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Driving the LPC111x with Murata resonators

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Document information

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Abstract	Characterization results of Murata resonators for LPC111x

Revision history

Rev	Date	Description
01	20100504	Initial release

Contact information

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1. Introduction

The LPC111x series microcontrollers are based on the ARM Cortex-M0 core operating at frequencies of up to 50 MHz. These low power 32-bit microcontrollers feature serial interfaces including UART, and I^2C.

The LPC111x devices have an integrated IRC oscillator. On the LPC111x, the IRC is nominally 12 MHz and accurate within 1 % over temperature and voltage. Many applications can utilize the IRC as the clock source; others may use a suitable crystal for more accuracy, particularly for CAN and USB applications. The LPC111x devices can also use a resonator as a clock source.

2. Characterization results

Based on characterization results, the following table details the most suitable devices available from Murata. Note that devices from other manufacturers can also be used.

Table 1. Recommended devices (for consumer) [1]

V_{DD}: 1.8 V to 3.6 V; −40 to +85 °C

Device	Freq. [MHz]	Type	Part number	Supply voltage range	Temp. range
LPC1111 LPC1112 LPC1113 LPC1114	2	SMD	CSTCC2M00G56-R0	1.8 to 3.6	−40 to +85 °C
	4		CSTCR4M00G55-R0		
	8		CSTCE8M00G55-R0		
	12		CSTCE12M0G55-R0		
	16		CSTCE16MOV53-R0		
	25		CSTCW25M0X51-R0		

[1] These resonators have load capacitors included so external load capacitors are not necessary.
Suffix indicates packaging style.
SMD type[-R0:Plastic tape package(∅ = 180mm), -B0:Bulk]

For more information and a detailed report please go to the Murata website http://nxp.com/redirect/search.murata.co.jp/Ceramy/IC_en.do and search for ‘LPC’.

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