

ds30 Secure Loader is a security enhanced commercial version of the open source boot loader ds30 Loader. It is available for the PIC18, PIC24, and dsPIC® families of MCUs from Microchip. The ds30 Secure Loader consists of three parts:



- Secure firmware, this is the software that resides in the microcontroller
- PC client, both graphical and command line interfaces are available
- ds31 HEX encryptor, encrypts hex files data and adds authentication codes

Security enhancements



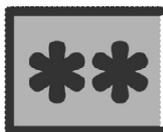
Encryption - protects your code

With encryption, software updates can be sent to the customers without fear of getting the code reverse engineered or used in illegal copies.



Authentication - protects your product

With the boot loader requiring authenticated data, the product will never execute unauthorized code. Authentication together with general segment code protection makes the use of boot segment and custom linker script redundant which reduces complexity.



Password protection - gives you control

A password protected boot loader makes it possible to control who is allowed to perform software upgrades.

Main features

- ✔ Supports PIC16/18, PIC24, and dsPIC
- ✔ Small footprint
- ✔ Windows, Linux*, and Mac OS X*
- ✔ UART and CAN operation

* Only UART operation is supported on this OS

Firmware

- Decrypts incoming data
- Authenticates incoming data
- Optionally requires password
- Placed in general segment
- Checksum control
- Write verification
- Boot loader protection
- Requirements:
- UART operation RS232 / RS485
- CAN operation
- Auto baud rate detection (UART)
- Low write times
- User application usually does not require a custom linker script

| | PIC18 | PIC24F dsPIC30F | PIC24FJ PIC24H dsPIC33F |
|--------------------|--------|--------------------|-------------------------------|
| Flash | ≤3.0kB | ≤3.0kB | 3.0kB |
| RAM ⁽¹⁾ | 512B | 256B | 512B |

- (1) This is only a device requirement, the boot loader will not occupy any RAM while the user application is running

PC client

- Checks hex-file for code that would overwrite the boot loader
- Checks hex-file for goto at 0x00
- Device reset by dtr, rts, or command
- Device activation by dtr or rts
- Auto baud rate (UART only)
- Tx echo verification
- Built-in serial terminal emulator
- Checks for latest version
- Provides detailed hex file analysis
- Require Mono or .NET framework
- Engine may be used in 3rd party applications, easy to integrate single C# namespace

Product brief

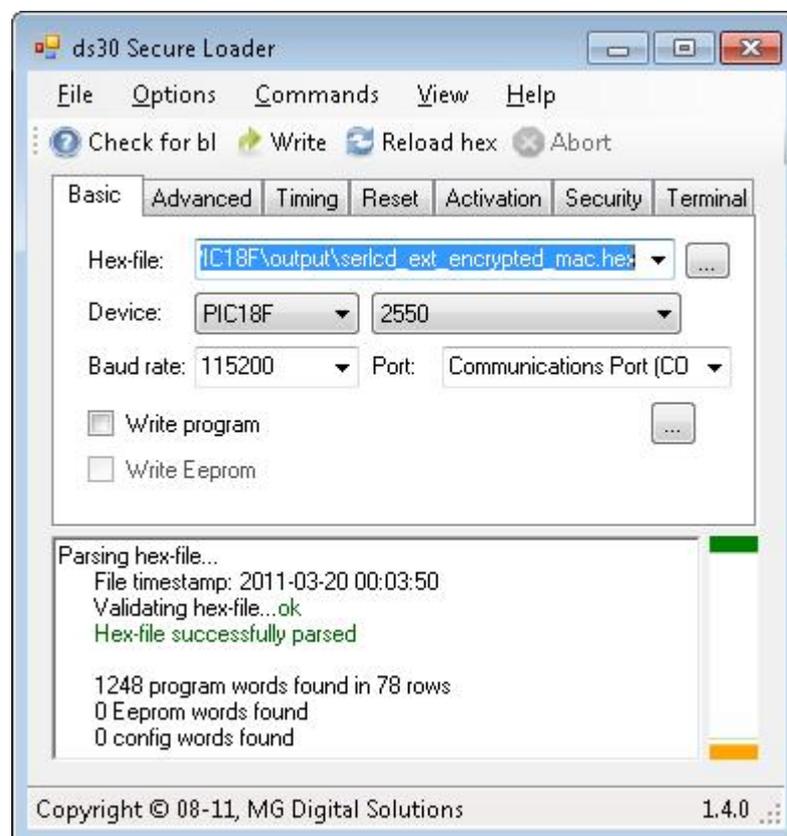
ds30 Secure Loader

for use with PIC® microcontrollers

ds31 HEX encryptor

- Encrypts hex file contents
- Adds authentication codes
- Outputs valid hex files
- Optionally generates encryption key

Screenshot



Contact

For more information please contact MG Digital Solutions at mgdigitalsolutions@telia.com.