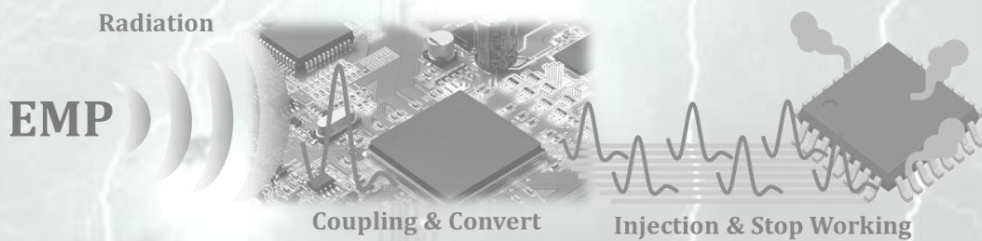


EMP GUN

*High-Power
Electromagnetic(HPEM)
Generation*



Introduction to EMP GUN

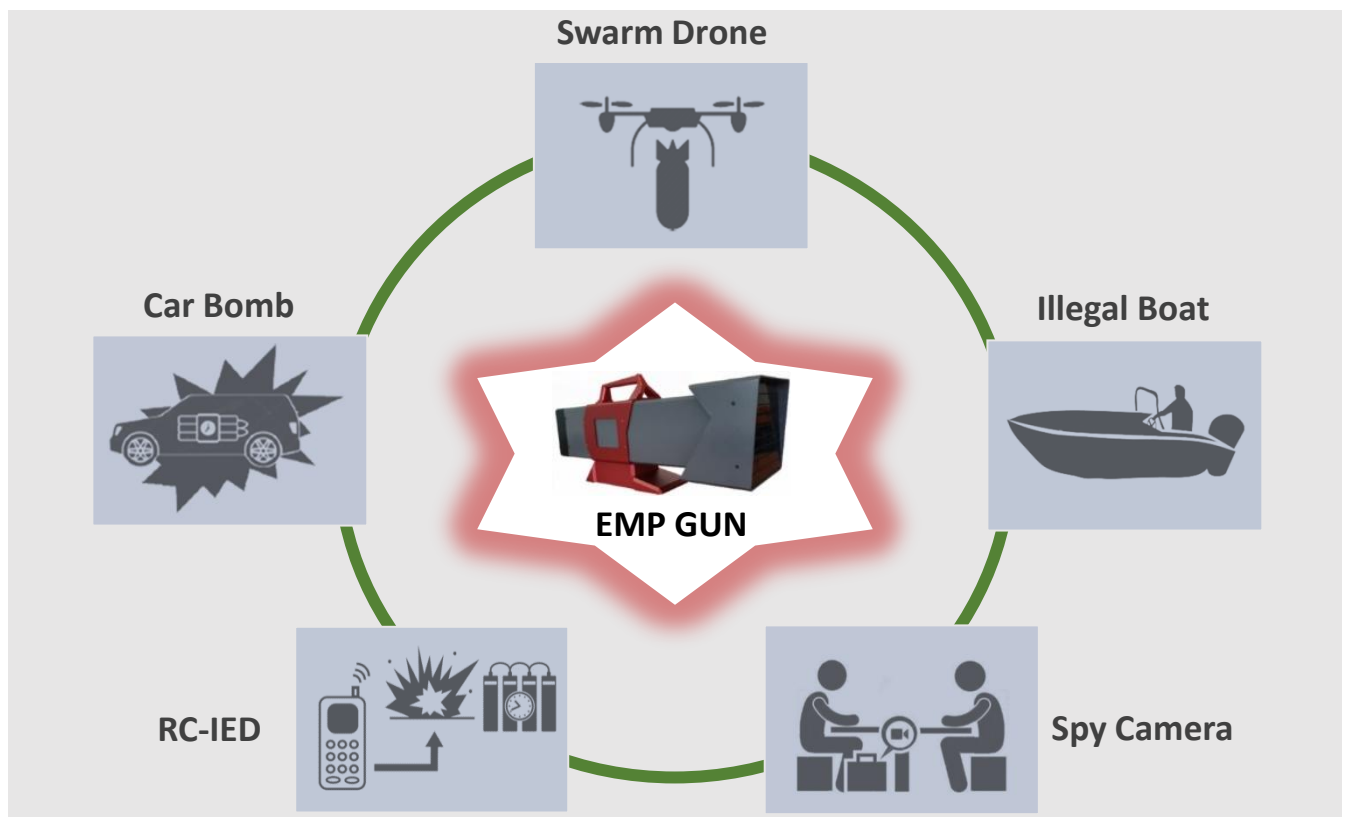
Unpredictable terrorism, for example, a swarm drone & car bomb has emerged as a new social threat in the worldwide. In addition, as the drone market grows rapidly, malicious use of drones such as precision bombing and illegal filming has become a social issue. In this way, terrorism is transforming into a form using electronic devices with new technology.

