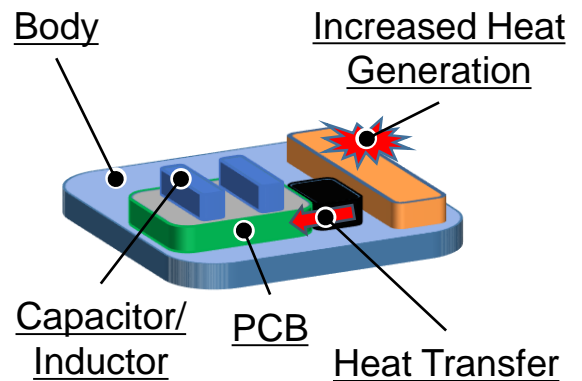


Chambers optimized for reliability assessment and temperature characteristics of capacitor and inductor with high frequency and wide temperature range

Passive components used in 5G networks are required to work in high frequency and withstand the heat. Therefore, various evaluations such as temperature characteristics, insulation reliability, and joints are performed. ESPEC provides measurement systems and environmental test chambers to support you to execute these evaluations efficiently with automation.

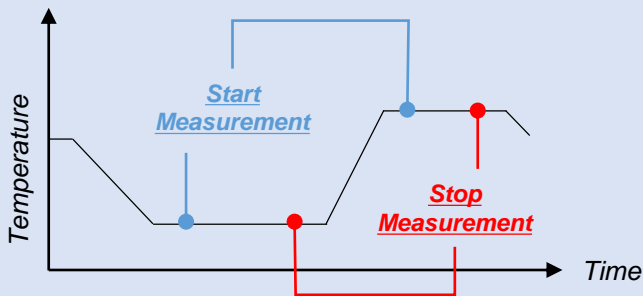
Mobile device block diagram



Features

Automation Measurements at set conditions

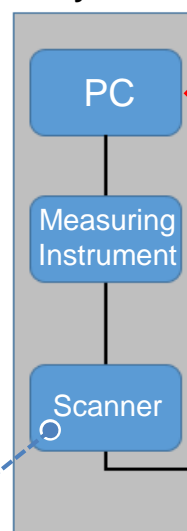
Measurement in synch with a test chamber



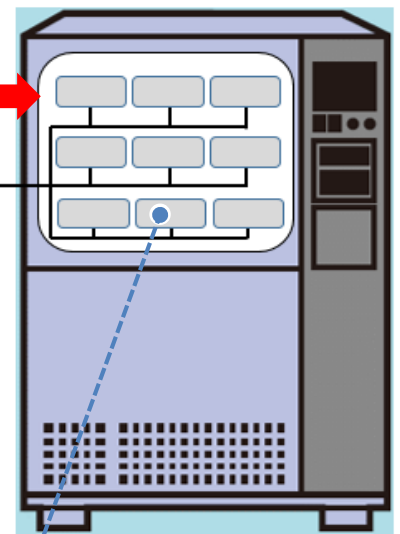
Automation Measuring multiple samples

Unique scanner method allows you to measure multiple samples automatically.

Measuring System

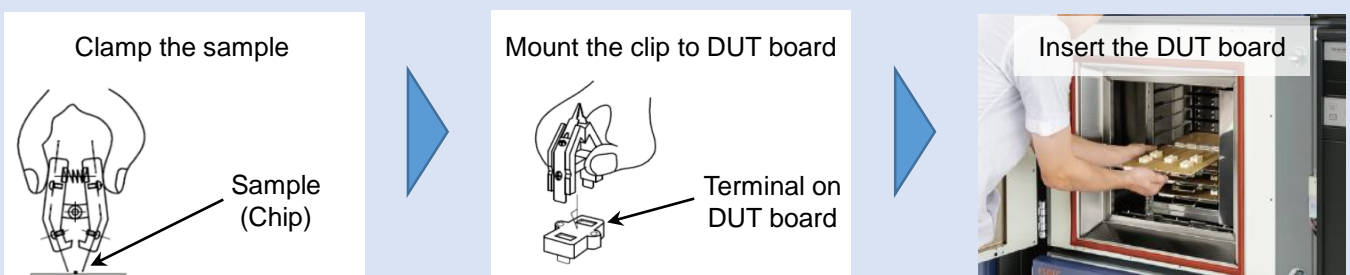


Chamber



Efficiency Original jig design per samples

Example: Tweezer clip mount



Lineup

High Frequency Inductor/Capacitor Temp. Characteristics Evaluation System

Automated measuring system with 100MHz measuring frequency

| | |
|-----------------|---|
| Model | AMQ-RF (Under development) |
| No. of Channels | 36 Channels |
| Measuring Range | FRQ: 1M to 100MHz L: 1n to 100μH Q: 0.1~100 Z: 100mΩ~1kΩ C: 1pF~100nF |

