CHD – Checksum Calculator

Support Software for CHD Products

Generally Applicable Software

DESCRIPTION

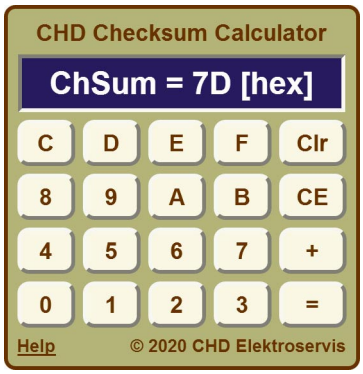
Many of our products are controlled and programmed via MIDI System Exclusive Messages. Unfortunately, creating of these messages is very difficult for most musicians because they use a "Checksum" byte in their structure. Calculating of the "Checksum" byte requires at least basic knowledge of work with binary or hexadecimal numbers. But it is no problem to create the checksum with help of our special **CHD Checksum Calculator**.

The calculator is based on Java scripts so it can run on any computer with a web browser (Windows, OSX, etc.)[1].

USAGE

The calculator needs no installation.

1. Visit our website and download the "**CHD_Chsum-Calculator.zip**" archive (available in "**Download**" section of the "**www.chd-el.cz/support/general-software/chd-checksum-calculator/**" page).
2. Expand the archive to a selected folder on your computer's hard drive (i.e. copy the "**CHD_Chsum-Calculator.html**" file).
3. Then launch the Checksum Calculator by opening of the "**CHD_Checksum-Calculator.html**" file in a web browser (e.g. by clicking on the file icon). The calculator window opens:



- **[0]** to **[F]** buttons are used for enter of partial hex characters of calculated bytes (note that only bytes with value from 0h to 7Fh are accepted!)
- **[Clr]** (Clear) button clears all
- **[CE]** (Clear Entry) button clears only last inserted byte
- **[+]** (Add) button is used for adding of next byte to checksum
- **[=]** (Check Sum Result) button calculates complete checksum and shows it on calculator's display
- **Help** link in bottom left corner opens this document (i.e. "**CHD_Chsum-Calculator.pdf**") from our web site.

Example Task:

Calculate checksum for the **[F0h 00h 20h 21h 7Fh 55h 01h 24h xx F7h]** SysEx message, where "**xx**" is the checksum byte. Byte sequence for checksum calculating starts at the "**55h**" byte.

Solution:

It is necessary to calculate the 7-bit complement of the sum of bytes **55h 01h 24h** (by other words, seven-bit sum of bytes **55h**, **01h**, **24h** and **xx** must be equal to zero).

Press sequentially the **[5] [5] [+] [1] [+] [2] [4] [=]** buttons. Calculator shows "**ChSum = 06 [hex]**" on its display. So "**06**" is required hexadecimal value necessary for the "**xx**" checksum byte in the SysEx message.

[1] Note that scripts and ActiveX elements must be enabled in web browser for proper function of the calculator.