



# Riverdi

Intelligent Display Solutions

## RiEPD-29-BxW

2.9" EPD module

Rev.1.1

2019-01-31

PARAMETER	CONTENTS	UNIT
Size	2.9	inch
Resolution	296x129	pixel
Active Area	29.06x66.90	mm
Module Outer Dimensions	89x36.9x4.2	mm
Communication	NFC	
Weight	15	g
Optimal operating and storage temperature	23±2	°C
Expected Module Lifetime	5	year

**Note 1:** RoHS, REACH SVHC compliant

**Note 2:** Weight tolerance: ± 5%.

## REVISION RECORD

REVNO.	REVDATE	CONTENTS	REMARKS
1.0	2019-01-31	Initial Release	

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## 1 MODULE CLASSIFICATION INFORMATION

<b>Ri</b>	<b>EPD</b>	<b>-</b>	<b>29</b>	<b>-</b>	<b>BxW</b>
<b>1.</b>	<b>2.</b>		<b>3.</b>		<b>4.</b>

<b>1.</b>	<b>BRAND</b>	<b>Ri – Riverdi</b>
<b>2.</b>	<b>PRODUCT TYPE</b>	<b>EPD – e-paper display</b>
<b>3.</b>	<b>DISPLAY SIZE</b>	<b>29 – 2.9”</b>
<b>4.</b>	<b>SERIES</b>	<b>BW – Black and White</b> <b>BRW- Black, Red and White</b> <b>BYW- Black, Yellow and White</b>

## 2 FEATURES

- Display
  - 2.9–inch Electronic Paper Display (EPD)
  - Resolution of 296x129 pixels
  - 29.06 x 66.90 [mm] Active Area
- NFC
  - All –NT Smarttag devices have been supplied with NFC module and antenna for wireless communication with mobile devices
- Power
  - The device was designed to be powered with 3V CR2016 battery
  - In case of example battery with capacitance of 90mAh, the guaranteed battery lifetime is up to 5 years when refreshed 5 times per day or up to 9000 refreshments
  - The PCB has been equipped with additional pads which can be used for soldering the MOLEX 0532610271 rectangular connector to apply an external power source

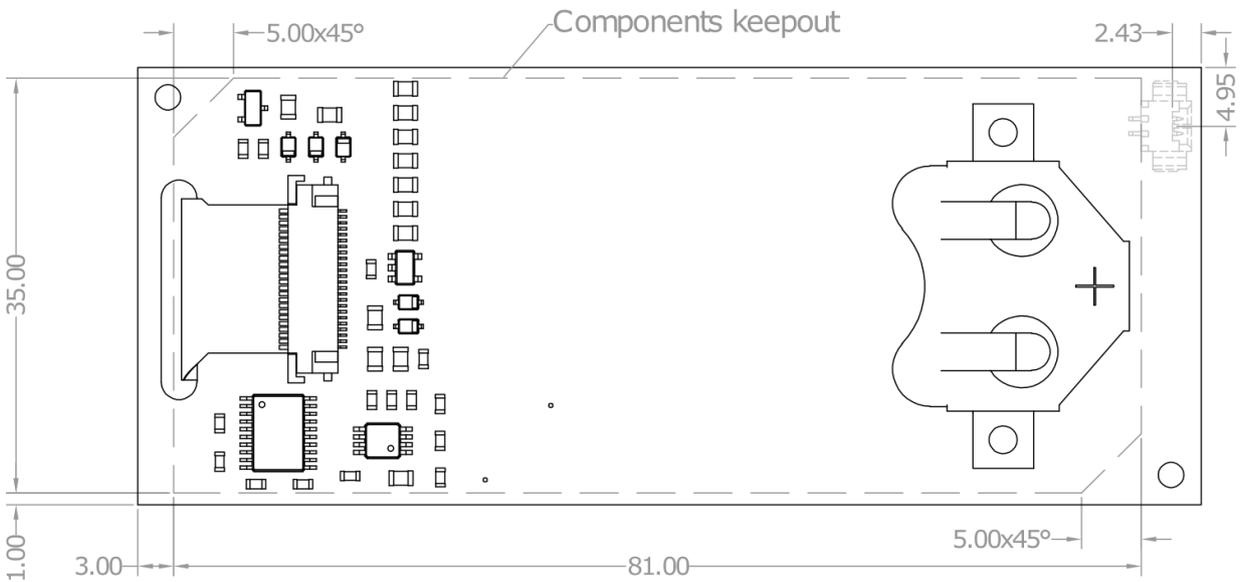
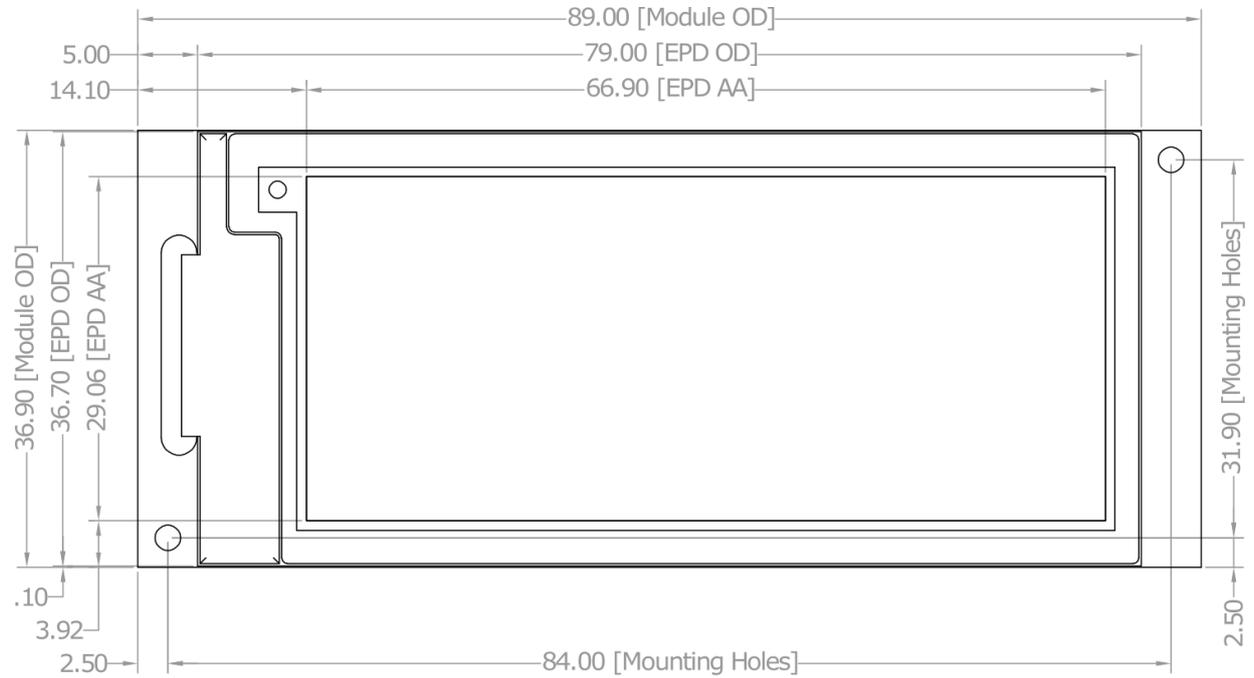
ⓘ Note: using external power source requires removing the battery from the battery slot to avoid its damage.

