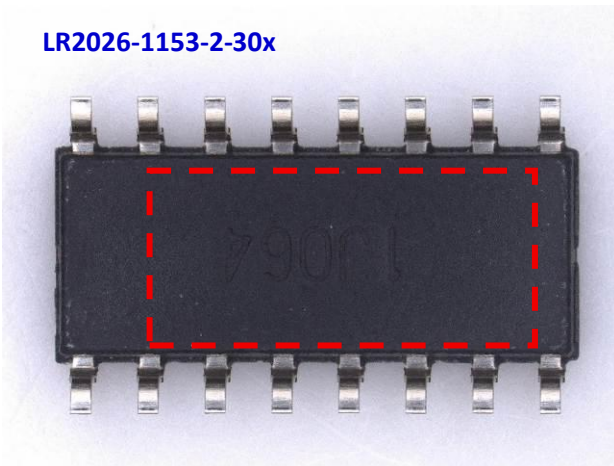
Figure 1: Top view of test items LR2026-1153-1 to LR2026-1153-3 as received.

Test Report

LR2026-1153-1 – 30x



LR2026-1153-2-30x



LR2026-1153-3-30x

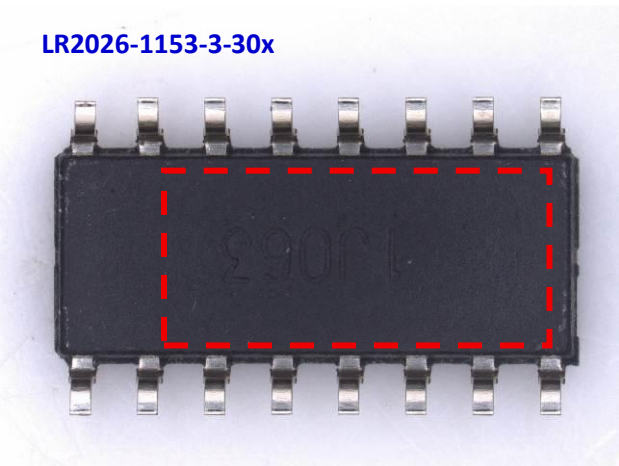


Figure 2: Bottom view of test items LR2026-1153-1 to LR2026-1153-3 as received. Showing different markings.

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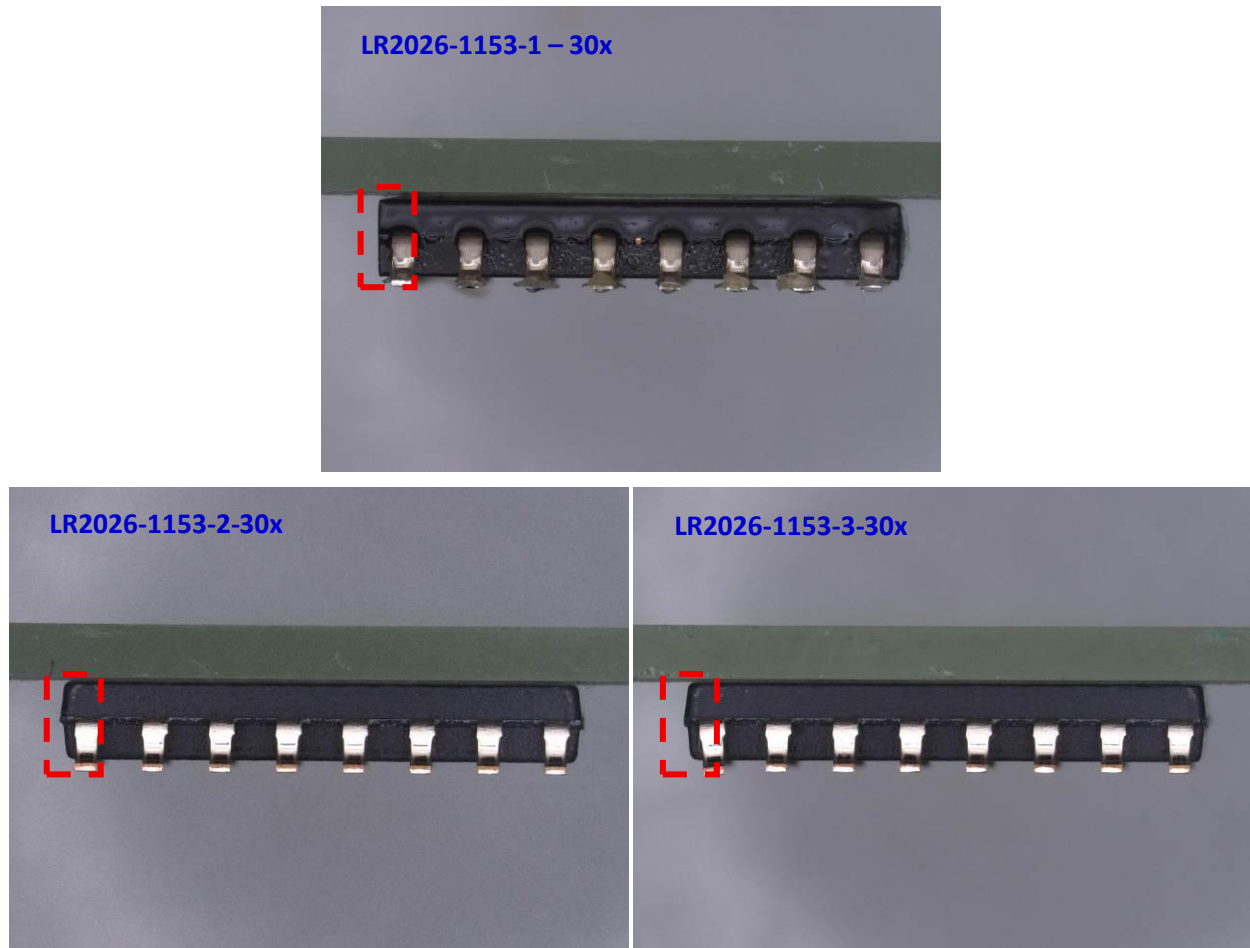


