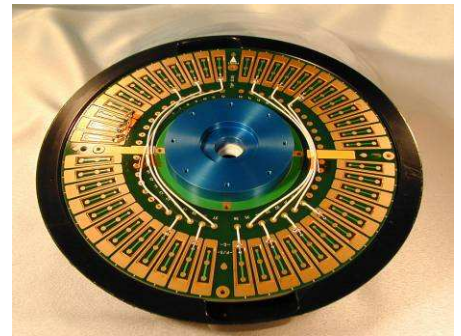# 406x, 407x LOW LEAKAGE PROBE CARDS DATA SHEET

SYNERGIE CAD has developed and enhanced parametric probing solutions for many years. Improvements made to reach new limits in term of Low Leakage for Keithley applications have been leveraged to provide solutions for Agilent parametric testers as well.

Synergie Cad Group is proud to announce that, as a result of its new technological development efforts , KEITHLEY Instruments granted us the agreement to manufacture Ultra Low Leakage probe cards for S600 testers for all technologies applicable to parametric testing : Ceramic Strip Line Blades (since 2000), Coaxial Epoxy (since 2002).
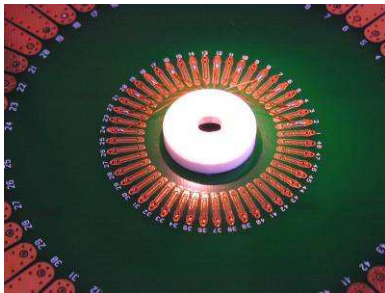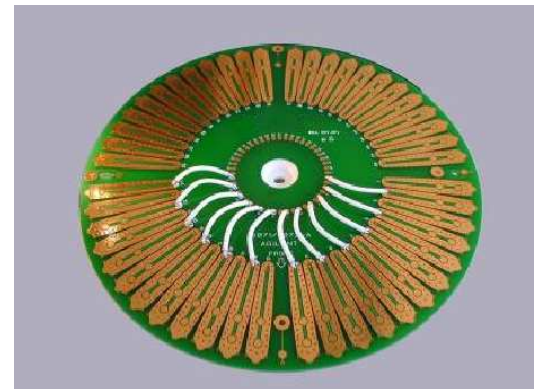
Capitalizing on its solid experience in parametric testing, Synergie CAD Group has expanded its line and is now offering probe cards compatible with Agilent 4060 and 4070 series. Technics used to manufacture these parametric probe cards are similar to the ones used for Keithley compatible series, but different boards are used. We manufacture probe cards using all technologies available at Synergie CAD.

In addition, to guaranteed the reliability of the complete manufacturing chain, Synergie CAD manufactures and has under controlled all parts used to manufacture these Low Leakage probe cards.
These probe cards are available in ceramic blades, epoxy ring and coax epoxy ring technologies.
We offer also high temperature solutions allowing continuous probing at temperatures up to 200 °C. We also offer board design services to fully accommodate custom testers and test head requirements.
Synergie CAD also used its experience and know-how to manufacture parametric probe cards for other testers brands such as Suss Microtech, ReedHlom…

SPECIFICATIONS	VALUES
Probe Card	
Typical Probe Card Depth	80-250 mils +/- 5
Minimum Pitch	80 µm
Minimum Pad dimensions	50 µm
Tip position	in line
Number of probes	1-60
Probe position (alignment) accuracy	+/- 5 µm
Operating temperature	**-40 ℃ to 200 ℃**
Rotational specification	+/- 1 °
Typical Overdrive	3 mils
Typical touchdowns	250 000 to 1 000 000
Needles	
Type	Ceramic Blades, Coaxial Epoxy needles, standard needles
Material	Copper Beryllium or Tungsten Rhenium
Tip diameter	1 to 2 mils (25 to 50 µm)
Tip length	7 to 25 mils (175 to 625 µm)
Planarity	+/- 5 µm
Pad specification	
Material	Aluminum, Copper, Polysilicon, other …
Flatness between 2 pads	+/- 10 µm
Probe mark dimensions	30 to 60 µm
Electrical Specifications	
Leakage : Pin to Ground , Pin to Pin **4060** **4071/4072** **4073**	**1 pA/V** **0.1 pA/V** **1 fA/V**
Maximum current per pin (depending on material tested)	Depending on needle dimension and material from 300 mA to 1.5 A
Typical parasitic capacitance	NA
Typical DC contact resistance (Probe)	0.5 to 1 Ohm
Maximum DC contact resistance (Tip to Test equipment)	2 Ohms +/- 1
PCB specification	
Material	FR4, Polyimide
Thickness	1.6 or 3.2 mm

 Ask for our special Order form to give us all data necessary for manufacturing.