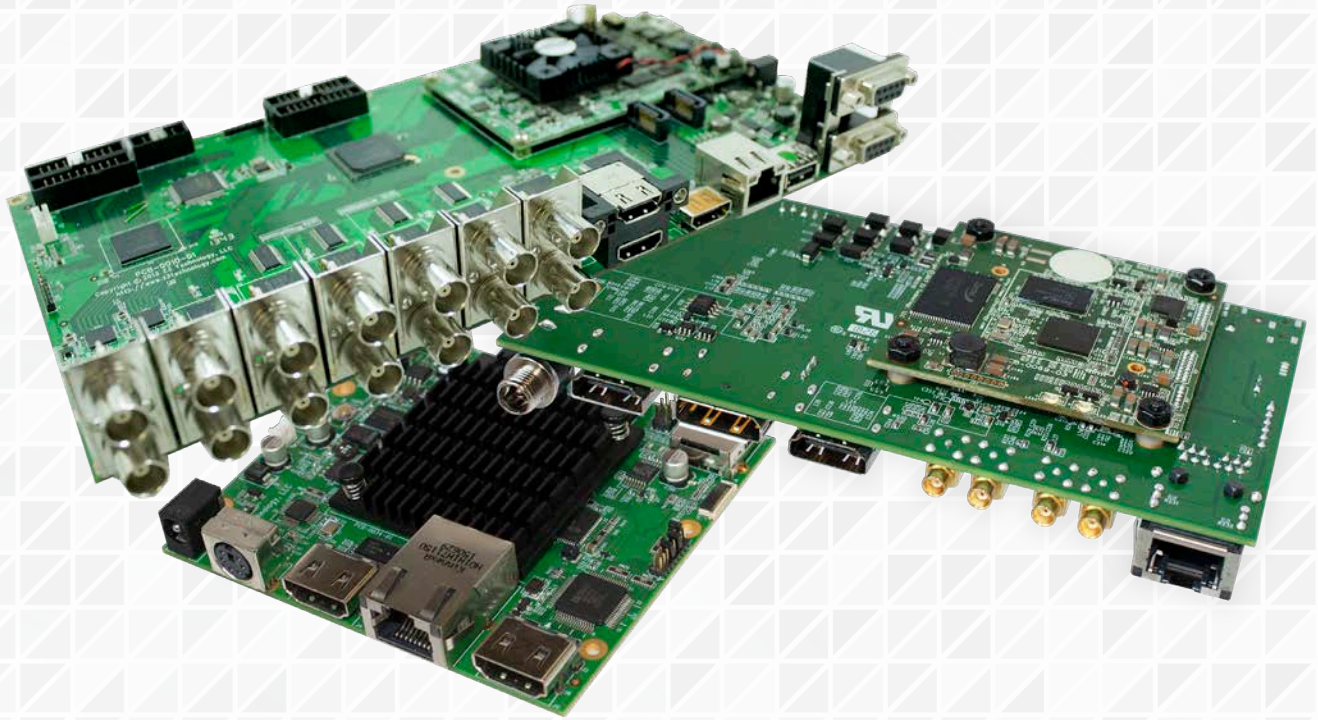




Z3
Technology®



Video Application Starter Kits



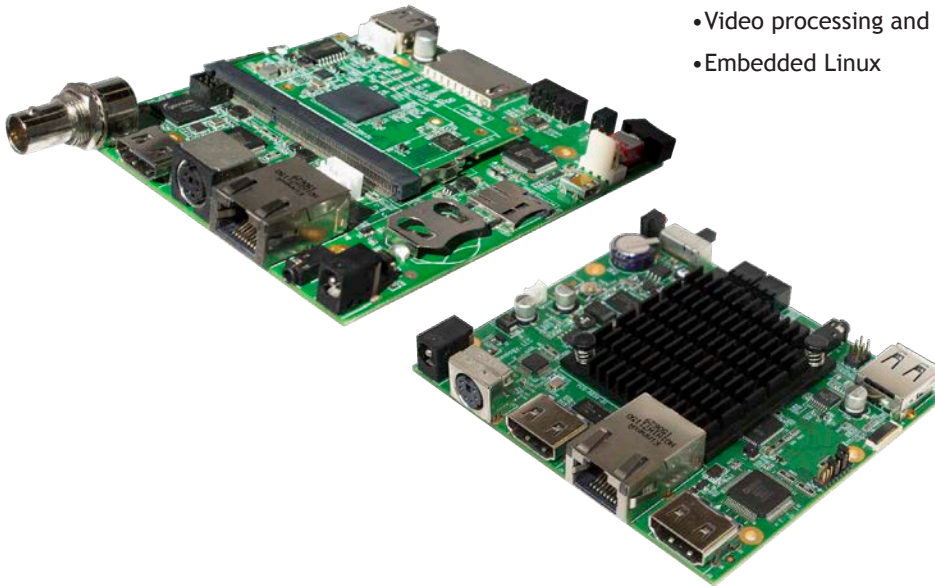
Z³
Technology®

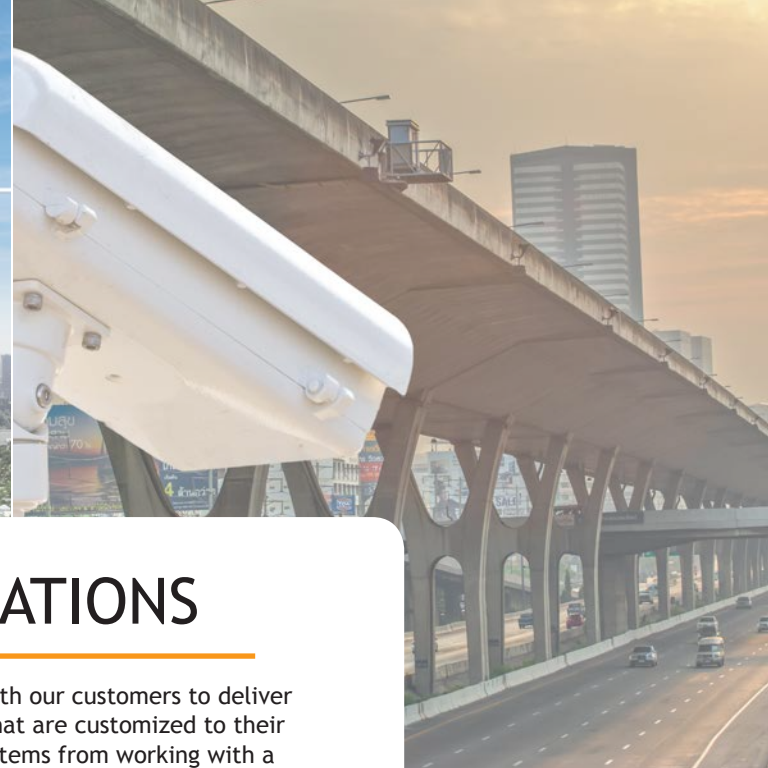
ABOUT Z³ TECHNOLOGY

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 that meet your multimedia product requirements. Z³ has a long and storied history of being the technical leader in development of video-on-module systems and a solid track record for helping our customers quickly get their product to market. If Z³ Technology doesn't have an off the shelf system to meet your product needs we can customize the design to your unique hardware and software needs.

Z³'s technical expertise includes:

- Turn-key embedded multimedia systems
- Embedded multimedia hardware and software
- Video processing and compression
- Embedded Linux





APPLICATIONS

Z³ Technology partners with our customers to deliver one-of-a-kind products that are customized to their needs. Our experience stems from working with a diverse set of customers in a variety of industries.

HEALTHCARE TECHNOLOGIES • UAV • MILITARY
SECURITY • INDUSTRIAL • UNDERWATER APPLICATIONS
BROADCAST ENCODING • CUSTOM APPLICATIONS





Z3
Technology®

OEM PRODUCTION-READY MODULES

Our production-ready modules reduce time-to-market with production quality H.265/H.264 modular solutions.

- Complete Hardware and Software Solutions
- Multi-Channel Encoding and Full Range of I/O's
- Linux-Based System with Control via API, Serial Commands or Network
- Ready-to-Use, Fully Functional Encoding and Decoding Applications Included
- Power Efficient, Compact Form Factors



Z3-HE4320-MOD
8Kp30/4Kp60 H.265



Z3-HE2160-MOD
4Kp30 H.265



Z3-HE1080-MOD
1080p60 H.265



Z3-DM816x-MOD
2160p30 H.264
4Kp30 H.264



Z3-DM8107-MOD
1080p60 H.264



Z3-DM368-MOD
1080p30 H.264

Z³ TECHNOLOGY RPS STARTER KITS

Our primary goal is to significantly reduce your development cost and time-to-market. Our Rapid Production Starter Kits (RPS) allow our customers to jump start their development process and get their products on the market faster and at a lower cost. We provide multiple systems with a variety of I/O's for each of the modules in our catalog. Each kit includes the necessary components to quickly evaluate the capabilities of our products.



PRODUCTION-READY MODULE

Our modules are production proven and ready for your volume needs whether you need 5000 or 5 modules.



APPLICATION (I/O) BOARD

Our modules work with our Application (I/O) Boards. Each APP Board/ Module pairing provides a wide variety of I/O combinations and functionality.



PRODUCTION SOFTWARE

Each RPS system comes preloaded with software so you can fully test the power and capabilities of our products.



