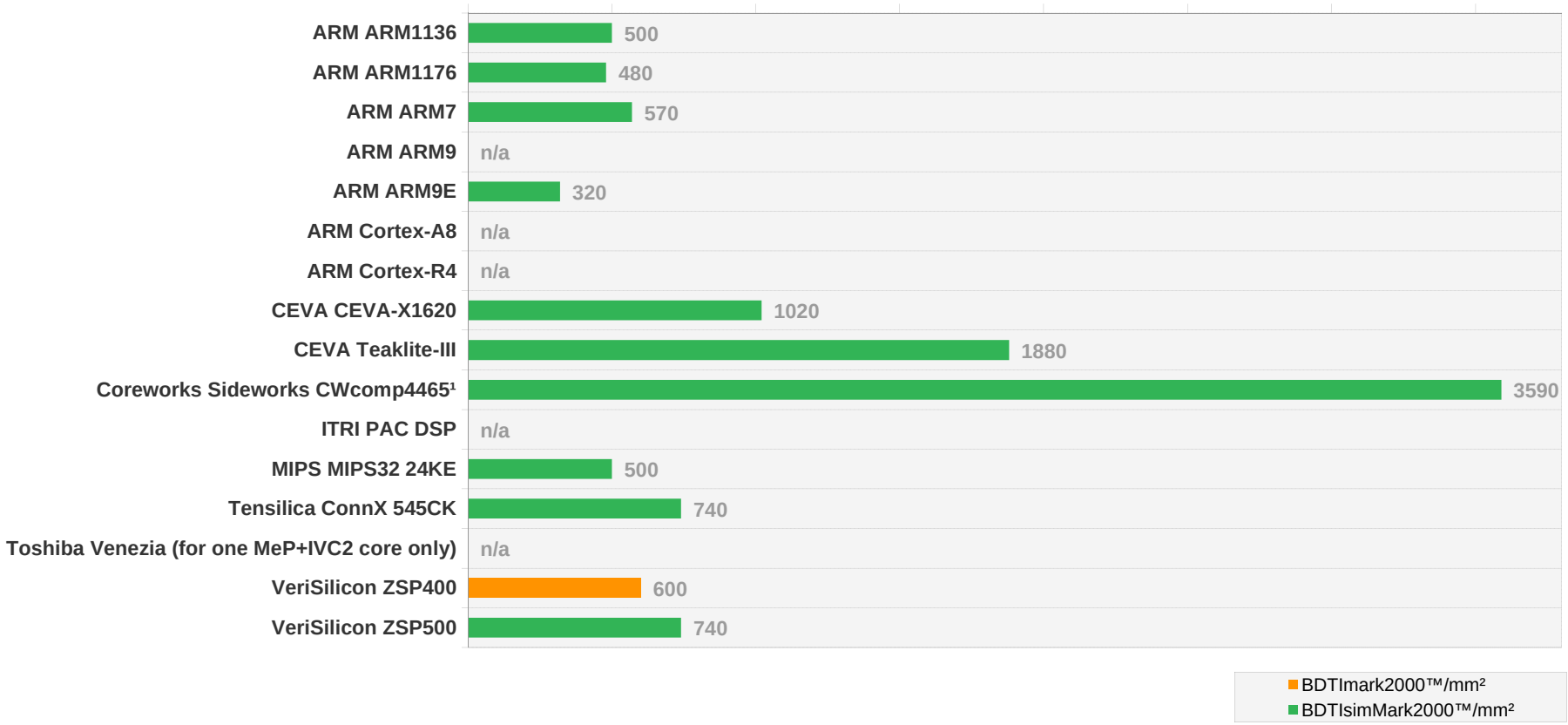
Speed per Square Milimeter Ratios for Fixed-Point Licensable Cores (130 nm)

Updated September 2009

Contact BDTI for authorization to publish scores.

See page 3 for details.



