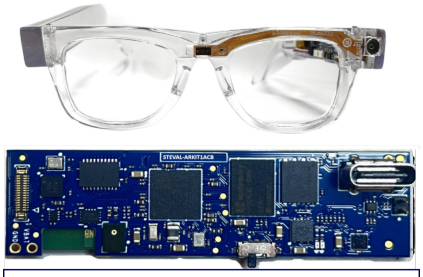
# STEVAL-ARKIT1CB

Data brief

## Evaluation kit for sensor hub augmented reality applications



The picture shown is for illustration purpose only.
Actual product may vary depending on buyer's selection and availability.

| Product summary | |
|---|---|
| Evaluation kit for sensor hub augmented reality applications | STEVAL-ARKIT1CB |
| Software for STEVAL-ARKIT1 | STSW-ARKIT1 |
| High-performance and DSP with DPFPU, Arm Cortex-M7 MCU with 1 MByte Flash, 564 KBytes RAM, 550 MHz CPU, L1 cache, external memory interface, SMPS, subset of peripherals | STM32H725AGI6 |
| Applications | Smart glasses (AR) |

## Features

- Sensor hub based augmented reality platform
- 6-axis IMU sensor
- Magnetometer for position accuracy
- Qvar electrodes for static charge detection
- Multizone ToF and multispectral ALS sensor on FPC board
- Monochrome camera module
- Based on high-performance STM32H7 MCU
- On board external flash and PSRAMs
- Audio signal sensing using a low-distortion digital microphone
- Bluetooth® LE connectivity using certified BlueNRG-M2 module
- Wireless charging
- USB Type-C® for power and charging
- LEDs for power and charging indication
- 0.5 mm pitch FFC cable for debugging
- Application SDK and examples for AI and sensor hub augmented reality use cases
- Companion smartphone app to control and monitor using phone

## Description

STEVAL-ARKIT1CB is a sensor hub based augmented reality evaluation kit, designed as a platform for the development of augmented reality-based applications. It contains two boards: STEVAL-ARKIT1ACB and STEVAL-ARKIT1BCB. STEVAL-ARKIT1ACB contains STM32H725AG, inertial measurement unit (IMU), magnetometer, and environment sensors, which gives the board capability to collect MEMS sensors data for application like head orientation and motion sensing.

It has also a tiny, clever, low power, 0.56 megapixels, monochrome global shutter image sensor used for AR applications like QR and bar code scanning. The Qvar sensor on the board is connected via FFC cable, and it gives the capability to detect the static charges around the 3D glass frame used for sliding, scrolling, and tap applications.

STM32H725AG can run Edge AI applications such as head and hand gestures. It also contains a Bluetooth® LE module, which facilitates seamless wireless communication, enabling the control using a mobile interface.

STEVAL-ARKIT1BCB is an FPC board containing time-of-flight and an ambient light sensor, which points outwards when fitted in the 3D glass case, and can be used for Edge AI hand gesture recognition.

# 1 Block diagram

Figure 1. **Block diagram**

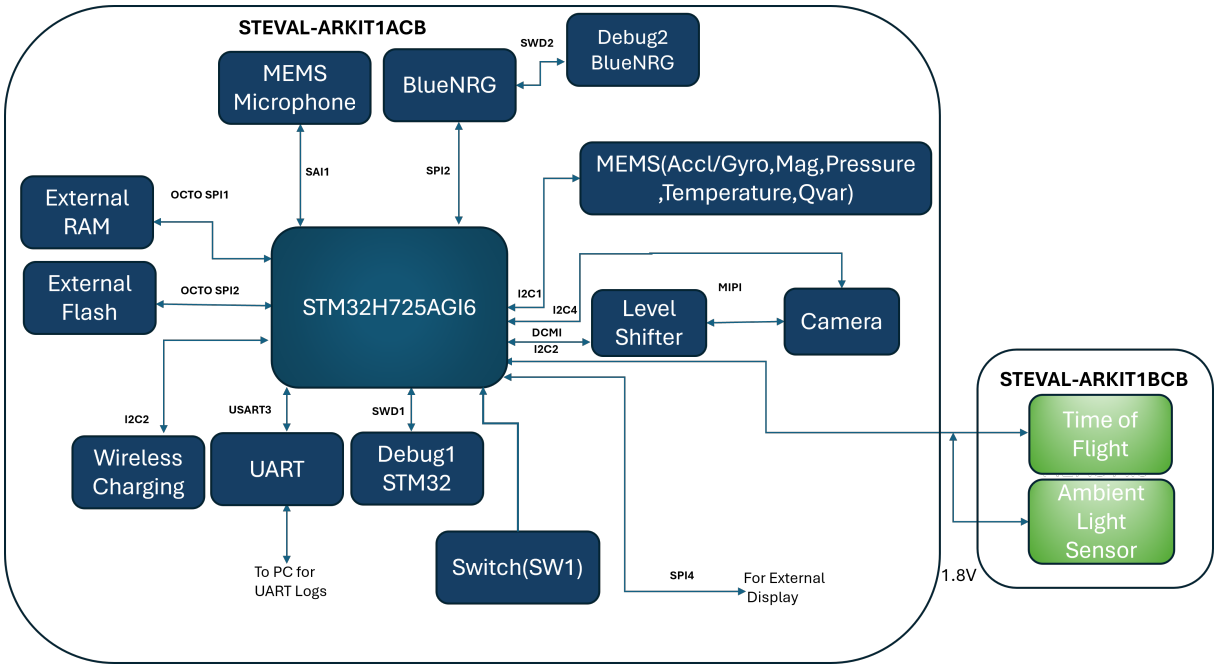



Figure 2. **STEVAL-ARKIT1ACB**

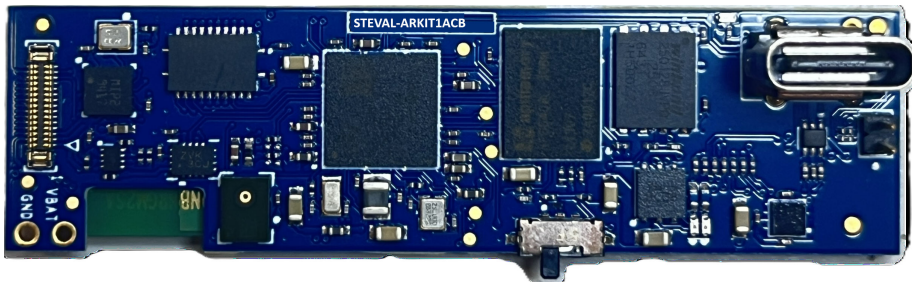



Figure 3. **STEVAL-ARKIT1BCB**

Figure 4. **Assembled kit**

# 2 Schematic diagrams

*Notice: These schematics are for illustration purpose only. Actual product may vary depending on buyer's selection and availability.*

