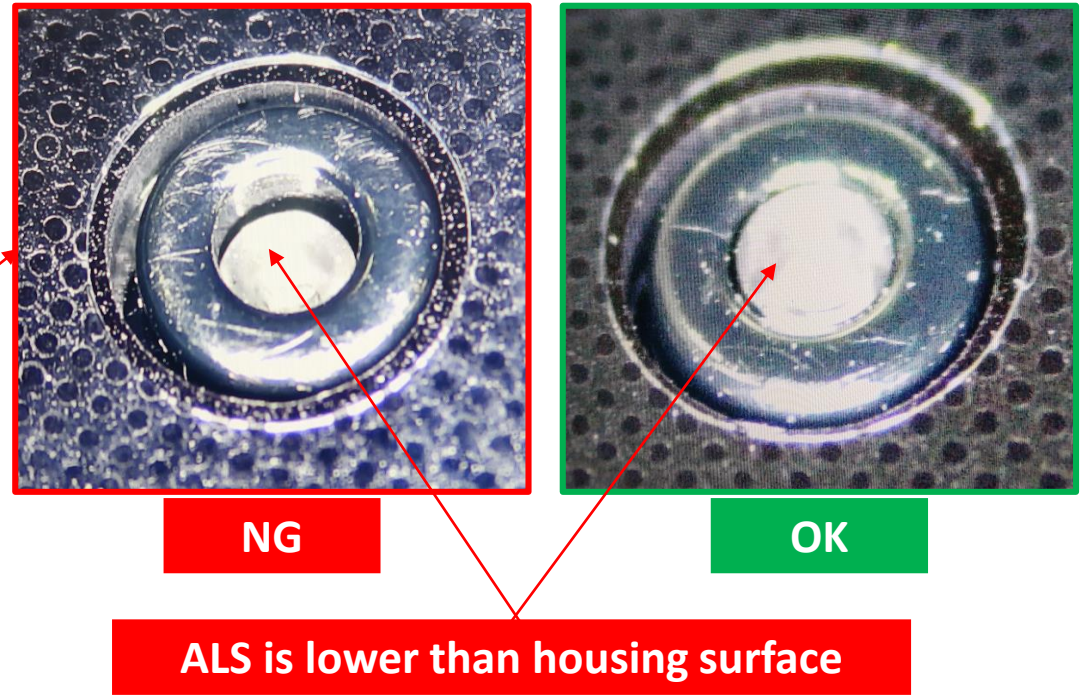
REL Test-Luna Air-leakage issue (ALS)

<< Failure description:

- Failure symptom: Devices are failed at IPX2 station after REL Q-Sun Sunny.
- Happen time: 2025/07/21
- How many: 1F/6T (FR: 16.66%)
- DSN: GT54FJ02525400F9



<< Failure Analysis:

Step 1: Checking device cosmetic if have any abnormal

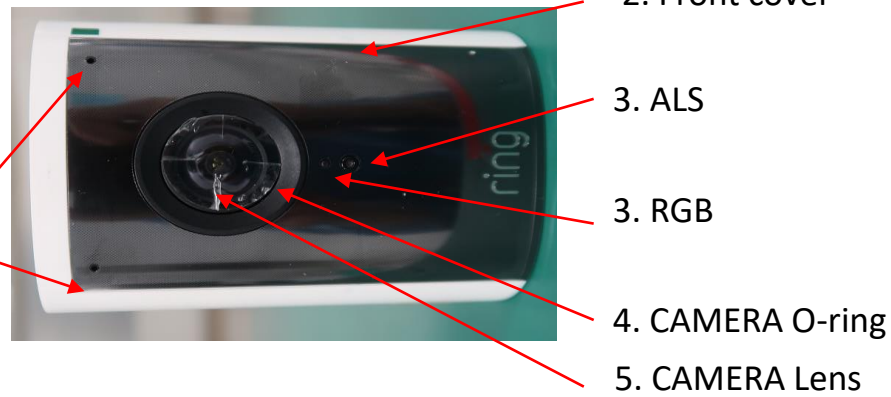
→ ALS product appearance detected abnormal phenomenon.

