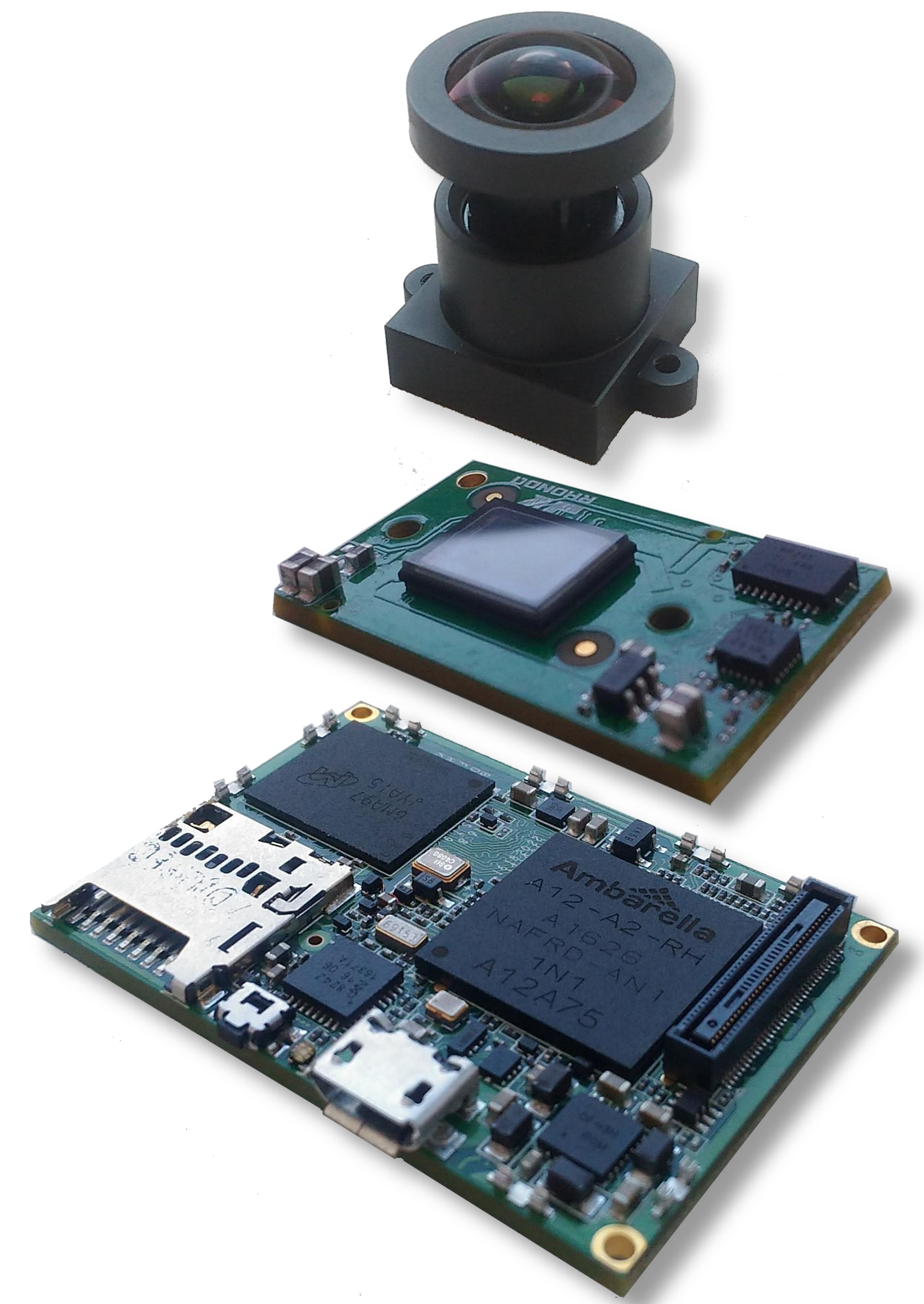


A12 System On Module

Overview

A12 System On Module (A12 SoM) is a hardware platform for consumer and professional imaging products. A12 SoM is based on Ambarella® A12A75™ SoC. A12 SoM contains a main board and a set of daughter boards, allowing flexible functionality.

