SOLUM
Newton Power Rail
Datasheet

21/03/2025

Summary
This datasheet presents the general performance and specifications of Newton Power Rail for SOLUM Electronic Shelf Label (ESL) System.

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Document History

Rev.	Date	Revision History	Page
v0.1	12/11/2024	Draft	-
v0.1-PRE	21/03/2025	Preliminary Release	-

1. Preface

1.1. About This Guide

This datasheet presents the specification and general performance of SOLUM's Newton Power Rail.

1.2. Audience

This manual is intended for any user (IT, operations, store managers, installers, etc.) authorized to operate and install SOLUM ESLs.

1.3. Abbreviations and Acronyms

Terminology/Abbreviation	Description
GW	Gateway
ESL	Electronic Shelf Label
RF	Radio Frequency
IT	Information Technology
PoE	Power over Ethernet
TBD	To Be Decided

2. Overview

SOLUM Newton Power Rail are components to a total SOLUM's Power Rail ESL System. The SOLUM's Power Rail ESL System consists of the Rail, Rail Tag, Gateway(s), Server and is used to electronically displays key information such as price and product information, that are traditionally printed or written on paper in environments like supermarkets, warehouses, and factories.

SOLUM's Newton ESLs are the industry leading solutions that provide the longest battery life (up to 10 years*), fastest update speed, built in LEDs, multiple pages per ESL, and more to take the operation beyond just displaying information on the ESLs.

* Based on 2.9" x 10 units, 1 update/day

Figure 1. PRODUCT

3. Specification

This section details specification of Power Rail

3.1. Product Specification

Item	Description
Dimensions (W x H x D)	37.80 X 47.68 X 21.17 mm
Weight	8.7 g
Communication	2.4 GHz SRD
Communication Distance	98 feet (30m) radius Line of Sight
Security	128-bit AES Encryption
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C) @45~70% RH
Storage Temperature	32°F ~ 104°F (0°C ~ 40°C) @45~70% RH

- The rail itself has no RF capabilities.

3.2. Radio (RF) Specification

Item	Parameter	Specification			Unit	Condition
		Min	Typ	Max		
Tx	Tx Power	-	4	-	dBm	
	[Carrier Frequency Offset and Drift]	-75	0	75	kHz	
	Tx Current	-	-	10	mA	Total current at max Tx Power
Rx	Receiver Sensitivity	-85	-	-	dBm	PER < 5%

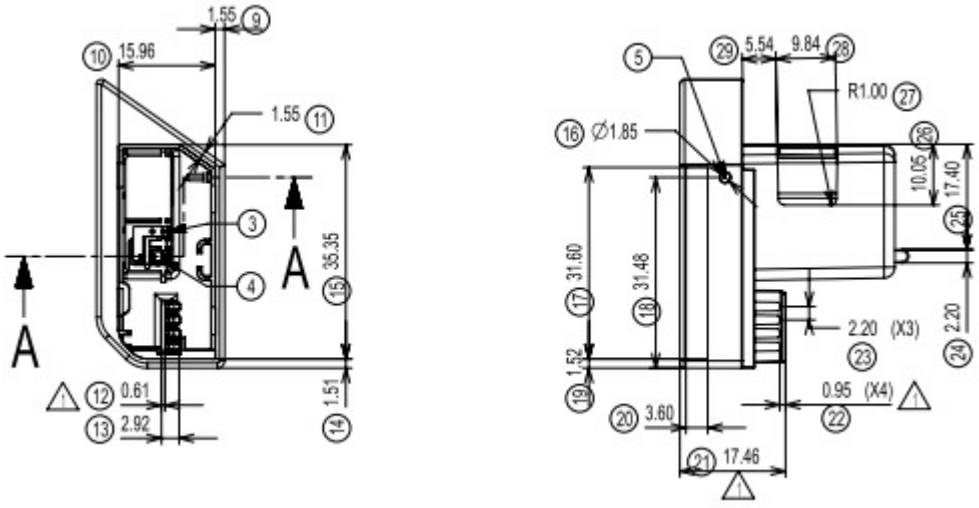
3.3. Features

Some of the features of SOLUM ESL.

- Low power consumption
- 'Real time' update speed
- SOLUM proprietary protocol communication with SOLUM Gateway for added security
- I2C Communication with Power Rail TAG

Item	Description
LED	7 colors (Red, Green, Blue, Yellow, Cyan, Magenta, White)
Housing Bezel Color	Black, White

3.4. Mechanical Drawing



(Unit: mm)

Figure 2. MECHANICAL DIMENSION

3.5. Label Marking

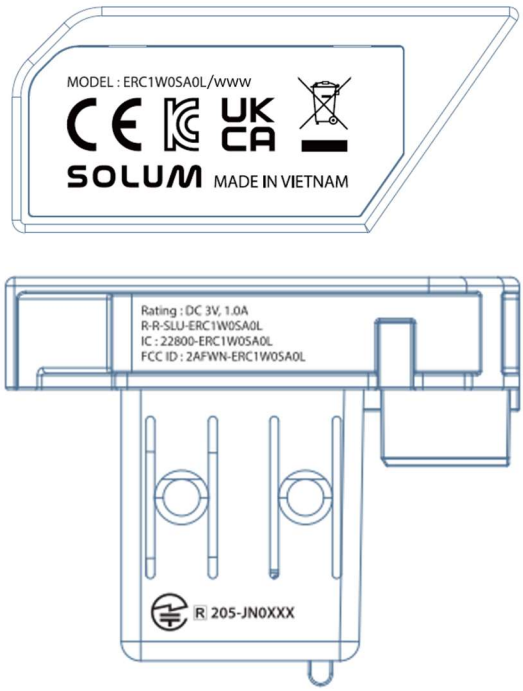


Figure 3. PRODUCT LABELS (PRODUCT)

Power Rail specific information can be found on the laser marking located on the side of the Power Rail. Information displayed are: Model, Certifications

- Rail Gateway only Model: ERC1①0SA0L (i.e. ERC1W0SA0L/WWW)
  - E : ESL
  - R : Rail
  - C : Controller
  - 1 : Generation 1
  - ①: Housing Color
    - ✓ B= Black
    - ✓ W= White
  - 0 : Series 0
  - S : Silicon Lab Chipset
  - A : 2.4GHz – Only

- 0 : Serial NO.
- L : LED

Model Name	
Black	**White**
ERC1B0SA0L/WWW	ERC1W0SA0L/WWW

- Rail Gateway + Rail Model: ER①②③XA④X0 (i.e. ER125XAWX0/WWW)

- E : ESL
- R : Rail
- ①②③ : Rail Length [cm]

  ex) 60cm : 060, 100cm : 100, 125cm : 125
- X : No Protocol Code Selection
- A : Accessory
- ④ : Housing Color
- B= Black
- W= White
- X : None Display
- 0 : Function application(No)

MODEL	Length[mm]	Color
ER060XAWX0/WWW	600	White
ER060XABX0/WWW	600	Black
ER100XAWX0/WWW	1000	White
ER100XABX0/WWW	1000	Black
ER125XAWX0/WWW	1250	White
ER125XABX0/WWW	1250	Black

3.6. Certifications

3.6.1. FCC

FCC ID : 2AFWN-ERC1W0SA0L

FCC Information to User

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Caution

THE GRANTEE IS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

IMPORTANT NOTE : FCC RF Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) (2) this device must accept any interference received, including interference that may cause undesired operation of the device.

3.6.2. CE

We hereby declare under our sole responsibility that the electrical product above is in compliance with the essential requirements of the Radio Equipment Directive (2014/53/EU) by application of

EN IEC 62368-1:2020+A11:2020

EN 62479:2010

EN 301 489-1 V2.2.3

EN 301 489-17 V3.2.4

EN 300 328 V2.2.2

and the Directive (2011/65/EU) on the restriction of the use of certain hazardous substances in electrical and electronic equipment by application of EN 62321 Series.

3.6.3. IC

IC : 22800-ERC1W0SA0L

ISED Information to User

[French]

Le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence.
L'exploitation est autorisée aux deux conditions suivantes :
(1) l'appareil ne doit pas produire de brouillage;
(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Avertissement : Tout changement ou modification non expressément approuvé par le fabricant peut annuler le droit de l'utilisateur à utiliser cet appareil.

Cet équipement est conforme aux limites d'exposition aux radiations d'Innovation, Sciences et Développement économique Canada (ISDE) établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

[English]

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Caution: Any change or modification not expressly approved by the manufacturer may void the user's right to use the equipment.

This equipment complies with Innovation, Science and Economic Development Canada's (ISED) radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.

-PMN(Product Marking Name) : RAIL Gateway

-FVIN(Firmware Version Identity Number) : V50

3.6.4 KC

인증받은 자의 상호명 : 주식회사 솔루엠

제품명 : 특정소출력 무선기기(무선데이터통신시스템용 무선기기)

모델명 : ERC1W0SA0L/WWW

제조자 : 주식회사 솔루엠

제조년월 : . . .

제조국가 : 한국,베트남

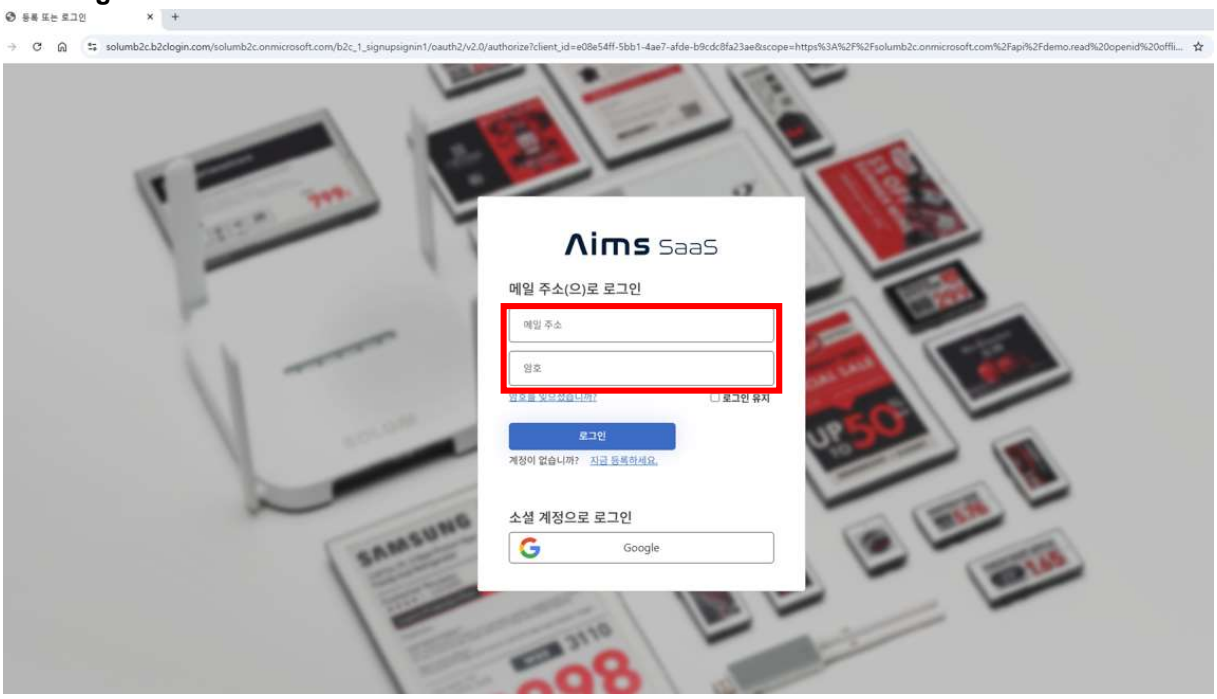
4. Installation & Operation Guide

1. **Insert the battery pack** from the **left-hand side**, as illustrated, and slide it fully to the right until you hear a distinct *click*, indicating that it is securely locked in place. Once properly seated, the **LED indicator** on the left side of the Rail Gateway will briefly flash **green**.

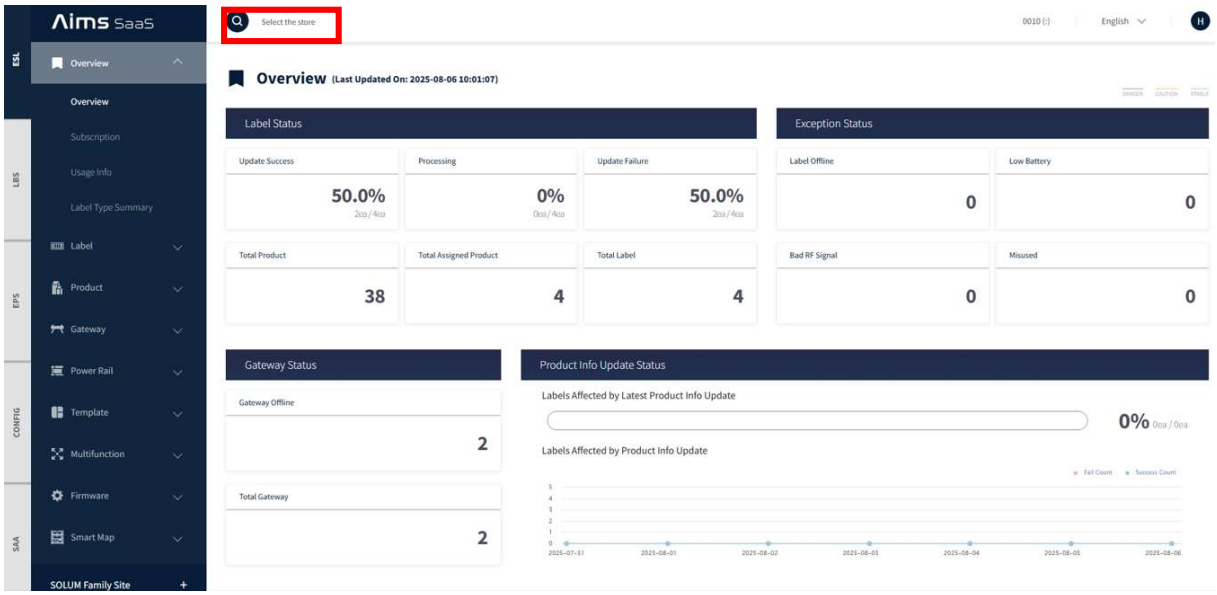
2. Attach the Tag **by sliding it** upwards from the bottom of the rail **until you hear an audible click.**

- **If the click is not heard or the Tag appears loosely connected, gently push it sideways to ensure a secure fit.**
- **Upon proper engagement, the** Tag's LED indicator **will briefly flash** green **for approximately** 500 ms**.**

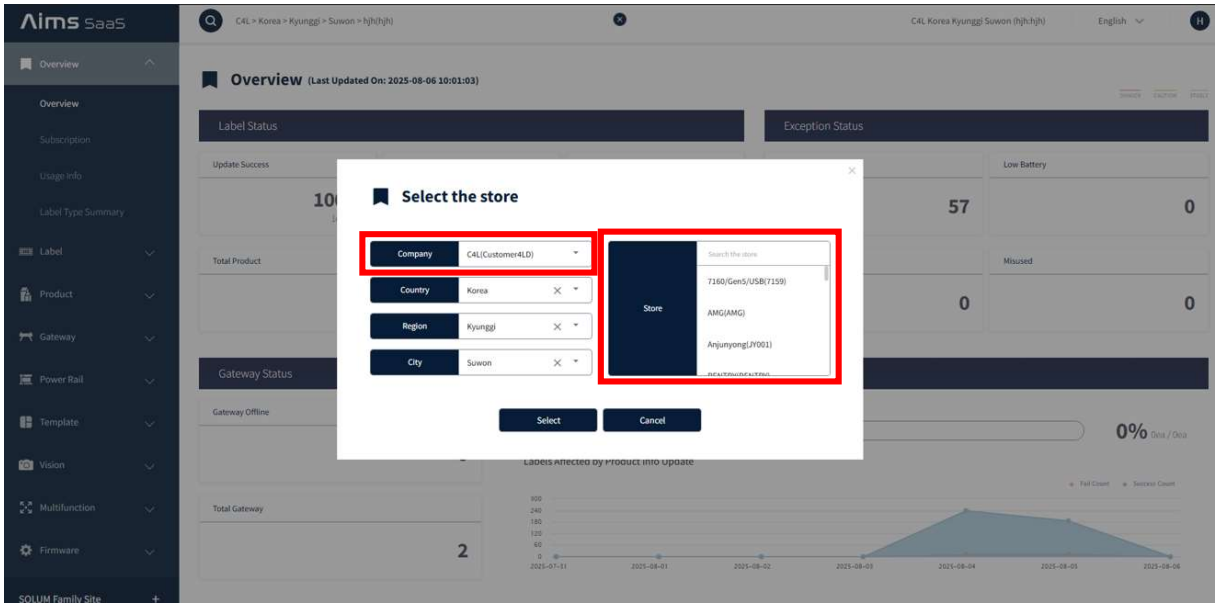
3. Access the designated **AIMS SASS server**, enter your **email address** and **password**, then click **Log In**.



4. Upon successful login, verify that the **Overview Page** is displayed, and click **Select the store**.

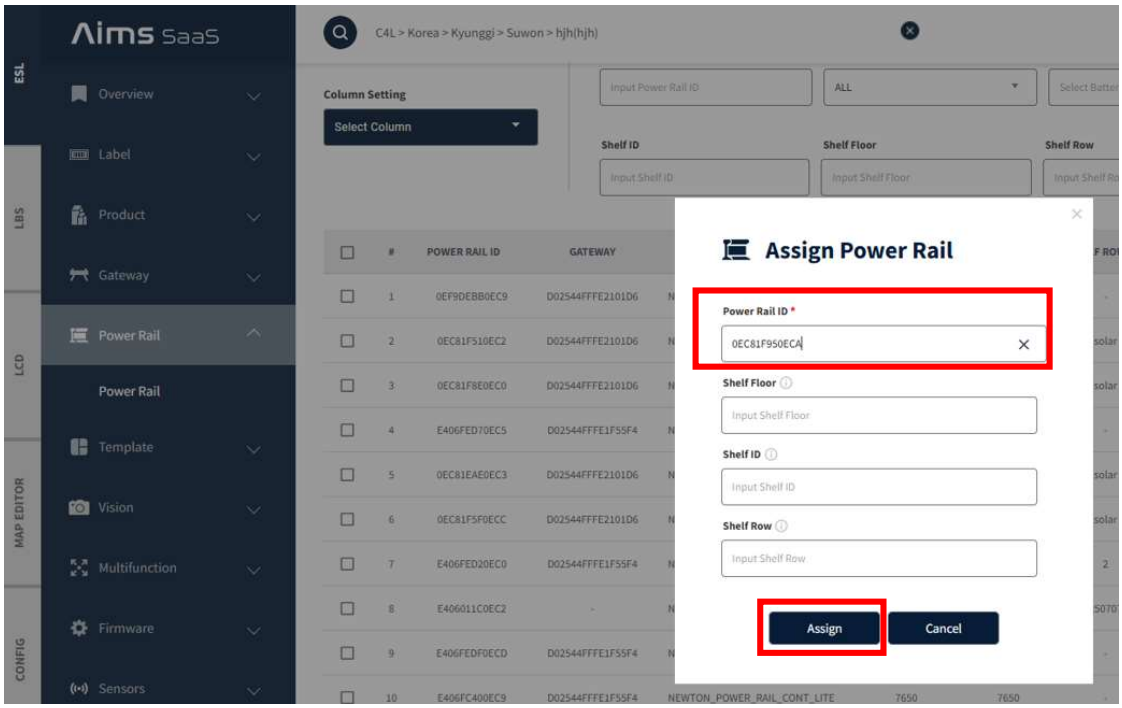


5. In the **Select Store** window, search for and select the appropriate **Company** and **Store**.

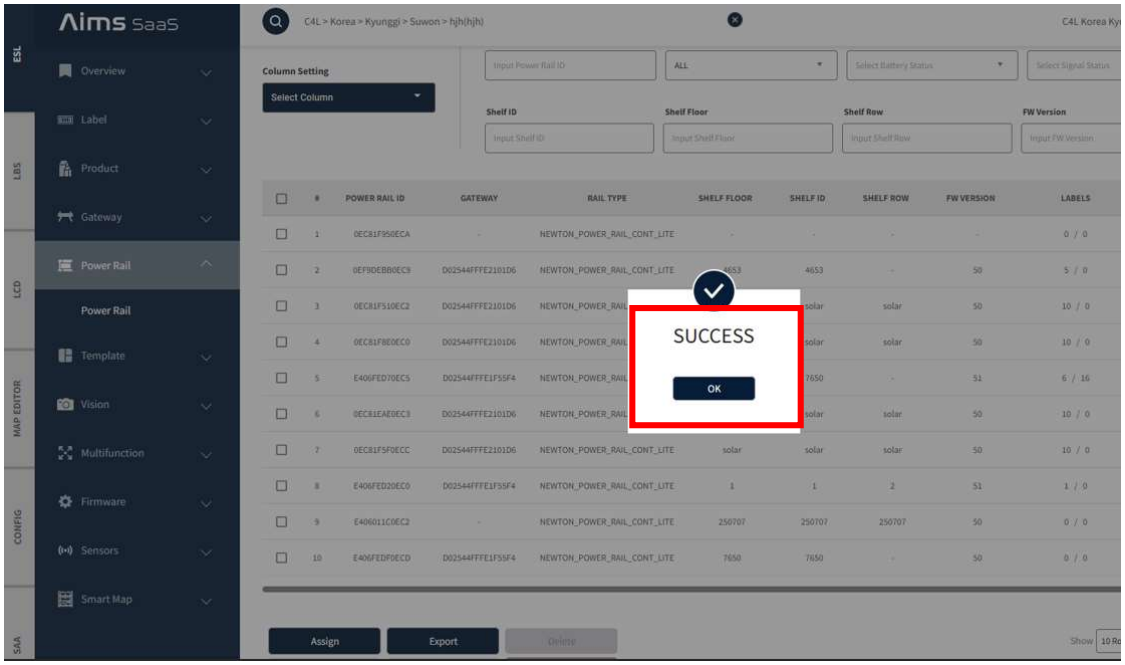


