

Vehicle keyless entry system vulnerable to 'relay attacks'

➤ Owners should combine physical measures with electronic protection to create defence set up that complicates theft attempts: Expert

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PETALING JAYA: The Vehicle Theft Reduction Council (VTREC) of Malaysia Berhad has warned that certain keyless entry systems are vulnerable and could result in vehicles being stolen within 30 seconds.

VTREC consists of stakeholders within the insurance industry and government and non-government agencies.

Its coordinator Mas Tina Abdul Hamid said: "Thieves have developed techniques to exploit vehicle keyless entry systems.

"Our report also revealed that as of June 2023, a total of 1,924 vehicles were stolen, with 785 being cars.

"The preferred pick-up truck for thieves in 2023 was the Toyota Hilux, which has a keyless entry system. It was the most stolen due to its popularity and demand," she said.

Universiti Putra Malaysia Road Safety Research Centre head Assoc Prof Dr Law Teik Hua said thieves bypass the keyless entry system in under a minute through "relay attacks".

He said the method uses radio wave

amplifiers to capture signals from the key fob inside the owner's home and transmit it to another device near the car to automatically unlock it.

"This allows the thieves to start the engine and drive off without having the key fob physically with them."

Law said the tactic is easy since car thieves can hack the key fob with a small handheld device that operates the remote keyless entry system.

He added that remote devices that can exploit vulnerabilities in keyless entry systems can be purchased online.

"Although these devices are not as readily available as traditional theft tools, they can be acquired by individuals with malicious intent.

"This highlights the importance of motorists taking precautions to secure their vehicles.

"Car owners should not rely only on the keyless entry system for security. Instead, they should have additional security measures to provide a more comprehensive vehicle protection system."

Law said steering wheel locks and car alarms are effective visual deterrents that discourage thieves from stealing vehicles. It also increases the time taken for a theft, discourages thieves, and attracts attention from bystanders or law enforcement officers.

"Owners can protect their vehicles by keeping key fobs away from doors and windows, using Faraday pouches to block signals, installing mechanical locks as deterrents, and employing tracking devices or car immobilisers.

"Combining physical deterrents with electronic protection creates a robust

defence system that complicates theft attempts and increases the likelihood of intervention or recovery."

Law said vehicle theft trends indicate a significant rise in the theft of modern vehicles equipped with keyless entry systems.

Hence, there is an urgent need for enhanced security measures and proactive countermeasures from car manufacturers and law enforcement agencies.

"To combat the rise in thefts, vehicle manufacturers must prioritise the development of more robust security features, including integrating advanced encryption technologies.

"They should also improve the physical security of key fobs and regularly update vehicle software to plug security loopholes."

Law said motion sensors can prevent continuous signal emission, remote deactivation gives owners control over their vehicle's security, and strong encryption protocols protect against signal interception and hacking.

Together, these measures can create a multi-layered defence that is difficult for thieves to bypass and ensures that modern vehicles remain secure against evolving theft methods.

However, he said keeping up with sophisticated theft methods poses challenges, particularly in light of rapid technology advancements.

"The ability of criminals to quickly exploit vulnerabilities in security systems makes it challenging to stay ahead of their tactics. Joint community and government efforts are vital to enforce stricter vehicle security regulations," he said.



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— **MASRY CHE ANI/THE SUN**