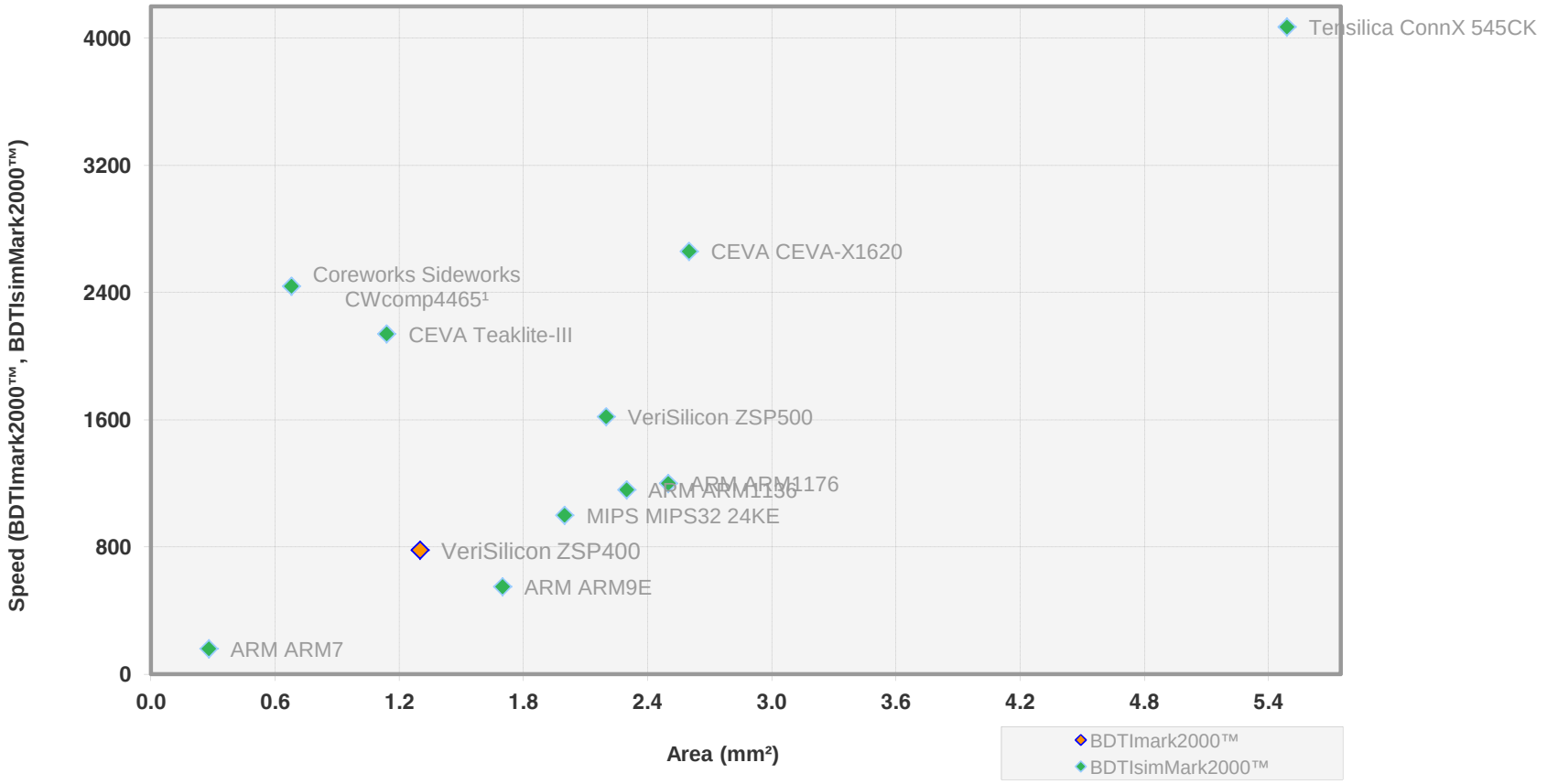
All processors benchmarked with 16-bit fixed-point data. All scores use worst-case clock speeds for the TSMC CL013G process and ARM Artisan SAGE-X library. Vendors can choose different speed/area/power trade-offs; to understand the trade-offs, please view all BDTI metrics for each core. BDTIsimMark2000™ scores may be based on projected clock speeds. For information, see www.BDTI.com/Services/Benchmarks.

[1]Coreworks scores include both a customized SideWorks DSP engine and the FireWorks 32-bit RISC processor. The SideWorks core used to implement the BDTI DSP Kernel Benchmarks includes four 16-bit multiplier units, six 32-bit ALUs, five shift units, six data multiplexing units, two data de-multiplexing units, two bit-reverse units, a bit unpack unit, and 6K bytes of memory. Different versions of the SideWorks core will yield different performance, power consumption, and die size figures than those reported here.

Speed vs. Area for Fixed-Point Licensable Cores (130 nm)

Updated September 2009

See page 3 for details.



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Speed vs. Area for Fixed-Point Licensable Cores (130 nm)

Updated September 2009

Processor Family	Clock Rate	BDTImark2000™, *BDTIsimMark2000™*	Die Area	BDTImark2000™/mm², *BDTIsimMark2000™/mm²*
ARM ARM1136	330	*1160*	2.3 mm²	*500*
ARM ARM1176	335	*1200*	*2.5 mm²*	*480*
ARM ARM7	145	*160*	0.28 mm²	*570*
ARM ARM9	255	*320*	*n/a*	*n/a*
ARM ARM9E	265	*550*	1.7 mm²	*320*
ARM Cortex-A8	*n/a*	*n/a*	*n/a*	*n/a*
ARM Cortex-R4	*n/a*	*n/a*	*n/a*	*n/a*
CEVA CEVA-X1620	330	*2660*	2.6 mm²	*1020*
CEVA Teaklite-III	335	*2140*	1.14 mm²	*1880*
Coreworks Sideworks CWcomp4465[1]	209	*2440*	0.68 mm²	*3590*
ITRI PAC DSP	*n/a*	*n/a*	*n/a*	*n/a*
MIPS MIPS32 24KE	335	*1000*	2 mm²	*500*
Tensilica ConnX 545CK	245	*4070*	5.49 mm²	*740*
Toshiba Venezia (for one MeP+IVC2 core only)	*n/a*	*n/a*	n/a	*n/a*
VeriSilicon ZSP400	165	*780*	1.3 mm²	**600**
VeriSilicon ZSP500	205	*1620*	2.2 mm²	*740*

All processors benchmarked with 16-bit fixed-point data. All scores use worst-case clock speeds for the TSMC CL013G process and ARM Artisan SAGE-X library. Vendors can choose different speed/area/power trade-offs; to understand the trade-offs, please view all BDTI metrics for each core. BDTIsimMark2000™ scores may be based on projected clock speeds. For information, see www.BDTI.com/Services/Benchmarks.

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Clock rate: Clock speeds assume worst-case process, voltage, and temperature variations

Die area: Die area for core only; does not include area for caches or other memories

BDTImark2000™, BDTIsimMark2000™: The BDTImark2000™ and BDTIsimMark2000™ provide a summary measure of signal processing speed. BDTIsimMark2000™ scores may be based on projected clock speeds. For more info and scores see www.BDTI.com/Services/Benchmarks.