**Figure 5. STEVAL-ARKIT1ACB circuit schematic (1 of 11)**

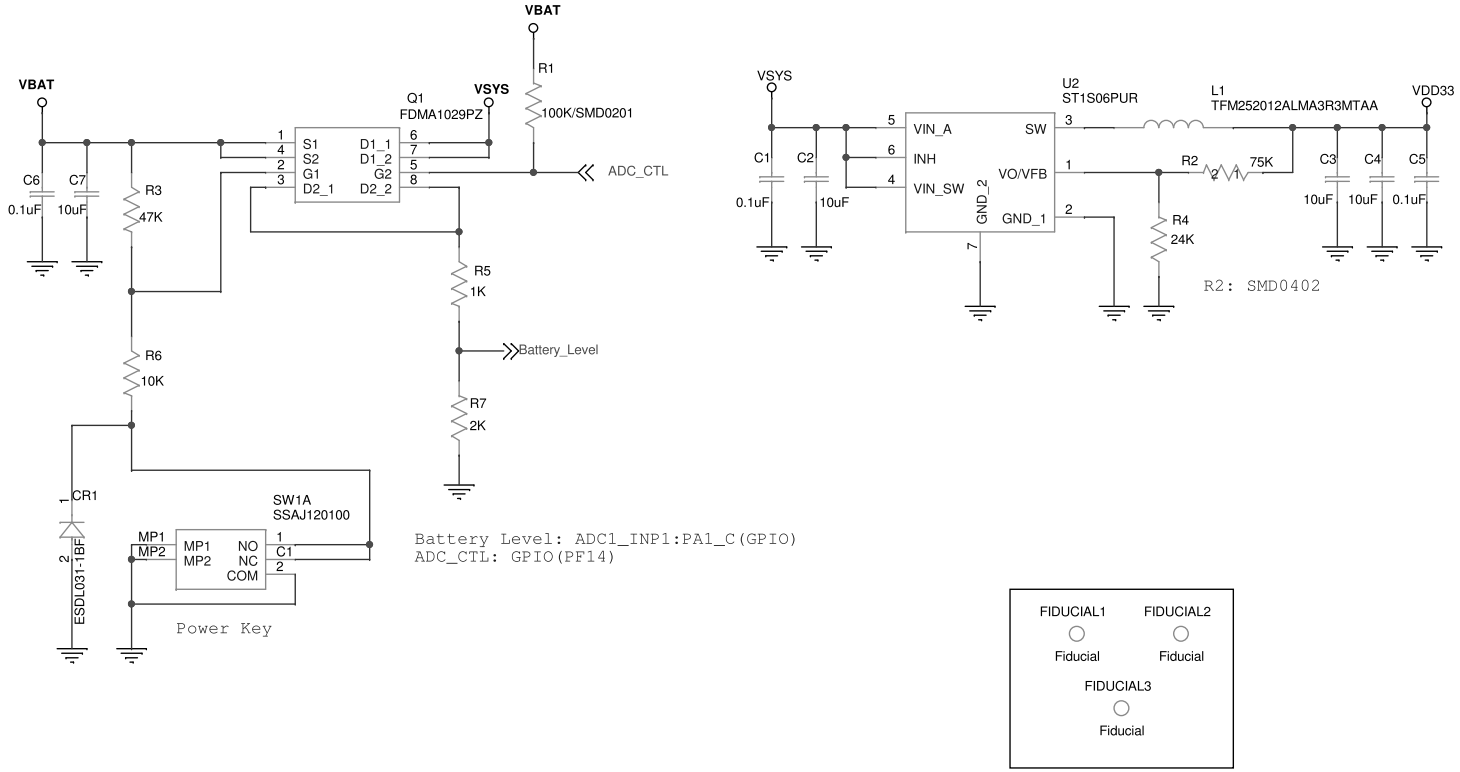


**Figure 6. STEVAL-ARKIT1ACB circuit schematic (2 of 11)**

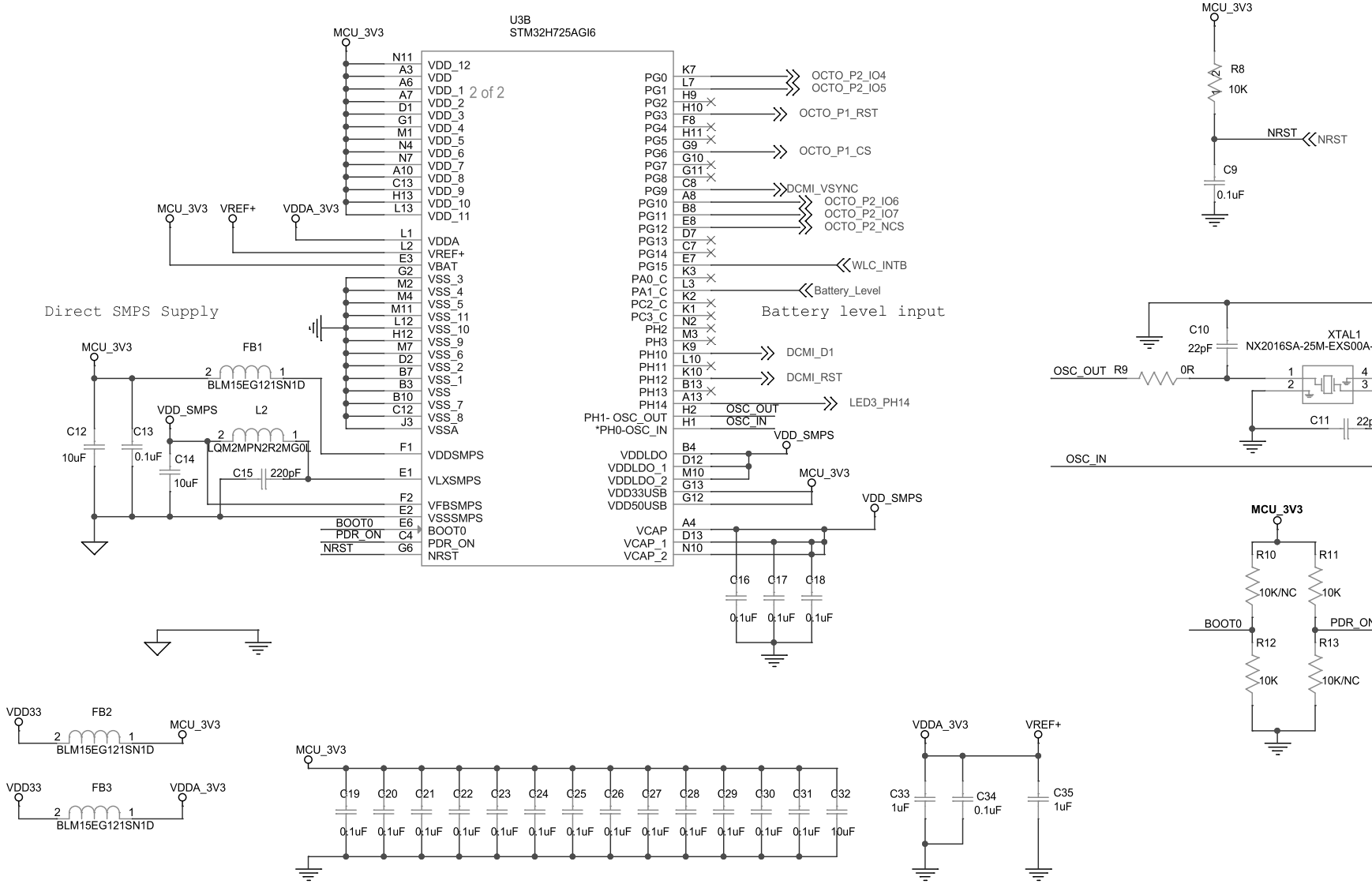
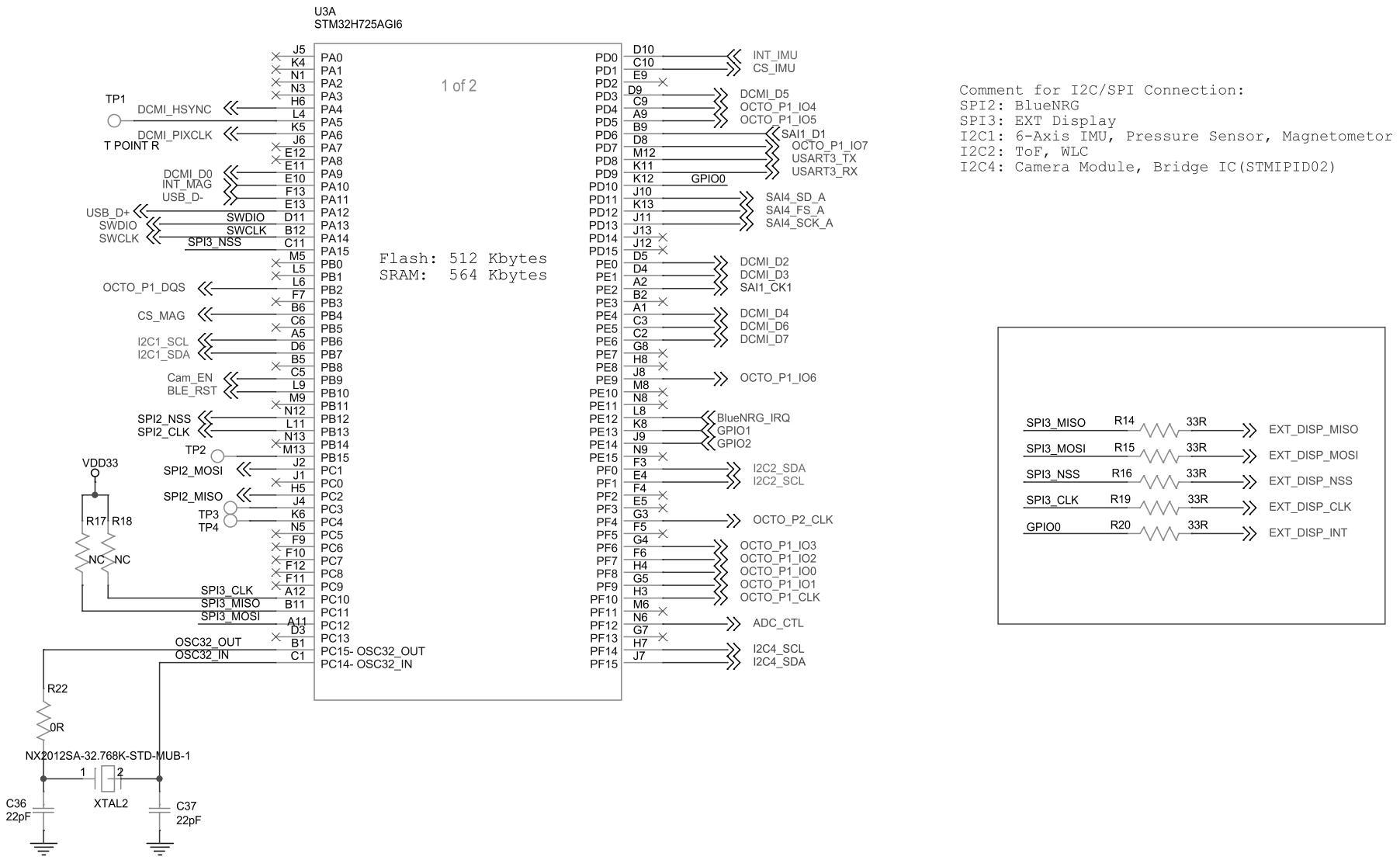


**Figure 7. STEVAL-ARKIT1ACB circuit schematic (3 of 11)**




```
Comment for I2C/SPI Connection:
SPI2: BlueNRG
SPI3: EXT Display
I2C1: 6-Axis IMU, Pressure Sensor, Magnetometer
I2C2: ToF, WLC
I2C4: Camera Module, Bridge IC(STMIPID02)
```