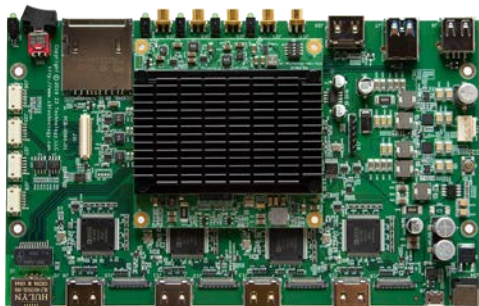
DOCUMENTATION

We provide documentation for all of our RPS systems so that you know exactly how you can utilize our products' many features.

Z3-HE4320-RPS

8K

8K H.265 Starter Kit



SPECIFICATIONS

Module Size	77 x 77 mm (3.03 x 3.03 in)
App Board Size	193 x 116 mm (7.60 x 4.56 in)
Power Supply	12V to 24V

HARDWARE

Module	Z3-HE4320-MOD-0x
App Board	Z3-HE4320-APP-0x
Processor	5-core: 2x A73 at 1.8GHz, 2x A53 at 1.2GHz, 1x A53 at 1 GHz, Dual core ARM Mali G71, Dual core Neural Network acceleration NNIE at 840 MHz
Video Inputs	4x 4K HDMI or 2x 6G-SDI
Video Codecs	H.265, H.264, MJPEG
Audio Interfaces	Embedded HDMI, Embedded SDI and Analog Stereo
Audio Codecs	AAC and G.711
Additional Interfaces	GbEth, USB 2.0/3.0, 4x KEL Jack, RS-422, RS-485, Micro-USB jack, SD Card

SOFTWARE

Encoding Resolutions	H.265 up to 8Kp30 or 4x 2160p30 or 2x 2160p60, 1080i
Output Formats	RTP, RTSP, MPEG-2 TS over UDP, RTMP, TSRTSP, MPTS, MP4 and TS File

Z3-HE2160-RPS

H.265

4K H.265 Starter Kit



HARDWARE

Module	Z3-HE2160-MOD-0x
App Board	Z3-HE2160-APP-0x
Processor	ARM A17/A7 big-Little at 1.25GHz
Video Inputs	3G-SDI, HDMI and Display Port
Video Codecs	H.265, H.264, MJPEG
Audio Interfaces	Embedded HDMI, Embedded SDI and Analog Stereo
Audio Codecs	AAC and G.711
Additional Interfaces	GbEth, USB 2.0, Micro SD Card, Serial, GPIO/UART

SOFTWARE

Encoding Resolutions	H.265 encode up to 2160p30 and 1080i H.264 video from QCIF to 2160p30
Output Formats	RTP, RTSP, MPEG-2 TS over UDP, RTMP, TSRTP, MPTS, MP4 and TS File

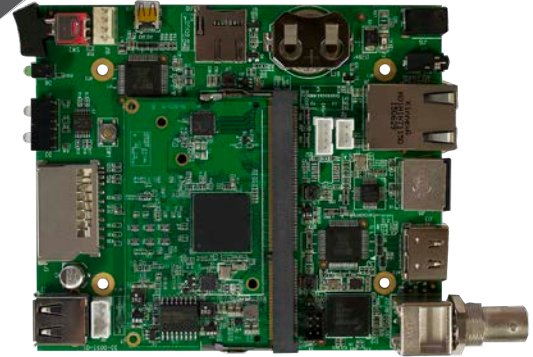
SPECIFICATIONS

Module Size	58 x 58 mm (2.28 x 2.28 in)
App Board Size	142 x 76 mm (5.59 x 2.99 in)
Power Supply	12V
Power Consumption	5W

Z3-HE1080-RPS

H.265

HD H.265 Starter Kit



HARDWARE

Module	Z3-HE1080-MOD-0x
App Board	Z3-HE1080-APP-0x
Processor	ARM A7 at 600 MHz
Video Inputs	1x HDMI, 1x 3G-SDI and 1x Composite
Video Codecs	H.265 and H.264
Audio Interfaces	Embedded HDMI, Embedded SDI and Analog Stereo
Audio Codecs	AAC and G.711
Additional Interfaces	GbEth, USB 2.0, Micro SD Card, Re-Clocked SDI loop through, HDMI pass-through and Serial

SOFTWARE

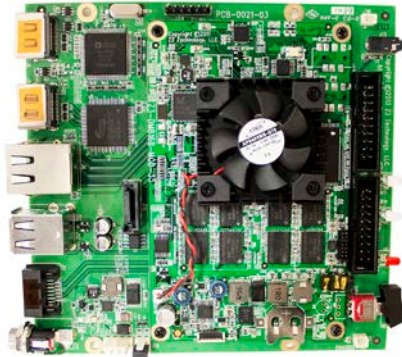
Encoding Resolutions	H.265 encode up to 1080p60 and 1080i, H.264 video from QCIF to 1080p60
Output Formats	RTP, RTSP, MPEG-2 TS over UDP, RTMP, TSRTP, MPTS, MP4 and TS File

