New high dynamic range and high frame rate InGaAs area image sensor module for hyperspectral imaging

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Hamamatsu Photonics announces its latest product release: the easy-to-use C16795 series **image sensor module**. Featuring a high dynamic range of typically 3500, it is capable of high-speed operations at up to 503 frames/s. With an integrated InGaAs area image sensor allowing superior light sensitivity, these high-performance devices deliver high image quality, even in low-light conditions. Its operation can be synchronized with external devices, and control of the module and data acquisition can be done conveniently from the PC via USB connectivity, conforming to USB 3.1 Gen.1. As a C-mount compatible lens can be used for the optical interface, no special optical design is necessary, and image acquisition can be done easily.

Hamamatsu's C16795 series image sensor module

Precise imaging technology for diverse applications

The high-sensitivity image sensor modules are versatile. Imaging applications include real-time **non-destructive inspection** techniques such as food screening, plastic sorting, **semiconductor inspection**, and traffic monitoring using **hyperspectral imaging**.

Key features and benefits:

1. High Dynamic Range: Typically 3500, it allows for improved image quality, particularly beneficial for tasks requiring accurate analysis and inspection such as hyperspectral imaging

2. **High-Speed Operation**: Capable of achieving 503 frames per second, a 20 μm pitch, and with its 320 × 256 pixels (QVGA format), the C16795 series allows for rapid real-time data processing and image capture.

3. **Integrated InGaAs Area Image Sensor**: The high dynamic range's integrated InGaAs area image sensor enhances hyperspectral analysis. Users can obtain high-quality images in a broad range of wavelengths.

4. **High S/N (Signal-to-Noise) Ratio**: The image sensor can produce clear images with minimal noise, even in low-light conditions.

5. **Analog to Digital Conversion**: Equipped with 4 port analog output providing multiple channels for data acquisition, and an analog front end with an A/D converter to convert analog signals into digital format. This ensures accurate signal processing and data integrity, allowing for reliable outputs to external devices.

6. **C-Mount Compatible Lens**: The module supports C-mount lenses, enabling the use of a wide variety of lenses without requiring specialized optical designs. This makes the module more versatile and easier to implement.

7. **Cooling (Three-stage TE-cooled Type)**: The advanced cooling system reduces thermal noise, improving image quality and stability, particularly in long-duration imaging tasks.

Other features include a multi-line readout function, the possibility of simultaneous integration and post-integration readout functions, and a built-in timing generator.

Please view the dedicated page and datasheet for more information on the new C16795 series image sensor module or fill in or contact us.