

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.

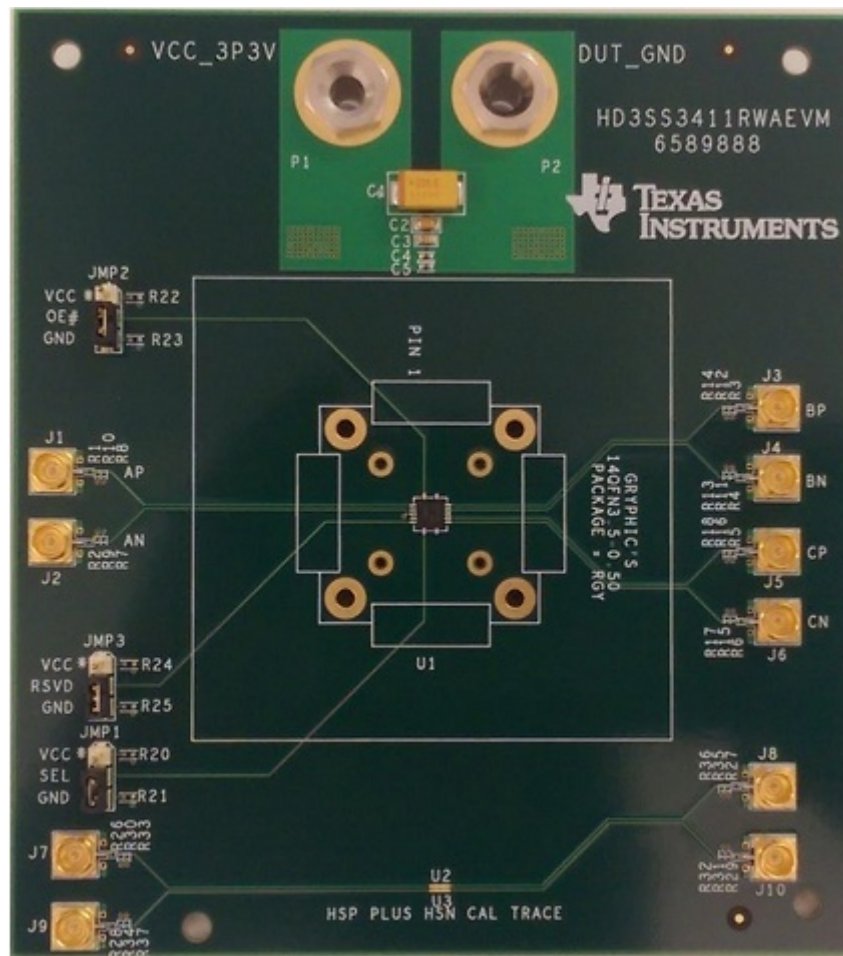


Figure 1. HD3SS3411 EVM

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](#).

