Application Note

LMK6H and LMKDB1xxx PCI Express Compliance Report

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ABSTRACT

Enterprise systems are demanding cleaner clocks since data centers are using higher data rates. This report demonstrates PCI Express (PCIe) compliance for the LMKDB1xxx family of buffers using the LMK6HA10000ADLER, LMK6HA10000ADLFR, and LMK6HA10000BDLFR BAW oscillator as an input clock, which verifies that these devices can be used together in such systems.

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Trademarks

1 Introduction

This document presents a test report of PCI Express (PCIe) reference clock compliance for the LMKDB1xxx buffer family using LMK6H as the input clock source. The report contains the test setup, test procedure, TI's PCIe Compliance Tool explanation, and the test results demonstrating PCIe compliance. The test setup was arranged to obtain both the phase noise and time domain jitter analysis required for PCIe compliance. Then, the test procedure was followed to obtain the results. The data from this test is then uploaded onto TI's PCIe Compliance Tool within TICS Pro to determine PCIe compliance.

2 Test Setup

TI's PCIe Compliance Reports display the analysis of a device's phase noise or jitter in regards to meeting PCIe requirements. This PCIe compliance report displays test results under typical conditions at 25°C ambient temperature and a supply voltage of 3.3 V for both devices.

The hardware setup consists of a device under test, power supply, balun (for frequency domain measurements only), test load board, and phase noise analyzer (PNA, for frequency domain measurements) or oscilloscope (for time domain measurements). The LMKDB1xxx clock buffer receives an input clock from an LMK6HA10000ADLER, LMK6HA10000ADLFR, and LMK6HA10000BDLFR in HCSL format. The LMKDB1xxx family of parts require an input slew rate of 3.5 V/ns and peak-to-peak swing of 1.6 Vpp, which was achieved with said setup.

For frequency domain measurements, the differential outputs of the LMKDB1xxx are connected to a balun to convert them to a single-ended signal which is routed to a PNA, as shown on Figure 2-1.

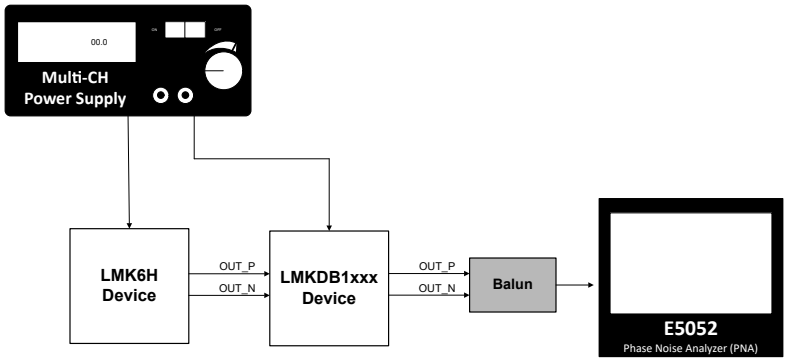

Figure 2-1. TI's PCIe Compliance Test Hardware Setup for Frequency Domain Measurements

For time domain measurements, the differential outputs (both positive and negative pins) of the device are routed directly to an oscilloscope, as shown on Figure 2-2. Also, when obtaining data for the time domain measurements, the PCIe test load is a 15 dB loss trace at 4 GHz.

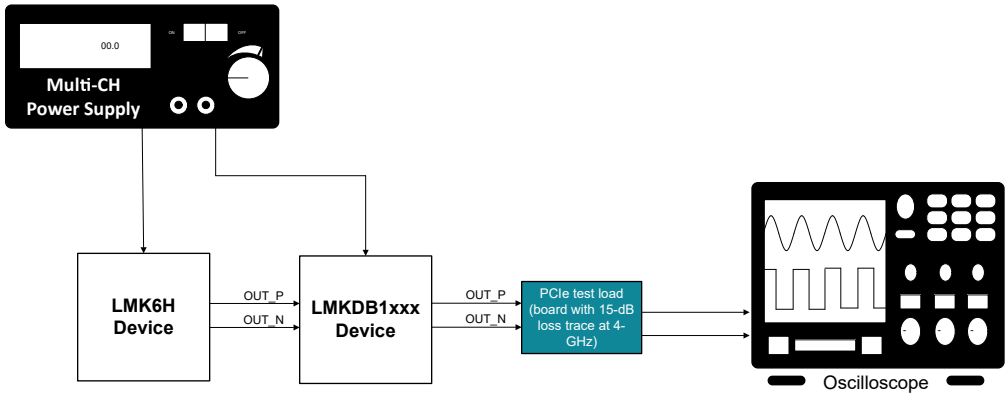

Figure 2-2. TI's PCIe Compliance Test Hardware Setup for Time Domain Measurements

3 Test Procedure

Test procedure used to obtain LMK6H and LMKDB1xxx's PCIe compliance report results is as follows:

1. After powering up the device, the differential outputs are connected directly to an oscilloscope for time domain measurements, or to a PNA through a balun for frequency domain measurements.
2. An output trace file is captured from the PNA or oscilloscope. Note that the oscilloscope capture requires both the positive and negative traces, so two output trace files from the oscilloscope are required.
3. The file/files generated is/are run through TI's PCIe Compliance Tool (Section 4 contains more information about this tool).

4 Explanation of TI's PCIe Compliance Tool

TI's PCIe Compliance Tool can be found within TI's TICS Pro Software. To access the tool, first download TI's TICS Pro Software. Under the *Tools* tab, select *PCIe Report Generator* (steps shown in Figure 4-1). After a few seconds, the tool appears, as shown on Figure 4-2, which can then be used to analyze frequency domain traces (such as Figure 4-3) and time domain traces (such as Figure 4-4) to determine PCIe compliance.

