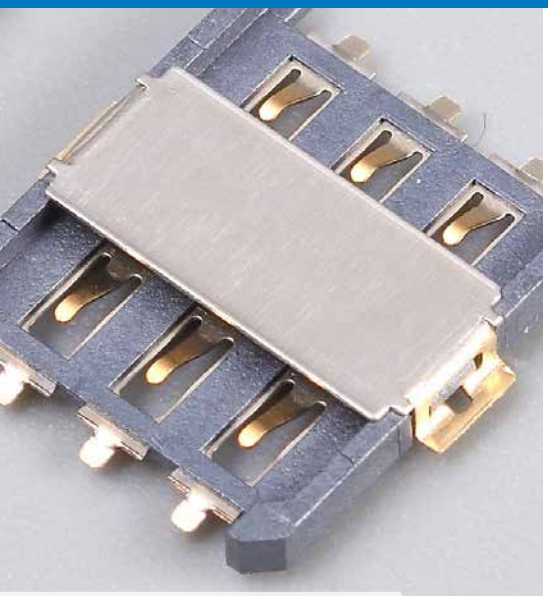
LMI TECHNOLOGIES

SOLUTION STORY

GOCATOR 2420 INSPECTS NANO-SIM CONNECTOR PINS AT PRODUCTION SPEED

In this application, the Gocator 2420 is used to take measurements on nano-SIM connectors in an in-line inspection process. There are 14 locations to be inspected on the SIM connector: seven small pins and seven large pins.



Nano-SIM Connector

The Challenge

Getting the right quality control information can make the difference between a streamlined, cost-effective production line and an inefficient and costly one. For example, with certain types of connectors, a pin ensures that the connector doesn't disengage from its socket. A connector with a flawed or missing pin could disengage from its socket, with potentially serious results.

Defective connectors have to be rejected on the production line. But without reliable, broad-coverage quality control information, defective connectors can easily be missed and passed on to distributors or customers. In the long run, the producer can suffer costly consequences.

The best way to reliably detect the presence and the height of a connector pin is to use 3D scanning technologies. 3D scanning allows the precise measurement of a pin's height, so the part can be compared to stringent specifications and rejected if necessary.

The Solution

A Gocator 2420 is set-up to scan one SIM connector at a time, using a simple height threshold to trigger the start and stop of each part. With this simple approach, Gocator Surface scan mode automatically combines profiles and outputs a complete surface visualization for every scanned SIM connector. The height of the connector pins is then measured as either median or average height values using 1940 data points per generated profile.

Because Gocator has a large measurement range, it is possible and required to "window down" the range appropriate to measure part height. Gocator 2420 can achieve scan speeds up to 5 kHz for parts that only need ¼ of the overall measurement range. This means a single nano-SIM connector surface can be fully inspected to meet process cycle time.

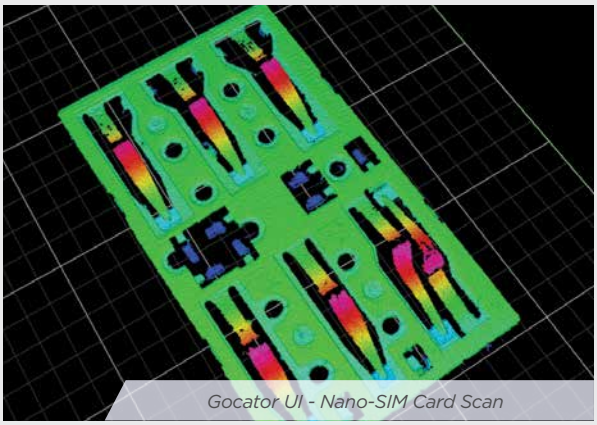
Nano-SIM Card Scanning

Advantages of Gocator 2420 in 3D Connector Pin Inspection:

- Accommodates for varying heights of different parts as they travel along the conveyor.
- Calculates the connector pin's height, which is relative to another surface of the part.
- Measures the pin's height precisely and accurately, down to a few hundredths of a millimeter.
- Measure the pin's height at full production speed.

"Gocator's smart sensor design allows it to compensate for mitigating factors in the inspection environment, such as part position variation, in real-time."

CHI HO NG, DIRECTOR OF PRODUCT MANAGEMENT, LMI TECHNOLOGIES



Gocator UI - Nano-SIM Card Scan

GENERAL BENEFITS OF GOCATOR 3D SMART SENSORS:

- Part position variation caused by mechanical movement can be fully compensated by using Gocator's anchoring and part matching features.
- Part anchoring updates one or more measurement regions automatically based on the measurement of another feature, thereby tracking part movement and maintaining reliable measurement results.
- Similarly, if a part rotates position, then the built-in part matching feature corrects for angle variation to ensure measurements are repeatable.

POINTS TO HIGHLIGHT:

- Web-browser based interface makes setup and sensor use easy and intuitive.
- Built-in drag and drop measurement tools make connector pin inspection fast and reliable.

The Results

Using Gocator means each and every connector can be inspected at production speed, letting the user know exactly how many parts are defective.

Furthermore, Gocator is precise enough to enforce very narrow tolerances, even at high production speeds. The net result is considerable cost savings, because users can quickly catch and correct production issues before incurring heavy costs due to defective parts.

To learn more about Gocator All-In-One 3D Smart Sensors, please email **contact@lmi3d.com**

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