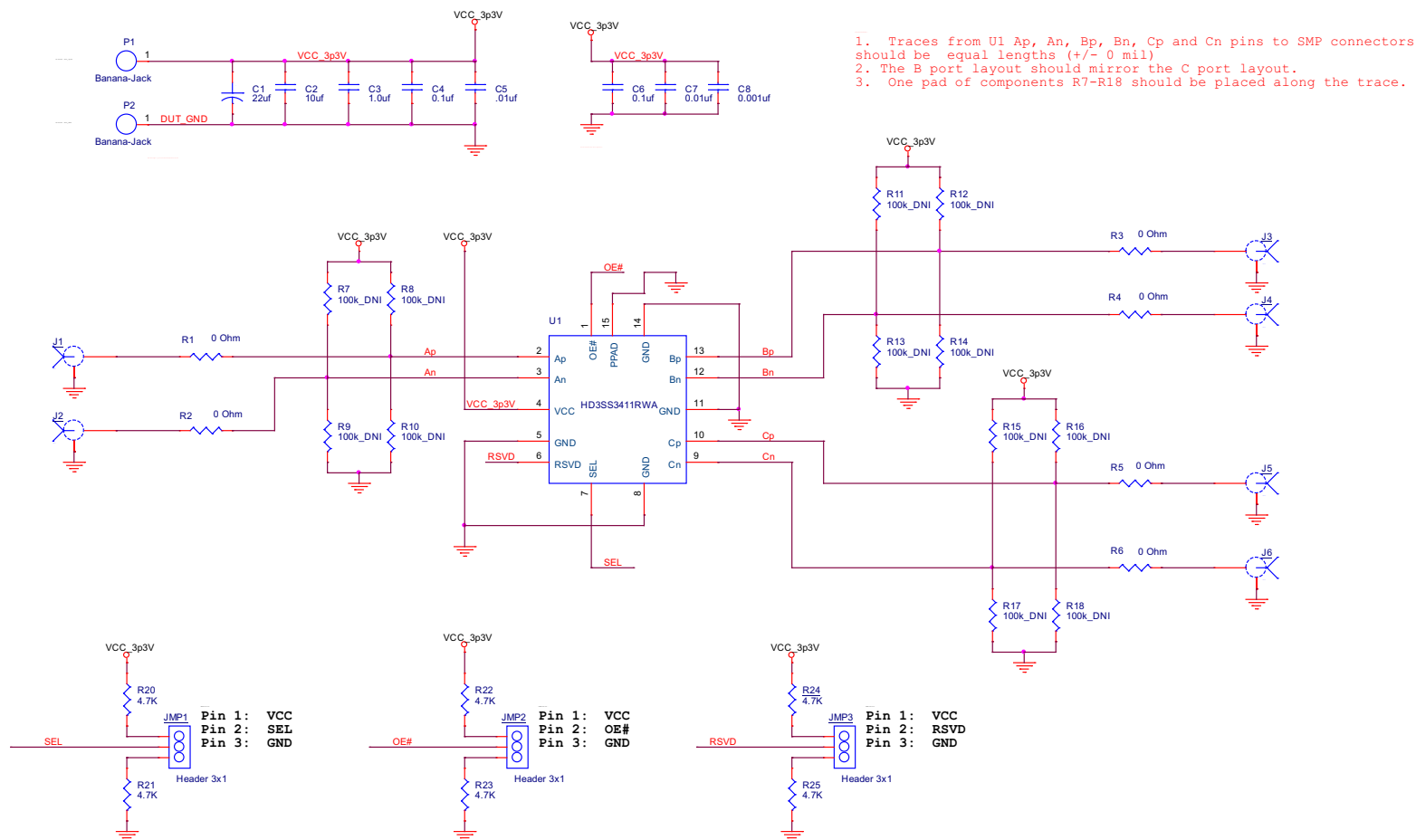
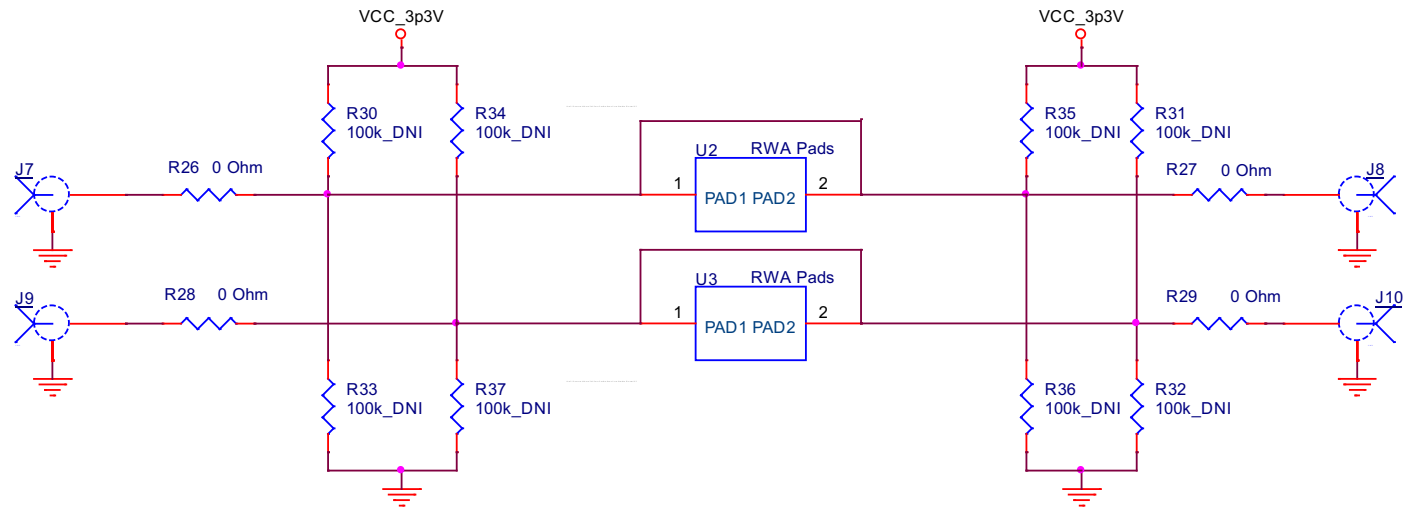


Figure 2. HD3SS3411 EVM Schematic High-Speed



- 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.