Figure 8. **STEVAL-ARKIT1ACB circuit schematic (4 of 11)**

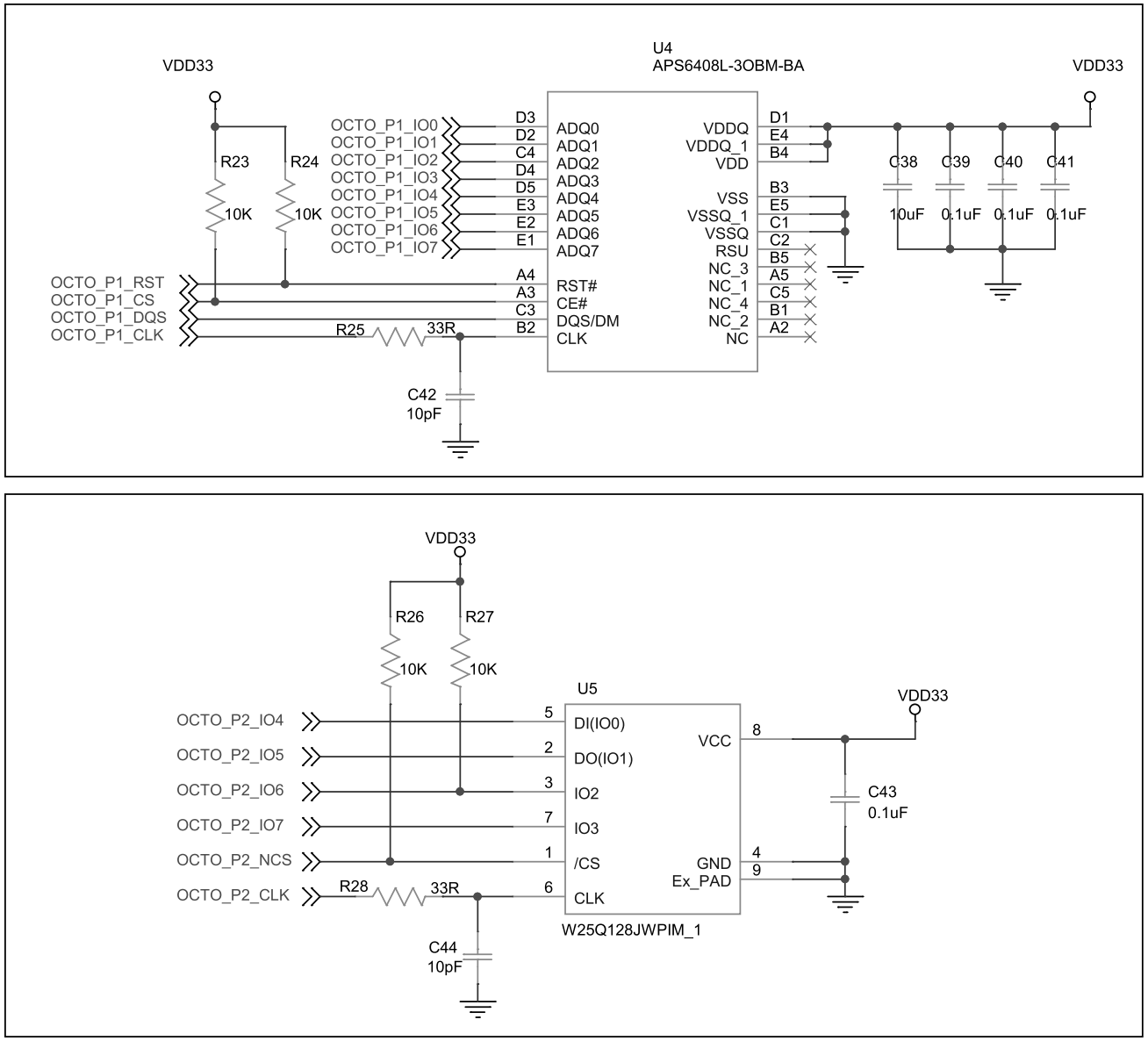


**Figure 9. STEVAL-ARKIT1ACB circuit schematic (5 