EVB001 Evaluation Board

Dual GA144-1.2 Retail Evaluation Board

To support GA144 production run of Winter 2010-11

1. GA144 Evaluation Board

This board will be offered for sale at about the same time as we announce release of the GA144 to production. It will be designed to work with RS232 interfaces and will be packaged in such a way that the customer can get it working with minimal time and effort.

Power will be supplied by an onboard regulator fed by paralleled "wall wart" or USB connectors. The USB connector will not communicate with the USB host but will merely accept the 100 mA at 4.4v guaranteed as minimum by the USB spec. Regulator will be an efficient switcher running darn fast and tested with the kinds of dynamic loads we can present. There will be a reset button and onboard reset R-C circuit so the board can work usefully without an IDE feed, however full IDE control is supported.

GA144 chip 0 will have an external SRAM and will boot eForth from SPI flash. By connecting power and an RS232 interface on port B, the customer can see useful operation immediately after applying power and striking space bar on a terminal or emulator. The SPI boot may be disabled by a jumper, and whether or not it is disabled full IDE control may be exercised over the chip using RS232 port A. Reset may be optionally supplied by IDE.

GA144 chip 1 is connected to chip 0 via SERDES and by a 1-wire interface that may be disconnected by jumper. Reset may be from the onboard RC/button, or from IDE on port C, or from chip 0. The intent in defining connections for chip 1 is that as much of its I/O as possible is available for prototyping or evaluation use.

The customer must ensure there is enough power for the intended use of the board. Minimal USB (440 mW) is sufficient for eForth and modest other use of the GA144s, but power requirements can exceed 400 mW for VddC (core power) if enough F18A computers are busy simultaneously, and likewise VddI (I/O power) can be greater than this depending on what the customer connects to the board.

For higher power levels, a "wall wart" may be used to supply up to (estimated) 2 amps (3.6 watts) of 1.8V power on the board. This is sufficient to run all 288 computers flat out continuously along with moderate I/O.

If the customer requires more than 2 amps due to I/O connections, the VddI and VddC buses may be isolated and power for either or both may be supplied by the customer.

1.1 Block Diagram
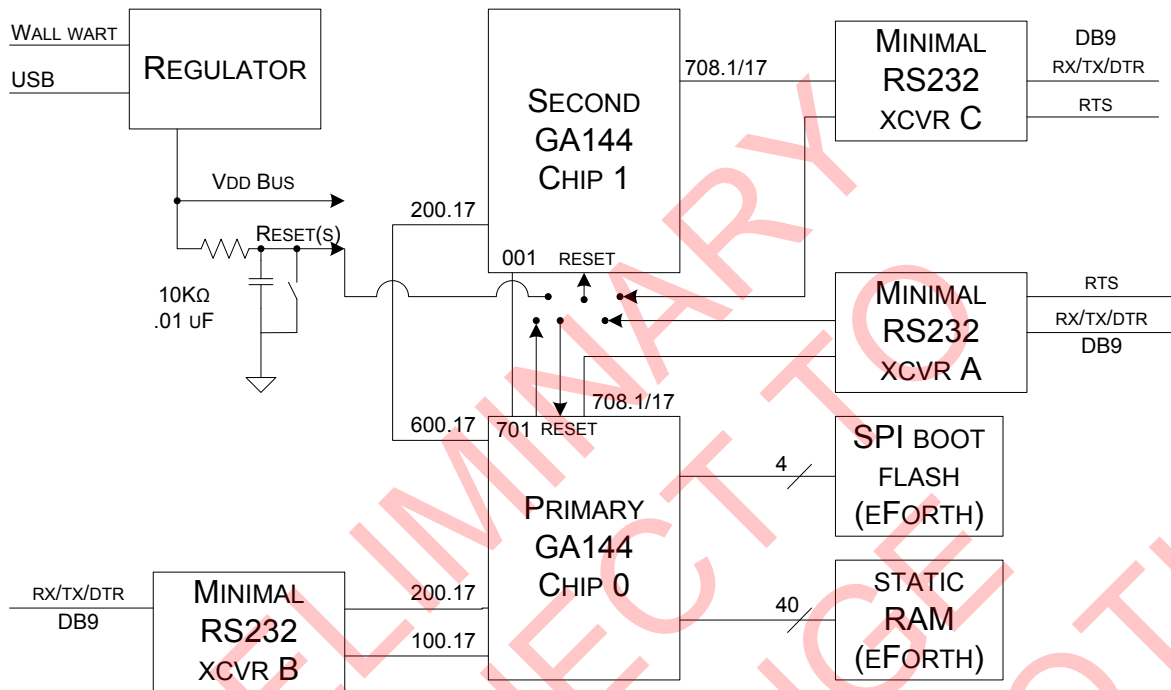
As delivered, eval board boots eForth from flash and talks to terminal on RS232 port B. Ports A and C are available for IDE operations on chips 0 and 1. Chip 1 may be fully isolated from chip 0 with the exception of the SERDES connection.

1.2 Additional Items

Specific I/O connections

Prototyping area

Analog terminations