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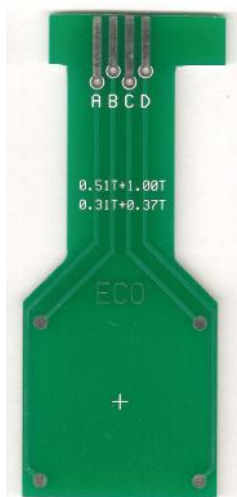
Sample Mounting Boards

for use with the HMS-3000 Hall Effect Measurement System

Ecopia offers various styles of sample mounting boards for use with the HMS-3000 Hall Effect Measurement System.

SMB-20 Board

The Manual Wire Bond Sample Mounting Board



The HMS-3000 includes 5 of the SMB-20 sample mounting boards as shown to the left. This board requires manual installation of small wires. The SMB-20 can be used to mount samples up to 20mm on a side. You can read about the process involved in mounting a sample onto the SMB-20 sample mounting board here: (SMB-6 boards are shown at the bottom of this document)

http://www.fourpointprobes.com/sample_mounting.pdf

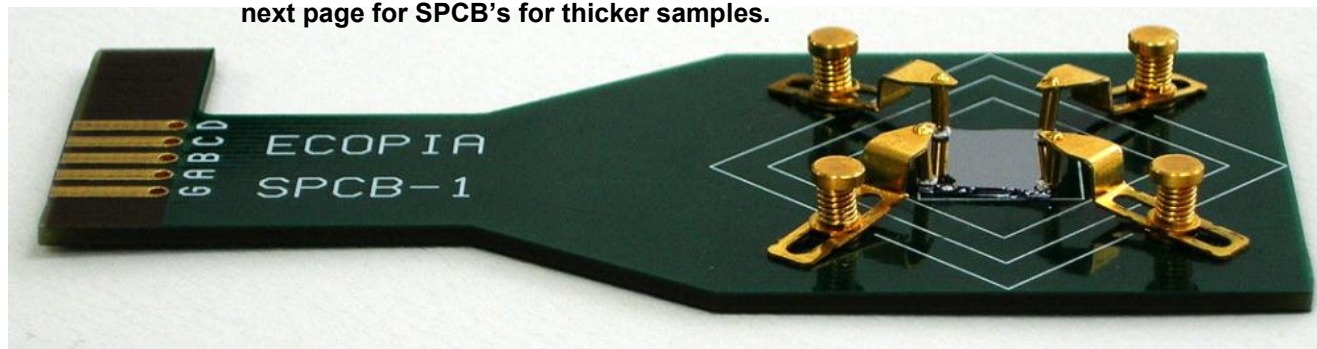
The HMS-3000 includes a small amount of the indium-tin compound and some of the thin wire that is used to mount samples onto these re-useable boards.

The Spring Clip Board Sample Mounting Boards

The SPCB-1 Spring Clip Sample Mounting Board makes sample mounting much quicker and easier. One of the SPCB-1 sample mounting boards is included with the HMS-3000, or it can be exchanged instead for any of the other choices of spring clip boards as shown on the following pages. The benefits of the SPCB-1 include:

- The SPCB-1 can mount square shaped samples up to 2mm thick and up to 20mm on a side.
- Hand-bonding the small contact wires is eliminated
- The gold plated spring loaded pins make good ohmic contact to the sample, although contacts on the sample are normally still required.
- The SPCB-0 is designed for use with the 1.0 Tesla magnet kit at room temperature.
- Compatible with measurements at LN₂ temperature or 300K using the 0.55T magnet kit.

SPCB-1 for sample up to 2mm thick. See next page for SPCB's for thicker samples.



Continued

Ecopia offers the following additional models of the SPCB Spring Clip boards. The samples should be square in shape. Construction is of gold plated non-magnetic phosphor-bronze alloy. Contacts applied to the corners of the sample are normally required for good ohmic contact. A complete listing of the available board types is shown on the next page.