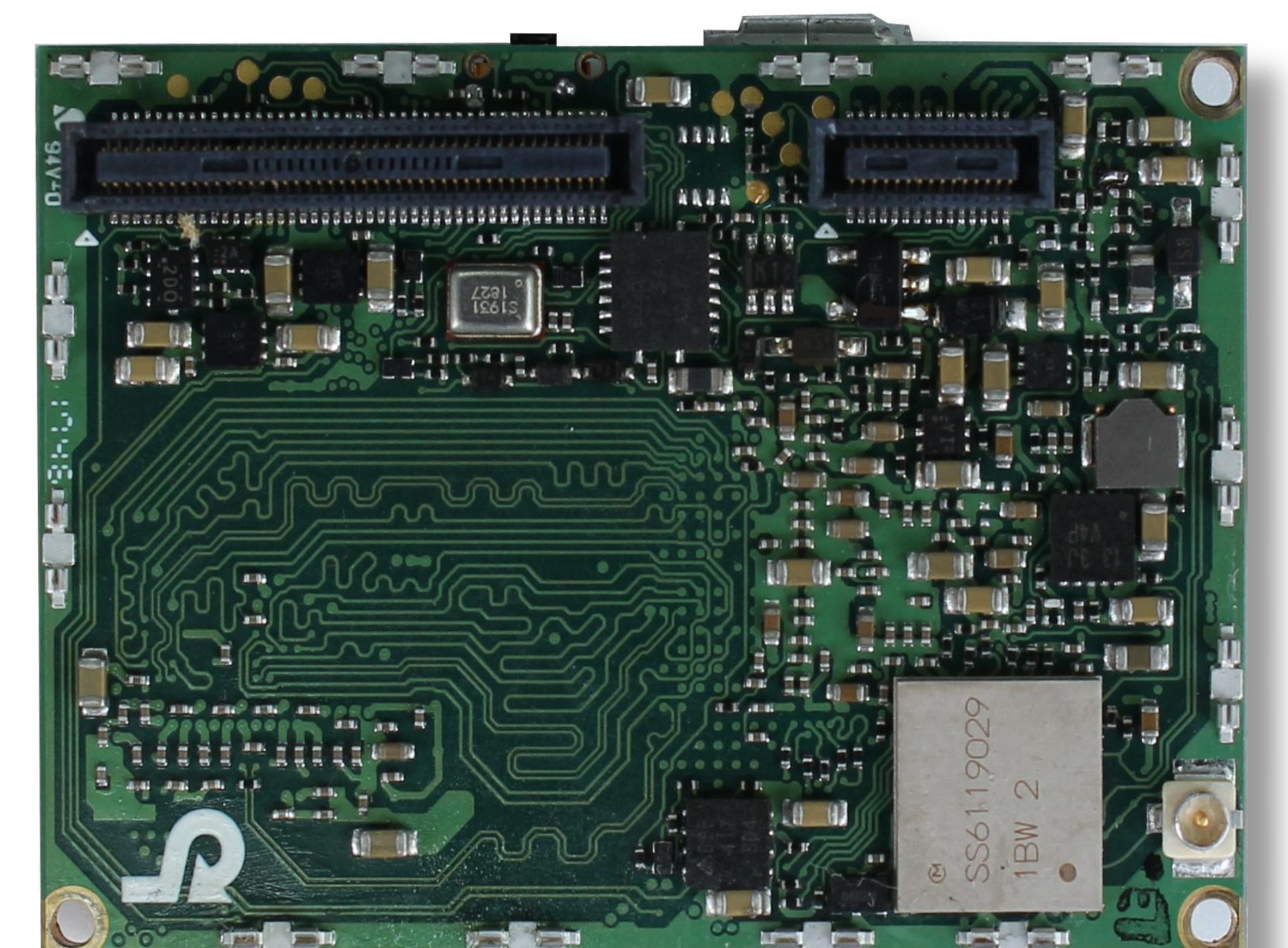
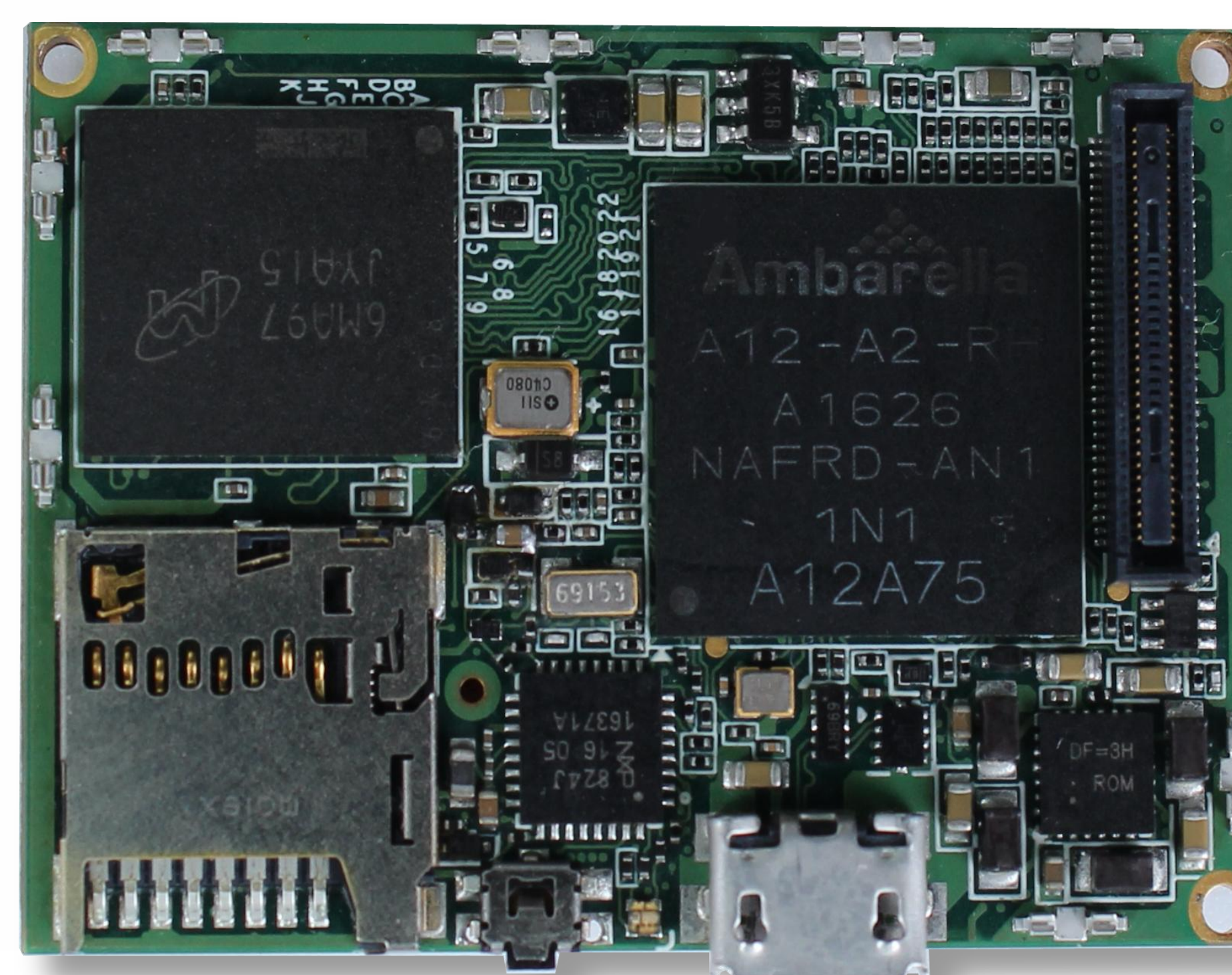
A12 SoM is low-power, ready-to-integrate and production ready for rapid prototyping, quick development and the production of robots, drones, or other applications.



