

Low Additive Phase Noise LVCMOS Clock Buffer Evaluation Board

NEED ABSTRACT

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1 General Description

The CDCLVC1112 is a high-performance, low additive phase noise LVCMOS clock buffer. It has one LVCMOS input and twelve LVCMOS outputs. It has also an enable pin.

This evaluation module (EVM) is designed to demonstrate the electrical performance of the CDCLVC1112. Throughout this document, the acronym EVM and the phrases evaluation module and evaluation board are synonymous with the CDCLVC1112 EVM. [Figure 1](#) illustrates the CDCLVC1112 EVM.

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

1.1 Features

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

2 Signal Path and Control Circuitry

The CDCLVC1112 EVM supports single-ended inputs up to 250MHz. For more information about the CDCLVC1112, see the CDCLVC1112 product data sheet available for download from the TI web site (www.ti.com).

3 Getting Started

The CDCLVC1112EVM has self-explanatory labeling and uses similar naming conventions as the CDCLVC1112 product datasheet. 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). There are decoupling capacitors and a ferrite bead to isolate the EVM power from the CDCLVC1112 device power pins.

The CDCLVC1112EVM can use a supply voltage 3.0 to 3.6 V.

5 Enabling/Disabling the Outputs

The Enable pin of the CDCLVC1112 can be controlled using jumper J21 or the SMA J2. The J2 connector is not soldered on the CDCLVC1112EVM but can be soldered if needed. Check the BOM section for part ordering information.

6 Output Clock

The CDCLVC1112 generates twelve LVCMOS outputs. The outputs can be loaded using the pull-up and pull-down 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
14	0	C1–C14	402	Panasonic – Ecg	ERJ-2GE0R00X
6	0.01μF	C19–C24	402	Venkel	C0402X7R500-103KNE
1	0.1μF	C18	402	Venkel	C0402X7R160-104KNE
2	47 μF	C15, C16	805	Taiyo Yuden	JMK212BJ476MG-T
1	10 μF	C17	3216-18 (EIA)	Kemet	B45196H3106K109
14	0.0 (Zero Ohm)	R4, R5, R8, R11, R14, R17, R20, R23, R26, R29, R32, R35, R38, R41	402	Panasonic – Ecg	ERJ-2GE0R00X
2	100	R1, R2	402	Venkel	CR0402-16W-1000FT
1	150	R43	402	Panasonic – Ecg	ERJ-2RK1500X
1	50	L1	1206	Murata Electronics North Am	BLM31PG500SN1L
1	LED – Green Clear	D1	1206	Cml Innovative Technologies	CMD15-21VGC/TR8
1	CDCLVC1112	U1	24-TSSOP	Texas Instruments	CDCLVC1112
1	1 X 3	J21	0.1 "	HTSW-150-07-G-S	K10000013783
2	Banana Plug – Metal	P1, P2	4mm	Emerson Network Power Co	108-0740-001
5	142-0701-801	J1, J3, J7, J9, J11	RF SMA EDGE	Emerson Network Power Co	142-0701-801
4	4-40/0.25"	Screws		Building Fasteners	PMSSS 440 0025 PH
4	0.75"	Standoffs	Round Threaded	2029	K10000010170

Table 1. Bill of Materials (continued)

QTY	Value	Designator	PKG/Case	Manufacturer	Part Number
26	DNI	R3, R6, R7, R9, R10, R12, R13, R15, R16, R18, R19, R21, R22, R24, R25, R27, R28, R30, R31, R33, R34, R36, R37, R39, R40, R42	402		DNI
9	DNI	J2, J4–J6, J8, J10, J12–J14	RF SMA EDGE		DNI

