Sigma Designs is a leading provider of system-on-chip (SoC) solutions used to deliver entertainment and control throughout the home:

- Media processing
- Smart TV
- Video encoding
- Home AV networking
- Video processing
- Home control

Sigma Designs’ products are sold worldwide through a direct sales force and distributors. Sigma’s Common Stock, publicly traded since 1986, is listed on the NASDAQ National Market under the symbol SIGM. Headquartered in Milpitas, California, the company also has sales offices in China, Denmark, Hong Kong, Israel, Japan, Singapore, and Taiwan.
Sigma Designs’ Secure Media Processors™ offer a complete, high-performance SoC solution for a wide variety of consumer products. Featuring high-quality audio/video decoding, powerful audio/video processing, and commonly-used peripheral interfaces, our SoCs and software enable rapid product development and lower manufacturing cost. In addition, our Secure Media Processor™ architecture offers advanced content protection, supporting a wide variety of Digital Rights Management (DRM) and Conditional Access (CA) solutions.

### Video Decoding
- MPEG-4.10 (H.264)
- MPEG-4.2
- MPEG-2
- MPEG-1
- VC-1
- WMV9
- AVS (China)
- DV, AVCHD
- RMVB v9, v10

### Audio Decoding
- Dolby
  - Dolby Digital
  - Dolby Digital Plus
  - Dolby TrueHD
- MPEG, MPEG 2.5
- WMA, WMA Pro
- WMA Lossless
- AAC, HE-AAC
- DRA (China)
- FLAC
- Ogg Vorbis
- PCM, LPCM, DVD LPCM, WFA LPCM
- G.711 a-law and u-law
- G.722, ADPCM DVI/MS/QT
- G.729, G.729A
- GSM AMR
- Skype SILK

### DRM/CA
- PlayReady
- HDCP, DTCP
- Conax
- Nagravision
- NDS
- Rovi
- SecureMedia
- Verimatrix
- Viaccess
- Widevine

### Peripheral I/O
- PCI
- Peripheral bus
- Ethernet
- USB
- SD Card
- Smartcard
- IDE/SATA
- SPI
- Transport stream
- IR
- PC
- I²S, SPDIF
- HDMI with CEC, deep color, xvYCC

### Video Processing
- Motion and edge adaptive deinterlacing
- Adaptive 2D/3D noise, mosquito noise, and block artifact reduction
- Adaptive detail and contrast enhancement
- Brightness, contrast, saturation, hue, colorimetry correction, color temperature, and gamma controls

### Audio Processing
- Dolby ProLogic IIx
- SRS TruSurround XT
- SRS TruVolume
- SRS WOW HD
- Upsampling, downsampling
- Bass redirection management
- 8-channel mixing
- Dual mode processing
- Channel re-mapping
- 2-channel downmixing
- Watermark detection
- Dolby Digital encoding
- G.722 ADPCM encoding

### Operating Systems
- Linux
- Android™
- WinCE

---

**Innovation**
- First multi-codec HD video decoder
- First Secure Media Processor™
- First multi-CPU architecture
- First high bandwidth internal bus design

**Leadership**
- First SoC for Microsoft® Mediaroom™
- First SoC for Blu-ray players
- First SoC for media players

**Technical Excellence**
- IPTV, ATSC, DVB, ARIB, DMB, Blu-ray, AVCHD, HDV, DVD
- Advanced audio and video processing
- APIs for feature rich, scalable applications

**Experience**
- IPTV solutions since 2000
- Pioneer in advanced DVD
- Video processing and decoding since 1993
- 30+ years technology leader
**SMP8910 Series**

Secure Media Processors™

---

**Target Markets**
- Premium media players
- Premium IPTV and hybrid set-top boxes

**Supported Technologies**
- Multiple task-specific processors lowers power and enables best middleware and application performance
- Three audio DSPs support wide variety of audio codecs
- Security CPU supports wide variety of conditional access (CA) and digital rights management (DRM) solutions, including Nagravision NOCS v1.1

**Video Decoding**
- MPEG-4.10 (H.264) BP@L3, MP@L4.2, HP@L4.2, MVC HP@L4.2
- SMPTE 421M (VC-1) MP@HL, AP@L3
- WMV9 MP@HL
- MPEG-2 MP@HL
- MPEG-4.2 ASP@L5 (up to HD, 1-point GMC)
  - *20 Mbps for L4.0; 40 Mbps for L6.0*
- AVS Jizhun profile@L2.0, 4.0, 6.0*
- RMVB v9, v10
- 3D video support
  - Generic side-by-side and top-bottom
  - RealD, SENSIO® Hi-Fi 3D, TDVision

**Advanced Video Processing**
- 3D graphics accelerator with Open GL ES 1.1/2.0 support
- VXP® motion adaptive deinterlacing and adaptive contrast enhancement
- Integrated HDMI with CEC, 12-bit deep color, xvYCC

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**Powering the new digital home**
SMP8680 Series
Secure Media Processors™ with Integrated HomePNA®

Target Markets
- IPTV and hybrid set-top boxes
- Thin clients

Supported Technologies
- Multiple task-specific processors lowers power and enables best middleware and application performance
- Audio DSP supports wide variety of audio codecs
- Security CPU supports wide variety of conditional access (CA) and digital rights management (DRM) solutions

Video Decoding
- MPEG-4.10 (H.264) BP@L3, MP@L4.0, HP@L4.0
- SMPTE 421M (VC-1) MP@HL, AP@L3
- WMV9 MP@HL
- MPEG-2 MP@HL
- MPEG-4.2 ASP@L5 (up to HD, 1-point GMC)
- AVS Jizhun profile@L2.0, 4.0, 6.0*
- RMVB v9, v10
- 3D video support
  - Generic side-by-side and top-bottom output
  - RealD (side-by-side output)
  - 20 Mbps for L4.0, 40 Mbps for L6.0

Advanced Video Processing
- 12-bit xvYCC processing
- Integrated HDMI output with CEC, 12-bit deep color, xvYCC
- Integrated HDMI input with 8-bit color, xvYCC (SMP8680)

Powering the new digital home
SMP8670 Series
Secure Media Processors™

Target Markets
- IPTV and hybrid set-top boxes
- Thin clients
- Media players
- Wireless display receivers

Supported Technologies
- Multiple task-specific processors lowers power and enables best middleware and application performance
- Audio DSP supports wide variety of audio codecs
- Security CPU supports wide variety of conditional access (CA) and digital rights management (DRM) solutions, including Nagravision NOCS v1.2

