

IMX6 GPU/VPU

[imx6](#), [codecs](#), [gpu](#), [vpu](#), [vivante](#), [gc880](#), [gc2000](#)

Description

Vivante's fourth generation (Gen 4) Vega ScalarMorphic architecture provides a foundation for our newest series of low-power, high-performance, silicon-efficient GPGPU cores. Gen 4 products support the most advanced GPGPU APIs and profiles for leading applications that take full advantage of GPU Compute for vision processing, gesture processing, Advanced Driver Assistance Systems, Augmented Reality, and much more. These cores are available as GPGPU only cores targeting high performance Compute applications that do not require any 3D functionality (CC or Compute Cores) or as part of our standard 3D products that give full flexibility to application developers and product offerings.

(source: vivantecorp.com)

Comparison Table

Graphics Processing Unit	Vivante GC880	Vivante GC2000
3D Graphics Support	OpenGL ES 1.1/2.0	OpenGL ES 1.1/2.0, OpenCL 1.1E
HW Video Dec/Enc	Multi- Format	Multi- Format

Supported Codecs

All imx6 MicroSoms have the same Video Processing Unit, which supports decoding the following codecs in hardware per Table 9-8 of the i.MX 6 Solo/DualLite Applications Processor Reference Manual and Table 9-8 of the i.MX 6 Dual/Quad Application Processor Reference Manual:

Dec/Enc	Standard	Profile	Resolution	Bitrate	Comments
Decoder	MPEG-2	Main-High	1080 i/p, 30fps	50 Mbps	1080p+SD at 30fps, 720p60
Decoder	MPEG4/XviD	SP/ASP	1080 i/p, 30fps	40 Mbps	—
Decoder	H.263	P0/P3	16CIF, 30fps	20 Mbps	—
Decoder	H.264	BP/CBP/MP/HP	1080 i/p, 30fps	50 Mbps	1080p+SD at 30fps, 720p60
Decoder	H.264-MVC	BP/MP/HP	720p, 30fps	—	—
Decoder	VC1	SP/MP/AP	1080 i/p, 30fps	45 Mbps	1080p+SD at 30fps, 720p60
Decoder	DivX	3/4/5/6	1090 i/p, 30fps	20 Mbps	—
Decoder	On2 VP8	—	720p, 30fps	20 Mbps	—
Decoder	MJPEG	Baseline	8192 x 8192	120 Mpixel/sec	Perf shown at 4:4:4 format
Decoder	RV	8/9/10	1080p, 30fps	40 Mbps	—
Decoder	On2 VP6	—	720p, 30fps	20 Mbps	—
Decoder	Theora	—	720p, 30fps	20 Mbps	—
Decoder	AVS	Jizhun	1080 i/p, 30fps	40 Mbps	—
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Encoder	MPEG4	Simple	720p, 30fps	—	VPU can generate higher bitrate than the maximum specified by the corresponding standard

Dec/Enc	Standard	Profile	Resolution	Bitrate	Comments
Encoder	H.263	P0/P3	4CIF, 30fps	8 Mbps	VPU can generate higher bitrate than the maximum specified by the corresponding standard
Encoder	H.264	BP/CBP	1080p, 30fps	14 Mbps	VPU can generate higher bitrate than the maximum specified by the corresponding standard
Encoder	MJPEG	Baseline	8192 x 8192	160 Mpixel/sec	Perf shown at 4:2:2 format

A note from the Reference manual states: "RealNetworks video codec is disabled by default on i.MX 6 series processors. Please contact your FSL sales representative for more details."

External Links and References

- [IMX6 Software Development/Drivers](#)
- [IMX6 MicroSom Documents](#)
- [SolidRun MicroSom Website](#)
- [Freescale i.MX6 Series Documentation Website](#)
- vivantecorp.com

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