SPCB-2 Spring Clip Sample Mounting Board for samples from **2mm up to 4.5mm thick** with square shape from **5mm to 20mm on a side**:

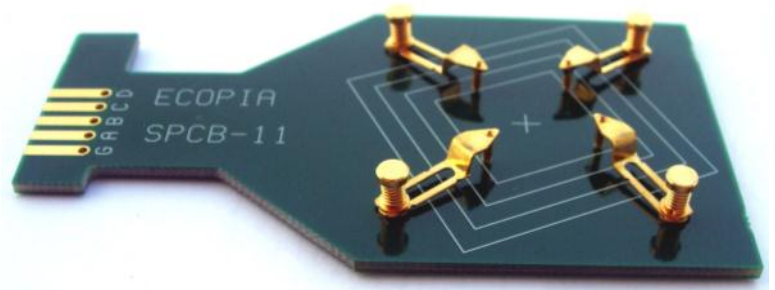


SPCB-3 Spring Clip Sample Mounting Board for samples from **3mm up to 5.5mm thick** with square shape and from **5mm up to 20mm on a side**:

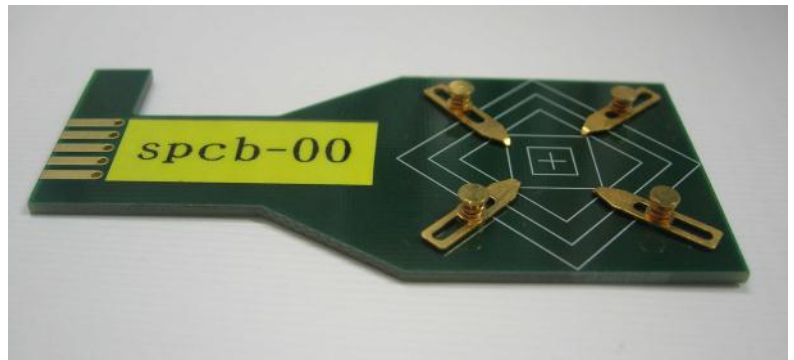


The **SPCB-11, -12, & -13** Spring Clip Sample Mounting Board are for samples from **15mm to 30mm on a side**.

NOTE: Due to the magnetic flux density area of the HMS-3000, Ecopia sample boards with up to 30mm square sample capacity are only for use with samples that are up to 20mm square, or for use with non-Hall effect measurement applications. These have been made available due to customer requests to mount larger samples, but for non-Hall Effect Applications.



The **SPCB-00** Spring Clip Sample Mounting Board for use with the 1.0 Tesla magnet, and samples **up to 1.5mm thick** with square shape up to **20mm on a side**:



Instructions for mounting a sample onto the SPCB boards can be found here:

http://www.four-point-probes.com/springclip_mounting.pdf

See next page for a description of the available SPCB Spring Clip Sample Mounting Boards

Spring Clip Sample Mounting Board Types and Sample Capacities

Model	Sample X-Y Size Range	Sample Thickness Range
SPCB-00	5mm x 5mm to 20mm x 20mm	<= 1.5mm thick samples
SPCB-01	5mm x 5mm to 20mm x 20mm	<= 2.0mm thick samples
SPCB-02	5mm x 5mm to 20mm x 20mm	2 to 4.5mm thick samples
SPCB-03	5mm x 5mm to 20mm x 20mm	3 to 5.5mm thick samples
SPCB-11	15mm x 15mm to 30mm x 30mm	<= 2mm thick samples
SPCB-12	15mm x 15mm to 30mm x 30mm	2 to 4.5mm thick samples
SPCB-13	15mm x 15mm to 30mm x 30mm	3 to 5.5mm thick samples

Notes:

1. The SPCB-00 is for use with the 1.0 Tesla Magnet
2. Models for samples up to 30mm square are for use with samples up to 20mm square when using the HMS-3000 due to the 20mm square size of the uniform magnetic flux density that the HMS-3000 provides. These larger capacity sample boards have been provided by Ecopia due to customer requests for use with either non-Hall Effect applications, resistivity only testing, or for samples that are larger than 20mm square for which a less accurate measurement is acceptable, taking into account that the area of uniform magnetic flux density is 20mm square.

The SMB-6 sample mounting board is not included with the system, but can be purchased as an option if desired. It is for wire mounting of small samples up to 10mm square.




