

Latest Update on GPS Jamming & Susceptibility Trials



ITSF 2015, Edinburgh, Scotland
5th November 2015

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Chronos Technology Ltd

Presentation Contents



- Jamming Research
- Types of Jammers
- Jammer Users & Examples
- Where to Buy your Jammers
- Is Jammer Use Increasing?



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UK Research since 2008



Latest Testing Sennybridge 2015



- UK Mod Range in Brecon Beacons
- Distance Testing of 3W Jammer
- Detection of Jammers in Container
- Photographing a Passing Jammer



Detection of 3W Jammer



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Powerful Jammers on the Web



Waterproof and Shockproof 320W Multifunctional Jammer



Price: GBP £0.69

[Please contact us to get the real price](#)

SKU: JFC-020-0041

Rating: ★★★★★ (7 product reviews)

Shipping: Calculated at checkout

Quantity: 1

[Add to Cart](#)

JammerFromChina Wholesales Discount

- Buy 2 - 4 and pay only GBP £11,808.47 each
- Buy 5 - 8 and pay only GBP £11,446.99 each
- Buy 9 - 15 and pay only GBP £10,844.52 each

15W High Power Adjustable 6 Antenna Bluetooth GPS Mobile Phone Jammer



RRP: GBP £216.16

Your Price: GBP £187.00

(You save GBP £29.15)

SKU: JFC-021-0016

Rating: ★★★★★ (6 product reviews)

Shipping: Calculated at checkout

Quantity: 1

[Add to Cart](#)

JammerFromChina Wholesales Discount

- Buy 2 - 4 and pay only GBP £183.26 each
- Buy 5 - 8 and pay only GBP £177.65 each
- Buy 9 - 15 and pay only GBP £168.30 each

12 Antennas Newest Adjustable WiFi GPS VHF UHF LoJack 3G 4G All Bands Signal Blocker



Price: GBP £413.30

SKU: JFC-021-0102

Rating: ★★★★★ (5 product reviews)

Shipping: Calculated at checkout

Quantity: 1

[Add to Cart](#)

JammerFromChina Wholesales Discount

- Buy 2 - 4 and pay only GBP £405.04 each
- Buy 5 - 8 and pay only GBP £392.64 each
- Buy 9 - 15 and pay only GBP £371.97 each

15W High Power 6 Antenna Mobile Phone GPS Bluetooth Jammer



Price: GBP £170.56

SKU: JFC-028-0010

Rating: ★★★★★ (5 product reviews)

Shipping: Calculated at checkout

Quantity: 1

[Add to Cart](#)


JammerFromChina Wholesales Discount

- Buy 2 - 4 and pay only GBP £167.15 each
- Buy 5 - 8 and pay only GBP £162.03 each
- Buy 9 - 15 and pay only GBP £153.51 each

[Recommend](#) Sign Up to see what your friends recommend.

100W Jammers!



**Spy Devices**
www.newspydevices.com

Enter search keywords here


SEARCH

0 item(s)

Popular Searches: Spy Cameras Kinds of jammers Android Phone Electronic Cigarette

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Home » Kinds of Jammers » GPS Jammers » Powerful 100W GPS Jammer GPS Jamming глушилка GPS



Powerful 100W GPS Jammer GPS Jamming глушилка GPS

★★★★★ (0 reviews)

Tweet 0Share 0Pin itLike 0Submit

\$3,634.00

In Stock - Shipping within 24 hours

Worldwide Free Shipping

Quantity:

+ Add to Cart

Add to Wishlist

Item DescriptionCustomer ReviewsPayment & Shipping

Powerful 100W GPS Jammer GPS Jamming глушилка GPS

Up to a distance of 500~1000M. This type of GPS Jamming is simply plugs into an ordinary car cigarette lighter socket and is active immediately blocking all types of tracking and navigational devices.

Only GPS jammers and глушилка gps will prevent the GPS loggers and GPS/GSM devices to get GPS positions from the Satellites.

