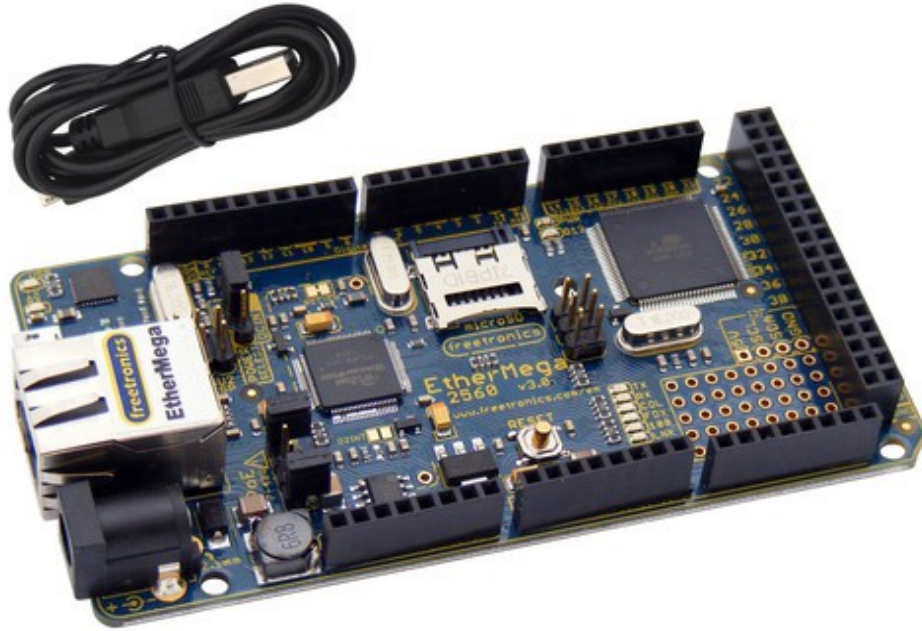


## RB-Fee-02

### EtherMega Ethernet Arduino Compatible Microcontroller



The ultimate network-connected Arduino-compatible board: combining an ATmega2560 MCU, onboard Wiznet-based Ethernet, an ATmega16u2 USB-serial converter, a microSD card slot, and Power-over-Ethernet support, and even an onboard switchmode voltage regulator so it can run on up to 28V without overheating!

The EtherMega is a 100% Arduino Mega 2560 compatible board that can talk to the world. Do Twitter updates automatically, serve web pages, connect to web services, display sensor data online, and control devices using a web browser. The Freetronics EtherMega uses the same ATmega2560 as the Arduino Mega 2560 so it has masses of RAM, flash memory, and I/O pins, and also includes the same Wiznet W5100 chip used by the official Arduino Ethernet Shield, so it's 100% compatible with the Ethernet library and sketches. Any project you would previously have built with an Arduino Mega 2560 and an Ethernet shield stacked together, you can now do all in a single, integrated board.

A micro SD card slot has been added so you can store web content on the card, or log data to it. But it gets even better with space to squeeze in a small prototyping area, so now it's possible to build a complete, Internet-enabled Arduino device including your own custom parts all on a single board. You don't even need to use a prototyping shield for many projects.

#### Features

- Gold-plated PCB
- Top and bottom parts overlays
- Top-spec ATmega2560 MCU
- Micro-USB connector: no more shorts against shields from the USB jack! (Please note that the Ethernet Jack can touch some wide shields, they can be raised up with Stackable Header Sets and also have the ProtoShield Short which can sit beside it.)
- Switchmode voltage regulator for wide input voltage range
- D13 pin isolated with a MOSFET so you can use it as an input

- Optional Power-over-Ethernet support, both cheapie DIY or full 802.3af standards-compliant
- Ethernet activity indicators on both the PCB and the jack
- 10/100base-T auto-selection
- Fully compatible with standard Ethernet library
- Reset management chip
- Fixed SPI behavior on Ethernet chipset
- Robust power filtering
- Sexy rounded corners

## **Specifications**

### **Microcontroller**

- MCU Type: Atmel ATmega2560
- Operating Voltage: 5V
- MCU Clock Speed: 16 MHz

### **EtherMega**

- Input Voltage: 7-28V DC (onboard switchmode power supply)
- Digital I/O pins: 54 (14 provide PWM output)
- Analog Input Pins: 16 (analog input pins also support digital I/O, giving 70 digital I/O total if required)
- Analog Resolution: 10 bits, 0-1023 at 5V AREF is approx 0.00488V; 4.88mV per step
- Current Per I/O Pin: 40 mA maximum
- Total Current For All I/O Pins: 200mA maximum
- Current At 3.3V: 50mA maximum

### **Memory**

- Flash Memory: 256 KB Flash Memory, of which 8 KB is used by bootloader
- SRAM, EEPROM: 8 KB SRAM, 4 KB EEPROM
- microSD: microSD card slot with SPI interface. Uses pins D4 (select), D50, D51, D52

### **Communications**

- Serial: 4 x hardware USARTs, SPI (Serial Peripheral Interface), I2C
- Ethernet: 1 x 10/100 LAN port using the Wiznet W5100. Uses pins D10 (select), D50, D51, D52
- Other: Integrated USB programming and communication port. Many other one-wire, multi-wire, LCD and expansion devices supported by free code and libraries