

# M5e Module Family Firmware Release

Firmware Version 1.7.1 for the M5e and M5e-C Module Family

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These release notes describe the features of M5e firmware (FW) ver. 1.7.1 for the M5e and M5e-Compact module family, relative to the previous firmware version, 1.5.1. A new version of the API was released at the same time to support the new features, which is version 1.11.2.

For a full description of how to interface to the M5e module family, refer to the *M5e family Developers Guide (875-0016)* and the *Mercury API Programmers Guide (875-0049)* available at <http://rfid.thingmagic.com/devkit>.

## New Features in this release

With this release, both the M5e and M5e-Compact module families have gained the following features:

- EU regulatory compliance with EN 302 208 v. 1.4.1 (scheduled to be published in the ETSI official journal in February of 2012)
- Australian region support
- New Zealand region support (for experimental purposes only)
- IDS SL900A Sensor tag custom command support

Additional information about these features are provided in the following paragraphs.

### ***Australian Region Support***

An Australian region ("AU", 0xB) has been added to the firmware, supporting 10 channels in the 920 to 926 MHz band. It has been confirmed through testing that the M5e module will meet Australian regulatory requirements at full power.

### ***New Zealand Region Support***

A New Zealand region (NZ, 0xC) has been added to the firmware that supports 11 channels in the 921.5 to 928 MHz band. It has been confirmed that operation in this region will NOT adhere to New Zealand regulatory requirements at full power.

### ***IDS 900A Sensor Tag Support***

The IDS 900A is an EPC global Class 3 tag IC which can be operated in either semi-passive or passive mode, containing a fully integrated temperature sensor with two additional external sensor interfaces. The new commands we support for this IC are:

- Get Sensor Value
- Access Fifo
- Set Log Mode
- Initialize
- Start Log
- End Log
- Get Log State

Refer to the M5e Family Developers Guide or Mercury API Programmers Guide for information on the use of these commands.

## Bug Fixes

### ***The following issues were fixed between version 1.5.1 and version 1.5.2 of the firmware***

- Maximum duration of RF-on time is now correctly limited when a single channel is used in the EU region (EU3)

## Operational Notes

### ***IDS 900A tags near the limit of their read distance***

We have found that the IDS 900A tags do not alert the reader if there is insufficient power to complete an operation. They attempt to complete the operation anyway. Because of this, care must be taken to ensure the tag is well within the read range when performing any non-reversible operations, such as writing the access password. We have also found that insufficient tag power can result in incorrect temperature values being reported to the reader.

***Group Code for Modules is Recognized by API***

Readers which have the modules embedded in them are given a group code to identify the ThingMagic reader model to the API. Until this API release (1.11.2), the group code returned by a module alone (0xffff) was not recognized by the API and it would report an “Unknown” reader type. The API now recognizes and reports that the module has not been installed in a ThingMagic reader (when, for example, it is in a development kit).

***Selective Writing to a Field Being Written.***

For most tag writing scenarios, the reader is able to verify the results after the write is complete and automatically correct any errors before returning control to the host program. The exception to this ability is when the tag is being selected using the same field which is being overwritten. This most commonly occurs when the tag is being selected by its EPC in order to change its EPC. If, during writing, the tag does not report an error, but one is later found during the verify cycle, the reader will not be able to re-select the tag to correct the error because the tag will no longer respond to the original Select criteria. In this case, it will be necessary for the host application to re-Select the tag and correct the error.

***C-API Specific***

Some C-API code samples explicitly set the region to North America, which will fail if used with an M5e-EU module. The work-around is to edit these code samples so they select the EU region.