

Overview

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The NT220 is Microsanj's transient thermoreflectance imaging system (Visible & NIR Camera configuration), used to generate thermal images and temperature measurements of microelectronic devices under test. The system combines:

- A visible or NIR camera with LED illumination (530 nm LED for the Visible Camera; 1064 nm LED for the NIR Camera)
- A 20X objective lens / microscope
- A piezo-driven 3D motion and alignment stage ("4D Nano Align")
- Control software organized around a **Project Manager** that stores microscope and brightness settings for reuse across measurement modes

From the control software, the instrument supports three primary measurement workflows, plus a companion image-processing application:

- **Calibration** — establishes the sample's Thermoreflectance Coefficient (Cth) by cycling the sample through a temperature range (e.g., 20 °C to 120 °C) and measuring the reflectance response.
- **Transient Image** — captures pulsed/transient thermal images of a powered device (device pulse width and duty cycle controlled).
- **Steady State Image** — captures steady-state thermal images of a device held at a fixed ON/OFF voltage condition.
- **SanjAnalyzer PLUS** — a separate image-processing application used to open calibration and transient/steady-state image files, correct for thermal expansion, and measure ΔT (temperature difference) across a device.

This guide is based on the Microsanj-supplied test sample (see [Microsanj Test Sample](#) below) and walks through the standard system setup, calibration, imaging, and analysis sequence.

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