SMB-6 Sample Board

COMPARISON of SPCB (Spring loaded type sample mounting boards)

No	Model No.	Image	Measurable sample size	Measurable sample thickness	Compatible with magnet kit	Remark
1	SPCB-01		5mm x 5mm ~ 20mm x 20mm	less than 2mm	MS31,MS37, MS55, EVM-100	
2	SPCB-01A			less than 2mm	MS31,MS37, MS55, EVM-100	Graticule on the board which is a network of lines.
3	SPCB-02			2~ 4.5mm	MS31,MS37, MS55, EVM-100	
4	SPCB-03			3~ 5.5mm	MS31,MS37, MS55, EVM-100	
5	SPCB-00			less than 1.5mm	MS31,MS37, MS55,MS100 EVM-100	
6	SPCB-001		2mm x 2mm ~ 12mm x 12mm		MS31,MS37, MS55,MS100 EVM-100	
7	SPCB-002		5mm x 5mm ~ 6mm x 12mm	less than 1.5mm	N/A	
8	SPCB-11		15mm x 15mm ~ 30mm x 30mm	less than 2mm	MS31,MS37, MS55, EVM-100	
9	SPCB-12			2~ 4.5mm	MS31,MS37, MS55, EVM-100	
10	SPCB-13			3~ 5.5mm	MS31,MS37, MS55, EVM-100	
11	SPCB-01C05		5mm x 5mm ~ 20mm x 20mm		MS31,MS37, MS55, EVM-100	5mm diameter round hole in the center

12	SPCB-01C10		10mm x 10mm ~ 20mm x 20mm	less than 2mm	MS31,MS37, MS55, EVM-100	10mm diameter round hole in the center
13	SPCB-01C15		15mm x 15mm ~ 20mm x 22mm		MS31,MS37, MS55, EVM-100	15mm diameter round hole in the center
14	SPCB-G1		5mm x 5mm ~ 20mm x 20mm	Less than 2mm	MS31,MS37, MS55, EVM-100	
15	SPCB-61		5mm x 5mm ~ 20mm x 20mm		MS31,MS37, MS55, EVM-100	
16	SPCB-31		50mm ~ 65mm	Less than 2mm.	MS,MP kit, without magnet	
17	SPCB-41		80% area of 2 inch wafer	Less than 2mm.	MP55T-01	
18	SPCB-21		5mm x 5mm ~ 20mm x 20mm	less than 2mm	RTSK-5000	
19	SPCB-22		5mm x 5mm ~ 20mm x 20mm	2~ 4.5mm	RTSK-5000	
20	SPCB-23		5mm x 5mm ~ 20mm x 20mm	3~ 5.5mm	RTSK-5000	
21	SPCB-71		15mm x 15mm ~ 30mm x 30mm	Less than 2mm	RTSK-5000	
22	SPCB-72			2~ 4.5mm	RTSK-5000	
23	SPCB-73			3~ 5.5mm	RTSK-5000	

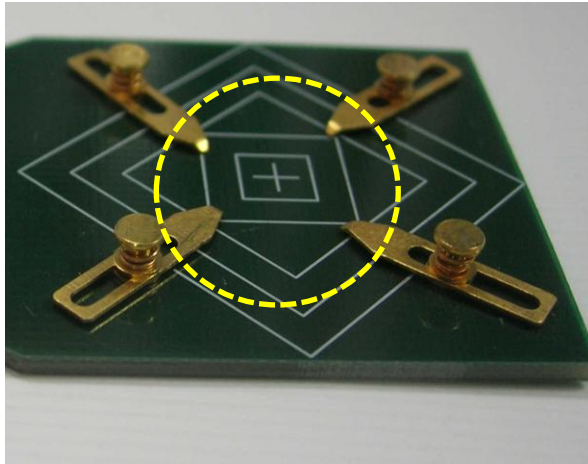
24	SPCB-51		8mm × 8mm	Less than 2mm.	N/A	
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* Remarks: RTSK-5000 is sample holding kit of magnet kit AMP55T which is integrated with HMS-5000 series.

MS31, MS37, MS55, MS100, EVM-100 models are magnet kits which are integrated with HMS-3000 model.

30mm x 30mm.