Replex has developed the EMP GUN, which generates a significantly powerful electromagnetic pulse(EMP) for either damaging or stopping electronic devices, used for malicious purposes such as car bomb, swarm drone, illegal fishing motor boat, RC-IED(Radio Controlled Improvised Explosive Device).

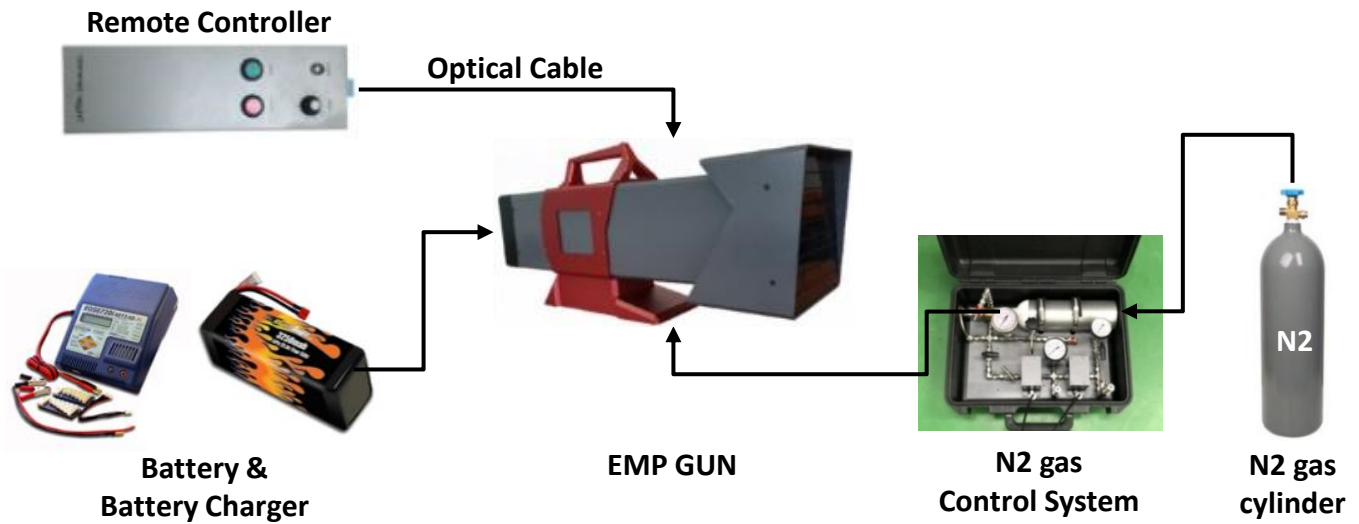
Features

- Compact, Light-Weight, Battery Powered
- Various effects on electronic devices by wideband frequency
- Harmless to the human body by very low average power
- Various platform (suitcase type, pole type, vehicle-mounted type, reflector type)
- Custom-made according to the user needs

Applications



Product Configuration



Component	Descriptions
Remote Controller	<ul style="list-style-type: none"> • The controller controls the ON/OFF, duration and PRF of the EMP GUN. • The controller is connected to the EMP GUN through an optical cable, and the maximum cable length is 20m. • For the M200 and M500 the controller is built into the EMP GUN.
Battery & Battery Charger	<ul style="list-style-type: none"> • Battery is included inside the EMP GUN to supply the initial driving power of the EMP GUN. • Battery Charger are provided by the manufacturer
Nitrogen(N2) Gas & Gas Cylinder	<ul style="list-style-type: none"> • N2 gas is electrical insulating gas required for the EMP GUN operation. • N2 gas must be used with a purity of 99.99% or higher, it can be purchased, easily, price is very inexpensive, and harmless to the human body. • N2 Gas Cylinder is not provided by the manufacturer and must be purchased locally by the customer.
Nitrogen(N2) gas Control System	<ul style="list-style-type: none"> • Used when charging and discharging of gas from gas cylinder to EMP GUN • Manufactured for easy charging and discharging of nitrogen gas

※ Components may vary depending on the product model.

EMP GUN – M30

Product Description

M30 generates very powerful electromagnetics pulse (EMP) capable of neutralize electronic devices for malicious purposes.

