



APPLICATION STORY



Aftermarket installation of a PathFindIR® in a Porsche Cayenne

Improving the driver's night vision

Founded in 1997, Kit Personalización Sport, S.L, better known as KP Sport, is an integrator of aftermarket systems in existing cars. GPS systems, the most sophisticated audio systems, multimedia and many other technologies, KP Sport can seamlessly integrate it in any car. The company is not only well established in Spain, but has begun its internationalization as well. The first results are being booked on the Latin American markets.

FLIR Systems PathFindIR: innovative technology

"We are constantly looking for innovative technologies that we can offer to our customers to integrate in existing cars of various makes," says Mr. Xavier Meseguer Casas, Managing Director of KP Sport. "While visiting the SEMA Trade Show in Las Vegas, I came across the booth of FLIR Systems and was confronted the first time with thermal imaging technology. On their booth, I noticed the PathFindIR, a small compact thermal imaging camera that can easily be integrated in any car. I found out that the PathFindIR is the same module that is being delivered to BMW. A thermal imaging camera can be ordered these days as an option on BMW 5-,6- and 7-series models."

"Not only was it a great surprise to me to see what thermal imaging can do, I was also surprised about the price of the PathFindIR. It is a very affordable tool."

"I decided to buy three FLIR Systems PathFindIR

thermal imaging cameras. As a test, I have installed the first one in my own car, a Porsche Cayenne," continues Xavier.

Installing a PathFindIR

"Installing the FLIR Systems PathFindIR was a fairly easy job. The thermal imaging camera is installed behind the radiator grid. The PathFindIR is well protected against harsh driving conditions. Rain, salt spray, and small rocks hitting the front of the camera are not affecting it. Once mounted behind the grid, the PathFindIR just needs to be connected to the car battery and to a standard LCD display that accepts composite video. For esthetical reasons I wanted to connect the PathFindIR to the built-in LCD that is already being used for navigation, audio control and various other functions. This could easily be done and now I can look at the thermal images on this same screen."

A safe system for night- and daytime use

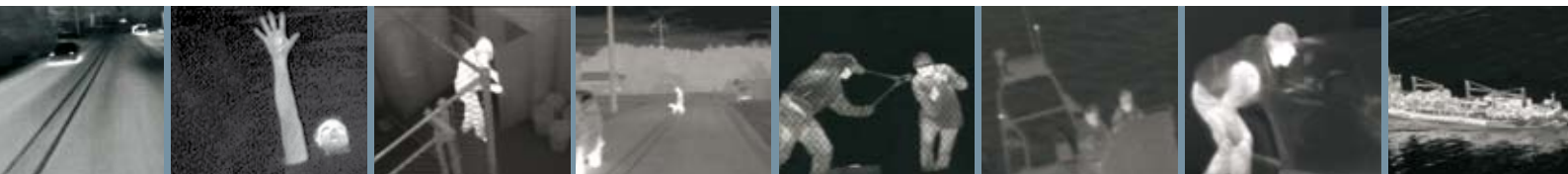
"Now that it is installed, I use the PathFindIR a lot", continues Xavier. "It allows me to see further than



The FLIR Systems PathFindIR installed behind the vehicle grid of a Porsche Cayenne



The thermal images generated by the PathFindIR can be displayed on any multi-function LCD display that accepts composite video. In this case on an LCD integrated in the Porsche dashboard.



with my headlights. I practically always switch the PathFindIR on when I need to hit the road in darkness. Quickly it became a reflex to look to the screen on which the thermal images are displayed, just in the same way as I look into my back view mirror. It helps me enormously to see curves that are coming up in the road on highways and on back ways. In Spain, most of these roads are not very well lit."

"On smaller roads it helps me to spot pedestrians, bicycles and parked and driving cars from a further distance. This way I detect and recognize potential hazards faster and anticipate better what might be happening. In a dangerous situation, it gives me more time to react which means that I will be able to avoid an accident."

"The PathFindIR is even useful in broad daylight. We all know these situations when the sun is just above the horizon and blinding you. The PathFindIR is not affected by this and produces a clear image in this situation as well."

"The PathFindIR is also not hindering other road users either. Headlights or other night vision systems can blind oncoming traffic. The PathFindIR is a passive system. It is not beaming any radiation in front of the car. It is just detecting minimal differences in temperature and converting these to a real time image on which the smallest of details can be seen."

