




PRIVATE SECURE MOBILE COMMUNICATION TECHNOLOGY

Developed by Secure Services LLC

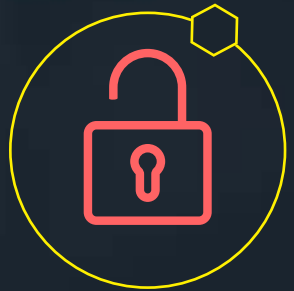


Based in Georgia, Bulgaria and Taiwan. Provides solutions for mobile security and critical applications.

TEAM MEMBERS ACHIEVEMENTS

- ✓ Airport eGate designer. Custom Immigration auto-security control (ePassport +Fingerprint +Face Recognition + Gate Control)
- ✓ Speed up HFT(high frequency trading) through hardware. Complete trading process takes few nano seconds
- ✓ Toy UAV integration
- ✓ Laser radar design for car autopilot. No motor mechanism.
- ✓ 360 degrees camera view in car. Intelligent image processing.
- ✓ iOS APP (more than 450 thousand downloads)

WHY TO PROTECT MOBILE VOICE PRIVACY?



Easy access to GSM
Interception equipment



Fake mobile base
stations



GSM communication
is easy to hack



“Google for Voice”:
speech-to-text
capabilities



Hackers easily snoop
on a GSM call



Internet based
communications
are not safe

SOLUTIONS FROM COMPETITORS



ENCRYPT ANALOG VOICE DIRECTLY



GSMK US \$3,500
100,000 in use

Android Phone



Snapcell
(EOL)

Ericsson phone



SecuSmart
US \$3,436

Blackberry Phone



SAGEM
(EOL)

Ericsson phone

VOIP
SOULTION



Cellcrypt
\$1,600



CryptoSmart
US \$2,740



Cryptify
£800/year

STATISTICS



Worldwide Mobile Enterprise Security Software Revenue by Segment, 2014-2019 (\$M)

	2014	2015	2016	2017	2018	2019
MIPC	217.3	260.3	306.5	346.6	385.7	422.1

Worldwide Mobile Enterprise Security Software 2015-2019. Mobile information protection and control (MIPC) source IDC, 2015

**100,000 GSMK
CRYPTOPHONES
IN USE AT 2013**

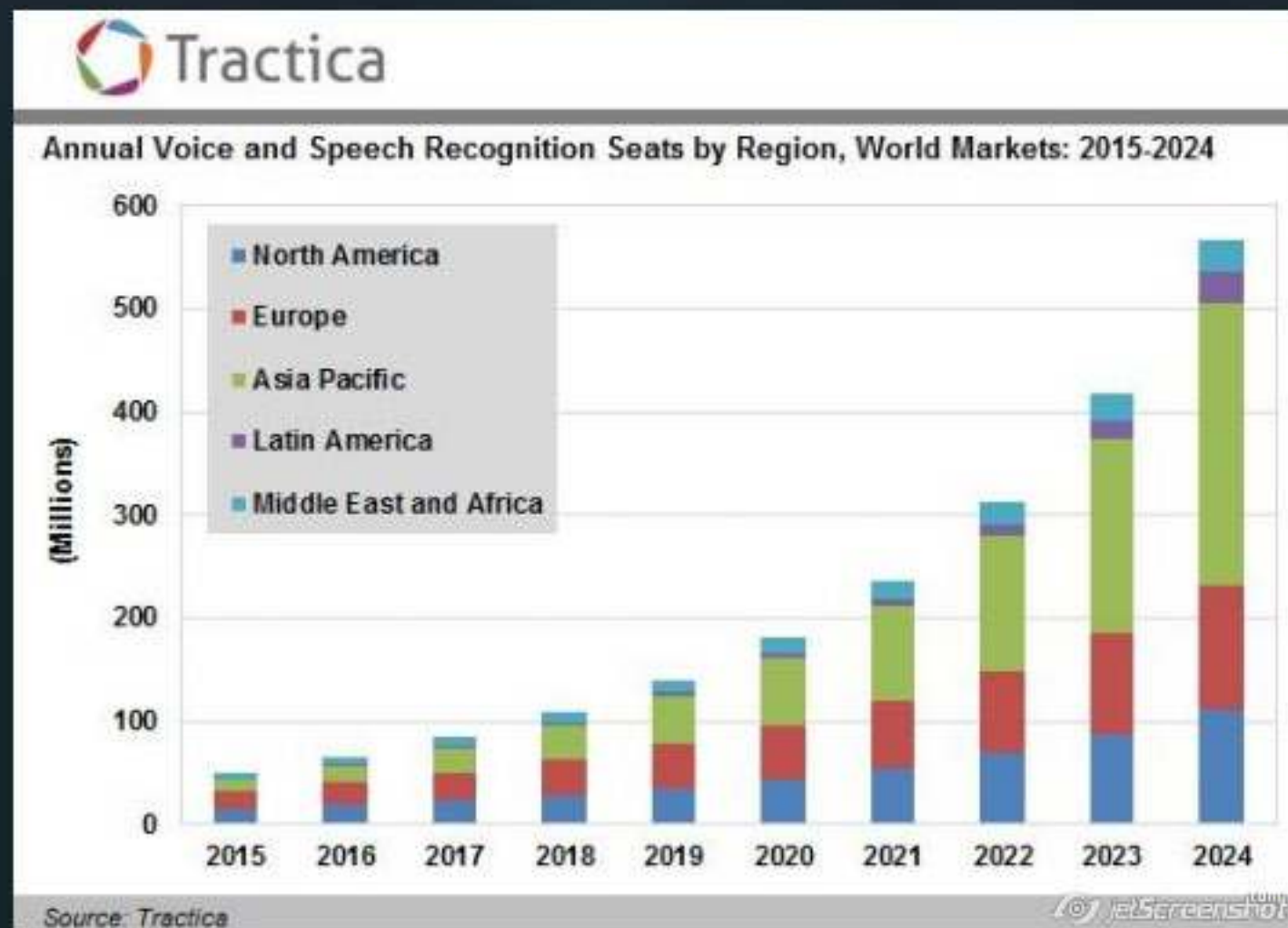
In 2014, mobile security and vulnerability management (MSVM) was the largest segment in the market (\$474 million) mobile identity and access management (MIAM) (\$277 million) source IDC, 2015