8 Schematic

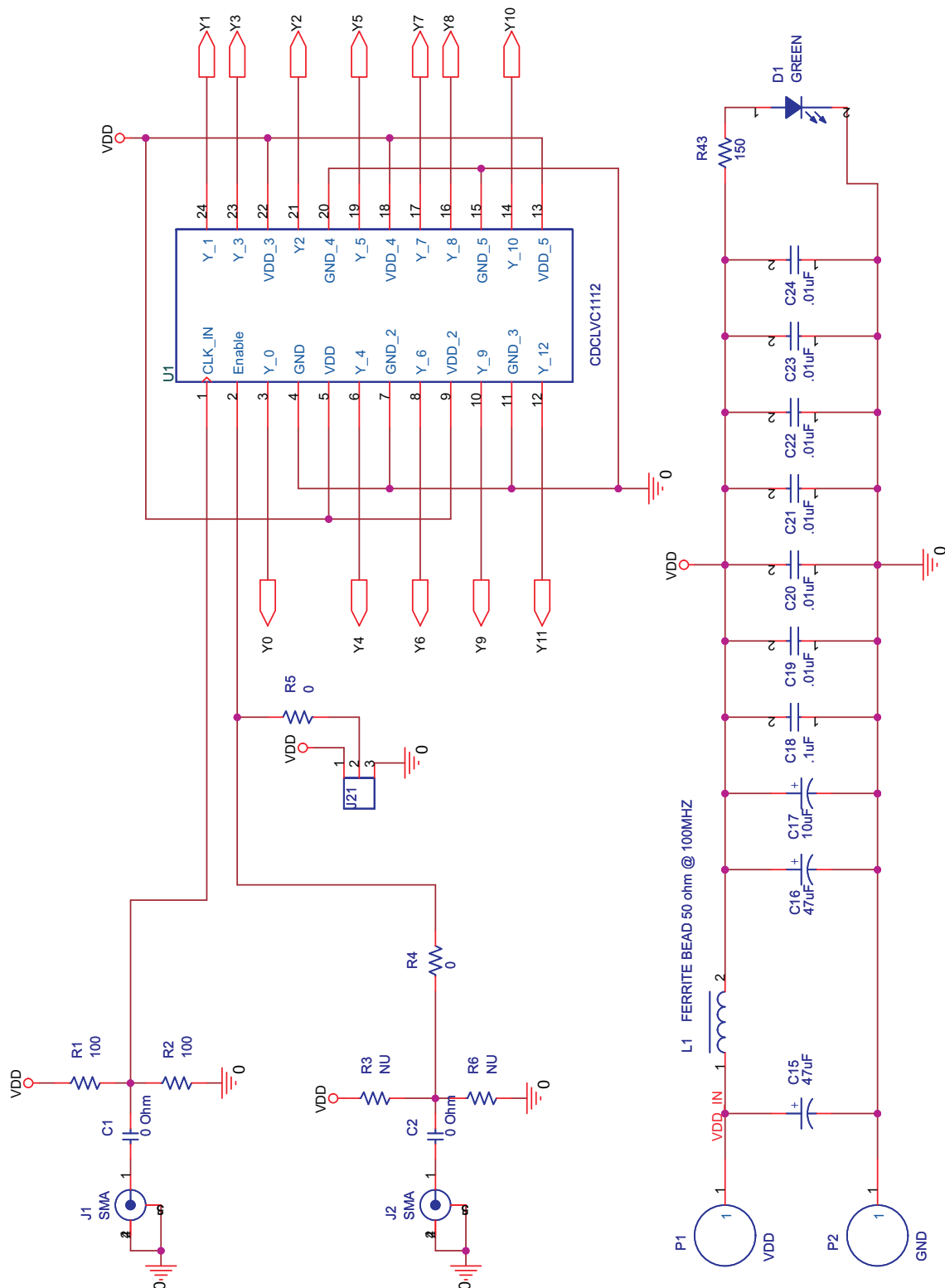


Figure 1. Schematic (Page 1 of 3)

