

NEWS | JAN 15, 2019

## Here's the Army's now-patented EMP rifle attachment for taking out small drones

Greg Clarke, Creative Commons

UPDATE: On September 10, U.S. Army researchers Adam L. Foltz and James E. Burke were issued U.S. Patent 10,408,579 for their directed energy modifications to the blank firing adapter used on M4 rifles. The patent can be found below.

---

A U.S. Army engineer's idea to turn the standard M4 rifle into an electromagnetic pulse gun recently got the nod from the U.S. Patent and Trademark Office.

James E. Burke, electronics engineer at the U.S. Army's Combat Capabilities Development Command Armaments Center, received U.S. patent 10,180,309 on Tuesday, giving the Army intellectual property protections on Burke's "Electromagnetic Pulse Transmitter Muzzle Adapter."

This invention would enable a single soldier in a ground unit to destroy enemy electronics, such as small drones or improvised explosive devices, by attaching a special blank-firing adapter to their rifle's muzzle, then firing a shot.

The muzzle attachment contains a piezoelectric generator, powered by firing the blank cartridge, which creates an electromagnetic pulse directed by a horn

antenna.

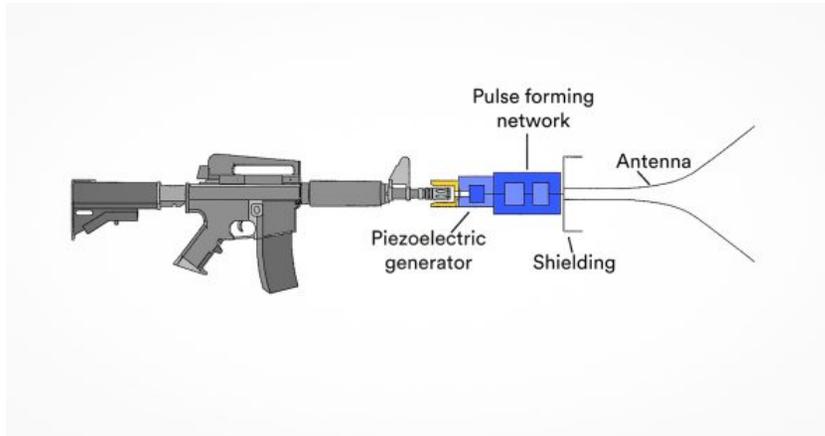


Illustration of the Burke Pulsar, a blank-firing attachment attached to the muzzle of an M4 rifle. (Troy Carter/TechLink)

Most of the Army's directed-energy weapons are large, vehicle-mounted systems. For example, the [High Energy Laser Mobile Test Truck](#) is an 8-wheeled behemoth.

"A need exists for an inexpensive, one-man portable directed energy weapon," according to the Army patent, which you can download along with Burke's slides below.

Troops "already carry rifles. Why not use something that every soldier already carries?" Burke told [Defense One](#).

A prototype has been tested, its effective range has not been disclosed, but Burke indicated that larger caliber ammunition may affect performance.



The M4 rifle blank-firing attachment with the piezoelectric generator attached. (Army photo)

TechLink, the Department of Defense's national partnership intermediary for technology transfer, can help businesses interested in productizing DoD technology learn more about patent licensing. Through technology transfer, DoD inventions are made available to businesses and entrepreneurs for use in new products and services.

The Armaments Center has over [400 available technologies](#).

A patent license confers the right to practice the invention for commercial purposes and often includes related data and technical knowledge. License fees paid to the laboratory are typically negotiable.

To receive more information on this technology, interested parties can contact Brian Metzger, senior technology manager at TechLink, at [brian.metzger@montana.edu](mailto:brian.metzger@montana.edu) or 406-994-7782.

#### ARTICLES & DOWNLOADS

- [↓ Slides: UWB Radiating Using Explosive Pulse Power from M4 Rifle](#)
- [↓ U.S. Patent 10,180,309](#)
- [↓ U.S. Patent 10,408,579](#)

Interested in connecting with our licensing experts?

[CONTACT US](#)



**By Troy Carter**  
TechLink Staff Writer

#### CATEGORIES

**Army, Tech, DEVCOM AC**

#### THE PULSE NEWSLETTER

Get a monthly update on new technology licensing opportunities, plus stay tuned to the latest news on the DOD and VA technology transfer landscape.

[SIGN UP](#)

**Have questions?**

[CONTACT US](#)

## RESOURCES

- [➤ Grow your business with technology transfer](#)
- [➤ How to work with TechLink to license DOD and VA technology](#)
- [➤ Frequently asked questions](#)

## RELATED ARTICLES



OCT 12, 2017

**What is a CRADA? 6 reasons every small business should know**



JAN 2, 2019

**Food safety expert licenses sonic swab from Army**

## The Pulse Newsletter

Get a monthly update on new technology licensing opportunities, plus stay tuned to the latest news on the DOD and VA technology transfer landscape.

SIGN UP

## TechLink

2310 University Way, Bldg. 2-2  
Bozeman, MT 59715  
406.994.7700

## DISCOVER

How It Works  
Why Tech Transfer  
Our Role  
Technologies  
Labs  
News  
Impacts

## SUPPORT

FAQs  
Contact

## ORGANIZATION

About  
Staff

**LAB SERVICES**

Overview

Innovation Discovery

Economic Impact Studies

**SOCIAL**

Facebook

Twitter

LinkedIn