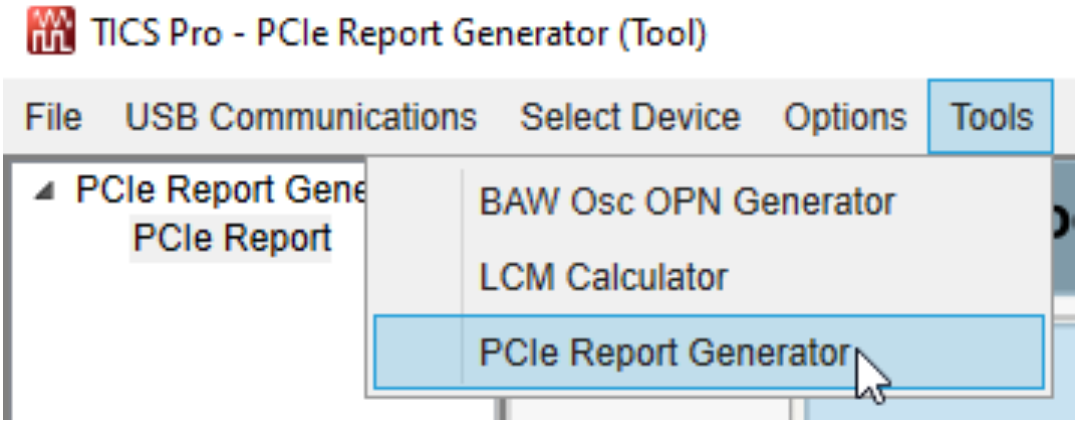

Figure 4-1. TICS Pro Steps to Access the *PCIe Reference Clock Analysis Tool*

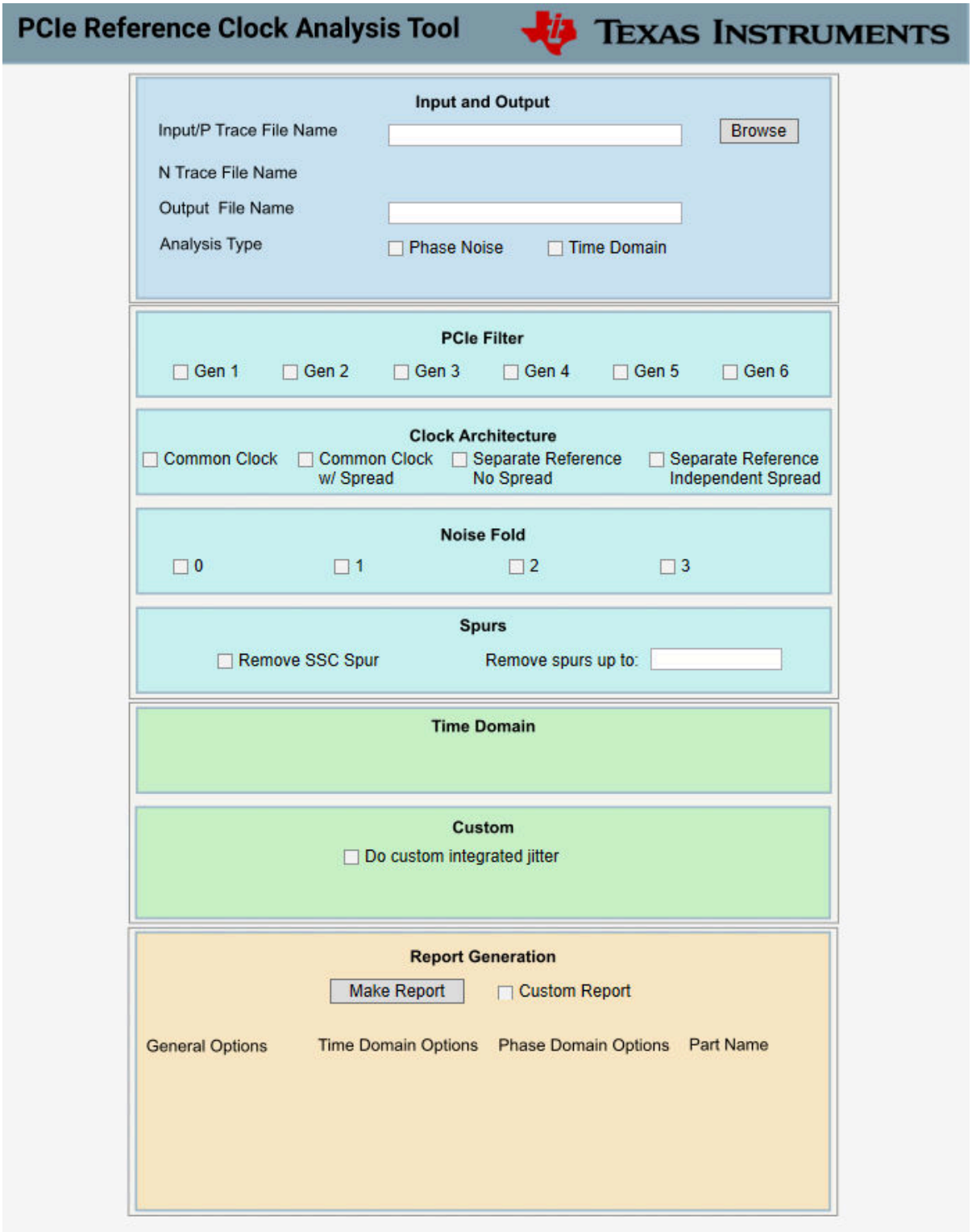

Figure 4-2. PCIe Tool Home Page

For frequency domain data analysis, the tool runs frequency domain input traces through PCIe filters, taking other parameters such as PCIe generation, clock architecture, noise fold, and presence of SSC into considerations to determine if the trace meets PCIe requirements. Then, the tool assign a PASS, FAIL, or N/A status based on the results.

For time domain data analysis, the tool runs time domain input traces, and takes into account Vcross, period, duty cycle, and other parameters specified by PCIe standards to determine and assign a PASS/FAIL to the traces being analyzed.

Figure 4-3. Example of PNA Plot

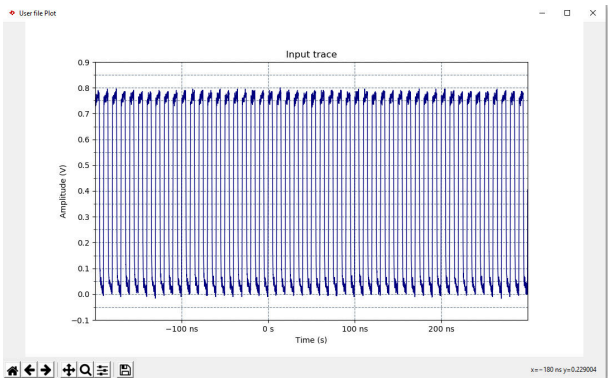

Figure 4-4. Example of Time Domain Plot

5 LMK6H and LMKDB1xxx Test Results

The LMK6H and LMKDB1xxx PCIe Compliance test results are detailed in this section.

5.1 LMK6H and LMKDB1xxx Test Results Summary

Table 5-1 is the PCIe compliance results summary for the LMK6H and LMKDB1xxx phase noise analysis, which demonstrates the jitter compliance of the device for PCIe Gen 1 through 6, noise folds 0 and 3, and clock architectures Common Clock (CC) and Separate Reference No Spread (SRNS).

A PCIe jitter spec or time domain calculation can have one of the following statuses:

- PASS: within specifications/limits
- FAIL: outside specifications/limits
- N/A: no specifications/limits available

Table 5-1. LMK6H and LMKDB1xxx PCIe Tool Test Results Summary - Frequency Domain

Jitter Filter	Clock Arch.	Noise Fold	Min (fs)	Max (fs)	Limit (fs)	Status
PCIe1	CC	0	0.0	1,385	86,000	PASS
		3	0.0	1,826	86,000	PASS
PCIe2	CC	0	46	145	3,100	PASS
		3	57	181	3,100	PASS
	SRNS	0	59	49	N/A	N/A
		3	73	60	N/A	N/A
PCIe3	CC	0	15	43	1,000	PASS
		3	19	54	1,000	PASS
	SRNS	0	18	49	N/A	N/A
		3	22	60	N/A	N/A
PCIe4	CC	0	18	43	500.0	PASS
		3	22	54	500.0	PASS
	SRNS	0	18	49	N/A	N/A
		3	22	60	N/A	N/A
PCIe5	CC	0	3	18	150.0	PASS
		3	4	23	150.0	PASS
	SRNS	0	4	19	N/A	N/A
		3	5	24	N/A	N/A
PCIe6	CC	0	4	11	100.0	PASS
		3	5	14	100.0	PASS
	SRNS	0	5	15	N/A	N/A
		3	6	18	N/A	N/A

Table 5-2 is the PCIe compliance summary for the LMK6H and LMKDB1xxx time domain analysis which demonstrates the time domain compliance of the device.

Table 5-2. LMK6H and LMKDB1xxx PCIe Tool Test Results Summary - Time Domain

Calculation	Min	Avg	Max	Limit	Status
V_{cross}	277.85	291.29	304.06	250 mV to 550 mV	PASS
V_{high}	664.188	664.188		150 mV	PASS
V_{low}		3.625	3.625	-150 mV	PASS
Period	9.992	10.001	10.016	9.847 ns to 10.203 ns	PASS
Duty Cycle	49.957	50.064	50.217	40% to 60%	PASS
Overshoot Voltage		42.9	56.19	300 mV	PASS
Undershoot Voltage		-53.95	-72.38	-300 mV	PASS
Rising Edge Rate	3.451	3.662	3.897	0.6 V/ns to 4 V/ns	PASS
Falling Edge Rate	3.374	3.579	3.809	0.6 V/ns to 4 V/ns	PASS

5.2 PCIe Tool Input File Waveforms for the LMK6H and LMKDB1xxx Family

Figure 5-1 illustrates output phase noise curve of the LMKDB1120 with a reference input of 100-MHz from the LMK6H. Figure 5-2 illustrates the input trace waveform. All of these waveforms are inputted into TI's PCIe Compliance Tool (found within TI's TICS Pro Software, more information in Section 4) to determine PCIe compliance. These results and waveforms apply for all LMKDB1xxx devices.

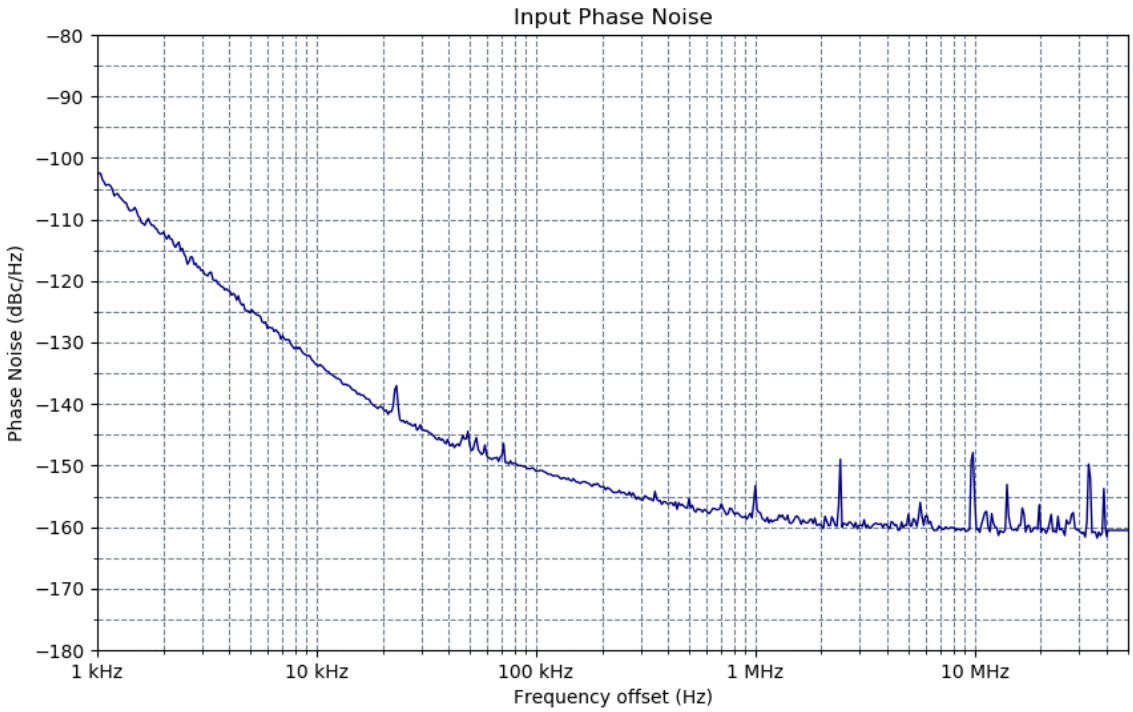

Figure 5-1. Output Phase Noise Curve from the LMKDB1120 with a 100 MHz Reference Input from the LMK6H