Video Decoding
- MPEG-4.10 (H.264) BP@L3, MP@L4.0, HP@L4.2, MVC HP@L4.2
- SMPTE 421M (VC-1) MP@HL, AP@L3
- WMV9 MP@HL
- MPEG-2 MP@HL
- MPEG-4.2 ASP@L5 (up to HD, 1-point GMC)
- AVS Jizhun profile@L2.0, 4.0*, 6.0*
- RMVB v9, v10
- 3D video support
  - Generic side-by-side and top-bottom output
  - RealD (side-by-side output)
- 20 Mbps for L4.0, 40 Mbps for L6.0

Advanced Video Processing
- 3D graphics accelerator with OpenGL ES 1.1/2.0 support
- Deblocking and deringing filters
- 12-bit xvYCC processing
- Integrated HDMI with CEC, 12-bit deep color, and xvYCC

Powering the new digital home

Set-Top Boxes
Consumer Electronics
AV Networks
Home Control
Commercial Systems

SMP8670
SMP8672
SMP8674

<table>
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<tr>
<th>Feature</th>
<th>SMP8670</th>
<th>SMP8672</th>
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<td>2210**</td>
<td>1592*</td>
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<td>1 SPI, 2 SSI</td>
<td>1 SPI, 2 SSI</td>
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<td>Transport Stream Outputs</td>
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<td>NAND Flash Support</td>
<td>SLC/MLC</td>
<td>SLC/MLC/eMMC</td>
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<td>NOR Flash Support</td>
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<td>Digital RGB/Y/CbCr Video Outputs</td>
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<td>Peripheral Bus</td>
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<td>Non-Rovi ACP Version</td>
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<td>SMP8673</td>
<td>SMP8675</td>
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* Host CPU + IPU (1057 + 535) ** Host CPU + IPU (1600 + 610)
SMP8650 Series
Secure Media Processors™

Target Markets
- IPTV and hybrid set-top boxes
- Thin clients
- Media players
- Wireless display receivers

Supported Technologies
- Multiple task-specific processors lowers power and enables best middleware and application performance
- Audio DSP supports wide variety of audio codecs
- Security CPU supports wide variety of conditional access (CA) and digital rights management (DRM) solutions, including Nagravision NOCS v1.1

Video Decoding
- MPEG-4.10 (H.264) BP@L3, MP@L4.0, HP@L4.0
- SMPTE 421M (VC-1) MP@HL, AP@L3
- WMV9 MP@HL
- MPEG-2 MP@HL
- MPEG-4.2 ASP@L5 (up to HD, 1-point GMC)
- AVS Jizhun profile@L2.0, 4.0, 6.0
- RMVB v9, v10
- 3D video support
  - Generic side-by-side and top-bottom output
  - RealD (side-by-side output)

Advanced Video Processing
- 2D/3D graphics accelerator with Open GL ES 1.1/2.0 support
- Motion adaptive deinterlacing
- Deblocking and deringing filters
- 12-bit xYCC processing
- Integrated HDMI with CEC, 12-bit deep color, xYCC

Powering the new digital home
Target Markets
- Premium media players
- Premium IPTV and hybrid set-top boxes

Supported Technologies
- Multiple task-specific processors lowers power and enables best middleware and application performance
- Three audio DSPs support wide variety of audio codecs
- Security CPU supports wide variety of conditional access (CA) and digital rights management (DRM) solutions

Video Decoding
- MPEG-4.10 (H.264) BP@L3, MP@L4.0*, HP@L4.0*
- SMPTE 421M (VC-1) MP@HL, AP@L3
- WMV9 MP@HL
- MPEG-2 MP@HL
- MPEG-4.2 ASP@L5 (up to HD, 1-point GMC)
- AVS Jizhun profile@L2.0, 4.0, 6.0
- RMVB v9, v10
- 3D video support
  - Generic side-by-side and top-bottom output
  - RealID (side-by-side output)

Advanced Video Processing
- Motion adaptive deinterlacing
- Deblocking and deringing filters
- Simultaneous HD, CIT-HD, and SD outputs
- Individual brightness, contrast, saturation, hue, and colorimetry correction controls for each video source and output port
- 12-bit xYCC processing
- Integrated HDMI with CEC, 12-bit deep color, xYCC

Powering the new digital home

Set-Top Boxes  Consumer Electronics  AV Networks  Home Control  Commercial Systems

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**SMP8640 Series**
Secure Media Processors™

<table>
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<tr>
<th></th>
<th>SMP8642</th>
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<td>DMIPS</td>
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<td>1840*</td>
<td>2208**</td>
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<td>L2 Cache</td>
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<td>System/DSP Clock Rates</td>
<td>667/333 MHz</td>
<td>667/333 MHz</td>
<td>800/400 MHz</td>
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<td>Video Input Port with VBI Capture</td>
<td>8-bit BT.601/656</td>
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<td>Ethernet</td>
<td>(2) 10/100</td>
<td>(2) 10/100</td>
<td>(2) 10/100/1000</td>
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<td>SATA II (1.5 Gbps, eSATA compatible)</td>
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<td>USB 2.0 Embedded Host</td>
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<tr>
<td>Transport Stream Inputs</td>
<td>1 SPI, 3 SSI</td>
<td>1 SPI, 3 SSI</td>
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<td>Transport Stream Outputs</td>
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<td>Peripheral Bus, DVB-CI Support</td>
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<td>DRAM Support</td>
<td>64-bit 1 GB (DDR2-667)</td>
<td>64-bit 1 GB (DDR2-667)</td>
<td>64-bit 1 GB (DDR2-800)</td>
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<td>SLC</td>
<td>SLC/MLC</td>
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<tr>
<td>NOR Flash Support</td>
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<td>SPI</td>
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<td>Digital RGB/YCbCr Video Outputs</td>
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<td>9.1 I²S + SPDIF (2)</td>
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<td>SMP8647</td>
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</tbody>
</table>

* Host CPU + IPU (1330 + 510)  ** Host CPU + IPU (1000 + 608)
**HiDTV® Pro-Fusion™**  
Smart TV SoC with Integrated 200/240Hz FRC

### Target Markets
- 200/240Hz Smart TV

### Supported Technologies
- Multiple MIPS 74Kf cores
- 48-/64-bit DDR3-1600 memory interface
- H.264 and MPEG-2 encoder (720p30)
- Integrated 8051 standby controller
- 2D and 3D graphics accelerators
- 3DTV support
- DVB-CI/CI+ v1.2 support
- Smartcard interface for ARIB
- Secure boot and key storage

