3.125 Gbps LVDS Buffer / Repeater (DS25BR150) Evaluation Kit

USER MANUAL

Part Number: DS25BR150EVK NOPB

For the latest documents concerning these products and evaluation kit, visit lvds.national.com. Schematics and gerber files are also available at lvds.national.com.

April 2007
Rev. 0.1

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Overview

The DS25BR150EVK is an evaluation kit designed for demonstrating performance of the 3.125 Gbps LVDS Buffer / Repeater (DS25BR150).

The purpose of this document is to: familiarize you with the DS25BR150EVK, suggest the test setup procedures and instrumentation, and guide you through some typical measurements that demonstrate performance of the device in typical applications.

DS25BR150EVK Description

Figure 1 shows the top layer drawing of the PCB with the silkscreen annotations. It is a small six-layer PCB that has a single-device layout capable of demonstrating performance and all features of the DS25BR150.

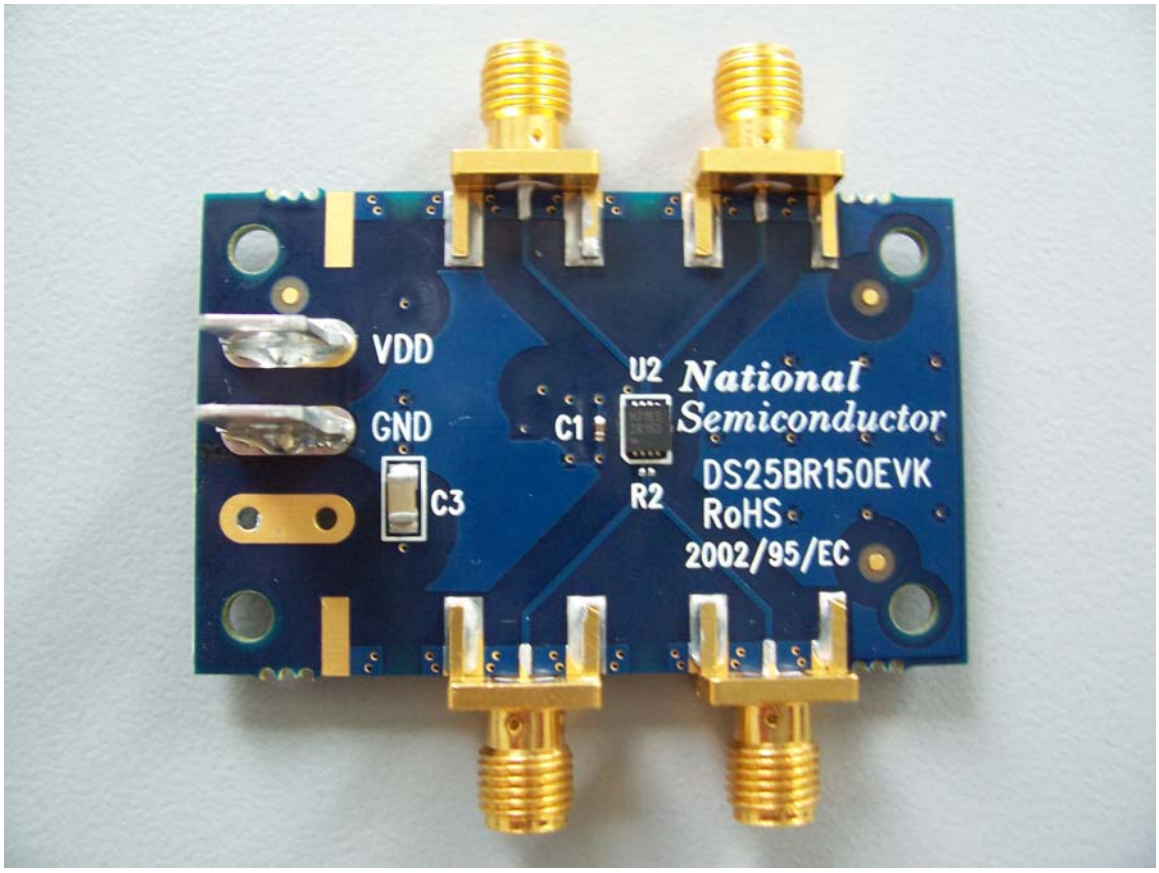


Figure 1. DS25BR150EVK

DS25BR150 Evaluation

This section provides recommended test setup procedure for the device evaluation. Figure 2 depicts a typical setup and instrumentation you may use for the device evaluation.

