

## Minutes of the Joint ECA Soldering Technology Committee (STC)

**Tuesday, April 1, 2008**

**Brown Hotel**

**Louisville, KY**

**The scope of the Soldering Technology Committee (STC):** The STC encompasses soldering practices (soldering iron-mass reflow techniques) and associated soldering materials (solders, pastes and adhesives, and flux / cleaning agents). However, the Committee will focus on solderability test method development for printed through-hole (PTH) and surface mountable components. One of the major functions is to promote commonality and standardization of soldering test methodology within the EIA sectors.

This meeting was called to order at 1:30 p.m. by Mary Carter Berrios,  
standing in for STC Committee Chairman, Doug Romm

Name	PI	V	T	Organization	Telephone	E-mail	S08	F07	S07	F06
<b>Attendees</b>										
Biernacki, Joe	M	P		Stackpole	915-790-2449	<a href="mailto:j.biernacki@seielect.com">j.biernacki@seielect.com</a>	Y	Y	Y	Y
Carter Berrios, Mary	M	P		KEMET Corporation	864-901-0157	<a href="mailto:marycarterberrios@kemet.com">marycarterberrios@kemet.com</a>	Y	Y	Y	Y
Lauri, Mike	M	U		IBM	845-892-0442	<a href="mailto:laurim@us.ibm.com">laurim@us.ibm.com</a>	Y	Y	Y	Y
Lindquist, Carl	M	P		SOC America, Inc.	908-218-8899	<a href="mailto:fuseman@attglobal.net">fuseman@attglobal.net</a>	Y	Y	Y	N
Macomber, Laird	M	P		Cornell Dubilier	864-843-2277	<a href="mailto:lmacomber@cde.com">lmacomber@cde.com</a>	Y	Y	Y	Y
McHargue, Lanney	M	P		Murata	770-319-5159	<a href="mailto:lmchargue@murata.com">lmchargue@murata.com</a>	Y	N	N	N
Offner, Arnold	M	P		Phoenix Contact	717-948-3469	<a href="mailto:aoffner@phoenixcon.com">aoffner@phoenixcon.com</a>	Y	N	N	N
Piscitelli, Brian	M	P		KOA Speer		<a href="mailto:bpiscitelli@koaspeer.com">bpiscitelli@koaspeer.com</a>	Y	N	N	N
Reynolds, Chris	M	P		AVX	843-444-2868	<a href="mailto:creynolds@avx.com">creynolds@avx.com</a>	Y	N	Y	Y
Richardson, Dave	M	P		Vishay	770-887-2021	<a href="mailto:Dave.richardson@vishay.com">Dave.richardson@vishay.com</a>	Y	Y	N	Y
Young, Jayson	M	P		KEMET Corporation	864-967-6859	<a href="mailto:jaysonyoung@kemet.com">jaysonyoung@kemet.com</a>	Y	Y	Y	Y
<b>Absent</b>										
Cambron, Ron	G	P		Bourns, Inc.	480-820-8662	<a href="mailto:Ron.cambron@bourns.com">Ron.cambron@bourns.com</a>	N	N	Y	N
Cannon, Mike	M	P		TDK	847-390-4317	<a href="mailto:mcannon@tdkca.com">mcannon@tdkca.com</a>	N	N	Y	N
Cantrell, Wil	G	P		Bourns, Inc.	951-781-5558	<a href="mailto:Wil.cantrell@bourns.com">Wil.cantrell@bourns.com</a>	N	N	Y	N
Cleet, Chris	S	G		EIA	703-907-7573	<a href="http://cdleet@eia.org">cdleet@eia.org</a>	N	N	N	Y
Coler, Ted	M	P		Vishay	402-563-6417	<a href="mailto:Ted.coler@vishay.com">Ted.coler@vishay.com</a>	N	Y	N	Y
Crawford, Jack	G	G		IPC	847-597-2893	<a href="http://crawja@ipc.org">crawja@ipc.org</a>	N	N	N	N
Griffith, Mike	M	P		KOA Speer	814-362-5536	<a href="mailto:mgriffith@koaspeer.com">mgriffith@koaspeer.com</a>	N	N	Y	N
Hillman, Dave	M	U		Rockwell-Collins	319-295-1615	<a href="mailto:ddhillma@rockwellcollins.com">ddhillma@rockwellcollins.com</a>	N	N	N	N
Kolbe, Jerry	M	P		Murata	814-238-8437	<a href="mailto:jkolbe@murata.com">jkolbe@murata.com</a>	N	N	N	Y
Kummeri, Steven	M	P		Texas Instruments, Inc.	214-480-1509	<a href="mailto:s-kummeri2@ti.com">s-kummeri2@ti.com</a>	N	Y	N	N
Masui, Jim	M	P		Murata	770-436-1300	<a href="mailto:jmasui@murata.com">jmasui@murata.com</a>	N	Y	N	N
McCullen, Jack	G	P		Intel	480-554-5354	<a href="mailto:Jack.t.mccullen@intel.com">Jack.t.mccullen@intel.com</a>	N	N	Y	N
Malhotra, Karun	G	P		Murata		<a href="mailto:kmalhotra@murata.co.jp">kmalhotra@murata.co.jp</a>	N	N	N	Y
Metzger, Len	M	P		Panasonic	201-348-5244	<a href="mailto:metzgerl@us.panasonic.com">metzgerl@us.panasonic.com</a>	N	N	N	Y
Motoki, Tom	M	P		Murata	770-433-7613	<a href="mailto:tmotoki@murata.com">tmotoki@murata.com</a>	N	N	N	Y
Offner, Arnold	M	P		Phoenix Contact	717-948-3469	<a href="mailto:aoffner@phoenixcon.com">aoffner@phoenixcon.com</a>	Y	N	N	N
Olster, Stephen	M	P		Mini-Systems, Inc.	508-695-0203	<a href="mailto:solster@mini-systemsinc.com">solster@mini-systemsinc.com</a>	N	N	N	Y
Romm, Doug	M	P		Texas Instruments, Inc.	903-868-7388	<a href="mailto:doug@ti.com">doug@ti.com</a>	N	Y	Y	Y
Russell, Bill	M	U		Raytheon	972-205-6188	<a href="mailto:wrussell@raytheon.com">wrussell@raytheon.com</a>	N	Y	N	Y
Toomey, Dave	M	P		Vishay	207-490-7212	<a href="mailto:Dave.toomey@vishay.com">Dave.toomey@vishay.com</a>	N	N	N	Y
Wang, Liwu	M	P		AEM	858-481-0210	<a href="mailto:lwang@aem-usa.com">lwang@aem-usa.com</a>	N	N	Y	N
<b>Nonvoting Members Present</b>										
Justus, Ralph	S	G		ECA	703-907-8023	<a href="mailto:rjustus@ecaus.org">rjustus@ecaus.org</a>	Y	Y	N	N
Willis, Bob	S	G		ECA	703-907-7436	<a href="mailto:rwillis@ecaus.org">rwillis@ecaus.org</a>	Y	N	N	N

