

# R\_10004

## Driving the LPC111x with Murata resonators

Rev. 1.1 — 12 February 2014

Report

### Document information

Info	Content
<b>Keywords</b>	LPC1111FHN33; LPC1112FHN33; LPC1113FHN33; LPC1114FHN33; LPC1113FBD48; LPC1114FBD48; LPC1114FA44
<b>Abstract</b>	Characterization results of Murata resonators for LPC111x



**Revision history**

Rev	Date	Description
1.1	20140212	Corrected link; removed /xxx suffix from part types listed in document information keywords section.
1	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<sup>2</sup>C.

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<sub>DD</sub>: 1.8 V to 3.6 V; -40 to +85 °C*

Device	Freq. [MHz]	Type	Part number	Supply voltage range	Temp. range
LPC1111	2	SMD	CSTCC2M00G56-R0	1.8 to 3.6	-40 to +85 °C
LPC1112	4		CSTCR4M00G55-R0		
LPC1113	8		CSTCE8M00G55-R0		
LPC1114	12		CSTCE12M0G55-R0		
	16		CSTCE16M0V53-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( $\varnothing = 180\text{mm}$ ), -B0:Bulk]

For more information and a detailed report please go to the Murata website

<http://search.murata.co.jp/Ceramy/ICsearchAction.do?sLang=en>

and search for 'LPC'.

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## 4. Contents

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1	<b>Introduction</b> .....	<b>3</b>
2	<b>Characterization results</b> .....	<b>3</b>
3	<b>Legal information</b> .....	<b>4</b>
3.1	Definitions .....	4
3.2	Disclaimers .....	4
3.3	Trademarks .....	4
4	<b>Contents</b> .....	<b>5</b>

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