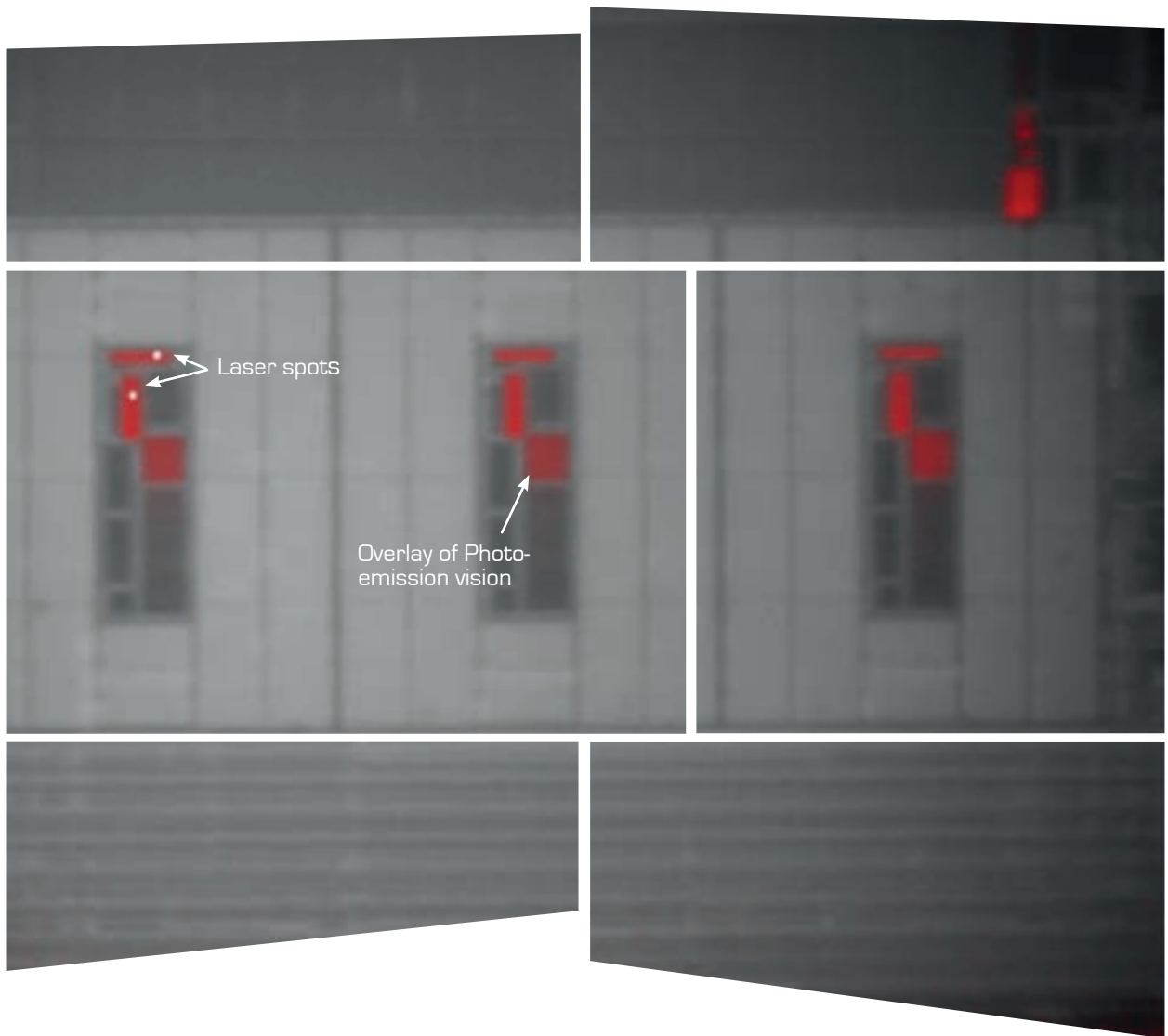


# Photo-emission Vision System



**ALPhA** **NOV**

Optics & Lasers Technology Center

# Photo-emission Vision System

The S-LMS or D-LMS microscope high quality IR vision is now compatible with new performances and reaches the sensitivity level which allows to see thermal activity within the circuit itself through the backside. A special IR Camera is required and a new software is necessary to simultaneously see the circuit path and the photo-emission spot.

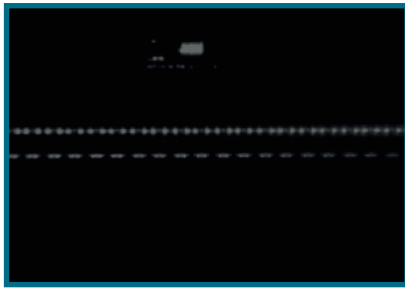


Photo-emission from the back side of the IC.



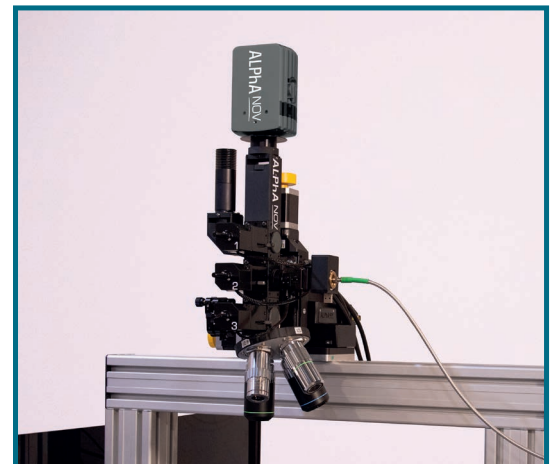
Overlay of the photo-emission results on IR vision of the chip.

Photo-emission vision allows the user to localize where the elementary transistors are switching. It is a very useful tool to identify the key active areas and determine where to perform fault injection and/or position side-channel tools.

HR photo-emission imaging	
Spectrum bandwidth	900 -1700 nm
Camera sensor resolution	640*512 pixels
Camera pixel size	15*15 µm
Cooling system	TEC
Special computer included	X
Software	ALPhANOV photo-emission software Compatible with eShard esDynamic platform

## Key features

- Ideal for back side circuit emission observation
- Takes less than hundreds ms to acquire a good photo-emission image
- Compatible with S-LMS & D-LMS fault injection laser systems
- Open software configuration: SDK supplied, etc.
- Full support to make customers develop their own software
- Different kind of camera resolution with no need to special cooling (LN2, etc.)
- Automatic setup to switch key elements (light, mirrors, etc.)



Photoemission optical station