Jammers at Scene of Crime



Cigarette Lighter
style Jammer hot
wired to car battery



Photo courtesy of Hampshire Police

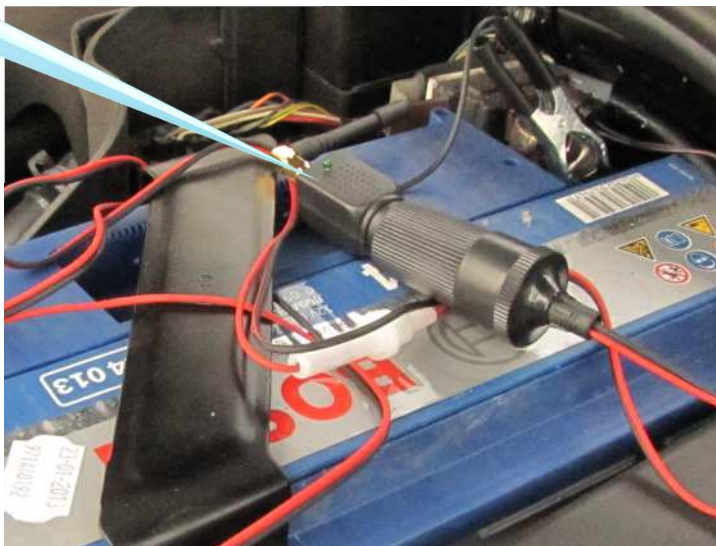


Photo courtesy of NaVCIS

AJR – Automatic Jamming Recognition



AJR

- “JammerCam”
- Uses DF technology from Bath Uni
- Photo triggered by passing jammer



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Jammer Users

- Personal Aggravation Disruption
- Personal Privacy
- Criminal Privacy
- Organised Crime
- Civil Disruption/Terrorism
- Nation State

Personal Aggravation Disruption

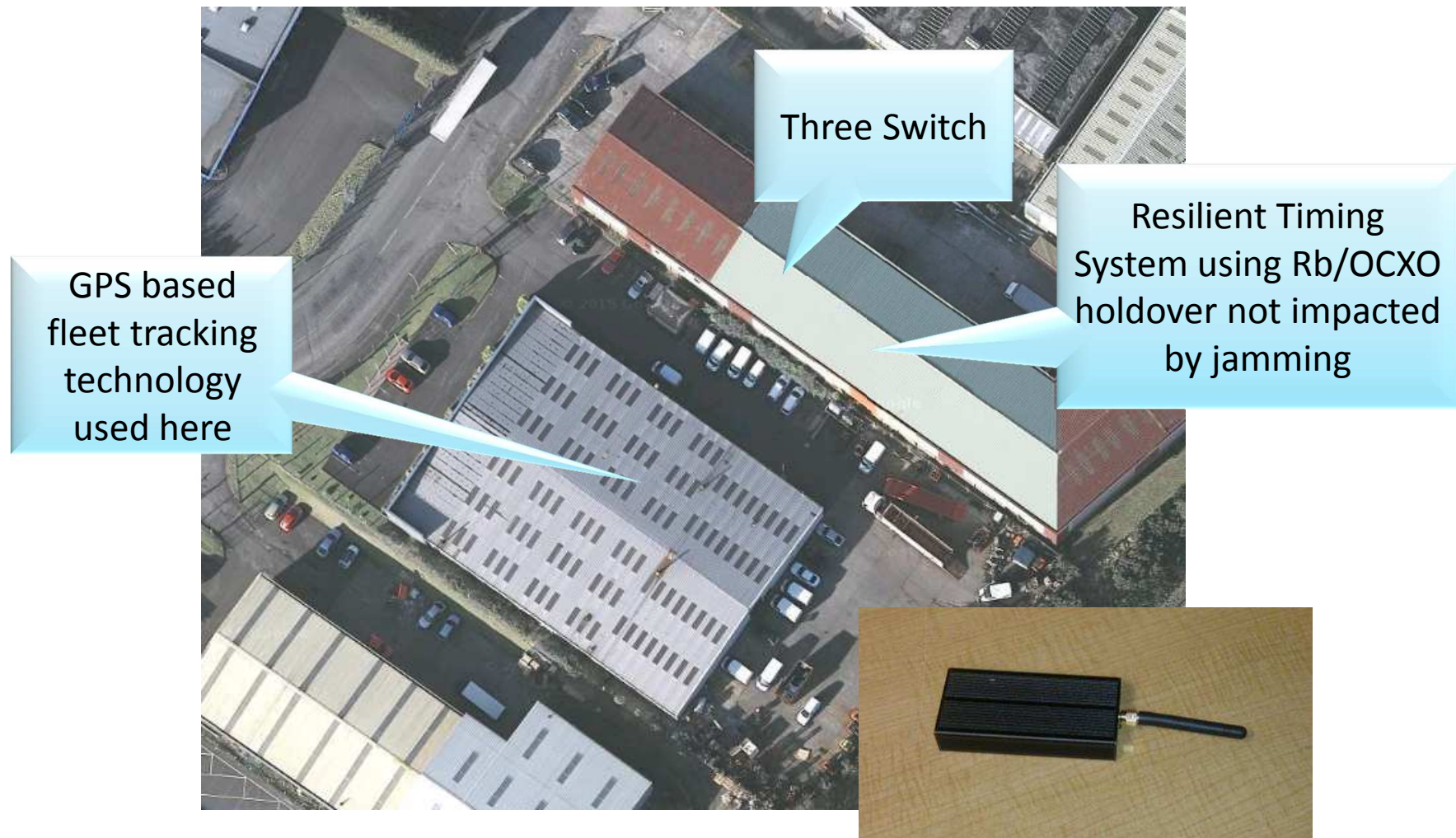
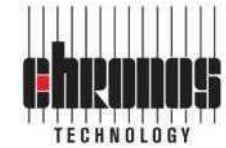