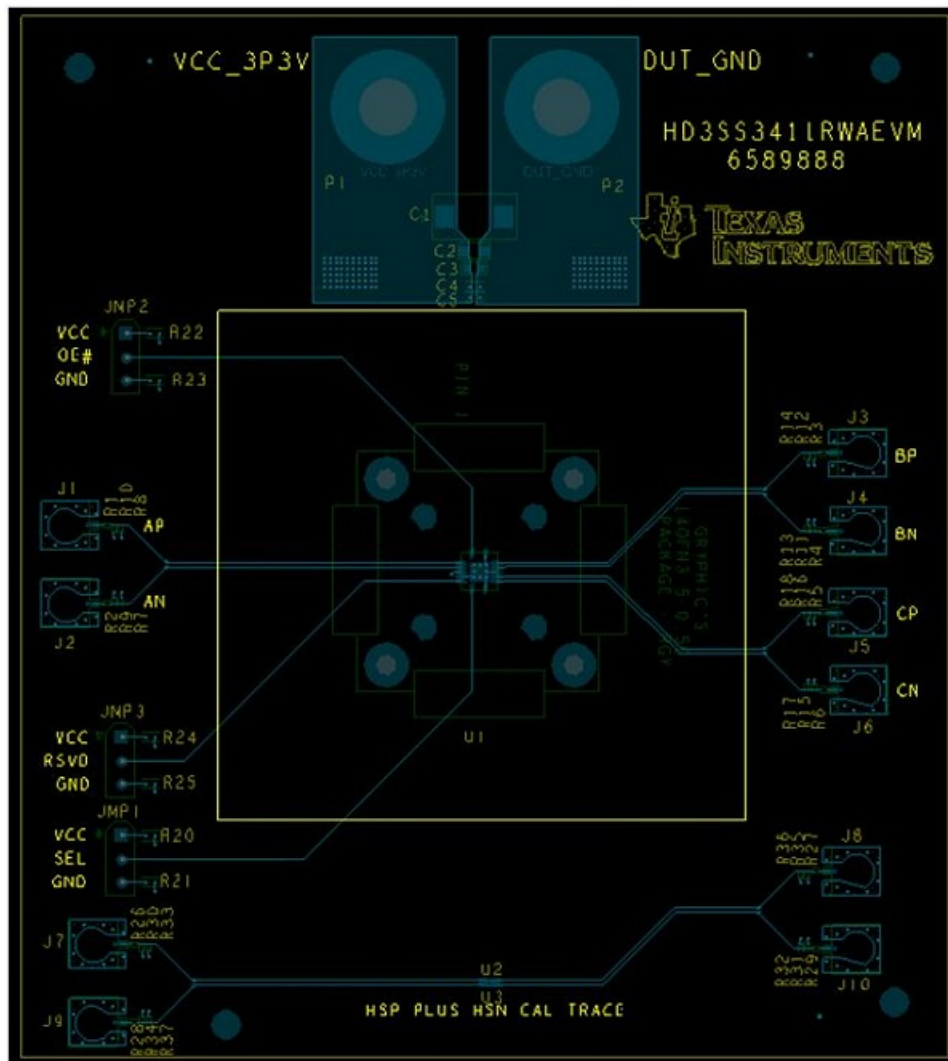


Figure 4. HD3SS3411 EVM Layout Layer 1 [Top]

