



Features

- 2 on-board MEMS MP34DT01 microphones on board
- Capable of driving up to 6 digital MEMS microphones
- 3 independent I²S outputs
- Up to 10 independent 32-bit user programmable biquads per channel
- The demonstration board is fully configurable with:
 - STEVAL-MKI129V1/V2/V3
 - STEVAL-MKI131V1/V2/V3
 - STEVAL-MKI116V1
 - STEVAL-MKI117V1/V2
 - STEVAL-CCA035V1
- Controllable via APWorkbench software suite
- RoHS compliant

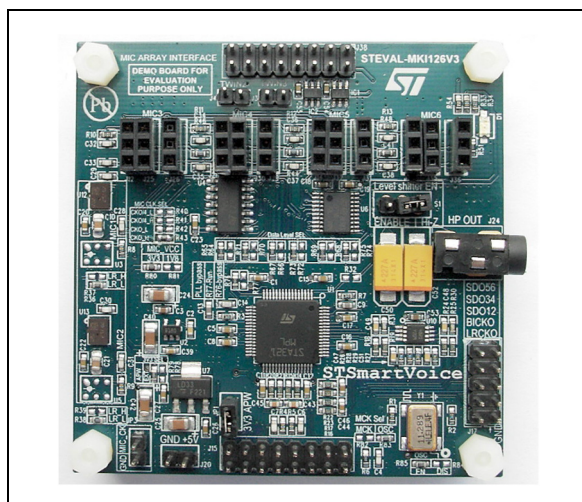
Description

The STEVAL-MKI126V3 demonstration board allows the connection of up to six microphones using the sockets provided, or through the connection of a dedicated six-microphone array.

The digital interface of the board allows the interfacing of the MIC output to the most widely used audio receivers and digital amplifiers, or permits evaluation of the MIC with generic audio measurement equipment. The filtered PWM signals allow the connection of a headset to listen to audio received through the microphones.

The fully digital path ensures a high level of processing with sound preconditioning, filtering and voice enhancement.

The main function of the STEVAL-MKI126V3 is to convert the PDM signals from the microphones into more common I²S and PWM signals.

