

TABLE 2 RESULTS OF RUNNING EACH KERNEL IN TESTBENCH SUITE

Benchmark	GCC autovectorization	GCC autovectorization FDPR-Pro	FDPR gain (%)	GCC	Autovectorization gain (%)
Autocorrelation/pulse	2,264,526	2,285,207	1	2,649,007	-15
Autocorrelation/sine	114,943	117,647	2	23,669	386
Autocorrelation/speech	107,527	110,867	3	24,691	335
Convolutional encoder/xk5r2dt	696,864	698,813	0	48,309	1343
Convolutional encoder/xk4r2dt	700,525	763,505	9	54,644	1182
Convolutional encoder/xk3r2dt	1,028,560	1,096,191	7	63,694	1515
Fixed-point bit allocation/typical	11,835	12,063	2	10,000	18
Fixed-point bit allocation/step	110,538	184,502	67	163,044	-32
Fixed-point bit allocation/pent	17,410	17,718	2	15,000	16
FFT/IFFT/pulse	63,966	65,076	2	60,976	5
FFT/IFFT/spn	63,966	65,076	2	60,976	5
FFT/IFFT/sine	63,966	65,076	2	60,976	5
Viterbi decoder/get	40,236	41,459	3	9740	313
Viterbi decoder/toggle	40,226	41,448	3	10,638	278
Viterbi decoder/ones	40,237	41,460	3	11,450	251
Viterbi decoder/zeros	40,170	41,277	3	14,286	181
Telemark	133.8	141.8	6	49.2	172