Default package size is 44 x 31 mm (without lens)

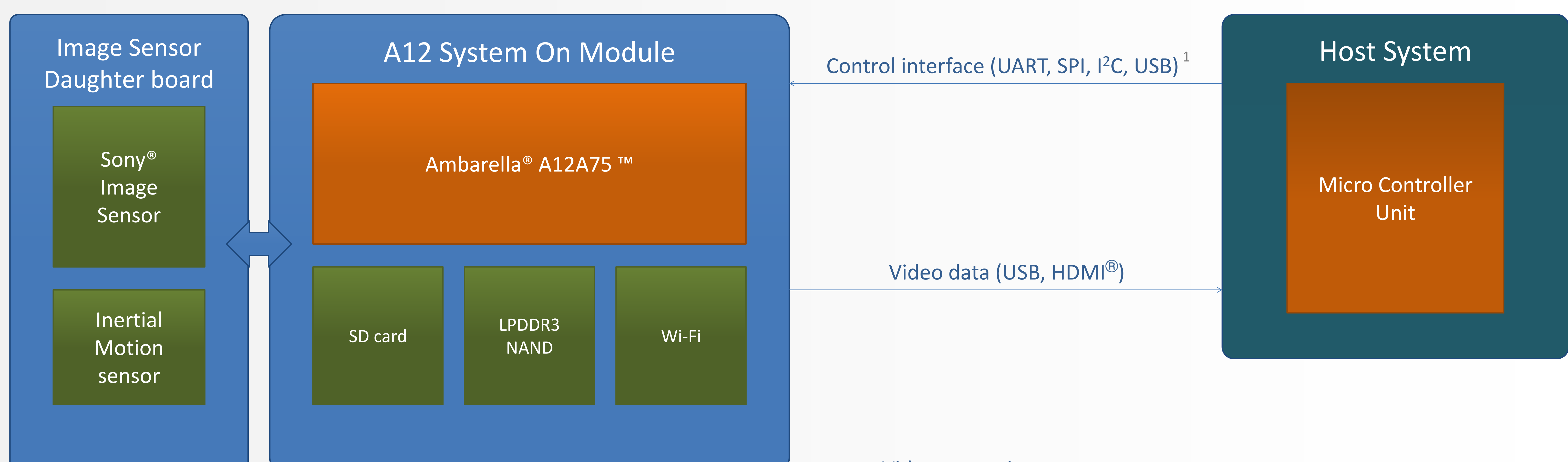
Key Features

- 4Mp30 + 4Mp30 H.264 video recording
- 16Mpx still capture
- Superior image quality of Sony® Exmor R™ image sensor
- Wi-Fi streaming
- USB streaming
- Inertial Motion sensor
- SD card
- USB Host for 4G Mobile connectivity

