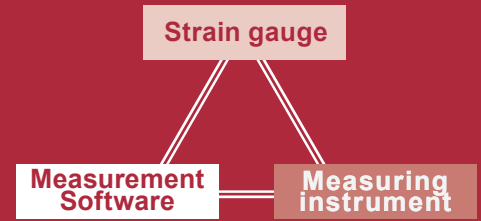
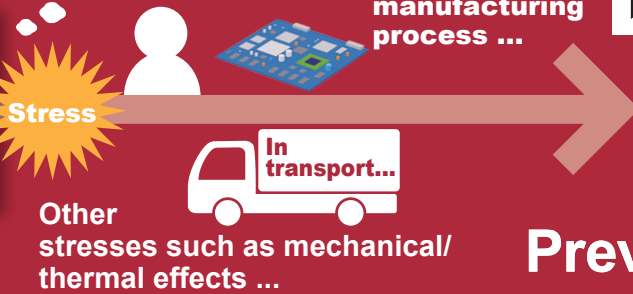
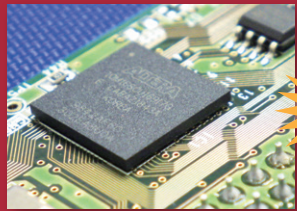


Prevent problems with circuit boards caused by stress

# Circuit Board Stress Check System



The problem could be caused by **circuit board stress...**



In recent years, due to the use of 'lead-free solder',  
 ▶ they have become more vulnerable to mechanical loads  
 ▶ and more fragile than ever before.



**Prevention of problems!**

## Circuit board stress check service

proposed by Tokyo Measuring Instruments Laboratory Co., Ltd.

**POINT 01**

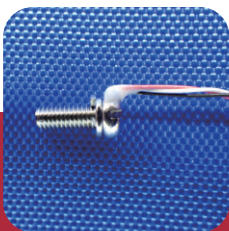
Our sales engineers can recommend the **“best gauge”** and **“mounting position”** for your circuit board problem!

**POINT 02**

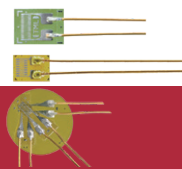
**“Highly reliable measurements”** ensure that even the slightest circuit board problem is not **“missed”**

**POINT 03**

**Strain analysis** using **measurement software** enables **“identification of substrate stress sources”** and **“objective data analysis”** !



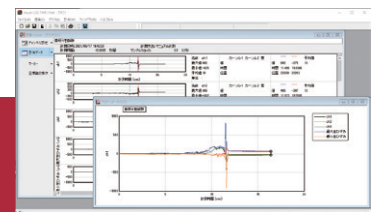
M3 axial force bolt installation example



UBFLA-03  
EFLK-02  
EFRA-05



Multi-Recorder  
TMR-300 Series



Time-series graph

**Bolt axial force gauge**

**Strain gauge**

**Measuring instrument**

**Measurement Software**

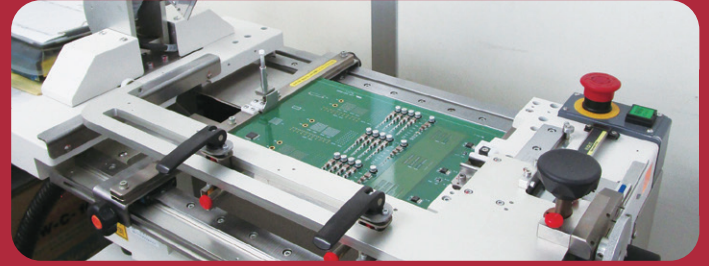
## Component mounting

When electronic components are mounted on printed circuit boards, stresses on the components occur due to mounting pressure.



## Circuit Board splitting

Surprisingly common component cracks. Stress from circuit board splitting is another factor.



# Each process of mounting and assembling printed circuit boards

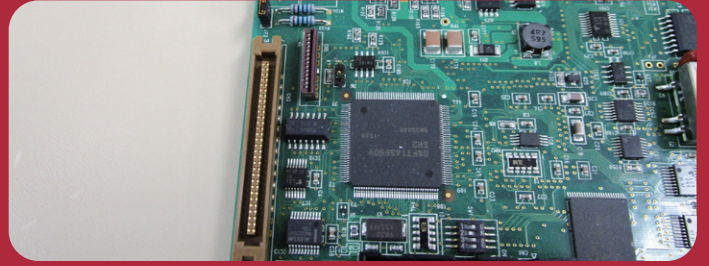
## Circuit testing

Board Functional Test (BFT)  
In-circuit testing (ICT)  
May be a cause of stress.



## Circuit Board assembly

Is excessive force being applied?  
Circuit Board warped by reflow,  
Is the assembly being carried out forcibly?



**! There are many unseen dangers lurking.**

# Why not find out about stresses on the circuit board?

## good point

Stresses occurring on components and circuit boards are visualised using strain gauges.

**good**

We can suggest the most suitable gauge and attachment position depending on the purpose of the test.

**good**

The maximum principal strain and its direction can be determined by rosette analysis using triaxial strain gauges.

**good**

Other tests such as thermal strain due to temperature changes during embedded board operation, heat cycle tests, etc., please contact us.

The contents of this catalog are subject to change without prior notice.  
The contents of this catalog are as of October 2024. TML Pam E8005A.



Approval Certificate **ISO9001**  
Design and manufacture of strain gauges, strain measuring equipment and transducers



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