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**Version:** 1.0

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**Subject:** MC464 Boot Loader

## TECHNICAL BULLETIN

### 1. Summary

The MC464 Boot Loader is responsible for initialising the MC464 RAM. The MC464 hardware may require the Boot Loader V 0.18 or later for the RAM to function correctly. All versions of the MC464 hardware will benefit from using Boot Loader V 0.18 or later.

Boot Loader V 0.18 should be used wherever possible and must be used on MC464s which were shipped with this version.

Boot Loader V 0.18 was first included with system software V 2.0162.

Down-grading protection was first included in system software V 2.0171.

### 2. Possible MC464 RAM malfunction

When the MC464 powers up the RAM is initialised by the Boot Loader. Boot Loaders 0.17 and before do not always set up the RAM correctly and the main system software will then fail to run. This is more likely to happen when the MC464 operates in a high temperature environment. It is also more likely to happen with later versions of the MC464, but it might affect any version.

Frequency of problem: Rare.

Serial numbers affected: All, but may be more likely in serial numbers above 1000. Note; there is no known serial number range or PCB revision.

### 3. Prevention

Load system software version 2.0162 or later. These versions include Boot Loader V 0.18.

If the MC464 has V2.0162 or later installed already **DO NOT LOAD A LOWER VERSION**. If you need to downgrade the system software for operational reasons, please follow these steps:

1. Load system software V2.0171 or later. This includes Boot 0.18 and a feature to stop lower versions of the Boot loader being installed.
2. Load your preferred version. At the end of the installation, Boot 0.18 will still be present.

**Whenever you need to load or re-load the firmware, ALWAYS load >=2.0171 first!**

## 4. Recovery of failed units

If the MC464 will not power up correctly, it may be possible to recover by powering up 10 to 20 times and each time checking to see if the power up has been successful. If so, do not power down, but **immediately** load a system software version with Boot Loader 0.18.

If it is not possible to recover and the MC464 will not power up, return to Trio for re-installation of the system software.