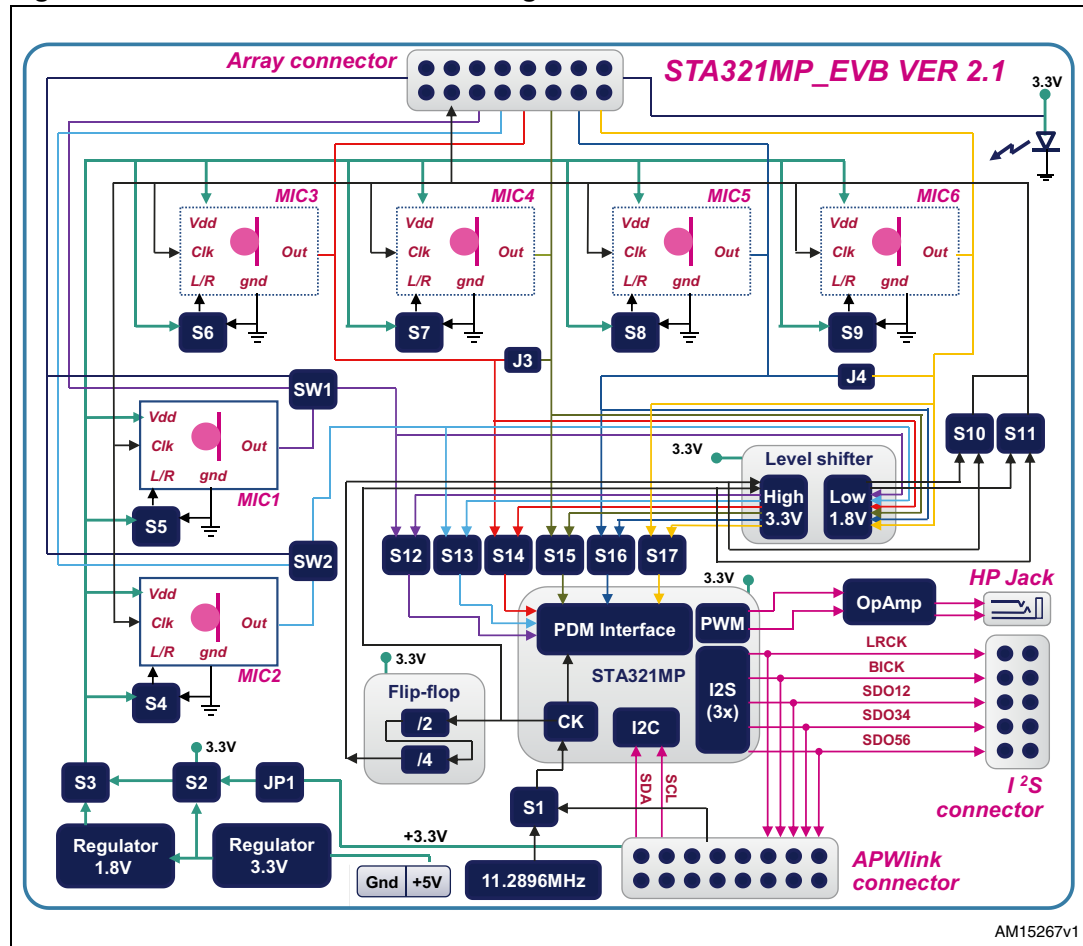


The I²S signal is routed both on a general and interface connector. appropriately filtered PWM signals provide an analog interface.

The STEVAL-MKI126V3 is equipped with two MP34DT01 microphones and an STA321MPL scalable digital microphone processor.

