



# Pixel Xstream Benchmarks

The data below show that Pixel Xstream consistently out-performs the leading software transcoders on the market by 20% to 100%. The data are collected with Ipera's intelligent video enhancement turned **ON** while our competitors' data typically do **NOT** include enhancement of any kind. We strongly encourage you to do your own testing and compare against competing products to confirm this for yourself.

**Test Platform<sup>1</sup>** 2 x Intel Xeon E5450 3.16 GHz CPUs with 2 x 6MB cache/CPU; 4GB RAM; 1 x 7200rpm SATA HDD; Window Server 2003 Standard, version SP3

**Application** Pixel Xstream 1.1 with Video Enhancement always set to Auto-Configure

This table shows how fast Pixel Xstream transcodes from each of 4 different input video stream formats into common low or medium bit-rate output formats with video enhancement turned on. The input formats listed across the top of the table are a) standard definition **DV-AVI** from a DV25 camcorder, b) interlaced **DVD VOB**, c) standard definition broadcast TV (**SDTV**) in a MPEG-2 transport stream at 5 Mbps (progressive), and d) high definition broadcast TV (**HDTV**) in a MPEG-2 transport stream at 10 Mbps (interlaced). All of the input streams are at D1 resolution and 29.97 frames per second and are between 5 minutes and 15 minutes duration. Each input file was transcoded individually to each output file.

The performance data are displayed as a factor of real time. This is calculated by dividing the input file duration by the transcoding duration. For example, if Pixel Xstream took 5 minutes to complete the transcoding of 10 minutes of input video content, the benchmark data will be displayed as 2.00 (10 minutes / 5 minutes = transcoding at 2.00 times faster than real time).

Target output settings			DV AVI 25 Mbps 720x480x29.97	DVD VOB 5 Mbps 720x480x29.97	SDTV (D1) 5 Mbps 704x480x29.97	HDTV (1080i) 10 Mbps 1920x1080x29.97
QVGA 320 x 240 29.97fps	H.264	VBR@180kbps	8.26	7.68	12.09	1.44
		CBR@128kbps <sup>2</sup>	12.62	12.58	13.72	2.03
		CBR@180kbps	7.81	7.65	12.09	1.43
	WMV	CBR@700kbps	7.75	6.99	10.00	1.42
		CBR@350kbps	3.81	4.25	4.88	1.15
		CBR@350kbps <sup>3</sup>	4.55	5.01	5.79	1.16
VGA 640 x 480 29.97fps	H.264	CBR@700kbps	3.58	4.04	4.65	1.14
		VBR@700kbps	5.13	4.48	5.86	1.39
		CBR@700kbps	5.10	4.48	5.93	1.42
	WMV	CBR@1800kbps	4.12	3.92	5.24	1.40
		CBR@1400kbps	1.03	1.15	1.36	1.03
		CBR@700kbps	1.07	1.22	1.43	1.02
SD/D1 720 x 480 29.97fps	H.264	CBR@700kbps <sup>4</sup>	1.28	1.41	1.66	1.06
		VBR@800kbps	5.47	5.14	5.67	1.51
		CBR@800kbps	5.55	5.17	5.80	1.45
	WMV	CBR@2000kbps	4.31	4.49	5.18	1.46
		CBR@1500kbps	0.92	1.04	1.21	1.02
		CBR@2000kbps	0.88	1.01	1.18	1.01

Pixel Xstream has much lower computation requirements than most products in its class. The recommended system configuration is

**CPU:** Intel Core 2 Duo or compatible @ 2.0 GHz

**RAM:** 2GB

**OS:** Any of the following Windows versions - XP (SP2 or later), Vista (except Home Basic) Server 2003, Server 2008

### Definitions:

QVGA: display resolution is 320 pixels wide by 240 pixels high

VGA: display resolution is 640 pixels wide by 480 pixels high

SD/D1 (standard definition D1): display resolution is 720 pixels wide by 480 pixels high

CBR@xxxkbps: Single pass constant bit-rate encoding at xxx kbps

VBR@xxxkbps: Variable bit-rate encoding at an average rate of xxx kbps

Mbps: mega bits per second

kbps: kilo bits per second

fps: frames per second

### Notes

- 1: Many factors including CPU, L2 Cache, FSB speed, motherboard, other software installed and running concurrently on the machine, and the content used for testing (bit-rate, resolution, frame-rate, motion and texture in the content) all affect speed. Actual speed may vary.
- 2: This output is representative of a typical 3GPP file for mobile video applications encoded at 15 frames per second
- 3: This output is encoded at 24 frames per second
- 4: This output is encoded at 25 frames per second



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