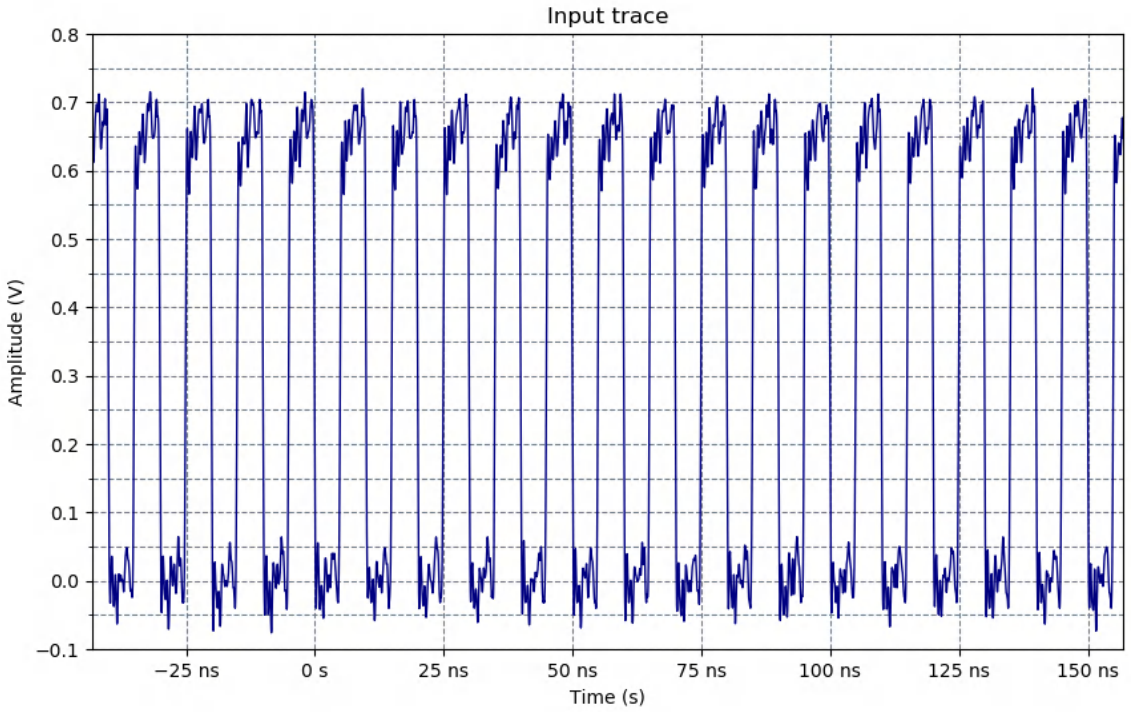

Figure 5-2. Output Time Domain Plot from the LMKDB1120 having a 100-MHz Reference Input from the LMK6H

5.3 LMK6H and LMKDB1xxx Detailed Jitter Measurements

Table 5-3 outlines specific jitter measurement results for PCIe generations 1 through 6 with noise folds 0 and 3 and clock architectures CC and SRNS.

Table 5-3. LMK6H and LMKDB1xxx Detailed Jitter Measurements

PCIe Gen	Clock Arch.	Noise Fold	Filter Comb	PLL1 f1	PLL1 zeta1	PLL2 f2	PLL2 zeta2	CDR f3	Value (fs)	Limit (fs)	Status
PCIe1	CC	0	1	1.50E+06	0.54	1.50E+06	0.54	1.50E+06	82.98947	86,000	PASS
PCIe1	CC	0	2	1.50E+06	0.54	2.20E+07	0.54	1.50E+06	1384.74	86,000	PASS
PCIe1	CC	0	3	2.20E+07	0.54	1.50E+06	0.54	1.50E+06	1384.74	86,000	PASS
PCIe1	CC	0	4	2.20E+07	0.54	2.20E+07	0.54	1.50E+06	1316.987	86,000	PASS
PCIe1	CC	0	5	1.50E+06	14	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	0	6	1.50E+06	0.54	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	0	7	2.20E+07	14	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	0	8	2.20E+07	0.54	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	0	9	1.50E+06	14	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	0	10	1.50E+06	0.54	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	0	11	2.20E+07	14	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	0	12	2.20E+07	0.54	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	0	13	1.50E+06	14	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	0	14	1.50E+06	0.54	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	0	15	2.20E+07	14	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	0	16	2.20E+07	0.54	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	0	17	1.50E+06	14	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	0	18	1.50E+06	0.54	2.20E+07	0.54	1.50E+06	0	86,000	PASS

Table 5-3. LMK6H and LMKDB1xxx Detailed Jitter Measurements (continued)

PCIe Gen	Clock Arch.	Noise Fold	Filter Comb	PLL1 f1	PLL1 zeta1	PLL2 f2	PLL2 zeta2	CDR f3	Value (fs)	Limit (fs)	Status
PCIe1	CC	0	19	2.20E+07	14	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	0	20	2.20E+07	0.54	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	3	1	1.50E+06	0.54	1.50E+06	0.54	1.50E+06	108.4737	86,000	PASS
PCIe1	CC	3	2	1.50E+06	0.54	2.20E+07	0.54	1.50E+06	1825.758	86,000	PASS
PCIe1	CC	3	3	2.20E+07	0.54	1.50E+06	0.54	1.50E+06	1825.758	86,000	PASS
PCIe1	CC	3	4	2.20E+07	0.54	2.20E+07	0.54	1.50E+06	1716.247	86,000	PASS
PCIe1	CC	3	5	1.50E+06	14	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	3	6	1.50E+06	0.54	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	3	7	2.20E+07	14	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	3	8	2.20E+07	0.54	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	3	9	1.50E+06	14	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	3	10	1.50E+06	0.54	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	3	11	2.20E+07	14	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	3	12	2.20E+07	0.54	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	3	13	1.50E+06	14	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	3	14	1.50E+06	0.54	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	3	15	2.20E+07	14	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	3	16	2.20E+07	0.54	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	3	17	1.50E+06	14	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	3	18	1.50E+06	0.54	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	3	19	2.20E+07	14	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe1	CC	3	20	2.20E+07	0.54	2.20E+07	0.54	1.50E+06	0	86,000	PASS
PCIe2	CC	0	10	5.00E+06	14	5.00E+06	14	5.00E+06	49.96428	3,100.00	PASS
PCIe2	CC	0	11	5.00E+06	14	5.00E+06	0.54	5.00E+06	53.13595	3,100.00	PASS
PCIe2	CC	0	12	5.00E+06	14	1.60E+07	14	5.00E+06	112.6125	3,100.00	PASS
PCIe2	CC	0	13	5.00E+06	14	1.60E+07	0.54	5.00E+06	105.3287	3,100.00	PASS
PCIe2	CC	0	14	5.00E+06	1.16	5.00E+06	14	5.00E+06	50.24456	3,100.00	PASS
PCIe2	CC	0	15	5.00E+06	1.16	5.00E+06	0.54	5.00E+06	45.67955	3,100.00	PASS
PCIe2	CC	0	16	5.00E+06	1.16	1.60E+07	14	5.00E+06	113.3724	3,100.00	PASS
PCIe2	CC	0	17	5.00E+06	1.16	1.60E+07	0.54	5.00E+06	109.3095	3,100.00	PASS
PCIe2	CC	0	18	1.60E+07	14	5.00E+06	14	5.00E+06	112.6125	3,100.00	PASS
PCIe2	CC	0	19	1.60E+07	14	5.00E+06	0.54	5.00E+06	115.0112	3,100.00	PASS
PCIe2	CC	0	20	1.60E+07	14	1.60E+07	14	5.00E+06	129.309	3,100.00	PASS
PCIe2	CC	0	21	1.60E+07	14	1.60E+07	0.54	5.00E+06	144.746	3,100.00	PASS
PCIe2	CC	0	22	1.60E+07	1.16	5.00E+06	14	5.00E+06	107.7612	3,100.00	PASS
PCIe2	CC	0	23	1.60E+07	1.16	5.00E+06	0.54	5.00E+06	113.0532	3,100.00	PASS
PCIe2	CC	0	24	1.60E+07	1.16	1.60E+07	14	5.00E+06	133.0145	3,100.00	PASS
PCIe2	CC	0	25	1.60E+07	1.16	1.60E+07	0.54	5.00E+06	133.5548	3,100.00	PASS
PCIe2	CC	3	10	5.00E+06	14	5.00E+06	14	5.00E+06	62.77221	3,100.00	PASS
PCIe2	CC	3	11	5.00E+06	14	5.00E+06	0.54	5.00E+06	66.44231	3,100.00	PASS
PCIe2	CC	3	12	5.00E+06	14	1.60E+07	14	5.00E+06	141.0571	3,100.00	PASS
PCIe2	CC	3	13	5.00E+06	14	1.60E+07	0.54	5.00E+06	130.4201	3,100.00	PASS
PCIe2	CC	3	14	5.00E+06	1.16	5.00E+06	14	5.00E+06	62.97917	3,100.00	PASS
PCIe2	CC	3	15	5.00E+06	1.16	5.00E+06	0.54	5.00E+06	57.17745	3,100.00	PASS
PCIe2	CC	3	16	5.00E+06	1.16	1.60E+07	14	5.00E+06	141.8573	3,100.00	PASS
PCIe2	CC	3	17	5.00E+06	1.16	1.60E+07	0.54	5.00E+06	135.2047	3,100.00	PASS

