

The Vector, Signal and Image Processing Library (VSIPL) is a standardised set of functions and an open application programming interface (API) that provides portable computational middleware for signal and image processing applications. The CSIPL library provides the same functionality as our VSIPL library, but with a standard C-style API for those who do not need or want to use VSIPL.

Scope of the CSIPL API:

- support functions
- scalar functions (mathematical functions, complex arithmetic)
- elementwise functions (mathematical functions, arithmetic, comparison, selection, random number generation)
- signal processing functions (FFT, windows, filters, convolution, correlation, histogram)
- linear algebra functions: (vector and matrix products, matrix decompositions, equation solvers).

We provide highly optimised CSIPL libraries for:

- **MIPS 64bit**
- **ARM**
- **PPC T2080**
- **PPC T4240**
- **Intel AVX512**
- **Intel Phi**
- **Intel AVX2**
- **Intel AVX**
- **Intel SSE**
- **MIPS**
- **G4** (PowerPC-AltiVec)

More information on these can be found [here](#) .

The CSIPL API includes definitions of:

- **Core Lite**
- **Core**
- **Full**
- **Double Precision Full**

Reference Manuals, Quick Reference Guides and Content Lists are all available below:

API	Contents	Manual	Quick Reference	List
CSIPL	Core Lite			
		Reference Manual		
		Quick Reference Guide		
		List of Contents		
CSIPL	Core			
		Reference Manual		
		Quick Reference Guide		
		List of Contents		
CSIPL	Full	Reference Manual	Quick Reference Guide	
		List of Contents		
CSIPL	Double Precision Full	Reference Manual	Quick Reference Guide	
		List of Contents		

Multi-threaded versions for shared memory systems are also available - the parallelism is completely transparent to the end-user and no changes are required to existing CSIPL code.

The performance of each CSIPL routine is essentially the same as that of the corresponding VSIPL routine.

A demo version of CSIPL is available [here](#) . You need to be registered to access this page.