Figure 3: Side view#1 of test items LR2026-1153-1 to LR2026-1153-3 as received. Showing different shapes.

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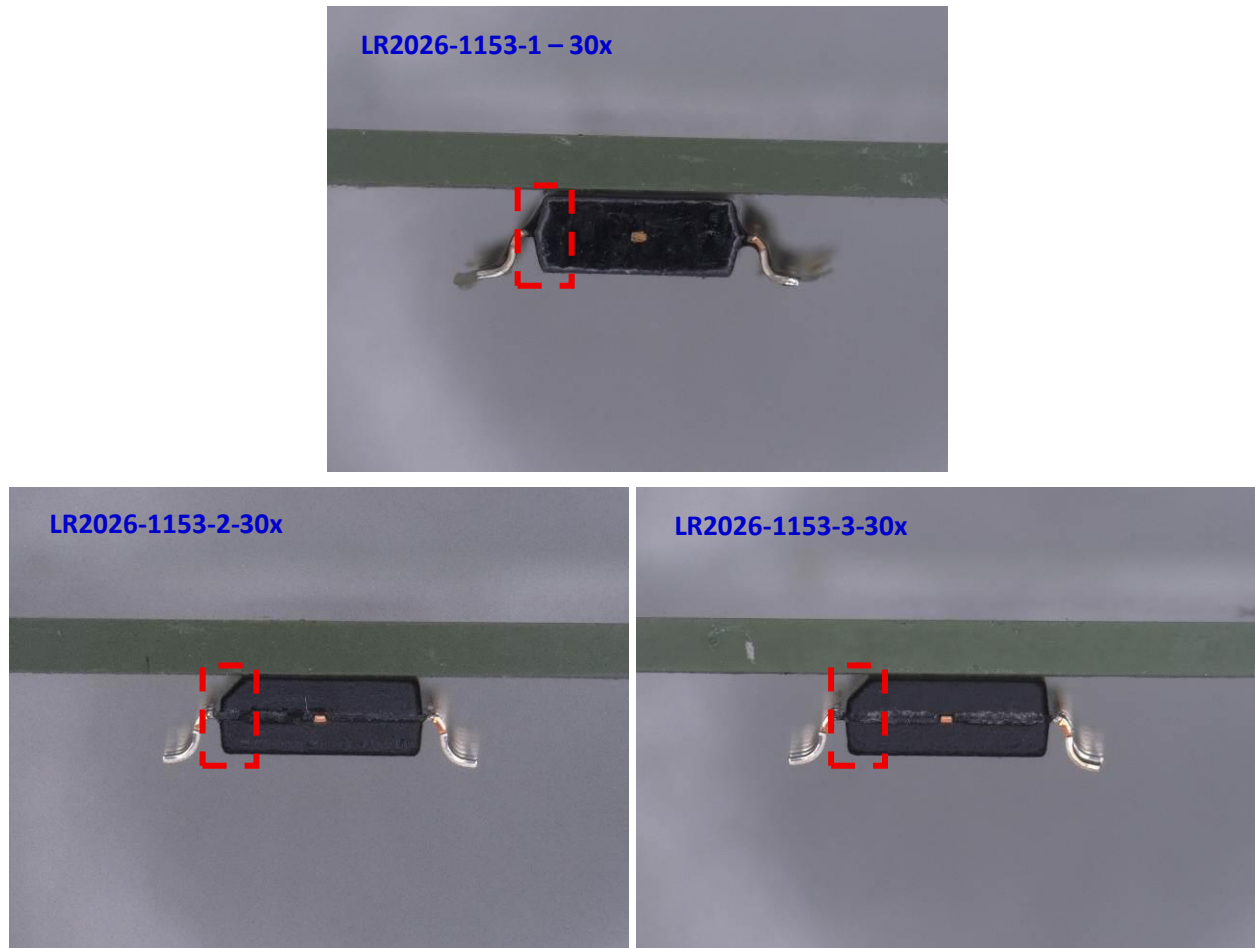


