

Low-Additive, Phase-Noise LVCMOS Clock Buffer Evaluation Board

The CDCLVC1104 is a high-performance, low-additive phase noise LVCMOS clock buffer. It has one LVCMOS input and four LVCMOS outputs. It also has an enable pin.

This evaluation module (EVM) is designed to demonstrate the electrical performance of the CDCLVC1104. Throughout this document, the acronym EVM and the phrases evaluation module and evaluation board are synonymous with the CDCLVC1104EVM. [Figure 1](#) illustrates the CDCLVC1104EVM.

For optimum performance, the board is equipped with 50-Ω SMA connectors and well-controlled 50-Ω impedance microstrip transmission lines.

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1 Features

- Easy-to-use evaluation board to fan out low-phase noise
- Easy device setup
- Enable pin configurable through jumper and SMA
- Board powered at 2.5 V or 3.3 V

2 Signal Path and Control Circuitry

The CDCLVC1104EVM supports single-ended inputs up to 250 MHz. For more information about the CDCLVC1104, see the CDCLVC1104 product data sheet available for download from the TI Web site (www.ti.com).

3 Getting Started

The CDCLVC1104EVM has self-explanatory labeling and uses similar naming conventions as the CDCLVC1104 product data sheet. In this user's guide, all words in **boldface** and *italic print* reflect the actual labeling on the EVM.

4 Power-Supply Connections

Connect the power-supply source to the banana plug labeled VDD (P1), and connect the ground of the power-supply source to GND (P2). Decoupling capacitors and a ferrite bead isolate the EVM power from the CDCLVC1104 device power pins.

The CDCLVC1104EVM can use a supply voltage 2.3 V to 3.6 V.

5 Enabling/Disabling the Outputs

The Enable pin of the CDCLVC1104 can be controlled using jumper J7 or the SMA J2. The J2 connector is not soldered on the CDCLVC1104EVM but can be soldered if needed. Check for part ordering information.

6 Output Clock

The CDCLVC1104 generates four LVCMOS outputs. The outputs can be loaded using the pullup and pulldown footprints. No resistor has been soldered in those footprints.

7 Bill of Materials

Table 1. Bill of Materials

QTY	Value	Designator	PKG/Case	Manufacturer	Part Number
6	0.0	C1–C6	402	Panasonic - Ecg	ERJ-2GE0R00X
3	0.01 μ F	C1–C13	402	Venkel	C0402X7R500-103KNE
1	0.1 μ F	C10	402	Venkel	C0402X7R160-104KNE
2	47 μ F	C7, C8	805	Taiyo Yuden	JMK212BJ476MG-T
1	10 μ F	C9	3216-18 (EIA)	Kemet	B45196H3106K109
6	0.0	R4, R5, R8, R11, R14, R17	402	Panasonic - Ecg	ERJ-2GE0R00X
2	100	R1, R2	402	Venkel	CR0402-16W-1000FT
1	150	R19	402	Panasonic - Ecg	ERJ-2RKF1500X
1	50	L2	1206	Murata Electronics North Am	BLM31PG500SN1L
1	LED – Green Clear	D1	1206	Cml Innovative Technologies	CMD15-21VGC/TR8
1	CDCLVC1104	U1	8-TSSOP	Texas Instruments	CDCLVC1104
1	1 \times 3	J7	0.1 in.	HTSW-150-07-G-S	K10000013783
2	Banana Plug – Metal	P1, P2	4mm	Emerson Network Power Con	108-0740-001
5	142-0701-801	J1, J3–J6	RF SMA EDGE	Emerson Network Power Con	142-0701-801
4	4-40/0.25"	Screws		Building Fasteners	PMSSS 440 0025 PH
4	0.75"	Standoffs	Round Threaded	2029	K10000010170
10	DNI	R3, R6, R7, R9, R10, R12, R13, R15, R16, R18	402		DNI
1	DNI	J2	RF SMA EDGE		DNI

