



Premier | Certified Third Party Marker

# DNA Marking Partnership Announcement

## **Applied DNA Sciences and Premier Semiconductor Services sign DNA-marking Memo of Understanding To provide SigNature® DNA marking in Accordance with DLA requirement in the authorized supply chain**

STONY BROOK, NY, January 24, 2013. [Applied DNA Sciences, Inc.](#) (OTC Bulletin Board: APDN), (Twitter: @APDN), a provider of DNA-based anti-counterfeiting technology and product authentication solutions, announced today that Premier Semiconductor Services, LLC (Premier), based in Tempe, Arizona, has agreed in principle to provide DNA-marking services for electronics firms wishing to comply with APDN's SigNature DNA authentication platform. The framework of the agreement allows for the platform to be available through Premier to authorized distributors, to manufacturers including members of the Semiconductor Industry Association (SIA), and to all others who may benefit from a fast-track route to SigNature DNA marking.



What criteria was important to Applied DNA in selecting a third party test house partner to perform DNA marking and relating services?

# A Test Facility that provided all of the Minimum Required Tests under 6081

- **Minimum Required Tests Under 6081**
  - **Visual Inspection (IDEA Checklist) including Documentation and Packaging Inspection**
  - **Resistance to Solvents (MIL-STD 883) including Dynasolve**
  - **Decapsulation (DPA)**
  - **X-Ray**
  - **XRF or EDS/EDX**

# A Test Facility that provided all of the Optional Tests under 6081

- **Optional Tests Under 6081**

- Electrical Testing
- SAM (Scanning Acoustic Microscopy)
- SEM (Scanning Electron Microscopy)
- Thermal Cycle Testing
- Burn In
- Fine and Gross Leak Testing

**\* Note that the current intent is when AS6171 is released, AS6081 will be updated to point to the AS6171 standard which will be more comprehensive**

# The Ability and Capacity to Provide all of the Ancillary Services needed for DNA Marking

- Other services that could be required as part of the DNA marking:
  - Detape – If parts come in tape
  - Bake – All DNA parts are baked so tubed and taped parts need to be transferred into metal tubes or trays without damaging leads
  - 3D Scanning and T&R for tubed and tray parts – to make sure parts go back into the appropriate media without being damaged
  - Axial/Radial taping – for Thru-hole components

# The Ability and Capacity to Provide Higher Volume Ink/DNA Marking

- Ink Marking, Laser Marking and Labeling Services
- Plate making capabilities.
- High volume capacity to perform DNA marking for Authorized or OCM customers

# Other Factors

- Quality Systems including ISO-9001, ITAR and DLA Lab Suitability
- Established Customer Base
- IT Infrastructure capable of setting up certain programs and processes remotely
- Completely Independent in regard to the Market



# DNA Process Flow

1. Work with Applied DNA to get your mark
2. Mark is provided to Premier & kept in a safe
3. PO is cut to Premier for DNA marking and ancillary and/or verification services
4. Premier performs the services, including DNA marking of the parts.
5. Premier then sends to Applied DNA samples of marking to be analyzed and certified.

# DNA Process Flow – Continued

6. Applied DNA will analyze and certify the sample marked parts.
7. A Certificate of DNA Analysis (“CODA”) is sent to Premier and approval to release parts.
8. Premier ships the parts (drop ship is an option) to the customer along with the “CODA”.
9. Customer is billed. DNA marking is just another line item on the invoice.

# Standardized Pricing

## Customer Quotation:

- a) Minimum set-up fee per marking shipment of **\$495.00** (includes first LIDF - Line Item Documentation Fee).
- b) Each additional line item (part number) will incur a **\$125.00** LIDF.
- c) Below pricing is applied to each individual line item quantity; pricing is not cumulative for multiple line items.

Price Breaks per line item/part number:

1 - 250 = \$0.60/component

251 - 500 = \$0.50/component

501 - 1,000 = \$.40/component

1,001 - 5,000 = \$0.25/component

5,000 and over = \$0.20/component

# Logistics of DNA Marking

1. Although the idea of marking parts is quite basic, there are a lot of issues to deal with
2. Nuances – flatness of the mark, mixing and disposing the inks, infra-red light, and more
3. Turn times – depends on volume of parts but in general can be done quickly
4. Security of parts, inks and marks are all very critical. Steps have been taken to ensure security of inks and marks.