Figure 4: Side view#2 of test items LR2026-1153-1 to LR2026-1153-3 as received. Showing different shapes.

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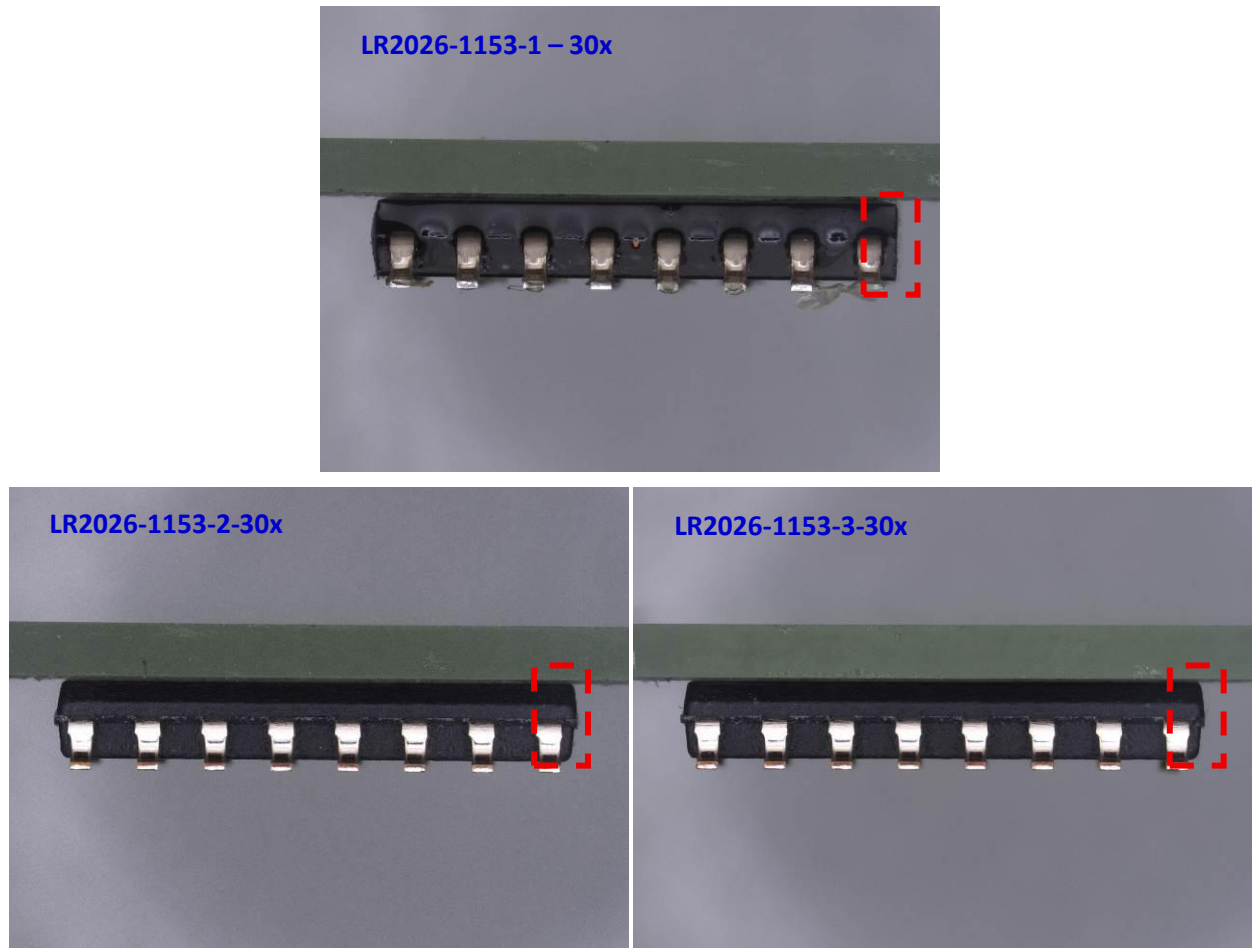


Figure 5: Side view#3 of test items LR2026-1153-1 to LR2026-1153-3 as received. Showing different shapes.

