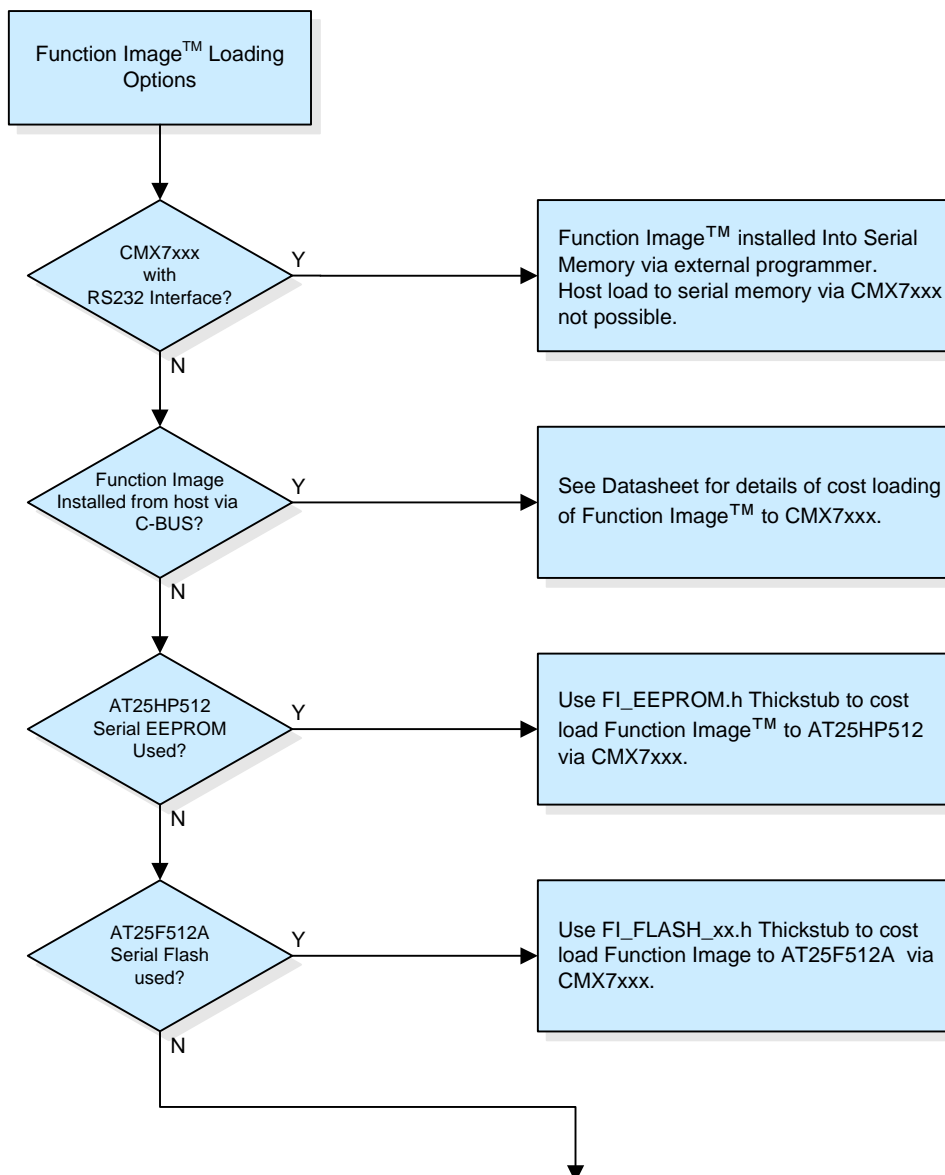Q. I am about to start a design using one of your FirmASIC® based products, what is the most suitable method of storing the associated Function Image™ in my project?

A. Our FirmASIC® based devices require a Function Image™ to configure their on-chip sub-systems.
This is a data file that is uploaded during device initialisation and defines the device's function and feature set.
The Function Image™ can be loaded automatically from external serial EEPROM via a dedicated SPI bus or from a host µController over the built-in C-BUS serial interface.
It is also possible with two specified memory devices to update the serial memory stored Function Image™ via the C-BUS and SPI interface.
CML supplies a dedicated Thick Stub Function Image™ to enable this capability.
The following flow diagram is an aide-memoir in that it makes it plain what is possible when choosing the most suitable method of storing a Function Image™ for your project.

Function Image™ Loading Options

CMX7xxx with RS232 Interface? — Y → Function Image™ installed Into Serial Memory via external programmer. Host load to serial memory via CMX7xxx not possible.

N

Function Image Installed from host via C-BUS? — Y → See Datasheet for details of cost loading of Function Image™ to CMX7xxx.

N

AT25HP512 Serial EEPROM Used? — Y → Use FI_EEPROM.h Thickstub to cost load Function Image™ to AT25HP512 via CMX7xxx.

N

AT25F512A Serial Flash used? — Y → Use FI_FLASH_xx.h Thickstub to cost load Function Image to AT25F512A via CMX7xxx.

N

If other serial memory types are used to store the Function Image™, the SPI interface employed by the CMX7xxx devices is broadly compatible with a range of memories supplied by other manufacturers.

Note that other devices can only be read from and not written to when using the CMX7xxx SPI interface. Therefore an external programmer is required with a method of disconnecting the SPI interface. This series of devices require no more than 46kB of external memory to store the Function Image.

The SPI port is compatible with 2-byte and 3-byte addressed serial memory, where the start address will always be at the start of memory ($00). Typical devices are available from Atmel, STMicro, Microchip and Catsemi, but devices from other suppliers may be available. CML is unable to comment on the suitability of other devices but is able to offer further advice if necessary.