M30 features omni-directional radiation by applying a dipole antenna, which can simultaneously disable various electronic devices

To enhance portability, it is designed to be lightweight and is powered by a battery, making it suitable for personal or VIP protection

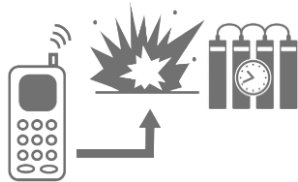


Features

- Non-nuclear radiated EMP generation
- Good Mobility (Battery operation and Light weight)
- Harmless to the human body (Low average power)
- Effective on various electronic device (Wideband frequency)
- Omni-directional radiation

Applications

- M30 can be utilized to disrupt the operation of IT devices for malicious purposes, such as disabling spy cameras and preventing bugging.
- M30 can be used to neutralize IEDs(Improvised Explosive Devices) operated by electronic control systems



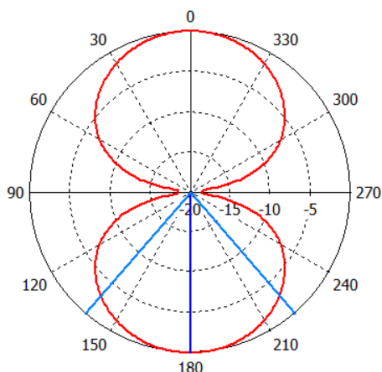
VIP protection / Blocking of the RC-IEDs , Spy camera and Bugging

EMP GUN – M30

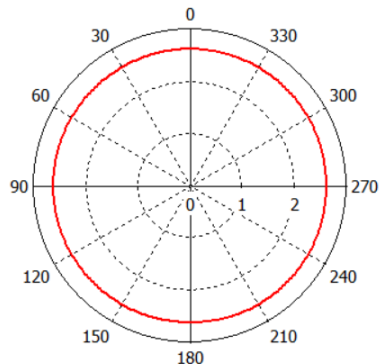
Specifications

Parameter	Value
Model Name	M30
Power Source	Lithium Polymer Battery
Peak E-field Strength	$\geq 7.5\text{kV/m@20m}$ (Far Voltage $\geq 150\text{KV}$)
Center Frequency	$620\text{MHz}\pm 10\%$
Bandwidth(-10dB)	600MHz (min.)
PRF(Pulse Repetition Frequency)	5Hz (Max.)
Battery Operation Time	1hour(PRF 1Hz)
Insulation	Nitrogen(N_2) gas
Storage/Working Temperature	$-5^\circ\text{C} \sim 50^\circ\text{C} / 0^\circ\text{C} \sim 45^\circ\text{C}$
Size(L×W×H) / Weight	$\leq 0.5\text{m} \times 0.2\text{m} \times 0.4\text{m} / \leq 19\text{kg}$

Beam Pattern(Vertical)

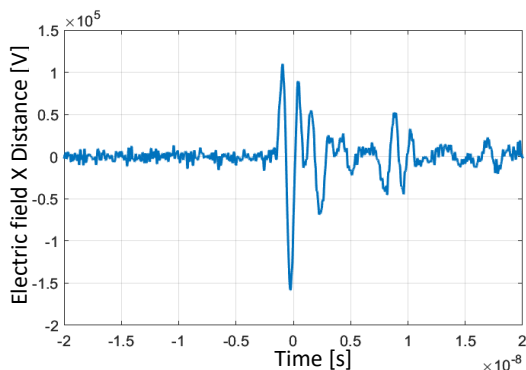


Beam Pattern(Horizontal)

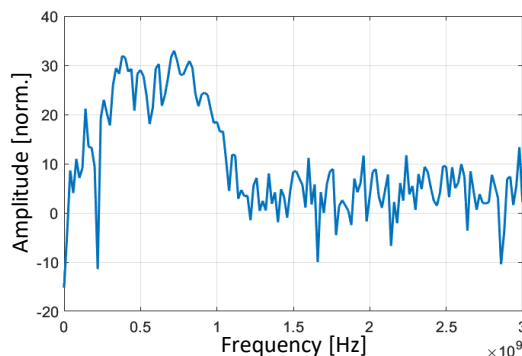


Beam Width (-3dB, simulation) : $80^\circ\pm 10\%$ (Vertical), 360° (Horizontal)

Far Voltage Waveform



Frequency Spectrum



※ **Far Voltage** mean $r \times E$ (r : distance from EMP GUN to the point in the far field area , E : E-field strength at the point).

EMP GUN – M30R

Product Description

M30R generates very powerful electromagnetics pulse (EMP) that can neutralize electronic devices with the malicious purposes.