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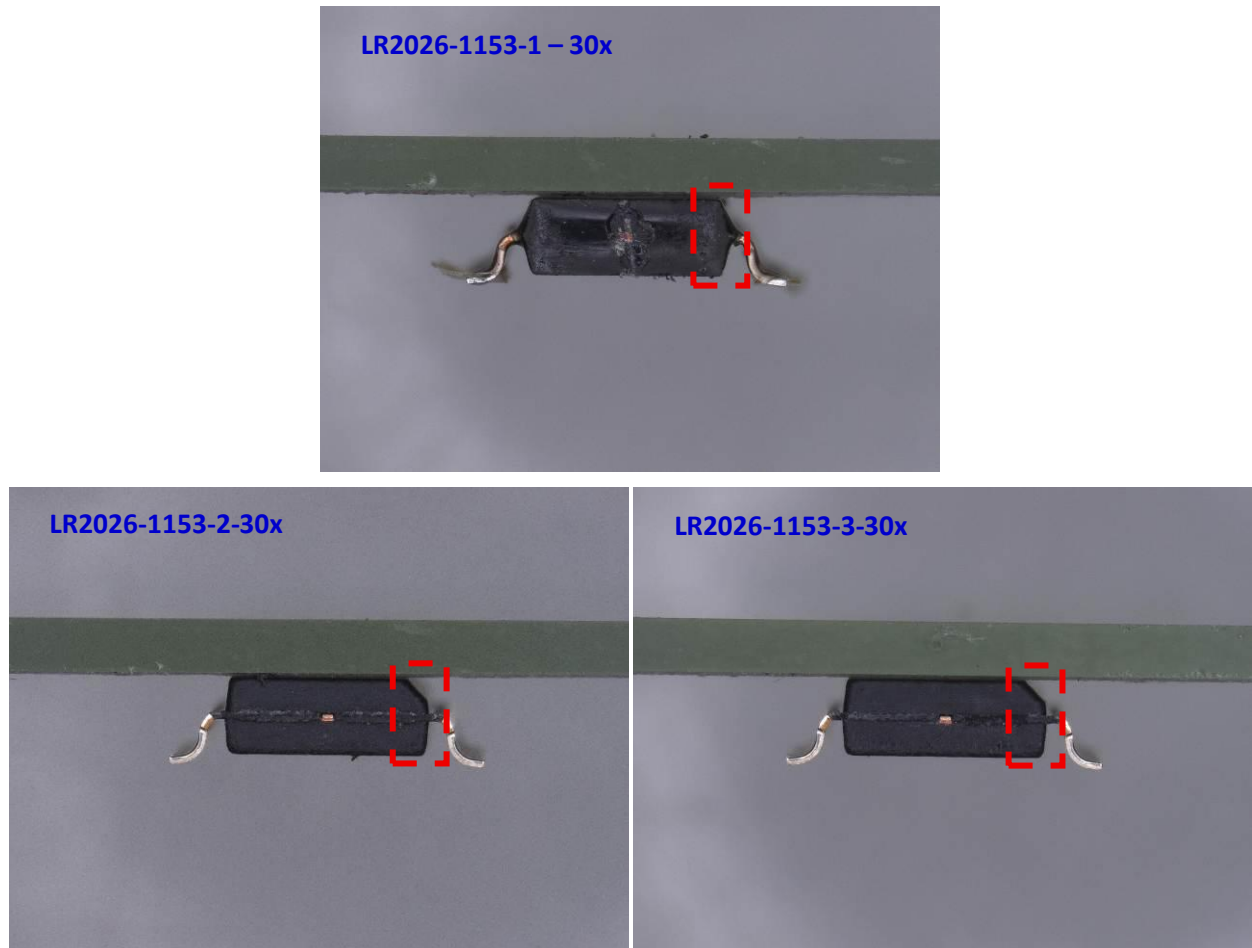
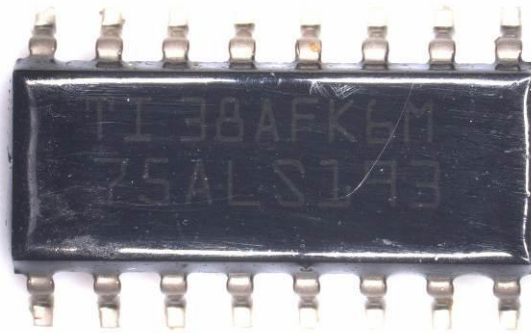