1. Apply the power to the device (3.3V typical) between VDD and GND connectors.

2. Connect a signal source (i.e. signal generator or an LVDS driver) to the input (R2 label) on the board and adjust the signal parameters (VOH, VOL, VCM) so that they comply with the device input recommendations.

3. Connect the output (U2 label) to an oscilloscope and view the output signals with an oscilloscope that has the bandwidth of at least 5 GHz.

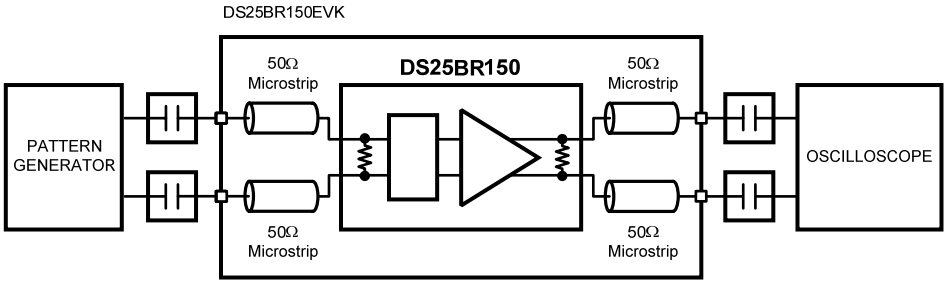


Figure 2. DS25BR150 Test Setup Example

Typical Performance

This section of the User Manual shows a typical eye diagram you can expect to see when evaluating the DS25BR150EVK.