SPECIFICATIONS

Module Size	68 x 42 mm (2.66 x 1.65 in)
App Board Size	120 x 95 mm (4.72 x 3.75 in)
Power Supply	5V
Power Consumption	4.1W

Z3-DM8169-4K-RPS

4K H.264 Starter Kit



HARDWARE

Module	Z3-DM816x-MOD-4K
App Board	Z3-DM8169-APP-6x
Processor	DSP + ARM Cortex A8
Video Inputs	1x 4K HDMI
Video Outputs	1x 4K HDMI
Video Codecs	H.264
Audio Interfaces	Embedded HDMI
Audio Codecs	AAC
Additional Interfaces	GbEth, 2x SATA2, 2x USB 2.0 and Serial

SOFTWARE

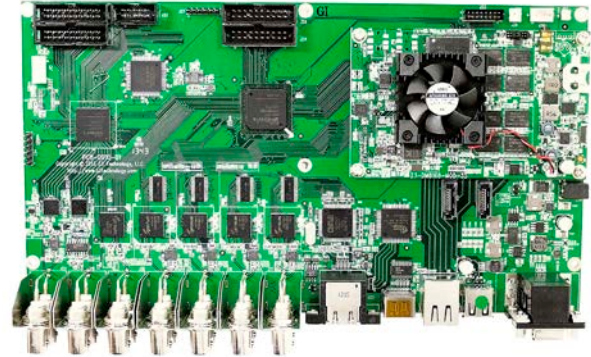
Software Development	Texas Instruments® RDK, Z ³ Technology software components for RDK, Z ³ Applications
Encoding Resolutions	H.264 video from QCIF to 2160p30 (4K) Simultaneous encode of one source in 4K + 1080p29.97 or 4K + 720p30
Output Formats	RTP, RTMP, MPEG-2 TS, MPTS* and TS File
Decoding Resolutions	H.264 video from QCIF to 2160p30 (4K)
Input Formats	RTP, RTSP, MPEG-2 TS and TS File

SPECIFICATIONS

Module Size	108 x 68 mm (4.25 x 2.67 in)
App Board Size	125 x 121 mm (4.92 x 4.76 in)
Power Supply	12V
Power Consumption	14W

Z3-DM8169-4CH-RPS

Four Channel H.264 Starter Kit



HARDWARE

Module	Z3-DM816x-MOD-3x
App Board	Z3-DM8169-APP-5x
Processor	DSP + ARM Cortex A8
Video Inputs	4x 3G-SDI and 2x ASI
Video Outputs	1x 3G-SDI
Video Codecs	H.264
Audio Interfaces	Embedded SDI
Audio Codecs	AAC
Additional Interfaces	GbEth, 2x SATA2, USB 2.0 and Serial

SOFTWARE

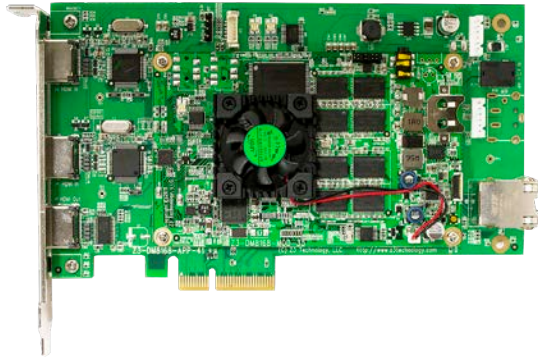
Software Development	Texas Instruments® RDK, Z ³ Technology software components for RDK, Z ³ Applications
Encoding Resolutions	H.264 video from QCIF to 1080p60, 2x 1080p60 or 4x 1080i
Output Formats	RTP, RTMP, MPEG-2 TS, MPTS and TS File

SPECIFICATIONS

Module Size	108 x 68 mm (4.25 x 2.67 in)
App Board Size	257 x 142 mm (10.12 x 5.59 in)
Power Supply	12V
Power Consumption	14W

Z3-DM8168-PCI2-RPS

Dual Channel PCI Express Starter Kit



HARDWARE

Module	Z3-DM816x-MOD-3x
App Board	Z3-DM8168-APP-4x
Processor	DSP + ARM Cortex A8
Video Inputs	2x HDMI
Video Outputs	1x HDMI
Video Codecs	H.264
Audio Interfaces	Embedded HDMI
Audio Codecs	AAC
Additional Interfaces	GbEth, PCIe 2.0 and Serial