### Broadcast
- DVB-T, DVB-C, ISDB-T, ATSC, and ClearQAM demodulators
  - ETSI EN 300 744
  - Nordig Unified 2.0
  - ITU-J.83 Annex A/C compliant
  - ATSC A/53, A/74 compliant
- Analog demodulators
  - BTSC, EIAJ, MA2, D/K1 A2, D/K2 A2, D/K3 A2, B/G A2, D/K NICAM, B/G NICAM, L NICAM, FM Radio
- PAL, SECAM, and NTSC

### Video Decoding
- Dual HD decode to support simultaneous decode from broadcast and broadband
- MPEG-4.10 (H.264) BP@L3, MP@L4.1, HP@L4.1, MVC HP@L4.1
- MPEG-2 MP@HL
- AVS Jizhun profile (1080p30)
- RMVB v8, v9, v10 (1080p30)
- VP6, VP8 (1080p30)
- DivX 3.11 (1080p30)

### Video Processing
- 240Hz MEMC and full frame rate conversion
- 2D local dimming (edge and direct lit), 512 segments
- 3DTV formatter with MEMC support and content adaptive 2D to 3D conversion
- 21:9 240Hz display support
HiDTV® Pro-UXL
Smart TV SoC

DVB Solutions | ATSC Solutions | tbd | tbd | tbd | tbd
---|---|---|---|---|---
Max Output Frequency | 60Hz | 60Hz | 60Hz | tbd
Max Output Resolution | 1920x1080 (16:9) | 1920x1080 (16:9) | 1920x1080 (16:9) | tbd
Panel Interface | LVDS | LVDS | LVDS | tbd
Memory Interface | 32-bit | 32-bit | 32-bit | tbd
3D Graphics | • | • | • | tbd
3D Formatter | • | • | • | tbd
Internet Support | • | • | • | tbd
PCB Layers | 2 or 4 | 2 or 4 | 2 or 4 | tbd

Max Output Frequency 60Hz 60Hz 60Hz
Max Output Resolution 1920x1080 (16:9) 1920x1080 (16:9) 1920x1080 (16:9)
Panel Interface LVDS LVDS LVDS
Memory Interface 32-bit 32-bit 32-bit
3D Graphics • • •
3D Formatter • • •
Internet Support • • •
PCB Layers 2 or 4 2 or 4 2 or 4

Target Markets
- 50/60Hz Smart TV

Supported Technologies
- 16-/32-bit DDR3-1600 memory interface
- Integrated 8051 standby controller
- 2D and 3D graphics accelerators
- 3DTV support
- DVB-CI/CI+ v1.2 support
- Smartcard interface for ARIB
- Secure boot and key storage

Broadcast
- DVB-T, DVB-C, ATSC, and ClearQAM demodulators
  - ETSI EN 300 744
  - Nordig Unified 2.0
  - ITU-J.83 Annex A/B/C compliant
  - ATSC A/53, A/74 compliant
- Analog demodulators
  - BTSC, EIAJ, MA2, D/K1 A2, D/K2 A2, D/K3 A2, B/G A2, D/K NICAM, B/G NICAM, I NICAM, L NICAM, FM Radio
- PAL, SECAM, and NTSC

Video Decoding
- MPEG-4.10 (H.264) BP@L3, MP@L4.1, HP@L4.1
- MPEG-2 MP@HL
- AVS Jizhun profile (1080p30)
- RMVB v8, v9, v10 (1080p30)
- DivX 3.11 (1080p30)

Video Processing
- Cross-color and cross-luma post processing filters
- Motion adaptive de-interlacing and noise reduction
- Local contrast enhancement
- Enhanced super resolution
- MPEG artifact reduction
- Universal color processor
- 3DTV formatter with content adaptive 2D to 3D conversion
- Support for 3DTV polarized (pattern retarder) panels
- Pivot function

Powering the new digital home
HiDTV® Pro-BXL
Smart TV SoC

Target Markets
- 50/60Hz Smart TV

Supported Technologies
- 16-/32-bit DDR3-1333 memory interface
- Integrated 8051 standby controller
- 2D graphics accelerator
- 3DTV support
- DVB-CI/CI+ v1.2 support
- Smartcard interface for ARIB
- Secure boot and key storage

System BOM Reduction
- 2-layer PCB support
- Single DDR3 option for non-connected HDTVs
- Passive component reduction

Broadcast
- DVB-T, DVB-C, ATSC, and ClearQAM demodulators
  - ETSI EN 300 744
  - Nordic Unified 2.0
  - ITU-J.83 Annex A/B/C compliant
  - ATSC A/53, A/74 compliant
- Analog demodulators
  - BTSC, EIAJ, MA2, D/K1 A2, D/K2 A2, D/K3 A2, B/G A2, D/K NICAM, B/G NICAM, I NICAM, L NICAM, FM Radio
  - PAL, SECAM, and NTSC

Video Decoding
- MPEG-4.10 (H.264) BP@L3, MP@L4.1, HP@L4.1
- MPEG-2 MP@HL
- AVS Jizhun profile (1080p30)
- RMVB v8, v9, v10 (1080p30)
- DivX 3.11 (1080p30)

Video Processing
- Improved picture quality for 42” and larger HDTVs
- Local contrast enhancement
- Support for 3DTV line based striped polarizer panels or remap to 60Hz frame sequential format
HiDTV® Pro-SXL/AXL
Smart TV SoC

Target Markets
- 50/60Hz Smart TV

Supported Technologies
- 16-/32-bit DDR3-1333 memory interface
- Integrated 8051 standby controller
- 2D graphics accelerator
- 3DTV support
- DVB-CI/CI+ v1.2 support
- Smartcard interface for ARIB
- Secure boot and key storage

Broadcast
- DVB-T, DVB-C, ATSC, and ClearQAM demodulators
  - ETSI EN 300 744
  - Nordig Unified 2.0
  - ITU-J.83 Annex A/B/C compliant
  - ATSC A/53, A/74 compliant
- Analog demodulators
  - BTSC, EIAJ, MA2, D/K1 A2, D/K2 A2, D/K3 A2, B/G A2, D/K NICAM, B/G NICAM, I NICAM, L NICAM, FM Radio
- PAL, SECAM, and NTSC

Video Decoding
- MPEG-4.10 (H.264) BP@L3, MP@L4.1, HP@L4.1
- MPEG-2 MP@HL
- AVS Jizhun profile (1080p30)
- RMVB v8, v9, v10 (1080p30)
- DivX 3.11 (1080p30)

Video Processing
- Cross-color and cross-luma post processing filters
- Motion adaptive de-interlacing and noise reduction
- Local contrast enhancement
- Enhanced super resolution
- MPEG artifact reduction
- Universal color processor
- Support for 3DTV line based striped polarizer panels or remap to 60Hz frame sequential format to be received by a 3D capable frame rate converter SoC (e.g. FRC-V)

DVB Solutions
- TSXL68-A11-H
- TSXL68-A11-S
- TSXL68-A11-T
- TSXL68-A22-H
- TSXL28-A10-H

ATSC Solutions
- TAXL68-A11-H
- TAXL68-A11-S
- TAXL68-A11-T
- TAXL68-A22-H
- TAXL28-A10-H

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Powering the new digital home

Set-Top Boxes
Consumer Electronics
AV Networks
Home Control
Commercial Systems
PL330
H.264 HD Encoder

General
- 1.2V, 1.8V, and 3.3V power supplies
- 380mW power in full operation
- 278-pin, 11mm x 11mm VFBGA package

System Interfaces
- Single 27 MHz input as master clock
- PCI Express Gen 1
- USB 2.0 Device
- GPIO, UART, and I2C compatible buses
- MDDR memory interface
- SPI serial flash interface for boot ROM
- SDIO

Video Interfaces
- Video input and output interfaces
- SMPTE 274/296, BT.656 interfaces
- 8-/16-bit YCbCr 4:2:2 interface with embed/external sync
- Interfaces to popular CMOS sensors
- Progressive scan and interlaced video
- Multi-tap down-scaler for arbitrary sizes
- Optimized single-pass encoder using motion analysis and advanced scalable algorithms

Audio Section
- Supports AAC-LC, MPEG Audio, MP3, PCM, G.711, G.729
- Supports 16-bit FS, left-/right-justified
- FS master and slave modes for audio inputs/outputs

Target Markets
- Video conferencing
- PVR
- Video phone
- IT & surveillance video capture
- Home surveillance
- Remote medicare / learning
- Wireless video transmission

Video Encoding Features
- Real-time full-HD H.264 (AVC) video encode
- Wide resolution ranges from 1920x1080 to QVQGA
- Baseline, Main, and High profile up to Level 4.1
- CAVLC and CABAC entropy coding
- Single-pass VBR/CBR encode up to 20 Mbps
- Dynamic change on bitrate, frame rate, and GOP structure
- Key frame insertion on-the-fly
- Quarter-pixel accuracy
- Multiple H.264 streams encoding (2 channels 720p30 or 4 channels of VGAp30)
- H.264 and MJPEG simultaneously
- Baseline JPEG encode/decode up to 2M pixel @ 30 fps

System Processor
- 266 MHz ARM9 processor
- ARC DSP for audio functions

Powering the new digital home
VXP® video processing brings video quality to a new level by offering a complete package of the world’s highest quality video processing algorithms for deinterlacing, scaling, and image enhancement.

HDTVs vary in their ability to cleanly display standard-definition content, such as DVDs and most television shows. This is due to the different video processing solutions used to upscale the content to fill the screen. With viewing of online low-resolution content becoming popular, the capabilities of these alternative video processing solutions are stretched even further. VXP® video processing can bring a high-definition experience to standard-definition content and make viewing of on-line content more enjoyable.

High-definition content can also be improved with high quality video processing. Just because a source is in high-definition doesn’t mean that it will offer the best possible picture. Although the content may be high-definition, it may still contain artifacts and reduced picture quality that can distract the viewer. VXP® video processing ensures a consistent, more enjoyable viewing experience.

**Features**

- **Mosquito Noise Reduction**: Recognizes object edges and removes mosquito noise to produce crisp, clear images
- **Block Artifact Reduction**: Identifies block artifacts introduced by source compression, adaptively smoothing the block boundaries
- **3D and 2D Noise Reduction**: Adaptively applies both temporal and spatial noise reduction, producing the clearest picture while maintaining fine image details
- **Motion and Edge Adaptive Deinterlacing**: Includes directional interpolation to eliminate jaggy artifacts
- **10-/12-bit Processing**: Offers superior image precision
- **Robust Film Cadence Detection**: Provides fast 3:2/2:2 lock time, bad edit recovery, and support for extended film cadences

**VXP® Video Processors**

VXP® video processing ensures a consistent, more enjoyable viewing experience.

**Video Processors**

**Features**

- **Mosquito Noise Reduction**: Recognizes object edges and removes mosquito noise to produce crisp, clear images
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- **10-/12-bit Processing**: Offers superior image precision
- **Robust Film Cadence Detection**: Provides fast 3:2/2:2 lock time, bad edit recovery, and support for extended film cadences
- **Adaptive Contrast Enhancement**: Analyzes the brightness level of each frame, producing stunning images with optimal contrast
FRC-V
Frame Rate Converter (FRC) for 200/240Hz 3DTV

Target Markets
• 200/240Hz 3DTV

Supported Technologies
• Fast and reliable film mode detection
• Spread-spectrum clock system
• LED backlight dimming control
• Split-screen mode for easy retail demo
• 16-/32-bit DDR3-1333 memory interface
• 3DTV support

Video Processing
• Vector-based motion compensated frame rate conversion from 50/60Hz to 100/120/200/240Hz
• 10-bit processing
• Supports xvYCC
• 4:2:2 internal processing and 4:4:4 PC/gaming mode
• Superior “halo” performance (NHF technology)
• Enhanced video quality with backend video processing supports global, segment, or 2D (up to 512 segments) backlight dimming control
• Superior MEMC performance on blended OSD and protection on logo
• Content adaptive 2D to 3D conversion
• 3DTV formatter supports HDMI v1.4a 3DTV formats
• Support for 3D line interleaved and frame-sequential panels
FRC-S+
Frame Rate Converter (FRC) for 100/120Hz 3DTV

Target Markets
- 100/120Hz 3DTV

Supported Technologies
- Fast and reliable film mode detection
- Spread-spectrum clock system
- LED backlight dimming control
- Split-screen mode for easy retail demo
- 16-/32-bit DDR3-1333 memory interface
- 3DTV support
- Supports 200/240Hz displays using two devices