of 11)**

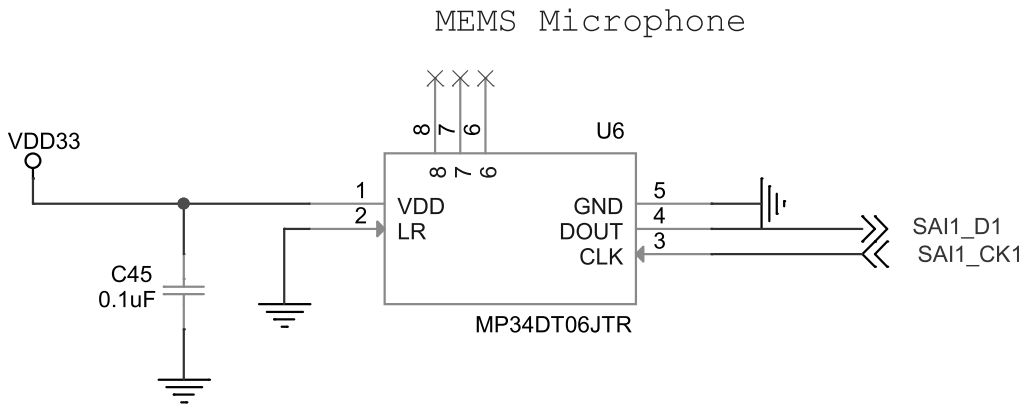


**Figure 10. STEVAL-ARKIT1ACB circuit schematic (6 of 11)**

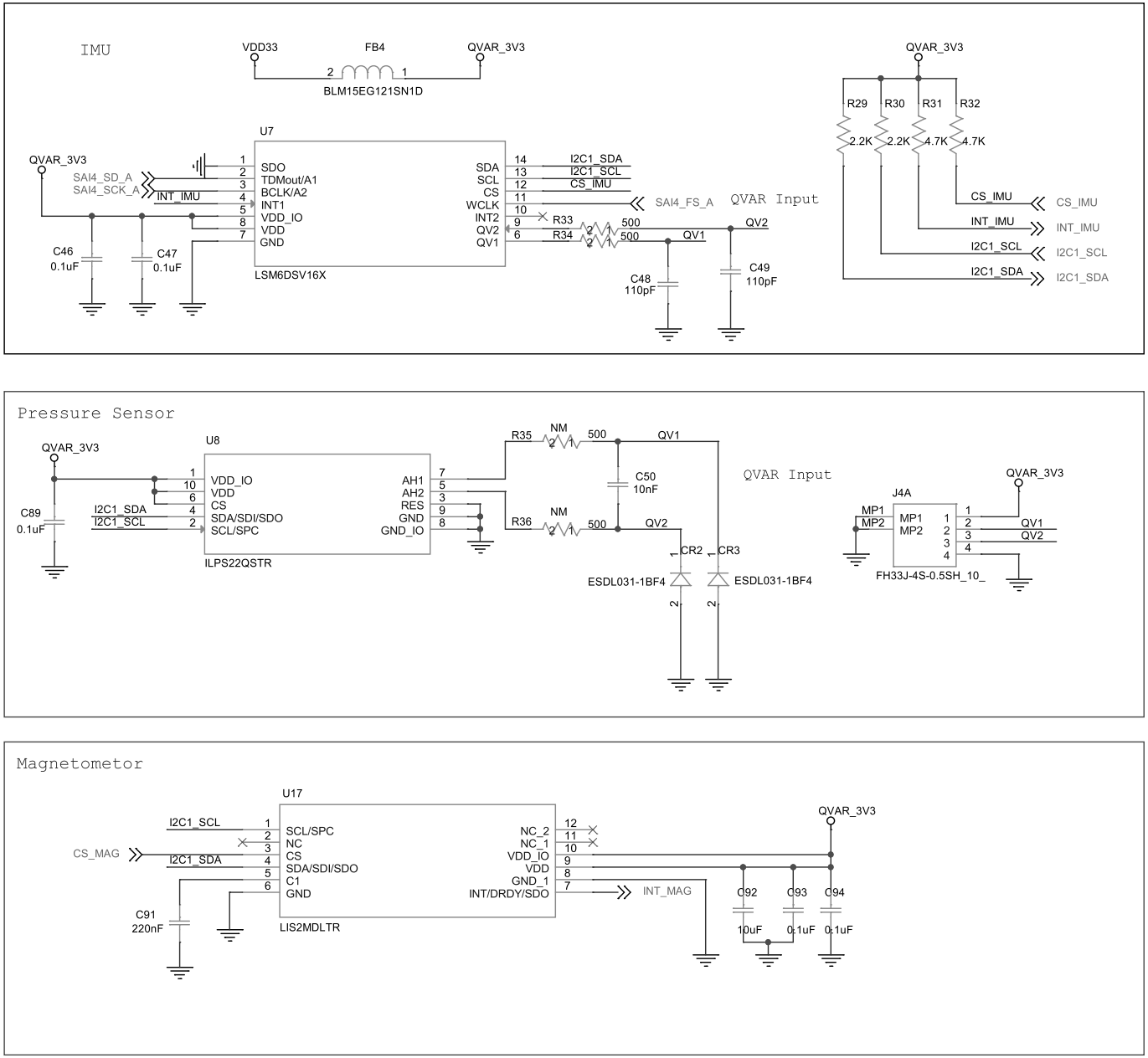