SNOWDEN EFFECT :

GSMK has seen the number of customer inquiries it receives rising **fivefold**. Deutsche Telekom released **mobile voice encryption APP** and **Merkelphone**

Blackphone (Silent Circle) announced that it has raised approximately **\$50 million** in funding, 2015 Feb

SPEECH RECOGNITION TECHNOLOGY



Speech recognition technology ramps up.

Most Voice APP/VOIP transfer voice into text with unexpected consequences. Voice privacy is in great demand.

PRODUCT COMPARISON



OTHERS

GSM Call Encrypt

Yes

GSMK / Blackberry

APP Voice Encrypt

Yes (Skype, Viber, WeChat
Messenger, Facetime...)

NO
(Vendor's APP only)

APP Installation

Not required

Required

Key Exchange

Voice Channel

Internet

Server

Not required

Yes

Phone

iPhone, Android...

Most are customized
phone

JB / Root

Not required

Not required


Stand Alone

Yes

Yes

PRODUCT UTILIZATION




	 PHANTEL	OTHERS
Encrypts iPhone cell phone call	Yes	NO
Encrypts Android cell phone call	Yes (on some customized Android phones, no Root)	Some (Need Root)
Encrypts Radio Walkie Talkie	Yes	NO
SIP Phone Combination	Yes	NO
Satellite Phone Combination	Yes	NO

** Phantel is a standalone dongle and functions autonomously. It offers high flexibility to interact with many communication devices.

HANDSHAKING SYSTEM



	 PHANTEL	OTHER ANALOG ENCRYPTOR	VOIP CRYPTO
Transfer key by	Voice	Voice	Internet
Type in Password	Not required	Not required	Saved at first use
Handshaking Time	15 ~ 25 seconds	1min ~ 3.5min	few seconds e.g. Cellc***t > 7s
Key Complexity	10^{23}	Minimal	AES 128/256bits
Quicker Way	Lower key complexity is possible	NO	Depends on server's bandwidth / cell phone network

HOW DOES PHANTEL WORK?



1 STEP

POWER ON PHANTEL. RANDOMLY GENERATE KEY.

Phantel uses real random generation to guarantee maximum safety

2 STEP

ATHENTICATE THE OTHER PARTY THROUGH VOICE CHANNEL.

GSM/Line/Facetime/Skype....

3 STEP

START ASYMMETRIC KEY ENCRYPTION. THE ENCRYPTION COMPLEXITY IS 10^{23}

Phantel uses a powerful analog encryption algorithm

WHY PHANTEL IS SECURE?



1

Phantel key complexity is 10^{14} Randomly generated at startup.

2

Analog voice must be understood by human ear. Analog encryption increases time and difficulty to hack.