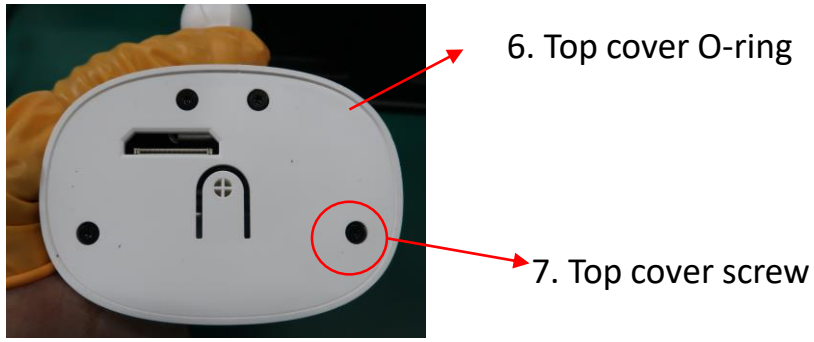
REL Test-Luna Air-leakage issue (ALS)

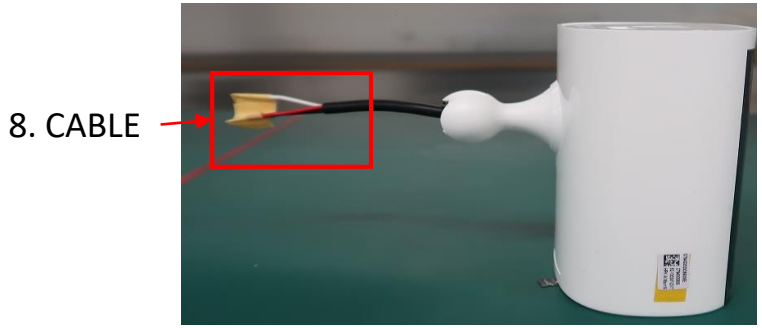
<< Failure Analysis:

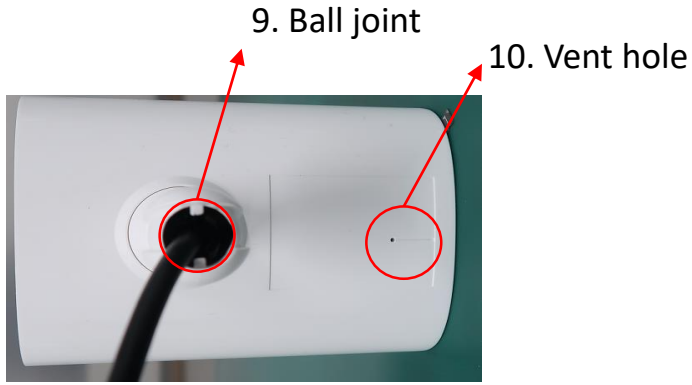
Step 2: Stick wooden tape to each possible air leakage location on the device to find out the exact air leakage location on the device.

- ❖ Only stick wooden tape and clay in turn to MIC/ALS/Camera/RGB/Vent position/Ball joint → Re-test IPX1 failed
- ❖ Only fill ALS position, re-test IPX1 is OK, the result showed table below → Only have air-leakage at ALS position





