

Instructions for Measuring an Sn-Ag Coating

1. Overview

Sn-Ag system solder coating has recently been used as one type of lead-free substitute. This application brief introduces some advantages to measuring a Sn-Ag solder coating using SFT series instruments.

2. Standard Sample Preparation

Listed below are the standard samples used for creating the calibration curve. Measurements of 5 to 15 μm can be done with this standard sample combination.

No	Sn-Ag	Sn %	Cu
1	Infinite	100.00	-----
2	Infinite	0.00	-----
3	-----	0.00	Infinite
4	Infinite	97.00	-----
5	Sn: 10 μm	100.00	Infinite
6	Sn: 20 μm	100.00	Infinite
7	Ag: 1 μm	0.00	Infinite
8	Ag: 2 μm	0.00	Infinite

3. Calibration Curve

The following changes in condition settings are required for optimum measurement conditions.

3.1 SFT7000

Change the Sn spectrum and Ag spectrum ranges as shown below.

	Before change	After change
Sn	115.135	98.135
Ag	98.122	98.135

Please note that these changes are not made in the usual calibration curve create menu but require that a special create menu be selected.

3.2 SFT3000

Select "6. Change Measurement Conditions" from the "Create Calibration Curve" menu and change the items as shown below.

	Sn	Ag
Primary filter	ON	ON
Secondary filter	OFF	OFF
ROI lower limit	98	98
ROI upper limit	135	135

3.3 SFT3000S

In Analysis Conditions 4/5 window select "Cancel Auto meas-cond set" and click on the **[Meas. Cond]** button to open the "Revision Measure Condition" window. Here, set the measurement conditions for both Sn and Ag.

3.3.1 Target Element Sn

Change Sn conditions as shown in the following table.

	Changed values
Primary filter	ON
Secondary filter	OFF
N.filter	ON
ROI	20.00 - 27.44

Click on the **[Next]** button to change the Ag conditions.

3.3.2 Target Element Ag

Change Ag conditions as shown in the following table.

	Changed values
Primary filter	ON
Secondary filter	OFF
N.filter	ON
ROI	20.00 - 27.44