

USB Hardware Verification for the ECM-20/TRC-20/ECM-30 Emulators

An Application Note

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Overview

American Arium has found functional issues with the embedded processor in its ECM-20/TRC-20/ECM-30 emulators for Intel processors when used with the USB 1.1 communications port. These issues have NO effect on the TCP-IP communications.

The American Arium emulators use the Motorola® MPC850 PowerQUICC™ Integrated Communications Processor for all processing and communications functions. An issue has been found with certain mask revisions of this processor that degrade or disable the USB functionality of the emulator. This document describes how to find your emulator's processor mask revision ID, and provides information to determine what is necessary for your emulator to support USB communication.

ECM-20/ECM-30 Processor Location

To examine the ECM-20/ECM-30 emulators processor mask revision ID, completely loosen the four screws located in each of the black feet on the bottom of the emulator. Return the emulator to the upright position and gently lift off the cover. With the front panel on the left, the MPC850 processor is located at the top of the circuit board, surrounded by four multi-pin connectors. See figure 1.

See the [MPC850 Mask Revision ID](#) section below to determine your mask revision.

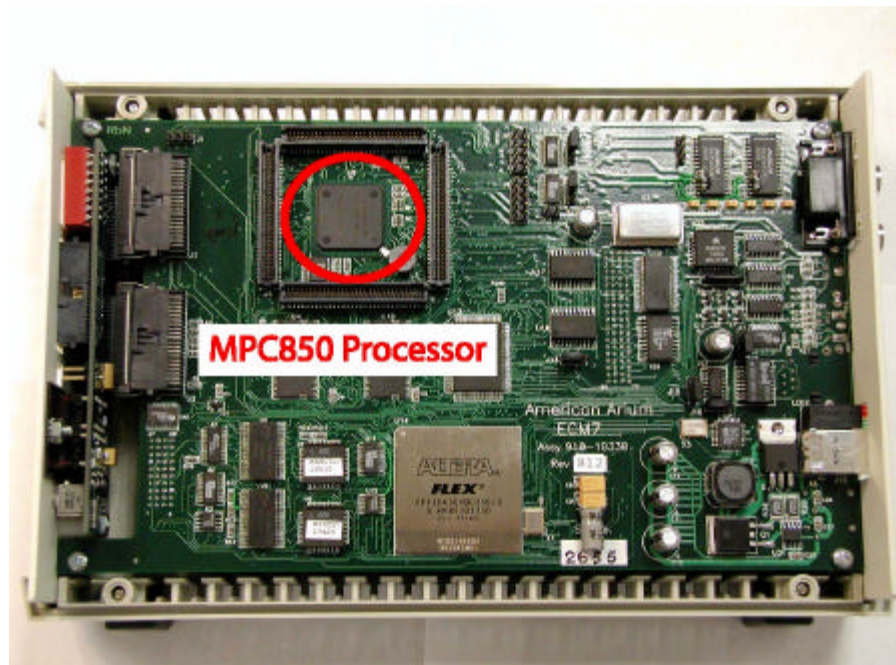


Figure 1. ECM-20/ECM-30 Circuit Board with MPC850 Location

TRC-20 Processor Location

To examine the TRC-20 emulator's processor mask revision ID, completely loosen the four screws located in each of the black feet on the bottom of the emulator. Return the emulator to the upright position and gently lift off the cover. With the front panel on the left, the MPC850 processor is located at the top of the smaller circuit board, surrounded by four multi-pin connectors. See figure 2 below.

See the [MPC850 Mask Revision ID](#) section below to determine your mask revision.

