Due to low programming track power in certain DCC systems, programming sound decoders on the program track may not be possible, especially trying to assign the decoder a four (4) digit address. This programming procedure has to be performed on the mainline, where more power is available for programming sound decoders.

If your DCC system allows simple 4 digit address programming on the main or OPS mode programming, simply input the 4 digit address and press ENTER.

A second step might be needed for certain sound decoders, which would be activating the 4 digit address by changing the value of CV29. Inputting a value of 34, a constant, tells the decoder to use the 4 digit address.

Some DCC systems need to have CVs 17 and 18 programmed separately to assign the decoder a 4 digit address. **You cannot simply split the four digit address in two halves and input these into CVs 17 and 18.** A conversion from decimal numbers to hexadecimal numbers is required. Once the hexadecimal conversion for the 4 digit address is performed, this number is then separated in two halves, converted back to decimal values and then inputted into CVs 17 and 18 respectively.

This may sound very confusing so let us explain with an example. To perform this operation, you need a scientific calculator or the calculator accessory on your computer. **Make sure the calculator on your computer is set for the scientific mode.**

For example let’s say your 4 digit address is 1998.

1. Using the constant number of 49152, add your 4 digit address to this number and convert it from decimal (DEC) to hexadecimal (HEX). You add 1998 to 49152, which equals 51150

\[1998+49152=51150\]

2. Under the DEC setting, input the number 51150.
3. Change the setting to HEX. You will get a hexadecimal number of C7CE, [51150 decimal equals C7CE hex].
4. Separate this number into two sections of two characters each; in this case, C7 and CE. This gives you separate hex numbers for CVs 17 and 18 respectively. C7 goes into CV17, and CE goes into CV18, but these numbers must be converted back to decimal values.
5. Enter C7 into the calculator under the HEX mode, then switch the calculator’s setting back to DEC. You will get 199 [C7 (HEX) =199 (DEC)].
6. Input the value of 199 into CV17.
7. Enter CE into the calculator under the HEX mode, then switch the calculator’s setting back to DEC, you will get 206 [CE (HEX) =206 (DEC)].
8. Input the value of 206 into CV18.

This gives the decoder a 4 digit address of 1998

9. The next step is to go to CV29 and input the constant decimal number of 34. This number tells the decoder to use the 4 digit address, along with analog disable, 28/128 speed steps, and normal direction (locomotive forward). There are other constant values that you can input into CV29 to change the decoder’s parameters, please refer to your decoders instructions, or to our CV29 Table.