

Title: What is the memory allocation for the MPiec Controllers?

Product(s): MP3200iec, MP2300iec, MP2600iec, MP3300iec, Sigma-7Siec

Doc. No. MTN-9GZ6HP

The following charts indicate the memory allocation for the MPiec Series Controllers. This can be found in the MotionWorks IEC Configuration Help File, Section 4.

Physical Memory	MP2600iec	Sigma7-Siec	MP2300Siec	MP2310iec	MP3200iec	MP3300iec (400MHz)	MP3300iec (800MHz)	MP3300iec (1.2 GHz)	Notes
Size of FLASH	8 MB	8 MB	8 MB	8 MB	40 MB	48 MB	48 MB	48 MB	
Size of static RAM memory (battery backed up)	0.5 MB	0.0 MB	0.5 MB	2 MB	8 MB	4 MB	8MB	8MB	Sigma7-Siec does not support battery backed memory
Size of dynamic RAM memory (cleared at power up)	32 MB	32 MB	32 MB	32 MB	128 MB	256 MB	256 MB	256 MB	
FLASH Allocation:									
Firmware and system files.	4.5 MB	4.5 MB	4.5 MB	4.5 MB	8 MB *	8 MB x2 **	8 MB x2 **	8 MB x2 **	See notes on MP3200isec and MP3300iec below.
Flash file system for user files.	3.5 MB (1.4 MB)	3.5 MB (1.4 MB)	3.5 MB	3.5 MB	32 MB (10MB)	32 MB (10MB)	32 MB (10MB)	32 MB (10MB)	() = maximum bootproject size. Other files can include source code and user data.
Static RAM Allocation: (Battery backed memory)									
System/Reserved	34 KB	Not Supported	34 KB	34 KB	1664 KB	640 KB	640 KB	640 KB	
Modbus	34 KB		34 KB	34 KB	64 KB	64 KB	64 KB	64 KB	When MPiec is configured as a Server, the Modbus inputs can be retained
Axis Data	56 KB		60 KB	60 KB	64 KB	64 KB	64 KB	64 KB	Absolute Encoder Offsets
Alarm History	32 KB		32 KB	32 KB	256 KB	256 KB	256 KB	256 KB	As reported in web server
Retained Data	352 KB		352 KB	951 KB	6 MB	3 MB	7 MB	7 MB	Global variables with 'Retain' checkbox checked
NOTE: The effective Retained Data memory area is divided by two to support the 'Download Changes' feature. (i.e. Up to 176 KB can be allocated on an MP2300Siec)									

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Dynamic RAM Allocation:									
System	13 MB	13 MB	13 MB	13 MB	32 MB	32 MB	32 MB	32 MB	Firmware
Ram file system	4 MB	4 MB	4 MB	4 MB	24 MB	24 MB	24 MB	24 MB	Ram disk file system
IEC 61131 Application	2.3 MB	2.3 MB	3.5 MB	3.5 MB	29 MB	57 MB	57 MB	57 MB	Code & Data
Cam Tables	7.5 MB	7.5 MB	7.5 MB	7.5 MB	20 MB	20 MB	20 MB	20 MB	Running cam tables transferred to the motion engine using Y_CamFileSelect or Y_CamStructSelect

Figure 1 Controller Memory from the MotionWorks IEC Hardware Configuration Manual, Section 4

System Flash on the MP3200iec and MP3300iec

* Separate flash device from the user flash.

** The MP3300 has 2x8MB to allow a new firmware image to be programmed while keeping the current image as a backup in case of power loss during programming.

User Flash on the MP2600iec and Sigma-7Siec

For MP2600iec and Sigma-7Siec the controller has 3.5MB available in the flash file system for user file storage. The MotionWorksIEC project size is limited to 1.4MB due to the need for double memory when the program is swapped during runtime. About 0.7MB is available for other user files such as Config, Cam/Data files, and other files which are not included as part of the MotionWorksIEC "user project".

Reallocating Non-Retained Memory on the MP2300Siec and MP2310iec

For the MP2300Siec and MP2310iec the amount of memory allocated to the IEC application program for non-retained variables is set at 1.5 MB and the memory allocation for Cam Storage/Data is set to 3.75MB, half the amount shown in the table. It is possible to increase the non-retained variable space is available by clicking the 'Change Default Area User Settings' button from the MotionWorks IEC Hardware Configuration Toolbar and choosing 3.2 MB. Please note, while this amount of memory can be increased, the memory for Cam Storage/Data will decrease to 2.25 MB.

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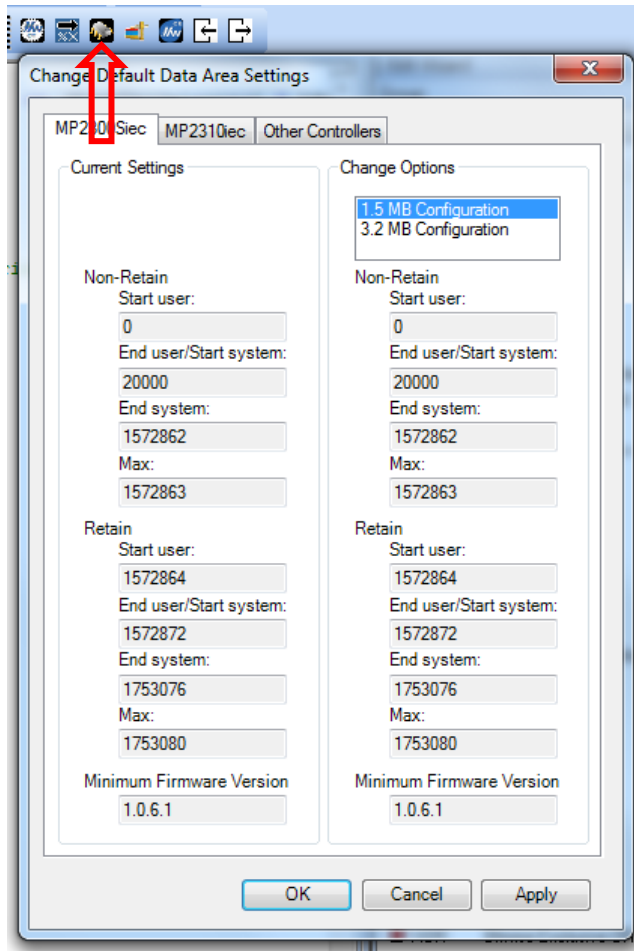


Figure 2 How to Increase Non-Retained Memory on the MP2300Siec and MP2310iec