# COVISUS
A CHROMOLOGIC COMPANY

DTEK

ADDRESSING THE CHALLENGES OF SECURING THE AUTHENTICITY OF MICROELECTRONICS WITHIN THE SUPPLY CHAIN

Covisus has developed DTEK 3.0 to meet the ongoing challenges to ensure the authenticity and security of microelectronic parts within its supply chain. We have developed this solution to be a cost effective, rapid, and practical solution that uses machine learning and machine vision to identify and flag suspect components rapidly. This scalable solution stack is easy to implement and use across the supply chain by easily integrating into existing manufacturing processes, with minor modifications to existing hardware.

Built upon our DTEK platform, we developed a rapid, portable, surface texture based component classifier system that will rely on machine learning based algorithms to instantly identify if a microelectronic component has been re-marked, and/or if the component is a counterfeit not produced by the original component manufacturer (OCM).

Part Classifier
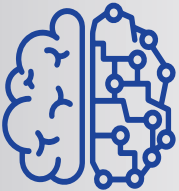
DTEK is a tagless item level authenticator that uses vTags® for the inspection of items and determine if it complies with specifications and known surface level characteristics. It is primarily intended for use as a quality and counterfeit mitigation tool to aid visual inspectors. Full SaaS installation and support is included.

Features include: comparative surface characteristic analysis, measuring visual features of an item, checking against specifications and reporting on non-compliant features/anomalies.
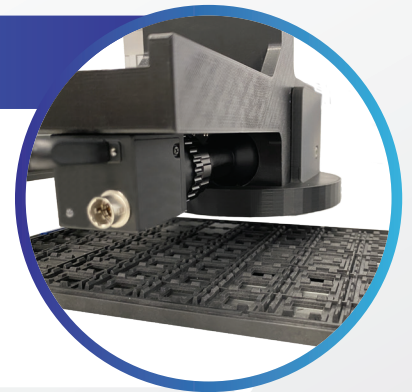
Our proven DTEK technology addresses key supply chain challenges by providing evidence of the product's originality.

Using the DTEK user interface, part identification information is entered to add the part to the system. Images collected by DTEK are used to develop a machine-learning upgrade to the system. The system will also include the option for the DTEK 2.0 surface texture analysis and part vTagging. Reporting generated to identify authentic or suspect parts for their authenticity.

DTEK 3.0 offers users a solution that reduces the time and improves tester-to-tester consistency of AS6171/2 Techniques for:

- **Suspect/Counterfeit EEE Parts Detection by External Visual Inspection**
- **Remarking and Resurfacing**
- **Surface Texture Analysis tests**

DTEK QUANTITATIVE SURFACE ANALYSIS REPORT SUMMARY

LOT INFORMATION

Chip ID: M29400WT
Manufacturer: Microchip
Package Type: Large Chip
Horizontal Pins: False

LOT COMMENTS

Lot Scanned on 10/07/2021, 13:53:56

REFERENCE COMMENTS

None

SUMMARY

None

PASS SUMMARY

WIDTH	LENGTH	LEAD #	LEAD WIDTH	LEAD PITCH	DTEK #
100%	**100%**	**100%**	**96.8%**	**64.8%**	**95.3%**
128/128 PASS	128/128 PASS	128/128 PASS	124/128 FAILED	83/128 FAILED	122/128 FAILED

TRAY

WIDTH	LENGTH	LEAD#	LEAD WIDTH	LEAD PITCH	DTEK #
PASSED	PASSED	PASSED	FAILED	FAILED	FAILED
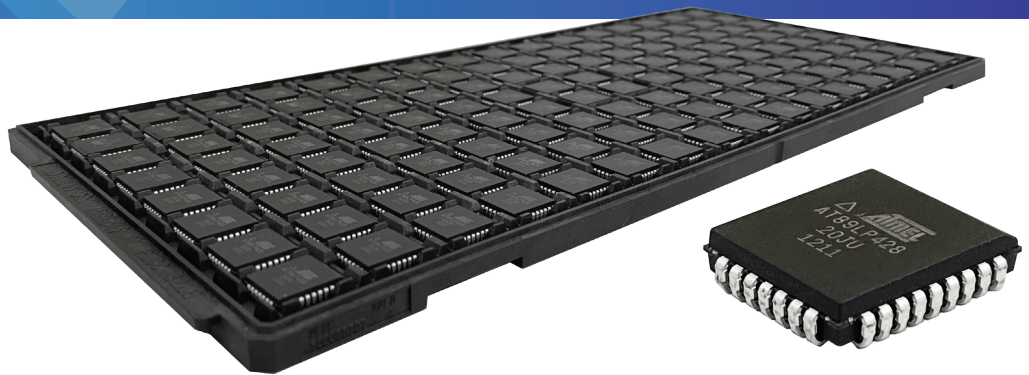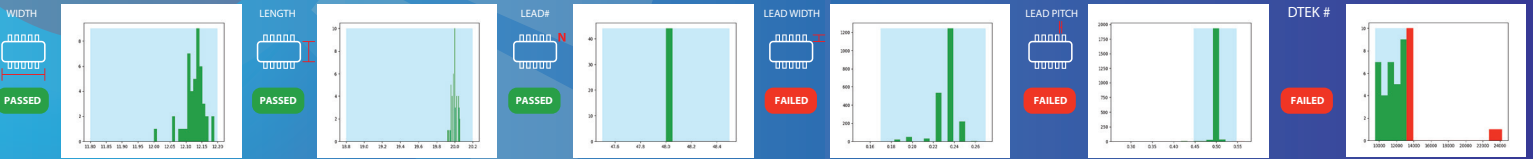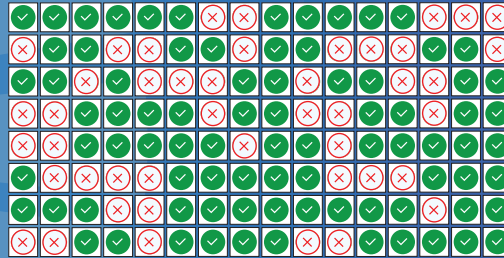
Our DTEK 3.0 solution relies on the intrinsic surface texture based characteristics of a microelectronic part as well as other unique features to produce item classification through machine learning algorithms. Through this robust repeatable system we help to ensure the authenticity and security of a part within its supply chain by identifying suspect parts.

DTEK Solution

- Patented scanner based on an off-the-shelf camera and custom lighting creates the digital fingerprint and part classifier

- Turnkey solutions - Vertical SaaS stack supported with hardware configurations optimized for user needs

- High speed operation ~2-3 seconds/scan

- Software stack combines cloud & edge computing as required in the deployment

- Fully automated inspection

- AS6171 based testing (visual inspection)

- vTag® surface texture based lot inspection covered under AS6081