

LiFi: Light-based connectivity

Push wireless to new limits with LiFi

Current wireless communications such as WiFi and cellular are pervasive - we use them every day. However, these technologies have limitations and challenges that prevent them from being used in certain environments or limit bandwidth and the user experience.

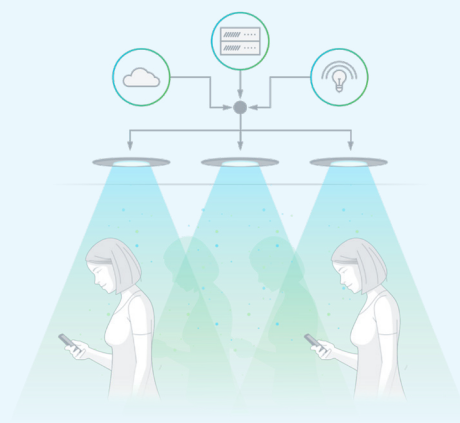
LiFi can extend wireless communications to new environments and push existing technologies to new limits. LiFi uses light rather than radio frequencies to transmit data. LiFi is wireless connectivity that offers radio free communications that is high-speed, secure and interference free.

What is LiFi and how does it work?

LiFi is a mobile wireless technology that uses light rather than radio frequencies to transmit data. All that is required is a LiFi component or light antenna built into your device to transmit and receive data through light. USB devices are also available to LiFi enable standard devices like tablets and laptops.

How does LiFi Work?

LED bulbs are semiconductor devices, which means that the brightness of the light flowing through them can be changed at extremely high speeds. This allows us to send a signal by varying the light at different rates. The signal can then be received by a detector which interprets the changes in light intensity (the signal) as data.



LiFi Benefits



Secure

LiFi offers military grade security leveraging the inherent physical security of containable light. LiFi is not vulnerable to eavesdropping through walls or tent canvas and is impervious to even close-range jamming attempts.



Near-Zero EM Signature

Unlike RF communications such as WiFi, LiFi has an insignificant electromagnetic signature. Designed to operate in congested & contested environments.



Reliable

LiFi provides enhanced reliability enabling interference-free communications and 1000 times the data density, dramatically improving the user experience.



Low Latency

LiFi offers ultra-low latency connections. This can be up to three times lower latency than other RF technologies such as WiFi. This can enable, automation, AR and VR applications.

802.11

802.11 Compatible

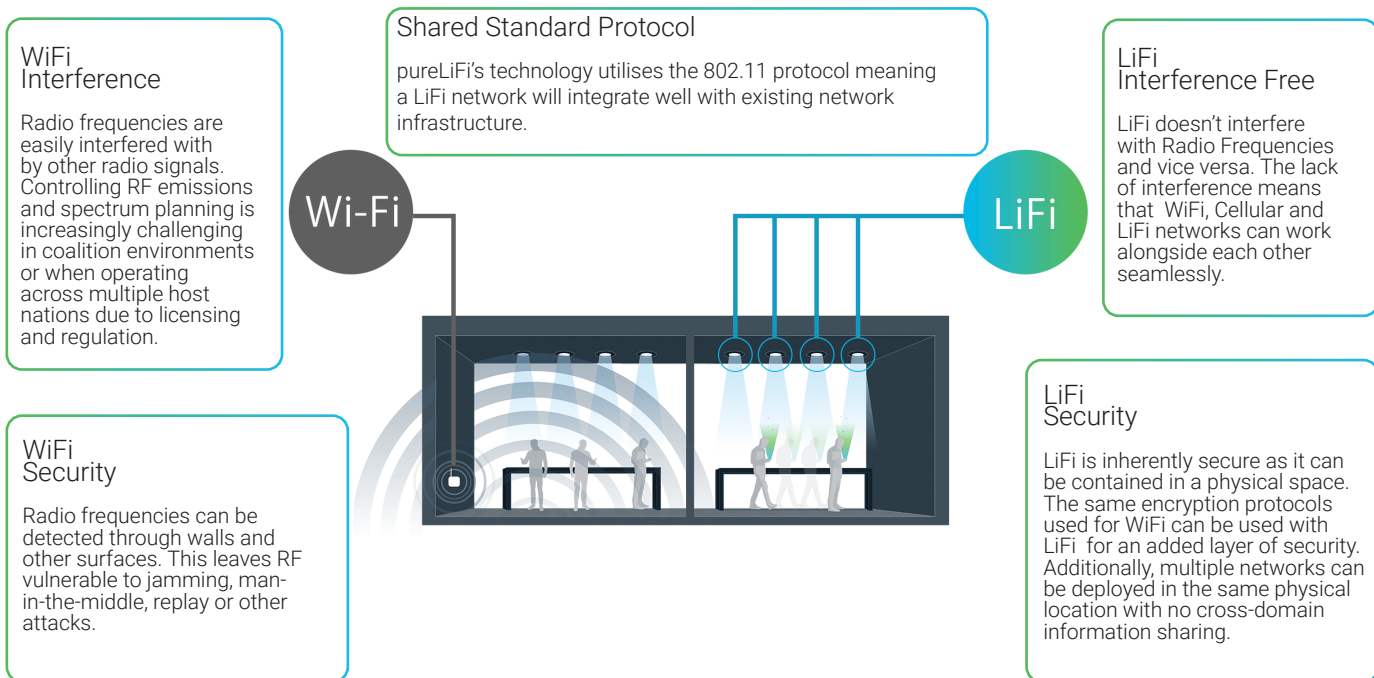
pureLiFi's technology is compatible with your existing wireless infrastructure, which means LiFi is straightforward to integrate into your current wireless administration, controls, and framework.



