



The AA trials Panasonic rugged tablet with thermal camera to get drivers on the road faster and improve patrol safety

Panasonic TOUGHBOOK G1 rugged tablet with an integrated thermal imaging camera to speed-up the diagnosis of faults, improve customer service and AA technician safety.

Date - Apr 2019

Client - The AA

Location - UK

Challenge

A rugged mobile computing device to help AA technicians:

- Diagnose roadside faults faster
- Improve customer service
- Improve safety by reducing the risk of burn injuries

Solution

An enhanced Panasonic TOUGHBOOK G1 rugged tablet with the addition of an integrated thermal imaging camera

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Keith Miller, Technical
Manager for the AA



Improve customer service and AA technician safety

The AA is trialing a new Panasonic TOUGHBOOK G1 rugged tablet with an integrated thermal imaging camera, to speed-up the diagnosis of faults and improve customer service and AA technician safety.

The Panasonic device with thermal camera can be used by technicians at the roadside to quickly identify heat-related vehicle problems, such as electrical faults, cooling system failures, mechanical faults, and battery/charging issues to get customers back on the road faster. Demonstrating the potential of the device, the AA typically deal with around 115K cooling system related cases per year.

Technicians can check for extreme heat issues

The use of the thermal camera also aids safety as technicians can check for extreme heat issues before touching or getting too close to the vehicle. In 2018, AA technicians suffered from 25 accidents due to heat and burns.

Keith Miller, Technical Manager for the AA, said: "Our patrols have been testing the devices for the past four months and they have been very well received. We are now building a business case for the deployment of the devices."

The thermal imaging camera in the tablet allows a technician to quickly scan the vehicle upon arrival to check for any heat risks. The device has also saved technicians significant time in diagnosing vehicle problems. For example, the imaging camera can show heat-related electrical issues without having to remove the vehicle's trim to check the fuse box or earth points. The camera can also identify cooling system failures, mechanical issues and failed or failing battery cells.

Top faults diagnosed

The thermal camera can be used to faster and more safely diagnose the following top 12 faults:

- Battery cell fault
- Cooling fault - restricted flow
- Electrical connections - causing poor/slow starting/ bad earth connections
- Electrical battery drains - faulty lights, BMC units, water ingress
- Unidentifiable engine misfires
- Smart-charging faults
- Brakes/wheel bearing faults
- DPF issues - including blocked catalytic converters, turbo chargers
- Unidentifiable engine noises/worn electromagnetic clutches/idler pulleys
- Blocked diesel fuel filters
- EV charging faults
- Air conditioning faults

A heat-sensing superpower

"Having a thermal imaging camera integrated into our everyday Panasonic device is like giving our technicians a superpower or a sixth sense," said Keith. "We can quickly take a holistic view of the vehicle and engine bay and identify many common problems before touching the vehicle. This helps speed diagnostic time and improve safety, whilst allowing the customer to get back on the road faster."

Show customers images to help them understand the problems

In addition, the thermal images can help improve communication with the customer. "During the trial we have been able to show customers images, such as failed battery cells, to help them understand the problems," explained Keith. "We can also show where problems are developing. This can assist the customer make a decision to replace the battery now, rather than waiting for a breakdown to happen further down the line."



Device also interfaces with the AA's vehicle diagnostic tool

The AA's 3000 patrols already use the Panasonic TOUGHBOOK G1 tablet to help them respond to the average 10,000 daily breakdown calls that they receive. The Panasonic TOUGHBOOK device is the primary tool for patrols when responding to breakdown calls. The patrols accept jobs via the device, locate the breakdown using GPS and let the customer service centre know when they have arrived on site. The device also interfaces with the AA's vehicle diagnostic tool to help find faults in the field. AA technicians can also search online for specialist knowledge, order replacement parts before completing the task and closing the job, and communicate information/extra services to clients whilst assisting them.

Take and process accurate thermal images on the spot

With the addition of the optional Flir Thermal Camera the tablet becomes a perfect tool, allowing technicians to take and process accurate thermal images on the spot and digitally attach them to reports and customer records.

20 years of experience in providing seamless hardware and software solutions

The thermal imaging application has been designed by Panasonic, drawing on its 20 years of experience in providing seamless hardware and software solutions for business customers. The Flir Lepton 3.5 thermal camera has high video resolution (160x120), a frame rate of 8fps, and can measure temperatures up to 450°C with an accuracy of + or -5°C (higher accuracy mode: -10°C to 140°C ± 5°C or ±5%, wider range mode: -10°C to 450°C ± 10°C or ±10%.)

Designed for the mobile worker

The Panasonic TOUGHBOOK G1 tablet is a Windows 10 Pro device, with 11 hours operating battery life (up to 22 hours with optional large battery) and optional hot swap capabilities to work in the field as long as required. Its comprehensive ecosystem of accessories and peripherals ensures it can be used in any environment, whether docked in a vehicle or carried. Like the wider range of Panasonic fully rugged devices, the tablet is designed and tested to stand up to extreme conditions with its MIL-STD 810G and IP65 ratings.

Stand up to extreme conditions

Alongside the thermal camera and mobile payment solution, the device has flexible configuration options including a 2D barcode reader, GPS, micro SD, 2nd USB 2.0, wired LAN or a smart card reader.