

PROGRAMMING MRC SOUND DECODERS ON THE MAIN USING HEXADECIMAL CONVERSIONS FOR CVs 17 AND 18

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**.