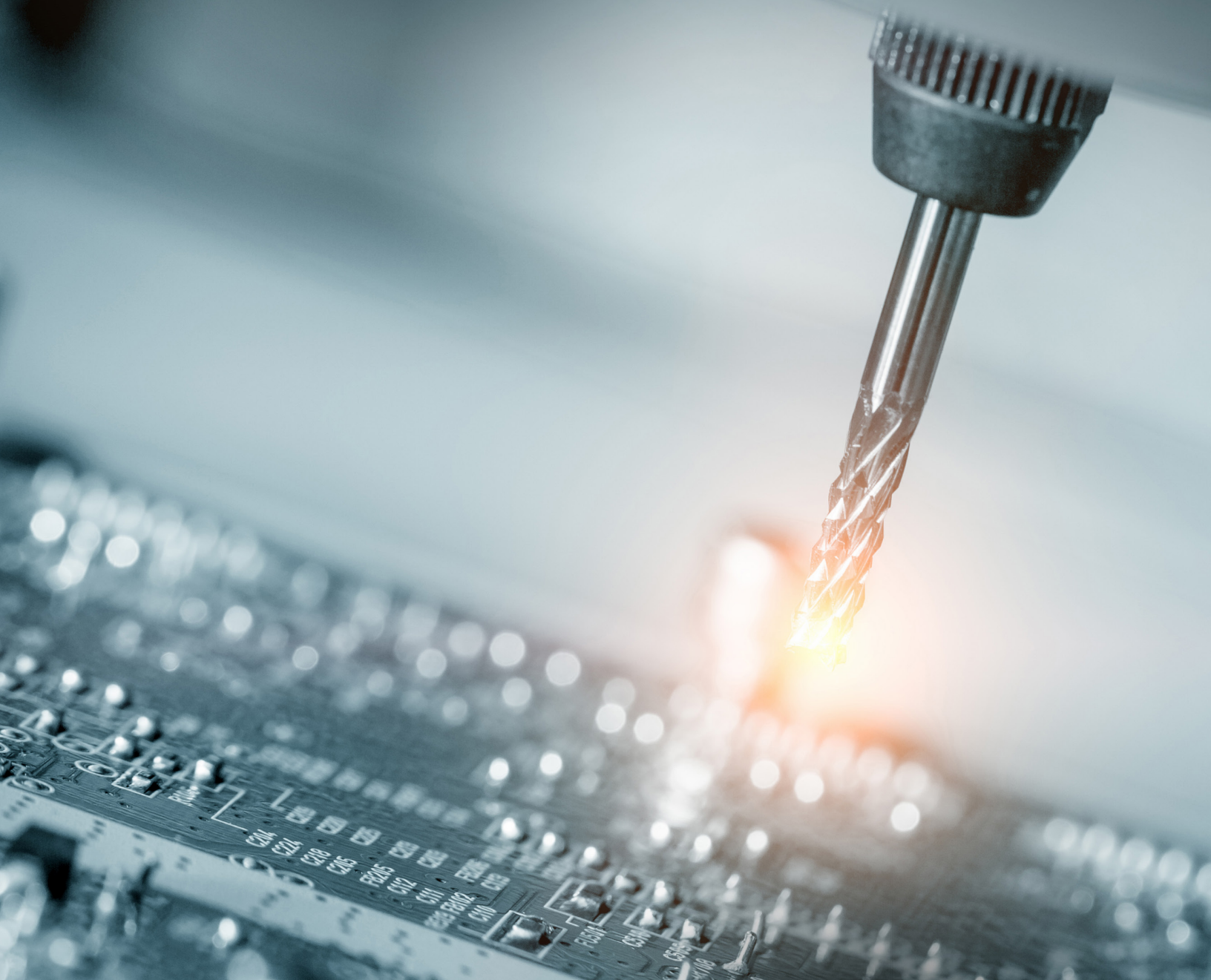


# CYIENT

LEADING INDUSTRIAL COMPANY  
LEVERAGES CYIENT'S END-TO-END  
PRODUCT DESIGN AND ENGINEERING  
SERVICES TO DEVELOP A LOW-  
TORQUE SCREW DRIVER



## Overview

Our client is a world-leading industrial company that manufactures industrial tools and equipment. They were looking for a partner to take complete ownership of the electronics and mechanical design and development of a low torque screw driver for automotive assembly line use.

## Our Solution

- Design based on Brushless DC motor
- Torque range up to 1.2 nm with max torque detection
- Driving and speed control through Software PWM generation and proportional-integral (PI) control loop
- Push-and lever-start provision
- Contactless clutch detection with advanced electronic drive
- Hardware based on ARM Cortex - STM32 based microcontroller
- Speed detection using the hall sensors; multi-speed to cater to different tightening requirements
- Built to meet 1.5 million cycle operations
- Implemented controller area network (CAN) based communication protocol for software (SW) update and tool parameter reading on system

## Key Business Benefits

- Completed full product development life cycle with minimal time investment from the client
- Analyzed and performed teardowns of competitive products to develop a tool with market-leading features
- Created product confidence by developing test fixtures and validated both the mechanical assembly and electronic hardware and software to meet client requirements and industry standards

## About Cyient

Cyient (Estd: 1991, NSE:CYIENT) provides engineering, manufacturing, geospatial, network and operations management services to global industry leaders. We leverage the power of digital technology and advanced analytics capabilities, along with domain knowledge and technical expertise, to solve complex business problems. As a Design, Build and Maintain partner, we take solution ownership across the value chain to help our clients focus on their core, innovate, and stay ahead of the curve.

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