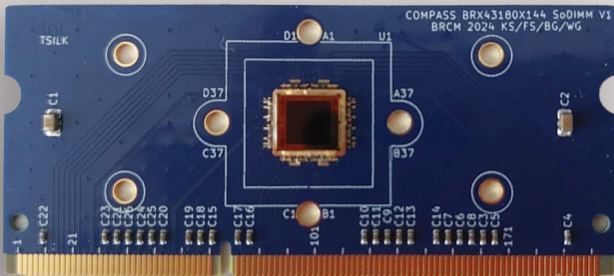


VCSEL AND PHOTODIODE ARRAYS FOR THE NEXT GENERATION OF OPTICAL WIRELESS COMMUNICATION - LiFi 2.0



Linear APD RX array with 12x12 pixels, and up to 4 selectable output signals.



High-power TX optical frontend with 9 VCSEL arrays commonly driven by the same driver.

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AT A GLANCE

HHI engages in the development of next-generation optical wireless communication systems.

LiFi 2.0 combines high-power, wide-beam laser transmitters with array receivers to offer a wide field of view and electronic tracking, supporting data rates of up to 10 Gbit/s for up to four mobile devices.

Features

- High-power VCSEL array transmitter (2 W)
- High bandwidth (1.5 GHz)
- Data rate up to 10 Gbit/s
- Large-area photodetector array (25 mm²) for imaging receiver
- Wide field of view (+/- 35°)
- High sensitivity
- Parallel tracking of up to 4 mobile devices
- High modulation index (80%) for efficient signal transmission of the LiFi transmitter
- Integrated BIAS circuit to optimize the transmitter performance

Technical Background

Optical wireless communication, known as LiFi, offers an alternative to radio waves for mobile communication by utilizing light. LiFi is seen as a promising technology for indoor mobile connectivity, providing more predictable signal propagation compared to radio communication. Its robustness against electromagnetic interference makes LiFi particularly suitable for demanding environments, such as industrial and medical applications.

Applications

Backhaul and Fronthaul Solutions

- Flexible backhaul for small cells
- Network desinification

Industrial Applications

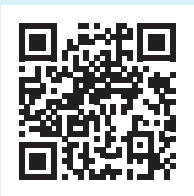
- Wireless communication in industrial environments
- Spatial diversity for Industry 4.0 platooning, including electronic tow bars
- Communication in electromagnetically sensitive environments

Medical and Industrial Access

- Mobile access in medical and industrial areas
- Robust communication in sensitive environments

Residential Connectivity

- Optical wireless hotspots
- High-speed wireless access in enterprise and homes



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