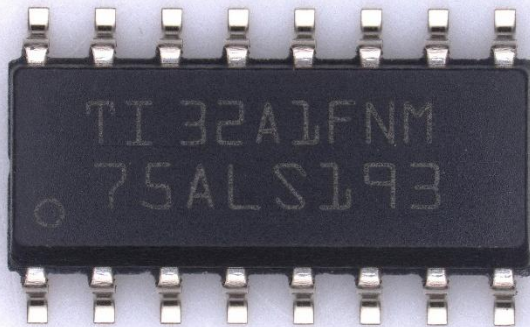
Figure 6: Side view#4 of test items LR2026-1153-1 to LR2026-1153-3 as received. Showing different shapes.

Test Report

LR2026-1153-1 – 30x



LR2026-1153-2-30x



LR2026-1153-3-30x

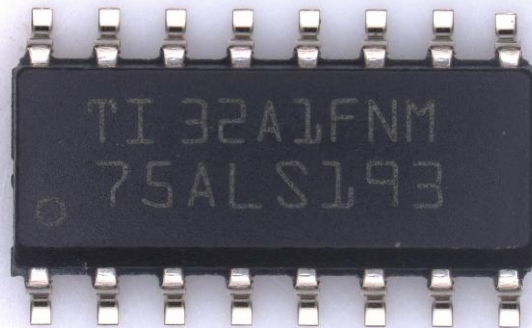


Figure 7: Optical inspection images of test items LR2026-1153-1 to LR2026-1153-3 showing laser markings at 30x magnification.