Video Processing
- Vector-based motion compensated frame rate conversion from 50/60Hz to 100/120Hz
- 10-bit processing
- Supports xvYCC
- 4:2:2 internal processing and 4:4:4 PC/gaming mode
- Superior “halo” performance (NHF technology)
- Enhanced video quality with backend video processing supports global, segment, or 2D (up to 512 segments) backlight dimming control
- Superior MEMC performance on blended OSD and protection on logo
- Content adaptive 2D to 3D conversion
- 3DTV formatter supports HDMI v1.4a 3DTV formats
- Support for 3D line interleaved and frame-sequential panels
# FRC-S
Frame Rate Converter (FRC) for 100/120Hz HDTV

## Target Markets
- 100/120Hz HDTV

## Supported Technologies
- Fast and reliable film mode detection
- Spread-spectrum clock system
- Split-screen mode for easy retail demo
- 16-/32-bit DDR2-1066 memory interface
- Supports 200/240Hz displays using two devices

## Video Processing
- Vector-based motion compensated frame rate conversion from 50/60Hz to 100/120Hz
- 10-bit processing
- Supports xvYCC
- 4:2:2 internal processing and 4:4:4 PC/gaming mode
- Superior “halo” performance
- Superior MEMC performance on blended OSD and protection on logo

### Table: FRC 9459S vs FRC 9559S

<table>
<thead>
<tr>
<th>Feature</th>
<th>FRC 9459S</th>
<th>FRC 9559S</th>
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<td>1-/2-ch 8-/10-bit LVDS Output</td>
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<td>4-ch 8-/10-bit LVDS Output</td>
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<tr>
<td>4-ch 10-bit V-By-One Output</td>
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### Diagram:
- Motion Compensated Frame Rate Interpolation
- Color Expansion Matrix Primary Conversion
- Mixor Contract Brightness Saturation
- 1-/2-ch 8-/10-bit LVDS-TX
- 4-ch 10-bit V-By-One TX
- LVDS
- PWM/D/V
- V-By-One
- PC
- EEPROM/Flash
- 8051
- Digital Decoder
- Video Pre-Processing
- Memory Manager
- DDR
- I2C EEPROM/Flash
- GPIO
- LVDS
- PWM/D/V
- V-By-One
- LVDS
- V-By-One
GF9452
12-bit Dual Channel, Dual Output VXP® Video Processor

Target Markets
- AV receivers
- Blu-ray players
- Commercial systems

Supported Technologies
- Supports all DTV video and PC graphics formats
- Supports active raster size up to 2048x2048
- High quality motion and speed adaptive deinterlacing
- Multi-tap scaling engine with panoramic scaling and aspect ratio conversion
- Multiple on-screen video display, including picture-in-picture (PIP), picture-on-picture (POP), picture-by-picture (PBP)
- Adaptive 3D noise reduction
- Mosquito noise reduction and block artifact reduction
- Adaptive detail enhancement featuring sharpness and texture enhancement with precise overshoot control
- Adaptive contrast enhancement
- User programmable gamma correction

Features
- Two independent channels of VXP® processing
- Support for 12-bit input and output on both channels
- Flexible output architecture to support single, dual, and twin channel outputs
- Advanced film mode detection and compensation for interlaced and progressive sources, including support for frame-locked 3:3 (72Hz) and 2:2 (48Hz) output cadence generation
- Frame rate conversion with full support for genlock and frame-lock operation

Video Input Formats
- 8-/10-/12-bit RGB or 4:2:2/4:4:4 YCbCr
- 16-/20-/24-bit RGB (G, BR) or 4:2:2/4:4:4 YCbCr (Y, CbCr)
- 24-/30-/36-bit 4:4:4 YCbCr (Y, Cb, Cr)
- 24-/30-/36-bit RGB

Video Output Formats
- 8-/10-/12-bit RGB or 4:2:2/4:4:4 YCbCr
- 16-/20-/24-bit RGB (G, BR) or 4:2:2/4:4:4 YCbCr (Y, CbCr)
- 24-/30-/36-bit 4:4:4 YCbCr (Y, Cb, Cr)
- 24-/30-/36-bit RGB

Host Interface
- 6-bit address, 16-bit data
- 4-wire serial

DDR-2 DRAM (DDR667) Support
- 4 x 512Mb (video + OSD)

Powering the new digital home

Set-Top Boxes
Consumer Electronics
AV Networks
Home Control
Commercial Systems
### GF9450

**10-bit Dual Channel VXP® Video Processor**

#### Target Markets
- AV receivers
- Blu-ray players
- Commercial systems

#### Supported Technologies
- Supports all DTV video and PC graphics formats
- Supports active raster size up to 2048x2048
- High quality motion and speed adaptive deinterlacing
- Multi-tap scaling engine with panoramic scaling and aspect ratio conversion
- Multiple on-screen video display, including picture-in-picture (PIP), picture-on-picture (POP), picture-by-picture (PBP)
- Adaptive 3D noise reduction
- Mosquito noise reduction and block artifact reduction
- Adaptive detail enhancement featuring sharpness and texture enhancement with precise overshoot control
- Adaptive contrast enhancement
- User programmable gamma correction

#### Features
- Two independent channels of VXP® processing
- Provides two flexible 30-bit digital video input ports
- Flexible single or dual pixel digital video output
- Advanced film mode detection and compensation, including support for frame-locked 3:3 (72Hz) and 2:2 (48Hz) output cadence generation
- Frame rate conversion with full support for genlock and frame-lock operation

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**Video Input Formats**
- 8-/10-bit RGB or 4:2:2/4:4:4 YCbCr
- 16-/20-bit RGB (G, BR) or 4:2:2/4:4:4 YCbCr (Y, Cb, Cr)
- 24-/30-bit 4:4:4 YCbCr (Y, Cb, Cr)

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- 24-/30-bit 4:4:4 YCbCr (Y, Cb, Cr)

**Host Interface**
- 6-bit address, 16-bit data
- 4-wire serial

**DDR-2 DRAM (DDR667) Support**
- 4 x 512Mb (video + OSD)
In-Home Networking

G.hn is a set of ITU-T Recommendations defining the next generation home AV network standard used for transferring Internet Protocol (IP) content across existing coax cables, phone wires, and AC power wires in the home. Sigma Designs, one of the leading proponents of G.hn, is considered one of the leaders in G.hn due to our extensive and proven expertise in deploying HomePNA® and HomePlug® AV solutions that use existing coaxial cables, phone lines, and AC powerlines in the home. G.hn is capable of data rates up to 1 Gbps per medium (coax, phone, power).

HomePNA® (HPNA) is the marketing name for the ITU-T G.9954 standard, and is a leading standard and technology used for transferring Internet Protocol (IP) content across existing coax cables or phone wires in the home. It is capable of data rates up to 320 Mbps (payload rates up to 200 Mbps).

HomePlug® AV (HPAV) is a leading standard and technology used for transferring Internet Protocol (IP) content across existing AC power wires in the home. HomePlug® AV is capable of data rates up to 200 Mbps (payload rates up to 110 Mbps).

G.hn Features
- PHY rate up to 1 Gbps per medium (coax, phone, power); up to 3 Gbps aggregated over all media
- Every in-home coax, phone, and power outlet can be a home AV network connection
- G.hn MIMO over power line - enables usage of power line as a multiple input multiple output (MIMO) channel, thus extending coverage, improving the network’s immunity to noise and delivering higher throughput
- Optimized for IPTV and multicast systems for video and audio traffic
- Plug & Play solution, self-install over all three media
- Supports HomePNA™ 3.1 (ITU-T G.9954 standard)
- Supports simultaneous connection to multiple media for optimal coverage and throughput

HomePNA® Features
- Every in-home coax or phone jack can be a home AV network connection
- Payload rates up to 200 Mbps over coax, 140 Mbps over phone wires
- Used by more than 40 service providers globally
- Four out of the top five North American telcos deploying IPTV have selected HomePNA®

HomePlug® AV Features
- Every in-home AC power outlet can be a home AV network connection
- ClearPath™ technology for improved AC powerline performance
- Payload rates up to 110 Mbps
- 1152 channels enables a highly customizable solution to maximize performance in different environments
CG5200 Series

G.hn chipsets, self install home entertainment networks over all wires, coax, phoiline and power line

Target Markets
- Connected TVs
- Set-top boxes, thin clients and Consumer electronics products
- Residential gateways (RG)
- Optical network terminals (ONTs)
- Home audio and home theater systems
- Network-attached storage devices (NAS)
- IP cameras
- PCs
- Video game consoles
- VoIP adaptors
- Ethernet to G.hn bridges
- G.hn to Z-Wave® bridges

Benefits
- Self-install even by a novice customer, no need for professional installation
- Compliant with ITU-T G.9954
- Guaranteed reliable whole home coverage even in homes with thick walls and multiple floors. Increased customer satisfaction and reduced maintenance expenditures
- Consistent user experience and improved immunity to interference for reliable HD picture quality
- Simple management, unified set of APIs, management and diagnostic tools for all media
- No need to hold double inventory; the same solution can support all media
- No need to run new wires; G.hn operates over existing power line, coax and phone line.
- Instantly secure the home network without the hassle of SSID and other cumbersome mechanisms
- Enables fast and cost-effective troubleshooting via advanced local/remote diagnostic tools
- Easy to embed. Enables all consumer electronics products in a home to be part of the same mesh network
- Enables a smooth and seamless migration from HomePNA™ technology to G.hn on coax

Powering the new digital home

CG5210 CG5220 CG5230

<table>
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<td>Power Line MIMO and SISO</td>
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<tr>
<td>Advanced Power Save</td>
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</table>
CG3210 Chipset
HomePNA® Modem

Features
- PHY layer rate up to 320 Mbps
- Payload rates up to 200 Mbps over standard coax cables and up to 140 Mbps over standard phone wires
- Multi-band operation
- Synchronous MAC
- Guaranteed (parameter) and prioritized QoS
- Complies with ITU-T G.9954, HomePNA® v3.1; meets FCC parts 15 and 68
- Master and Endpoint application support
- MII, TurboMII, PHY host interfaces
- Integrated 10/100 Base-T Ethernet MAC

Benefits
- Coexists with ADSL/ADSL2/ADSL2+, VDSL/VDSL2, ISDN, POTs
- Coexists with terrestrial and satellite TV
- Support for remote and local management and diagnostics
- Field-upgradeable firmware
- Implements complete HomePNA® protocol stack on chip
- Expandable internal packet buffer
- Industrial temperature range
- On-chip filtering reduces hybrid cost
- Low power consumption
- Uses standard Ethernet drivers

Target Markets
- Home AV networks
- Set-top boxes and CE products
- Residential gateways
- Optical network terminals (ONTs)
- Customer premises equipment (CPE)
- Ethernet to HomePNA® v3.1 bridges

Powering the new digital home

Set-Top Boxes  Consumer Electronics  AV Networks  Home Control  Commercial Systems
CG3210M Chipset
HomePNA® Modem for MDUs

Network Features

- Robust operation above 65 dB (over 1,000 meters) end-to-end attenuation (cable & splitters)
- 190 Mbps effective data rate per band
- Point-to-multipoint topology; up to 62 Endpoints per Master per band
- Advanced TDMA, CSMA/CA MAC protocol
- Low latency and jitter
- Advanced guaranteed and prioritized QoS
- Efficient support of broadcast, multicast, unicast, and VLAN routing schemes
- Supports CBR, VBR, and best effort data streams
- Supports IPv6 protocol
- Field-upgradeable firmware

Security Features

- Absolute client to client privacy
- Support AES based encryption
- Advanced device admission & connection control
- Dynamic configuration of clients according to Service Level Agreement (SLA)
- Supports DSLF TR-69
- Local & remote network monitoring and logging tools
- Supports IGMP/MLD snooping and filtering

Typical MDU Master Device Block Diagram

Typical MDU Endpoint Block Diagram

Target Markets

- DSL gateway equipment
- Optical network terminals (ONTs)
- Ethernet to HomePNA® v3.1 bridges for each unit

Benefits

- Enables service providers a fast and easy migration to bi-directional, digital broadband services
- Enables the cost-effective provisioning of advanced Triple-Play services such as IPTV, VOD, VoIP, and Broadband Internet Access
- Creates new revenue opportunities for service providers
- Huge cost savings compared to alternative solutions such as DOCSIS, DSL, and Ethernet cabling
- Speedy deployment - no new wires; uses existing coax wires and splitters, in parallel with existing RF video broadcast services
- Enables self-installation of in-home Endpoints by the consumer

Chipset Features

- Same chipset for Master and Endpoint design
- Built-in MII PHY host interfaces
- Built-in 100 Base-T Ethernet MAC
- Internal packet processor and buffer, no need for external processor
- JTAG IEEE 1149.1 test port
- Industrial temperature range

Powering the new digital home

Set-Top Boxes  Consumer Electronics  AV Networks  Home Control  Commercial Systems
**Benefits**

