Z3-DM8169-4K-RPS
Rapid Production Starter Kit

Z3 Technology®

Stream One Source in 4K + 720p30

The Z3-DM8169-4K-RPS starter kit features Ultra HD video encode and decode. This system offers real-time 4K encoding and decoding capabilities while maintaining low power consumption. It is equipped with multi-resolution encode from a single source of up to 1x 4K + 1x 720p30. The Z3-DM8169-4K-RPS consists of a hardware package and software bundle designed to enable rapid development of multimedia applications. The hardware consists of one Z3-DM816x-MOD-4K System on Module card and one Z3-DM8169-APP-6x Application (I/O) Board. The software bundle consists of the necessary components for developing advanced multimedia, graphics, and DSP applications. This application board uses the I/O expansion capability of the Z3-DM816x-MOD-4K to implement additional functions not present in the base module.

121 mm

125 mm
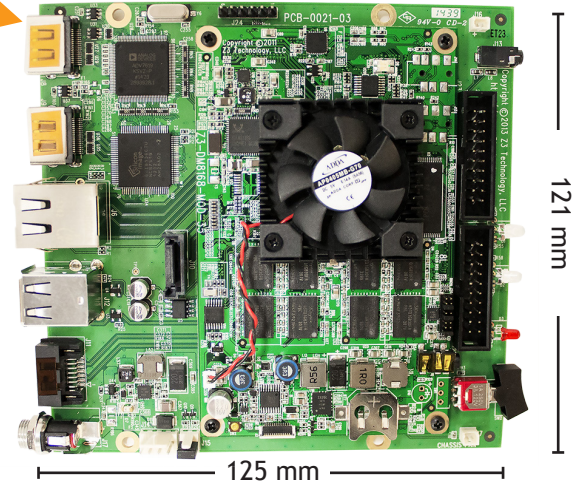
BENEFITS

> Stream One Source in 4K + 720p30 Resolutions

> Production-proven, fully integrated hardware and software audio/video system

> Easily controlled through RS-232 or an HTTP-based GUI

> Full A/V synchronization even after hours of recording

> Ready to use, out-of-the-box commands for encoding, decoding and streaming

APPLICATIONS

Medical Imaging Applications

Digital Signage and Video Kiosks

Video Security and Surveillance

Industrial Video Solutions

Military Applications

Customized Applications*

*Contact Z³ Technology for Customized Product Options

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Hardware

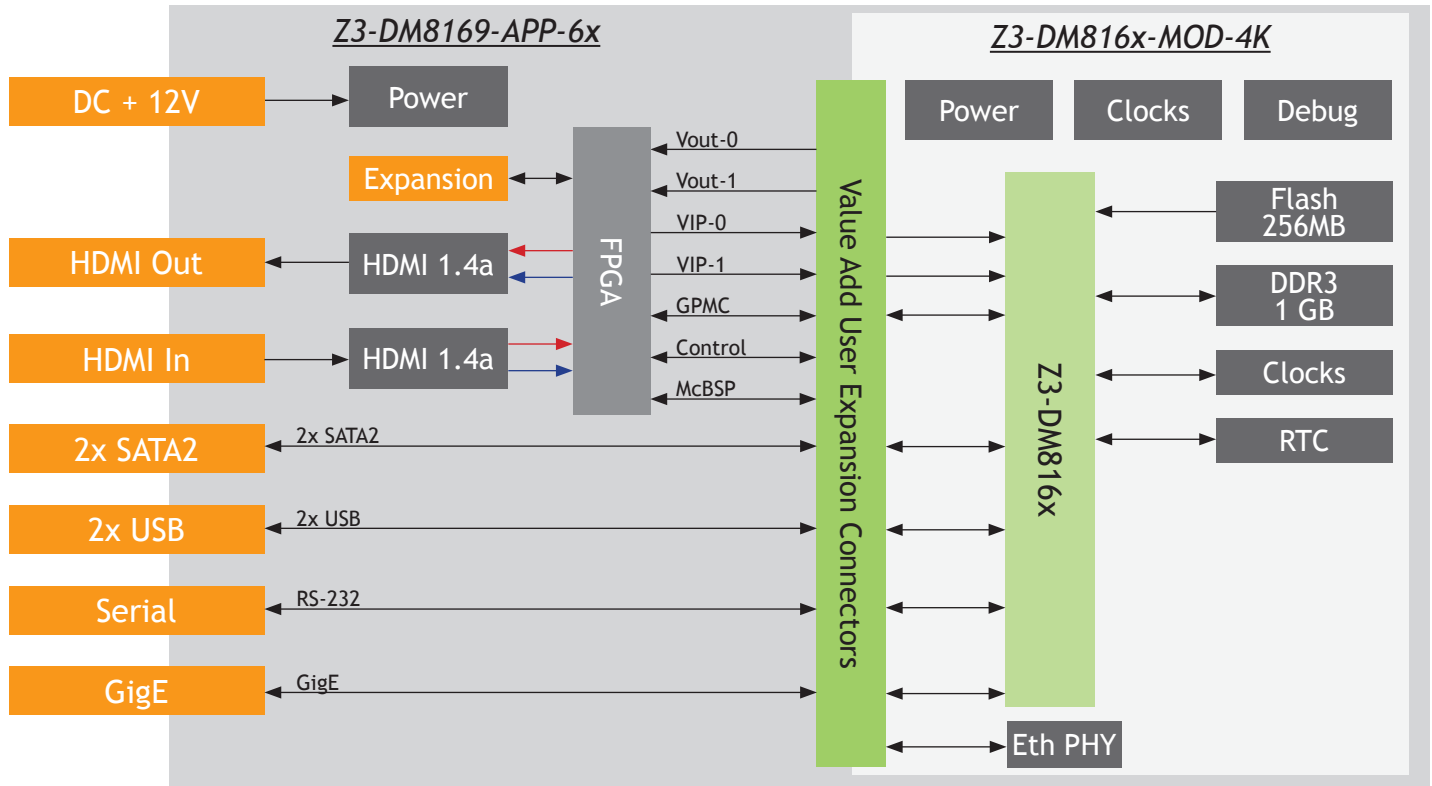|	
Module	Z3-DM816x-MOD-4K
Application Board	Z3-DM8169-APP-6x
Processor	DSP + ARM Cortex A8
Video Inputs	HDMI
Video Outputs	HDMI
Video Codecs	H.264
Audio Interfaces	Embedded HDMI
Audio Codecs	AAC, G.711* and PCM*
Additional Interfaces	GigE, 2x SATA2, 2x USB 2.0 and Serial