6. From the left-hand navigation panel, click Power Rail, then open the Assign Power Rail window.

- Scan the Power Rail barcode using a barcode scanner or manually type the Power Rail ID into the field provided.
- Click Assign to proceed.



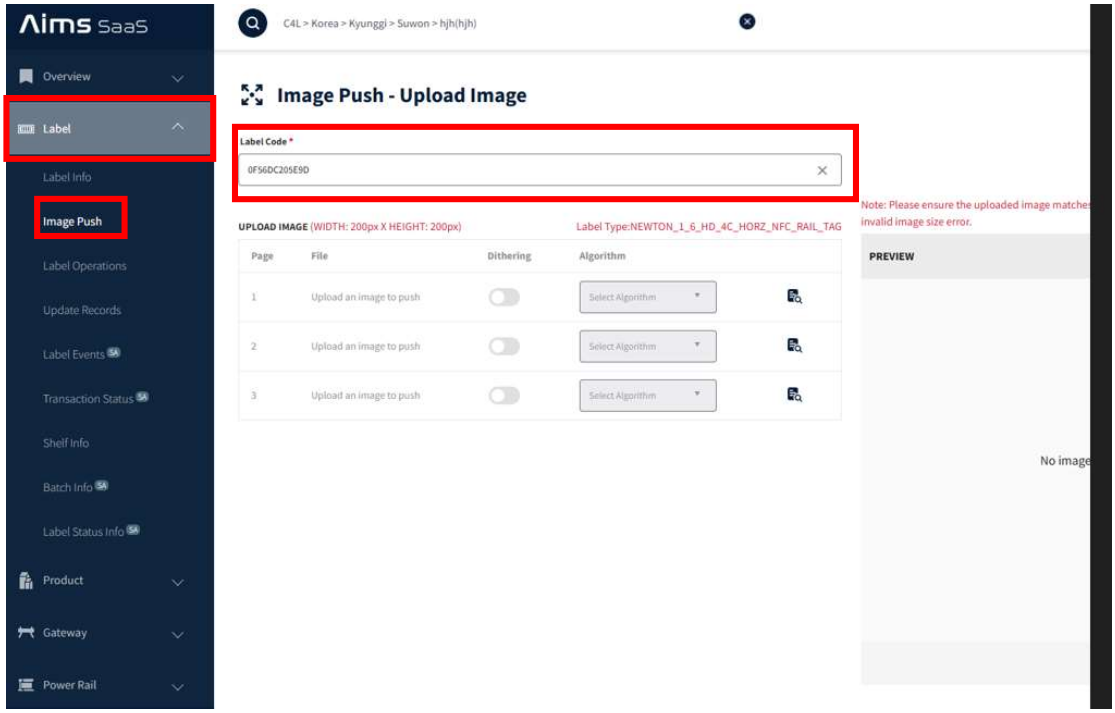
7. Confirm that the **SUCCESS** pop-up message appears.