SOFTWARE

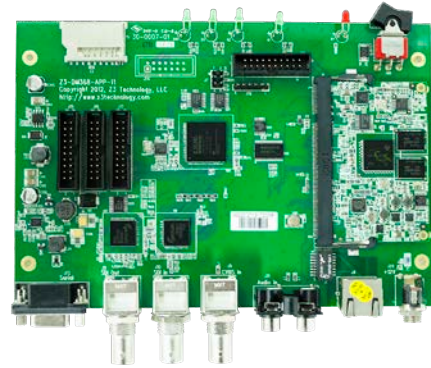
Software Development	Texas Instruments® RDK, Z ³ Technology software components for RDK, Z ³ Applications
Encoding Resolutions	H.264 video from QCIF to 1080p/i at 60 fps Dual channel encode up to 1080p/i at 60 fps
Output Formats	RTP, MPEG-2 TS and TS File
Decoding Resolutions	H.264 video from QCIF to 1080p/i at 60 fps
Input Formats	RTP and MPEG-2 TS

SPECIFICATIONS

Module Size	108 x 68 mm (4.25 x 2.67 in)
App Board Size	168 x 89 mm (6.61 x 3.50 in)
Power Supply	12V
Power Consumption	12W

Z3-DM368-SDI-RPS

Real-Time HD Video Starter Kit



HARDWARE

Module	Z3-DM368-MOD-0x
App Board	Z3-DM368-APP-1x
Processor	ARM9
Video Inputs	1x HD-SDI, 1x Composite and 1x ASI
Video Outputs	1x ASI and 1x HD-SDI
Video Codecs	H.264 and MPEG-2
Audio Interfaces	Analog Stereo and Embedded SDI
Audio Codecs	AAC and PCM
Additional Interfaces	Ethernet, SD Card and Serial

SOFTWARE

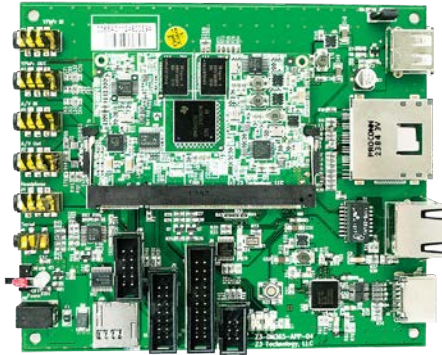
Software Development	Texas Instruments® DVSDK, Z ³ Technology software components for DVSDK, Z ³ Applications
Encoding Resolutions	H.264 video from QCIF to 1080p/i at 30 fps
Output Formats	RTP, MPEG-2 TS and MPEG-2 TS over RTP
Decoding Resolutions	H.264 video from QCIF to 1080p/i at 30 fps
Input Formats	RTP, MPEG-2 TS, RTSP and MPEG-2 TS over RTP

SPECIFICATIONS

Module Size	68 x 44 mm (2.68 x 1.73 in)
App Board Size	190 x 100 mm (7.48 x 3.94 in)
Power Supply	12V
Power Consumption	2.6W

Z3-DM368-RPS

Compact H.264 Starter Kit



HARDWARE

Module	Z3-DM368-MOD-0x
App Board	Z3-DM365-APP-0x
Processor	ARM9
Video Inputs	1x Component and 1x Composite
Video Outputs	1x HDMI, 1x Component and 1x Composite
Video Codecs	H.264 and MPEG-2
Audio Interfaces	Analog Stereo
Audio Codecs	AAC and PCM
Additional Interfaces	Ethernet, SD Card, USB 2.0, Headphone and Serial

SOFTWARE

Software Development	Texas Instruments® DVSDK, Z ³ Technology software components for DVSDK, Z ³ Applications
Encoding Resolutions	H.264 video from QCIF to 1080p/i at 30 fps
Output Formats	RTP, MPEG-2 TS and MPEG-2 TS over RTP
Decoding Resolutions	H.264 video from QCIF to 1080p/i at 30 fps
Input Formats	RTP, MPEG-2 TS, RTSP and MPEG-2 TS over RTP

SPECIFICATIONS

Module Size	68 x 44 mm (2.68 x 1.73 in)
App Board Size	130 x 110 mm (5.12 x 4.33 in)
Power Supply	5V
Power Consumption	2.6W

Z3-DM8107-SDI2-RPS

Compact H.264 Starter Kit



HARDWARE

Module	Z3-DM8107-MOD-0x
App Board	Z3-DM8107-APP-2x
Processor	ARM Cortex A8
Video Inputs	1x HDMI, 1x 3G-SDI and 1x Composite
Video Codecs	H.264
Audio Interfaces	Analog Stereo, Embedded HDMI and Embedded SDI
Audio Codecs	AAC
Additional Interfaces	GbEth, USB 2.0 and Serial