# DNA Marking Security



# Specific Aspects Of DNA Marking



# Specific Aspects of DNA Marking



**Product Name (Description):** PRINTED: Product name  
**Client:** Company Name **Fill Volume:** 5 mL  
**Part Number:** DNA000000-XXX **SMT Sample Collected on:** Month Day, Year  
**Lot number of Ink used:** xx13.000000 **Samples Received on:** Month Day, Year

| MATERIAL TESTED | SAMPLE ID  | SIGNATURE® DNA TESTS | LAB NB REF                       | RESULT  |
|-----------------|------------|----------------------|----------------------------------|---------|
| Sample 1        | C000000-01 | UV/IR Rapid Reporter | Authentication Binder #1 – JR000 | Pass    |
|                 |            | Authentication DNA   | Authentication Binder #1 – JR000 | Present |
| Sample 2        | C000000-02 | UV/IR Rapid Reporter | Authentication Binder #1 – JR000 | Pass    |
|                 |            | Authentication DNA   | Authentication Binder #1 – JR000 | Present |

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Forensic Technician

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Date

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# Important Things to Remember

- The mark that is going on the parts will be that of the supplier from which the PO is originating. Per the specific clause from the Defense Logistics Agency DIBB's Awards:
  - "If you are the AWARDEE Named on a Purchase Order, and the PO states "DNA MARKED" then YOU MUST PUT YOUR DNA on a part. This is how we "forensically" secure the supply chain."
- Premier is a Certified Third Party Marker and can process orders currently BUT they will not have their own mark and thus can only put on marks of their customers.



# Important Things to Remember

- If Premier sees obvious visual authenticity related issues with the parts they are authorized to send the parts back to the customer and report to Applied DNA what issues they noted. But since Premier may not be doing any testing they will not have any responsibility to opine on the testing done.
- It is the customer's responsibility to ensure that the parts are either:
  - Non-Traceable parts that are tested to the QTSL required parameters
  - QSLD traceable parts and thus will not require testing other than external visual utilizing the IDEA 1010 checklistprior to sending them to Premier for DNA marking unless Premier is being asked to do the testing.

# Summary

- We believe that DNA marking will be a valuable tool in the fight against counterfeit components.
- Although this is an evolving process the best thing that we can all do is to educate ourselves on this new technology and do our part to make this process as efficient and cost effective as possible.

THANK YOU!

# Premier offers a full range of Value-add Solutions in Final Manufacturing and Test

- **IC Counterfeit Detection**
  - Visual Inspection (IDEA Checklist)
  - Mark Permanency (MIL-STD 883)
  - Decapsulation (DPA)
  - X-Ray
  - XRF
  - SAM (Scanning Acoustic Microscopy)
  - SEM (Scanning Electron Microscopy)
  - Electrical Authenticity Testing
  - DNA Marking
  - & More
- **Electrical/Up-screen Testing**
- **MIL-STD (Group A/B)**
- **IC Programming (Turnkey available)**
- **Tape & Reel & 3D Scanning of Components**
- **Automated Lead Straightening/Conditioning**
- **Conversion to Pb Free & Sn/Pb**
- **BGA Reball & Ball Attach**
- **Solder Dip & Retinning**
- **Solderability Testing**
- **RoHS Compliance Testing**
- **Failure Analysis – Multiple Services**
- **IC Laser/Ink Mark and Serialization**
- **Board Rework**
- **Axial and Radial Taping and Straightening**
- **And More....**

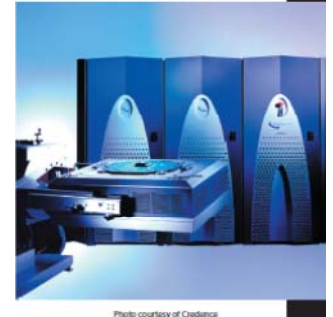
Premier Semiconductor Services provides outsourced services combining technical expertise, state-of-the-art equipment and unsurpassed capacity. Premier provides a quick turn and cost effective alternative to expensive in-house or cumbersome overseas processing.



# Premier Semiconductor Services



Multiple Service and Test locations:  
Arizona, Texas, Florida



- Most comprehensive array of outsourced value-add and test service in North America
- State-of-the-Art equipment
- Comprehensive technical assets and personnel
- Operations are ISO9001:2008, ITAR, DLA lab suitability, DSCC certified, and QML listed, ANSI/ESD S20.20



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