Multi band
jammers jam
GPS as well as
mobile phones



GPS: 1500-1600 MHz
CDMA: 850-894MHz
DCS: 1805-1880MHz
GSM: 925-960MHz
PHS: 1900-1930MHz
CDMA1900: 1930-1980MHz
WiFi: 2400-2500MHz

Personal Privacy



Criminal Privacy



Recent arrest apprehended a de-tagged criminal who was a passenger in a van.

The driver was using a cigarette lighter style jammer.
Concerned about covert tracking technology.



UK Law



- Not illegal to possess
 - However - No legal reason for use!
- Offence under Wireless Telegraphy Act 2006
 - Causing Deliberate Interference
 - Maximum 2 years in prison - Unlimited Fine
- Offence under EMC Directive EC89/336
 - Electromagnetic compatibility Regs SI 2006/3418
 - Supplying Jammers – Fine of up to £5000
- Google 'Ofcom Jammers' for more info

Organised Crime



<http://www.bbc.co.uk/programmes/p014f7jk>

<https://www.youtube.com/watch?v=l8fe3nNUmBg>

Scene of Crime Photos

Cigarette Lighter
style Jammer hot
wired to car battery



Photo courtesy of Hampshire Police

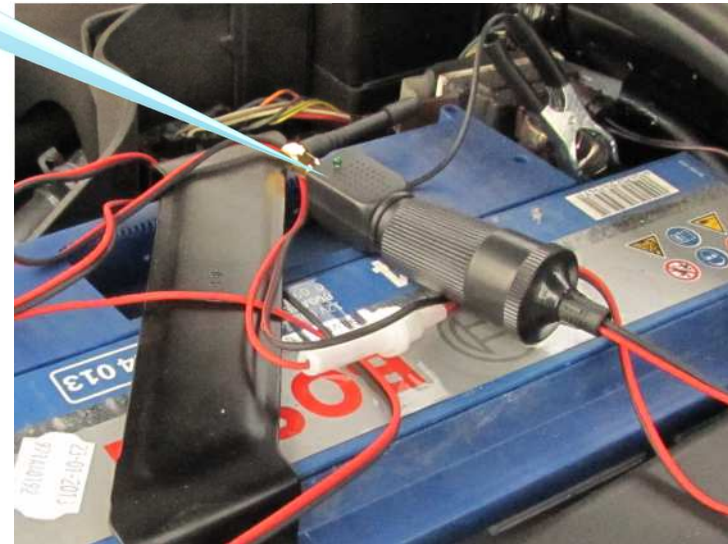


Photo courtesy of NaVCIS

Terrorist Threat – 3 Watt Jammer



25m off
City

Purple –
S

Red – Ma
Unabl

Yellow –
possible



Nation State



Nation State



Intentional High-Power GPS Jamming

[The Central Radio Management Office, South Korea]

Dates	Aug 23-26, 2010 (4 days)	Mar 4-14, 2011 (11 days)	Apr 28 – May 13, 2012 (16 days)
Jammer locations	Gaesong	Gaesong, Mt. Gungang	Gaesong
Affected areas	Gimpo, Paju, etc.	Gimpo, Paju, Gangwon, etc.	Gimpo, Paju, etc.
GPS disruptions	181 cell towers, 15 airplanes, 1 battle ship	145 cell towers, 106 airplanes, 10 ships	1,016 airplanes, 254 ships

Prof. Jiwon Seo -Yonsei University, South Korea Resilient PNT Forum II, Dana Point, California - January 26, 2015

