

# MIOS

## Overview

MIOS is the Operating System of the Chip. This Page covers MIOS and the BOOTLOADER (or Bootstrap Loader). General Informations can be found in the Intro-Article: [what is a MIDibox](#).

There are two versions of MIOS: The (older) **MIOS8**, used for MBHP\_Core modules equipped with 8bit PIC uControllers and **MIOS32** used for the Core\_STM32 modules with 32bit STM controllers. If you are planning to build a new MidiBox, you should use the newer Core\_STM32 that allows much more complex devices.

## MIOS8

MIOS8 is used for MBHP\_Core modules equipped with PIC18F452, PIC18F4620 or PIC18F4685. 

**The Article [MIOS Bootstrap For Newbies](#) (also available as [MIOS Bootstrap](#) in different languages) contains important informations about how to upload MIOS - the operating system - and an application.**

Developers should consult the related project pages or [Application Development](#).

## Documentation

- [Introduction](#) uCApps
- [Change Log](#) uCApps
- [MIOS project summary RSS feed](#)
- [MIOS-Downloads](#) uCApps
- [Bootstrap Loader](#) uCApps
  - check out [pic\\_programmer\\_modules](#) to know how to get the Bootstrap Loader onto the PIC.
- [Application Development](#) Section
- [MIOS running on a PIC18F4620](#) (for certain future applications)

## Frequently Asked Questions

 [MIOS FAQ - Questions and Answers](#) !

# MIOS32

MIOS32 is used on Core\_STM32 boards, equipped with the 32bit STM32F103RE processor. MIOS32 is prepared for other 32bit uCs as well and allows platform independent applications.

MIOS32 on a CORE\_STM32 is more powerful than MIOS8:

- MIOS32 uses the realtime operating system FreeRTOS and allows simple multitasking with different priorities.
- It also supports native USB MIDI for faster code upload and MIDI transfer.
- Interfaces such as SPI and I<sup>2</sup>C can be used with DMA, allowing fast transfer at low CPU load
- Besides hardware multiplier and division units the STM32F103RE provides more peripherals:
  - CAN or USB (can not be used in parallel)
  - SPI
  - I<sup>2</sup>C
  - Timers
  - DAC
  - ADC
  - I2S for Audio DACs
- The STM32F103RE provides 512kB of Flash and 64kB RAM
- BankSticks are replaced by SD Cards for more and faster memory

## Documentation

- [Core32 Introduction](#) <sup>uCApps</sup>
- [MIOS32 Download](#) <sup>uCApps</sup>
- [Toolchain setup guide for Windows](#)
- [MIOS32 manual and function overview](#)

## See Also

[Mios studio](#)

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Last update: **2011/01/10 22:10**

