**Document No. : 18-039871-01 Rev. A**

**Title : EVAL-AD7402-8FMCZ Customer Evaluation Board Test Procedure**

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| REVISION HISTORY | | | | |
| **Revision** | **ECR #** | **Description of Change** | **Date** | **Author** |
| A | - | Initial Release | 19/05/14 | Aidan Frost |
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| **Required Approvers** | |
| **Approver Roles** | **Approver Names** |
| Apps Engineer | Shane O’Meara |
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**Equipment Required:**

* EVAL-AD7402-8FMCZ evaluation board
* EVAL-SDP-H1 board
* B&K Sine Generator (or Audio Precision Sine Generator)
* Single ended interposer board & XLR Cable ( if using AP)
* BNC to SMA cable (if using B&K)
* Bench top power supply
* 12V DC mains adapter
* PC & USB cable
* EVAL-AD740xFMCZ evaluation software
* AD7402\_03 EEPROM programming software

**Procedure for programming the Evaluation board EEPROM**

1. Install the AD740xFMCZ software.
2. Setup the link options as follows:

|  |  |  |
| --- | --- | --- |
| **Link No.** | **Position** | **Function** |
| LK1 | A | VDD1 = 5V |
| LK2 | A | VDD2 = 3.3V |
| LK7 | Removed | VIN+ connected to SMB connector J1 |
| LK8 | Inserted | VIN- grounded |
| LK3 | B | Clock sourced from AD7402 |
| Lk4 | A | Data sent to MDAT on FMC connector |
| LK5 | Removed |  |

Table 1: Link Positions

1. Connect the FMC connector on the evaluation board to the FMC port on the SDP-H1.
2. Connect the 12V mains adapter to the SDP-H1.
3. Check that both “BF\_POWER” and “SYS\_PWR” LEDs are illuminated.
4. Connect the SDP-H1 board to the PC’s USB port via J1 using USB cable.
5. Proceed through any dialog boxes that may appear (allowing the PC to recognise the SDP-H1 and install drivers as required).
6. Open the ad7402\_03 EEPROM programming software folder.

Double click the AD7402\_03 EEPROM PROGRAMMER.bat file.

* 1. When prompted to select a device, type “2” to select AD7402.
  2. Wait for the message “Board Successfully Programmed” to appear.

1. When finished programming boards type “E” to exit.
2. Disconnect the SDP-H1 board from the PC by removing the USB cable.
3. Power cycle the SDP-H1 board and then reconnect the board to the PC.
4. Run the evaluation CD software. (Ensure running with latest version/that supplied)
5. Check that the software connects to the newly programmed board.
6. LED1 on the SDP-H1 should be flashing red and LED0 should be lit orange.

**Procedure for testing the board (B&K):**

1. Set the B&K to 35Hz @ 250mv.
2. Connect the “BNC to SMA” cable to the B&K Output.
3. Connect the SMA Cable to SMA connector VIN+.

*Proceed to step 4 below*

**Procedure for testing the board (AP):**

1. Open the provided AD7403 AP configuration file.
2. Connect one end of the XLR cable to Analog Output A on the AP, and the other end to the single ended interposer board.
3. Connect the single ended interposer board to VIN+ &VIN-.
4. Run the Evaluation Software.
5. Select the FFT tab.
6. Click the “Sample” button.
7. Check SNR/THD against values in Table 2; log SNR and THD values observed for each board.
8. Apply 24V to High-V connector J7 using a bench top power supply.
9. Remove LK1, then insert LK5
10. Click the “sample” button in the evaluation software.
11. Check SNR/THD against values in Table 2
12. Setup links as detailed in Table 1 (Page 2)

Board must meet test pass value as specified in Table 2 (Page 4) in order to pass:

***Caution*: Do not “hot-swap” Evaluation boards! When finished testing an evaluation board hit F12 on the keyboard to stop the software (without closing it) and then click the “RESET” button on the SDPH1 before removing evaluation board.**

**Test parameters**

|  |  |
| --- | --- |
| **Parameter** | **Test Pass Values** |
| SNR | 85dB minimum |
| THD | -85dB maximum |

Table 2: Test Parameters

**Test Results Recording**

For each tested board the SNR and THD result should be logged in a word document in table format. See example below. This should be provided to the responsible engineer.

|  |  |  |
| --- | --- | --- |
| **EVAL-AD7XXXFMCZ W/O NO.: XXXXX** | | |
| **Unit no.** | **SNR (dB)** | **THD (dB)** |
| **12** | **88** | **-88** |
| **13** | **86** | **-87** |

**Packaging - The following items are included in the completed box.**

1. 1 tested evaluation board packed in an anti-static bag.
2. CD containing the evaluation board software. Place disc in cover and attach to the lid of the evaluation board box.
3. Barcode label the box on the front panel.

**Board Traceability & Certification.**

All boards must be individually labeled and traceable to a lot number. A certificate must accompany the lot certifying each individual board within the lot.