



FXCore Asm is the free assembler that allows users to develop programs for the FXCore DSP from Experimental Noize.

This guide is meant as a simple guide to using the assembler, the mnemonics, directives and reserved words can be found in the instruction set data sheet.

FXCore asm contains a tabbed editor allowing multiple source files to be open at the same time. This allows easy cut and paste operations between programs. The active tab is the one used for actions like assemble or program.

Here is the program with 3 files loaded:

```
FXCore Assembler
File Edit Tools Help
prg0_small_reverb.fxc loaded from C:\Users\frankthomson\Documents\FXCore programs\Master Programs\Updated code
prg1_medium_reverb.fxc loaded from C:\Users\frankthomson\Documents\FXCore programs\Master Programs\Updated code
prg2_cathedral_reverb.fxc loaded from C:\Users\frankthomson\Documents\FXCore programs\Master Programs\Updated code
prg0_small_reverb.fxc X prg1_medium_reverb.fxc X prg2_cathedral_reverb.fxc X
; Default program 0
;
; Small reverb
; mono in/two channel out
;
; pot0 = reverb time
; pot1 = diffusion
; pot2 = LP filter
; pot3 = reverb level
; pot4 = not used
; pot5 = not used

.mem   ap1      420      ; all-pass block 1
.mem   ap2      867      ; all-pass block 2
.mem   ap3     1578      ; all-pass block 3
.mem   ap4      390      ; all-pass block 4
.mem   apc1     3402      ; loop all-pass 1
.mem   apc2     2202      ; loop all-pass 2
.mem   dc       7678      ; loop delay

.equ   kapi     0.65      ; all-pass coefficients
.equ   kap      0.6

.equ   fs       32768     ; sample rate
.equ   freq     0.45      ; LFO frequency in Hz
.equ   pi       3.14159   ; pi
.equ   lfo_f_coeff (2*pi*freq)/fs ; calculate the LFO coefficient, SEE NOTE

; NOTE: The datasheet states the equation is:
; (2^31 - 1)*(2*pi*freq)/fs
; but we are missing the (2^31 - 1)
; this is because by default the equation solver
; calculated values for .creg, .sreg and .mreg
; will scale them automatically by 2^31-1
; if you were to directly enter a vlaue like
; just do it like: .sreg lfo0_f 0x12345678
; note that the equation solver assumption of
; by appending .i to the .sreg for .sreg.i me
; write it to the SFR for LFO 0

.sreg  lfo0_f      lfo_f_coeff
```

Line: 1 -- Position: 0 FXCore dev board connected



---

Most commands are available on the icon bar just above the editor tabs, starting from the left:

**New** : Creates a new blank editor tab.

**Open** : Opens a file browser allow you to select an existing FXCore program (.fxc extension) and loads it into a new editor tab.

**Save** : Saves the file in the active tab

**Print** : Prints the file in the active tab

**A** : Assembles the code in the active tab and if a development board is connected downloads the assembled code to the execution RAM of the FXCore and starts the program running. Using this button in development saves the FLASH in the FXCore from multiple writes while developing code. A HEX version of the program is generated and saved.

**L** : View listing file for active tab. When a program is assembled a listing file is created with resolved values, memory usage, etc. If there were errors in assembly they are recorded to the listing file.

**Program number selector** : Used to select which program slot a program will be written to or which program slot will be cleared.

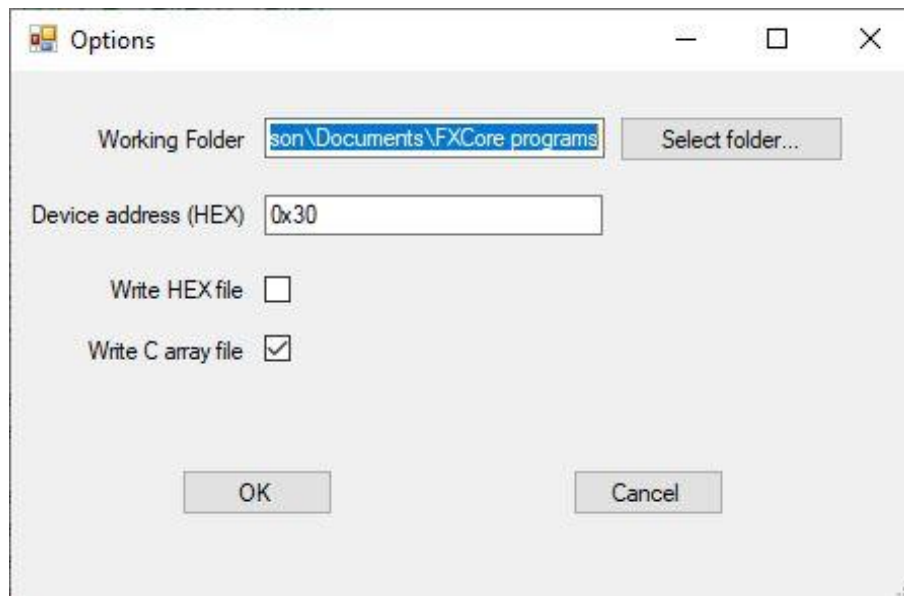
**Program Location** : This button will assemble the program in the active tab and program it to the FXCore FLASH program slot specified by the program number selector.

**Clear Location** : This button will clear the program location in the FXCore FLASH specified by the program number selector.

**Clear All** : This button will clear all 16 programs slots in the FLASH of the FXCore.

Users can set a number of options such as the directory that contains the .fxc files, if HEX and C array files will be generated and the I2C address of the FXCore to write to.

Selecting Tools -> Options will open the following window:



Pressing the “Select Folder” buttons will open a file browser where the user can select the folder containing the FXCore programs.

The “Device address (HEX)” field must match the I2C address of the FXCore on the development board. If one is changed then the other must also be changed.

If multiple FXCore boards are daisy chained and they also have their SDA and SCL lines daisy chained then each FXCore must have a unique I2C address and the address set in this field will program the FXCore with the corresponding address.

The check boxes for HEX file and C array file control if these files will be generated when the program is assembled. These file are written to the working folder.



---

Experimental Noize Inc. reserves the right to make changes to, or to discontinue availability of, any product or service without notice.

Experimental Noize Inc. assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using any Experimental Noize Inc. product or service. To minimize the risks associated with customer products or applications, customers should provide adequate design and operating safeguards.

Experimental Noize Inc. make no warranty, expressed or implied, of the fitness of any product or service for any particular application.

In no even shall Experimental Noize Inc. be liable for any direct, indirect, consequential, punitive, special or incidental damages including, without limitation, damages for loss and profits, business interruption, or loss of information arising out of the use or inability to use any product or document, even if Experimental Noize Inc. has been advised of the possibility of such damage.

**SAFETY-CRITICAL, MILITARY, AND AUTOMOTIVE APPLICATIONS DISCLAIMER:** Experimental Noize Inc. products are not designed for and will not be used in connection with any applications where the failure of such products would reasonably be expected to result in significant personal injury or death (“Safety-Critical Applications”). Safety-Critical Applications include, without limitation, life support devices and systems, equipment or systems for the operation of nuclear facilities and weapons systems. Experimental Noize Inc. products are not designed nor intended for use in military or aerospace applications or environments. Experimental Noize Inc. products are not designed nor intended for use in automotive applications.

**Experimental Noize Inc.**

**Scottsdale, AZ USA**

**[www.xnoize.com](http://www.xnoize.com)**

**[sales@xnoize.com](mailto:sales@xnoize.com)**