**Figure 11. STEVAL-ARKIT1ACB circuit schematic (7 of 11)**

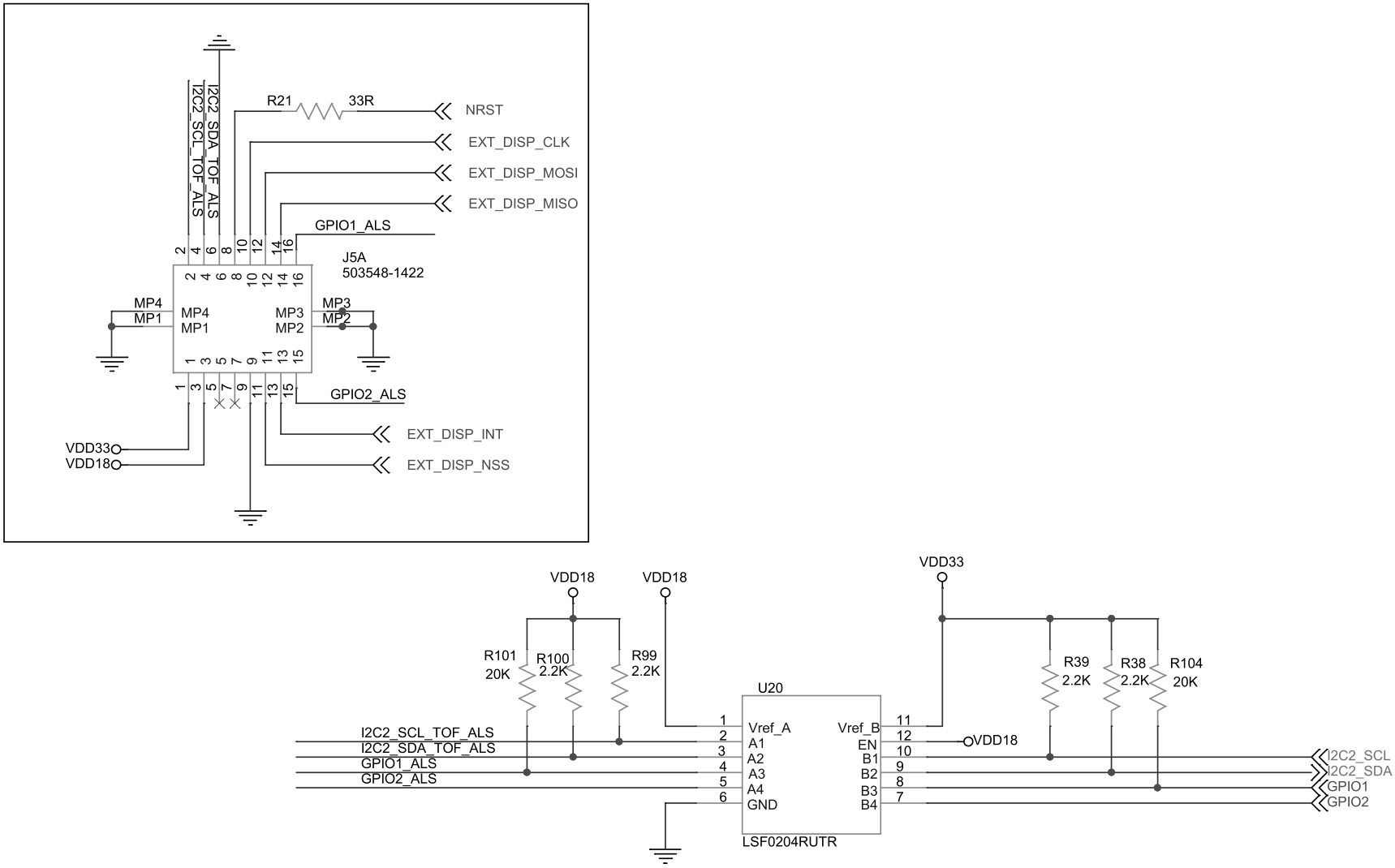
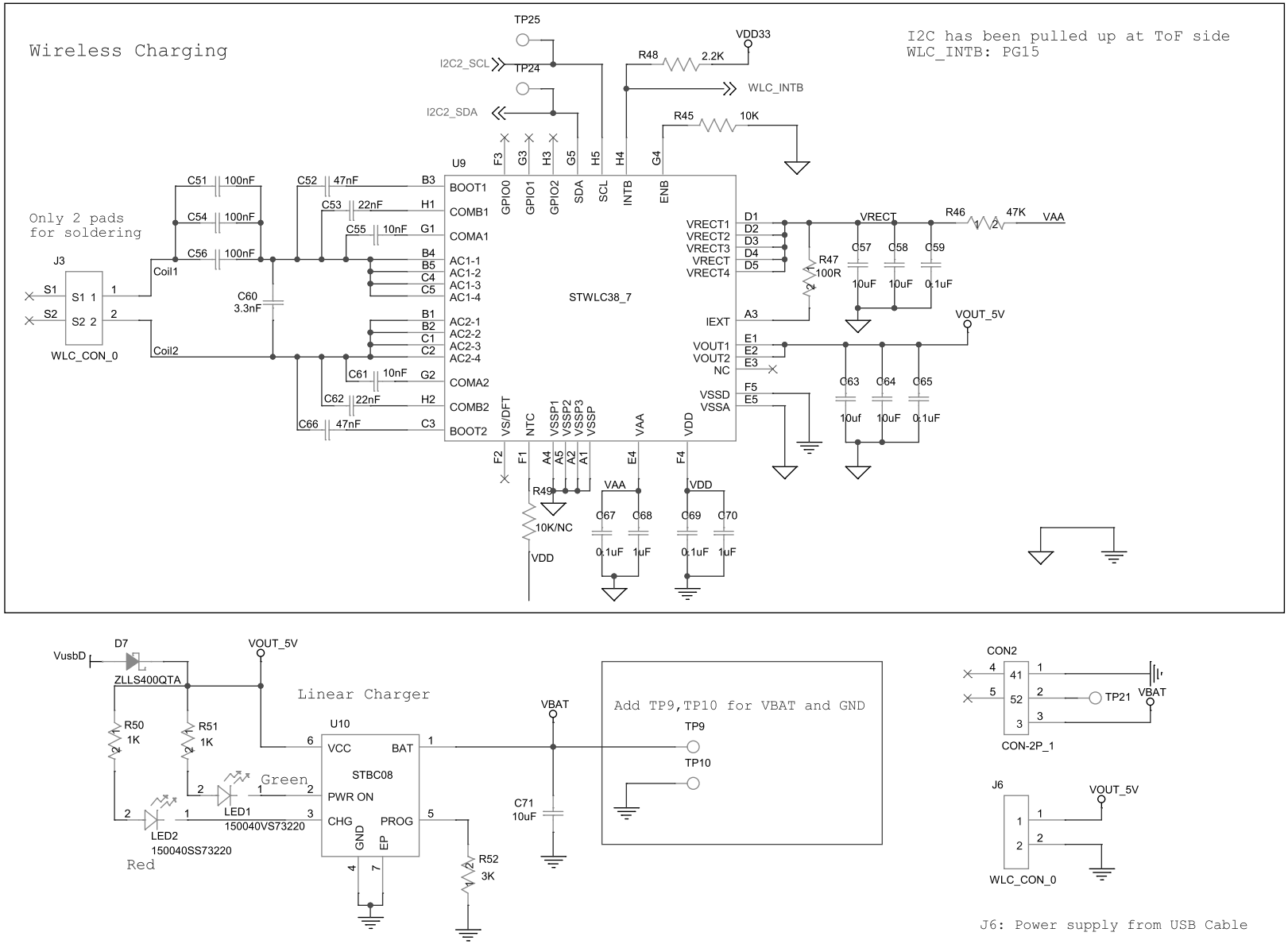