25 Hz or 9 Hz ?

"When purchasing the PathFindIR, FLIR Systems explained me that there are 2 versions on the market. One that produces 25 images per second, or otherwise stated has a refresh rate of 25 Hz, and another that has a refresh rate of 9 images per second or 9 Hz. The 25 Hz technology is controlled by the US Government. In order to get it outside the USA, you need to obtain a license that needs to be approved by the US Department of Commerce. Initially I had my doubts about the 9 Hz. When you are driving fast on the highway, you want to have a continuously updated image of what is happening."

"A video, showing the difference between a 9 Hz and a 25 Hz Systems convinced me immediately. Although the image of a 9 Hz camera is a bit less "fluent" than the one of a 25 Hz camera, it is perfect. Even when driving at a fast pace. You have to remember that I am not "watching television", rather I am glancing to the screen much in the same way as looking into the mirrors."

"Now that the PathFindIR is installed and I have used it for a while, I have not regretted it one moment

that I chose for the 9Hz version. Not only did it save me from going through a lot of complicated administration, I can now also do with the PathFindIR what I want. Resell it for example. Something which is not possible with a 25 Hz system."

An affordable solution soon to be seen in many more cars

"The pathFindIR is an affordable solution for driver vision enhancement in any car bus or truck. It is a small investment that can help to avoid sometimes deadly accidents. I am sure we will see the PathFindIR appear in many more vehicles shortly and that a lot more people will discover that thermal imaging can offer them a good solution for driving more safely at night."

PathFindIR after market kit

The aftermarket installation in the Porsche Cayenne is just one example of the PathFindIR that is finding its way to more and more enthusiastic users. There is a huge interest for after-market installations. The PathFindIR is being installed in numerous military, mining, emergency and fire fighting vehicles, trucks, busses, passenger cars and other vehicles.

As requested by users who want to install the PathFindIR in existing vehicles, FLIR Systems has developed a complete package that provides all the necessary equipment required to install and use thermal imaging technology. This PathFindIR kit is the ideal tool if you want to equip existing vehicles with the power of thermal imaging.

The kit consists of the following components:

- PathFindIR thermal imaging camera
- High resolution 7 Inch LCD monitor which can be mounted either on the dash or on the cab ceiling with included bracket. The monitor has contrast, brightness, and hue adjustments adding flexibility in performance. The monitor kit also includes a protective fuse, quick disconnect from the bracket, and a removable sun shield for daytime operation and glare reduction.
- 6 meter Detachable Pigtail Cable: for routing the PathFindIR's power and video interface into a passenger compartment. On one side the cable connects to the PathFindIR. On the other end it has 2 wires that can be terminated, as required by the user, for hooking into the vehicle powerbus and a video cable that is terminated with a BNC connector
- Universal Mounting Bracket and Mounting Hardware to install the PathFindIR in a vehicle
- PathFindIR Users Guide
- Cable, BNC to S-Video, 8,8 meters



Thanks to this complete kit, it becomes extremely easy to install the PathFindIR in almost any vehicle.

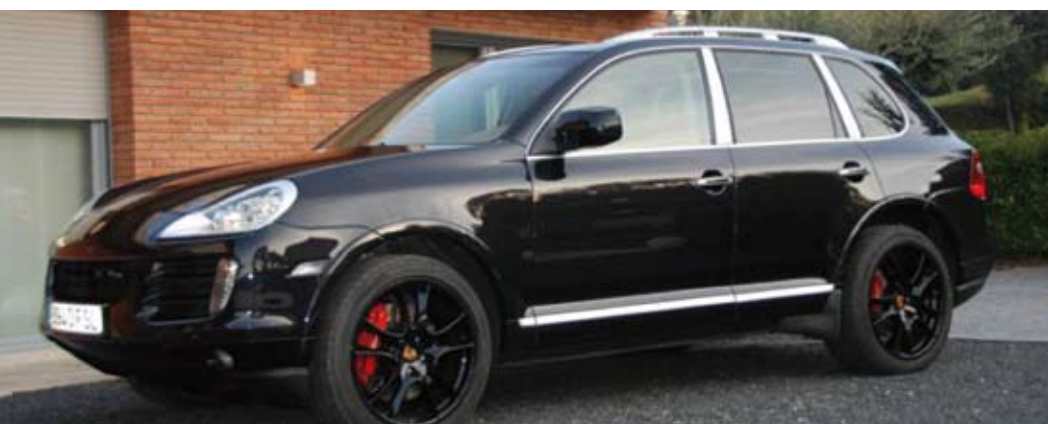
All components have been selected by FLIR Systems so that the entire kit complies with the stringent quality requirements for which FLIR Systems is renowned.



Visual image



Thermal image



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

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