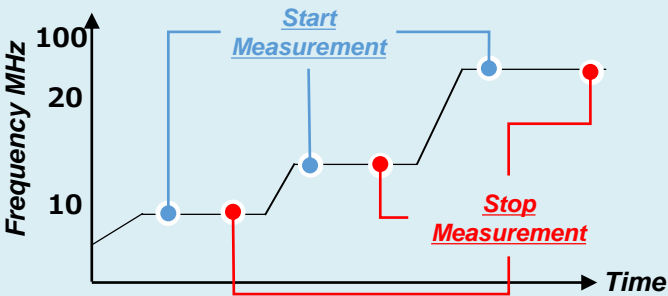


- Compatible with:
- Bench-Top Temperature Chamber
 - Compact Ultra Low Temperature Chamber
 - Platinous J
 - AR Series

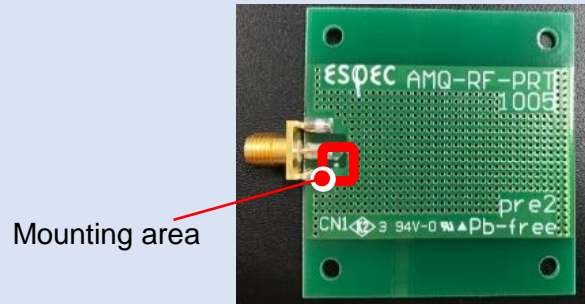
Automation *Measurement at set conditions*

Efficiency *Jigs to minimalizing error*

Ex: Frequency characteristics
Set FRQ sweep interval and take meas.



Ex: A jig for 50ohm chip impedance matching



Multi-layer Chip Inductor Reliability Evaluation System

A constant current is applied at high temperature to accelerate the thermal distortion, and measures the change in resistance value.

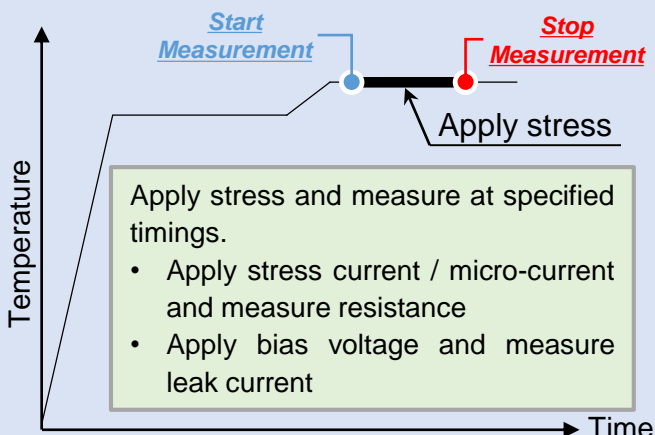
| | |
|-----------------------|------------------------------|
| Model | AEM |
| No. of Channels | Max 72 Channels |
| Stress Amperage Range | +DC10mA to 10A (3 ranges) |



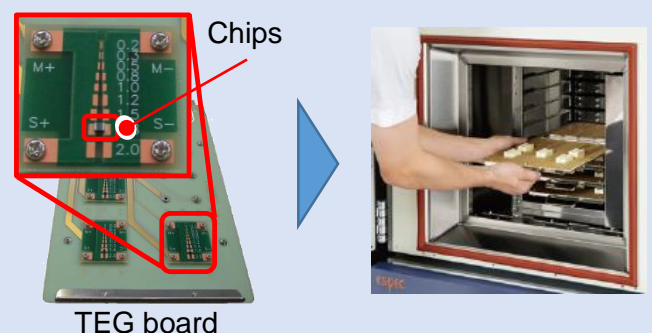
- Compatible with:
- AEM Exclusive Oven
Temp. Range: +65 to +350C

Automation *Programed stress & meas.*

Efficiency *Easy to mount jigs*



EX: TEG board - Mount chips on jig substrate, fix the substrate to TEG board. Insert the TEG board to the chamber.



Lineup

Capacitor Leakage Test System

Applies voltage under high temperature (and humidity) conditions and detects the leak current caused by insulation breakdown.

| | |
|--------------------|--|
| Model | AMI-U |
| Number of Channels | 150 channels per rack |
| Resistance Range | 2 x 10 ⁵ to 1 x 10 ¹³ Ω (with 100V stress) 2 x 10 ³ to 1 x 10 ¹¹ Ω (with 1V stress) |
| Amperage Range | 10pA~1mA |
| Stress Voltage | 100V / 300V / 500V / 1000V / 2500V |



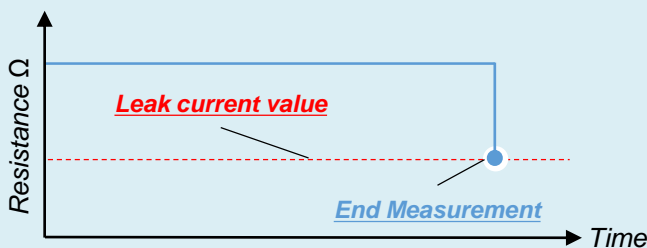
Compatible with:

- HAST
- Bench-Top Type Temperature Chamber
- Platinous J
- AR Series

Automation *Auto Short Circuit Detection*

Leak-touch Detection

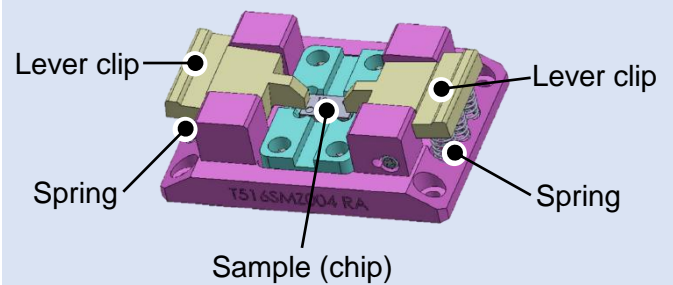
Accurately captures the short-circuit. The measurement ends when the leak is detected.



Efficiency *Jigs to minimalizing error*

EX: Chip-probe jig

1. Press the lever clip and place the sample
2. Release the clip to secure the sample



Conductor Resistance Evaluation System

Automatically detects cracks in the joint caused by the difference in expansion coefficient between the PCB and the component.

| | |
|------------------|---|
| Model | AMR-U |
| No. of Channels | Max. 280 channels per rack |
| Type | DC Current Measurement |
| Resistance Range | 1 x 10 ⁻³ ~1 x 10 ⁶ Ω |

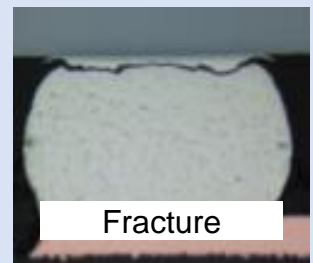
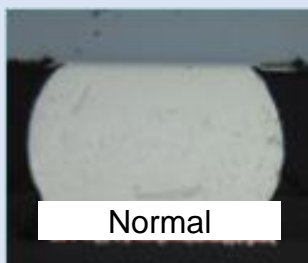


Compatible with:




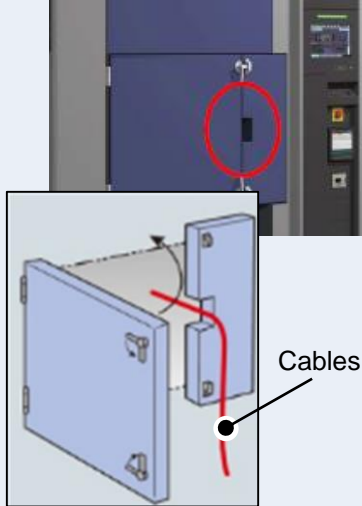
- Thermal Shock TSA
- Thermal Shock TSD
- TCC

Automation *Detect disconnection by continuous monitoring of resistance*

Microcracks at the joints occur at high temperatures in temperature cycle tests, but there are cases where cracks are not noticed as they reconnect at room temperature. By continuously monitoring the resistance during the test, the system can automatically judge the pass/fail of the samples by either an absolute value or change rate.



Chamber line-up to accommodate various sample size and quantity

| Product | HAST | Thermal Shock TSA | |
|-------------------------------------|--|--|---|
| Appearance |  |  | |
| Model | EHS-212 / 222 / 412 | EHS-432 / 432L | TSA-43 / 73 / 103 / 203 / 303 |
| Temperature Range | 212 / 222: +105 to 142.9C 412: +105 to 162.2C | +105 to 162.2C | EL HOT: (ambient + 50) to 200C COLD: -65 to 0C ES / EH HOT: +60 to 200C COLD: -70 to 0C |
| Humidity Range | 75 to 100%rh | 75 to 100%rh | N/A |
| Internal Dimensions WHD (mm) | 212/412: Φ294 x D318* (296) 222: Φ394 x D426*(404) * ()without fan-guard | 432: Φ560 x D560 432-L: Φ560 x D760 | 43: 240 x 460 x 370 73: 410 x 460 x 370 103: 650 x 460 x 370 203: 650 x 460 x 670 303: 970 x 460 x 670 |
| Features | <div style="border: 1px solid red; border-radius: 10px; padding: 5px; display: inline-block; color: red; font-weight: bold;">Efficiency</div>  <p>Allows you to work outside to set up (with an optional Slide shelf terminal block)</p> | <div style="border: 1px solid red; border-radius: 10px; padding: 5px; display: inline-block; color: red; font-weight: bold;">Large Capacity</div> Capacity: 432: 130L 432-L: 180L | <div style="border: 1px solid red; border-radius: 10px; padding: 5px; display: inline-block; color: red; font-weight: bold;">Efficiency</div>  <p style="text-align: right;">Cables</p> <p>Allows you to place the sample in the chamber with cables and wires connected with an optional Door notch.</p> |