

Onyx

smart security



Nguyen Khuong Tuan
inventor

Onyx Vietnam is a science and technology company, operating in the field of hardware security. Established since 2015, based on the product research and development team of Smart Technology JSC, which has a long tradition of researching and developing embedded electronic applications since 2005. Onyx Techlab is a hardware security technology laboratory, a new field with many difficult problems and challenges.

After 5 years of research and innovation, Onyx now has many patents in the field of hardware security. Included:

TrustFaceID

Onyx
Cypher

eFence
electronic security fence



CyLock
SAFETY CYPHER LOCK

Sao Khuê 2020 Trophy



Crypto + Embedded + IoT



2021



UNHACKABLE REMOTE LOCK

100% of remote keys in Vietnam contain serious security vulnerabilities.

CyLock completely eliminates this risk, providing security, protecting property.



patent protection, 02 independent protection points

Wipo: PCTVN2021000004

Taiwan: X211669TWI

PROBLEM

Rolling-code security flaw

Defcon23 2015, Samy Kamkar publishes rolling-code security vulnerability



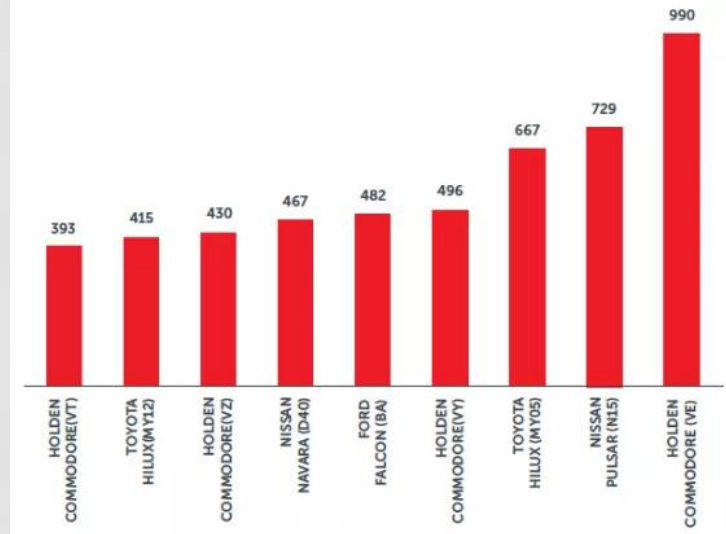
2018, US, 748,841 cases

Australia, 53,564 cases

Top 10 Most Frequently Stolen Vehicles, 2018

All model years (1)			2018 model year vehicles only		
Rank	Model	Thefts	Rank	Model	Thefts
1	Honda Civic	38,426	1	GMC Pickup (Full size)	1,170
2	Honda Accord	36,815	2	Ford Pickup (Full size)	1,017
3	Ford Pickup (Full size)	36,355	3	Toyota Camry	976
4	Chevrolet Pickup (Full size)	31,566	4	Nissan Altima	912
5	Toyota Camry	16,906	5	Chevrolet Pickup (Full size)	790
6	Nissan Altima	13,284	6	Hyundai Elantra	775
7	Toyota Corolla	12,388	7	Ford Transit	723
8	GMC Pickup (Full size)	11,708	8	Dodge Charger	719
9	Dodge Pickup (Full size)	11,226	9	Toyota Corolla	699
10	Jeep Cherokee/Grand Cherokee	9,818	10	Chevrolet Malibu	698

Most stolen cars in Australia in 2018



<https://www.iii.org/fact-statistic/facts-statistics-auto-theft>

<https://www.budgetdirect.com.au/car-insurance/research/car-theft-statistics.html>

This video verify the car lock security vulnerability: <https://youtu.be/SW2nif3QCkA>

Car theft insurance?!?

PROBLEM



Rolling-code security flaw

Defcon23 2015, Samy Kamkar publishes rolling-code security vulnerability

- In Vietnam, 100% of rolling door locks have Rolling-code or Fix-code security flaw
- 100% origin: China, Taiwan; There is no domestic lock producer
- 100% of rolling door manufacturers import locks and stretch their brands, they do not own technology, and they themselves do not understand the risks of the technology they are using

This video verify the door remote lock security vulnerability:

https://youtu.be/st_xSEitji0

It is also the opportunity for new-tech which solve the problem

SOLUTION



new concept, new protocol

Old concept: coding



*open when right code,
don't care who uses the code*

New concept: authentication



*Open when right code and
right key*

*With Token 64 bits, CypherKey 256 bits; **can't be hack/crack** with nowadays computer science*

unhackable

PRODUCT



CyLock: safety cypher lock

The Key:

- *Water proof IP68*
- *No need to change battery*
- *Enduring: 100k button pushes*
Video: Stress test CyLock, 50k pushes:
youtu.be/wx5pW6y2BhY

The Lock:

- *Unbrakeable crypto: AES, SHA*
- *Safety protocol: can not capture the code, can not clone the key*
- *Saving money: when lost a key just need pair new one to use*

Unhackable, reliable, enduring

Market

Property protection

auto



bike



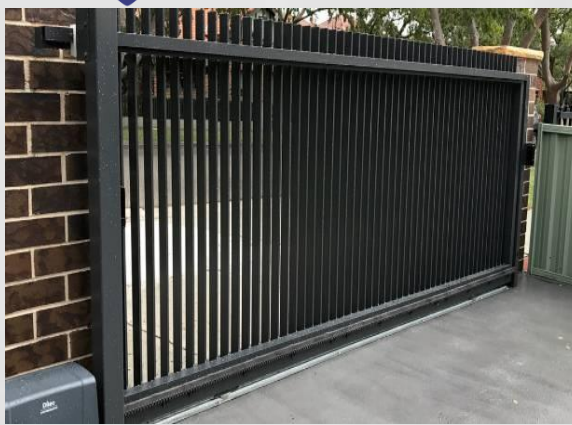
electrical bike



rolling door



slide gate



sky door



Info: Việt Nam, more than 40 millions moto, market growth 10%
Global: nearly 100 millions auto vehicles produced annually

Business



First stage:

Rolling doors: Product is ready to go to the market

- F2C: online marketing, e-commerce
- B2C: shops, warehouses, secured vaults, garages
- B2B: cooperation with rolling doors manufacturers

Second stage:

Auto, moto, electric vehicles: Product needs more engineering

- B2C: anti theft lock for current vehicles
- B2B: Cooperation with Auto firms



Just go to the market



Thank you!

think in simple way, do in detailed way,