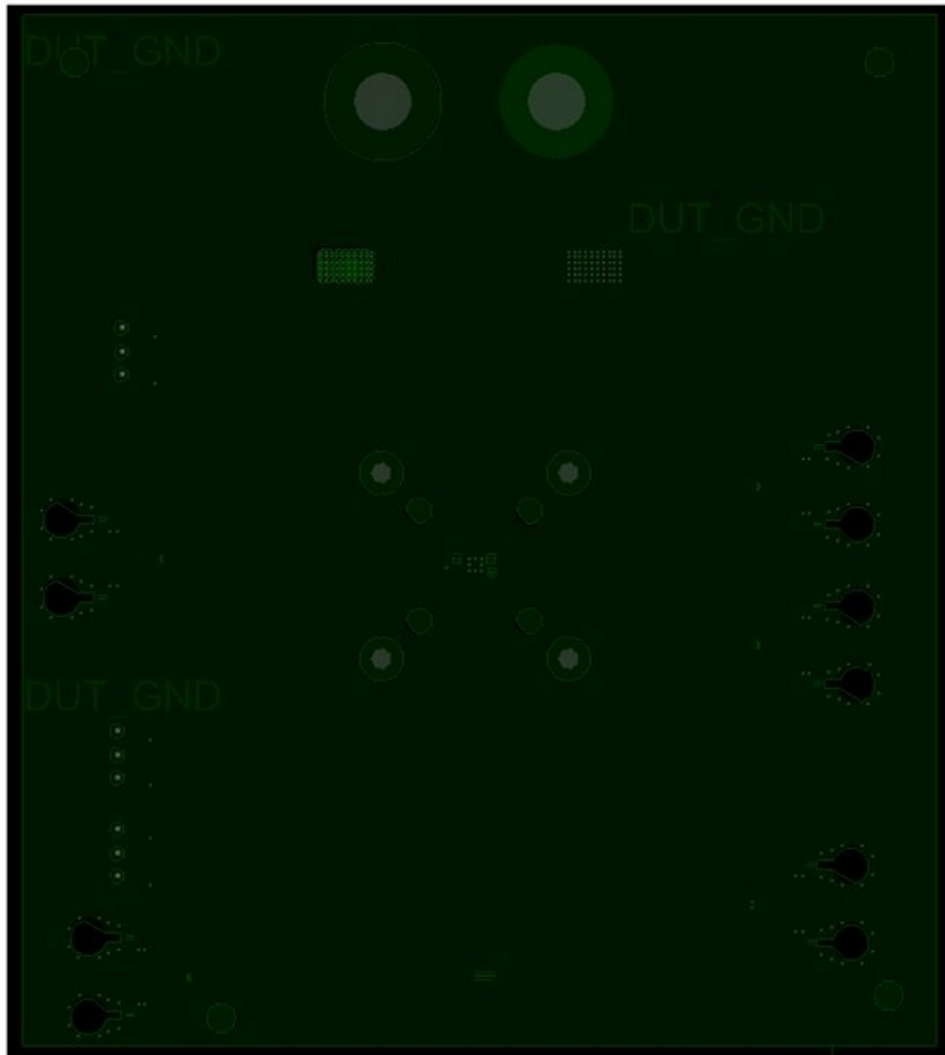


Figure 5. HD3SS3411 EVM Layout Layer 2 [GND]

