



Power ON/OFF Sequences and Power-On-Reset (POR) on A2100-A/B

Application Notes

Version 1.0

Revision History

Rev.	Date	Description
1.0	05-18-11	First release
	mm-dd-yy	

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1 Introduction

Orderly shut-down process to properly stop internal operation and complete any write of critical data to internal RAM or Flash memory of A2100-A/B is recommended. Proper power ON and OFF sequences will be presented on section 2 of this application notes.

Although the probability of an exact coincidence of a power decrease during a flash data write or sector erase is very low, it is not zero. Abrupt removal or drop of main power while the system is running has risks ranging from fatal corruption of flash memory code area to minor impact on TTFF from lost data. Therefore, an additional external POR device is connected to nRST of A2100-A/B for monitoring the sudden main power drop is proposed on section 3.

2 Power sequence

2.1 Power on sequence

Power On Sequence

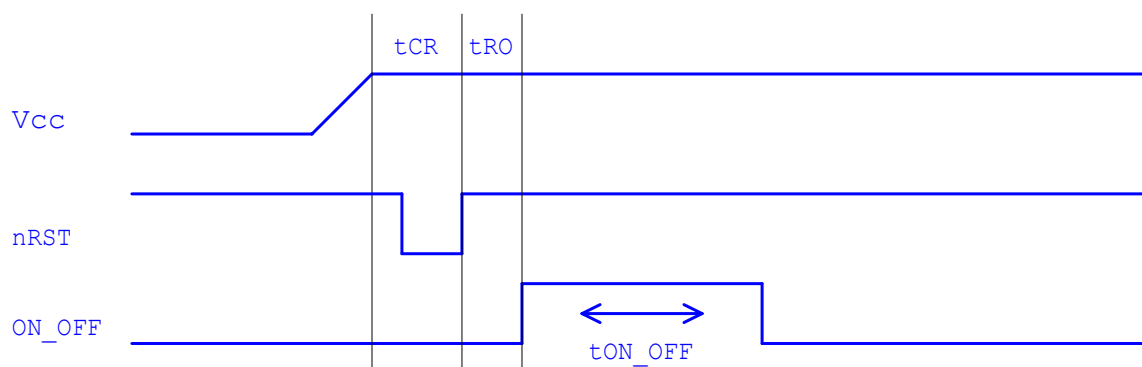


Fig 1. Power ON Sequence on A2100-A/B

Parameter	Symbol	Min	Typ	Max	Unit
Vcc to nRST	tCR	50			ms
nRST to ON_OFF	tRO	0	10		ms
ON_OFF pulse	tON_OFF	150	200		ms

2.2 Power off sequence

Power Off Sequence

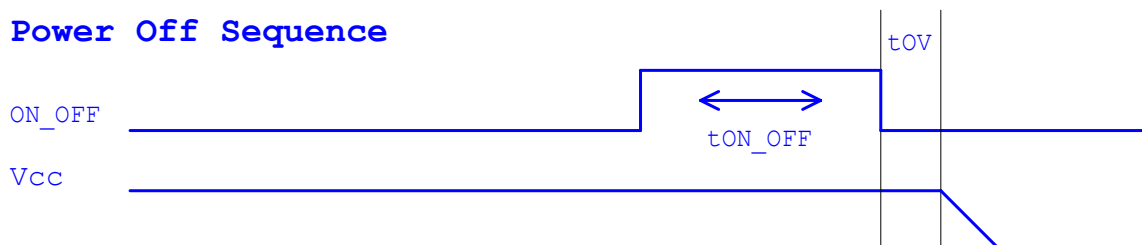


Fig 2. Power OFF Sequence on A2100-A/B

Parameter	Symbol	Min	Typ	Max	Unit
ON_OFF pulse	tON_OFF	150	200		ms
ON_OFF to VCC	tOV	0	50		ms

3 External POR Implementation on A2100-A/B

Abrupt or uncontrolled removal of power while the A2100-A/B is operating carries the risk of data corruption when writes to internal memory are occurring or when sectors of flash memory are being erased. The consequences of memory corruption range from longer TTFF to complete system failure. The problem can be avoided by monitoring A2100-A/B supply using an external POR device.