**Figure 12. STEVAL-ARKIT1ACB circuit schematic (8 of 11)**







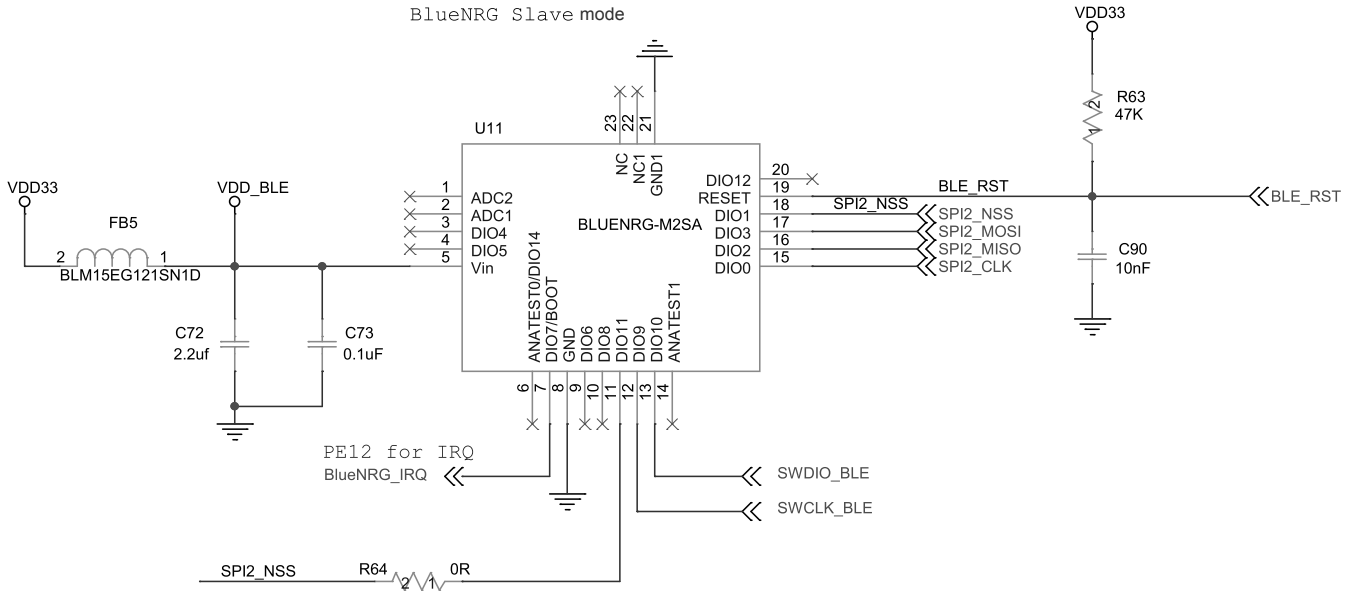






J6: Power supply from USB Cable

**Figure 13. STEVAL-ARKIT1ACB circuit schematic (9 of 11)**



## Figure 14. STEVAL-ARKIT1ACB circuit schematic (10 of 11)

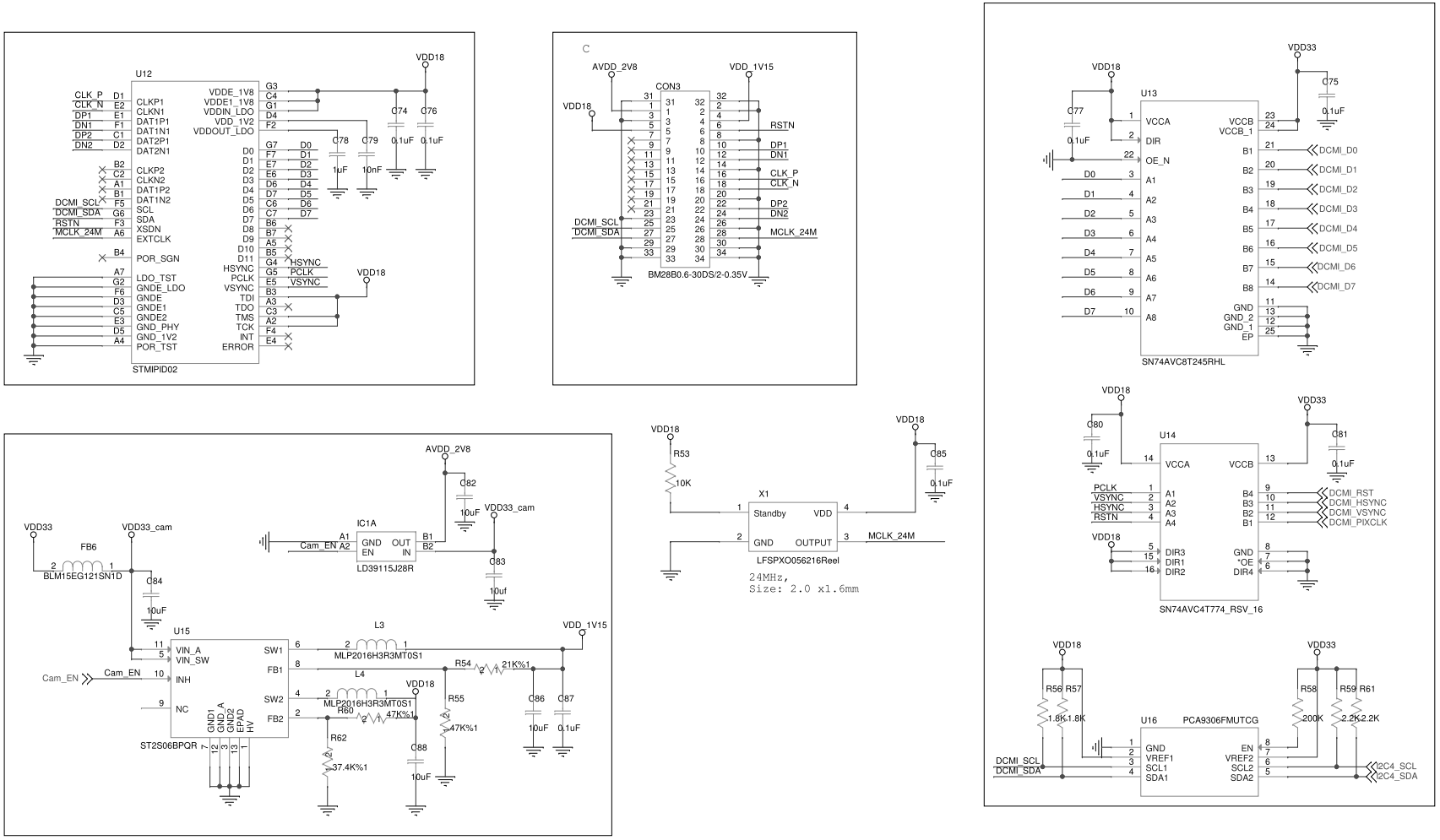
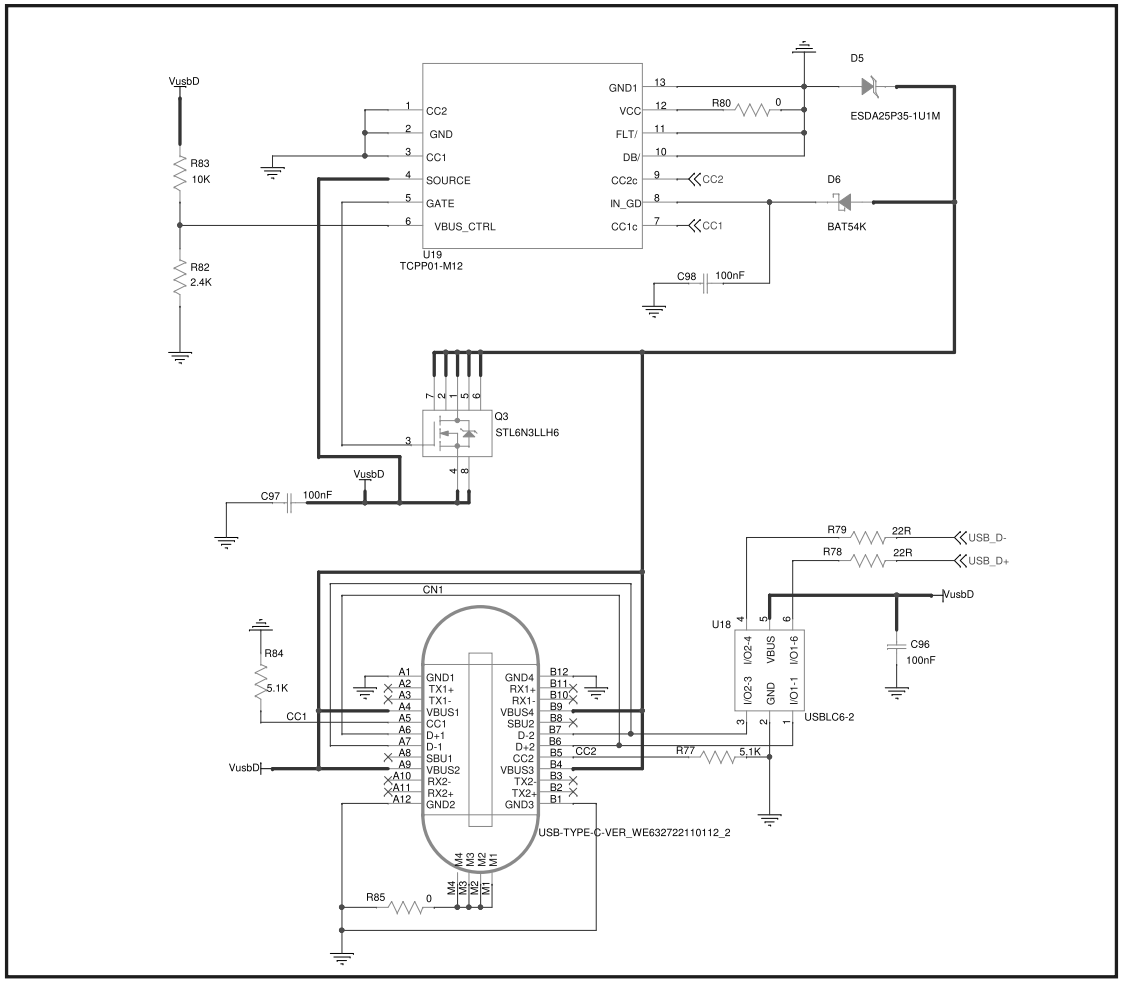


**Figure 15. STEVAL-ARKIT1ACB circuit schematic (11 of 11)**



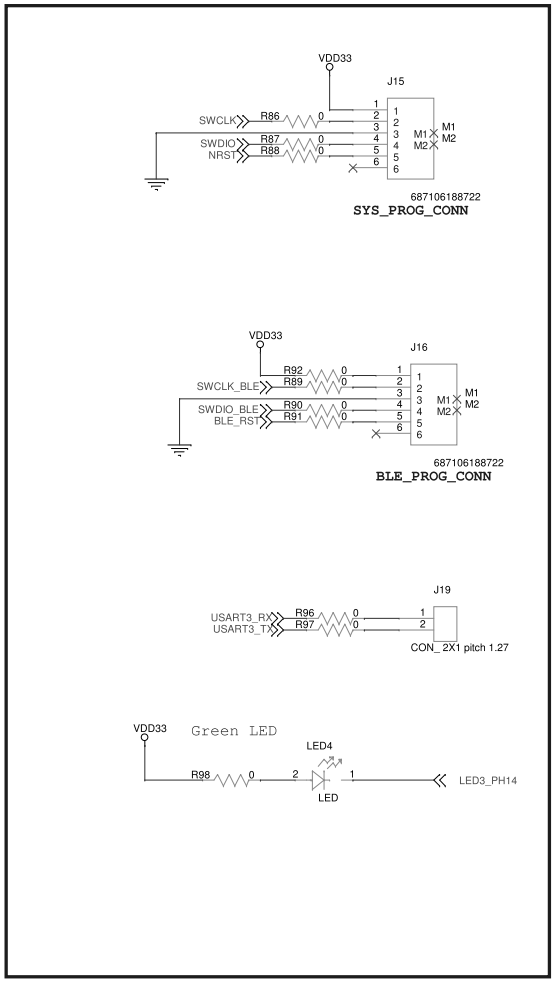
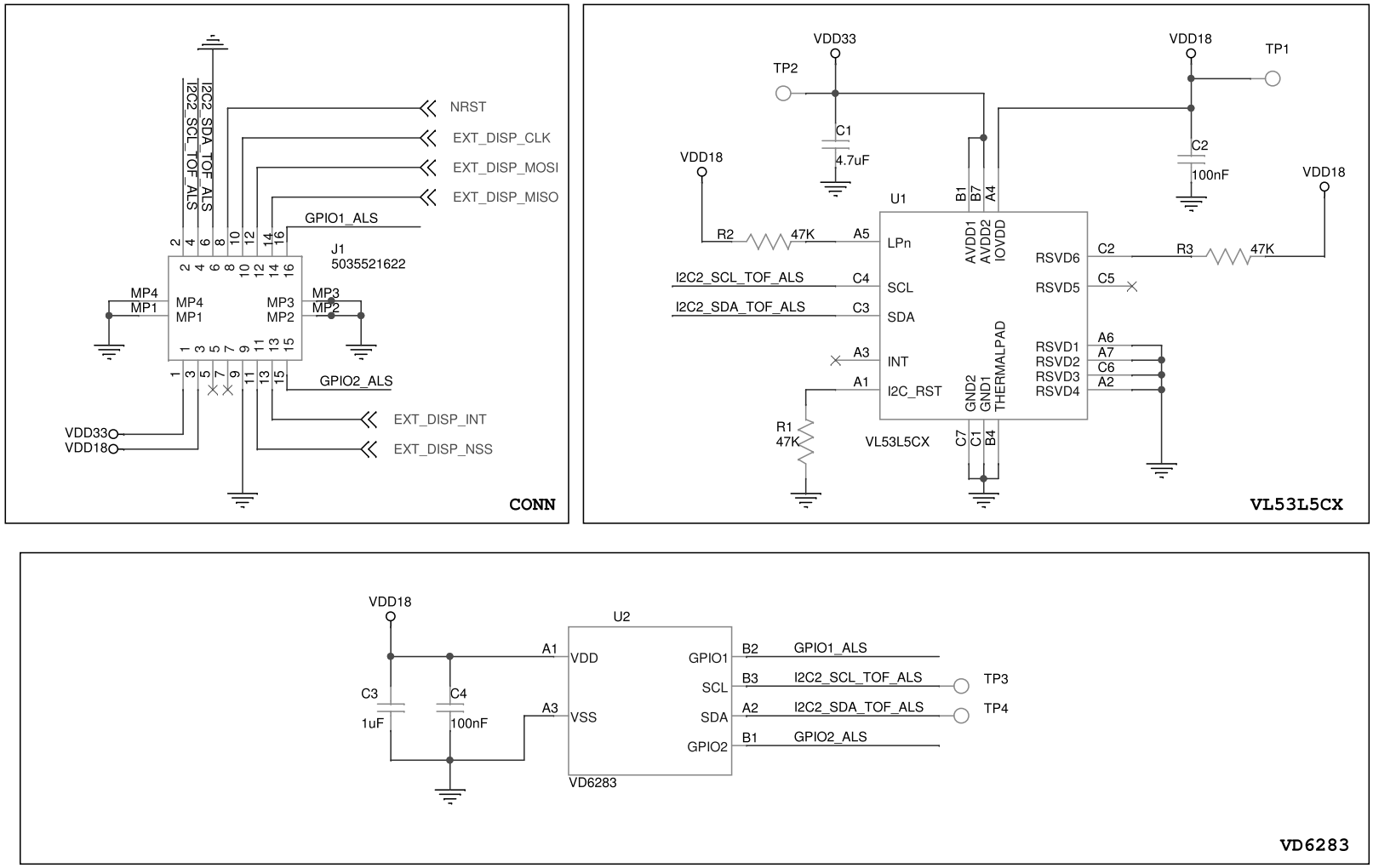



**Figure 16. STEVAL-ARKIT1BCB circuit schematic**



# 3 Custom evaluation boards information

*Notice:* *These evaluation boards are custom designed and built, in small quantities, according to specific requests from customers and are destined for evaluation and testing of ST products in a research and development setting. Please contact ST to provide your specific requests and get your custom built board(s).*

# Revision history

Table 1. **Document revision history**

| Date | Revision | Changes |
|---|---|---|
| 16-Dec-2025 | 1 | Initial release. |

**IMPORTANT NOTICE – READ CAREFULLY**

STMicroelectronics NV and its subsidiaries (“ST”) reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice.

In the event of any conflict between the provisions of this document and the provisions of any contractual arrangement in force between the purchasers and ST, the provisions of such contractual arrangement shall prevail.

The purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgment.

The purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of the purchasers’ products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

If the purchasers identify an ST product that meets their functional and performance requirements but that is not designated for the purchasers' market segment, the purchasers shall contact ST for more information.

ST and the ST logo are trademarks of ST. For additional information about ST trademarks, refer to www.st.com/trademarks. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.