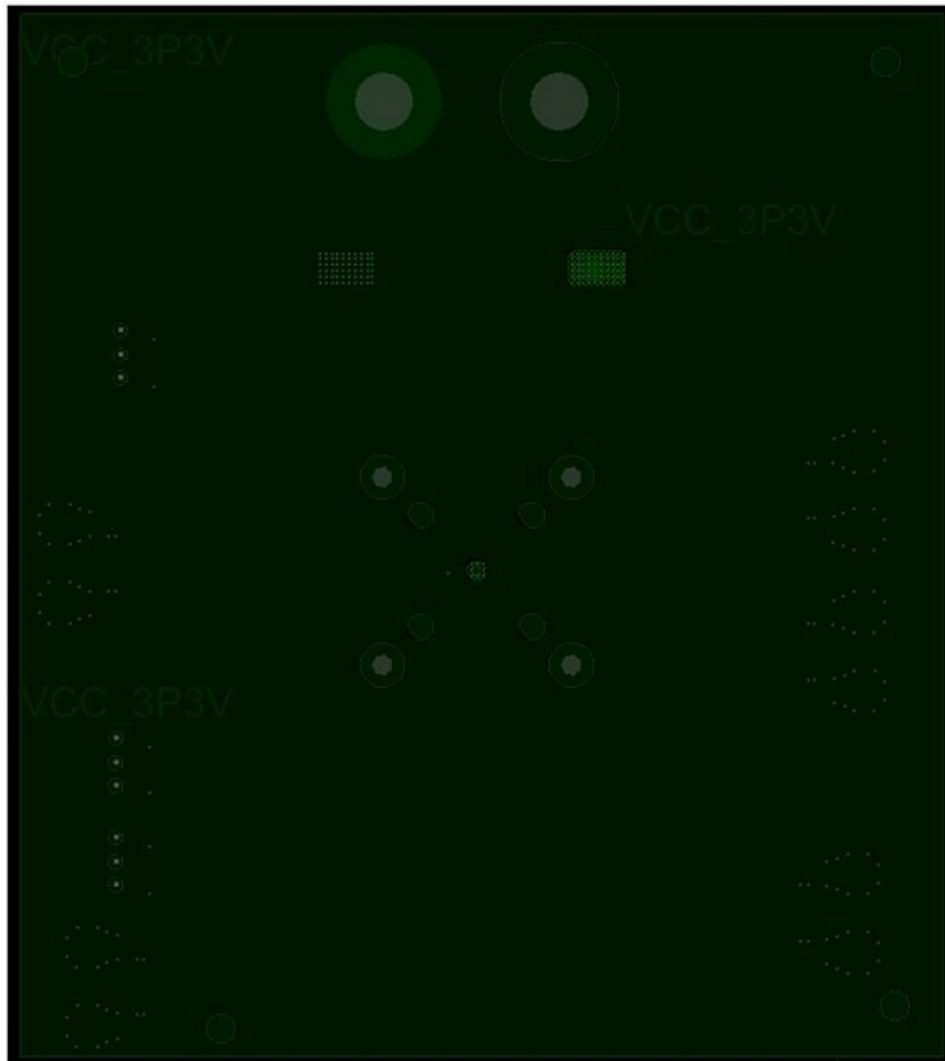


Figure 6. HD3SS3411 EVM Layout Layer 3 [VCC]

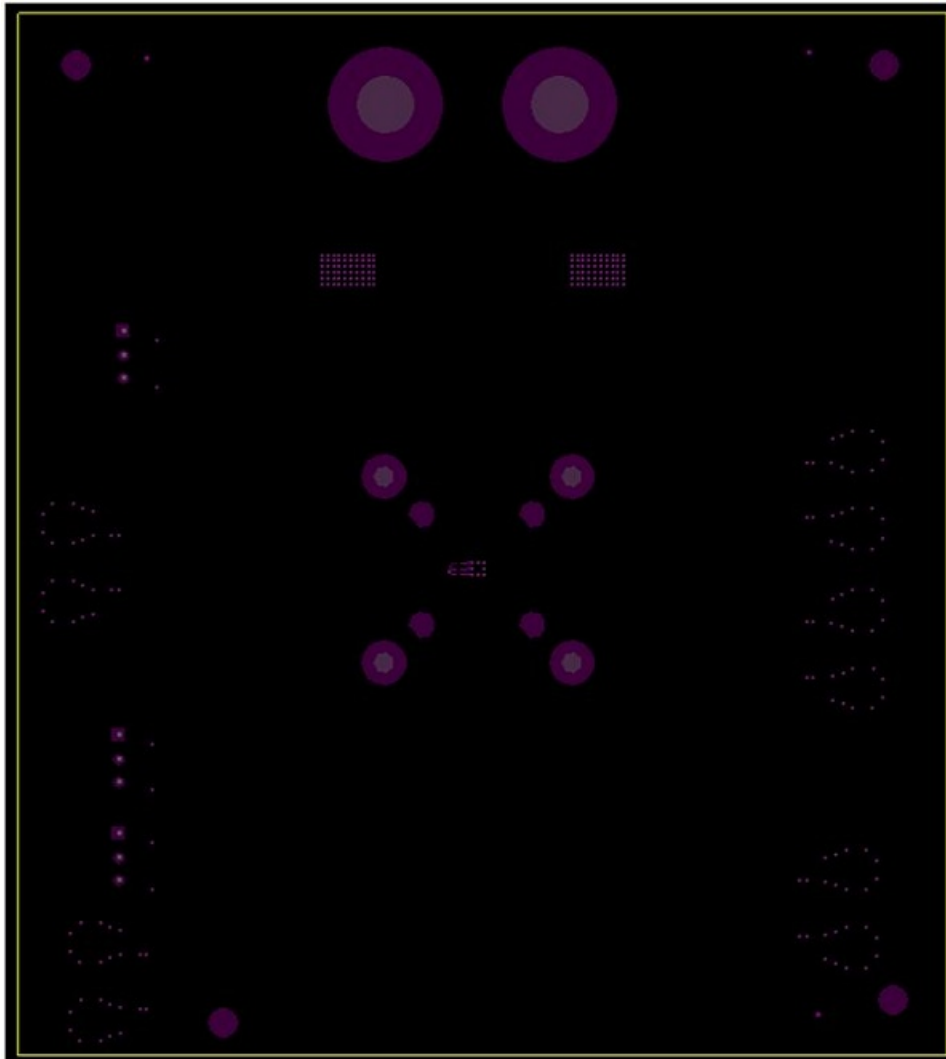


Figure 7. HD3SS3411 EVM Layout Layer 4 [Bottom Signal]

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, R27, R28, R29 | 0 Ohm |
| 13 | 20 | R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R30, R31, R32, R33, R34, R35, R36, R37 | 100k_DNI |
| 14 | 6 | R20, R21, R22, R23, R24, R25 | 4.7K |
| 15 | 1 | U1 | HD3SS3411RWA |

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