

# Transforming communications at the Speed of Light

PITCH VIDEO INVESTOR PANEL



optipulse.com Albuquerque NM

Hardware Infrastructure Technology Clean Tech Electronics

## LEAD INVESTOR



**Gary Gordon** Retired Investor

OptiPulse immediately impressed me when I first met the founders in their lab in a former bakery in downtown Albuquerque, which they still occupy by the grace of our local community college. The inventor of the technology, John Joseph, could not resist explaining his invention that is fabricated on a semiconductor wafer. A single wafer houses 20,000 chips and is slightly larger than the head of a pin. I remember looking through a microscope and staring at the wafer while John explained how lasers worked, and how this laser optical device could do things at a power and

OVERVIEW UPDATES 3 WHAT PEOPLE SAY 5 ASK A QUESTION

## Highlights

- 1 Be on the ground floor with the broadband solution; improving 4G, enabling 5G and developing 6G.
- 2 Proof of Concept completed and tested, customer acquired, MVP Alpha 1 in design phase.
- 3 Unique, revolutionary IP, 8 issued patents, 6 provisional patents and multiple foreign filings.
- 4 Technology being proven with NSF and US DoD grants, development underway.
- 5 Developing Low-cost, quick installation, high-speed solution for increased demand for broadband.
- 6 Raised \$3.6M from rural telecoms, angels, research and community universities; join move to market.
- 7 <https://www.abqjournal.com/1317779/cnm-readies-for-superfast-wireless-internet.html>
- 8 <https://www.laserfocusworld.com/photronics-business/article/14179508/a-new-global-view-of-the-stock-market-value-of-photo>

## Our Team

John Joseph CEO



**John Joseph** CEO

Over 20 issued patents on electro-optic photonics devices some that produce world record performance from a tiny light emitting chip set to disrupt wireless communications

We discovered a disruptive photonics source for wireless technology and sensing. We want to connect as many as we can in underdeveloped areas and where needed the most. Having connectivity is an equalizing tool for the underdeveloped peoples of the world.



**Mathis Shinnick** COO

Turning companies into global industry leaders by focusing on Strategy, Structure, People; working as a team making workforce development and operational efficiency paramount: my commitment to OptiPulse.



**Dr. Jim Lott** Chief Technical Officer CTO

World record Epitaxial designs for Vertical Cavity Surface Emitting Lasers and arrays. Multiple patents. Was Professor at Technical University of Berlin

[SEE MORE](#)

## Pitch

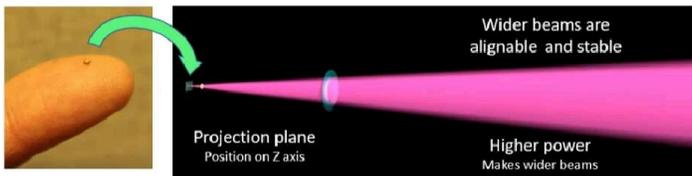
### The World Needed Faster, Less Expensive Internet Infrastructure, So We Created It !

#### First, we invented a new photonics chip architecture

Back in 2011, John Joseph, CEO and Founder, invented a device that can send massive amounts of data through the air over long distance. It was very inexpensive, light weight, and small; oh, and it used much less energy to send this massive amount of data.

A brief “tech” comment, his patented method produces an array of near infra-red light emitting VCSEL’s (Vertical Cavity Surface Emitting Lasers) on a single chip that provides both power and speed without performance losses. Yes, it is Free Space Optical, FSO. AND yes, we solved classic FSO alignment and weather issues.....

#### Project the convergence point to the far field for data transfer at Gbps rates



### Wow! It worked!

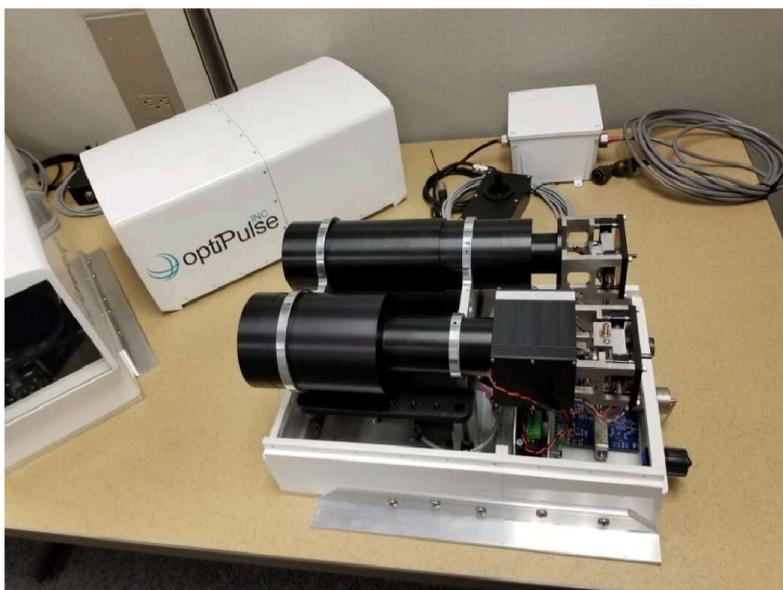
.....the design proved very beneficial for wireless emission in the atmosphere. More “tech”, it turns out our low-coherence array sums optical power like a light bulb, you can see a light across the way in rain or snow, right? Coherent lasers have issues going through atmospheric conditions and create scintillation which is not good for detecting signals. Our low-coherence array uses many wavelengths that make it through long distant propagation if the optical power is high enough. These features and others in a chip that will eventually cost \$1 in

production, make it the technology that will bring high-speed broadband to all. Chips have been tested to 25Gbps for a single channel!

Next, we decided to apply this technology to closing the Digital Divide.

