Stretch®

Extending the Possibilities

S6106
IP Camera RDK

The Stretch S6106 IP Camera Reference Design Kit (RDK) is an ultra-compact IP camera reference design based on the Stretch S6106 software configurable processor. With the main board measuring just 32mm x 72mm, the design is small enough to fit within the smallest of mechanical enclosures. The high level of integration achieved with the S6106 results in a low-complexity board design with low power consumption.

The S6106 can process and compress multiple video streams at 30fps using the H.264 standard. The processor has enough power to compress full resolution and frame rate video from the supplied wide dynamic range D1 sensor, while simultaneously performing complex video analytics. The S6106 IP Camera RDK application is built using the Stretch Intelligent Encoder, giving it multi-stream and multi-CODEC capability. A Web server embedded in the application software makes configuration of the design easy and intuitive using a rich, graphical user interface.

The S6106 IP Camera RDK is a production-ready reference design that can form the heart of a high performance IP camera without further modification. It remains, however, compatible with the same intuitive tool flow and debug environments used across the entire Stretch product line, so it can also be used as a highly efficient development platform for the S6106 device family.
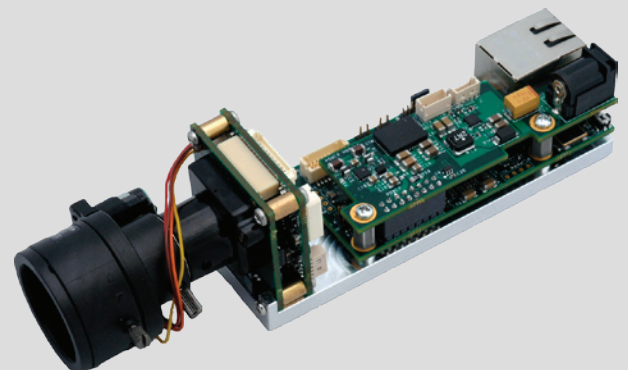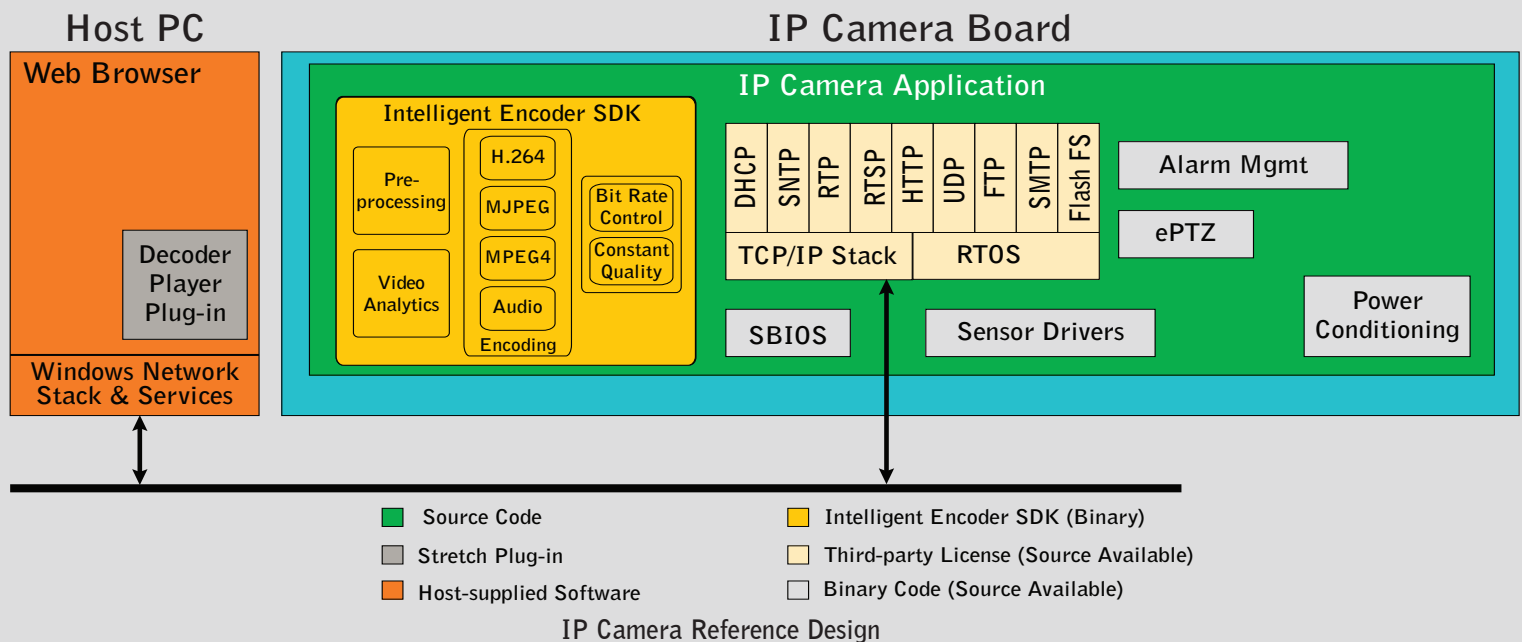
Key Features
- Small Footprint
  > Low component count
  > Small physical size
- Low Power Consumption
  > Low power S6106 processor delivers low power operation
- High Performance
  > Multiple H.264 encoding
  > Built-in video analytics
- Stretch Intelligent Encoder
  > Embedded video preprocessing
  > Constant Quality encoding
  > Automatic bit rate management using embedded analytics
  > Selectable output resolution and frame rate
- Flexible and Modular Development Platform

