



FLIR® thermal imaging cameras detect failures in electronics equipment in an early stage.

TEST srl chooses the FLIR T440 for a wide variety of electronics diagnostics jobs.

Thermal imaging cameras have already found their way into the electronics industry many years ago. In fact, the use of thermal imaging cameras is more and more becoming commonplace in many electronics labs. This is also the case with Italian company TEST srl. This Perugia-based specialist in the sale, rental, maintenance and repair of electronic components and measurement equipment has been using FLIR thermal imaging cameras for many years to detect failures in electronic PCB boards in an early stage.

TEST srl is specialized in the sale and rental of measuring instruments for electronics, wholesale photovoltaic material, design photovoltaic systems, tools for monitoring and testing of photovoltaic systems, reconditioning services, repair and calibration of measuring instruments for electronics.

The company disposes of a fully equipped laboratory where engineers are repairing, testing and calibrating a wide range of electronics equipment, including PCB boards, power supplies, oscilloscopes, and

many more. Thermal imaging cameras from FLIR Systems support them in that daily job.

Thermal imaging is used to monitor the temperature level of electronic components and devices, functioning independently or as part of more complex electronic instruments. Electronic components and devices can be stressed by overheating whenever a defect or malfunctioning affects either the components itself or the circuitry which it is part of. Mostly, the hot or defective device needs to be replaced. This is a fast and safe method, which allows



The FLIR T440 camera with 320 x 240 pixel resolution offers excellent performance at an affordable price.



Cristiano Cenci: "Thermal imaging gives us that first info on what is wrong or on what is about to go wrong."



locating electrical problems and defects very quickly and accurately.

“Thermal imaging cameras help us a lot during the repair of electronic boards and measuring instruments,” comments Mr. Cristiano Cenci at TEST, srl. “The cameras allow us to exactly see where the board circuitry is damaged, for instance in the case of overheated transistors, resistors, inductors or relays. When you are able to do that in a very early stage, you can avoid causing bigger problems and destroying other components.”

Heat indicates failure

“When you are not using a thermal imaging camera, mostly you are only able to detect failures when smoke comes out of the electronics equipment,” Cristiano Cenci comments. “With thermal imaging you can avoid that and see possible problems much earlier. Normally, increased heat is a sign that that something is wrong, or that something will go wrong shortly, be it from excessive voltage or excessive current. Thermal imaging gives you that first info.”

“To give an example, we were recently looking at a MOSFET power transistor. Normally, the circuitry should never be more than 100°C. When we looked at the circuitry with the FLIR camera, we quickly saw that one component was reaching 120°C. We discovered a problem in the electronics circuitry in a matter of minutes.” “Another advantage of using thermal imaging cameras is that you see the status of the entire board or instrument all at once. Before, we were sometimes focused on one specific problem or component, while overlooking another defective component that was heating up.”



TEST srl has a fully equipped laboratory to test and calibrate a wide range of electronics equipment, including PCB boards, power supplies and oscilloscopes. FLIR thermal imaging cameras support the engineers from TEST srl in that daily job.

FLIR cameras give TEST engineers a quick notion of what needs to be repaired. But also after repair, the cameras come in handy. After a faulty component has been repaired or replaced, FLIR cameras allow them to quickly scan the electronics again, to see if everything is up and running.

Affordable cameras for experts

Cristiano Cenci has been using the FLIR T440 thermal imaging camera for a few years now. The FLIR T440 camera with 320 x 240 pixel resolution offers a good performance at an affordable price. The camera is easy to handle and offers easy communication with a smartphone or tablet via Wi-Fi.

“We especially like the FLIR T440 as a very performing and very ergonomic camera,” says Cristiano Cenci. “It allows us to easily and quickly detect problems. A

useful feature of the T440 for our line of work is the automatic and manual focus. Also, the laser pointer allows us to quickly locate the problem and get an immediate confirmation of what we are aiming for.”

Multi Spectral Dynamic Imaging (MSX®)

The FLIR T440 features the innovative MSX technology, which produces extraordinary thermal image details in real time. Unlike traditional thermal fusion that inserts a thermal image into a visible-light picture, FLIR’s MSX technology embosses digital camera detail onto thermal video and stills. “This feature really makes a difference to us. You can see the electronics components with more contrast and much more details. MSX allows you to read the labels on the components, for example. This allows us to locate problems more easily.”



Thermal image of the electronic circuitry of an oscilloscope



Thermal image of the electronic circuitry of an oscilloscope, with MSX

For more information about thermal imaging cameras or about this application, please contact:

FLIR Commercial Systems

Luxemburgstraat 2
2321 Meer
Belgium
Tel. : +32 (0) 3665 5100
Fax : +32 (0) 3303 5624
e-mail: flir@flir.com
www.flir.com

The images displayed may not be representative of the actual resolution of the camera shown. Images for illustrative purposes only.