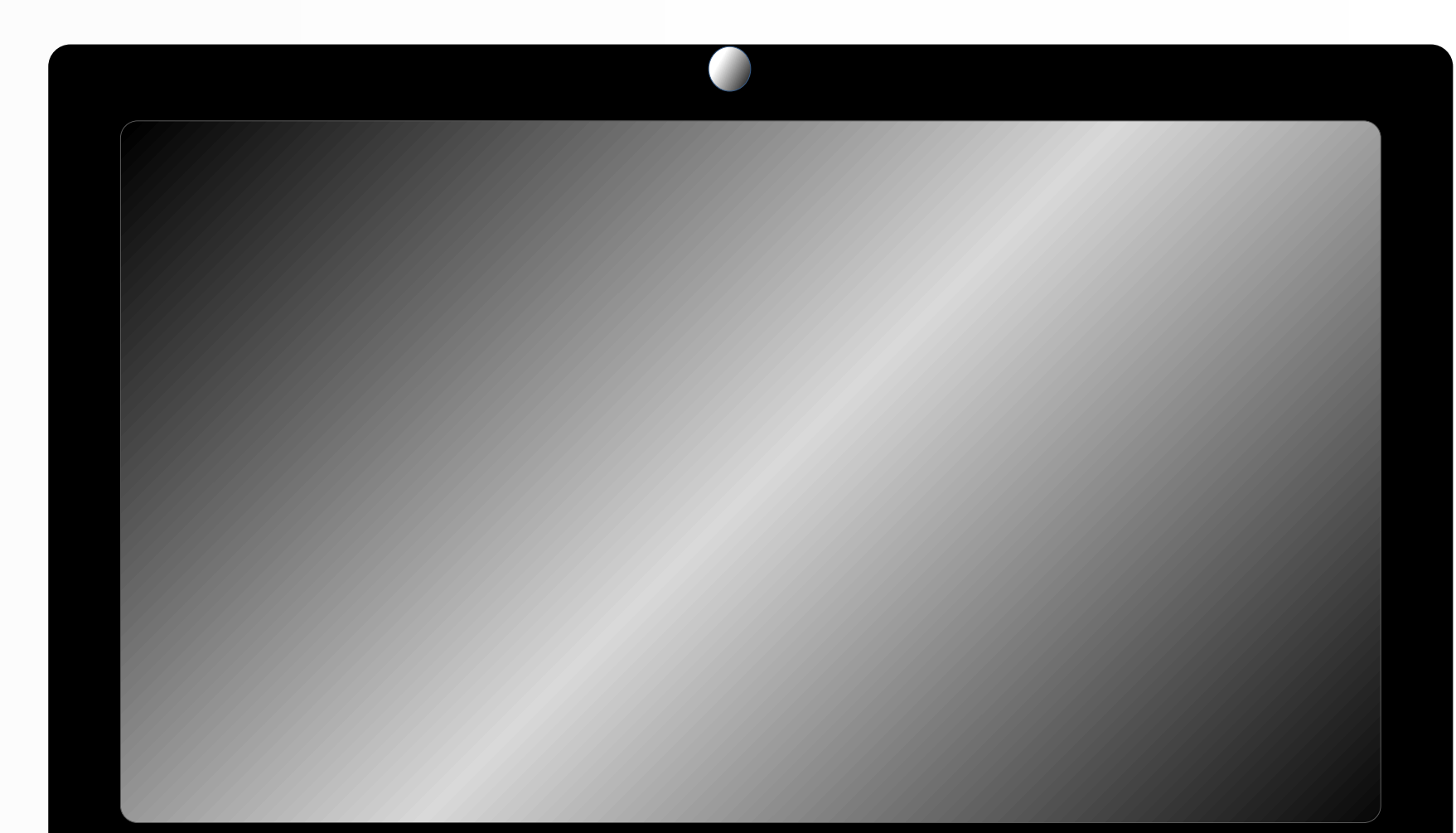


Block Diagram

The diagram below illustrates A12 System On Module interaction with Host System



Video streaming



¹ Control interface is optional, A12 System On Module may function without Host system control if configured properly

General Specification

- Ambarella® A12A75™ SoC
- Dual image sensor support:
 - Primary sensor: MIPI CSI-2 4-lane or SLVS 8-lane
 - Secondary sensor: MIPI CSI-2 2-lane or SLVS 2-lane
- 8Gb LPDDR3 DRAM
- 4Gb internal NAND storage
- Wi-Fi (802.11a/b/g/n)
- Sony® 16Mpx (Type 1/2.3"), 8.4 Mpx (Type 1/1.8"), 3.2 Mpx (Type 1/2.8") image sensors with tuned image quality
- Optical lens DFOV 165°, physical dimensions 23 mm (length) x 18 mm (diameter) ²
- Power input: 5V from USB or 3.5-5V from board-to-board connector
- Li-ion battery support ³
- On-board mono digital microphone
- Speaker and stereo analog microphones support ³
- SD card support
- 3-axis accelerometer, 3-axis gyroscope, 3-axis magnetometer
- GNSS ³
- Interfaces:
 - 8-bit parallel video output interface for LCD
 - HDMI® 1.4b
 - I²S
 - Wide range of peripheral interfaces (UART 3x, I²C 2x, SPI, ADC x2, GPIOs)
 - USB 2.0 DEVICE and USB 2.0 HOST
- Operating temperature -20°C to 75°C ⁴
- Main board physical dimensions 44 x 31 mm

² Default option for 16Mpx image sensor, for other daughter boards sizes may be different

³ Available on daughter boards

⁴ Temperature range of main board; daughter boards temperature range may be different

Development platform

A12 System On Module is a HW platform for integration with Host systems. A12 SoM provides interfaces for:

- Control (UART, SPI, I²C, USB)
- Video streaming (USB, HDMI®, Wi-Fi)

A12 System On Module has several working configurations, the startup configuration is flexible and can be easily changed.

To speed up product development, A12 System On Module is provided with:

- Reference application in C source code for integration with Host system
- Configuration file for A12 System On Module control (settings changing, quick feature testing)
- Detailed documentation including reference board pinout, HW guide, application notes.

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