S6106 IP Camera RDK

STRETCH ADVANTAGES

> Multi-CODEC, multi-stream software capability

> Intelligent Encoder for optimum bit rate selection

> Processing power for encoding and simultaneous analytics

> Small footprint with low component count

> Flexible software-defined architecture for future-proof design

■ Source Code	■ Intelligent Encoder SDK (Binary)
■ Stretch Plug-in	■ Third-party License (Source Available)
■ Host-supplied Software	□ Binary Code (Source Available)

IP Camera Reference Design

The high level of integration achieved using the Stretch S6106 processor means that few additional components are required on the camera base board. This reduces power dissipation and physical size. The simplicity of the design and its compatibility with the Stretch development environment means that it can be adapted easily to customize it to specific OEM requirements. The full RDK is supplied with hardware design files, so modifications can be made easily.

Power conditioning circuitry is confined to a single, low-complexity mezzanine card, so any change required to adapt the RDK to a specific OEM design power supply can be made quickly and easily. The result is a low risk design with fast time to market for OEM designers and system integrators.

The reference design is available in either an evaluation version or a full reference design kit. The evaluation version of the kit contains source code for the supplied software (with the exception of the Intelligent Encoder, which is supplied as object code). Evaluation versions of the entire suite of Stretch CODECs are included. The full reference design kit is additionally supplied with hardware design files and a distribution license for the H.264 and MJPEG CODECs. Using this version, OEMs can modify the hardware design, if needed, integrate their own applications, and freely distribute the customized product.

S6106CAM1 Kit Contents
- Main board, D1 wide dynamic range sensor, and power conditioning card
- Debug module and Ethernet-based JTAG interface
- Power adapter
- Application source code and documentation
- Distribution license for H.264 and MJPEG CODECs (full RDK only)
- Hardware design files (full RDK Only)

Ordering Codes
- Evaluation reference design kit: HW-EVK-S6106CAM1
- Full reference design kit: HW-RDK-S6106CAM1
- Stretch software design tools: SW-LIC-IDE

Specifications

Sensor	
Resolution	D1 CMOS wide dynamic range
Audio/Video	
CODECs	MPEG4, MJPEG, H.264, and G.711
Frame Rate	30fps
Network	
Interface	10/100 Ethernet RJ-45
Protocol	TCP/IP, UDP, RTP, RTSP, HTTP, DHCP, SNTP, FTP, and SMTP
Power	
Supply	12V on barrel connector