\*PI = Participant Identification: V = voting status, M = member, G = guest, S = staff, T = participant type, P = producer, U = user, G = participant

## **1. Introductions and Roster Modifications**

## **2. Old Business**

- 2.1. Fall 2007 meeting minutes approval – The committee approved the minutes from the September 2007 STC meeting in San Antonio, TX.

## **3. New Business**

### **3.1. Revision to IPC / EIA J-STD-002B**

3.1.1. J-STD-002C published and now available.

3.1.2. Dave Hillman has highlighted the following 2 issues:

3.1.2.1. Wetting balance on BGA balls – parameters do not work. A synopsis is due to Dave Hillman the week of April 6<sup>th</sup>.

3.1.2.2. Test S – verbiage allowing vendor and user to agree on paste used was inadvertently dropped.

3.1.3. An amendment to address issues in 3.1.2 will be sent out. These changes do not affect passive devices and committee members were encouraged to vote positively and not hold up release of the amended document.

### **3.2. Comparison of J-STD-002C to JEDEC B102**

3.2.1. JEDEC originally agreed to rescind B102 when J-STD-002C was published, but now intends to continue use of JEDEC B102. J-STD-002C was published as a Joint ECA / IPC standard. The reason is that more time will be required to resolve the differences.

3.2.2. A spreadsheet compiled by Dave Hillman comparing the two documents was reviewed and is provided as an attachment. The main differences are lead-free test temperatures and preconditioning.

3.2.3. Doug Romm, Dave Hillman, and Bill Russell will attend the June 17<sup>th</sup> meeting of JEDEC JC14.1 in Denver, CO in an effort to work with JEDEC to bridge the gap between these two specifications.

3.2.4. A survey of meeting attendees indicates that neither standard is used in practice. Instead manufacturers rely on customer specifications, which cite one of the two documents or some other customer-unique requirements.

### **3.3. Possible Replacements for Steam Preconditioning**

3.3.1. To investigate options for replacing steam aging as a preconditioning method, a DOE was established and a “pathfinder” study initiated. Conditioning is complete and data is currently being analyzed. The latest information is summarized and provided as an attachment.

3.3.2. The following tasks are being completed:

- Wetting balance testing conducted by Gerard O’Brien (wetting bath) STS and Bev Christian (globule) RIM per new J-STD-002C.
- Dip-and-look performed by Chris Mahana of Robeson Labs. KEMET and AVX have volunteered to also support this effort.
- Assembly simulation conducted by Dave Hillman.

- 3.3.3. The majority of the data will be available at the Fall 2008 meeting. A confirmation run will follow that meeting with data to be summarized and ready for the Spring 2009 meeting.
- 3.3.4. JEDEC JC14.1 meets in Denver on June 17<sup>th</sup>. The IPC Fall 2008 meeting is Monday, September 22<sup>nd</sup> in Chicago.

#### 3.4. Gauge R&R for Wetting Balance test

- 3.4.1. The wetting balance test method is currently listed in ANSI/J-STD-002 under the section "Tests without Established Accept / Reject Criterion". The STC has agreed to undertake evaluation of either validating or removing the wetting balance test as an accepted method. Plans and timing for this future work is tabled until the Fall 2008 meeting at earliest.

#### 3.5. Two areas were discussed for consideration in future revision of J-STD-002.

- 3.5.1. Consider adding push test and associated criterion. Results are measurable and the test is also used by IEC.
- 3.5.2. Consider defining criteria for which types of components can be defined by the various classes. The default category definition is a class 3 requiring 98% coverage. This is difficult to accomplish on axial and radial through hole requirements.

### **4. Next Meeting**

The next meeting is scheduled to be held in conjunction with the ECA Fall 2008 ECA Engineering Summit. The ECA Engineering Summit will be held at the Red Lion Hotel in Salt Lake City, UT during the week of October 6 -9 2008.

### **5. Adjournment**

The committee moved, seconded, and unanimously agreed to adjourn at approximately 2:30 p.m. The meeting was conducted in accordance with the EIA legal guidelines and the EIA manual of organization and procedure.

Respectfully submitted:  
Mary Carter Berrios  
Member, STC