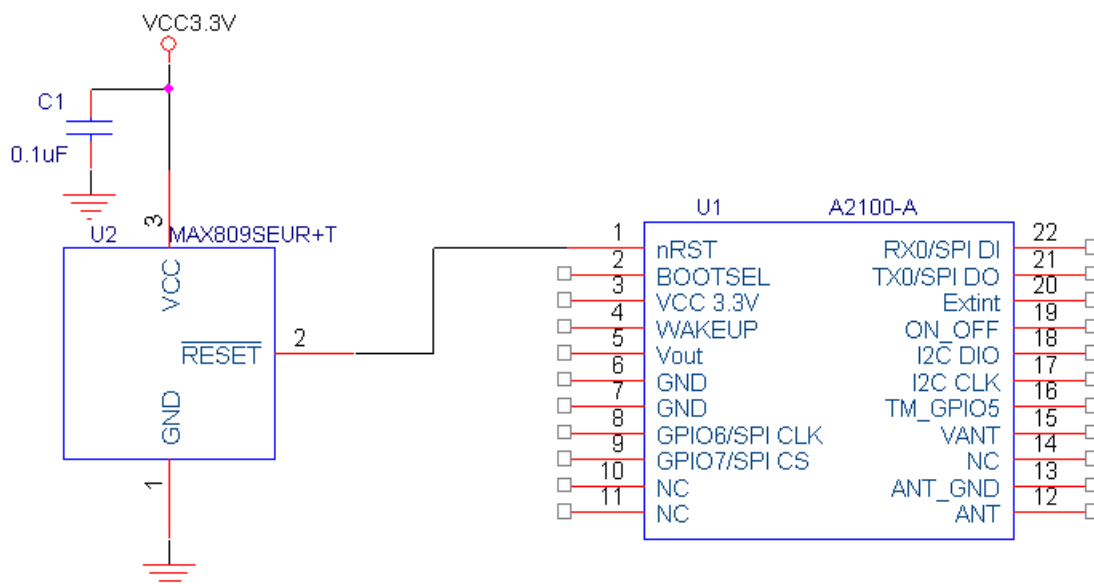


Fig 3. Recommended POR circuitry for A2100-A

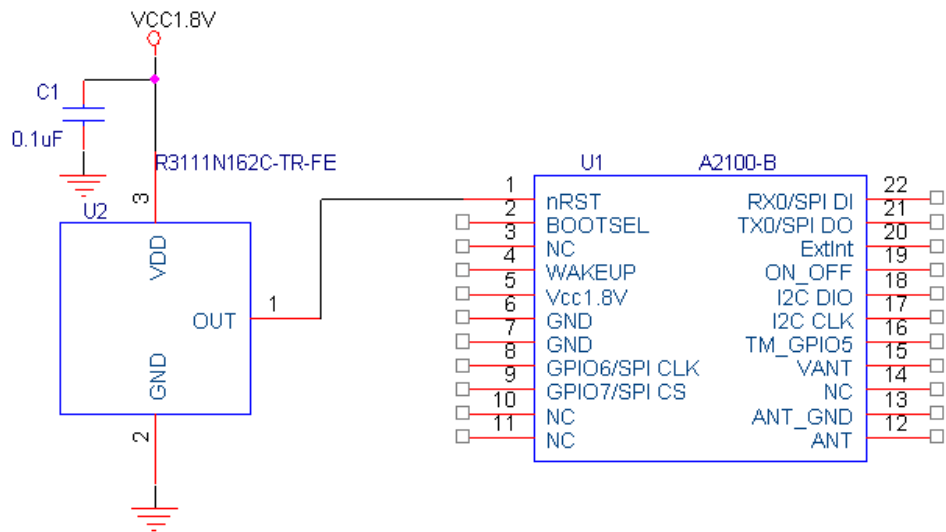


Fig 4. Recommended POR circuitry for A2100-B

We strongly recommend simulating and testing the POR circuitry in your product design before implementing to the final product application. In any case it is the responsibility of the designer to test and verify the implementation.

4 Related Information

4.1 Contact

This manual is created with due diligence. We hope that it will be helpful to the user to get the most out of the GPS module.

Inputs about errors or mistakable verbalizations and comments or suggestions to Maestro Wireless for further improvement are highly appreciated.

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5.Reference

[1] CSR Application Notes - GSD4e Supply Voltage Control and Sequencing
Application notes (CS-210069-AN-2)

[2] Data sheet of MAX809SEUR+T

URL: <http://datasheets.maxim-ic.com/en/ds/MAX803-MAX810Z.pdf>

[3] Data sheet of R3111N162C-TR-FE

URL: http://www.ricoh.com/LSI/product_power/vd/r3111x/r3111x-e.pdf