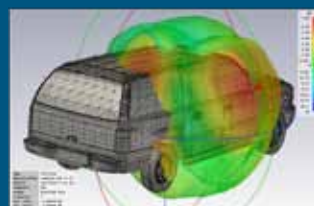




Facilities

Pharad has invested heavily in engineering resources and state-of-the-art facilities. Our Maryland headquarters consist of Class A office space, engineering laboratories, and production facilities. Pharad's engineering laboratories have test capabilities up to 75 GHz. They comprise microwave, millimeter-wave, photonics, and electronics laboratories; various antenna measurement facilities including an anechoic chamber, antenna Specific Absorption Rate (SAR) measurement equipment; rapid prototyping and final assembly laboratories; as well as environmental test facilities.

Our research and development work is facilitated by the latest modeling and simulation tools running on our state-of-the-art computing and networking equipment. These tools and our facilities allow us to rapidly transition from initial concept to working prototypes. We also operate an ISO9001:2008 certified manufacturing facility that delivers high quality production volume products to some of the most demanding customers in the world.



PHARAD

Antennas, Photonics, & RF Communications

PHARAD

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A Reputation for Innovation and Excellence

Founded in 2003 and located in Hanover, Maryland, Pharad is a customer focused company carrying out innovative research, development, and manufacturing in the areas of antennas, photonics, and RF communications. Pharad operates an ISO9001: 2008 manufacturing facility that delivers high quality production volume products to a wide range of government and commercial customers through the octane® brand, a wholly owned division of Pharad.

Antennas

Pharad is an innovator in the creation of highly efficient, electrically small antennas. Our antenna technology services and products incorporate innovative electromagnetic materials and miniaturization techniques pioneered by our world renowned research team. We have developed products for body worn, vehicle, aircraft, UAV, and UUV applications. Our specialties include broadband antennas that are unique in the industry, conformal antennas, highly efficient antennas, antennas incorporating flexible materials, and antennas for integration into non planar surfaces.

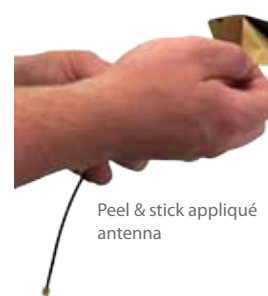


Wearable antenna

Pharad is the recognized industry leader in the development of wearable antenna solutions, with the most comprehensive wearable antenna product offering in the world. The patented Flexenna® flexible antenna technology enables these unique form factor

antennas, which are the ideal wearable antenna solution for first responders, soldiers, marines, and security/intelligence personnel operating covertly. In addition to our wearable

antenna products, Pharad has developed a series of flexible peel & stick appliqué antennas that are nearly as thin as a piece of paper and adhere to surfaces via an integrated pressure sensitive adhesive. Pharad has also developed a range of tactical gooseneck antennas for dismounted applications, providing high performance radiating apertures with flexible goosenecks.



Peel & stick appliqué antenna



UAV antenna



Gooseneck antenna

Pharad is at the forefront with its pioneering research and development of wideband conformal antenna technology and has developed low observable flexible antenna technology operating from VHF through C-band for a variety of vehicle and other applications. These novel covert antennas are virtually indistinguishable from their surrounding environment. Pharad's antenna design team creates innovative solutions that address the challenge of engineering efficient radiators for a range of unique applications and platforms.



Covert vehicle antennas



Customers

Pharad is committed to quality and providing our customers with optimized antenna, photonic, and RF communication solutions for a variety of defense and commercial applications.

Pharad has developed and delivered technology solutions for hundreds of customers; from Fortune 500 companies to a variety of government agencies, including the US Navy, US Marine Corps, US Army, US Air Force, US Special Operations Command, Defense Advanced Research Projects Agency, Department of Homeland Security, National Aeronautics and Space Administration, and National Science Foundation.

Our work for these customers is characterized by solving difficult electromagnetic, photonic, and RF communication problems using ingenuity, specialized materials, innovative designs, and an unparalleled knowledge of these technologies and their achievable performance in real world environments.



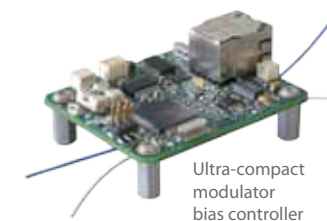
Photonics

Pharad is a leader in the design and development of technologies for RF-over-fiber systems that enable high performance RF signal transport over optical fiber for antenna remoting and wireless backhaul applications. Our microwave photonics development team comprises internationally recognized experts in the field with over 40 years of combined experience developing these technologies.



RF-over-fiber system

Pharad offers the highest performing analog photonic transmitter and receiver products available on the market which support the optical distribution of RF signals



Ultra-compact modulator bias controller

novel circuit designs allow us to achieve the best RF photonic link gain, noise figure, and dynamic range performance available. A novel photonic cross-connect that interfaces with our fiber optic equipment has also been developed and supports the low loss optical routing, switching and distribution of multiple RF over fiber signals.

Pharad is also a leading supplier of OEM circuit boards for analog photonic links, including modulator bias controllers and laser drivers.

RF Communications

In addition to its antennas and photonics innovations, Pharad creates novel technologies for realizing highly efficient, compact modules for RF communication systems. Applications include tracking and monitoring using both terrestrial wireless and satellite communications, as well as mitigation of co-site interference due to closely located communications equipment. Pharad's key advancements in the development of new devices for tagging, tracking and locating are the realization of highly integrated antenna/RF component solutions that enable low SWaP (size, weight, and power). Pharad's co-site mitigation technologies are unique in the industry; two distinct but complementary approaches have been architected to work together to maximize the suppression of unwanted RF interference signals.



Tracking application technology



Company Profile

Located adjacent to the Baltimore-Washington International Airport, Pharad, LLC was started to capitalize on the founding team's extensive experience and technical capabilities in Antennas, Photonics, and RF Communications. Pharad's goal is to ensure customer satisfaction through the development, manufacture, and delivery of cost-effective products, services, and solutions.

Pharad is focused on carrying out innovative research, development, and manufacturing in the areas of highly efficient, electrically small antenna technologies, high performance RF signal transport over optical fiber, and compact modules for RF communications. In order to meet the needs of our customers, we draw on the extensive and diverse experience of our engineering team, including: Electromagnetics, Photonics, Microwave and Millimeter-wave circuits, Electronics, Firmware, Mechanical and Packaging, and Test and Measurement.

Pharad's management team is intimately involved with the execution of all our customer programs, ensuring that the full resources of the company are efficiently utilized to deliver quality products and services. Our team is experienced in managing US and International organizations, bringing new products to market, and managing new ventures. Due to the growing demand for our products Pharad formed the **octane®** division in 2007 and we now sell all of our standard products through the **octane®** brand.

...invention to production.