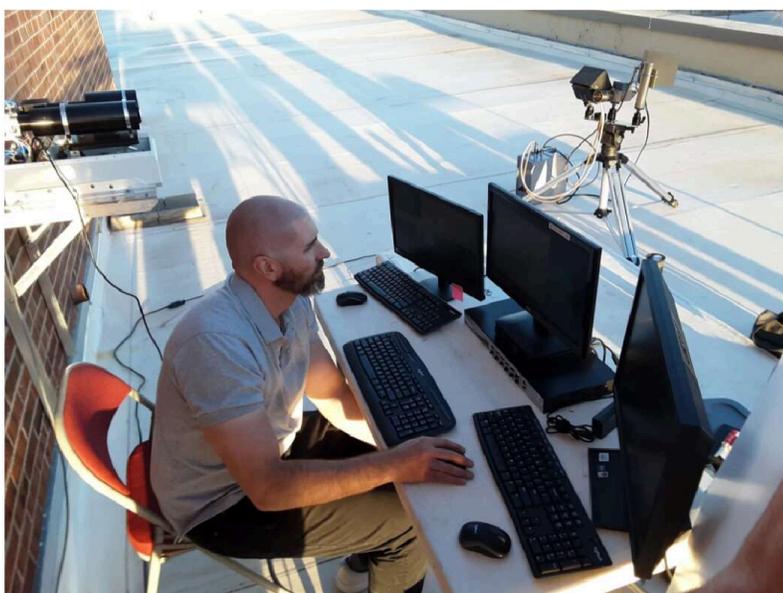
We want to make a positive difference in the world with our technology. This vision guided us in applying the technology to make people's lives better. We decided on wireless communication, high-speed broadband delivering very inexpensive access to the home. This fulfills a long standing desire to enable everyone to have affordable high-speed internet access. The Digital Divide is real, it inhibits education, healthcare, job training and many other benefits those of us with access take for granted. Little did we know that a global pandemic would vastly expand the need for such access. Making it an imperative to close the divide by finding the solution for how most of us will work, learn and stay healthy in the future.

Then, after several prototypes, we built a proof of concept.



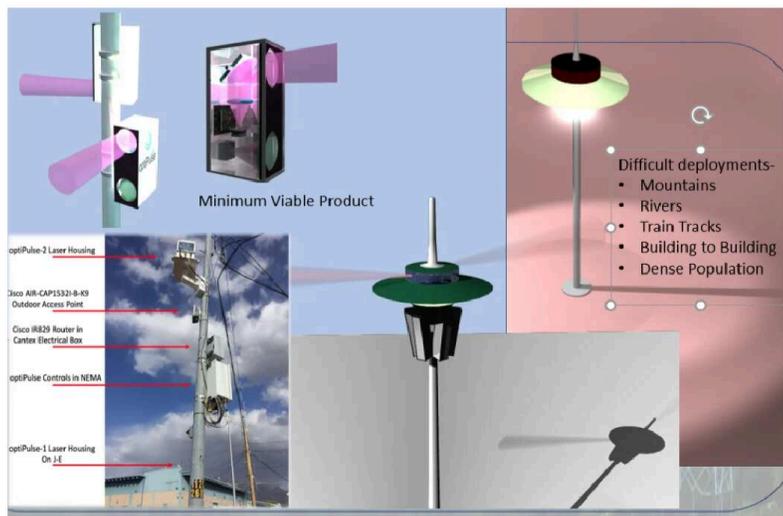
Large and bulky we learned a lot and proceeded to test and analyze the results.

And tested it across two buildings >100 meters



We logged a throughput of 10Gbps with data at 9.4Gbps goodput both ways.

With a key partner in the City of Albuquerque, a city leading the charge for a better way to connect communities, we continued testing with pole mounting and interfacing with other equipment used at infrastructure sites. The City has been very supportive and we are proud to work with them. We encountered issues and solved them by increasing optical power and redesigning to Prototype 4 (Alpha 1). The larger beam proved weather resilient but network components had to be modified in design to interface with our circuits. We are there now and designing and integrating the Alpha 1 prototype, our Minimally Viable Product (MVP).



John has assembled a very capable team of engineers. We benefit from strong support by our telecom shareholders in addition to the CIO of the City of Albuquerque. We are completing installation and testing of an outdoor link that will enable the City to bring broadband internet to under-served parts of the city. Since we first drew interest....

#### ABQ startup may revolutionize Internet delivery

By Kevin Robinson-Avila / Journal Staff Writer

*ALBUQUERQUE, N.M. — Albuquerque startup OptiPulse Inc. is blazing a new path to superfast wireless internet at 100 times the speed of today's networks and potentially half the cost.*

*The company, which launched in 2015, has developed novel optics technology that uses proprietary, high-power laser chips to beam wireless data across a new type of network in urban and rural areas at 10 gigabytes per second. That would allow for direct download delivery to homes and businesses at 1 GBPS, or about 100-fold faster than most current speeds.*

... we have won and completed a DOD SBIR Phase I, upon the success of which we won the Phase II follow-on. We were awarded an NSF America's Seed Fund SBIR Phase I that we completed. OptiPulse has participated in the NSF I-Corp customer discovery program and have just kicked off the NSF Phase II Commercialization Plan program managed by Dawnbreaker.

Our story is not yet complete, in fact we are just getting started. OptiPulse is in the development stage and hopes soon to be testing Alpha 1 in a network configuration in Q4 2021 this year

By bringing our Story to you, the crowdfunding will be used to complete a minimally viable product, one that is already being requested for purchase by our partners. The crowdfunding with your support would also expand awareness across the US public investor market opening additional funding sources to accelerate our push to market.

Join us, be a part of revolutionizing internet access in your community & across the globe.

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