<http://rntfnd.org/2015/02/01/resilient-pnt-forum-ii-presentations/>

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Where to buy Jammers

- Over 50 active Chinese Web Sites
- Power ~ 100mW to 50W!



3W



500mW



Galileo
PRS Ready!



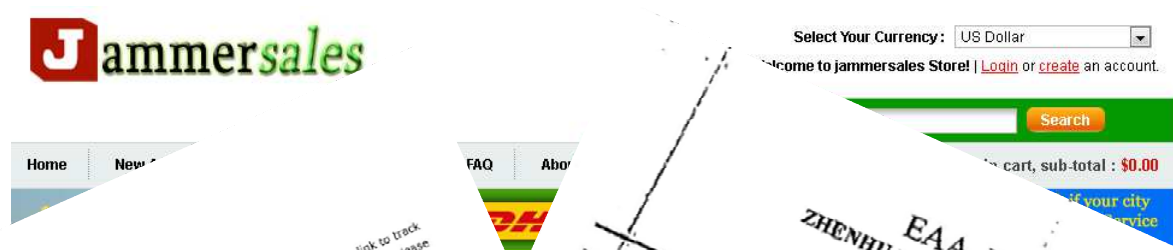
chronos
TECHNOLOGY

250mW

« Previous Pages: 1 2

 High Power 6 Antenna Cell Phone, GPS, WiFi Jammer GBP £178.09 ★★★★☆ <input type="checkbox"/> Compare Add To Cart	 High Power 6 Antenna Cell Phone, GPS, WiFi, VHF Jammer GBP £178.84 ★★★★☆ <input type="checkbox"/> Compare Add To Cart	 High Power 6 Antenna Cell Phone, GPS, WiFi, VHF, UHF and Cell Phone Jammer GBP £178.84 ★★★★☆ <input type="checkbox"/> Compare Add To Cart	 High Power 8 Antenna Cell Phone, 3G, WiFi, GPS, Jammer GBP £198.85 ★★★★☆ <input type="checkbox"/> Compare Add To Cart
 High Power Handheld Portable Cellphone+GPS+Wi Jammer-Omnidirectional Antennas GBP £198.94 ★★★★☆ <input type="checkbox"/> Compare Add To Cart	 High Power Portable GPS (GPS L1/L2/L3 /L4/LS) Jammer GBP £126.45 ★★★★☆ <input type="checkbox"/> Compare Add To Cart	 High Power Portable GPS and Cell Phone Jammer(CDMA GSM DCS PCS 3G) GBP £180.13 ★★★★☆ <input type="checkbox"/> Compare Add To Cart	 High Power Portable GPS and Cell Phone Jammer with Carry Case GBP £113.80 ★★★★☆ <input type="checkbox"/> Compare Add To Cart
 High Power Portable GPS and Mobile Phone Jammer(CDMA GSM DCS PCS 3G) GBP £121.36 ★★★★☆ <input type="checkbox"/> Compare Add To Cart	 High Power Portable GPS and Mobile Phone Jammer(CDMA GSM DCS PCS) GBP £106.94 ★★★★☆ <input type="checkbox"/> Compare Add To Cart	 Mini GPS jammer for Car GBP £34.08 ★★★★☆ <input type="checkbox"/> Compare Add To Cart	 Mini GPS Satellite Isolator GBP £37.13 ★★★★☆ <input type="checkbox"/> Compare Add To Cart

