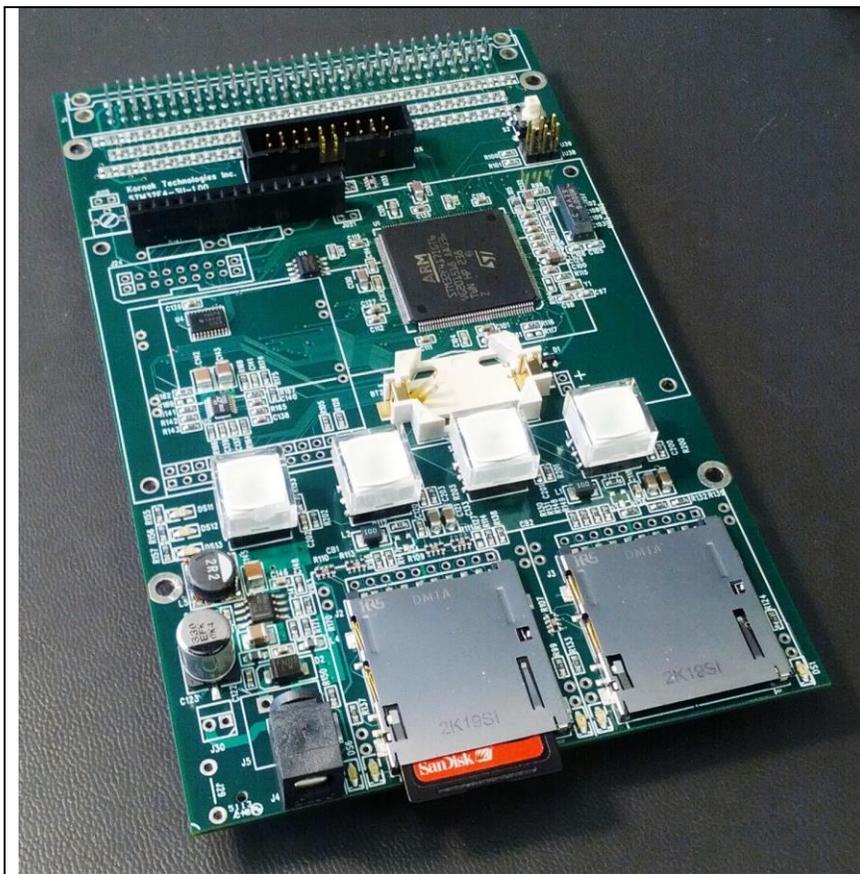


STM32F4-96 Controller MCU Board with 96 GPIO

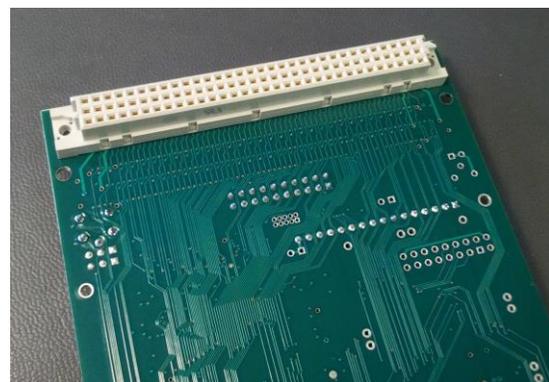


- Controller board for high GPIO count applications.
- STMicro ARM Cortex-M4 STM32F407IGT6 microcontroller.
- 96-pin I/O connector (DIN-41512, VME style) (RA or vertical).
- Two SD cards.
- Can be used for PCB functional test or cable test systems. Fault protected regulator for powering the device under test.
- Optional 4x20 LCD, OLED, or VFD display. Other sizes supported.
- Four LED user interface buttons.
- Real time clock (RTC) with oscillator and battery.
- ASPICE expansion for peripheral modules (Analog, SPI, I²C).
- 20-pin or 10-pin JTAG connector.

The **STM32F4-96** is a microcontroller board providing up to 96 GPIO pins on a DIN-41512 connector. It is designed for test applications such as functional test controllers, cable testers, and other applications requiring a large number of GPIO pins.

The board uses a **STMicro ARM Cortex-M4 STM32F407IGT6** microcontroller in a LQFP-176 package. It has 1 Mbyte Flash, 192 kbytes SRAM, and can have up to a 168 MHz internal clock speed. Floating point and DSP support are provided (crypto co-processor optional).

The PCB has a standard 3U size (100x160mm) which allows it to be used with 3U size card cages. Either a vertical or a right-angle DIN connector can be installed depending on the mounting requirements.