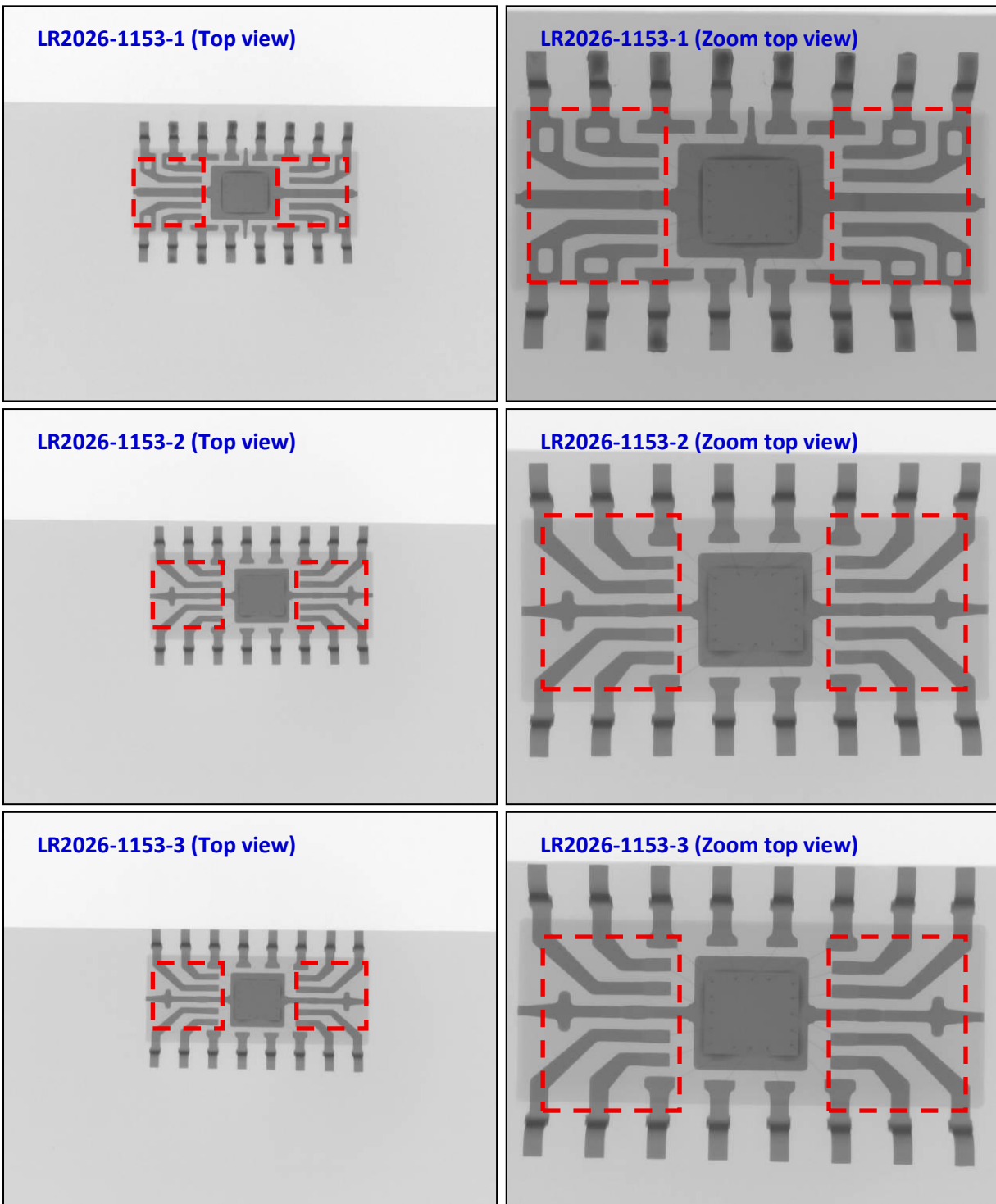


Figure 8: 2D X-ray images showing comparison of internal structure in top view of different lead frames.

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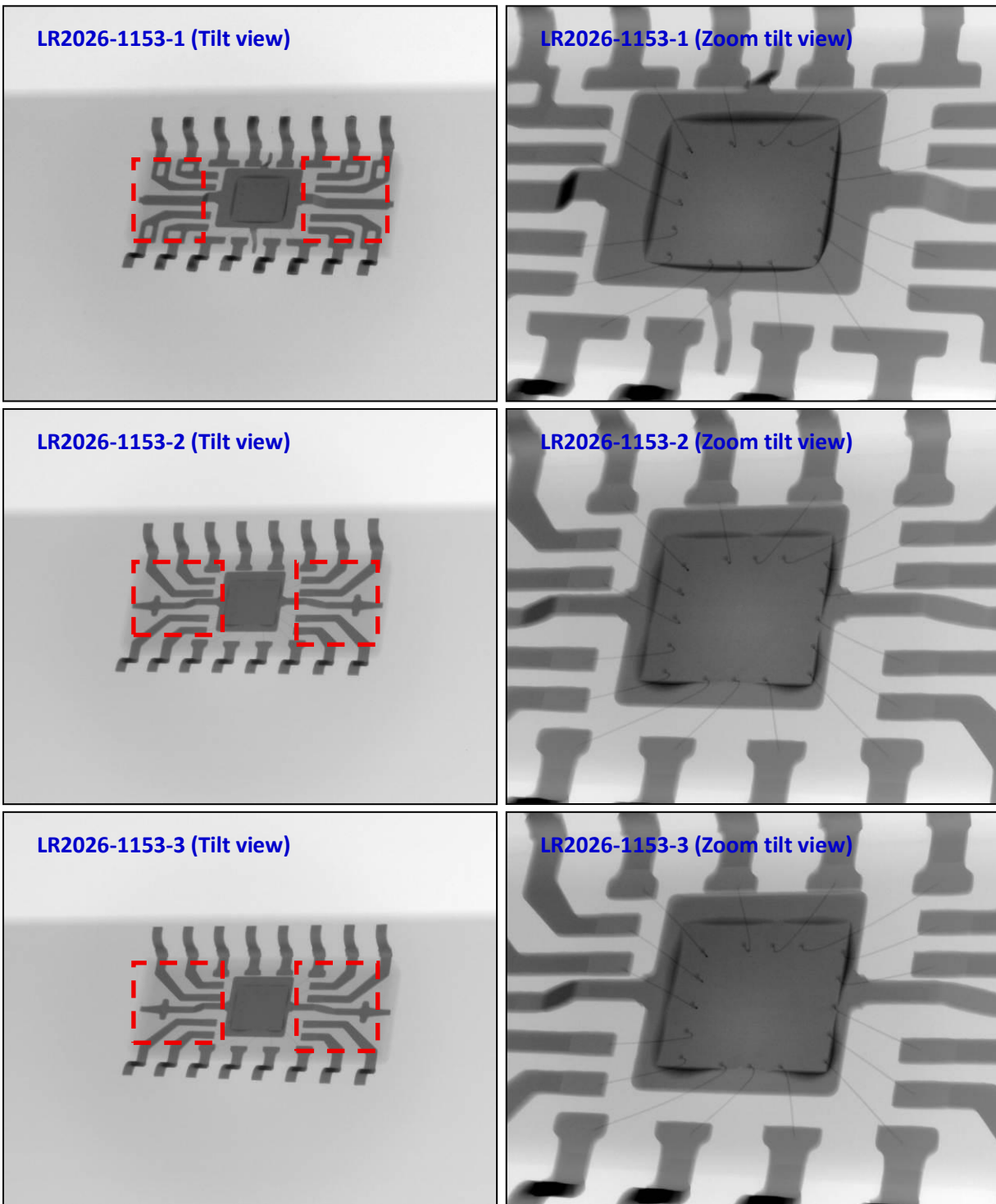


