

Digital Control Loop Designer SDK

z-Domain Configuration Window



Version History

Version	Date	Comment
v0.9.0.23	07/26/18	Initial release
v0.9.0.25	07/27/18	Bug Fixes/Features
	Bug Fix	Modified the data structure element ptrADCTriggerOffset, which was a pointer to a 16-bit variable to ADCTriggerOffset, which is now a true 16-bit value
	Feature	internal, absolute path information used to work with internal resource files have been changed to become relative paths. (performance improvement)
v0.9.0.32	08/19/18	Bug Fixes/Features
	Bugfix	variable declaration in the header file for fast floating-point scaling created conflicts
	Bugfix	code generation of register save/restore instructions added to assembly code, where the status register bit was always added, regardless of the option setting
	Bugfix	gain folding upwards instead of dropping into the Nyquist abyss due to unresolved inversion in the conversion equation
	Feature	Bode plot export now supports selection of s-domain and z-domain transfer function
	Feature	Files can now directly be opened by a double-click on a project file, however the file association is not properly set during installation or will not be present when you use a ThumbDrive version. under these circumstances, right-click on a *.dclD project file in Windows Explorer and choose the DCLD.exe application as "Open With..." default target.
v0.9.0.33	09/10/18	modification
		MPLAB XC16 v1.35 Linker crashed occasionally when a C-code and assembly source file have the same name. Now the generated assembly library gets the extension "xxx_asm.s" by default
		After startup the generator target path in source file windows shows the filename. As this is not required (it's a directory path only) these have been removed.
v0.9.0.34	09/19/18	Features
	Feature	code generation in previous versions was acknowledged by a simple message box claiming that all files were generated successfully. Now a list of all files is shown indicating which files have been generated or skipped in accordance with user settings.
	Feature	file "nnpz16b.h" will always be generated when selected. The auto-deselect feature for this generic file was removed on request.
v0.9.0.35	09/24/18	bug fixes
	Bugfix	added exception handlers to calculation routines to handle math errors like divide-by-zero or multiply-by-infinity



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	Bugfix	added status bar output when entered numbers result in non-processible result
v0.9.0.36	09/29/18	bug fixes/features
	Feature	added warning bar to source code windows to indicate when pole & zero locations have been changed and a code generation process is pending/has not been performed yet
	Feature	added debugging information about operating system, hardware and regional settings, which is printed to the output window at startup
	Bugfix	resolved a bug with the value of the input gain, which resulted in a wrong value when regional settings of decimal point and grouping letter differed from generic English settings
	Bugfix	optimized startup behavior and solved occasional problems with invisible controls (pole and zero entry boxes)
v0.9.0.38	09/29/18	bug fixes/features
	Feature	changed the Copy Coefficient Table To Clipboard feature. It now copies a table in the form of the table displayed below the Bode plot with columns separated with tabs to be directly pasted in MS Excel
	Feature	added scaled frequency entry. Frequencies can now be entered in the form e.g. xxxk for kHz. Supported scaling letters: T=Tera, G=Giga, k=kilo, m=milli, u=micro, n=nano, p=piko, f=femto
	Bugfix	Updated references for code-highlighting libraries preventing machine-dependent .net version conflicts when opening the application.
v0.9.0.39	09/30/18	Performance optimization
		minor internal code execution optimization without visible impact to the user
v0.9.0.40	10/01/18	features
	Feature	added a tool bar to enhance user experience
v0.9.0.44	10/02/18	bug fixes/features
	Feature	added a progress bar function to the status bar (lower edge of the main window) to indicate activity during long processes such as code generation
	Bugfix	replaced internal components to stay compatible with earlier versions of the Windows .net framework. This helped to resolve issues with setup programs and especially the thumb-drive version without installation process
v0.9.0.45	10/02/18	major feature change
		The input gain setting will not affect the coefficient generation anymore. It now only adjusts the transfer function results so that results are correctly representing the physical system. Any decisions on gain adjustments do now have to be made by the user.
v0.9.0.46	10/03/18	features
	Feature	The right side of the main window got a new tab showing standardized block diagrams, z-transform equations and flow charts of the selected controller type (read only)

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	Feature	The timing chart got a new analysis value indicating the expected CPU load, depending on selected code features, CPU performance and sampling frequency
v0.9.0.47	10/04/18	feature change
		there is a new checkbox allowing the selection of internal Input Gain Normalization. When the input gain is set to non-"1" values and the normalization is enabled, the control loop gain will be changed to compensate the input gain variation. When this option is disabled (default) then the gain in the bode chart will have an offset and coefficients won't be affected. Preparation for bi-directional feedback signal scaling (not enabled yet)
v0.9.0.48	10/05/18	bugfix/feature enhancement
	Bugfix	"Save" button remained disabled when parameters were changed under some conditions.
	Feature	Progress bar in the lower right corner of the status bar indicating loading/saving/code generation processes got a label
v0.9.0.49	10/05/18	bugfix
	Bugfix	Code Generator Update warning within Timing Chart Tab was not functional
	Bugfix	Timing results table was overlapping on some screens. These items have been re-positioned.
v0.9.0.50	11/09/18	bugfix
	Bugfix	When opening DCLD by double-click on a configuration file, transfer function parameters may not get set correctly. This issue is now resolved.
v0.9.0.51	11/11/18	features
	Feature	Anti-windup settings now support soft desaturation where the most significant error in the error history array is reset to zero (no error saturation)
	Feature	Anti-Windup saturation flag bits are now reset automatically by the controller code library. Please note: Code generation of anti-windup in assembly file has changed. Please make sure the auto-reset of the saturation flag bits does not create conflicts in diagnostics engines or fault handlers.
v0.9.0.52	11/14/18	features
	Feature	CPU load calculation result in Timing view seems to be misunderstood sometimes. CPU load is only created when the MCU executes code and therefore the only value of the sampling frequency is of interest. This value, however, is adjusted outside the Timing window under control parameters.
v0.9.0.53	11/28/18	features



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	Feature	The source code file path defining the directory in which generated code files will be placed, now supports relative file paths to ease the use when moving/exchanging MPLAB X projects or when copying DCLD config files to new projects.
v0.9.0.54	11/29/18	bugfix
	Bugfix	The relative/absolute path translators introduced in version 0.9.0.53 generated file paths with double backslashes under certain circumstances. This bug has been fixed in this release.
v0.9.0.55	12/13/18	bugfix
	Bugfix	Wrong s-domain transfer function in the Block Diagram View was replaced with the correct equation.
v0.9.0.58	04/17/19	feature update
	Feature	Feedback input offset is now supported by enabling the "Bi-directional Feedback" option on the 'Controller' tab. This will add lines to the assembly library subtracting a user defined value from the most recent input value.
	Feature	Adding file location to the #include "xxx" preprocessor declaration in C-source and C-header files is now possible by selecting "Add file location in generated code #include path" option on the individual code generator tab

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