Table 5-3. LMK6H and LMKDB1xxx Detailed Jitter Measurements (continued)

PCIe Gen	Clock Arch.	Noise Fold	Filter Comb	PLL1 f1	PLL1 zeta1	PLL2 f2	PLL2 zeta2	CDR f3	Value (fs)	Limit (fs)	Status
PCIe2	CC	3	18	1.60E+07	14	5.00E+06	14	5.00E+06	141.0571	3,100.00	PASS
PCIe2	CC	3	19	1.60E+07	14	5.00E+06	0.54	5.00E+06	143.7617	3,100.00	PASS
PCIe2	CC	3	20	1.60E+07	14	1.60E+07	14	5.00E+06	163.2359	3,100.00	PASS
PCIe2	CC	3	21	1.60E+07	14	1.60E+07	0.54	5.00E+06	180.7382	3,100.00	PASS
PCIe2	CC	3	22	1.60E+07	1.16	5.00E+06	14	5.00E+06	134.7449	3,100.00	PASS
PCIe2	CC	3	23	1.60E+07	1.16	5.00E+06	0.54	5.00E+06	141.0265	3,100.00	PASS
PCIe2	CC	3	24	1.60E+07	1.16	1.60E+07	14	5.00E+06	167.5247	3,100.00	PASS
PCIe2	CC	3	25	1.60E+07	1.16	1.60E+07	0.54	5.00E+06	166.8088	3,100.00	PASS
PCIe2	SRNS	0	10	5.00E+06	14	5.00E+06	14	5.00E+06	70.91272	N/A	N/A
PCIe2	SRNS	0	11	5.00E+06	14	5.00E+06	0.54	5.00E+06	60.95952	N/A	N/A
PCIe2	SRNS	0	12	5.00E+06	14	1.60E+07	14	5.00E+06	111.8593	N/A	N/A
PCIe2	SRNS	0	13	5.00E+06	14	1.60E+07	0.54	5.00E+06	127.8718	N/A	N/A
PCIe2	SRNS	0	14	5.00E+06	1.16	5.00E+06	14	5.00E+06	67.70224	N/A	N/A
PCIe2	SRNS	0	15	5.00E+06	1.16	5.00E+06	0.54	5.00E+06	58.83639	N/A	N/A
PCIe2	SRNS	0	16	5.00E+06	1.16	1.60E+07	14	5.00E+06	108.8534	N/A	N/A
PCIe2	SRNS	0	17	5.00E+06	1.16	1.60E+07	0.54	5.00E+06	125.3292	N/A	N/A
PCIe2	SRNS	0	18	1.60E+07	14	5.00E+06	14	5.00E+06	111.8593	N/A	N/A
PCIe2	SRNS	0	19	1.60E+07	14	5.00E+06	0.54	5.00E+06	104.247	N/A	N/A
PCIe2	SRNS	0	20	1.60E+07	14	1.60E+07	14	5.00E+06	147.4733	N/A	N/A
PCIe2	SRNS	0	21	1.60E+07	14	1.60E+07	0.54	5.00E+06	152.5197	N/A	N/A
PCIe2	SRNS	0	22	1.60E+07	1.16	5.00E+06	14	5.00E+06	115.2333	N/A	N/A
PCIe2	SRNS	0	23	1.60E+07	1.16	5.00E+06	0.54	5.00E+06	107.2064	N/A	N/A
PCIe2	SRNS	0	24	1.60E+07	1.16	1.60E+07	14	5.00E+06	148.2493	N/A	N/A
PCIe2	SRNS	0	25	1.60E+07	1.16	1.60E+07	0.54	5.00E+06	156.9449	N/A	N/A
PCIe2	SRNS	3	10	5.00E+06	14	5.00E+06	14	5.00E+06	88.04578	N/A	N/A
PCIe2	SRNS	3	11	5.00E+06	14	5.00E+06	0.54	5.00E+06	75.84073	N/A	N/A
PCIe2	SRNS	3	12	5.00E+06	14	1.60E+07	14	5.00E+06	139.439	N/A	N/A
PCIe2	SRNS	3	13	5.00E+06	14	1.60E+07	0.54	5.00E+06	157.0577	N/A	N/A
PCIe2	SRNS	3	14	5.00E+06	1.16	5.00E+06	14	5.00E+06	84.10471	N/A	N/A
PCIe2	SRNS	3	15	5.00E+06	1.16	5.00E+06	0.54	5.00E+06	73.28186	N/A	N/A
PCIe2	SRNS	3	16	5.00E+06	1.16	1.60E+07	14	5.00E+06	135.7467	N/A	N/A
PCIe2	SRNS	3	17	5.00E+06	1.16	1.60E+07	0.54	5.00E+06	153.866	N/A	N/A
PCIe2	SRNS	3	18	1.60E+07	14	5.00E+06	14	5.00E+06	139.439	N/A	N/A
PCIe2	SRNS	3	19	1.60E+07	14	5.00E+06	0.54	5.00E+06	130.0079	N/A	N/A
PCIe2	SRNS	3	20	1.60E+07	14	1.60E+07	14	5.00E+06	183.819	N/A	N/A
PCIe2	SRNS	3	21	1.60E+07	14	1.60E+07	0.54	5.00E+06	188.3718	N/A	N/A
PCIe2	SRNS	3	22	1.60E+07	1.16	5.00E+06	14	5.00E+06	143.1752	N/A	N/A
PCIe2	SRNS	3	23	1.60E+07	1.16	5.00E+06	0.54	5.00E+06	133.1949	N/A	N/A
PCIe2	SRNS	3	24	1.60E+07	1.16	1.60E+07	14	5.00E+06	184.4743	N/A	N/A
PCIe2	SRNS	3	25	1.60E+07	1.16	1.60E+07	0.54	5.00E+06	193.5944	N/A	N/A
PCIe3	CC	0	1	2.00E+06	14	2.00E+06	14	1.00E+07	18.7997	1,000.00	PASS
PCIe3	CC	0	2	2.00E+06	14	2.00E+06	1.15	1.00E+07	18.06176	1,000.00	PASS
PCIe3	CC	0	3	2.00E+06	14	5.00E+06	14	1.00E+07	39.43191	1,000.00	PASS
PCIe3	CC	0	4	2.00E+06	14	5.00E+06	1.15	1.00E+07	34.11543	1,000.00	PASS
PCIe3	CC	0	5	2.00E+06	0.73	2.00E+06	14	1.00E+07	17.64864	1,000.00	PASS
PCIe3	CC	0	6	2.00E+06	0.73	2.00E+06	1.15	1.00E+07	15.28504	1,000.00	PASS

Table 5-3. LMK6H and LMKDB1xxx Detailed Jitter Measurements (continued)

