Table 10.8: Significant DSP-based analog ATE matrix operations.

Description	LTX Cadence code
Matrix add/subtract	`R = D ± U`
Root mean square	`V =` **rms** `(X)`
Integer-floating conversion	`K =` **integer** `(S)`
Boolean logic operations	`L = J` **xor** `K`
Set all matrix elements to a constant 1.026	`X = 1.026`
Adding a constant 1.026 to all matrix elements	`W = 1.026 + W`
Indexing operations – Sum of 31st to 220th positions	`S =` **sum** `(X [31:220] )`
Fourier voltmeter	`Y =` **fvm** `(data, no_samples, harmonic)`
Returns a 2-element array containing the cosine and sine of the *harmonic* of the *data* containing *no_samples*	
Discrete Fourier transform	`Y =` **dft** `(result, samples, test_tone_freq, sampling_freq, no_harmonics_desired)`
result [1]: Total signal RMS $\times\sqrt{2}$ *result* [2]: Non-harmonic RMS $\times\sqrt{2}$ *result* [3]: DC Voltage *result* [4]: Peak Amplitude 1st harmonic of test tone F_t *result* [5]: Peak Amplitude sine of 1st harmonic *result* [6]: Peak Amplitude cosine of 1st harmonic *result* [7]: Peak Amplitude 2nd harmonic of test tone F_t *result* [8]: Peak Amplitude sine of 2nd harmonic *result* [9]: Peak Amplitude cosine of 2nd harmonic ...	
Fast Fourier transform	`freq_domain =` **fft** `(time_domain)`
freq_domain [1]: DC component of *time_domain* *freq_domain* [2]: cosine component at frequency $F_s/2$ of *time_domain* *freq_domain* [3]: cosine component of multiples of Δ of *time_domain* *freq_domain* [4]: sine component of multiples of Δ of *time_domain* ...	
Inverse FFT	`T =` **inverse_fft** `(F)`
Magnitude	`Y =` **mag_fft** `(X)`
Power spectrum	`power_results =` **power_fft** `(time_domain)`
Phase	`polar_coord =` **polar** `(`**fft** `(samples))`
Converts an array of cosine-sine pairs into amplitude-angle data	
μ-law CODEC encoding	`array1 =` **mucode** `(array2)`
μ-law CODEC decoding	`array1 =` **mudec** `(array2)`
A-law CODEC encoding	`array1 =` **acode** `(array2)`
A-law CODEC decoding	`array1 =` **adec** `(array2)`
Normalized correlation	`I =` **correlation** `(samples_1, samples_2)`