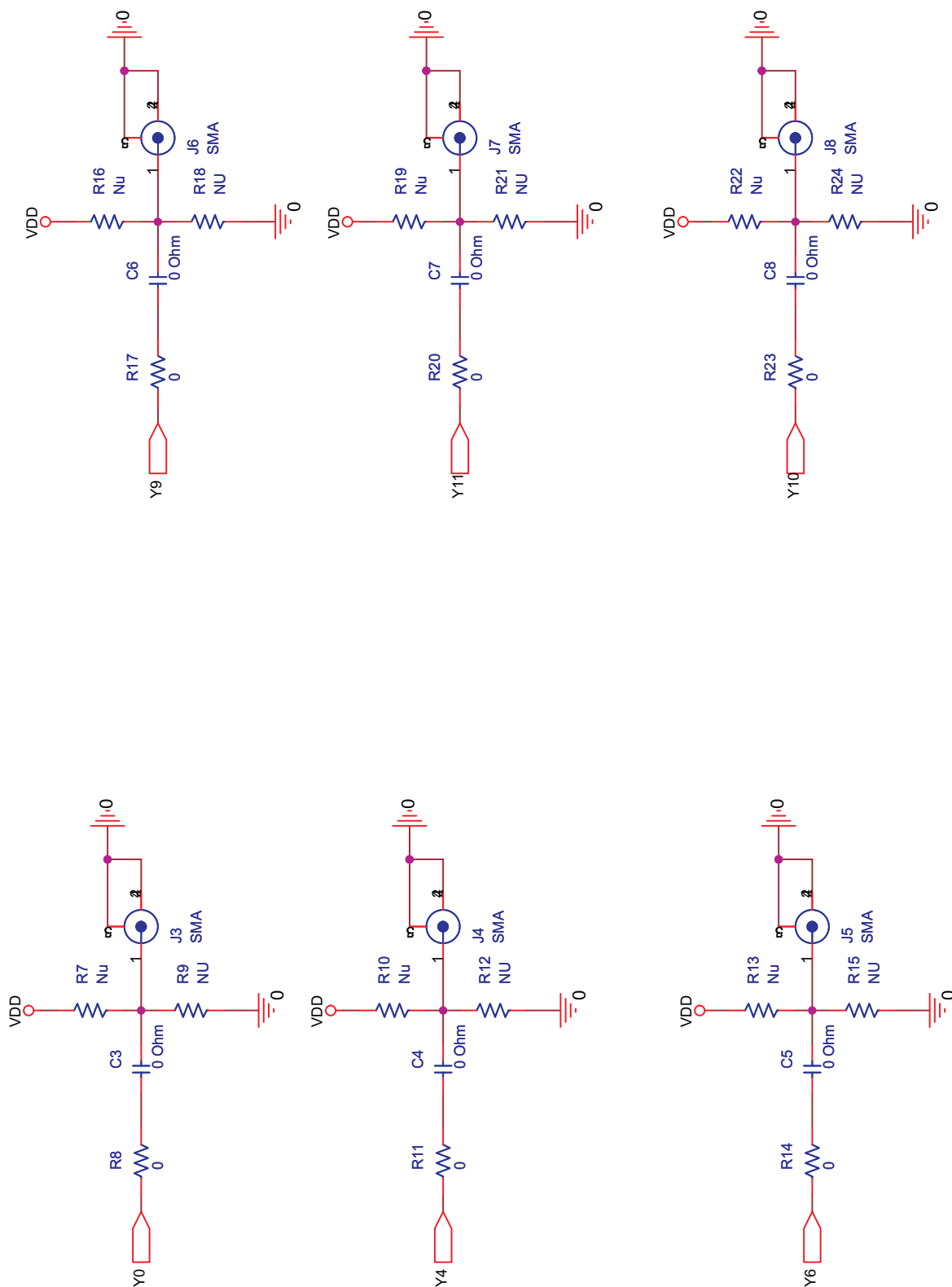


Figure 2. Schematic (Page 2 of 3)