Figure 9: 2D X-ray images showing comparison of internal structure in tilt view of different lead frames.

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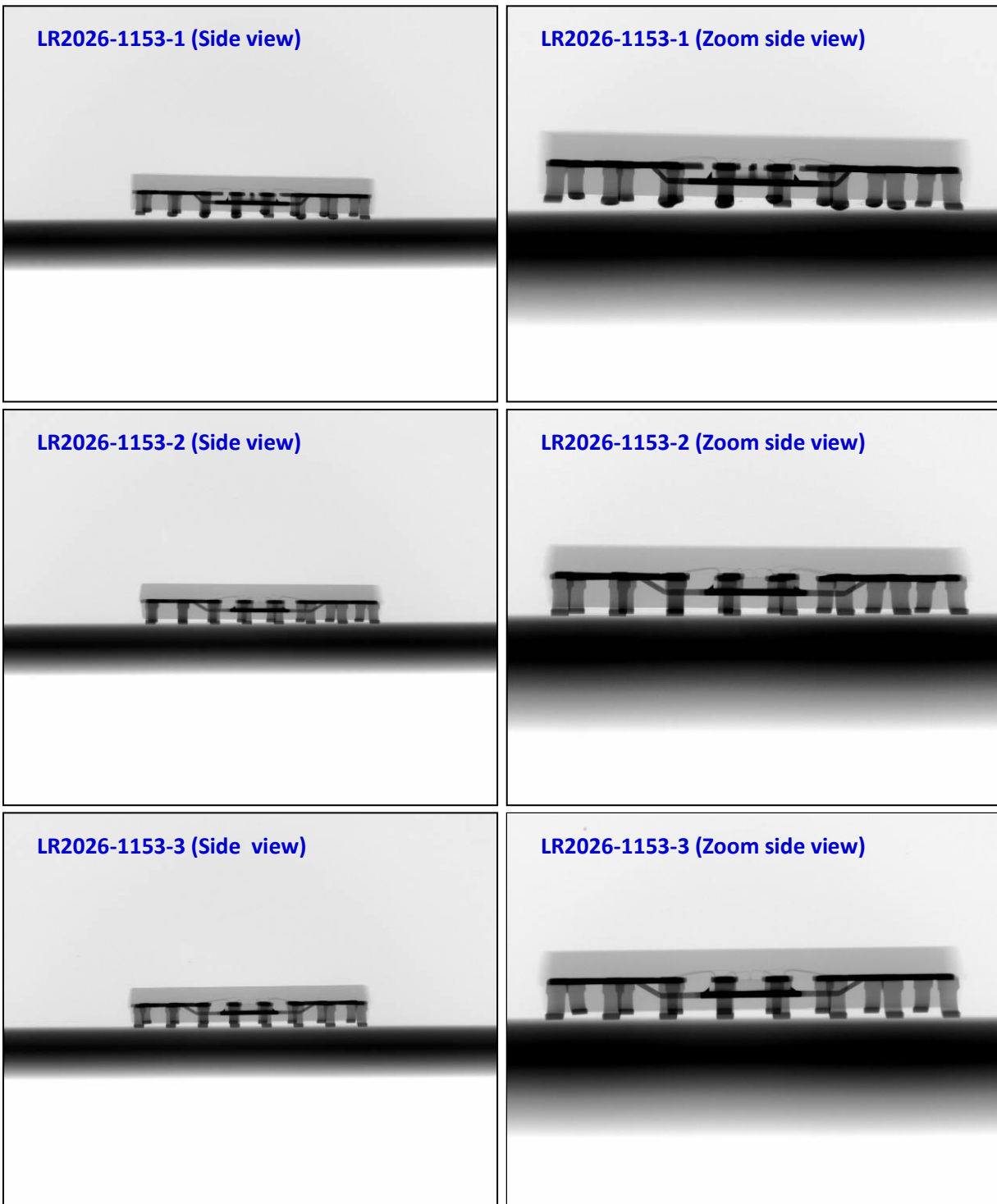


Figure 10: 2D X-ray images showing comparison of internal structure in side view.

