Following its first introduction of a 3D structured light camera on the front of the Find X, last year, Oppo is now pioneering the use of 3D Time-of-Flight (ToF) in its Rx17 Pro. Lenovo did a similar integration on the rear of one of its products a few years ago, integrating a pmd/Infineon solution in a high-end phone. In doing this, Asus and Lenovo added an additional Near Infra-Red (NIR) Global Shutter (GS) camera, but Oppo doesn’t have such a dedicated NIR GS Camera. Instead, Oppo uses the latest generation of ToF camera technology from Sony Depthsensing Solutions, formerly known as SoftKinetic.

The rear optical hub is packaged in one metal enclosure and features several cameras and a flood illuminator. The complete system features a telephoto and wide-angle camera module and a 3D ToF camera. The distinguishing characteristic of the 3D depth sensing system is the addition of a NIR flood illuminator.

This report focuses its analysis on the 3D depth sensing system. All components are standard and can be found on the market. That includes a BackSide Illumination (BSI) ToF image sensor featuring 10 µm x 10 µm size pixels and resolution of 46 kilopixel, developed by Sony Depthsensing Solutions. It also has one vertical cavity surface emitting laser (VCSEL) for the flood illuminator, coming from a major supplier. This is the first ToF imager found on the market featuring BSI technology, which is commonly used by Sony, coupled with Current Assisted Photonic Demodulation (CPAD) developed by Sony Depthsensing Solutions.

Along with the complete 3D depth sensing system, this report analyses the system’s cost and estimates its price. It also includes a physical and technical comparison with another 3D sensing system from Lenovo in the Phab2Pro, using the first generation pmd/Infineon ToF Imager. The comparison looks at system integration, the NIR camera module and the flood illuminator architecture.

COMPLETE TEARDOWN WITH

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• Precise measurements
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