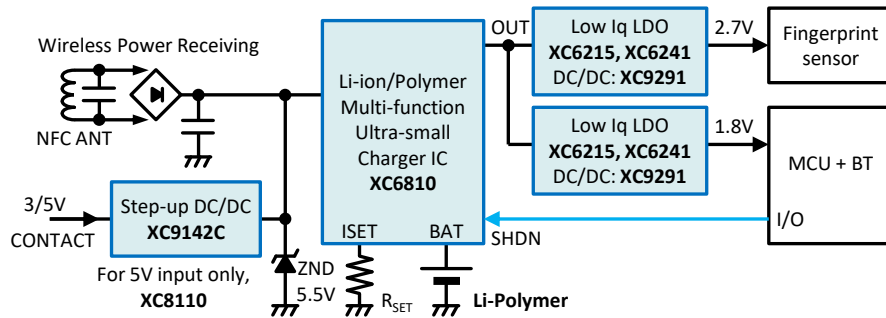


Low Profile Power Supply Solutions for h=0.33mm/0.40mm max.

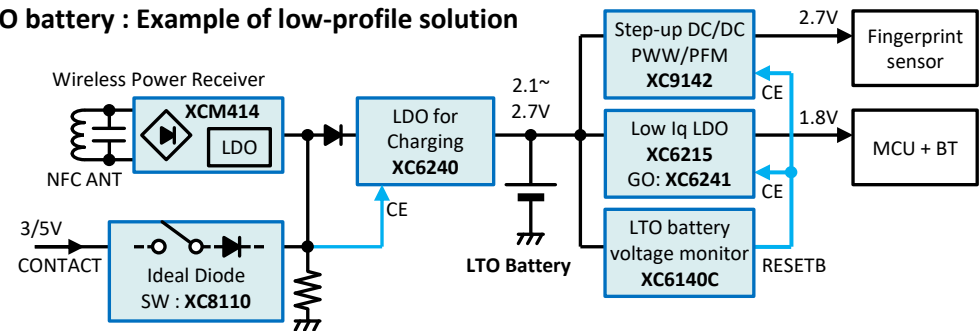
■ Example of thin power supply configuration with h = 0.33mm max for Smart card

- Challenges : Support h=0.33mm max. including external components
High efficiency charging circuit for input sources such as NFC

Li-Polymer battery : Example of low-profile solution

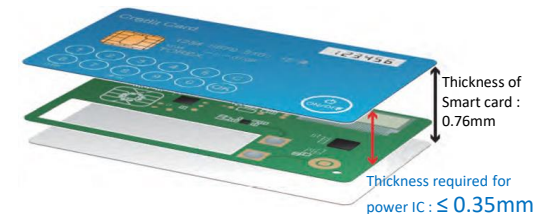


LTO battery : Example of low-profile solution



■ List of low-profile power supply ICs with h ≤ 0.33mm or 0.40mm

	Product	Features	V _{IN} (V)	V _{OUT} (V)	I _{OUT} (mA)	Package	Size
LDO	XC6216	28V	2.0 ~ 28.0	1.8 ~ 12.0	150	USP-6B06	1.8 x 1.5 x h 0.33mm
	XC6215	Iq=0.8μA	1.5 ~ 6.0	0.9 ~ 5.0	200		
	XC6241	High-speed, Iq=0.6μA, GO	1.6 ~ 6.0	1.5 ~ 5.0	150	USPQ-4B05	1.0 x 1.0 x h 0.33mm
	XC6504	Cap. Less, Iq=0.6μA	1.4 ~ 6.0	1.1 ~ 5.0	150	USPN-4B02	0.75 x 0.95 x h 0.40mm
LDO + Bridge Diode	XCM414	For wireless power receiving LDO with internal bridge diode	2.0 ~ 26	2.0 ~ 12.0	150	USP-8B10	2.6 x 2.9 x h 0.33mm
Step-up DC/DC	XC9142	PWM/PFM Step-up DC/DC	V _{ST} =0.9	1.8 ~ 5.5	500	WLP-6-01	1.08 x 1.28 x h 0.40mm
	XC9145	Iq=400nA, PWM/PFM Step-up DC/DC	V _{ST} =1.6	3.0 ~ 5.5	430	WLP-6-05	1.28 x 1.08 x h 0.40mm
Charge pump	XC9802	PWM/PFM Charge Pump	1.8 ~ 5.5	2.5 ~ 6.0 or x2	80	USP-8B05	2.4 x 2.4 x h 0.33mm
Step-down DC/DC	XC9276	Iq=200nA, Step-down DC/DC, VSET	1.8 ~ 6.0	0.5 ~ 3.6	150	WLP-6-03	1.72 x 1.07 x h 0.33 mm
	XC9291	HiSAT-COT, PWM/PFM, 6MHz	2.5 ~ 6.0	0.7 ~ 3.6	600	LGA-6B01	1.2 x 1.2 x h 0.3mm
Battery voltage monitor	XC6140	For LTO battery voltage monitoring Release voltage:2.475V	1.1 ~ 6.0	1.6 ~ 2.2	-	USPQ-4B05	1.0 x 1.0 x h 0.33mm
	XC6136	Iq=88nA	1.1 ~ 6.0	1.5 ~ 5.0	-		
Charger IC	XC6810	For 1 cell Li-ion, multi-function Charger IC	3.5 ~ 28	3.8 ~ 4.4	1 ~ 25	WLP-12-01	1.17 x 1.57 x h 0.33mm
	XC6808	Charger IC for 1 cell Li-ion	4.5 ~ 6.0	4.2, 4.35, 4.4	5 ~ 40	USP-6B07	1.8 x 2.0 x h 0.33mm
	XC6240	LDO for charging LTO battery	1.5 ~ 6.0	2.63	150	USP-6B06	1.8 x 1.5 x h 0.33mm
	XC8102	Load SW, Iq=3uA	1.2 ~ 6.0	-	400		
Load SW	XC8110	Ideal Diode SW	1.5 ~ 6.0	-	500	USP-6B06	1.8 x 1.5 x h 0.33mm
	XC6194	Push Button Load SW, I _{STB} =1nA	1.8 ~ 6.0	-	1000		



Inputs and energy storage for smart cards

Input sources : NFC
CONTACT input

Energy storages : Li-Polymer
LTO battery
Supercap (EDLC)
or battery less

Optimal power supply configuration for low-profile solutions varies depending on the input source and other factors.

TOREX offers **optimal power configurations**.