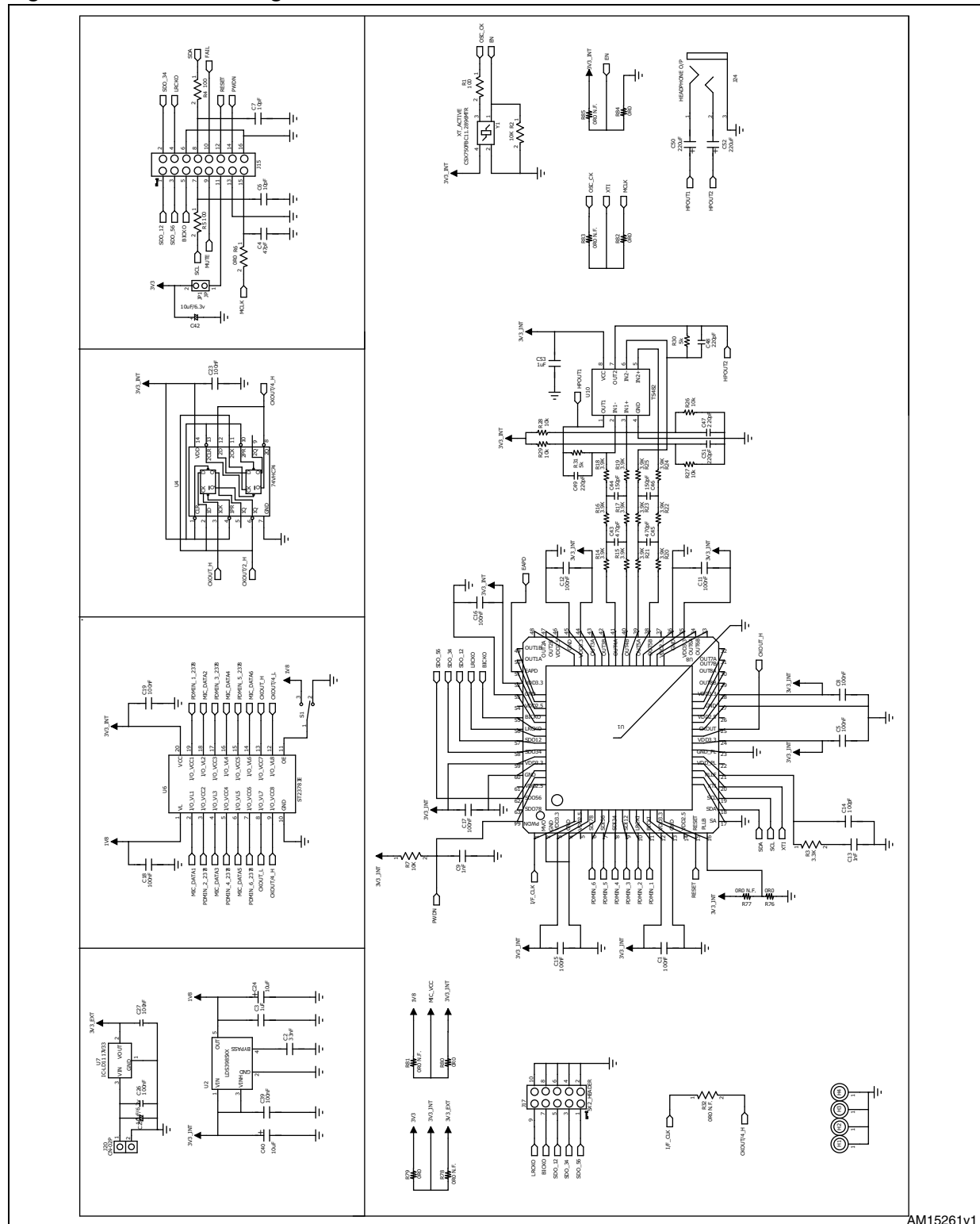
1 Block diagram

Figure 1. STEVAL-MKI126V3 block diagram



AM15267v1

Figure 2. Schematic diagram 1/5



The image contains two circuit diagrams, labeled MIC_DATA1_BOARD and MIC_DATA2_BOARD, which show the internal wiring of the AM1526v1 module. Both diagrams are symmetrical and include the following components and connections:

- Top Section (MIC_DATA1_BOARD / MIC_DATA2_BOARD):**
 - U3 / U5:** A 6-pin connector. Pins 1, 2, 3, and 4 are connected to ground. Pins 5 and 6 are connected to the MIC_VCC supply. A 10uF capacitor (C10 / C20) and a 100nF capacitor (C21 / C22) are connected between the MIC_VCC supply and ground.
 - MP34DT01:** A microphone pre-amplifier. Pin 1 is connected to ground. Pin 2 is connected to the LR input. Pin 3 is connected to ground. Pin 4 is connected to the CLK input. Pin 5 is connected to the DOUT output. Pin 6 is connected to ground.
 - MP34DB01:** A microphone buffer. Pin 1 is connected to ground. Pin 2 is connected to the L/R input. Pin 3 is connected to ground. Pin 4 is connected to the DATA input. Pin 5 is connected to the CLK input. Pin 6 is connected to ground.
 - U9 / U11:** A 6-pin connector. Pins 1, 2, 3, and 4 are connected to ground. Pins 5 and 6 are connected to the MIC_VCC supply. A 10uF capacitor (C10 / C20) and a 100nF capacitor (C21 / C22) are connected between the MIC_VCC supply and ground.
 - MP34DT01:** A microphone pre-amplifier. Pin 1 is connected to ground. Pin 2 is connected to the LR input. Pin 3 is connected to ground. Pin 4 is connected to the CLK input. Pin 5 is connected to the DOUT output. Pin 6 is connected to ground.
 - MP34DB01:** A microphone buffer. Pin 1 is connected to ground. Pin 2 is connected to the L/R input. Pin 3 is connected to ground. Pin 4 is connected to the DATA input. Pin 5 is connected to the CLK input. Pin 6 is connected to ground.
 - U12 / U13:** A 6-pin connector. Pins 1, 2, 3, and 4 are connected to ground. Pins 5 and 6 are connected to the MIC_VCC supply. A 10uF capacitor (C10 / C20) and a 100nF capacitor (C21 / C22) are connected between the MIC_VCC supply and ground.
- Bottom Section:**
 - U12 / U13:** A 6-pin connector. Pins 1, 2, 3, and 4 are connected to ground. Pins 5 and 6 are connected to the MIC_VCC supply. A 10uF capacitor (C10 / C20) and a 100nF capacitor (C21 / C22) are connected between the MIC_VCC supply and ground.
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 - U9 / U11:** A 6-pin connector. Pins 1, 2, 3, and 4 are connected to ground. Pins 5 and 6 are connected to the MIC_VCC supply. A 10uF capacitor (C10 / C20) and a 100nF capacitor (C21 / C22) are connected between the MIC_VCC supply and ground.
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 - MP34DB01:** A microphone buffer. Pin 1 is connected to ground. Pin 2 is connected to the L/R input. Pin 3 is connected to ground. Pin 4 is connected to the DATA input. Pin 5 is connected to the CLK input. Pin 6 is connected to ground.
 - U3 / U5:** A 6-pin connector. Pins 1, 2, 3, and 4 are connected to ground. Pins 5 and 6 are connected to the MIC_VCC supply. A 10uF capacitor (C10 / C20) and a 100nF capacitor (C21 / C22) are connected between the MIC_VCC supply and ground.