SOFTWARE

Software Development	Texas Instruments® RDK, Z ³ Technology software components for RDK, Z ³ Applications
Encoding Resolutions	H.264 video from QCIF to 1080p/i at 60 fps Dual channel encode up to 1x 1080i and 1x 720p60
Output Formats	RTP, RTSP, MPEG-2 TS, RTMP, MPTS* and TS File

SPECIFICATIONS

Module Size	82 x 43 mm (3.23 x 1.69 in)
App Board Size	120 x 89 mm (4.72 x 3.50 in)
Power Supply	5V
Power Consumption	6W



Z³
Technology®

Z³ TECHNOLOGY SINGLE BOARD ENCODERS

Introducing our newest embedded products, our Single Board Encoders offer the same video encoding functionality present in our video modules, but with the added convenience of integrated, on-board I/O's.

- All-in-one solutions
- Products on the market faster by shortening the design cycle
- Reduce overall project costs
- On-board interfaces, allowing for immediate access to video encoding capabilities
- Production-proven, sophisticated OEM systems
- High performance video encoding capabilities
- Feature rich preloaded software and SDK available
- Multiple control options through the HTTP based interface, API or serial



SINGLE BOARD ENCODER

Our Single Board Encoders are an all-in-one solution, providing immediate access to encoding capabilities via on-board I/O's.



PRODUCTION SOFTWARE

Each system comes preloaded with software so you can fully test the power and capabilities of our products.

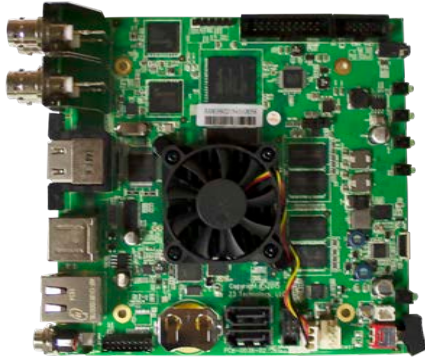


DOCUMENTATION

We provide documentation for each Single Board Encoder system so that you know exactly how you can utilize our products' many features.

Z3-SBE264-25

3G-SDI or HDMI H.264 Single Board Encoder



HARDWARE

Module	Z3-SBE264-25
Processor	DSP + ARM Cortex A8
Video Inputs	1x 3G-SDI and 1x HDMI
Video Outputs	1x 3G-SDI and 1x HDMI
Video Codecs	H.264
Audio Interfaces	Embedded HDMI and Embedded SDI
Audio Codecs	AAC
Additional Interfaces	GbEth, SATA2, USB 2.0 and Serial

SOFTWARE

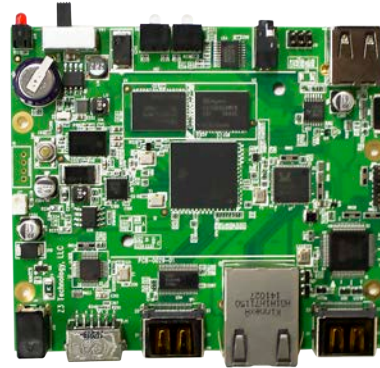
Software Development	Texas Instruments® RDK, Z ³ Technology software components for RDK, Z ³ Applications
Encoding Resolutions	H.264 video up to 1080p60
Output Formats	RTP, MPEG-2 TS, RTMP, ASI, RTSP, TS RTP and MP4
Decoding Resolutions	H.264 video up to 1080p60
Input Formats	RTP, MPEG-2 TS, ASI, TS RTP, TS File and MP4

SPECIFICATIONS

Module Size	128 x 124 mm (5.03 x 4.87 in)
Power Supply	12V
Power Consumption	15W

Z3-SBE264-01

HDMI H.264 Single Board Encoder



HARDWARE

Module	Z3-SBE264-01
Processor	ARM Cortex A8 + Video Acceleration
Video Inputs	1x HDMI and 1x Composite
Video Outputs	1x HDMI
Video Codecs	H.264
Audio Interfaces	Embedded HDMI and Analog Stereo
Audio Codecs	AAC
Additional Interfaces	GbEth, USB 2.0 and Serial

SOFTWARE

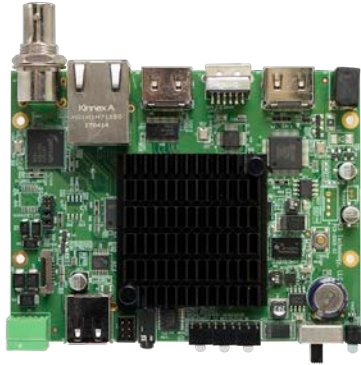
Software Development	Texas Instruments® RDK, Z ³ Technology software components for RDK, Z ³ Applications
Encoding Resolutions	H.264 Video up to 1080p60 Dual channel encoding up to 1x 1080i + 1x 480i
Output Formats	RTP, MPEG-2 TS, RTMP, RTSP, TS RTP and TS File
Decoding Resolutions	H.264 Video from QCIF to 1080p60
Input Formats	RTP, RTSP, TS RTP, TS File and MPEG-2 TS

