CUDA

This test merges 32 MPix using the OVER composition with a mask present. The data of the merged pixels is random, so no fast paths are used.

The total amount of data:
src, dst – buffers of 122 MiB (=128MB)
mask – buffer of 30.5 MiB (=32MB)

Integer Math (old) – default Krita implementation of Composite Over
AVX (no Vc) – coded on intrinsics AXV implementation that doesn't unswizzle color channels
AVX (no Vc), unrolled loops – every two iterations of the loop are unrolled, so it processes 512 bit per iteration
AVX (Vc) – Vc version of the composite that unswizzles color channels before processing
AVX (Vc), unrolled loops – 512 bit per iteration
CUDA – cuda implementation of the composite
CUDA (dry run) – copies src, dst and mask (all in uint8) to GPU memory, then copies dst back. No composition is done.
Memcpy – direct copy of 122 MiB from src to dst

Intel Core i7-2600 + NVIDIA GT610 (48 CUDA cores)							
Integer Math (old), ms	AVX (no Vc), ms	AVX (no Vc), unrolled loops, ms	AVX (Vc), ms	AVX (Vc), unrolled loops, ms	CUDA, ms	CUDA (dry run), no calculations, only data transfers CPU ↔ GPU, ms	Memcpy, ms
315	152	115	147	141	139	75	14
Scaled to a Memcpy:							
22.50	10.86	8.21	10.50	10.07	9.93	5.36	1