PCIe Gen	Clock Arch.	Noise Fold	Filter Comb	PLL1 f1	PLL1 zeta1	PLL2 f2	PLL2 zeta2	CDR f3	Value (fs)	Limit (fs)	Status
PCIe3	CC	0	7	2.00E+06	0.73	5.00E+06	14	1.00E+07	39.77467	1,000.00	PASS
PCIe3	CC	0	8	2.00E+06	0.73	5.00E+06	1.15	1.00E+07	34.74637	1,000.00	PASS
PCIe3	CC	0	9	4.00E+06	14	2.00E+06	14	1.00E+07	32.38469	1,000.00	PASS
PCIe3	CC	0	10	4.00E+06	14	2.00E+06	1.15	1.00E+07	32.46164	1,000.00	PASS
PCIe3	CC	0	11	4.00E+06	14	5.00E+06	14	1.00E+07	42.79895	1,000.00	PASS
PCIe3	CC	0	12	4.00E+06	14	5.00E+06	1.15	1.00E+07	38.86762	1,000.00	PASS
PCIe3	CC	0	13	4.00E+06	0.73	2.00E+06	14	1.00E+07	24.3059	1,000.00	PASS
PCIe3	CC	0	14	4.00E+06	0.73	2.00E+06	1.15	1.00E+07	23.57573	1,000.00	PASS
PCIe3	CC	0	15	4.00E+06	0.73	5.00E+06	14	1.00E+07	42.43908	1,000.00	PASS
PCIe3	CC	0	16	4.00E+06	0.73	5.00E+06	1.15	1.00E+07	36.67452	1,000.00	PASS
PCIe3	CC	3	1	2.00E+06	14	2.00E+06	14	1.00E+07	23.6577	1,000.00	PASS
PCIe3	CC	3	2	2.00E+06	14	2.00E+06	1.15	1.00E+07	22.7028	1,000.00	PASS
PCIe3	CC	3	3	2.00E+06	14	5.00E+06	14	1.00E+07	49.35605	1,000.00	PASS
PCIe3	CC	3	4	2.00E+06	14	5.00E+06	1.15	1.00E+07	42.74923	1,000.00	PASS
PCIe3	CC	3	5	2.00E+06	0.73	2.00E+06	14	1.00E+07	22.14978	1,000.00	PASS
PCIe3	CC	3	6	2.00E+06	0.73	2.00E+06	1.15	1.00E+07	19.2081	1,000.00	PASS
PCIe3	CC	3	7	2.00E+06	0.73	5.00E+06	14	1.00E+07	49.6904	1,000.00	PASS
PCIe3	CC	3	8	2.00E+06	0.73	5.00E+06	1.15	1.00E+07	43.43879	1,000.00	PASS
PCIe3	CC	3	9	4.00E+06	14	2.00E+06	14	1.00E+07	40.58652	1,000.00	PASS
PCIe3	CC	3	10	4.00E+06	14	2.00E+06	1.15	1.00E+07	40.63364	1,000.00	PASS
PCIe3	CC	3	11	4.00E+06	14	5.00E+06	14	1.00E+07	53.82465	1,000.00	PASS
PCIe3	CC	3	12	4.00E+06	14	5.00E+06	1.15	1.00E+07	48.89753	1,000.00	PASS
PCIe3	CC	3	13	4.00E+06	0.73	2.00E+06	14	1.00E+07	30.53	1,000.00	PASS
PCIe3	CC	3	14	4.00E+06	0.73	2.00E+06	1.15	1.00E+07	29.5891	1,000.00	PASS
PCIe3	CC	3	15	4.00E+06	0.73	5.00E+06	14	1.00E+07	53.17645	1,000.00	PASS
PCIe3	CC	3	16	4.00E+06	0.73	5.00E+06	1.15	1.00E+07	46.01397	1,000.00	PASS
PCIe3	SRNS	0	1	2.00E+06	14	2.00E+06	14	1.00E+07	22.80154	N/A	N/A
PCIe3	SRNS	0	2	2.00E+06	14	2.00E+06	1.15	1.00E+07	21.18408	N/A	N/A
PCIe3	SRNS	0	3	2.00E+06	14	5.00E+06	14	1.00E+07	40.6995	N/A	N/A
PCIe3	SRNS	0	4	2.00E+06	14	5.00E+06	1.15	1.00E+07	36.86108	N/A	N/A
PCIe3	SRNS	0	5	2.00E+06	0.73	2.00E+06	14	1.00E+07	19.75412	N/A	N/A
PCIe3	SRNS	0	6	2.00E+06	0.73	2.00E+06	1.15	1.00E+07	17.93082	N/A	N/A
PCIe3	SRNS	0	7	2.00E+06	0.73	5.00E+06	14	1.00E+07	39.03765	N/A	N/A
PCIe3	SRNS	0	8	2.00E+06	0.73	5.00E+06	1.15	1.00E+07	34.99063	N/A	N/A
PCIe3	SRNS	0	9	4.00E+06	14	2.00E+06	14	1.00E+07	34.72468	N/A	N/A
PCIe3	SRNS	0	10	4.00E+06	14	2.00E+06	1.15	1.00E+07	33.6325	N/A	N/A
PCIe3	SRNS	0	11	4.00E+06	14	5.00E+06	14	1.00E+07	48.67422	N/A	N/A
PCIe3	SRNS	0	12	4.00E+06	14	5.00E+06	1.15	1.00E+07	45.37788	N/A	N/A
PCIe3	SRNS	0	13	4.00E+06	0.73	2.00E+06	14	1.00E+07	28.13123	N/A	N/A
PCIe3	SRNS	0	14	4.00E+06	0.73	2.00E+06	1.15	1.00E+07	26.85399	N/A	N/A
PCIe3	SRNS	0	15	4.00E+06	0.73	5.00E+06	14	1.00E+07	43.56882	N/A	N/A
PCIe3	SRNS	0	16	4.00E+06	0.73	5.00E+06	1.15	1.00E+07	40.24111	N/A	N/A
PCIe3	SRNS	3	1	2.00E+06	14	2.00E+06	14	1.00E+07	28.28598	N/A	N/A
PCIe3	SRNS	3	2	2.00E+06	14	2.00E+06	1.15	1.00E+07	26.27869	N/A	N/A
PCIe3	SRNS	3	3	2.00E+06	14	5.00E+06	14	1.00E+07	50.55296	N/A	N/A
PCIe3	SRNS	3	4	2.00E+06	14	5.00E+06	1.15	1.00E+07	45.74109	N/A	N/A

Table 5-3. LMK6H and LMKDB1xxx Detailed Jitter Measurements (continued)