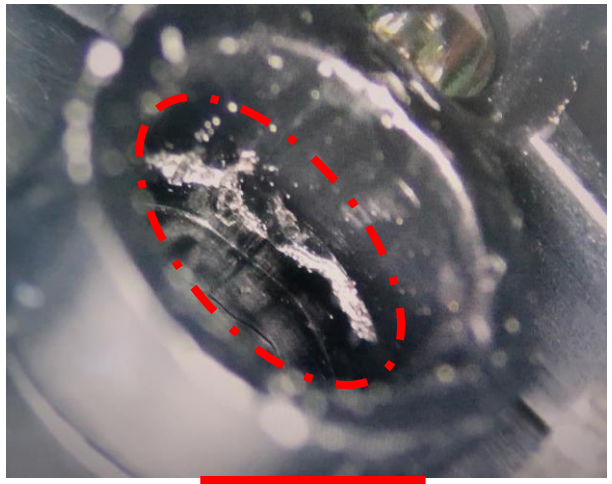




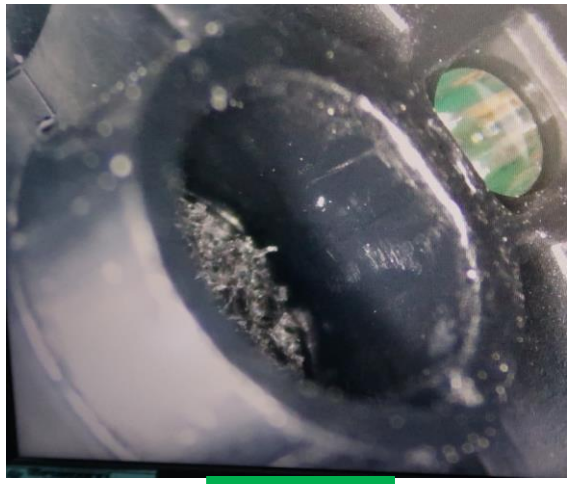
REL Test-Luna Air-leakage issue (ALS)

DSN	Leaking Position	IPX1 (IPX 2 < 200pa)	IPX After stick tape (Pa)
GT54FJ02525400F9	ALS	4232	183

Step 3: Disassemble the product and check:



NG



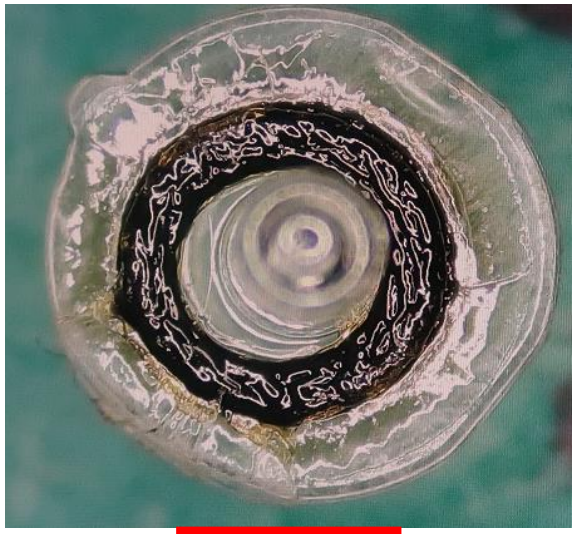
OK

❖ During inspection of the ALS cavity, a raised defect was observed inside the hole. This raised portion results in an uneven surface.

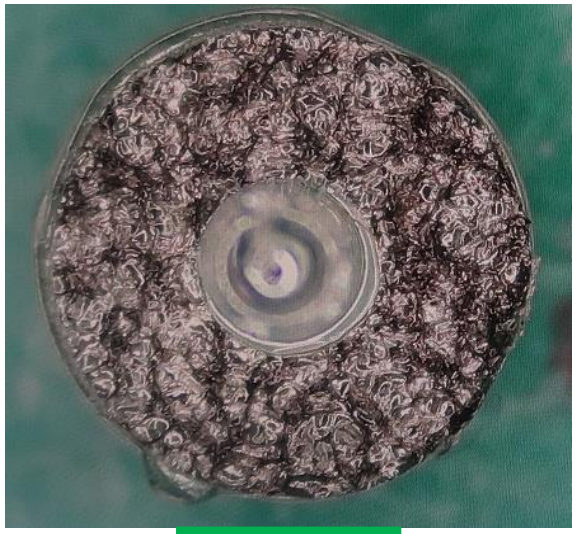
REL Test-Luna Air-leakage issue (ALS)

- When ALS is assembled onto this uneven surface, proper adhesion is compromised. This issue becomes more critical after undergoing the REL Q-Sun test (sunlight and mist exposure)
- which further degrades the adhesive properties of PSA

→ As a result, the bonding becomes unreliable or fails entirely.



NG



OK

REL Test-Luna Air-leakage issue (ALS)

<< Root cause:

- The raised surface inside the ALS hole prevents tight bonding due to uneven terrain.
- REL Q-Sun testing exacerbates the issue by accelerating PSA degradation.
- These combined factors lead to poor adhesion performance in the final product.

<< Correct Action:

1. SQE Coordinate with supplier for material review and improvement.

   Owner: SQE- Tammy Due date: 2025/07/28 Status: **On-going**