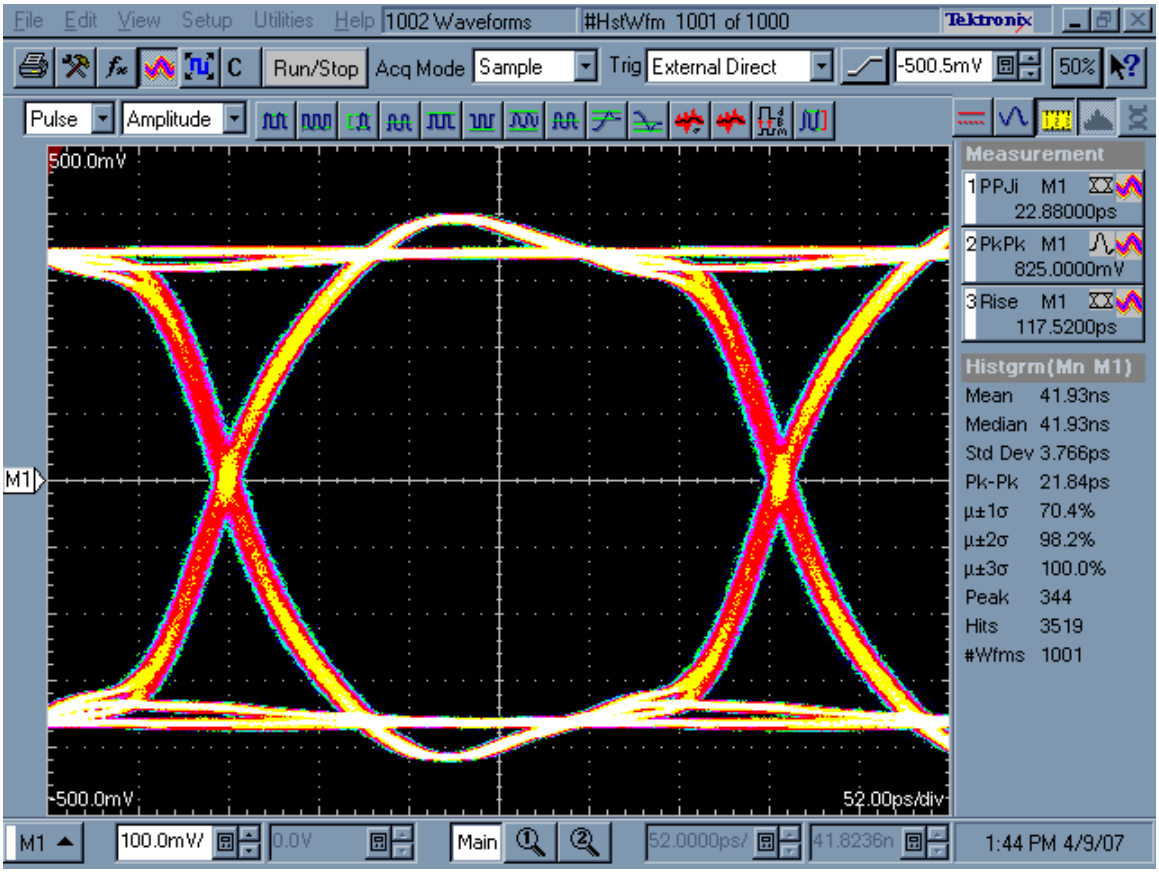
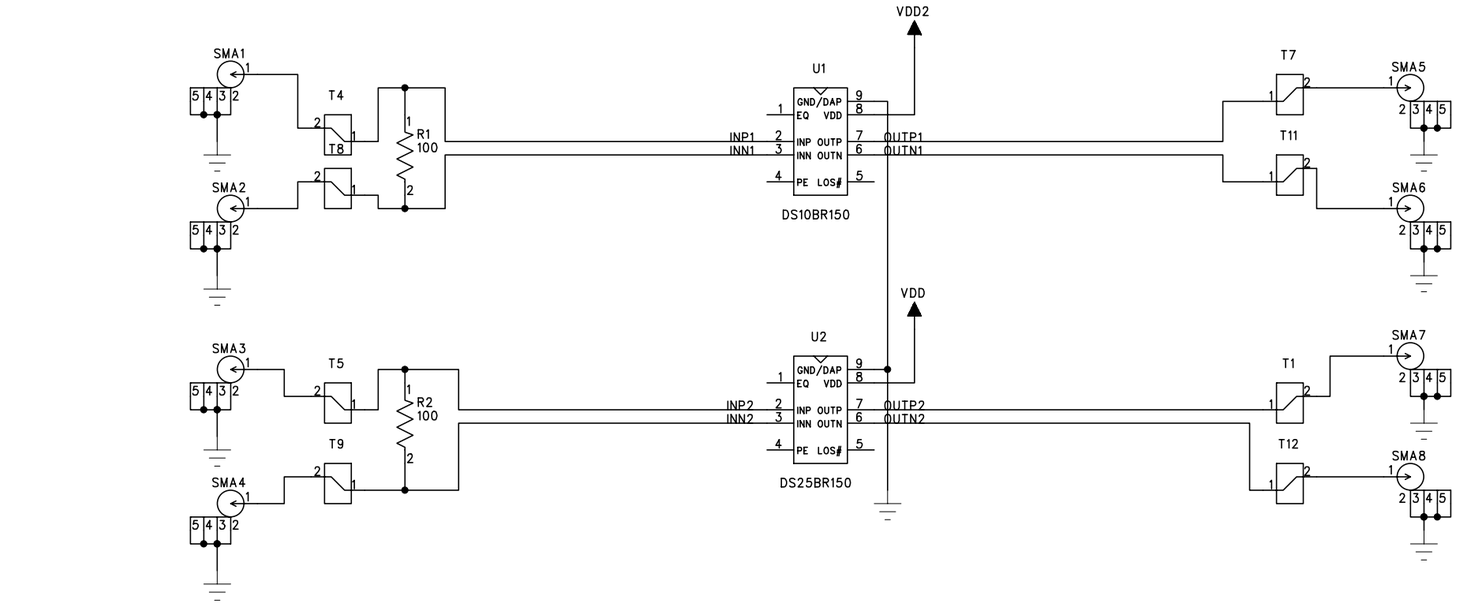
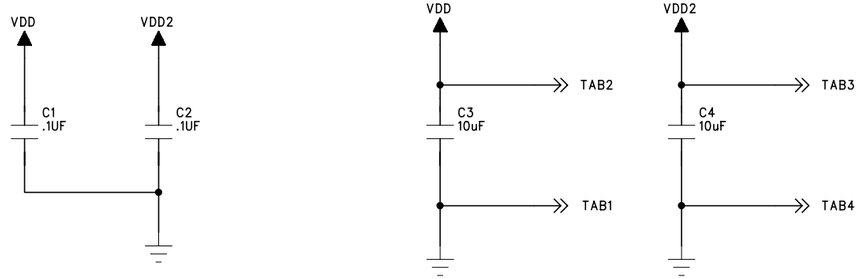
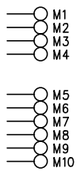


Figure 2. DS25BR150 3.125 Gbps PRBS-7 Output Eye Diagram

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:
0	INITIAL RELEASE		







COMPANY:	NATIONAL SEMICONDUCTOR		
TITLE:	SCHEMATIC DS25BR150/DS10BR150 EVK , ROHS		
CODE:	SIZE: B	DRAWING NO: S-05800	REV: 0
SCALE:		SHEET: 1 OF 1	

Enercon Technologies
25 NorthBrook Drive
Gray, Maine 04039
U.S.A.

DRAWN: ACF	DATED: 2/27/07

ENERCON - BILL OF MATERIALS	TITLE: NATIONAL SEMICONDUCTOR PCBA, DS25BR150EVK, ROHS	PL Number: Z3053-01	Rev: 0	Rev By:	Rev Date: 2/27/2007	PL Status: Released
Main Product: PCBA, DS25BR150 EVK		Responsible Eng/Mgr:		Creator: Arlene Fox		Creation Date: 2/27/2007

Item	Part Type	Part Number/Value	Mfg	NoSub	Description	Qty	SMT	Ref Des	Notes	Rev
1	PCB	P-05797R0			DS10/25BR150K: 1.25x2.03x.060in, 6 layer	1			Bd: (31.75x 51.43mm)	0
2										
3	IC	DS25BR150	NAT			1		U2	CUSTOMER SUPPLIED	0
4										
5	CAP	0402YD104KAT	AVX		.1µF, 16V, ±10%, 0402, Ceramic, X5R, Pb-Free	1	X	C1		0
	<ALT>	ECJ-0EB1C104K	PANA		.1µF, 16V, ±10%, 0402, Ceramic, X5R, Pb-Free					
6	CAP	ECJ-3YB0J106K	PANA		10µF, 6.3V, ±10%, 1206, Ceramic, X5R, Pb-Free	1	X	C3		0
	<ALT>	12066D106KAT	AVX		10µF, 6.3V, ±10%, 1206, Ceramic, X5R, Pb-Free					
	<ALT>	C1206C106K9PAC	KEMET		10µF, 6.3V, ±10%, 1206, Ceramic, X5R, Pb-Free					
7										0
8	CONN	1287-ST	KEYSTONE		Faston, Male, .250x.032, Pb-Free	2		TAB1,2	VDD, GND	0
9	CONN	142-0701-851	EMERSON		SMA, Jack Receptacle, 50 OHM, Pb-Free	4		SMA3,4,7,8		0
10										
11	STENCL	T-05801R1	ENERCON		STENCIL FABRICATION, TOP, DS25BR150/DS10BR150 EVK	1				0
12	STENCL	T-05802R1	ENERCON		STENCIL FABRICATION, BOTTOM, DS25BR150/DS10BR15...	1				0
13										
14	REF	C-05798R0	ENERCON		FABRICATION DWG, DS25BR150/DS10BR150 EVK, ROHS					0
15	REF	C-05799R1	ENERCON		PALLET DWG, DS25BR150/DS10BR150 EVK					0
16	REF	S-05800R0	ENERCON		SCHEMATIC, DS25BR150/DS10BR150 EVK					0
17										

ENERCON - BILL OF MATERIALS	TITLE: NATIONAL SEMICONDUCTOR PCBA, DS25BR150EVK, ROHS	PL Number: Z3053-01	Rev: 0	Rev By:	Rev Date: 2/27/2007	PL Status: Released
Main Product: PCBA, DS25BR150 EVK		Responsible Eng/Mgr:	Creator: Arlene Fox		Creation Date: 2/27/2007	

Notes:

DO NOT STUFF:

R1,2
C2,4
U1
TAB3
SMA1,2,5,6

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