PCIe Gen	Clock Arch.	Noise Fold	Filter Comb	PLL1 f1	PLL1 zeta1	PLL2 f2	PLL2 zeta2	CDR f3	Value (fs)	Limit (fs)	Status
PCIe3	SRNS	3	5	2.00E+06	0.73	2.00E+06	14	1.00E+07	24.5049	N/A	N/A
PCIe3	SRNS	3	6	2.00E+06	0.73	2.00E+06	1.15	1.00E+07	22.24124	N/A	N/A
PCIe3	SRNS	3	7	2.00E+06	0.73	5.00E+06	14	1.00E+07	48.49313	N/A	N/A
PCIe3	SRNS	3	8	2.00E+06	0.73	5.00E+06	1.15	1.00E+07	43.42173	N/A	N/A
PCIe3	SRNS	3	9	4.00E+06	14	2.00E+06	14	1.00E+07	43.10384	N/A	N/A
PCIe3	SRNS	3	10	4.00E+06	14	2.00E+06	1.15	1.00E+07	41.75	N/A	N/A
PCIe3	SRNS	3	11	4.00E+06	14	5.00E+06	14	1.00E+07	60.44792	N/A	N/A
PCIe3	SRNS	3	12	4.00E+06	14	5.00E+06	1.15	1.00E+07	56.32115	N/A	N/A
PCIe3	SRNS	3	13	4.00E+06	0.73	2.00E+06	14	1.00E+07	34.89361	N/A	N/A
PCIe3	SRNS	3	14	4.00E+06	0.73	2.00E+06	1.15	1.00E+07	33.30786	N/A	N/A
PCIe3	SRNS	3	15	4.00E+06	0.73	5.00E+06	14	1.00E+07	54.1151	N/A	N/A
PCIe3	SRNS	3	16	4.00E+06	0.73	5.00E+06	1.15	1.00E+07	49.9332	N/A	N/A
PCIe4	CC	0	1	2.00E+06	14	2.00E+06	14	1.00E+07	18.7997	500.00	PASS
PCIe4	CC	0	2	2.00E+06	14	2.00E+06	1.15	1.00E+07	18.06176	500.00	PASS
PCIe4	CC	0	3	2.00E+06	14	5.00E+06	14	1.00E+07	39.43191	500.00	PASS
PCIe4	CC	0	4	2.00E+06	14	5.00E+06	1.15	1.00E+07	34.11543	500.00	PASS
PCIe4	CC	0	5	2.00E+06	0.73	2.00E+06	14	1.00E+07	17.64864	500.00	PASS
PCIe4	CC	0	6	2.00E+06	0.73	2.00E+06	1.15	1.00E+07	15.28504	500.00	PASS
PCIe4	CC	0	7	2.00E+06	0.73	5.00E+06	14	1.00E+07	39.77467	500.00	PASS
PCIe4	CC	0	8	2.00E+06	0.73	5.00E+06	1.15	1.00E+07	34.74637	500.00	PASS
PCIe4	CC	0	9	4.00E+06	14	2.00E+06	14	1.00E+07	32.38469	500.00	PASS
PCIe4	CC	0	10	4.00E+06	14	2.00E+06	1.15	1.00E+07	32.46164	500.00	PASS
PCIe4	CC	0	11	4.00E+06	14	5.00E+06	14	1.00E+07	42.79895	500.00	PASS
PCIe4	CC	0	12	4.00E+06	14	5.00E+06	1.15	1.00E+07	38.86762	500.00	PASS
PCIe4	CC	0	13	4.00E+06	0.73	2.00E+06	14	1.00E+07	24.3059	500.00	PASS
PCIe4	CC	0	14	4.00E+06	0.73	2.00E+06	1.15	1.00E+07	23.57573	500.00	PASS
PCIe4	CC	0	15	4.00E+06	0.73	5.00E+06	14	1.00E+07	42.43908	500.00	PASS
PCIe4	CC	0	16	4.00E+06	0.73	5.00E+06	1.15	1.00E+07	36.67452	500.00	PASS
PCIe4	CC	3	1	2.00E+06	14	2.00E+06	14	1.00E+07	23.6577	500.00	PASS
PCIe4	CC	3	2	2.00E+06	14	2.00E+06	1.15	1.00E+07	22.7028	500.00	PASS
PCIe4	CC	3	3	2.00E+06	14	5.00E+06	14	1.00E+07	49.35605	500.00	PASS
PCIe4	CC	3	4	2.00E+06	14	5.00E+06	1.15	1.00E+07	42.74923	500.00	PASS
PCIe4	CC	3	5	2.00E+06	0.73	2.00E+06	14	1.00E+07	22.14978	500.00	PASS
PCIe4	CC	3	6	2.00E+06	0.73	2.00E+06	1.15	1.00E+07	19.2081	500.00	PASS
PCIe4	CC	3	7	2.00E+06	0.73	5.00E+06	14	1.00E+07	49.6904	500.00	PASS
PCIe4	CC	3	8	2.00E+06	0.73	5.00E+06	1.15	1.00E+07	43.43879	500.00	PASS
PCIe4	CC	3	9	4.00E+06	14	2.00E+06	14	1.00E+07	40.58652	500.00	PASS
PCIe4	CC	3	10	4.00E+06	14	2.00E+06	1.15	1.00E+07	40.63364	500.00	PASS
PCIe4	CC	3	11	4.00E+06	14	5.00E+06	14	1.00E+07	53.82465	500.00	PASS
PCIe4	CC	3	12	4.00E+06	14	5.00E+06	1.15	1.00E+07	48.89753	500.00	PASS
PCIe4	CC	3	13	4.00E+06	0.73	2.00E+06	14	1.00E+07	30.53	500.00	PASS
PCIe4	CC	3	14	4.00E+06	0.73	2.00E+06	1.15	1.00E+07	29.5891	500.00	PASS
PCIe4	CC	3	15	4.00E+06	0.73	5.00E+06	14	1.00E+07	53.17645	500.00	PASS
PCIe4	CC	3	16	4.00E+06	0.73	5.00E+06	1.15	1.00E+07	46.01397	500.00	PASS
PCIe4	SRNS	0	1	2.00E+06	14	2.00E+06	14	1.00E+07	22.80154	N/A	N/A
PCIe4	SRNS	0	2	2.00E+06	14	2.00E+06	1.15	1.00E+07	21.18408	N/A	N/A

Table 5-3. LMK6H and LMKDB1xxx Detailed Jitter Measurements (continued)

PCIe Gen	Clock Arch.	Noise Fold	Filter Comb	PLL1 f1	PLL1 zeta1	PLL2 f2	PLL2 zeta2	CDR f3	Value (fs)	Limit (fs)	Status
PCIe4	SRNS	0	3	2.00E+06	14	5.00E+06	14	1.00E+07	40.6995	N/A	N/A
PCIe4	SRNS	0	4	2.00E+06	14	5.00E+06	1.15	1.00E+07	36.86108	N/A	N/A
PCIe4	SRNS	0	5	2.00E+06	0.73	2.00E+06	14	1.00E+07	19.75412	N/A	N/A
PCIe4	SRNS	0	6	2.00E+06	0.73	2.00E+06	1.15	1.00E+07	17.93082	N/A	N/A
PCIe4	SRNS	0	7	2.00E+06	0.73	5.00E+06	14	1.00E+07	39.03765	N/A	N/A
PCIe4	SRNS	0	8	2.00E+06	0.73	5.00E+06	1.15	1.00E+07	34.99063	N/A	N/A
PCIe4	SRNS	0	9	4.00E+06	14	2.00E+06	14	1.00E+07	34.72468	N/A	N/A
PCIe4	SRNS	0	10	4.00E+06	14	2.00E+06	1.15	1.00E+07	33.6325	N/A	N/A
PCIe4	SRNS	0	11	4.00E+06	14	5.00E+06	14	1.00E+07	48.67422	N/A	N/A
PCIe4	SRNS	0	12	4.00E+06	14	5.00E+06	1.15	1.00E+07	45.37788	N/A	N/A
PCIe4	SRNS	0	13	4.00E+06	0.73	2.00E+06	14	1.00E+07	28.13123	N/A	N/A
PCIe4	SRNS	0	14	4.00E+06	0.73	2.00E+06	1.15	1.00E+07	26.85399	N/A	N/A
PCIe4	SRNS	0	15	4.00E+06	0.73	5.00E+06	14	1.00E+07	43.56882	N/A	N/A
PCIe4	SRNS	0	16	4.00E+06	0.73	5.00E+06	1.15	1.00E+07	40.24111	N/A	N/A
PCIe4	SRNS	3	1	2.00E+06	14	2.00E+06	14	1.00E+07	28.28598	N/A	N/A
PCIe4	SRNS	3	2	2.00E+06	14	2.00E+06	1.15	1.00E+07	26.27869	N/A	N/A
PCIe4	SRNS	3	3	2.00E+06	14	5.00E+06	14	1.00E+07	50.55296	N/A	N/A
PCIe4	SRNS	3	4	2.00E+06	14	5.00E+06	1.15	1.00E+07	45.74109	N/A	N/A
PCIe4	SRNS	3	5	2.00E+06	0.73	2.00E+06	14	1.00E+07	24.5049	N/A	N/A
PCIe4	SRNS	3	6	2.00E+06	0.73	2.00E+06	1.15	1.00E+07	22.24124	N/A	N/A
PCIe4	SRNS	3	7	2.00E+06	0.73	5.00E+06	14	1.00E+07	48.49313	N/A	N/A
PCIe4	SRNS	3	8	2.00E+06	0.73	5.00E+06	1.15	1.00E+07	43.42173	N/A	N/A
PCIe4	SRNS	3	9	4.00E+06	14	2.00E+06	14	1.00E+07	43.10384	N/A	N/A
PCIe4	SRNS	3	10	4.00E+06	14	2.00E+06	1.15	1.00E+07	41.75	N/A	N/A
PCIe4	SRNS	3	11	4.00E+06	14	5.00E+06	14	1.00E+07	60.44792	N/A	N/A
PCIe4	SRNS	3	12	4.00E+06	14	5.00E+06	1.15	1.00E+07	56.32115	N/A	N/A
PCIe4	SRNS	3	13	4.00E+06	0.73	2.00E+06	14	1.00E+07	34.89361	N/A	N/A
PCIe4	SRNS	3	14	4.00E+06	0.73	2.00E+06	1.15	1.00E+07	33.30786	N/A	N/A
PCIe4	SRNS	3	15	4.00E+06	0.73	5.00E+06	14	1.00E+07	54.1151	N/A	N/A
PCIe4	SRNS	3	16	4.00E+06	0.73	5.00E+06	1.15	1.00E+07	49.9332	N/A	N/A
PCIe5	CC	0	1	5.00E+05	14	5.00E+05	14	2.00E+07	4.976565	150.00	PASS
PCIe5	CC	0	2	5.00E+05	14	5.00E+05	0.73	2.00E+07	4.362175	150.00	PASS
PCIe5	CC	0	3	5.00E+05	14	1.80E+06	14	2.00E+07	13.85277	150.00	PASS
PCIe5	CC	0	4	5.00E+05	14	1.80E+06	0.73	2.00E+07	9.91689	150.00	PASS
PCIe5	CC	0	5	5.00E+05	0.73	5.00E+05	14	2.00E+07	4.362175	150.00	PASS
PCIe5	CC	0	6	5.00E+05	0.73	5.00E+05	0.73	2.00E+07	3.485068	150.00	PASS
PCIe5	CC	0	7	5.00E+05	0.73	1.80E+06	14	2.00E+07	13.72957	150.00	PASS
PCIe5	CC	0	8	5.00E+05	0.73	1.80E+06	0.73	2.00E+07	9.767569	150.00	PASS
PCIe5	CC	0	9	1.80E+06	14	5.00E+05	14	2.00E+07	13.85277	150.00	PASS
PCIe5	CC	0	10	1.80E+06	14	5.00E+05	0.73	2.00E+07	13.72957	150.00	PASS
PCIe5	CC	0	11	1.80E+06	14	1.80E+06	14	2.00E+07	17.84481	150.00	PASS
PCIe5	CC	0	12	1.80E+06	14	1.80E+06	0.73	2.00E+07	15.9681	150.00	PASS
PCIe5	CC	0	13	1.80E+06	0.73	5.00E+05	14	2.00E+07	9.91689	150.00	PASS
PCIe5	CC	0	14	1.80E+06	0.73	5.00E+05	0.73	2.00E+07	9.767569	150.00	PASS
PCIe5	CC	0	15	1.80E+06	0.73	1.80E+06	14	2.00E+07	15.9681	150.00	PASS
PCIe5	CC	0	16	1.80E+06	0.73	1.80E+06	0.73	2.00E+07	12.55003	150.00	PASS