**Vertical 96-pin Connector
DIN-41512 (VME style)**

Right-Angle Connector Also Available

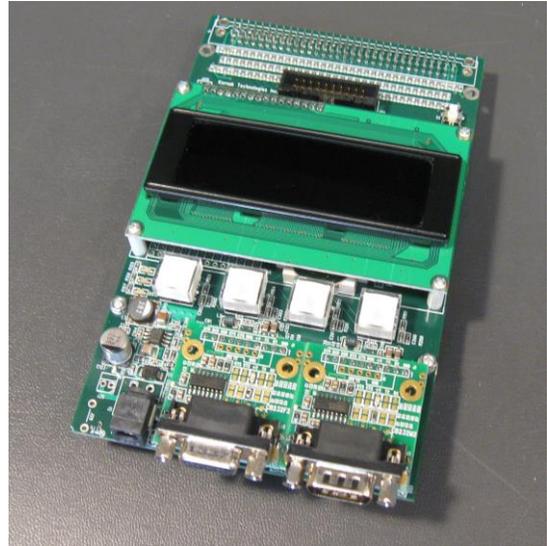
A 4 x 20 character OLED display, LCD, or a VFD (vacuum fluorescent display) can be fitted to provide a user interface.

The four buttons with LEDs can be used as menu smart keys.

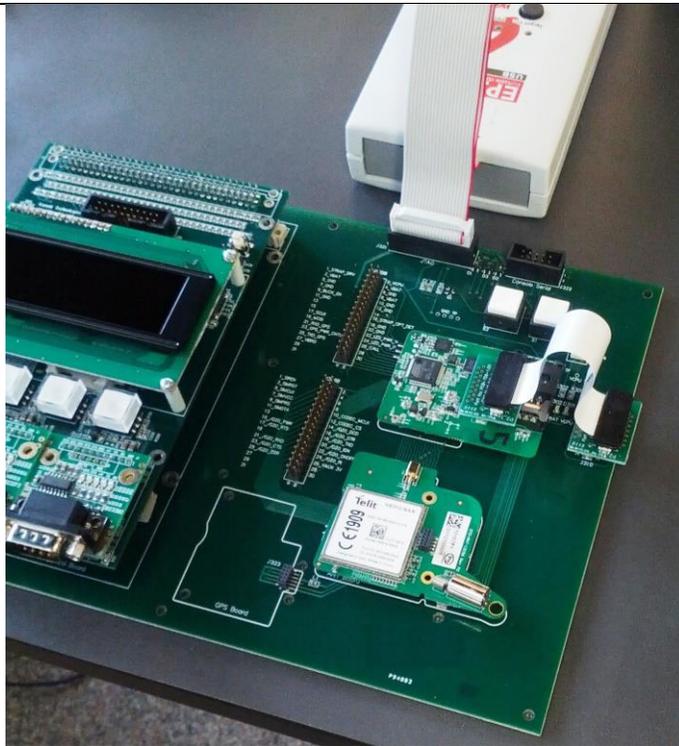
Two ComBoard USART expansion boards are shown here, providing two RS-232 ports.

ComBoard modules can be used to add peripherals with USART interfaces, such as USB, WiFi modules and multi-drop RS485.

An interface for ASPICE modules (Analog + SPI + I2C) is located under the display. It is used to add peripheral modules, such as a super-accurate (TCXO based) Real-Time Clock.



STM32F4-96 with 4x20 OLED Display



**Functional Tester for an M2M Product
With HSPA Modem**

The STM32F4-96 is well suited for functional test applications. It communicates with the Device Under Test (DUT) via serial port to place it in various test modes and query status.

It is shown here as a functional tester for a M2M GPS tracker board set. The test baseboard shown connects two boards being tested (a control board and a HSPA modem board) and routes the test signals to the STM32F4-96.

The large number of STM32 GPIO pins allows every input and output of the boards to be monitored or asserted. The STM32 peripheral interfaces allow SPI, I2C, USART, and other DUT signals to be monitored. A JTAG programmer loads test firmware into the DUT. A USART communicates with the device under test to invoke built-in tests and query status.

The two SD card slots allow separate cards to be used for the test program (test command scripts) and the test result outputs. One card uses the SDIO interface and the other uses SPI.

The STM32F4-96 was originally developed for a high pin count cable test application.



Kornak Technologies Inc.

Calgary, Alberta, Canada

www.Kornak.ca