SPECIFICATIONS

Module Size	80 x 92 mm (3.14 x 3.62 in)
Power Supply	5V
Power Consumption	5W

Z3-SBE264-10

HD Single Board Encoder



HARDWARE

Module	Z3-SBE264-10
Processor	ARM Cortex A8 + Video Acceleration
Video Inputs	1x HDMI, 1x 3G-SDI and 1x Composite
Video Outputs	1x HDMI
Video Codecs	H.264
Audio Interfaces	Embedded HDMI, Embedded SDI and Analog Stereo
Audio Codecs	AAC
Additional Interfaces	GbEth, UART, USB 2.0 and GND A B

SOFTWARE

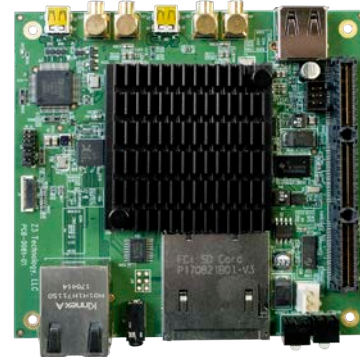
Software Development	Texas Instruments® RDK, Z ³ Technology software components for RDK, Z ³ Applications
Encoding Resolutions	H.264 video up to 1080p60 Dual channel encoding up to 1x1080i + 1x 720p
Output Formats	RTP, RTMP, RTSP, TSRTSP, TS File, File, and MPEG-2 TS over UDP

SPECIFICATIONS

Module Size	81 x 105 mm (3.19 x 4.13 in)
Power Supply	5V
Power Consumption	5W

Z3-SBE264-DVR-23

4 Channel H.264 Single Board Encoder



HARDWARE

Module	Z3-SBE264-DVR-23
Processor	ARM Cortex A8 + Video Acceleration
Video Inputs	1x HDMI, 1x 3G-SDI and 4x Composite
Video Outputs	1x Micro HDMI
Video Codecs	H.264
Audio Interfaces	Embedded HDMI, Embedded SDI and Analog Stereo
Audio Codecs	AAC
Additional Interfaces	GbEth, UART, PCIe/104, USB 2.0 and SD Card

SOFTWARE

Software Development	Texas Instruments® RDK, Z ³ Technology software components for RDK, Z ³ Applications
Encoding Resolutions	H.264 Video up to 1080p60
Output Formats	RTP, RTMP, RTSP, TSRTSP, TS File and MPEG-2 TS over UDP
Decoding Resolutions	H.264 Video from QCIF to 1080p60
Input Formats	RTP, TSRTSP, TS File and MPEG-2 TS