- Enables service providers a fast and easy migration to bi-directional, digital broadband services
- Enables the cost-effective provisioning of advanced Triple-Play services such as IPTV, VOD, VoIP, and Broadband Internet Access
- Creates new revenue opportunities for service providers
- Huge cost savings compared to alternative solutions such as DOCSIS, DSL, and Ethernet cabling
- Speedy deployment - no new wires; uses existing coax wires and splitters, in parallel with existing RF video broadcast services
- Enables self-installation of in-home Endpoints by the consumer

**Chip Features**

- Based on Fast EoC™ technology
- Single chip for Endpoint design
- Built-in MII PHY host interfaces
- Built-in 100 Base-T Ethernet MAC
- Internal packet processor and buffer, no need for external processor
- JTAG IEEE 1149.1 test port
- Industrial temperature range

**Network Features**

- Robust operation above 73 dB (over 1,000 meters) end-to-end attenuation (cable & splitters)
- 160 Mbps effective data rate per band
- Point-to-multipoint topology; up to 126 Endpoints per Master per band
- Advanced TDMA, CSMA/CA MAC protocol
- Low latency and jitter
- Advanced guaranteed and prioritized QoS
- Efficient support of broadcast, multicast, unicast, and VLAN routing schemes
- Supports CBR, VBR, and best effort data streams
- Supports IPv6 protocol
- Field-upgradeable firmware

**Security Features**

- Absolute client to client privacy
- Support AES based encryption
- Advanced device admission & connection control
- Dynamic configuration of clients according to Service Level Agreement (SLA)
- Supports DSLF TR-69
- Local & remote network monitoring and logging tools
- Supports IGMP/MLD snooping and filtering

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**Powering the new digital home**

- Set-Top Boxes
- Consumer Electronics
- AV Networks
- Home Control
- Commercial Systems
CG2210 Chipset
HomePlug® AV Modem with ClearPath™ Technology

Features
- PHY layer rate up to 200 Mbps
- Implements OFDM, channel adaptation, FEC, noise mitigation schemes
- Supports 1024/256/64/16/8-QAM, QPSK, BPSK, ROBO modulation schemes
- Supports IP multicast for audio and video traffic
- IPv4, IPv6 with IGMP v1, v2, v3 snooping support
- 128-bit AES encryption with key management
- Supports pushbutton-based privacy
- Excellent throughput with a variety of packet sizes in a wide range of environments
- Enhanced Quality of Service (QoS) with programmable classification filters and support for priority based and parameter based QoS
- Device Level QoS with advanced hardware mechanism for managing traffic priority
- Environmentally-friendly technology integrates innovative features for reduced energy consumption
- Up to 90% power reduction in power-save mode
- MII MAC and PHY host interfaces
- Signal quality LED indication
- Well-documented Application Programming Interface (API) for easy product adaptation
- Support for customer specific features
- Remote management and diagnostics for faster installation
- Coexistence with neighboring HomePlug® networks

Target Markets
- Home AV networks
- Set-top boxes and CE products
- Residential gateways
- Optical network terminals (ONTs)
- Customer premises equipment (CPE)
- Ethernet to HomePlug® AV v1.1 bridges

Benefits
- Every in-home AC power outlet can be a home network connection
- Quality of Service (QoS) configuration allows data stream prioritization for specific applications
- Device QoS balances resource usage when services contend for the same resources within a device
- Decreased energy costs through reduction of power consumption when system is inactive
- Remote monitoring and management tools reduce maintenance costs
- LED indicators display system status and enable simple installation
- Optimized software API, enabling quick customization and product differentiation
- Secure home communications at the touch of a button
- ClearPath™ technology enables usage of powerline as a multiple input multiple output (MIMO) channel, thus extending coverage, improving the network’s immunity to noise and delivering a higher throughput
- Supports TR069
- Supports power-save mode; compliant with EuP 2013

Powering the new digital home

Set-Top Boxes  Consumer Electronics  AV Networks  Home Control  Commercial Systems
Our Z-Wave® single-chip wireless technology is ideal for easily adding Z-Wave® control and status capabilities to RF remote controls, set-top boxes, CE products, and home automation, home security monitoring, and home energy management products. Z-Wave® has emerged as the industry standard for wireless home control, with more than 160 manufacturers offering more than 700 Z-Wave®-enabled products.

The wireless mesh network technology automatically routes the RF signal from one Z-Wave® node to the next, around obstacles and radio dead spots, resulting in high reliability and assured whole-home coverage.

The ability to also use the Z-Wave® protocol over IP (Internet Protocol) networks allows Z-wave® enabled products to connect seamlessly using the wireless mesh network, the home network, and the Internet.

For RF remote control applications, Z-Wave® overcomes the line-of-sight limitation of IR, enabling reliable two-way communications and whole-home coverage. Program names, song titles, artist names, channel identification, etc. can now be seen from the remote control.

Z-Wave® allows both manufacturers and consumers the security of knowing that Z-Wave® certified products, regardless of brand, will work together.

Features

- Integration of home, entertainment, security, and energy management control with metadata support
- Seamless interoperability between multiple vendors and applications
- Robust and reliable whole-home coverage through mesh networking
- Z-Wave® protocol over IP (Internet Protocol) networks, such as home network and Internet
- Patented Z-Wave® protocol delivers a complete and highly reliable communication solution, using frame acknowledgement retransmission, collision avoidance, frame checksum check, and sophisticated routing
- Supports unicast, multicast, and broadcast messages
- Low power consumption for multi-year battery life
SD3402
Z-Wave® Wireless Controller for CE and STB Products

Target Markets
- RF/IR remote control
- IPTV and cable set-top boxes that support home security monitoring and home energy management

Benefits
- Integration of home, entertainment, security, and energy management control with metadata support
- Seamless interoperability between multiple vendors and applications
- Robust and reliable whole-home coverage through mesh networking
- Z-Wave® protocol over IP (Internet Protocol) networks, such as home network and Internet
- Supports unicast, multicast, and broadcast messages
- Low power consumption for multi-year battery life

Features
- Integrated CPU and RF transceiver
- IR transmitter
- 64KB OTP, 16KB SRAM, 64B NVRAM
- 1000 DIM step Triac controller
- 4-ch 12-bit rail-to-rail ADC
- Integrated GPIO, SPI, UART, PWM, USB, 88-key matrix scan
- AES 128 security engine
- 4-ch LED controller
- Ultra-low power sleep mode
- 100 kbps data rates, low latency
- Uses frequency bands 779...956 MHz for complete global coverage
- Concurrent multi-channel support reduces external interference
- Superior blocking performance
- Battery monitor and built-in supply regulators
- Power supply: 2.3-3.6V