M30R features directional radiation by applying a reflector to the M30, which can simultaneously disable various electronic devices

To enhance portability, it is designed to be lightweight and is powered by a battery, making it suitable for personal or VIP protection

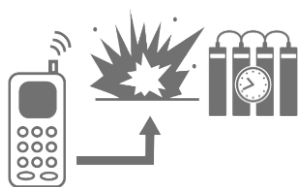


Features

- Non-nuclear radiated EMP generation
- Good Mobility (Battery operation and Light weight)
- Harmless to the human body (Low average power)
- Effective on various electronic device (Wideband frequency)
- Directional radiation

Applications

- M30R can be utilized to disrupt the operation of IT devices for malicious purposes, such as disabling spy cameras and preventing bugging.
- M30R can be used to neutralize IEDs(Improvised Explosive Devices) operated by electronic control systems



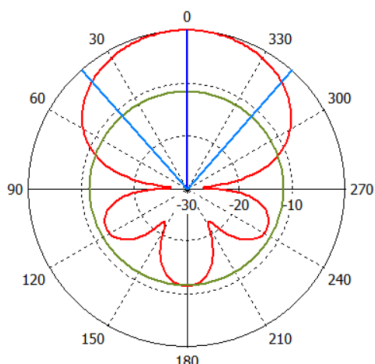
VIP protection / Blocking of the RC-IEDs , Spy camera and Bugging

EMP GUN – M30R

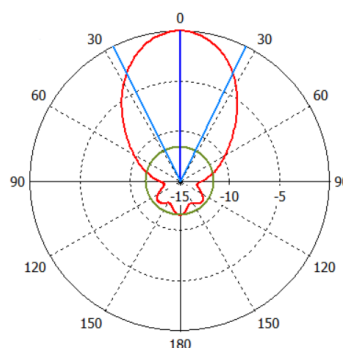
Specifications

Parameter	Value
Model Name	M30R
Power Source	Lithium Polymer Battery
Peak E-field Strength	$\geq 12.5\text{ kV/m@20m}$ (Far Voltage $\geq 250\text{KV}$)
Center Frequency	$650\text{MHz}\pm 10\%$
Bandwidth(-10dB)	600MHz (min.)
PRF(Pulse Repetition Frequency)	5Hz (Max.)
Battery Operation Time	1hour (PRF 1Hz)
Insulation	Nitrogen(N_2) gas
Storage/Working Temperature	$-5^\circ\text{C} \sim 50^\circ\text{C} / 0^\circ\text{C} \sim 45^\circ\text{C}$
Size(L×W×H) / Weight	$\leq 0.5\text{m} \times 0.7\text{m} \times 0.4\text{m} / \leq 22\text{kg}$

Beam Pattern(Vertical)

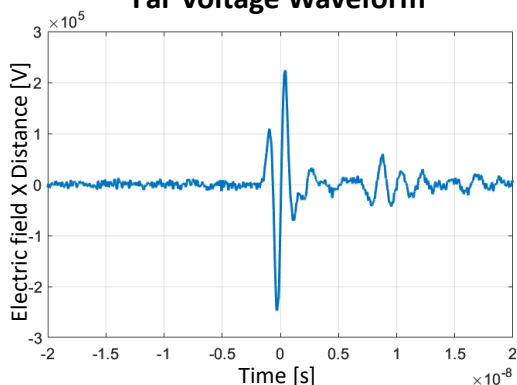


Beam Pattern(Horizontal)

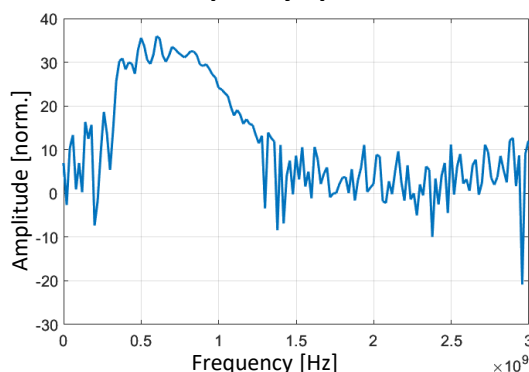


Beam Width (-3dB, simulation) : $75^\circ\pm 10\%$ (Vertical), $50^\circ\pm 10\%$ (Horizontal)

Far Voltage Waveform



Frequency Spectrum



※ **Far Voltage** mean $r \times E$ (r : distance from EMP GUN to the point in the far field area , E : E-field strength at the point).

EMP GUN – M60P

Product Description

M60P generates very powerful electromagnetic pulse (EMP) that can neutralize electronic devices with the malicious purposes.

M60P has the directional radiation feature, which can simultaneously disable various electronic devices

Specially, the M60P can be used for vehicles engine stop controlled by an electronic fuel injection control system.