Table 5-3. LMK6H and LMKDB1xxx Detailed Jitter Measurements (continued)

PCIe Gen	Clock Arch.	Noise Fold	Filter Comb	PLL1 f1	PLL1 zeta1	PLL2 f2	PLL2 zeta2	CDR f3	Value (fs)	Limit (fs)	Status
PCIe5	CC	3	1	5.00E+05	14	5.00E+05	14	2.00E+07	6.289015	150.00	PASS
PCIe5	CC	3	2	5.00E+05	14	5.00E+05	0.73	2.00E+07	5.507361	150.00	PASS
PCIe5	CC	3	3	5.00E+05	14	1.80E+06	14	2.00E+07	17.42125	150.00	PASS
PCIe5	CC	3	4	5.00E+05	14	1.80E+06	0.73	2.00E+07	12.48828	150.00	PASS
PCIe5	CC	3	5	5.00E+05	0.73	5.00E+05	14	2.00E+07	5.507361	150.00	PASS
PCIe5	CC	3	6	5.00E+05	0.73	5.00E+05	0.73	2.00E+07	4.40413	150.00	PASS
PCIe5	CC	3	7	5.00E+05	0.73	1.80E+06	14	2.00E+07	17.24588	150.00	PASS
PCIe5	CC	3	8	5.00E+05	0.73	1.80E+06	0.73	2.00E+07	12.27904	150.00	PASS
PCIe5	CC	3	9	1.80E+06	14	5.00E+05	14	2.00E+07	17.42125	150.00	PASS
PCIe5	CC	3	10	1.80E+06	14	5.00E+05	0.73	2.00E+07	17.24588	150.00	PASS
PCIe5	CC	3	11	1.80E+06	14	1.80E+06	14	2.00E+07	22.55305	150.00	PASS
PCIe5	CC	3	12	1.80E+06	14	1.80E+06	0.73	2.00E+07	20.15163	150.00	PASS
PCIe5	CC	3	13	1.80E+06	0.73	5.00E+05	14	2.00E+07	12.48828	150.00	PASS
PCIe5	CC	3	14	1.80E+06	0.73	5.00E+05	0.73	2.00E+07	12.27904	150.00	PASS
PCIe5	CC	3	15	1.80E+06	0.73	1.80E+06	14	2.00E+07	20.15163	150.00	PASS
PCIe5	CC	3	16	1.80E+06	0.73	1.80E+06	0.73	2.00E+07	15.85956	150.00	PASS
PCIe5	SRNS	0	1	5.00E+05	14	5.00E+05	14	2.00E+07	5.482737	N/A	N/A
PCIe5	SRNS	0	2	5.00E+05	14	5.00E+05	0.73	2.00E+07	4.736143	N/A	N/A
PCIe5	SRNS	0	3	5.00E+05	14	1.80E+06	14	2.00E+07	14.16266	N/A	N/A
PCIe5	SRNS	0	4	5.00E+05	14	1.80E+06	0.73	2.00E+07	10.53832	N/A	N/A
PCIe5	SRNS	0	5	5.00E+05	0.73	5.00E+05	14	2.00E+07	4.736143	N/A	N/A
PCIe5	SRNS	0	6	5.00E+05	0.73	5.00E+05	0.73	2.00E+07	3.853862	N/A	N/A
PCIe5	SRNS	0	7	5.00E+05	0.73	1.80E+06	14	2.00E+07	13.89407	N/A	N/A
PCIe5	SRNS	0	8	5.00E+05	0.73	1.80E+06	0.73	2.00E+07	10.16725	N/A	N/A
PCIe5	SRNS	0	9	1.80E+06	14	5.00E+05	14	2.00E+07	14.16266	N/A	N/A
PCIe5	SRNS	0	10	1.80E+06	14	5.00E+05	0.73	2.00E+07	13.89407	N/A	N/A
PCIe5	SRNS	0	11	1.80E+06	14	1.80E+06	14	2.00E+07	19.29714	N/A	N/A
PCIe5	SRNS	0	12	1.80E+06	14	1.80E+06	0.73	2.00E+07	16.74907	N/A	N/A
PCIe5	SRNS	0	13	1.80E+06	0.73	5.00E+05	14	2.00E+07	10.53832	N/A	N/A
PCIe5	SRNS	0	14	1.80E+06	0.73	5.00E+05	0.73	2.00E+07	10.16725	N/A	N/A
PCIe5	SRNS	0	15	1.80E+06	0.73	1.80E+06	14	2.00E+07	16.74907	N/A	N/A
PCIe5	SRNS	0	16	1.80E+06	0.73	1.80E+06	0.73	2.00E+07	13.86253	N/A	N/A
PCIe5	SRNS	3	1	5.00E+05	14	5.00E+05	14	2.00E+07	6.863322	N/A	N/A
PCIe5	SRNS	3	2	5.00E+05	14	5.00E+05	0.73	2.00E+07	5.92829	N/A	N/A
PCIe5	SRNS	3	3	5.00E+05	14	1.80E+06	14	2.00E+07	17.7408	N/A	N/A
PCIe5	SRNS	3	4	5.00E+05	14	1.80E+06	0.73	2.00E+07	13.1927	N/A	N/A
PCIe5	SRNS	3	5	5.00E+05	0.73	5.00E+05	14	2.00E+07	5.92829	N/A	N/A
PCIe5	SRNS	3	6	5.00E+05	0.73	5.00E+05	0.73	2.00E+07	4.822715	N/A	N/A
PCIe5	SRNS	3	7	5.00E+05	0.73	1.80E+06	14	2.00E+07	17.40476	N/A	N/A
PCIe5	SRNS	3	8	5.00E+05	0.73	1.80E+06	0.73	2.00E+07	12.72828	N/A	N/A
PCIe5	SRNS	3	9	1.80E+06	14	5.00E+05	14	2.00E+07	17.7408	N/A	N/A
PCIe5	SRNS	3	10	1.80E+06	14	5.00E+05	0.73	2.00E+07	17.40476	N/A	N/A
PCIe5	SRNS	3	11	1.80E+06	14	1.80E+06	14	2.00E+07	24.17278	N/A	N/A
PCIe5	SRNS	3	12	1.80E+06	14	1.80E+06	0.73	2.00E+07	20.97717	N/A	N/A
PCIe5	SRNS	3	13	1.80E+06	0.73	5.00E+05	14	2.00E+07	13.1927	N/A	N/A
PCIe5	SRNS	3	14	1.80E+06	0.73	5.00E+05	0.73	2.00E+07	12.72828	N/A	N/A

Table 5-3. LMK6H and LMKDB1xxx Detailed Jitter Measurements (continued)