Buying the 3W Jammer



Hello, Gean Jones

Thank you for your order from Jammersales Wholesale Limited. Once your package ships we will send an email with a link to track your order. You can check the status of your order by [logging into your account](#). If you have any questions about your order please contact us at sales@jammersales.com. Your order confirmation is below. Thank you again for your business.

Your Order #20140814104510 (placed on August 14, 2014 6:45:10 PM CST)

Billing Information:

Gean Jones
Chronos Technology Limited
Stowfield House
Upper Stowfield
Lydbrook, Gloucestershire, GL17 9PD
United Kingdom
T: +441594862257
F: 0441594862211

Shipping Information:

Gean Jones
Chronos Technology Limited
Stowfield House
Upper Stowfield
Lydbrook, Gloucestershire, GL17 9PD
United Kingdom
T: +441594862257
F: 0441594862211

Item

4G LTE Wimax Cell Jammer - Hot New The Best Most Powerful 4G Mobile Phone GPS Sig.

Payment Method:
Credit Card Payment Online(VISA)

Shipping Method:
Select Shipping Method

Thank you, Jammersales Wholesale Limited

EAA Digital Co., LTD			
ZHENHUA ROAD HUAQBEI SHENZHEN, CHINA			
INVOICE			
TO:		INVOICE NO.:	RV-201400816
ADD: Chronos Technology Limited		DATE:	
Stowfield House, Upper Stowfield, Lydbrook,		TRACKING NO.	
Gloucestershire, GL17 9PD, United Kingdom			
TEL: +441594862257			
Marks Nos	Description	Quantity	Unit Price
	GPS signal kit	1	USD
			US\$80.00
			Amount
			USD
			US\$80.0
			US\$80.00
TOTAL			