- Mounting
  - PCB has four holes which can be used for mounting the device with M2 screws
  - Another recommended attachment method is using a double-sided adhesive
- Smart Actions
  - There are 7 Smart Actions which can be programmed on the module to run the specific actions when phone taps the device
- Mobile Application
  - The custom version of the mobile application was developed exclusively for this series, which can be downloaded and installed from Android Play Store free of charge
  - Application is supported by Android devices supplied with NFC modules and Operating System version 5.0 or higher

**Mobile application:**



# RiEPD-29-BxW



## 4 TECHNOLOGY

### Smart actions

Smart Actions realized by mobile application on your device are a group of special functions which can be programmed into the Smart Tag devices. Once the mobile phone (with turned on NFC)

is close to the device the specified Smart Action will be launched on it. All Smart Actions have been listed below:

- **Creating SMS** with predefined text to predefined phone number.
- **Opening an URL** in phone's web browser
- **Creating Email** draft with predefined text, subject and recipient.
- **Saving a vCard** contact. It can contain contact name, phone number, address, webpage address
- **Auto Wi-Fi pairing** with defined SSID, protection type and password
- **Auto Bluetooth/BLE pairing** on the MAC name and address basis
- **Running any mobile application**

## 5 ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	MAX	UNIT	NOTE
External Power Source	$V_{SUP}$	2.2	3.7	V	
Operating Temperature	$T_{OP}$	0	50	°C	
Storage Temperature	$T_{ST}$	-25	70	°C	
Module battery lifetime		3000		days	Note1

Note1: The module battery lifetime, in case of 3 refreshes a day.