Figure 4. Schematic diagram 3/5

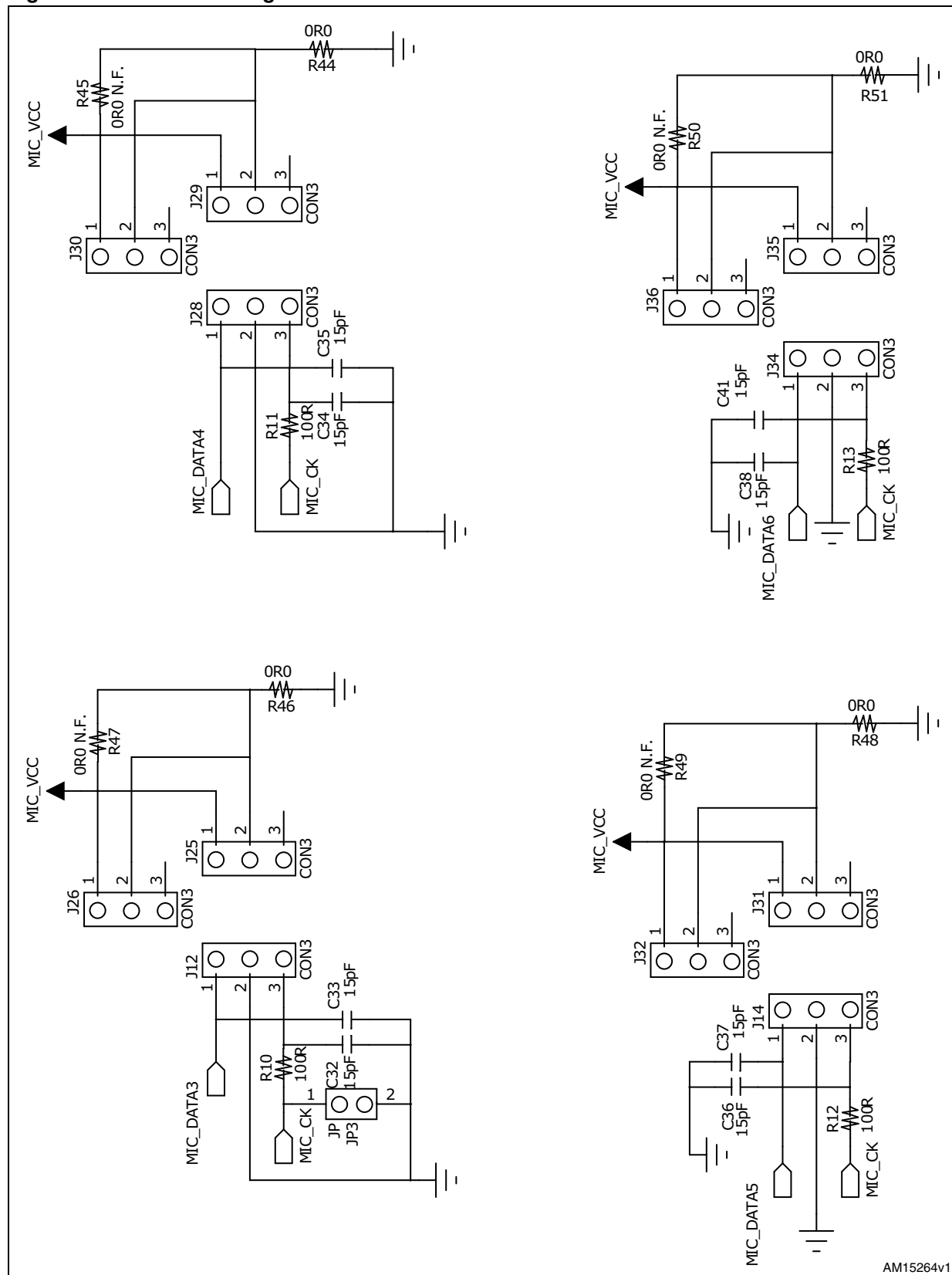


Figure 5. Schematic diagram 4/5