PCIe Gen	Clock Arch.	Noise Fold	Filter Comb	PLL1 f1	PLL1 zeta1	PLL2 f2	PLL2 zeta2	CDR f3	Value (fs)	Limit (fs)	Status
PCIe5	SRNS	3	15	1.80E+06	0.73	1.80E+06	14	2.00E+07	20.97717	N/A	N/A
PCIe5	SRNS	3	16	1.80E+06	0.73	1.80E+06	0.73	2.00E+07	17.35386	N/A	N/A
PCIe6	CC	0	1	5.00E+05	14	5.00E+05	14	1.00E+07	5.477088	100.00	PASS
PCIe6	CC	0	2	5.00E+05	14	5.00E+05	0.73	1.00E+07	4.915467	100.00	PASS
PCIe6	CC	0	3	5.00E+05	14	1.00E+06	14	1.00E+07	9.469397	100.00	PASS
PCIe6	CC	0	4	5.00E+05	14	1.00E+06	0.73	1.00E+07	6.859572	100.00	PASS
PCIe6	CC	0	5	5.00E+05	0.73	5.00E+05	14	1.00E+07	4.915467	100.00	PASS
PCIe6	CC	0	6	5.00E+05	0.73	5.00E+05	0.73	1.00E+07	3.836472	100.00	PASS
PCIe6	CC	0	7	5.00E+05	0.73	1.00E+06	14	1.00E+07	9.526796	100.00	PASS
PCIe6	CC	0	8	5.00E+05	0.73	1.00E+06	0.73	1.00E+07	6.592638	100.00	PASS
PCIe6	CC	0	9	1.00E+06	14	5.00E+05	14	1.00E+07	9.469397	100.00	PASS
PCIe6	CC	0	10	1.00E+06	14	5.00E+05	0.73	1.00E+07	9.526796	100.00	PASS
PCIe6	CC	0	11	1.00E+06	14	1.00E+06	14	1.00E+07	10.93595	100.00	PASS
PCIe6	CC	0	12	1.00E+06	14	1.00E+06	0.73	1.00E+07	9.955268	100.00	PASS
PCIe6	CC	0	13	1.00E+06	0.73	5.00E+05	14	1.00E+07	6.859572	100.00	PASS
PCIe6	CC	0	14	1.00E+06	0.73	5.00E+05	0.73	1.00E+07	6.592638	100.00	PASS
PCIe6	CC	0	15	1.00E+06	0.73	1.00E+06	14	1.00E+07	9.955268	100.00	PASS
PCIe6	CC	0	16	1.00E+06	0.73	1.00E+06	0.73	1.00E+07	7.673939	100.00	PASS
PCIe6	CC	3	1	5.00E+05	14	5.00E+05	14	1.00E+07	6.872443	100.00	PASS
PCIe6	CC	3	2	5.00E+05	14	5.00E+05	0.73	1.00E+07	6.155703	100.00	PASS
PCIe6	CC	3	3	5.00E+05	14	1.00E+06	14	1.00E+07	11.82527	100.00	PASS
PCIe6	CC	3	4	5.00E+05	14	1.00E+06	0.73	1.00E+07	8.593784	100.00	PASS
PCIe6	CC	3	5	5.00E+05	0.73	5.00E+05	14	1.00E+07	6.155703	100.00	PASS
PCIe6	CC	3	6	5.00E+05	0.73	5.00E+05	0.73	1.00E+07	4.813765	100.00	PASS
PCIe6	CC	3	7	5.00E+05	0.73	1.00E+06	14	1.00E+07	11.86232	100.00	PASS
PCIe6	CC	3	8	5.00E+05	0.73	1.00E+06	0.73	1.00E+07	8.234464	100.00	PASS
PCIe6	CC	3	9	1.00E+06	14	5.00E+05	14	1.00E+07	11.82527	100.00	PASS
PCIe6	CC	3	10	1.00E+06	14	5.00E+05	0.73	1.00E+07	11.86232	100.00	PASS
PCIe6	CC	3	11	1.00E+06	14	1.00E+06	14	1.00E+07	13.72276	100.00	PASS
PCIe6	CC	3	12	1.00E+06	14	1.00E+06	0.73	1.00E+07	12.46182	100.00	PASS
PCIe6	CC	3	13	1.00E+06	0.73	5.00E+05	14	1.00E+07	8.593784	100.00	PASS
PCIe6	CC	3	14	1.00E+06	0.73	5.00E+05	0.73	1.00E+07	8.234464	100.00	PASS
PCIe6	CC	3	15	1.00E+06	0.73	1.00E+06	14	1.00E+07	12.46182	100.00	PASS
PCIe6	CC	3	16	1.00E+06	0.73	1.00E+06	0.73	1.00E+07	9.628737	100.00	PASS
PCIe6	SRNS	0	1	5.00E+05	14	5.00E+05	14	1.00E+07	7.369751	N/A	N/A
PCIe6	SRNS	0	2	5.00E+05	14	5.00E+05	0.73	1.00E+07	6.364447	N/A	N/A
PCIe6	SRNS	0	3	5.00E+05	14	1.00E+06	14	1.00E+07	11.58218	N/A	N/A
PCIe6	SRNS	0	4	5.00E+05	14	1.00E+06	0.73	1.00E+07	8.984896	N/A	N/A
PCIe6	SRNS	0	5	5.00E+05	0.73	5.00E+05	14	1.00E+07	6.364447	N/A	N/A
PCIe6	SRNS	0	6	5.00E+05	0.73	5.00E+05	0.73	1.00E+07	5.174004	N/A	N/A
PCIe6	SRNS	0	7	5.00E+05	0.73	1.00E+06	14	1.00E+07	10.96686	N/A	N/A
PCIe6	SRNS	0	8	5.00E+05	0.73	1.00E+06	0.73	1.00E+07	8.182046	N/A	N/A
PCIe6	SRNS	0	9	1.00E+06	14	5.00E+05	14	1.00E+07	11.58218	N/A	N/A
PCIe6	SRNS	0	10	1.00E+06	14	5.00E+05	0.73	1.00E+07	10.96686	N/A	N/A
PCIe6	SRNS	0	11	1.00E+06	14	1.00E+06	14	1.00E+07	14.6406	N/A	N/A
PCIe6	SRNS	0	12	1.00E+06	14	1.00E+06	0.73	1.00E+07	12.66038	N/A	N/A

Table 5-3. LMK6H and LMKDB1xxx Detailed Jitter Measurements (continued)

PCIe Gen	Clock Arch.	Noise Fold	Filter Comb	PLL1 f1	PLL1 zeta1	PLL2 f2	PLL2 zeta2	CDR f3	Value (fs)	Limit (fs)	Status
PCIe6	SRNS	0	13	1.00E+06	0.73	5.00E+05	14	1.00E+07	8.984896	N/A	N/A
PCIe6	SRNS	0	14	1.00E+06	0.73	5.00E+05	0.73	1.00E+07	8.182046	N/A	N/A
PCIe6	SRNS	0	15	1.00E+06	0.73	1.00E+06	14	1.00E+07	12.66038	N/A	N/A
PCIe6	SRNS	0	16	1.00E+06	0.73	1.00E+06	0.73	1.00E+07	10.35194	N/A	N/A
PCIe6	SRNS	3	1	5.00E+05	14	5.00E+05	14	1.00E+07	9.118388	N/A	N/A
PCIe6	SRNS	3	2	5.00E+05	14	5.00E+05	0.73	1.00E+07	7.874468	N/A	N/A
PCIe6	SRNS	3	3	5.00E+05	14	1.00E+06	14	1.00E+07	14.33011	N/A	N/A
PCIe6	SRNS	3	4	5.00E+05	14	1.00E+06	0.73	1.00E+07	11.11669	N/A	N/A
PCIe6	SRNS	3	5	5.00E+05	0.73	5.00E+05	14	1.00E+07	7.874468	N/A	N/A
PCIe6	SRNS	3	6	5.00E+05	0.73	5.00E+05	0.73	1.00E+07	6.4014	N/A	N/A
PCIe6	SRNS	3	7	5.00E+05	0.73	1.00E+06	14	1.00E+07	13.56876	N/A	N/A
PCIe6	SRNS	3	8	5.00E+05	0.73	1.00E+06	0.73	1.00E+07	10.12332	N/A	N/A
PCIe6	SRNS	3	9	1.00E+06	14	5.00E+05	14	1.00E+07	14.33011	N/A	N/A
PCIe6	SRNS	3	10	1.00E+06	14	5.00E+05	0.73	1.00E+07	13.56876	N/A	N/A
PCIe6	SRNS	3	11	1.00E+06	14	1.00E+06	14	1.00E+07	18.11417	N/A	N/A
PCIe6	SRNS	3	12	1.00E+06	14	1.00E+06	0.73	1.00E+07	15.66398	N/A	N/A
PCIe6	SRNS	3	13	1.00E+06	0.73	5.00E+05	14	1.00E+07	11.11669	N/A	N/A
PCIe6	SRNS	3	14	1.00E+06	0.73	5.00E+05	0.73	1.00E+07	10.12332	N/A	N/A
PCIe6	SRNS	3	15	1.00E+06	0.73	1.00E+06	14	1.00E+07	15.66398	N/A	N/A
PCIe6	SRNS	3	16	1.00E+06	0.73	1.00E+06	0.73	1.00E+07	12.80805	N/A	N/A

6 Summary

This report outlines TI's PCIe Compliance Tool, how the test results are obtained, and demonstrates PCIe compliance based on the results in Section 5.1. Therefore, the LMK6HA10000ADLER, LMK6HA10000ADLFR, and LMK6HA10000BDLFR BAW oscillator can be fanned out through the LMKDB1xxx buffer family and meet the jitter and time domain specifications for PCIe in enterprise systems.

7 References

- Texas Instruments, *LMKDB1120 and LMKDB1108 Ultra-Low Jitter PCIe Gen 1 to Gen 6 LP-HCSL Clock Buffers*, data sheet.
- Texas Instruments, *LMK6x Low Jitter, High-Performance BAW Oscillator*, data sheet.
- Texas Instruments, *TICSPRO-SW*, Clocks and Synthesizers (TICS) Pro Software.

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