SD3402
Frequency 779...956 MHz
Program Memory 64 KB OTP
SRAM 16 KB
NVRAM 64 B
GPIO 23
Keyboard Scan 88 keys
UARTs 1
SPI Ports 1
AES Security
IR Transmitter
Data Rate 100 kbps

Z-Wave® CE/STB Controller Selection Guide

Powering the new digital home

Set-Top Boxes  Consumer Electronics  AV Networks  Home Control  Commercial Systems
ZM4102
Z-Wave® Integrated Wireless Module

Target Markets
- Home control
- Home security and monitoring
- Home energy management

Benefits
- Integration of home, entertainment, security, and energy management control with metadata support
- Seamless interoperability between multiple vendors and applications
- Robust and reliable whole-home coverage through mesh networking
- Z-Wave® protocol over IP (Internet Protocol) networks, such as home network and Internet
- Supports unicast, multicast, and broadcast messages
- Low power consumption for multi-year battery life

Features
- ZM3102 pin compatible
- Integrated CPU and RF transceiver
- 64KB OTP, 16KB SRAM, 64B NVRAM
- 1000 DIM step Triac controller
- 4-ch 12-bit rail-to-rail ADC
- Integrated GPIO, SPI, UART, PWM
- AES 128 security engine
- Ultra-low power sleep mode
- 100 kbps data rates, low latency
- Uses frequency bands 779...956 MHz for complete global coverage
- Concurrent multi-channel support reduces external interference
- Superior blocking performance
- Battery monitor and built-in supply regulators
- Power supply: 2.3-3.6V
- 12.5x13.6mm module, 18 pins

Z-Wave® Home Control Module Selection Guide

Powering the new digital home
ZM4101
Z-Wave® Integrated Wireless Module

Target Markets

• Home control
• Home security and monitoring
• Home energy management

Benefits

• Integration of home, entertainment, security, and energy management control with metadata support
• Seamless interoperability between multiple vendors and applications
• Robust and reliable whole-home coverage through mesh networking
• Z-Wave® protocol over IP (Internet Protocol) networks, such as home network and Internet
• Supports unicast, multicast, and broadcast messages
• Low power consumption for multi-year battery life

Features

• Integrated CPU and RF transceiver
• IR generation and learning
• 64KB OTP, 16KB SRAM, 64B NVRAM
• 1000 DIM step Triac controller
• 4-ch 12-bit rail-to-rail ADC
• Integrated GPIO, SPI, UART, PWM, USB, 128-key matrix scan
• AES 128 security engine
• 4-ch LED controller
• Ultra-low power sleep mode
• 100 kbps data rates, low latency
• Uses frequency bands 779…956 MHz for complete global coverage
• Concurrent multi-channel support reduces external interference
• Superior blocking performance
• Battery monitor and built-in supply regulators
• Power supply: 2.3-3.6V
• 8x8mm SiP module, QFN56 form factor

Z-Wave® Home Control Module Selection Guide

<table>
<thead>
<tr>
<th></th>
<th>ZM3102</th>
<th>ZM4101</th>
<th>ZM4102</th>
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<tr>
<td>Frequency</td>
<td>868.40…921.42 MHz</td>
<td>779…956 MHz</td>
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<tr>
<td>Program Memory</td>
<td>32 KB flash</td>
<td>64 KB OTP</td>
<td>64 KB OTP</td>
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<td>USB</td>
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<tr>
<td>IR Learning</td>
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<tr>
<td>Data Rate</td>
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Powering the new digital home

- Set-Top Boxes
- Consumer Electronics
- AV Networks
- Home Control
- Commercial Systems
**ZM3102**

**Z-Wave® Integrated Wireless Module**

### Target Markets
- Home control
- Home security and monitoring
- Home energy management

### Benefits
- Integration of home, entertainment, security, and energy management control with metadata support
- Seamless interoperability between multiple vendors and applications
- Robust and reliable whole-home coverage through mesh networking
- Z-Wave® protocol over IP (Internet Protocol) networks, such as home network and Internet
- Supports unicast, multicast, and broadcast messages
- Low power consumption for multi-year battery life

### Features
- Integrated CPU and RF transceiver
- 32KB flash, 2KB SRAM
- Triac controller
- 4-ch 12-bit rail-to-rail ADC
- Integrated GPIO, SPI, UART, PWM
- Ultra-low power sleep mode
- 40 kbps data rates, low latency
- Uses the unlicensed Short-Range Device (SRD) frequency bands
- Battery monitor and built-in supply regulators
- Power supply: 2.1-3.6V
- 12.5x13.6mm module, 18 pins

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**Z-Wave® Home Control Module Selection Guide**

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**Powering the new digital home**

### Diagram

[Diagram of ZM3102 module]

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**Set-Top Boxes**

**Consumer Electronics**

**AV Networks**

**Home Control**

**Commercial Systems**
Development Kits

SMP8910 Series Media Processors

Vantage 8910
SMP8910 Dev. Kit

Vantage 8670
SMP8670 Dev. Kit

Vantage 8672
SMP8672 Dev. Kit

Vantage 8674
SMP8674 Dev. Kit

SMP8670 Series Media Processors

Vantage 8670
SMP8670 Dev. Kit

Vantage 8672
SMP8672 Dev. Kit

Vantage 8674
SMP8674 Dev. Kit

Hybrid STB 8674
SMP8674 Hybrid Dev. Kit

SMP8680 Series Media Processors

Vantage 8680
SMP8680 Dev. Kit

Vantage 8682
SMP8682 Dev. Kit

SMP8674 Miracast™
Receiver Reference Design
Development Kits

SMP8650 Series Media Processors

Vantage 8656
SMP8656 Dev. Kit

Vantage 8654
SMP8654 Dev. Kit

Vantage 8652
SMP8652 Dev. Kit

SMP8640 Series Media Processors

Vantage 8646
SMP8646 Dev. Kit

Vantage 8644
SMP8644 Dev. Kit

VXP®

RDK9452
GF9452 Reference Design Kit

RDK9450
GF9450 Reference Design Kit

HomePNA®

CG3210HLEC
HomePNA® Over Coax

CG3210HLEP
HomePNA® Over Phone

CG3210MLEC
HomePNA® MDU Access

CG3310MLEC
HomePNA® MDU Access
Development Kits

HomePlug® AV

CG2110LEPL
HomePlug® AV

Z-Wave®

Z-Wave® Home Control Development Kit

H.264 Encoders

PL330 Mini-PCIe Card Evaluation Kit

PL330 USB Capture Dongle Evaluation Kit