

Evaluation of a low frequency clock oscillation circuit

SSP-T7 series with LC88F85D0A-ES1-120P [LQFP(14x14) 0.40mm pitch]

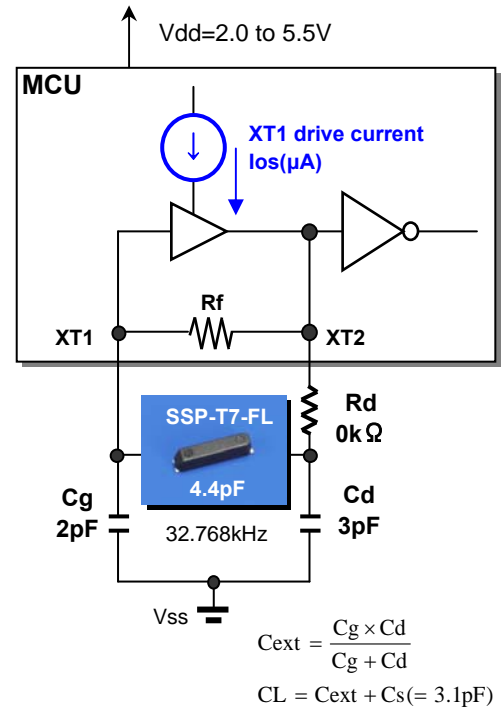
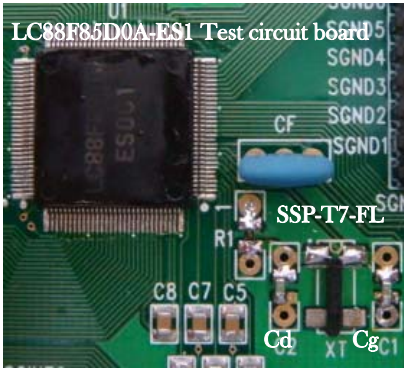
Measurement conditions : Vdd=2.0V and 5.5V at 25°C

Low power consumption MCU

LC88F85D0A XT1 oscillation mode and recommended load capacitance

For LC88F85D0A (Low current mode)

XT1 oscillation circuit consists of an excellent power saving circuit which realizes stable oscillation at low amplitude.



For your design reliability, please refer to Table 1 which shows the performance of the XT1 oscillation circuit and the recommended load capacitance for each resonator.

SSP-T7 series

SSP-T7-FL CL=3.7pF,4.4pF,6.0pF and SSP-T7-F CL=7.0pF,9.0pF,12.5pF
 VT-200-FL CL=3.7pF,4.4pF,6.0pF and VT-200-F CL=12.5pF

$$C_{ext} = \frac{C_g \times C_d}{C_g + C_d}$$

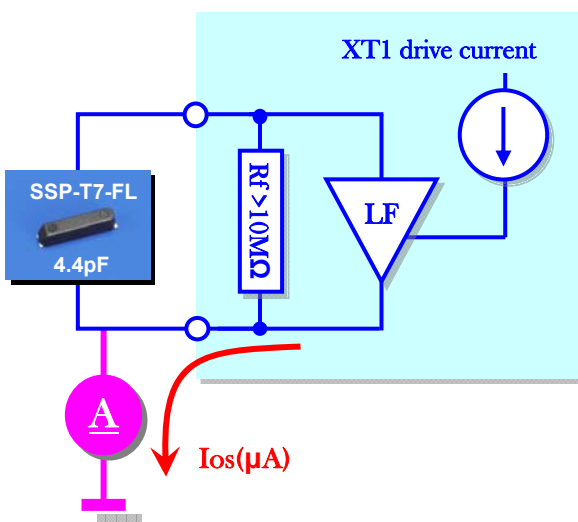
$$CL = C_{ext} + C_s (= 3.1pF)$$

Table 1 XT1 low current oscillation circuit mode and load capacitance for a resonator

XTL	CL (pF)	Rd (kΩ)	Cg (pF)	Cd (pF)	Vdd	Ios (μA)	dF/Cext ¹ (x10 ⁻⁶)	Ts (sec)	RL (kΩ)
SSP-T7-FL	4.4pF	0	2	3	2.0V ± 10%	203	2.22	0.82	-790
					5.0V ± 10%	256		0.50	-1059
VT-200-FL	6.0pF	0	6	6	2.0V ± 10%	203	3.08	1.21	-494
					5.0V ± 10%	256		0.85	-710

¹)GRM1552C1HxR0CZ01D1 and GRM1554C1H2R0CZ01D(±5%).

Low power consumption LC88F85D0A and SSP-T7-FL



Voltage characteristics of XT1 drive current

