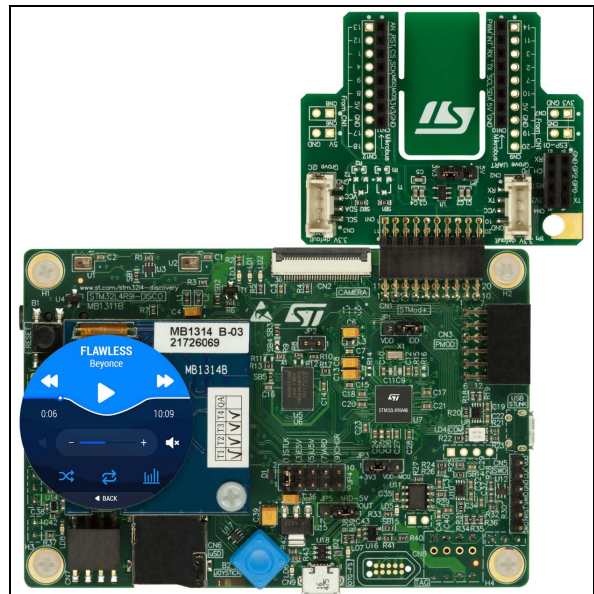


### Features

- STM32L4R9AI6 Arm<sup>®</sup>-based microcontroller with 2-Mbyte Flash memory and 640-Kbyte RAM in UFBGA169 package
- 1.2" 390x390 pixel AMOLED round display panel with 16 million colors depth, MIPI<sup>®</sup> DSI interface and capacitive touch panel
- USB OTG FS
- On-board current measurement
- SAI audio codec
- ST-MEMS digital microphones
- 16-Mbit asynchronous PSRAM
- 512-Mbit Octo-SPI Flash
- 2 user LEDs
- 1 reset push-button
- 4-direction joystick with selection button
- Board connectors:
  - 8-bit camera
  - USB OTG FS with Micro-AB
  - Stereo headset jack including analog microphone input
  - microSD<sup>™</sup> card
  - ARDUINO<sup>®</sup> Uno V3 expansion connectors
  - STMod+ expansion connector
  - PMOD expansion connector
  - EXT\_I2C expansion connector
- Flexible power supply options:
  - ST-LINK USB  $V_{BUS}$  or external sources
- On-board ST-LINK/V2-1 debugger/programmer with USB re-enumeration capability: mass storage, Virtual COM port and debug port
- Comprehensive free software libraries and examples available with the STM32Cube package



Picture is not contractual.

- Support of a wide choice of integrated development environments (IDEs), including IAR<sup>™</sup>, Keil<sup>®</sup> and STM32CubeIDE

### Description

The 32L4R9IDISCOVERY Discovery kit is a complete demonstration and development platform for STMicroelectronics Arm<sup>®</sup> Cortex<sup>®</sup>-M4 core-based STM32L4R9AI microcontroller.

Leveraging the innovative ultra-low-power oriented features, 640 Kbytes of embedded RAM, graphics performance (Chrom-ART Accelerator), and DSI controller offered by the STM32L4R9AI, the 32L4R9IDISCOVERY Discovery kit enables users to easily prototype applications with state-of-the-art energy efficiency, as well as stunning audio and graphics rendering with direct support for AMOLED DSI round LCD display.

For even more user-friendliness, the on-board ST-LINK/V2-1 debugger provides out-of-the-box programming and debugging capabilities.

# 1 Ordering information

To order the 32L4R9IDISCOVERY Discovery kit, refer to [Table 1](#). For a detailed description, refer to the user manual on the product web page. Additional information is available from the datasheet and reference manual of the target STM32.

**Table 1. Ordering information**

Order code	Board references	User manual	Target STM32
STM32L4R9I-DISCO	<ul style="list-style-type: none"> <li>– MB1311</li> <li>– MB1280<sup>(1)</sup></li> <li>– MB1314<sup>(2)</sup></li> </ul>	UM2271	STM32L4R9AI16

1. Fanout board.

2. Round DSI LCD board.

## 1.1 Product marking

Evaluation tools marked as “ES” or “E” are not yet qualified and are therefore not ready to be used as reference designs or in production. Any consequences arising from such usage will not be at ST’s charge. In no event will ST be liable for any customer usage of these engineering sample tools as reference designs or in production.

‘E’ or ‘ES’ marking examples of location:

- on the targeted STM32 that is soldered on the board (For an illustration of STM32 marking, refer to the section ‘Package information’ of the STM32 datasheet at [www.st.com](http://www.st.com)).
- next to the evaluation tool ordering part number, that is stuck or silkscreen printed on the board

This board features a specific STM32 device version, which allows the operation of any stack or library. This STM32 device shows a ‘U’ marking option at the end of the standard part number and is not available for sales.

## 1.2 Codification

The meaning of the codification is explained in [Table 2](#). The order code is mentioned on a sticker placed on the top or bottom side of the board.

**Table 2. Codification explanation**

32XXYYZDISCOVERY	Description	Example:32L4R9IDISCOVERY
32XX	MCU series in STM32 32-bit Arm Cortex MCUs	STM32L4+ Series
YY	MCU product line in the series	STM32L4R9
Z	STM32 Flash memory size: – I for 2 Mbytes	2 Mbytes

## 2 Development environment

The 32L4R9IDISCOVERY Discovery kit features the STM32L4R9AI16 32-bit microcontroller based on the Arm<sup>®(a)</sup> Cortex<sup>®</sup>-M4 processor.



### 2.1 System requirements

- Windows<sup>®</sup> OS (7, 8 and 10), Linux<sup>®</sup> 64-bit or macOS<sup>®(b)</sup> (c)
- USB Type-A to Micro-B cable

### 2.2 Development toolchains

- IAR<sup>™</sup> - EWARM<sup>(d)</sup>
- Keil<sup>®</sup> - MDK-ARM<sup>(d)</sup>
- STMicroelectronics - STM32CubeIDE

### 2.3 Demonstration software

The demonstration software, included in the STM32Cube package corresponding to the on-board MCU, is preloaded in the STM32 Flash memory for easy demonstration of the device peripherals in standalone mode. The latest versions of the demonstration source code and associated documentation are downloadable from the [www.st.com/stm32l4-discovery](http://www.st.com/stm32l4-discovery) web page.

## 3 Technology partners

### MACRONIX:

512-Mbit Octo-SPI NOR Flash memory device, part number MX25LM51245GXDI00

### GOVISIONOX OPTOELECTRONICS:

1.2 inch 390x390 AMOLED display, part number G1120TB103GF-001

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a. Arm is a registered trademark of Arm Limited (or its subsidiaries) in the US and/or elsewhere.

b. macOS<sup>®</sup> is a trademark of Apple Inc. registered in the U.S. and other countries.

c. All other trademarks are the property of their respective owners.

d. On Windows<sup>®</sup> only

## Revision history

**Table 3. Document revision history**

Date	Revision	Changes
12-Sep-2017	1	Initial version
10-Oct-2017	2	Updated display panel item in section <i>Features</i> .
11-Feb-2020	3	Reorganized the entire document: – Updated <i>Features</i> , <i>Description</i> , <i>Ordering information</i> , and <i>Development toolchains</i> – Added <i>Product marking</i> and <i>Codification</i>