

# R\_10003

## Driving the LPC1300 with Murata resonators

Rev. 01 — 4 May 2010

Report

### Document information

Info	Content
<b>Keywords</b>	LPC1311FHN33; LPC1313FBD48; LPC1313FHN33; LPC1342FHN33; LPC1343FBD48; LPC1343FHN33
<b>Abstract</b>	Characterization results of Murata resonators for LPC1300



## Revision history

Rev	Date	Description
01	20100504	Initial release

## Contact information

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## 1. Introduction

The LPC1300 series microcontrollers are based on the ARM Cortex-M3 core operating at up to 72 MHz. These low power 32-bit microcontrollers feature serial interfaces including USB, UART, and I<sup>2</sup>C. The controllers are ideal for applications such as eMetering, medical, POS, and industrial networking.

The LPC1300 devices have an integrated IRC oscillator. On the LPC1300, 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 USB applications. The LPC1300 device can also use a resonator as a clock source.

## 2. Characterization results

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

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

$V_{DD}$ : 2.0 V to 3.6 V; -40 to +85 °C

Device	Freq. [MHz]	Type	Part number	Supply voltage range	Temp. range
LPC1311	2	SMD	CSTCC2M00G56-R0	2.0 to 3.6	-40 to +85 °C
LPC1313	4		CSTCR4M00G55-R0		
LPC1342	8		CSTCE8M00G55-R0		
LPC1343	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( $\varnothing$  = 180mm), -B0:Bulk]

For the LPC parts with USB (LPC1343 and LPC1342), the following resonators are recommended.

**Table 2. Recommended devices (for consumer) [1]**

$V_{DD}$ : 2.0 V to 3.6 V; -40 to +85 °C

Device	Freq. [MHz]	Type	Part number	Supply voltage range	Temp. range
LPC1342	12	SMD	CSTCE12M0GH5L**-R0	2.0 to 3.6	-40 to +85 °C
LPC1343	16	SMD	CSTCE16M0VH3L**-R0		

- [1] These resonators have load capacitors included so external load capacitors are not necessary.  
 "\*\*\*" means temporary part number; formal part number will be applied after the frequency measurement process on actual board by Murata.  
 Suffix indicates packaging style.  
 SMD type[ -R0:Plastic tape package( $\varnothing$  = 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/LC\\_en.do](http://nxp.com/redirect/search.murata.co.jp/Ceramy/LC_en.do) and search for 'LPC'.

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Date of release: 4 May 2010

Document identifier: R\_10003\_1