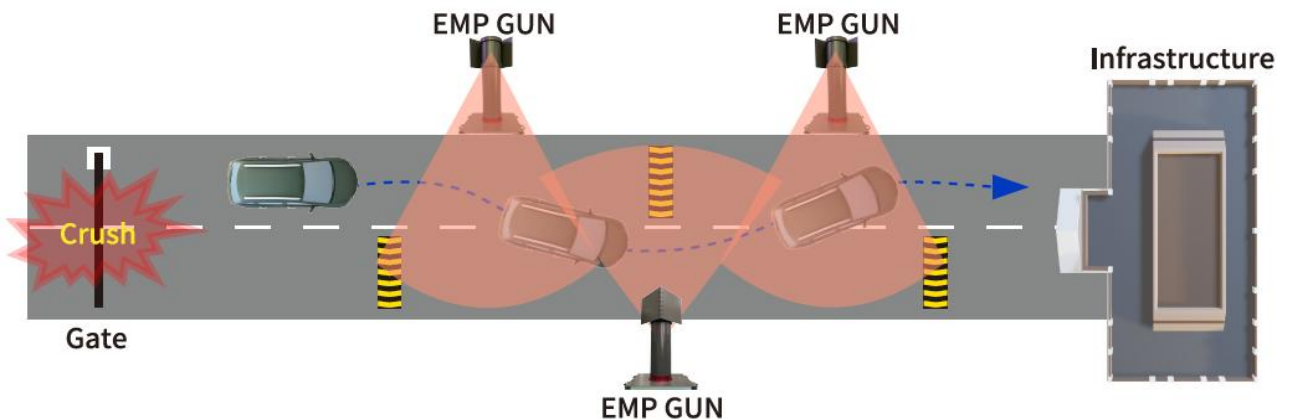


Features

- Non-nuclear radiated EMP generation
- Good Mobility (Battery operation and Light weight)
- Harmless to the human body (Low average power)
- Effective on various electronic device (Wideband frequency)
- Directional radiation

Applications

- By installing several M60-P along the entrance drive way of a building, it can be used to stop the engine of an unauthorized entry vehicles.



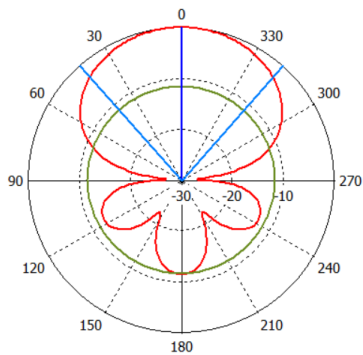
Unauthorized Entry Vehicle Blocking by Stopping the Engine

EMP GUN – M60P

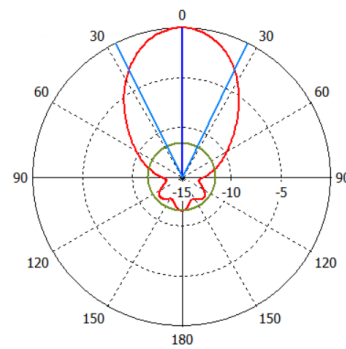
Specifications

Parameter	Value
Model Name	M60P
Power Source	Lithium Polymer Battery
Peak E-field Strength	$\geq 12.5\text{kV/m}@20\text{m}$ (Far Voltage $\geq 250\text{KV}$)
Center Frequency	$650\text{MHz}\pm 10\%$
Bandwidth(-10dB)	600MHz (min.)
PRF(Pulse Repetition Frequency)	5Hz (Max.)
Battery Operation Time / Capacity	1hour (PRF 1Hz)
Insulation	Nitrogen(N_2) gas
Storage/Working Temperature	$-5^\circ\text{C} \sim 50^\circ\text{C}$ / $0^\circ\text{C} \sim 45^\circ\text{C}$
Size(L×W×H) / Weight	$\leq 0.4\text{m} \times 0.4\text{m} \times 1.2\text{m}$ / $\leq 50\text{kg}$

Beam Pattern(Vertical)

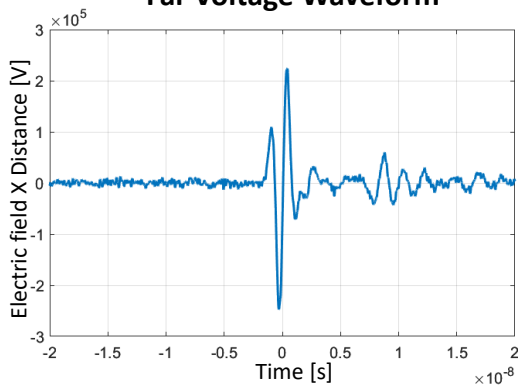


Beam Pattern(Horizontal)

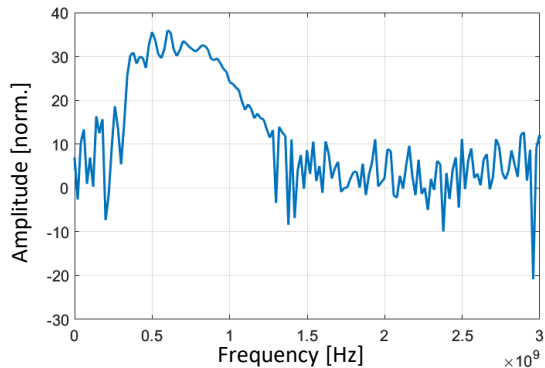


Beam Width (-3dB, simulation) : $75^\circ\pm 10\%$ (Vertical), $50^\circ\pm 10\%$ (Horizontal)

Far Voltage Waveform



Frequency Spectrum



※ **Far Voltage** mean $r \times E$ (r : distance from EMP GUN to the point in the far field area , E : E-field strength at the point).