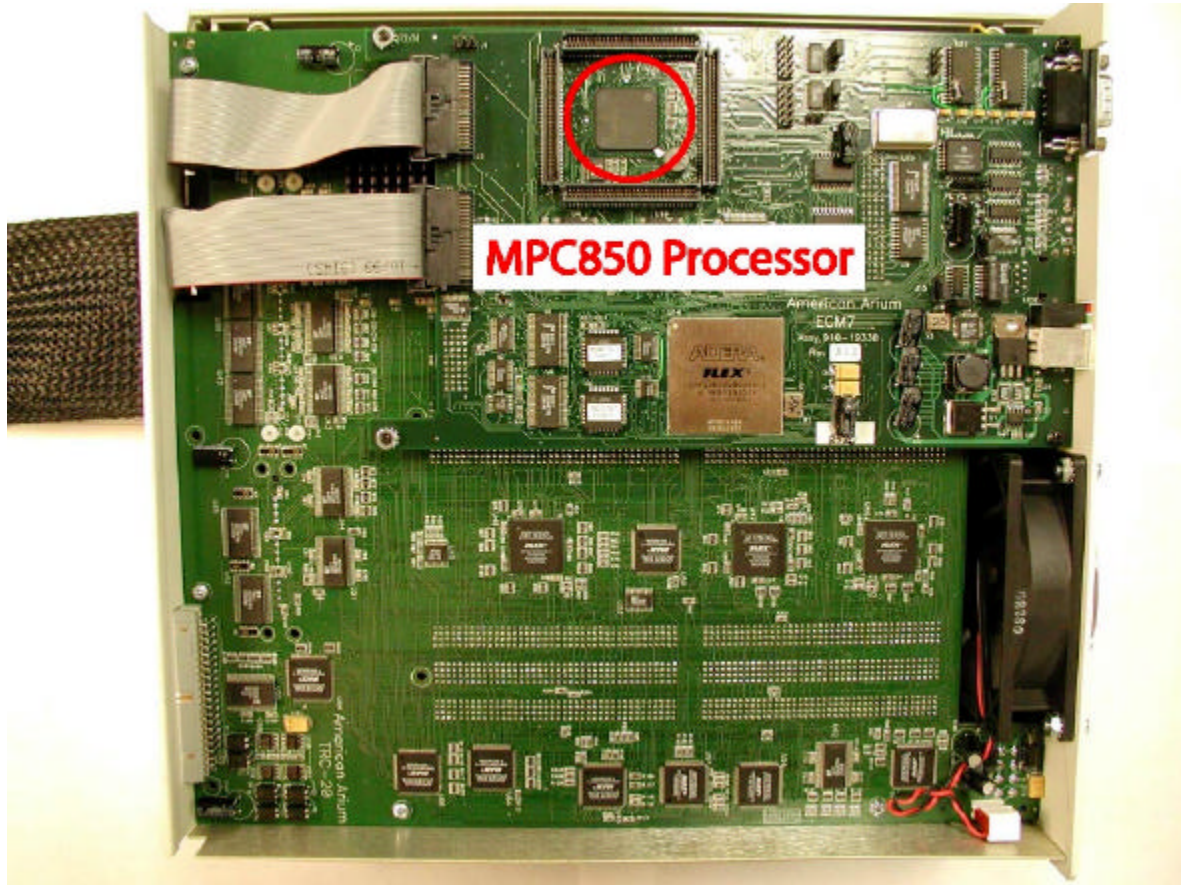


Figure 2. TRC-20 Circuit Board with MPC850 Location

MPC850 Mask Revision ID

The American Arium emulators have used six different versions of the Motorola MPC850 processor. The ID code can be found immediately to the left of the country of manufacture imprinted on the package surface. See figure 3 for location.

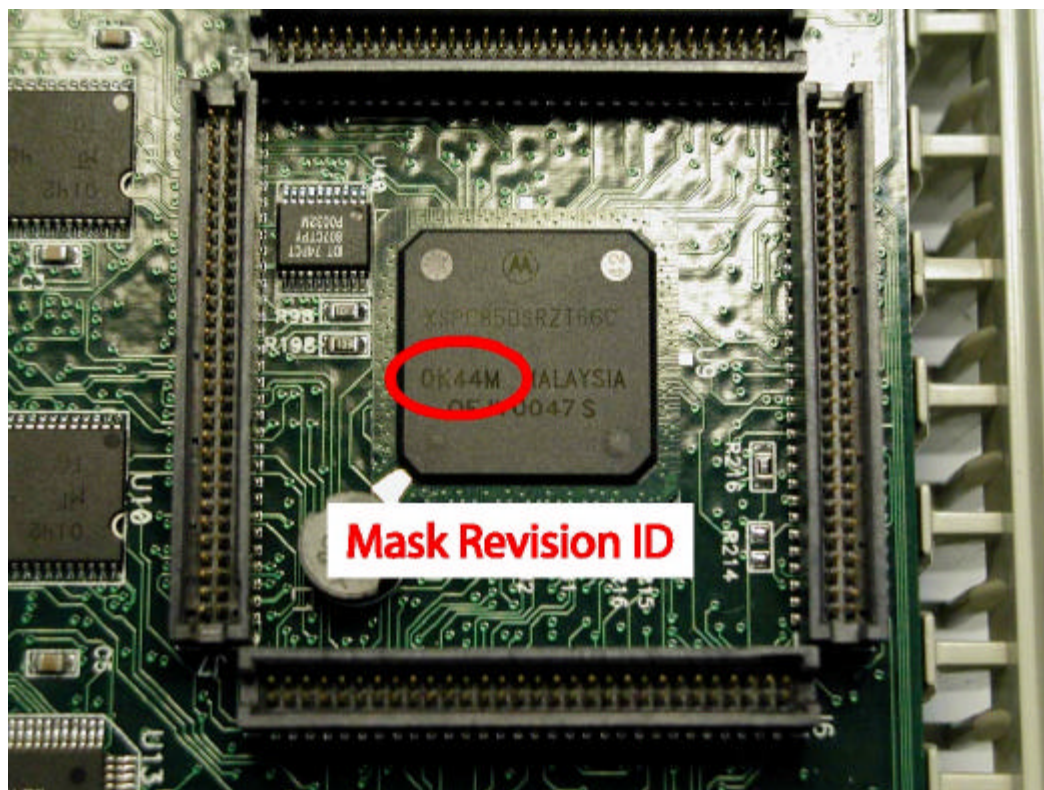


Figure 3. MPC850 Mask Revision ID Location

The table below describes the revisions and their USB capability

Mask Revision ID	USB Capability
0K44M	Fully functional. No known issues
0K45M	Fully functional. No known issues
0K29A	Fully functional. No known issues
0K24A	Fully functional. No known issues
4H97G	May have degraded performance. Contact American Arium for update
2H89G	May have degraded performance. Contact American Arium for update

What Do I Do Now?

If your processor has a revision of 4H97G or 2H89G, you should NOT attempt to use the USB communication port. You will need to return your equipment to American Arium for updating. In addition, if you purchased your unit before March 2001, you will need to return your emulator for a USB hardware upgrade as well.

Since this technical issue in no way affects the TCP-IP performance, you can continue to use the TCP-IP network connection as your primary communication method.

Please contact your American Arium representative, or call (877-508-3970) or email support@arium.com to arrange for return of your equipment for updating. You must be under warranty, either during the initial 12 months after purchase, or through our STAR-1 extended warranty.

Contact American Arium Support at 877-508-3970, or email support@arium.com for any other questions regarding this update.