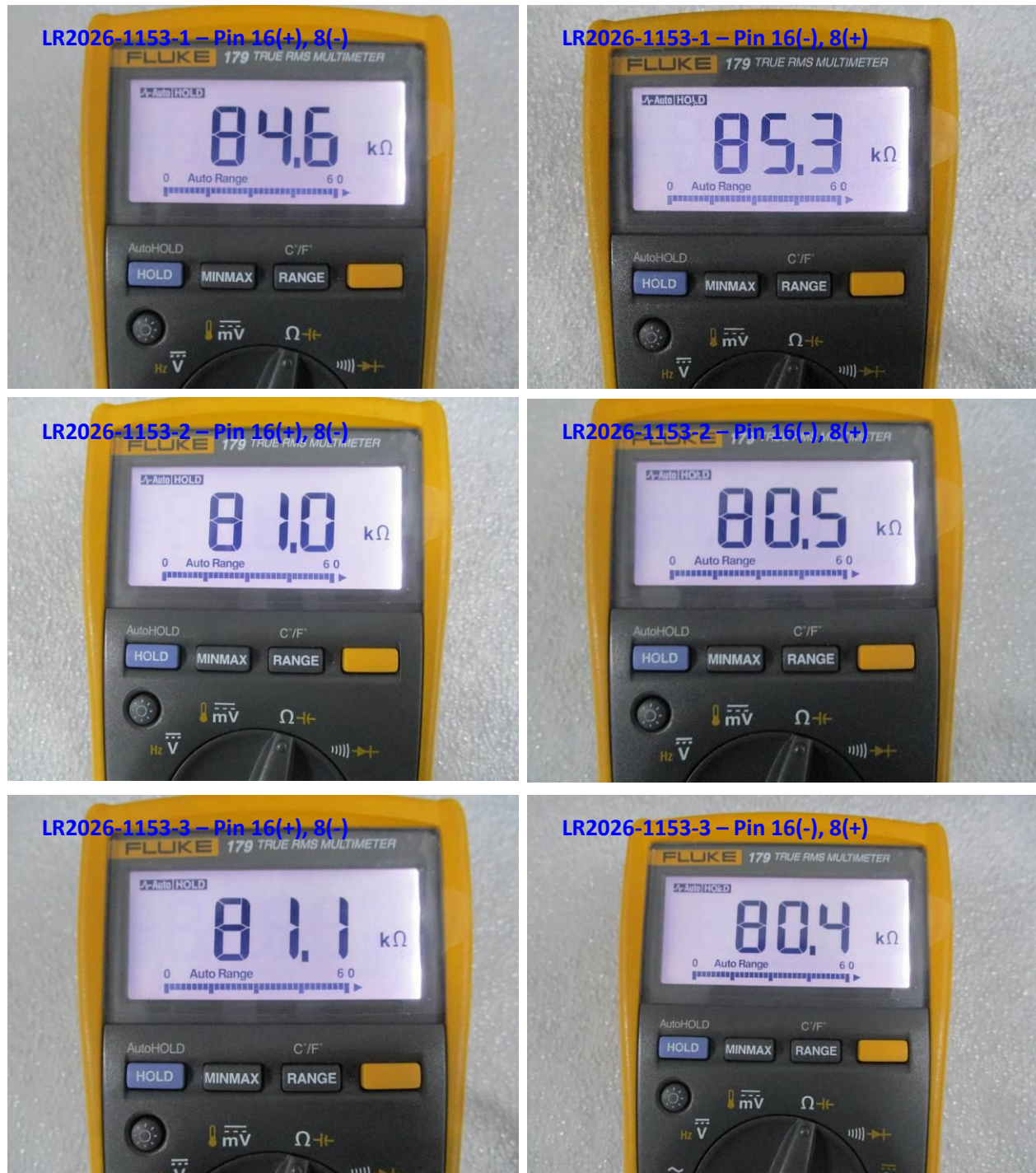


Figure 11: Resistance test of test items LR2026-1153-1 – LR2026-1153-3 measurement by multimeter.

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Test report authorized by

Advanced Engineering Group Director

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Amendment

Rev.	Description of Changes	Reason for Change
Initial	New Release	-

End of test report