EMP GUN – M200

Product Description

M200 generates very powerful electromagnetics pulse (EMP) that can neutralize electronic devices with the malicious purposes.

Specially, the M200 can be used for vehicles engine stop controlled by an electronic fuel injection control system.

M200 can be customized to be mounted on various platforms such as the vehicles, ships, and ground-fixed installations according to user needs.



Features

- Non-nuclear radiated EMP generation
- Maximize mobility by using battery power
- Harmless to the human body (Low average power)
- Effective on various electronic device (Wideband frequency)
- Directional radiation

Applications

- M200 can be used to stop the engine of a moving vehicles for malicious purposes, such as car bomb attack, reckless motor cycle, illegal boat.
- M200 can stop the engine in several seconds and the engine is not restart while the EMP is being radiated.
- It is recommended to use it for temporarily and continuously stopping the engine, not for permanent damage to the engine.



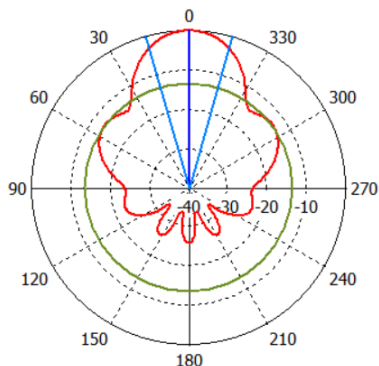
Stopping the Engine or Motor of the Escape Vehicle

EMP GUN – M200

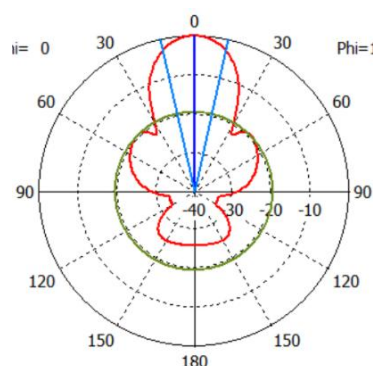
Specifications

Parameter	Value
Model Name	M200
Power Source	Lithium Polymer Battery
Peak E-field Strength	$\geq 28.4\text{kV/m}@30\text{m}$ (Far Voltage $\geq 850\text{KV}$)
Center Frequency	$600\text{MHz}\pm 10\%$
Bandwidth(-10dB)	600MHz (min.)
PRF(Pulse Repetition Frequency)	10Hz (Max.)
Battery Operation Time	1hour(PRF 1Hz)
Insulation	Nitrogen(N_2) gas
Storage/Working Temperature	$-5^\circ\text{C} \sim 50^\circ\text{C}$ / $10^\circ\text{C} \sim 45^\circ\text{C}$
Size(L×W×H) / Weight	$\leq 1\text{m} \times 1.5\text{m} \times 1.9\text{m}$ / $\leq 280\text{kg}$

Beam Pattern(Vertical)

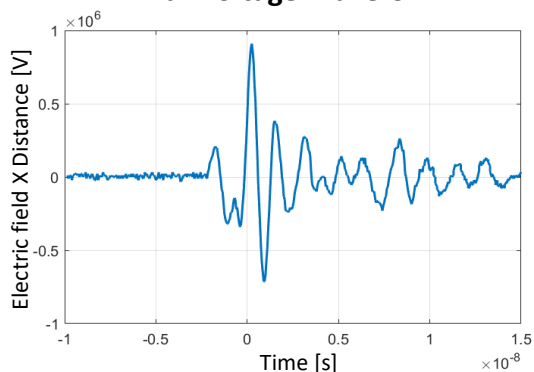


Beam Pattern(Horizontal)

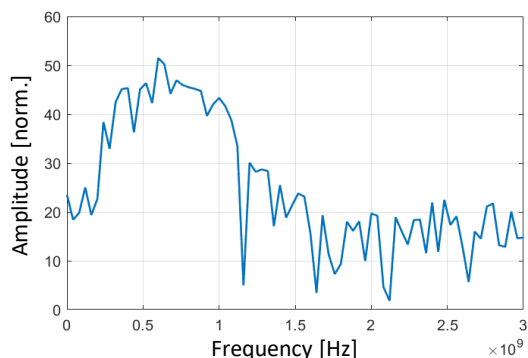


Beam Width (-3dB, simulation) : $30^\circ\pm 10\%$ (Vertical), $25^\circ\pm 10\%$ (Horizontal)

Far Voltage Waveform

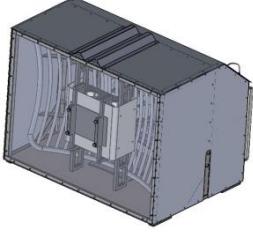
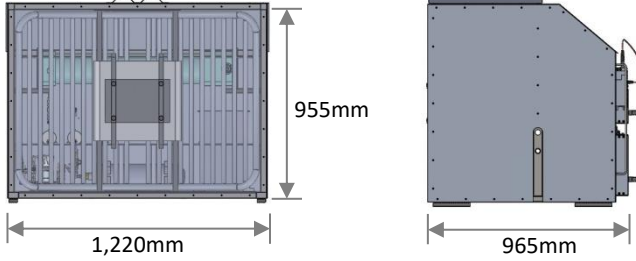
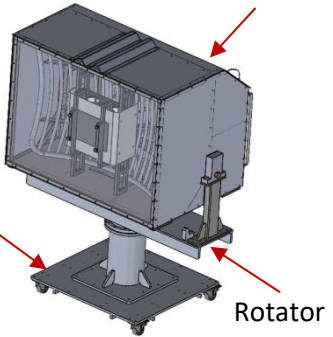
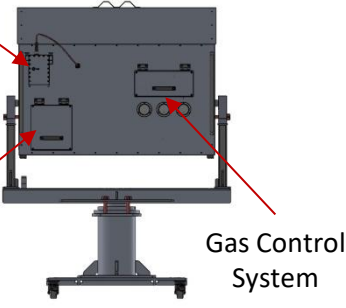
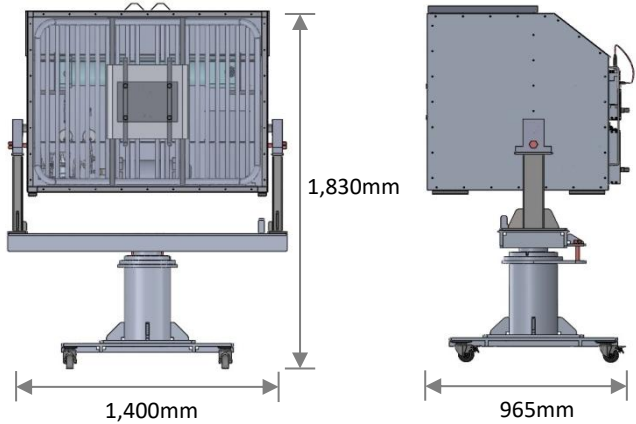



Frequency Spectrum



※ **Far Voltage** mean $r \times E$ (r : distance from EMP GUN to the point in the far field area , E : E-field strength at the point).

EMP GUN – M200

Model Name	Drawing
<p>M200-SX</p>  <p>Integration of EMP Generator, Gas Control System and Controller</p>	<p>Weight : 165kg</p> 
<p>M200-SG</p>  <p>Cart Rotator</p>  <p>Remote Controller Battery (built-in) Gas Control System</p> <p>Rotation Angle : -15°~+60°(Vert.), 360°(Hor.) Cart → Height : 130mm, Weight : 40kg</p>	<p>Weight : 280kg</p>  

EMP GUN – M500

Product Description

M500 generates very powerful electromagnetics pulse (EMP) that can neutralize electronic devices with the malicious purposes.

Specially, M500 can be use for neutralize swarm drones that could threaten public events, critical infrastructure and military missions. It has a directional radiation angle of 11°, which allows it to neutralize multiple drones simultaneously without precise aiming.