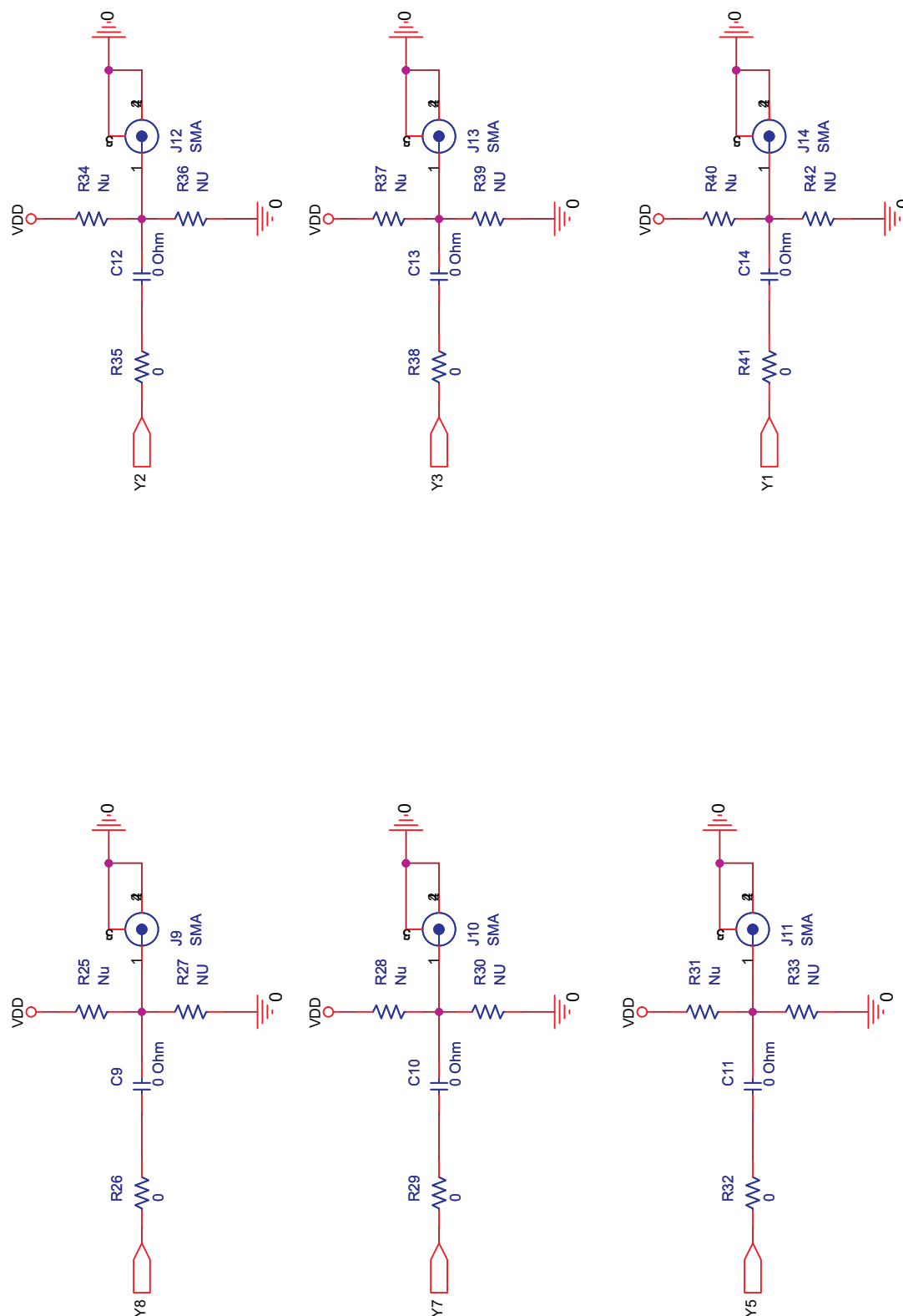


Figure 3. Schematic (Page 31 of 3)

9 References

1. CDCLVC1112 datasheet, [SCAS895](#)

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