Rockley’s technology platform was developed with a total focus on high volume manufacture of highly integrated optical/electronic devices for ultra-high performance sensing applications. Rockley’s large waveguide photonics platform consists of blocks which offer multiple benefits over conventional solutions. These benefits include higher density waveguide circuits and complex system integration, better manufacturing tolerance, superior optical power handling, and more efficient interface from the photonics IC to the outside world – application specific optimized. Rockley Photonics’ technology simplifies the manufacturing, assembly, test and validation process while optimizing the power, size and cost of the complex optical system.

Examples of existing devices and capabilities from Rockley’s portfolio key to sensing applications are shown below:

**Lasers**
Rockley lasers offer multi-channel, extremely narrow line width, tuneable lasers with good power efficiency and massive optical bandwidth. The waveguide platform allows efficient wafer-scale integration of laser-devices.

**Modulators & Detectors**
High performance detectors for coherent detection, Rockley has developed various types of optical modulators and detectors that are ultra-compact, power efficient and high speed and capable of handling broad range of wavelengths.

**Interface Electronics**
Rockley has the expertise in defining and delivering efficient and high-performance analog and mixed-signal ASIC blocks together with application specific output interface to customers’ need for digital data analysis.

**Free-Space Optics**
The Rockley platform allows for efficient light coupling from free-space into and out of the photonics circuits, with either edge or perpendicular coupling. This feature enables a broad range of 3D consumer-sensing applications.

**Complex Optical Signal Processing**
Low loss, polarization maintaining optical signal processing, high resolution beam shaping and scanning.

**Fiber Optic Coupling**
Where needed, the photonic IC contains on-chip embedded ultra-efficient interfaces to the optical fibers. These interfaces allow the fiber to be attached directly to the photonic IC without need for costly active alignment.

**Wafer Scale Processing**
The silicon photonics platform enables high throughput wafer-scale processing of monolithic and multi-die structures including options for chip-on-wafer integration.

**Photonic Integrated Circuits**
The Rockley development platform enables integration of light sources, active devices, passive devices and optical coupling elements into a single silicon device.

For more information please contact us: contact@rockleyphotonics.com
or visit our website: www.rockleyphotonics.com

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Rockley Photonics, with its extensive library of silicon photonic components and products, has firmly established itself as a world leader in the integrated photonic marketplace. We sample and offer various photonics building blocks to our partners and customers. These blocks, ranging from high performance lasers to coherent detection modules, facilitate end-to-end sensing and 3D-imaging solutions (such as LiDAR). Rockley’s expertise in the high-speed analog, mixed-signal and interface electronics domain, enables the provisioning of a well optimized set of IC blocks that are critical to the delivery of a high-performance imaging system that can be custom tailored to suit the customer’s back-end processing and analysis requirements.

Packaged Assembly:
The assembly of electrical ASICs and photonics ICs into a single, highly-integrated product, requires a proven test and manufacturing flow in order to achieve high volume scale.

Rockley LiDAR Engine Package Design (Preliminary)

Rockley DBR Laser - Narrow line width & tunable with large optical wavelength band coverage

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