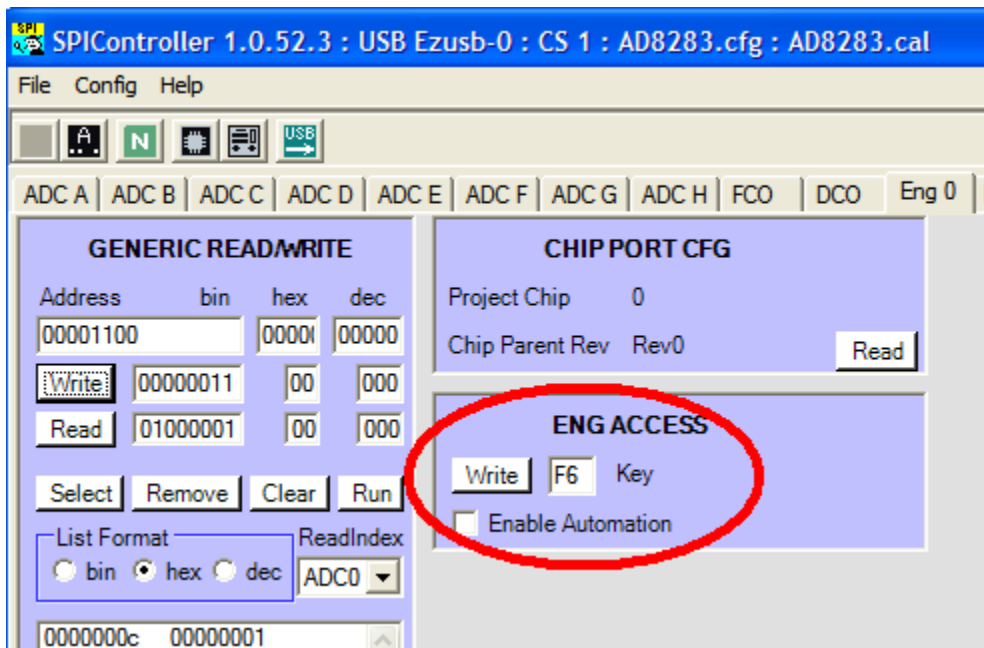




## AD8283 – How to Manually Set the Cutoff Frequencies of the Anti-Aliasing Filters

It is possible to manually set the cutoff frequency for the AD8283. In order to do so, please follow the following steps. The commands are all completed using the SPIController software.

First, you must enable the engineering functions of the AD8283. This can be done by clicking the “Write” button in the ENG ACCESS portion of the panel. You will not be able to write or read any of the registers we are dealing with until you complete this step. Pressing this key is equivalent to writing the code F6 to register 0x100.



Next, you must program 2 registers to the values that correspond to the desired cutoff frequency. The registers that must be programmed are located at addresses 0x14D and 0x14C.

Here is a table that contains some sample frequencies and their corresponding codes. Register 14D must be programmed first :

AAF -3dB Frequency (MHz)	14D	14C
4.77	100	1100 1101
5.75	100	1010 1010
7.02	100	1001 0000
8.52	100	0111 0000
9.00	100	0110 0011
9.50	100	0101 0111
10.02	100	0100 1100
10.48	100	0100 0011
11.00	100	0011 1010

One thing to note is that you can not read registers 14D and 14C. If you would like to read from the SPI to verify that your code is properly stored, you must read from registers 146 and 145. However, the registers do not contain an exact duplicate of what was entered into 14D and 14C.

The best way to explain the translation is an example. If the user wanted to program 7.02 MHz, then they would write 100 into register 14D and then write 1001 0000 into register 14C. The bits that matter are the 2 LSBs of register 14D and all 8 bits of register 14C. These combine to form the 10 bit setting of the filter.

The 10 bit setting is of course **00** from 14D and **1001 0000** from 14C

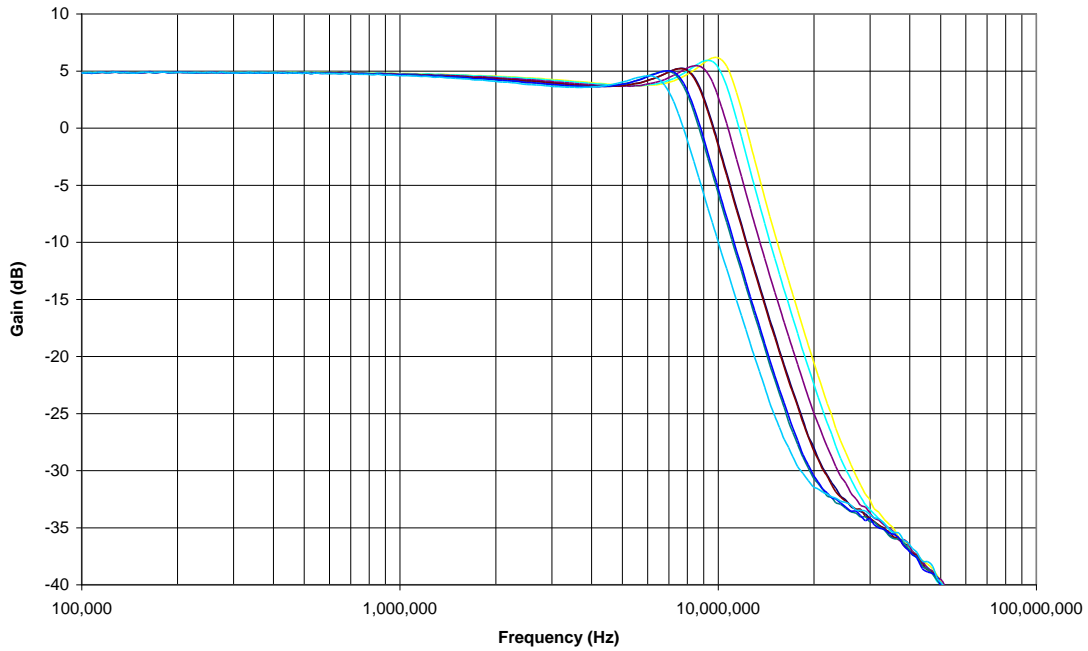
This would be read from 146 and 145 as follows:

146 = XX**00 1001**    145 = **0000** XXXX



Here is a frequency response and pulse response of the AD8283 AAF:

AD8283 - AAF Frequency Response  
fs = 40 MSPS per channel



Pulse Response with 7MHz AAF -3dB frequency