8 Schematic

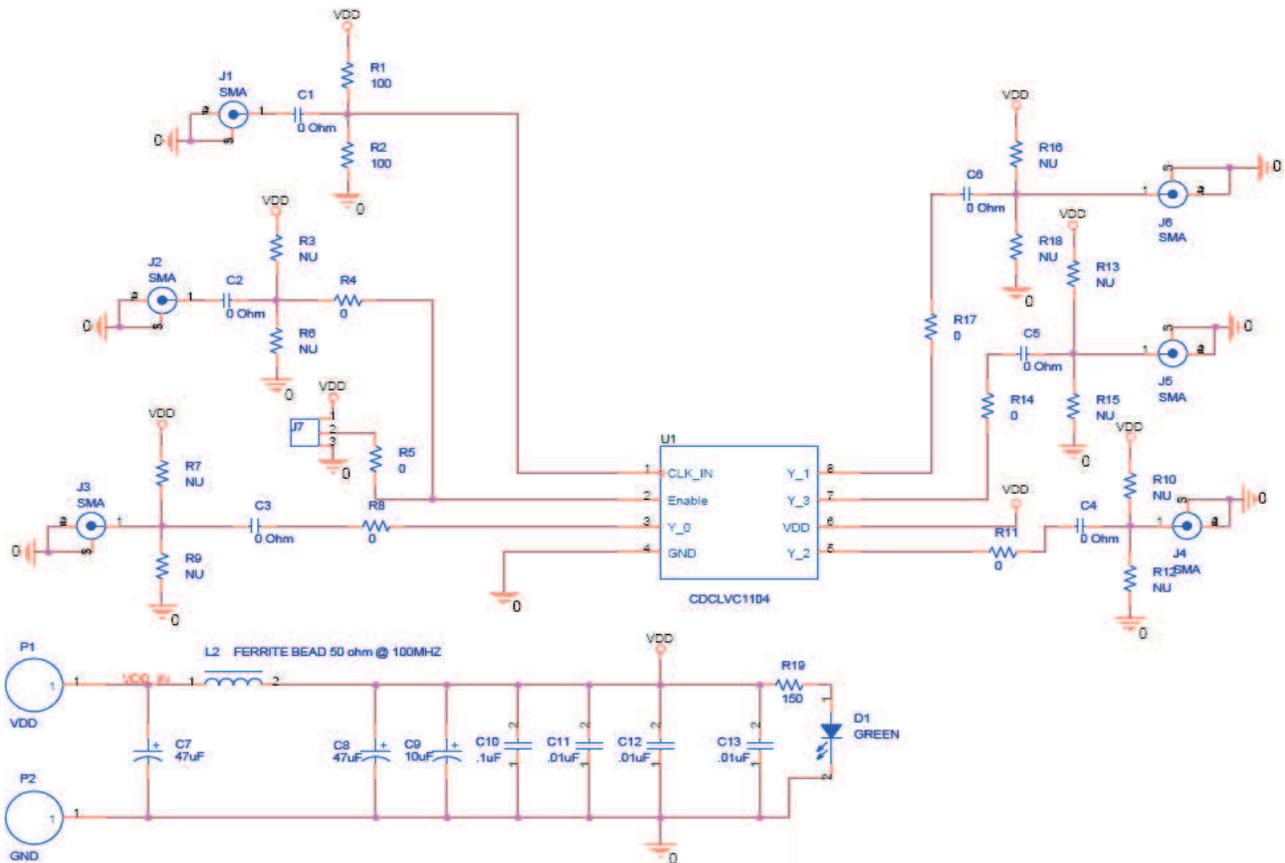


Figure 1. Schematic

9 Reference

1. [CDCLVC11xx, 3.3 V and 2.5 V LVCMOS High-Performance Clock Buffer Family data sheet \(SCAS895\)](#)

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EVM Warnings and Restrictions

It is important to operate this EVM within the input voltage range of 2.3 V to 3.6 V and the output voltage range of -0.5 V to 3.6 V .

Exceeding the specified input range may cause unexpected operation and/or irreversible damage to the EVM. If there are questions concerning the input range, please contact a TI field representative prior to connecting the input power.

Applying loads outside of the specified output range may result in unintended operation and/or possible permanent damage to the EVM. Please consult the EVM User's Guide prior to connecting any load to the EVM output. If there is uncertainty as to the load specification, please contact a TI field representative.

During normal operation, some circuit components may have case temperatures greater than 85° C. The EVM is designed to operate properly with certain components above 125° C as long as the input and output ranges are maintained. These components include but are not limited to linear regulators, switching transistors, pass transistors, and current sense resistors. These types of devices can be identified using the EVM schematic located in the EVM User's Guide. When placing measurement probes near these devices during operation, please be aware that these devices may be very warm to the touch.

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