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Migrating from ZICM35xSP2-1 to ZICM35xSP2-2

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INTRODUCTION

California Eastern Laboratories (CEL) has released a new part number for the high power EM35x based modules. The new part number ZICM35xSP2-2 is intended for applications that require faster time to sleep. This is an important parameter for battery powered applications that rely on achieving the minimum sleep current as quickly as possible. The ZICM35xSP2-2 is pin for pin compatible (except for PC6 as described below) and footprint compatible to the ZICM35xSP2-1. All electrical characteristics with the exception of time to sleep are identical between the two part number variants.

HARDWARE REQUIREMENTS

For customers who might have already implemented the ZICM35xSP2-1 and are migrating over to the ZICM35xSP2-2, the impact to their hardware design is that Module Castellation Pin 5 which is EM35x GPIO PC6 is not available. This GPIO instead is connected internally in the module to the front end IC as a control signal. Therefore, for any existing designs that may have used GPIO_PC6 must be modified to use a different GPIO.

Also noteworthy is that the CEL Evaluation Board had PC6 mapped to LED2. Therefore, LED2 is not available as a peripheral when used in conjunction with the ZICM35xSP2-2 and the CEL Evaluation Board.

Similarly, the Silicon Labs Breakout board had PC6 mapped to Switch_1. Therefore, the functionality of this SW1 with the ZICM35xSP2-2 does not exist either.

SOFTWARE REQUIREMENTS

The impact of migrating from ZICM35xSP2-1 to the ZICM35xSP2-2 from a software perspective is the additional requirement of configuring and controlling GPIO_PC6 in addition to GPIO_PC5. Per the recommendation of Silicon Labs, PC5 is used to enable the transmitter or disable the transmitter for receive mode. PC6 must be kept at logic high for both transmit and receive mode. However, to send the module to sleep mode, both PC5 & PC6 must be programmed to a logic low state. The truth table that the software must conform to is shown below.

Description	PC6	PC5
All off (sleep mode)	0	0
Receive LNA mode	1	0
Transmit mode	1	1

More information on the exact changes required for a customer's application software can be found in the *ZICM35xSPx Software Design Guidelines* application note.

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REFERENCES

Reference Documents	Download
California Eastern Laboratories	
0000-00-07-01-000 – MeshConnect EM35x Mini Modules Datasheet	Link
0011-00-16-10-000 – ZICM35xSPx Software Design Guidelines	Link

REVISION HISTORY

Previous Versions	Changes to Current Version	Page(s)
0011-00-16-12-000 (Issue A) August 13, 2014	Initial Release	N/A
0011-00-16-12-000 (Issue B) September 11, 2015	Generalized references to the EM35x family so that guide is now inclusive of the newer EM358x variants.	All

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