3

Phantel encryption complexity is 10^{23} . Assume to spend 1 second to hack one type of encryption pattern... You would need four human's whole life time to crack.

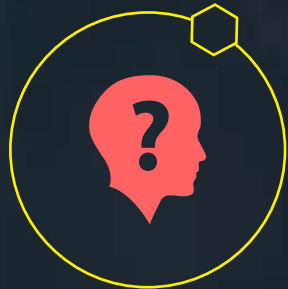
4

Phantel doesn't log keys inside. Also, Phantel doesn't use internet connection to transmit data.

5

Communication line is established by Telecom / APP. Phantel encrypts the voice content. Separate the communication and encryption between two subjects . Double safety!

PHANTEL ADVANTAGES



No 3rd party involvement

Won't leak information
at server / APP



Flexible Customization

Ability of combining radio/bluetooth
headset/walkie-talkie and
encryption module in cell phone



Doesn't need internet

Transfers key through voice.
Competitors transfer key through
internet



Group Authorization

Identifies GroupID before
phone call



End-to-End Encryption

Encryption/decryption inside
Phantel. Doesn't consume phone
power and CPU



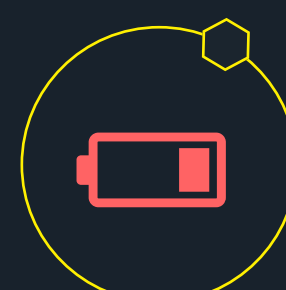
Random Key

Real Random Generator
Authorization through key
exchange. User doesn't require
a password



Analog Encryption

Hard to reverse and recognize



Low-power consumption

Active 5 hours at 1100mAh

PHANTEL TECHNOLOGY



100% PRIVATE CODE

Full Ability to enhance and implement features

AUTHENTICATION

Able to segment group/SKU
Provides enterprise solution

KEY

10^{14} complexity. Can change the complexity to adapt to different requirements

ENCRYPTION

10^{23} complexity. Able to increase complexity pattern. Evolution similar to antivirus

VOICE PROCESS

Expert knowledge in voice processing, sound effects and noise in telecom

HARDWARE

Unique design for voice encryption

POSSIBLE CUSTOMIZATION



BUSINESS GRADE



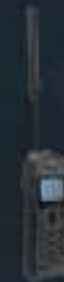
Phantel
(wire connection)



Phantel inside
Bluetooth headset



Phantel for
radio headset



Phantel for satellite
phone headset



Phantel inside
VOIP phone

MILITARY GRADE

GROUP AUTHENTICATION BOX

Plug Phantel into the box. This box will authorize and load group limitation into Phantel. Only the device with same group authorization can call each other

AUTO-VANISH

Limit the life of Phantel. Once it expires, it can't work any more.

FINGERPRINT AUTHENTICATION

Control who can use Phantel.

APP ACTIVATION

Phantel must be activated by APP. Also, this APhantel could belong to dedicated cell

COMPLEXITY

Military grade combined with higher key and encryption complexity. Stronger protection.

PHANTEL SALES STRATEGY



1

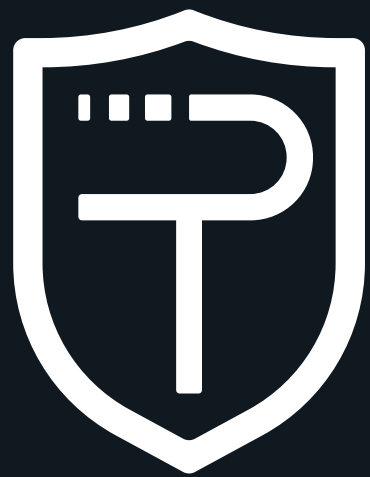
DIFFERENT AUTHENTICATION OR ENCRYPTION METHODS FOR GOVERNMENT, MILITARY, CORPORATE AND PRIVATE CLIENTS.

2

VERSION UPGRADE
ENCRYPTION ALGORITHM EVOLVES. NEW MODELS WILL BE DEVELOPED.

3

COMBINE WITH VARIOUS COMMUNICATION DEVICES
E.G. WALKIE-TALKIE / BLUETOOTH / SATELLITE /
FEATURE PHONE / SIP PHONE / ANDROID PHONE / VOIP
PHONE



MOBILE VOICE
PRIVACY



PROTECTS AGAINST
SPEECH-TO-TEXT



NO MORE VULNERABILITY
AT SERVER SITE



VOICE DEFENDER

ANY QUESTIONS?



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[HTTPS://PHANTEL.COM](https://phantel.com)