

## The Power Configuration for NX11FS2x series IC Using SPI Flash

**Description :** The power configuration for NX11FS2x using SPI Flash.

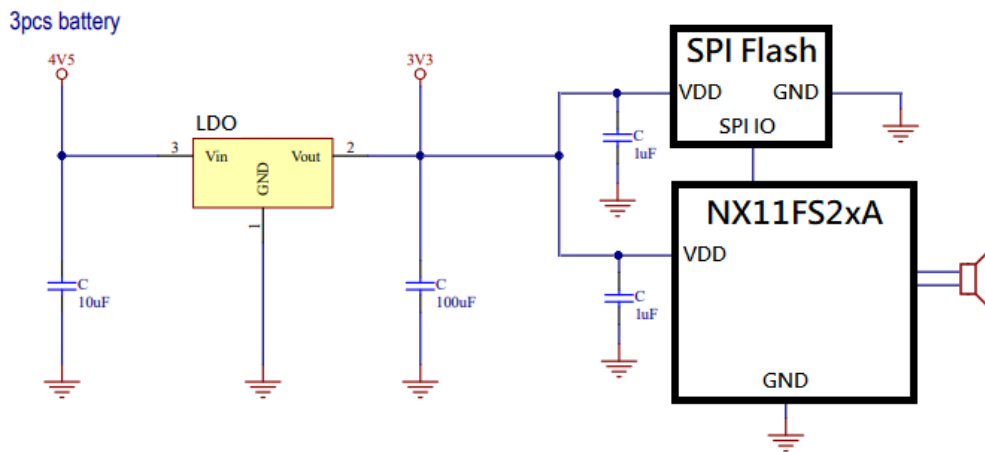
**Reason :** The power supply of SPI Flash.

The NX1 OTP series and the NX12FS / NX13FS series have a built-in LDO for the external SPI Flash, but the NX11FS2x series already has the built-in 1Mb ~ 8Mb Embedded Flash and most applications don't require the use of external SPI Flash. Therefore, to save IC cost, there is no built-in LDO for the NX11FS2x series. This application notice will provide three common power supply methods for the adding external SPI Flash.

**Solution :**

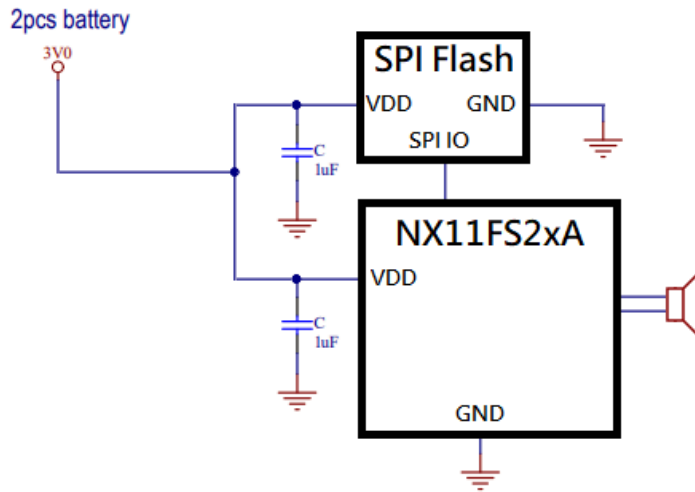
[Configuration 1]

For three batteries application, users can add an LDO at batteries side to be shared by whole system. The LDO can supply power to NX11FS2x and the external SPI Flash simultaneously.



[Configuration 2]

For two batteries application, users can supply power straight to NX11FS2x and the external SPI Flash simultaneously.



[Configuration 3]

For three batteries application, users can add diode D1 with a high VF (about 0.6V) after the battery and supply power straight to NX11FS2x. The voltage is reduced and then provided to the SPI Flash to avoid potential reliability issues that might be caused by high battery voltage. This method cannot fully meets the SPI Flash specification still, therefore users must pay attention to the potential risk. Due to the voltage difference between NX11FS2x and SPI Flash, the communication in between may have transmission problems due to level shifting issue as well as the possibility of higher leakage current.