Unlicensed Spectrum

LiFi operates in visible and infrared light spectrum, which is not subject to licensing in any country, ensuring that capabilities designed and deployed in one location can be easily replicated anywhere else.

LiFi offers significant advantages over WiFi in the field and office. Security, reliability and performance are enhanced with the use of LiFi.



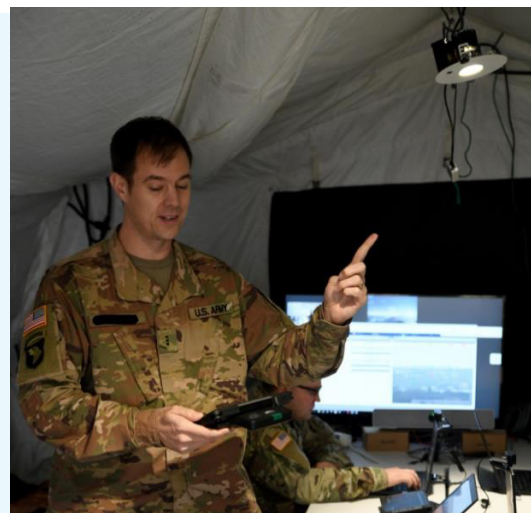
What are LiFi users in the field saying?

“We must make a critical decision. Start deploying optical wireless technology or continue to push highly detectable RF systems to the tactical edge, putting soldiers & systems in dire straits.”

CW5 Andrew Foreman US Army Europe G6 Chief Technology Officer *

“I need the signal community to solve the unsolvable... and to leap ahead in addressing network vulnerability, capacity & resiliency.”

Lieutenant General Cavoli Commander, US Army Europe *



Getac T800 with LiFi snapback
US Army Europe LiFi Field Trial, Oct 2019*

Deploy LiFi Today

LiFi systems are ready for industries that require secure, interference free wireless communications today. LiFi systems are particularly suitable for industries such as defence, Industrial manufacturing, and security sensitive environments.



System capability includes:

- 43Mbps (30 Mbps + throughput)
- Full Mobility with <1 second handover
- Near zero electromagnetic signature
- Inherently secure communications
- Supports WPA2 Personal and Enterprise (802.1X) authentication

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Get in touch

EMEA-Product_and_ Solutions@getac.com

www.getac.com

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Key LiFi Applications



Defence

LiFi can provide rapidly deployable non-RF wireless solution to reduce detectability and increase survivability. LiFi can provide inherent security for the battlefield and office alike. pureLiFi can provide mission deployable, no RF wireless communication solution for both the battlefield tactical edge and operational facilities. These solutions are non-jammable, fully cyber secure, and provide enhanced force protection and security. It also allows for rapid set up reducing the logistical impact.

Core Benefits:

- Approved for use in the Military
- Military Grade Security
- Near zero EM signature
- Quick Deployment & Tear Down
- Ready for Field and Office
- Unlicensed Spectrum
- Saves Logistics and Saves Costs

Utilities & Energy

Utilities (water, electricity, gas and green energy) are essential services that play a vital role in providing and maintaining public infrastructure. As digitalisation continues to gain traction in this sector, LiFi can offer reliable and safe connectivity to meet the unique operational challenges of this sector. LiFi can offer high speed low latency connections in some of the most congested and hazardous environments.

Core Benefits:

- Reliable Connections
- Radio Frequency Free
- Interference Free
- Enhanced Security
- 802.11 Compliant



Manufacturing

"Smart Factories" require a fast-paced production with fewer delays and close-knit control loops. LiFi can provide lower latency when compared to WiFi, especially in congested Radio Frequency (RF) environments, which is key in facilitating higher product throughputs. Additionally, LiFi provides a high level of security and safety simply due to the limited propagation of light in the environment – where there is light; there is data. LiFi can also enable connected maintenance providing information at the point of operation.

Core Benefits:

- Reliable Connections
- Reduced Latency
- Interference Free
- Enhanced Security
- 802.11 Compliant
- Fast Real Time Monitoring

Automotive

Automotive factory environments can be highly congested and hostile RF environments.

LiFi can enhance automotive manufacturing service and repair environments with reliable wireless connections that can be as stable and secure as wired connections.

Fast, uninterrupted data downloads for upgrading vehicle firmware in factory or workshop environments.

Core Benefits:

- Reliable Connections
- Reduced Latency
- Interference Free
- Enhance Security
- 802.11 Compliment
- Radio Frequency Free