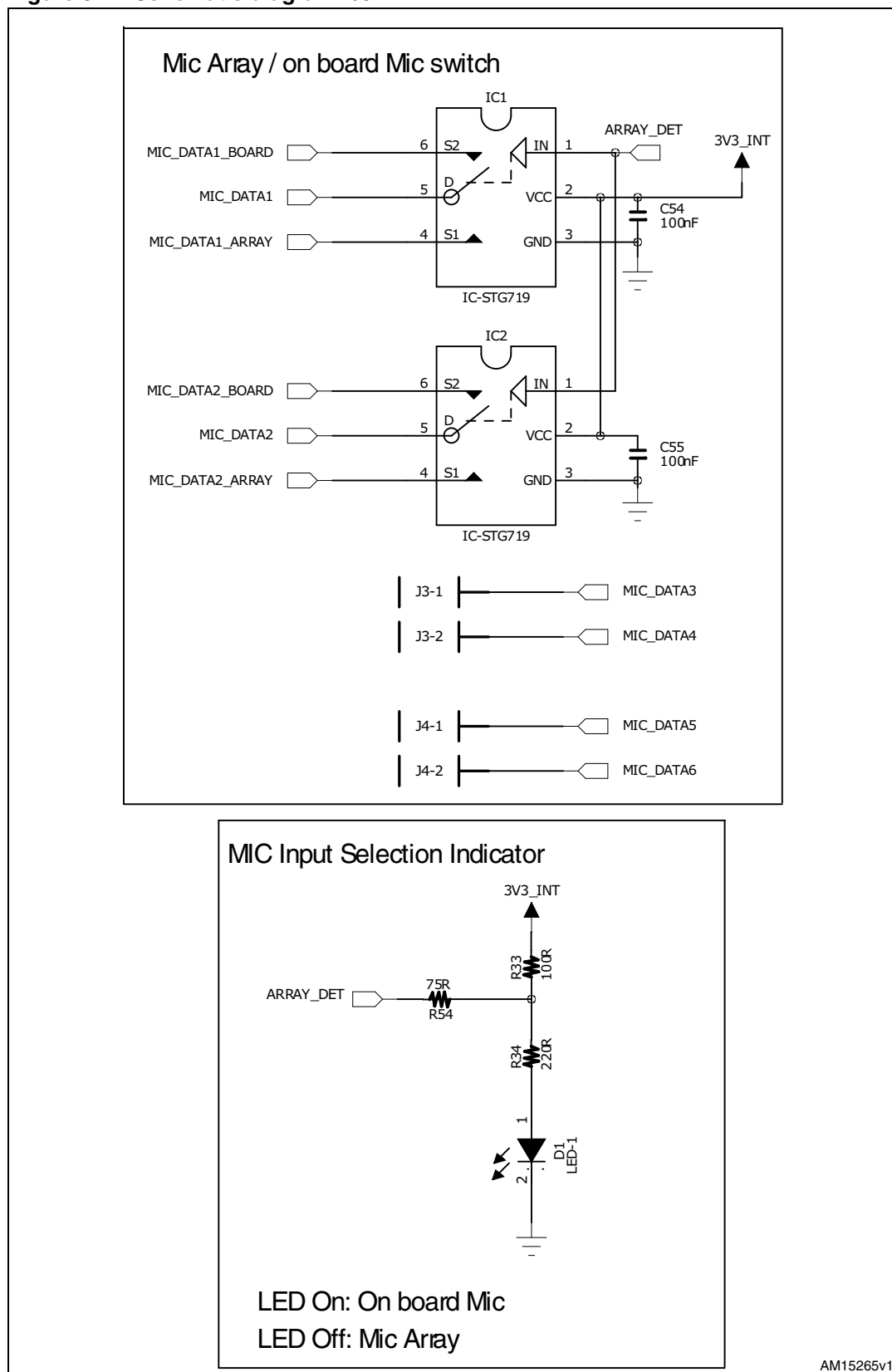
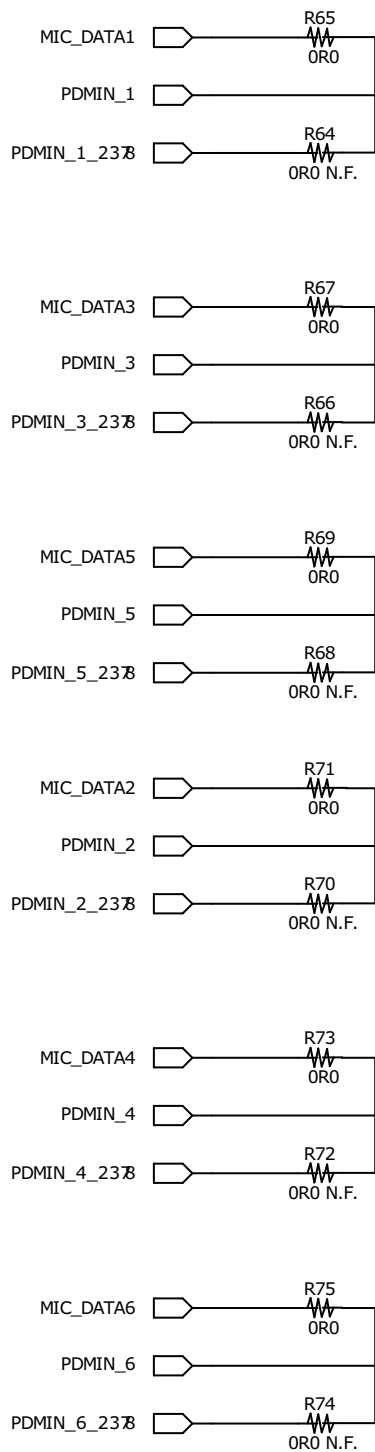