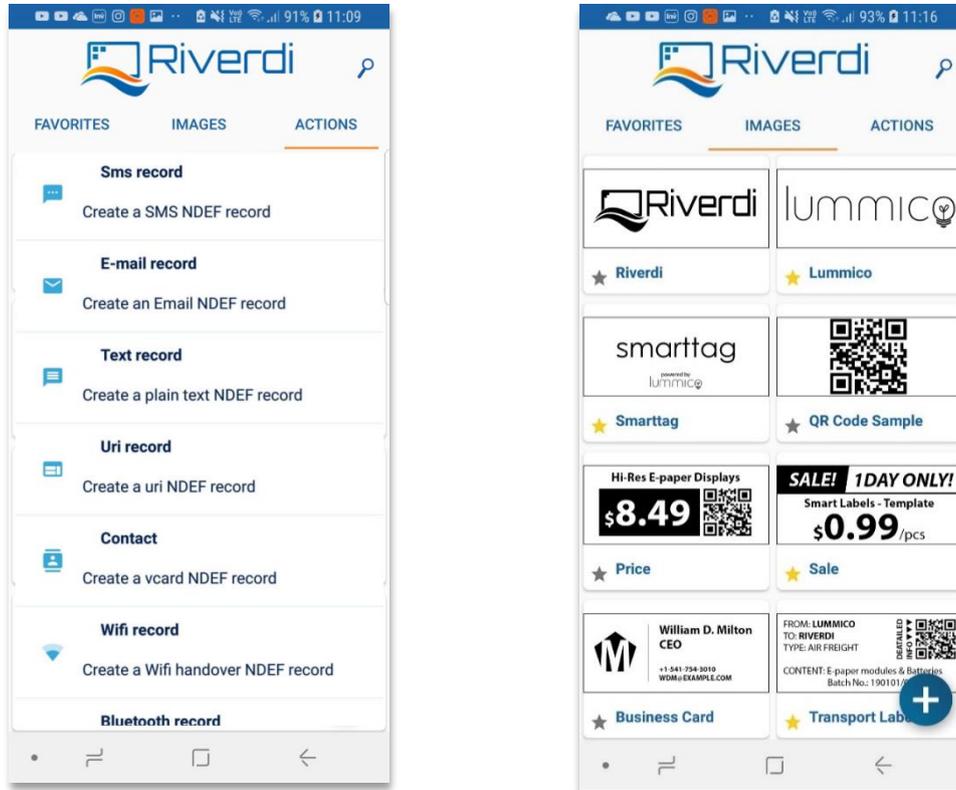
## 6 EXTERNAL POWER SOURCE

In order to use external power source some changes are required. First of all the battery must be removed from the battery holder. When battery slot is empty, the external power source connector can be soldered. The matching connector is Molex 0532610271 rectangular connector.

**⚠ Warning!** Not applying to the rule above might lead to battery and device damage which can be also dangerous. Please always remove the battery before applying external power source. Riverdi company takes no responsibility for incorrect usage.

## 7 MOBILE APPLICATION

The dedicated mobile and web app for OEM modules was developed for the modules of the RiEPD series. The main purpose of the application is to convert graphics from popular image formats (\*.bmp, \*.jpg, \*.png) to the bitmaps which can be uploaded to the module. Application is available for mobile phones with NFC module and Android 5.0 or higher.



Mobile app comes together with web-app account where user can load images. They will be automatically available on the mobile app after logging in. User can also add graphics directly from an application by pressing on the “plus” button in the bottom-right corner.

The main screen presents all of user’s graphics which can be immediately uploaded on the module after tapping the desired image. User can adjust how many images should be displayed on the main screen by pinching the screen.

On the bottom-left side of each image, there is a small star symbol. When the star is pressed, the layout will be added to “favorites” list. This list is stored only locally on every device. On the top-right corner of the application, there is a small search button. It might be very useful when there is a lot of images.

Third tab is the “Actions” tab. User can choose and customize each of the 7 supported Smart-Actions (Described on the page 5 of this datasheet, in “Technology” chapter). New Smart-Actions are constantly developed. What’s more, the customization for Smart-Actions, as well as the whole application is available from as low MOQ (Minimum Order Quantity) as 1000pcs.

**Mobile application:**



## 8 PRECAUTIONS

Please pay attention to the followings as using the EPD module.

### Handling

- Avoid bending the module.

### Storage

- EPD module should be stored under the environment temperature and humidity controlled as suggested.

### Operation

- Do not pull the interface connector in or out while the EPD module is operating.
- Any sharp-edged or hard objects are interdiction to hitting when EPD module operation.
- The EPD module must be operated in a steady environment, the abrupt change of the environmental conditions may cause the malfunction of the module.

### Cleaning

- Prevent using any kind of chemical solvent, acidic or alkali solution when cleaning.
- Neutral detergent or isopropyl alcohol was suggested if the EPD module is cleaned.

### Assembly

- Do not apply a rough force such as bending or twisting to the EPD module during assembly.
- Excessive force or strain to the EPD module is prohibited.
- Mount the EPD module using the mounting holes in the corners of the module.

### Others

- The product meets the specification requirement of the RoHS standard criteria.
- Avoid high voltage and/or static charge being applied to the EPD module.
- Keep the EPD module surface clean. Prevent any kind of adhesive applied on the surface.
- Avoid the metal or any kind of the electric conduction materials on the EPD module when you are handling.
- Any kind of the nonelectric conductor may cause the malfunction when that applied due to EPD module is sensing a human body.

Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other condition These are stress ratings only and operation of the device at these or at any other condition to limiting values for extended periods may affect device reliability.

## 9 LEGAL INFORMATION

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