SPECIFICATIONS

Module Size	80 x 92 mm (3.14 x 3.62 in)
Power Supply	5V
Power Consumption	5W

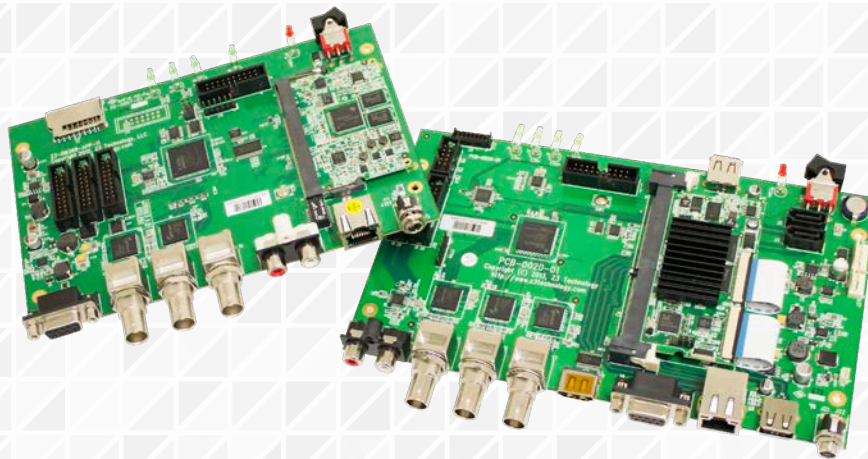
SBE PRODUCT GUIDE

	Z3-SBE264-25	Z3-SBE264-01	Z3-SBE264-10	Z3-SBE264-DVR-23	
	Module	SBE264-25	SBE264-01	SBE264-10	SBE264-DVR-23
Codecs	H.264	1x 1080p60	1x 1080p60	1x 1080p60	1x 1080p60 or 4 x NTSC/PAL
	AAC	✓	✓	✓	✓
Encode	INPUTS				
	HDMI	✓	✓	✓	✓
	3G-SDI	✓		✓	✓
	Component				
	Composite		✓	✓	4
	Analog Stereo		✓	✓	✓
	OUTPUTS				
	ASI	✓			
HDMI Passthrough	✓	✓	✓	✓	
SDI Passthrough	✓				
Decode	INPUTS				
	ASI	✓			
	OUTPUTS				
HDMI	✓	✓	✓	✓	
3G-SDI	✓				
Addt'l Interfaces	Ethernet	1x GbEth	1x GbEth	1x GbEth	1x GbEth
	SD Card				✓
	PCIe/104				✓
	SATA2	✓			
	USB 2.0	✓	✓	✓	✓
	Serial	✓	✓	✓	✓
	Specs				
Input Power	12V	5V	5V	5V	
Power Consumption	15W	5W	5W	5W	
Module Size (mm)	128 x 124	80 x 92	81 x 105	80 x 92	

RPS PRODUCT GUIDE

	Z3-HE4320-RPS	Z3-HE2160-RPS	Z3-HE1080-RPS	Z3-DM8169-4K-RPS	Z3-DM8169-4CH-RPS	
Module	HE4320-MOD-0x	HE2160-MOD-0x	HE1080-MOD-0x	DM8169-MOD-4K	DM8169-MOD-3x	
App Board	HE4320-APP-0x	HE2160-APP-0x	HE1080-APP-0x	DM8169-APP-6x	DM8169-APP-5x	
Codecs	H.265	4320p30	2160p30, 1080i	1080p60, 1080i		
	H.264	2160p30	2160p30	1080p60	2160p30 2x 1080p60 4x 1080i	
	MPEG-2					
	AAC	✓	✓	✓	✓	✓
	G.711	✓	✓	✓		
	PCM					
	INPUTS					
HDMI	4x (4K)	✓	✓	✓ (4K)		
3G-SDI	4 (6G-SDI)	2	✓		2	
HD-SDI					4	
Display Port		✓				
Component						
Composite			✓			
RGB						
Analog Stereo		✓	✓			
OUTPUTS						
ASI						
HDMI Passthrough	✓	✓				
SDI Passthrough	✓	✓			4	
Component Passthrough						
Composite Passthrough						
INPUTS						
ASI					2	
OUTPUTS						
HDMI				✓ (4K)		
3G-SDI						
HD-SDI						
Component						
Composite						
Add'l Interfaces	Ethernet	1x GbEth	1x GbEth	1x GbEth	1x GbEth	1x GbEth
	SD Card	✓	✓	✓		
	PCIe 2.0					
	SATA2				2	2
	USB	✓ (2.3 & 3.0)	✓	✓	2	✓
	Headphone					
Specs	Input Power	12V to 24V	12V	5V	12V	12V
	Power Consumption		5W	4.1W	14W	14W
	Module Size (mm)	77 x 77	58 x 58	68 x 42	108 x 68	108 x 68
	App Board Size (mm)	193 x 116	142 x 76	120 x 95	125 x 121	257 x 142

Z3-DM8169-VI-RPS	Z3-DM8168-PCI-RPS	Z3-DM8168-RPS	Z3-DM8107-SDI2-RPS	Z3-DM8107-SDI-RPS	Z3-DM368-VI-RPS	Z3-DM368-SDI-RPS	Z3-DM368-RPS
DM8169-MOD-2x	DM8169-MOD-3x	DM8169-MOD-2x	DM8107-MOD-0x	DM8107-MOD-0x	DM368-MOD-0x	DM368-MOD-0x	DM368-MOD-0x
DM8168-APP-3x	DM8168-APP-2x	DM8168-APP-0x	DM8107-APP-2x	DM8107-APP-1x	DM368-APP-0x	DM368-APP-1x	DM365-APP-0x
2x 1080p60	2x 1080p60	2x 1080p60	1080p60	1080p60	1080p30 1080i	1080p30 1080i	1080p30 1080i
1080i					1440x1080@30	1440x1080@30	1440x1080@30
✓	✓	✓	✓	✓	✓	✓	✓
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		✓			✓	✓	
		✓					✓
1x GbEth	1x GbEth	1x GbEth	1x GbEth	1x GbEth	1x 10/100	1x 10/100	1x 10/100
		✓			✓	✓	✓
	✓						
✓	✓	✓		2			
2	✓	2	✓	2	✓		✓
							✓
12V	12V	12V	5V	12V	12V	12V	5V
14W	12W	12W	6W	6W	2.6W	2.6W	2.6W
108 x 88	108 x 68	108 x 88	82 x 43	82 x 43	68 x 44	68 x 44	68 x 44
218 x 90	168 x 89	186 x 88	120 x 89	206 x 121	203 x 114	190 x 100	130 x 110



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