1 Power Supply and Boost Regulator Configuration

1.1 Recommended Configuration

for Boost Regulator 4-25V (Pololu #799):

VDD Output Voltage	VBAT Input Voltage	AAA Batteries	LiPo Cells
8V	1.5V	1 x 1.5V	
8V	3V	2 x 1.5V	
8V	4.5V	3 x 1.5V	
8V	6V	4 x 1.5V	
8V	7.5V	5 x 1.5V	
8V	3.7V		1 x 3.7V
8V	7.4V		2 x 3.7V

1.2 Maximum/Minimum Configuration

for Boost Regulator 4-25V (Pololu #799):

VDD Output Voltage	VBAT Input Voltage	AAA Batteries	LiPo Cells
*If FRDM-Board-VIN to VDD:**			
9V (max.)[2]	9V(max.)[1]	6 x 1.5V	
9V (max.)[2]	1.5V(min.)	1 x 1.5V	
9V (max.)[2]	7.4V (max.)[1]		2 x 3.7V
9V (max.)[2]	3.7V (min.)		1 x 3.7V
4V (min.)[3]	3V (max.)[1]	2 x 1.5V	
4V (min.)[3]	1.5V (min.)	1 x 1.5V	
4V (min.)[3]	3.7V (max.)[1]		1 x 3.7V
4V (min.)[3]	3.7V (min.)		1 x 3.7V
*If FRDM-Board-VIN to VBAT:**			
11V (max.)[4]	9V (max.)[2]	6 x 1.5V	
11V (max.)[4]	6V (min.)[5]	4 x 1.5V	
11V (max.)[4]	7.4V (max.)[2]		2 x 3.7V
11V (max.)[4]	7.4V (min.)[5]		2 x 3.7V
6V (min.)[1]	6V (max.)[5]	4 x 1.5V	
6V (min.)[1]	6V (min.)[5]	4 x 1.5V	
7.4V (min.)[1]	7.4V (max.)[2]		2 x 3.7V
7.4V (min.)[1]	7.4V (min.)[5]		2 x 3.7V

Notes:

* Default configuration is FRDM-Board-VIN pin to VDD.

[1] Input voltage should not exceed output voltage.

[2] FRDM-Board-VIN Pin allows 9V max.
[3] Boost Regulator (Pololu #799) minimal output is 4V.
[4] VDD may not exceed 11V! Pololu DRV8835 Dual Motor Driver Carrier has an input voltage of 2V to 11V.
[5] FRDM-Board-VIN Pin requires 5V min.

1.3 Important notes for Boost Regulators

> "You should be careful **not to use an input voltage that exceeds the output voltage** setting."

> "So we recommend setting the output voltage with the input voltage around or below 2.5 V (e.g. using one or two alkaline batteries). Note that the **potentiometer** has no physical end stops, which means that the wiper can be turned **360 degrees** and into an invalid region in which the output voltage is set to approximately 2.5 V (for both the 2.5 V to 9.5 V and 4 V to 25 V versions)."
> ⇒ *This is advisable when setting the output voltage with the potentiometer to the desired level. After having set the output voltage, the input voltage can be 1.5 V to 16 V.*

> "The **absolute limit** for the input voltage is double the output voltage setting. For example, if the output is set to 6 V, the input must not exceed 12 V."

(Source: www.pololu.com/catalog/product/799)