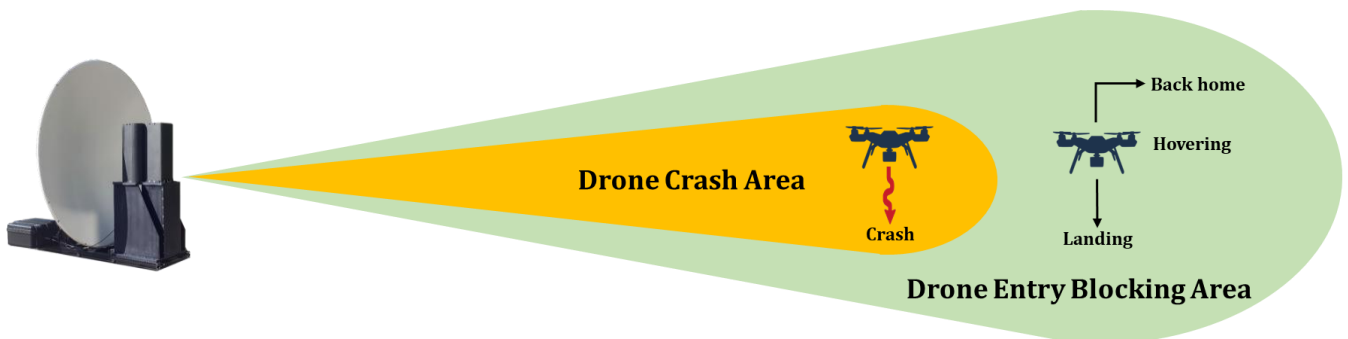


Features

- Non-nuclear radiated EMP generation
- Maximize mobility by using battery power
- Harmless to the human body (Low average power)
- Effective on various electronic device (Wideband frequency)
- Directional radiation

Applications

- M500 can be use for neutralize swarm drones that could threaten public events, critical infrastructure and military missions.
- The EMP radiated by the M500 directly affects the semiconductors inside of the drone. This will lead to drone crash or entry blocking such as back home, hovering and landing. This EMP effects depends on the drone model and attack distance.



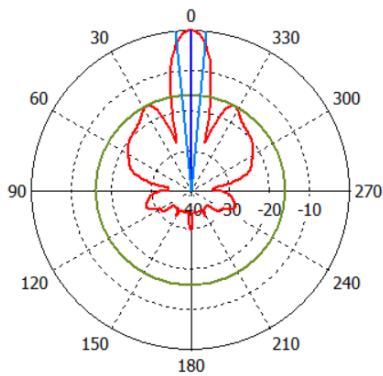
Anti-Drone System (Neutralization of swarm drones)

EMP GUN – M500

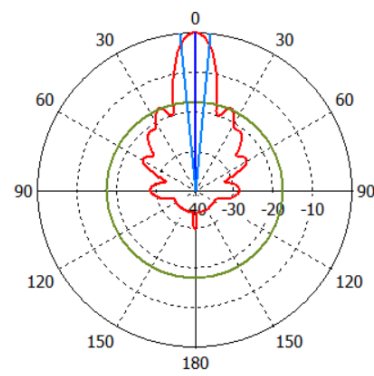
Specifications

Parameter	Value
Model Name	M500
Power Source	Lithium Polymer Battery
Peak E-field Strength	$\geq 66.7\text{kV/m@30m}$ (Far Voltage $\geq 2\text{MV}$)
Center Frequency	$640\text{MHz}\pm 10\%$
Bandwidth(-10dB)	600MHz (min.)
PRF(Pulse Repetition Frequency)	10Hz (Max.)
Battery Operation Time	1hour (PRF 1Hz)
Insulation	Nitrogen(N_2) gas
Storage/Working Temperature	$-5^\circ\text{C} \sim 50^\circ\text{C}$ / $10^\circ\text{C} \sim 45^\circ\text{C}$
Size(L×W×H) / Weight	$\leq 2\text{m} \times 2.5\text{m} \times 2.8\text{m}$ / $\leq 350\text{kg}$

Beam Pattern(Vertical)

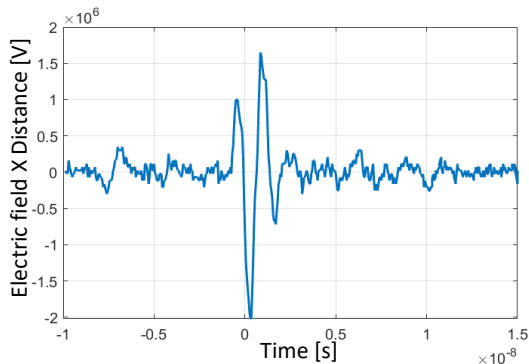


Beam Pattern(Horizontal)

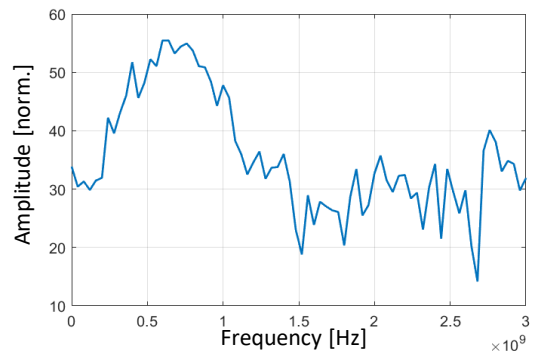


Beam width (-3dB, simulation) : $11^\circ\pm 10\%$ (Vertical), $11^\circ\pm 10\%$ (Horizontal)

Far Voltage Waveform



Frequency Spectrum



※ Far Voltage mean $r \times E$ (r : distance from EMP GUN to the point in the far field area , E : E-field strength at the point).



EMP & HPEM SOLUTIONS PROVIDER



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