

graphiCAL file transfer program

the **graphiCAL** calculator gives you the possibility to transfer the program memory (PROG_RAM) to an external computer or to download a program from there.



The part marked **in green** is **graphiCAL**. The arrow marked **with burgundy** represents a USB-A 2.0 to USB-C 3.0 cable. The block marked **in blue** represents the PC loaded with the terminal program. A terminal program can be, for example, TeraTerm.

The TeraTerm program is a free downloadable application. (I use version 4.74.) The necessary settings can be made in the Setup menu.

Terminal Setup : Terminal Size : 120 * 80
Receive : CR + LF
Transmit : CR
Terminal ID: VT100

Window In the window setting, the colors , the shape of the " cursor ", etc. can be determined. Everyone can set this according to their own taste.

Font Setup : Font: Fixedsys
Font Style : Regular
Font Size : 9
Script: Central European

Serial Port Port: the number of the previously selected Port.
Baud-rate : The value set in the PIC must be entered: 115200
Data: 8 bits
Parity : none (no parity check)
Stop: 1 bit
Flow Control : none (we use no control signals)

The file transfer can be started from the Menu :

After pressing the **MNU** key , use the navigation dial to select the **File transfer** line and validate it by pressing the dial.

```
Set date----->
Set time----->
Set contrast---->
Run Monitor---->
Get ID.----->
File transfer---> <
Bootloader---->
Exit----->
```

```
File transfer
File send: STO
File rec.: RCL
Exit: CLx
```

If it is not connected to the PC , this inscription is displayed and:

```
No PC connection
```

On the PC screen **File transfer from/to PC** can be read.

File sending can be initiated with the **STO** key (STO: STorage , storage), and reception with the **RCL** key (RCL: ReCaLL , recall).

Send file : After pressing the **STO** key, the following text appears:

**Send the program
to PC. Follow
the instructions
on the screen!**

At the same time, we can read this on the screen:

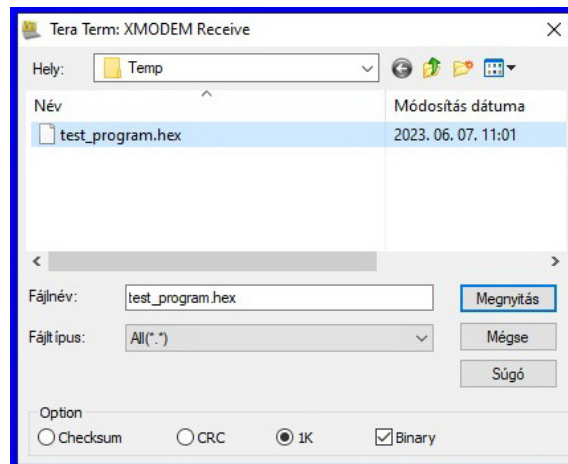
Step 1: Tera-Term -> File -> Transfer -> XMODEM -> Receive ...

Step 2: Select an old or enter a new file name.

Step 3: Click on the 1K option

Step 4: Change the extension into hex or HEX

Step 5: Click on the OPEN (Megnyitás)



When starting the file transfer, in the **Location (Hely):** window , **teraterm** subdirectory is displayed. I created it in **C:\Temp** I usually use a subdirectory . It is easier to find the necessary file here. **It is important** that the **1K** option is turned on! Then just click the Open button. Uploading the file takes 1 second. After successful upload, the screen reads:

All data are sent.

The reception of the file can be started by pressing the **RCL** key .

Receive a prgm.
from PC. Follow
the instructions
on the screen!

Instructions on the PC monitor screen:

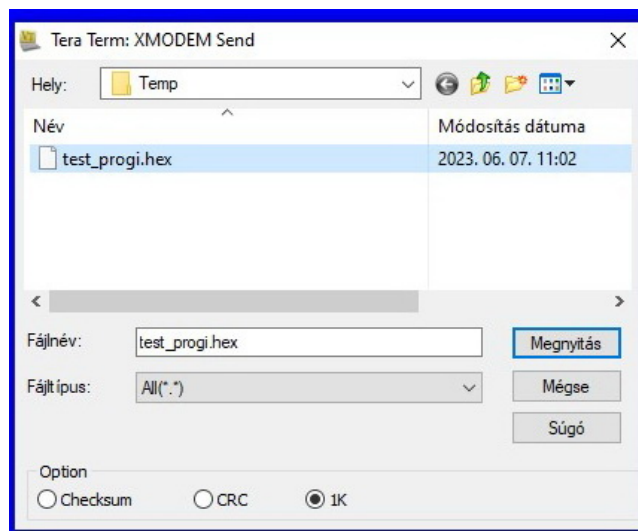
Step 1: Tera-Term -> File -> Transfer -> XMODEM -> Send ...

Step 2: Select the file to be transferred .

Step 3: Click on the 1K option!

Step 4: Click on the OPEN (Megnyitás)

Step 5: Push the ENTER button on the graphiCAL, to start the transmission.



It is important that the **1K** option is turned on!

The download of the program does not start automatically. Here you have to press on **graphiCAL** **ENTER** the key .

Downloading the file also takes 1 second.

After a successful download, the text displayed on the screen:

Program has been received.

Very rarely, a transmission error may occur. In this case, the error message: **Time is over!** (timeout). If other errors occur and **graphiCAL** does not respond to any keys, you must wait until the **Watchdog** circuit stops the calculator. This time is 524 seconds (almost 9 minutes). The reason why the time is so long is because while editing the program, do not switch it off at too short intervals. When **graphiCAL** is in non-editing mode, it switches off after 2 minutes. (In this case, the **Watchdog** circuit does not stop the machine.)

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