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Contact:
Zafar Ullah
Scenix Semiconductor Inc.
Zafar.ullah@scenix.com
(408) 327-8888 ext.111

Design Requirement to Move From SX Rev.2.1 to Rev.2.5

This memo talks about the necessary board design change to move from SX Rev.2.1 to SX Rev.2.5 parts.

Date codes for Rev.2.1 part: 9747, 9749, 9750, 9810, 9811, and 9812

Date codes for Rev.2.5 part: 9814, 9815, 9818, and 9819

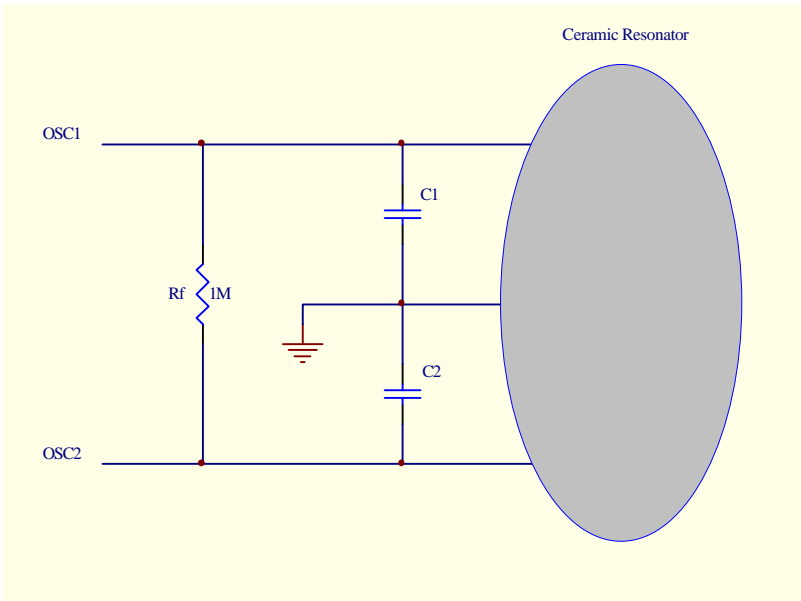
Differences Between Rev. 2.1 and Rev. 2.5 parts:

1. Rev 2.1 has internal feedback resistor between OSC1 and OSC2 pins. To switch to Rev. 2.5 parts the feedback resistor for the oscillator circuit should be provided externally. The following tables give the values of the resistors and capacitors for the clock oscillator circuit for Rev. 2.5 parts.
2. In-system Debugging (ISD) is not supported with Rev.2.1 parts, but it is supported with Rev.2.5 parts. To do ISD with SX-key and Rev. 2.5 parts, it is required to remove the clock circuit from the board. In-system programming (ISP) is supported with both 2.1 and 2.5 Revs, and no clock circuit removal is necessary.

Resistor & Capacitor Selection for Ceramic Resonator (RF = 1M)

Osc Type	Resonator Frequency (MHz)	C1(pF)	C2(pF)
XT	455 kHz	20	100
	2	20	47
	4	20	47
HS	8	20	47
	10	20	47
	12	20	47
	20	5	15
	50.0 without Caps	5	10
	50.0 with Caps	No Cap	No Cap

Suggested Circuit:



Resistor & Capacitor Selection for Crystal

Osc Type	Crystal Frequency (MHz)	C1(pF)	C2(pF)	RF
XT	4	20	47	1M
HS	8	20	47	1M
	12	20	47	1M
	16	15	30	1M
	20	15	30	1M
	25	5	20	10K
	30	5	20	4.7K
	36	5	15	3.3K
	40	5	15	3.3K
	50	5	10	3.3K

Suggested Circuit:

