User's Guide
SLLU220–June 2015

HD3SS3411 Evaluation Module

This is the user guide for the evaluation module (EVM) of the HD3SS3411. The purpose of this user guide is to facilitate an easy evaluation process of the HD3SS3411 passive switch.

The contents of this user guide are meant to provide an overview of the HD3SS3411, which includes highlighting its key features, operating conditions, and how to setup this EVM for evaluation.

Target applications include automotive infotainment, desktop and notebook PCs, server/server area networks, PCIe backplanes, and shared I/O ports. Schematic and layout information is included at the end of this manual.

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1 Introduction

The HD3SS3411 is a high speed passive switch capable of switching differential channels between Port A to Ports B or C based on the state of control pin SEL.

The interface to the EVM consists of standard SMP connectors to interface the EVM to test equipment or adapter boards to use in a system application.

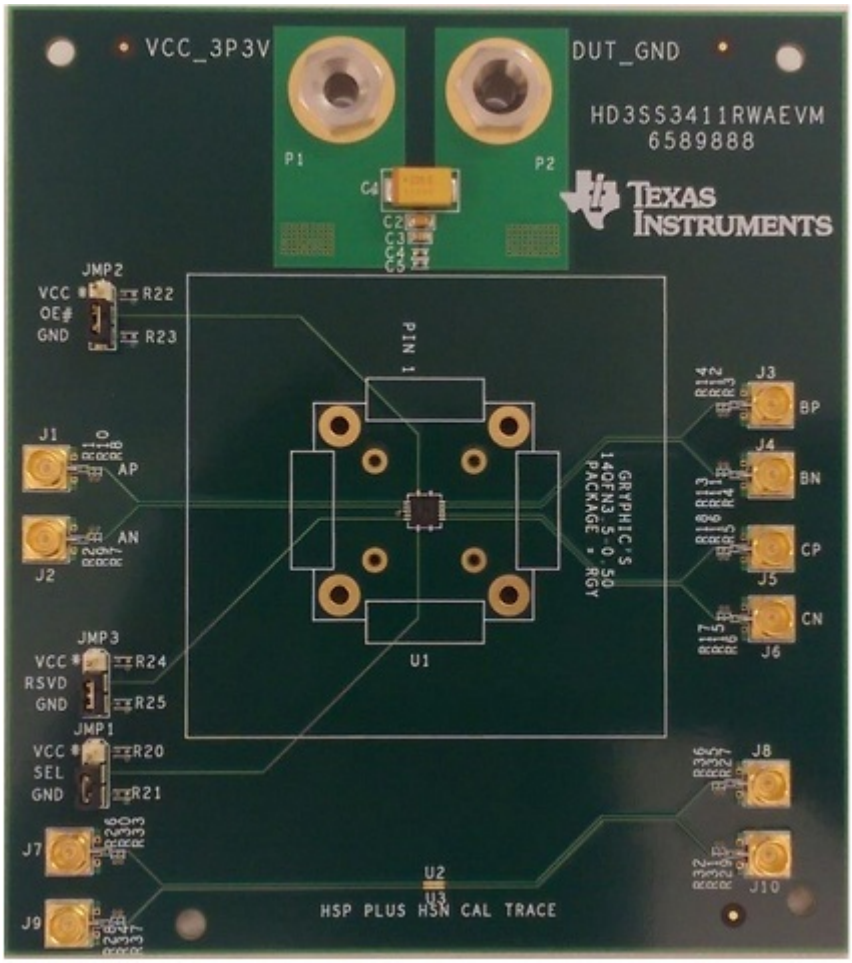


Figure 1. HD3SS3411 EVM

1.1 HD3SS3411 EVM Kit Contents

This EVM kit contains the following items:

- HD3SS3411 EVM board
- This user's manual

1.2 Description of EVM Board

The HD3SS3411 EVM is designed to provide easy evaluation of the HD3SS3411 device. Table 1 highlights the EVM jumper functionality and configuration.

Table 1. HD3SS3411 EVM Jumper Description and Settings

Jumper		Configuration
JMP1	SEL	Jumper pins 1-2 to connect Ports A to C Jumper pins 2-3 to connect Ports A to B
JMP2	OE#	Jumper pins 1-2 to place device in shutdown Jumper pins 2-3 for normal operation
JMP3	RSVD	Jumper pins 2-3 for normal operation

1.3 Power for the HD3SS3411 EVM

The HD3SS3411 EVM can be powered from a 3.3-V external supply capable using banana plug cables for 3.3 V and GND.

2 PCB Construction

2.1 HD3SS3411 EVM Board Schematics

This section provides the EVM board schematic sheets in Figure 2 and Figure 3.

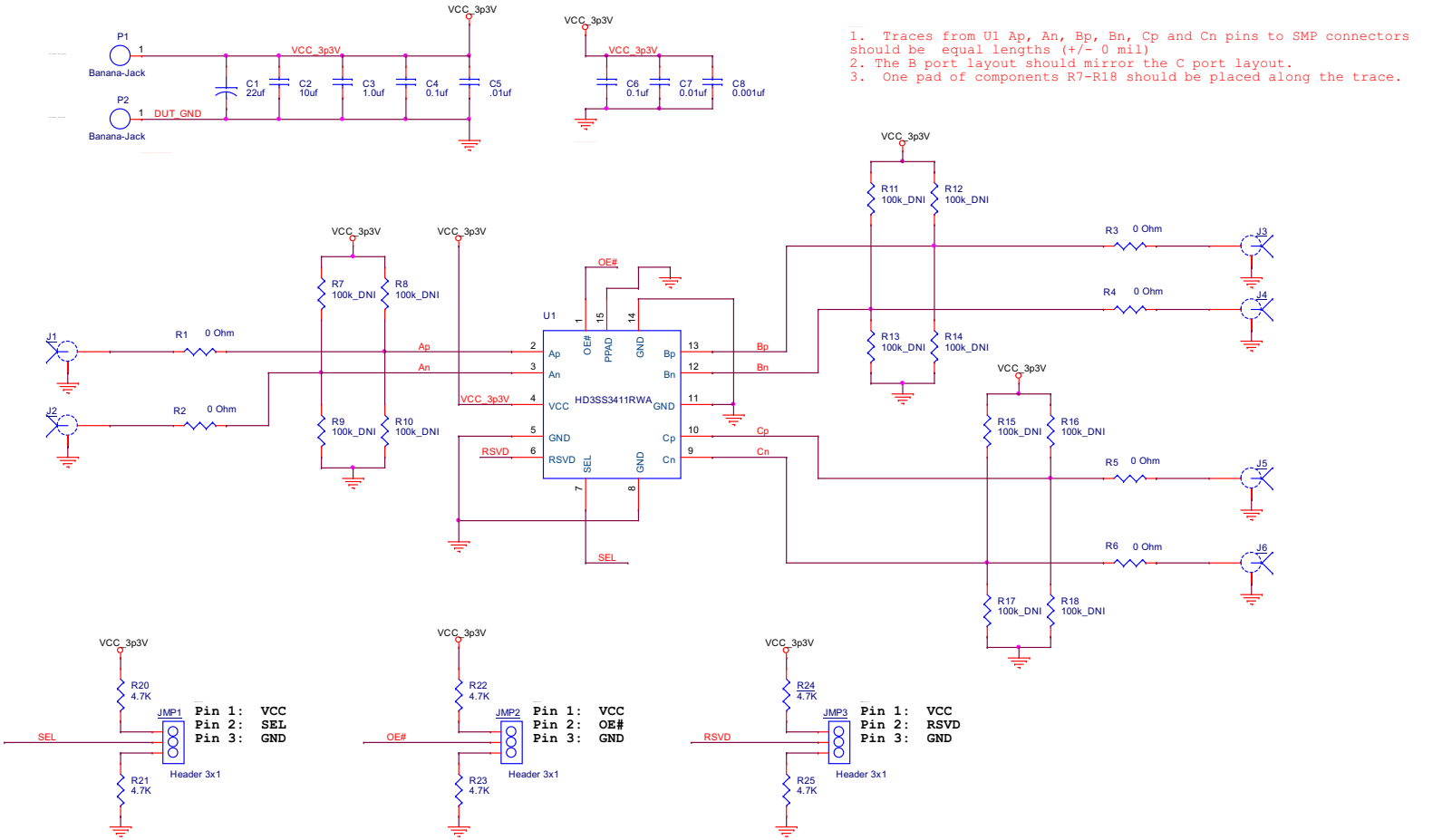
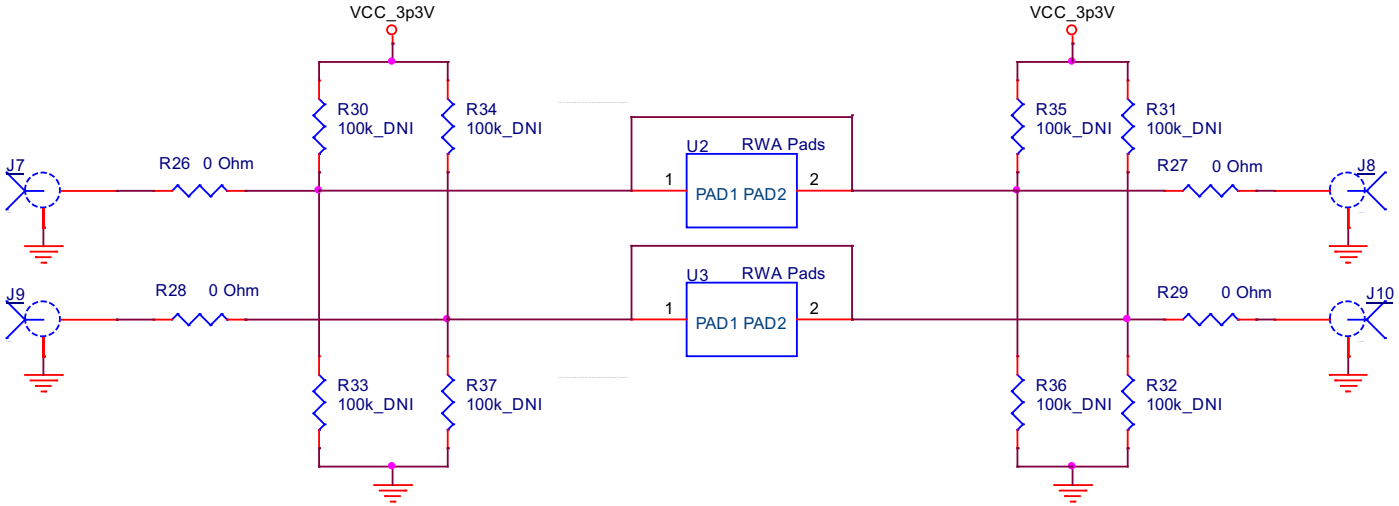


Figure 2. HD3SS3411 EVM Schematic High-Speed



A Route HSP Cal Trace and HSN Cal Trace exactly as the traces in Figure 2.

B HSP Cal Trace and HSN Cal Trace should be exactly 2x in length of any of the traces in Figure 2.

Figure 3. HD3SS3411 EVM Schematic Cal Trace

2.2 HD3SS3411 EVM Board Layout

This EVM was designed to show the implementation of this device on a 4-layer board. Figure 4 through Figure 7 illustrate the HD3SS3411 EVM printed-circuit board (PCB) layout.

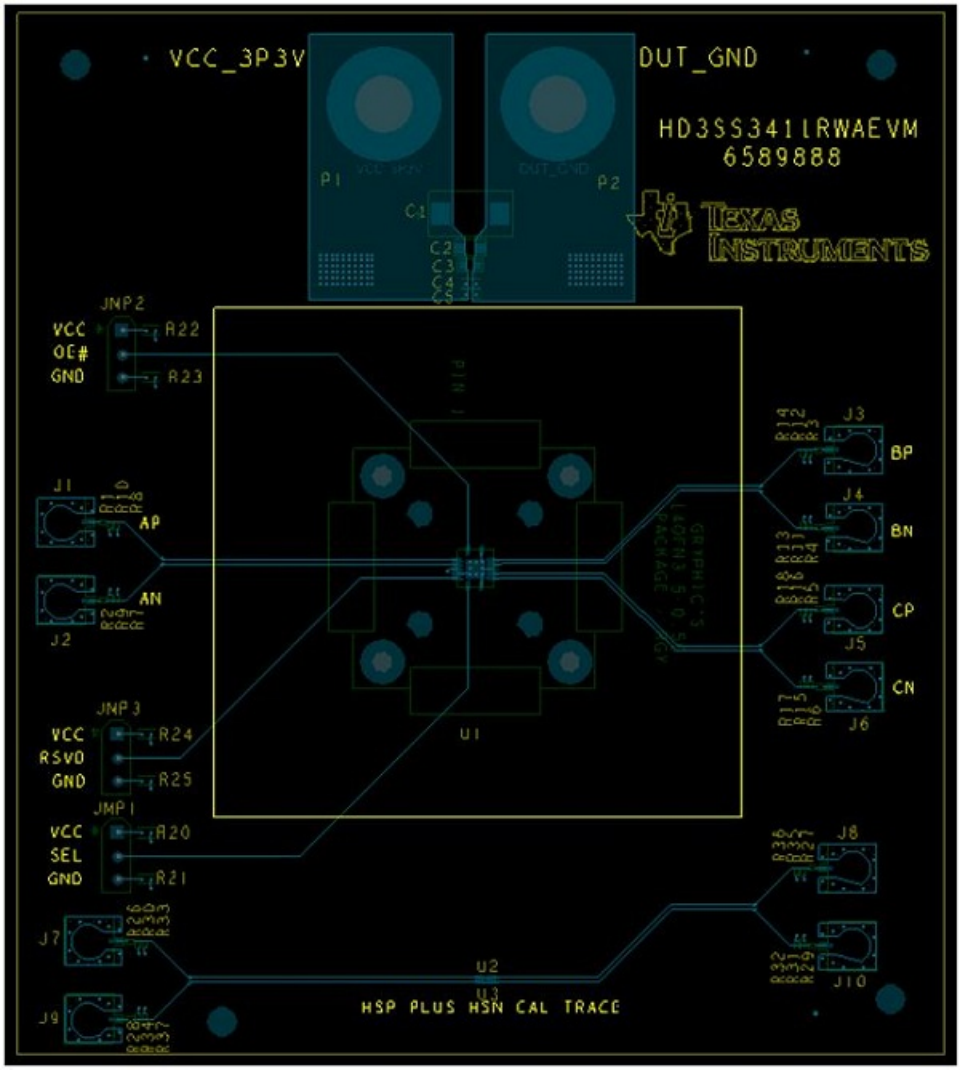


Figure 4. HD3SS3411 EVM Layout Layer 1 [Top]

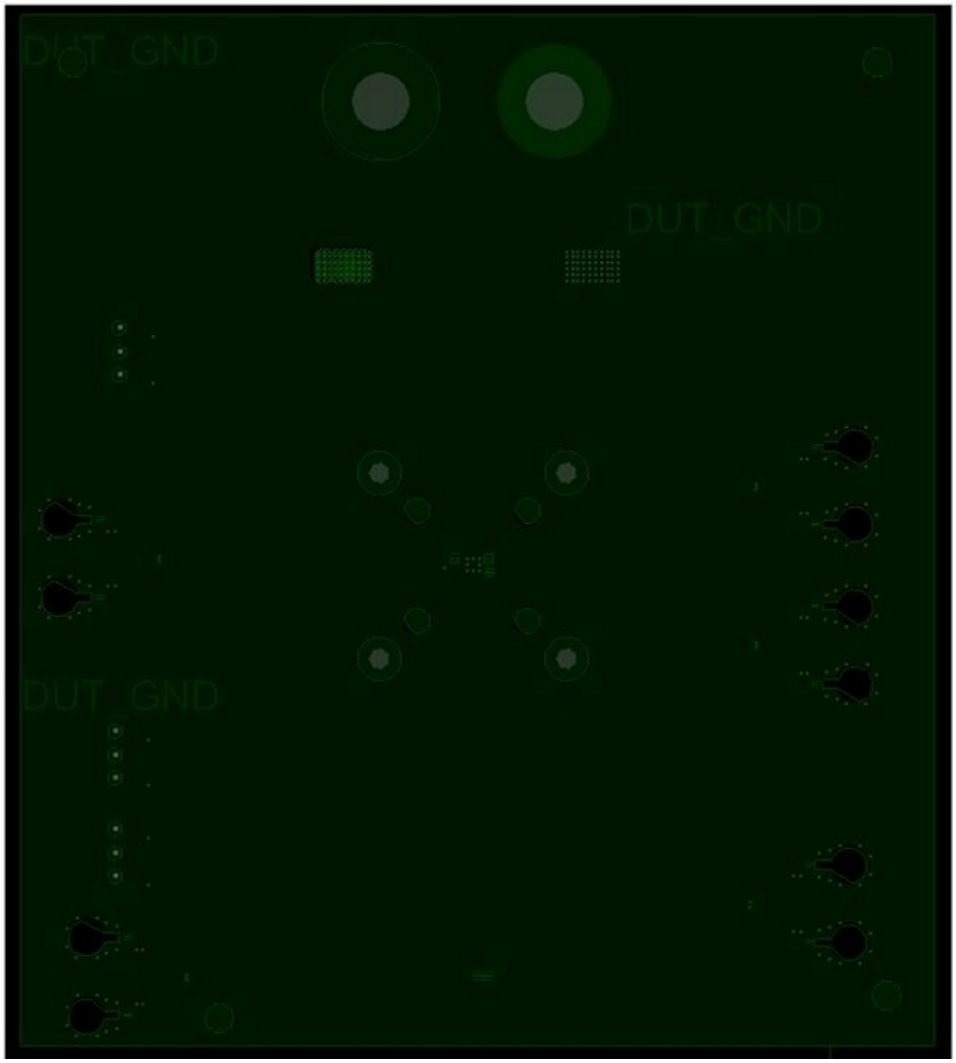


Figure 5. HD3SS3411 EVM Layout Layer 2 [GND]

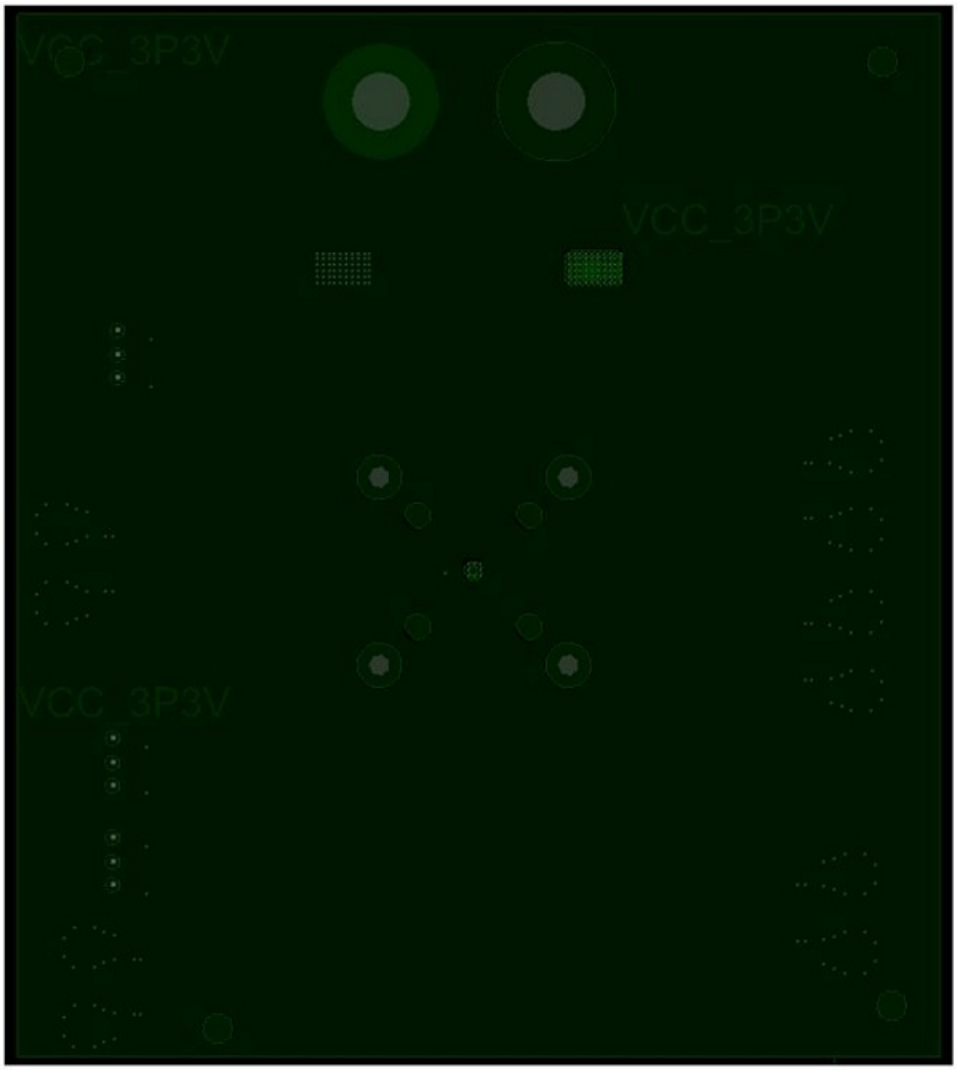


Figure 6. HD3SS3411 EVM Layout Layer 3 [VCC]

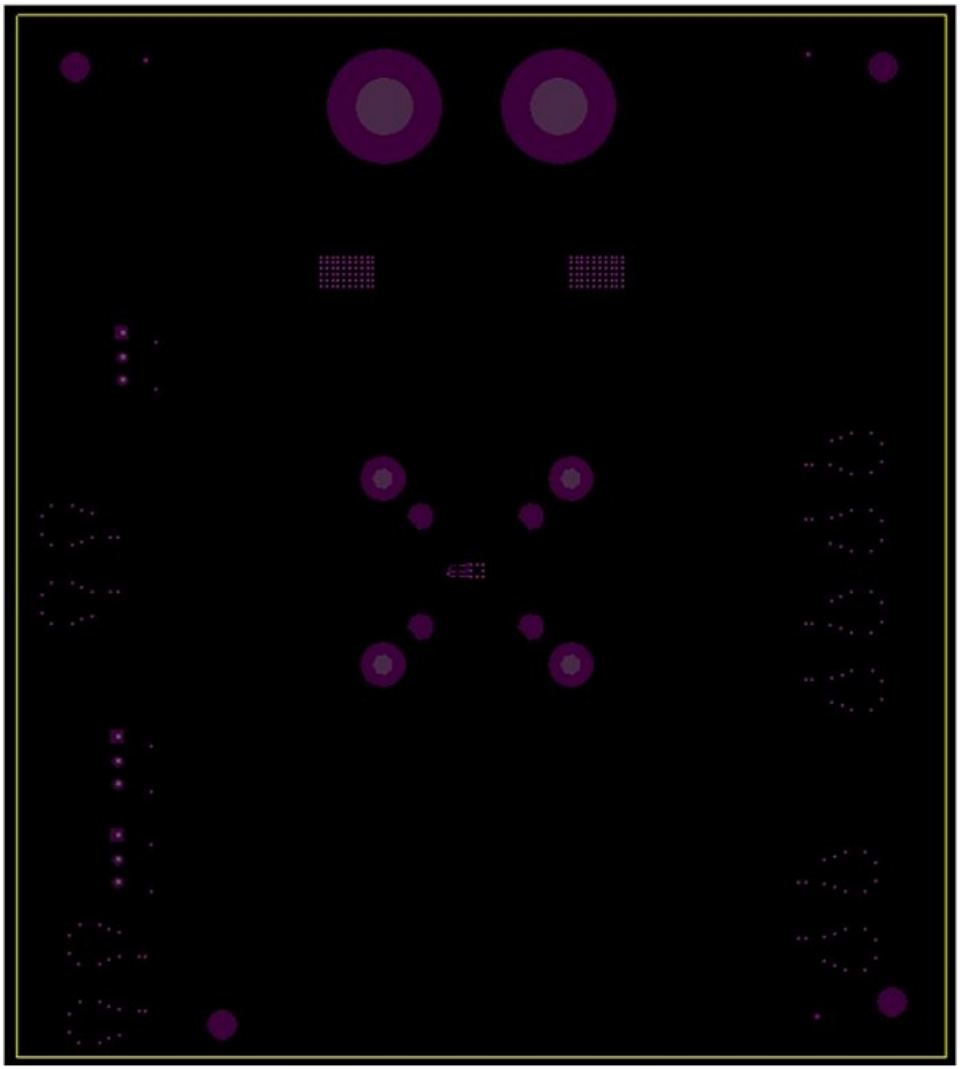


Figure 7. HD3SS3411 EVM Layout Layer 4 [Bottom Signal]

3 HD3SS3411 EVM Material Listing

The complete bill of material for the EVM is listed in Appendix A.

4 HD3SS3411 EVM Board Construction

The HD3SS3411 EVM board is a 4-layer board constructed of FR4 – TurboClad 370 material. The board stack-up consists of a signal layer on top, ground layer, power layer, and a signal layer on bottom.

NOTE: In order to achieve the desired impedance, it is recommended that you consult your board manufacturer for their process and design requirements.

Bill of Materials

Table 2 shows the complete BOM for the HD3SS3411 EVM.

Table 2. HD3SS3411 EVM Bill of Materials

Item	Quantity	Reference	Part
1	1	C1	22uf
2	1	C2	10uf
3	1	C3	1.0uf
4	1	C4	0.1uf
5	1	C6	0.1uf
6	1	C5	.01uf
7	1	C7	0.01uf
8	1	C8	0.001uf
9	3	JMP1,JMP2,JMP3	Header 3x1
10	10	J1,J2,J3,J4,J5,J6,J7,J8,J9,J10	SMP
11	2	P1,P2	Banana-Jack
12	10	R1,R2,R3,R4,R5,R6,R26,	0 Ohm
		R27,R28,R29	
13	20	R7,R8,R9,R10,R11,R12,R13,	100k_DNI
		R14,R15,R16,R17,R18,R30,	
		R31,R32,R33,R34,R35,R36,	
		R37	
14	6	R20,R21,R22,R23,R24,R25	4.7K
15	1	U1	HD3SS3411RWA

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- *Reorient or relocate the receiving antenna.*
- *Increase the separation between the equipment and receiver.*
- *Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*
- *Consult the dealer or an experienced radio/TV technician for help.*

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Concernant les EVMs avec antennes détachables

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2. Use EVMs only after User obtains the license of Test Radio Station as provided in Radio Law of Japan with respect to EVMs, or
3. Use of EVMs only after User obtains the Technical Regulations Conformity Certification as provided in Radio Law of Japan with respect to EVMs. Also, do not transfer EVMs, unless User gives the same notice above to the transferee. Please note that if User does not follow the instructions above, User will be subject to penalties of Radio Law of Japan.

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