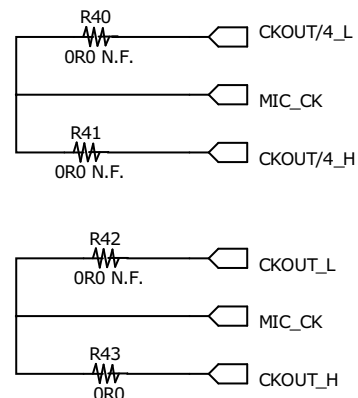
Figure 6. Schematic diagram 5/5

Mic data level selection

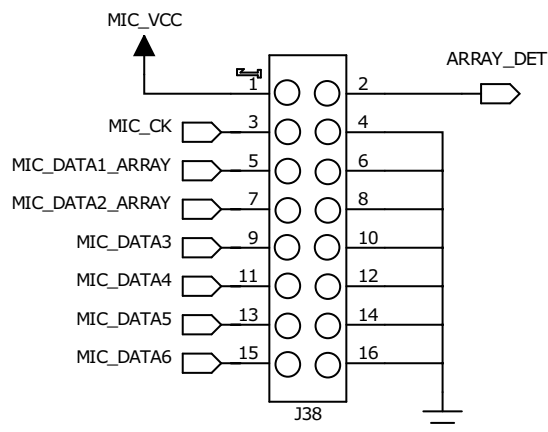
Default setting : 3V3



MIC CLOCK SELECTION



MIC ARRAY INTERFACE



AM15266v1

3 Revision history

Table 1. Document revision history

Date	Revision	Changes
18-Sep-2012	1	Initial release.

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