Grand Total To

4G LTE Wimax
Phone GPS Signal
PCS, GPS signals, but also

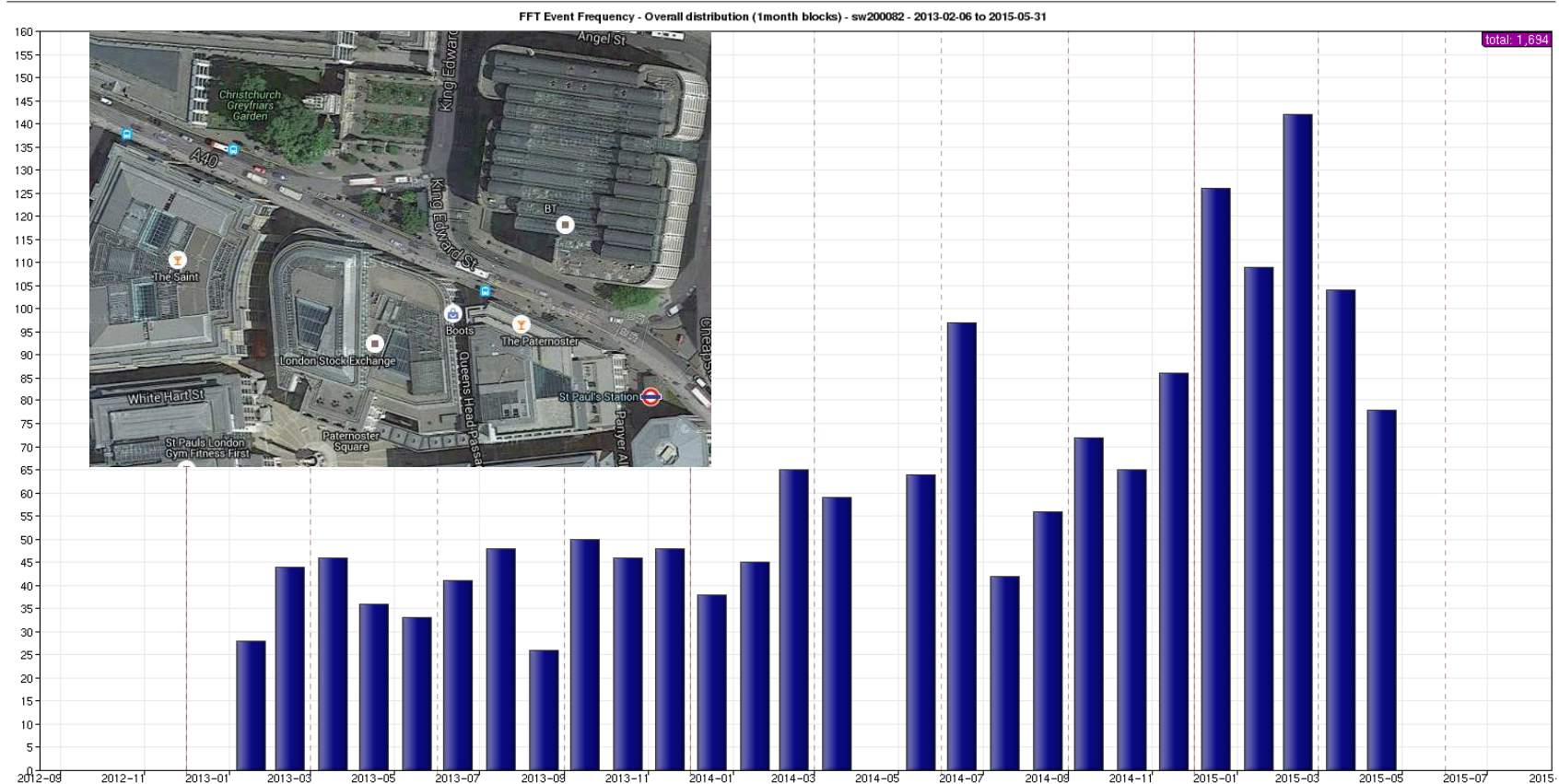
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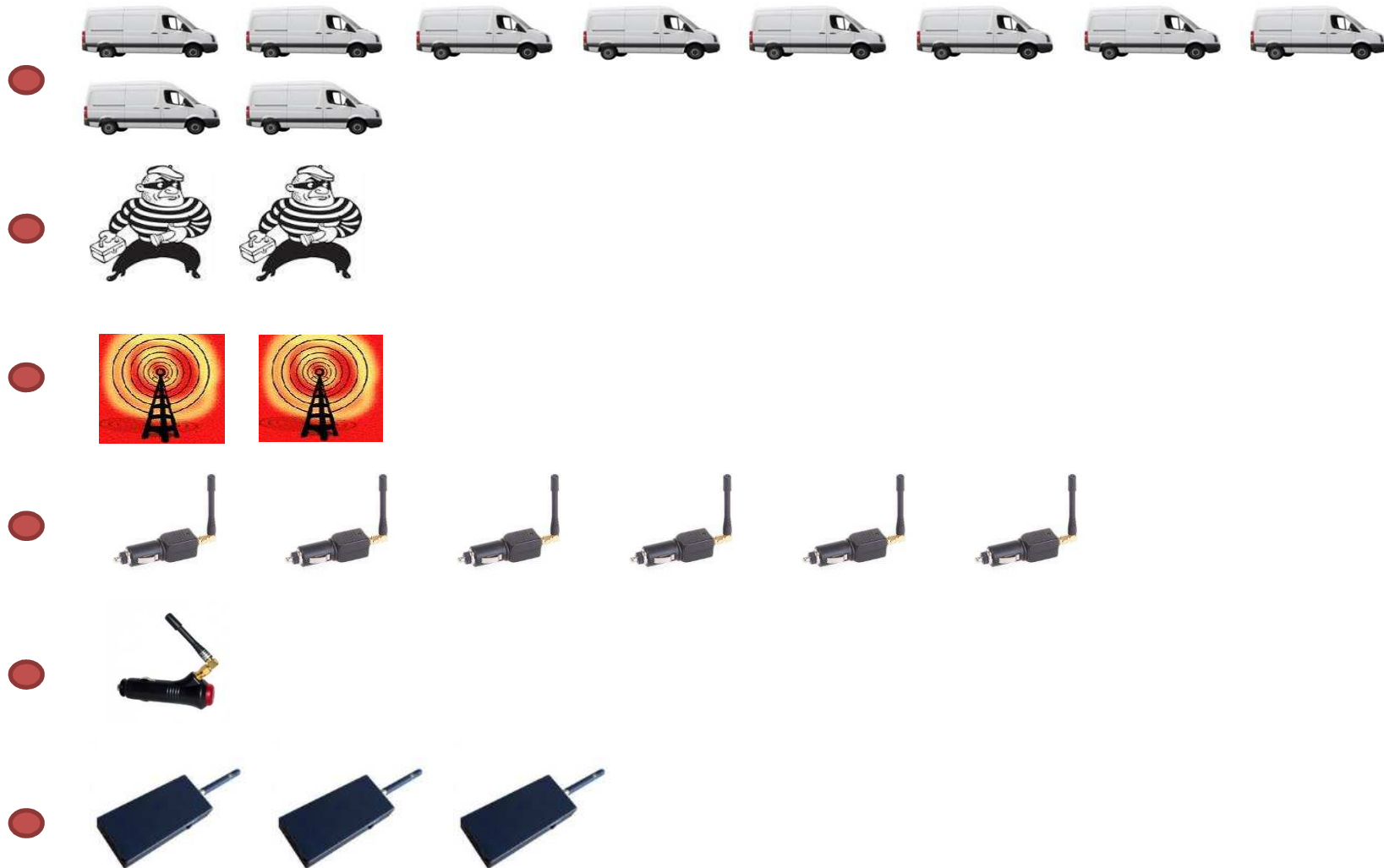
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Events/Month >60 Seconds



Kills @ November 2015!



Conclusion

- Threat from GPS Jammers is real and increasing
 - OCGs use Jammers
 - Generally More Powerful
- Did you know about Jammers?
- Learn with the SENTINEL Report
 - [http://www.chronos.co.uk/files/pdfs/gps/SENTINEL Project Report.pdf](http://www.chronos.co.uk/files/pdfs/gps/SENTINEL%20Project%20Report.pdf)



SENTINEL PROJECT REPORT ON GNSS VULNERABILITIES



SENTINEL Project – GNSS Vulnerabilities

The SENTINEL Project investigated a number of interconnected activities involving mission-critical or safety-critical services which need to be able to "trust" GNSS signals at the point of use. The SENTINEL Project was concerned with GNSS interference and jamming, and techniques for mitigating such jamming. This Report also records some of the world-wide press and television coverage stimulated by presentations of the results of SENTINEL at numerous conferences and symposia.

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Originated by:	Prof. Charles Curry, BEng, CEng, FIET	Title: Managing Director, Chronos Technology
Document Status:	RELEASED	SENTINEL Project – Report on GNSS Vulnerabilities



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