NEW Model SPCB-001



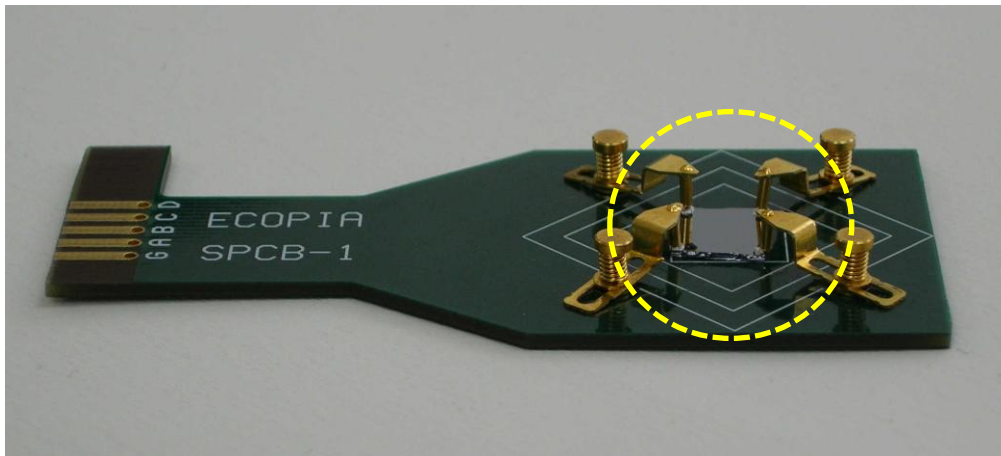
Model No: SPCB-001

Measurable sample size

: 2mm x 2mm ~ 12mm x 12mm

Measurable sample thickness

: 0~ 1.5mm thickness sample



Model No: SPCB-01

Measurable sample size

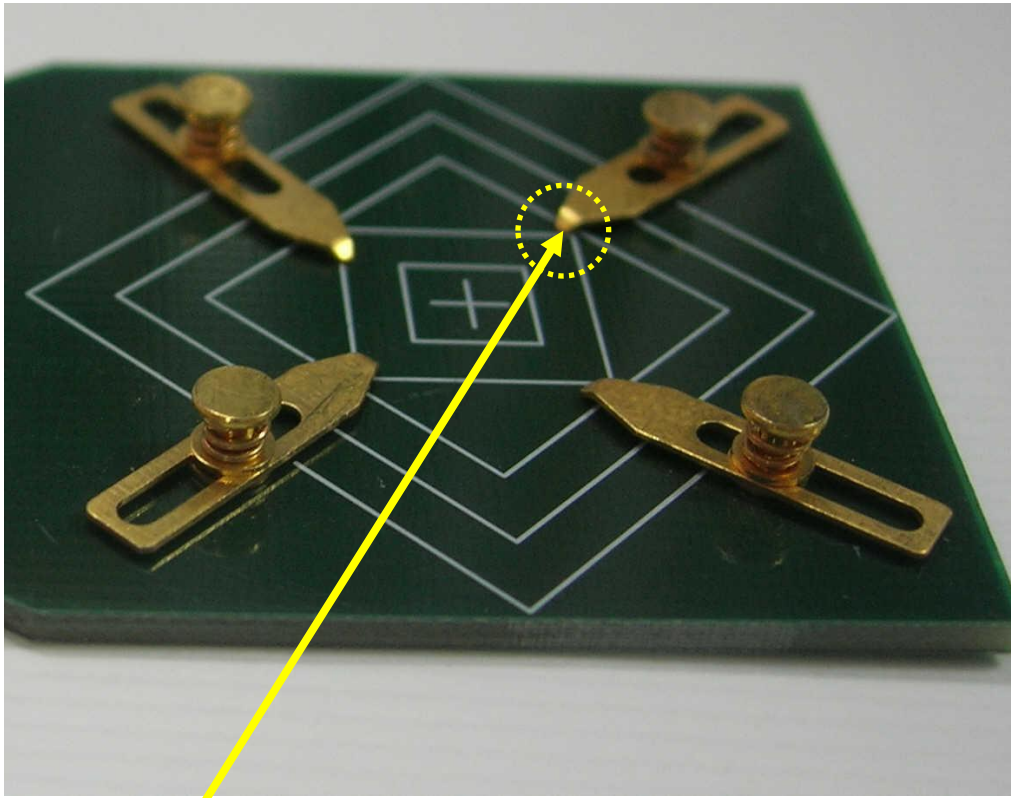
: 5mm x 5mm ~ 20mm x 20mm

Measurable sample thickness

: 0~2mm thickness sample



If purchasing SPCB-001 for use with 1.0 Tesla sample kit, it is recommended that they order a special version which has slightly shorter posts so that it will fit within the gap.



This clip end is now not as sharp as it can be contacted on sample's four point edge successfully because this clip end is a little round shape.

And, we can make round shape more sharpen clip end and ecopia's craftsmanship person can successfully connect clip into 1x1mm sample.

But, we are not sure if the customer can do it successfully .