

[12.1] Advantages of TIGCC over TI SDK

There are two options for C programming on the calculators: TI's proprietary SDK, and the open-source TIGCC. TIGCC cannot be used to develop flash applications, but it has many other advantages over the SDK:

- Global and static variables are allowed in RAM programs with TIGCC.
- Programs can be automatically compressed with TIGCC. This also allows RAM programs of up to 64 KB of uncompressed size rather than just 24 KB.
- TIGCC is given with a static library called TIGCCLIB which contains functions like most ANSI `stdio.h` and `stdlib.h` functions, grayscale and sprite routines and many more.
- By default, programs written with TIGCC also run on AMS versions lower than 2.04 without having to install a memory resident emulation program. As an alternative, starting from TIGCC 0.94, the AMS 2.04/2.05 only ROM_CALL method used in the SDK is also supported. The SDK only supports the method incompatible with AMS 2.03 or lower.
- By default, programs written with TIGCC also work on AMS 1, while SDK programs often fail to work even with an emulation program because they use ROM_CALLs available on AMS 2 only. SDK programs even sometimes use ROM_CALLs only introduced in AMS 2.04 or 2.05. Starting from TIGCC 0.94, TIGCC now optionally allows the programmer to use those functions if they wish to abandon AMS 1 compatibility, but does not force him to do so.
- TIGCC is a port of GCC 3, so you get GCC specific features such as GNU C extensions with it.
- Starting from TIGCC 0.94, TIGCC supports passing arguments to functions by registers rather than on the stack as an option. This can create smaller and faster code and make it easier to interface with existing assembly code.
- TIGCC supports third-party static libraries, and a few of those have already been written, such as ExtGraph by Thomas Nussbaumer.
- TIGCC also allows you to program in assembly (not just inline assembly), and you even have the choice between 2 different assemblers.
- TIGCC also allows you to write kernel-based programs, including dynamic libraries and programs which use them (even though I do not recommend to use this feature).

(Credit to Kevin Kofler)