Software

Software Development	Texas Instruments® RDK, Z³ Technology software components for RDK, Z³ Applications
Operating System	Linux 2.6 (root file-system, NAND boot, tool chain and flash programming tool), u-boot
Encoding Resolutions	H.264 video from QCIF to 2160p30 (4K) Simultaneous encode of one source in 4K + 720p30
Output Formats	RTP, MPEG-2 TS and TS File
Decoding Resolutions	H.264 video from QCIF to 2160p30 (4K)
Input Formats	RTP, MPEG-2 TS and TS File
Features	• Stream One Source in Multiple Resolutions (1x 4K + 1x 720p30) • Low latency mode • Fully controllable parameters: resolution, max bitrate and GOP • Source code license available*

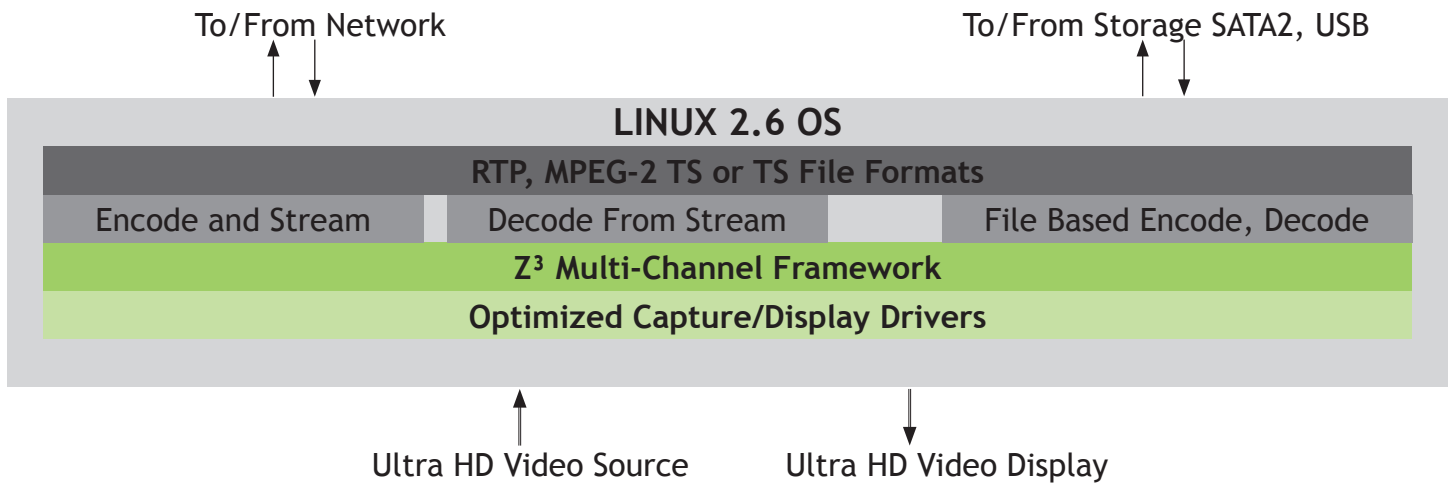## Specifications

Module Size	108 x 68 mm (4.25 x 2.67 in)
Application Board Size	125 x 121 mm (4.92 x 4.76 in)
Power Supply	12V
Power Consumption	14W
Ordering Information	Z3-4K-RPS-SW-01 (4Kp30 Encoder or 4Kp30 Decoder) Z3-4K-RPS-SW-02 (4Kp30 + 720p30 Encode Only)

HW Block Diagram

Z3-DM8169-4K-RPS

Z3-DM8169-APP-6x

Z3-DM816x-MOD-4K

DC + 12V → Power

Expansion ↔ FPGA

HDMI Out ← HDMI 1.4a

HDMI In → HDMI 1.4a

FPGA — Vout-0, Vout-1, VIP-0, VIP-1, GPMC, Control, McBSP → Value Add User Expansion Connectors

2x SATA2 — 2x SATA2

2x USB — 2x USB

Serial — RS-232

GigE — GigE

Power | Clocks | Debug

Z3-DM816x

Flash 256MB

DDR3 1 GB

Clocks

RTC

Eth PHY

SW Block Diagram

To/From Network

To/From Storage SATA2, USB

LINUX 2.6 OS

RTP, MPEG-2 TS or TS File Formats

Encode and Stream | Decode From Stream | File Based Encode, Decode

Z³ Multi-Channel Framework

Optimized Capture/Display Drivers

Ultra HD Video Source

Ultra HD Video Display

Z³ Technology is the market leader in providing production-ready embedded multimedia solutions and systems. From our founders to our world-class engineers to our sales and customer service team, we understand your requirements and speak your language. Our experience allows us to provide cost-effective solutions to meet your multimedia product requirements. With the assistance of our robust worldwide distribution and sales networks, we can provide a simple solution for your multimedia needs.