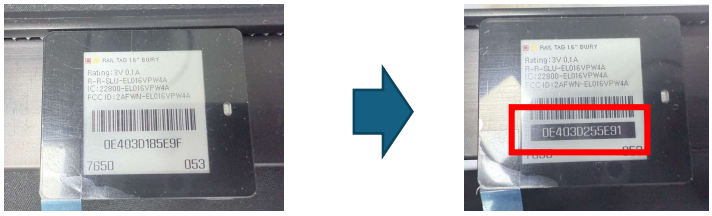


8. From the left-hand menu, select the Label tab, then click Image Push.

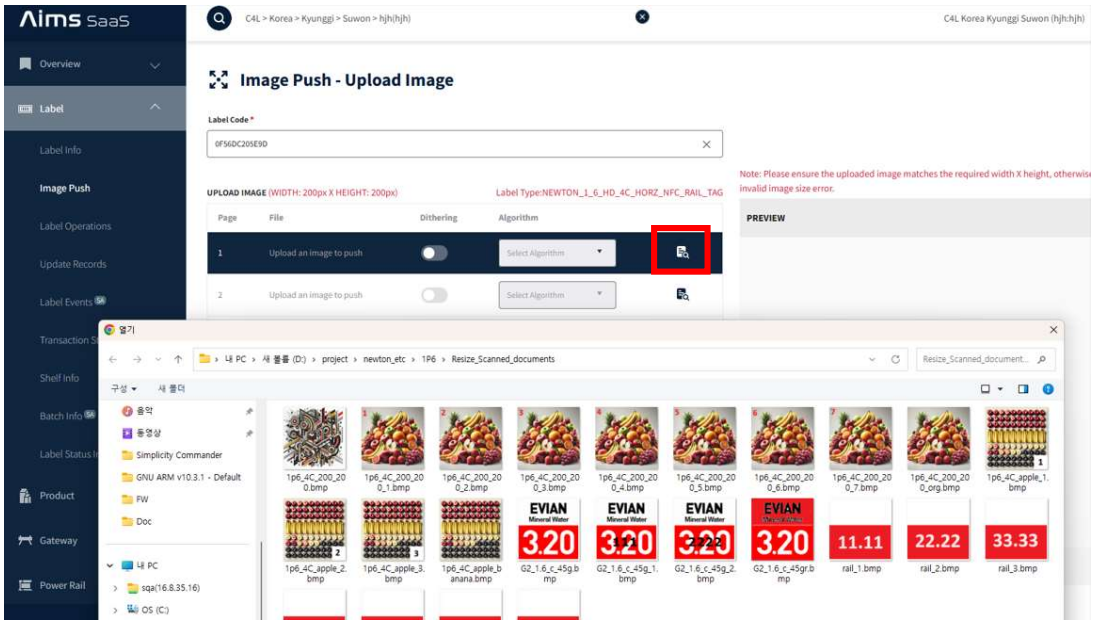
- Once the image placeholder is displayed, input the Label Code of the Tag using a barcode scanner or enter it manually.
- After a successful connection, the **barcode number displayed on the EPD screen** will gradually change to a **shaded black tone**. *(Note: Update speed may vary depending on the*

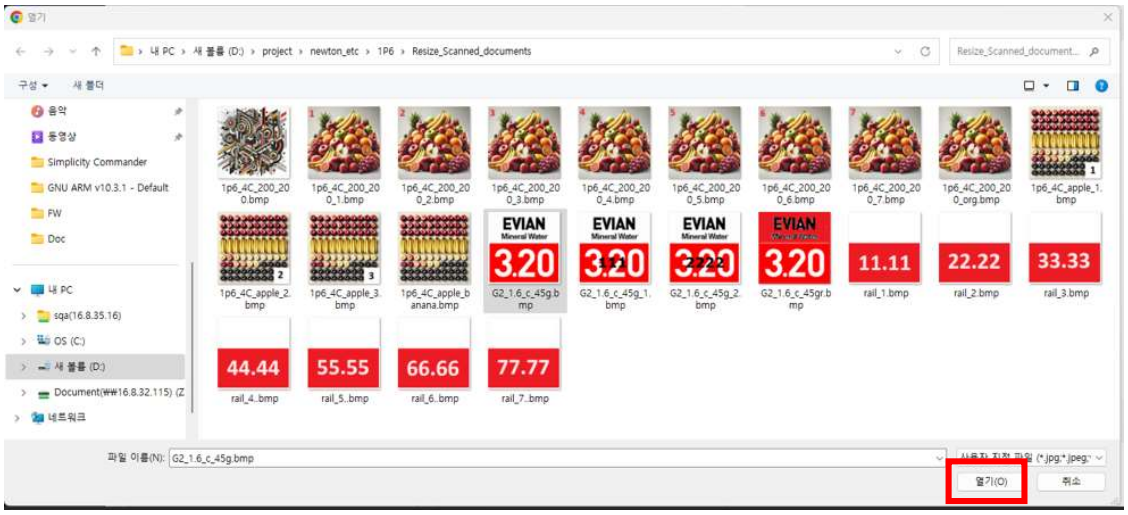
communication environment.)





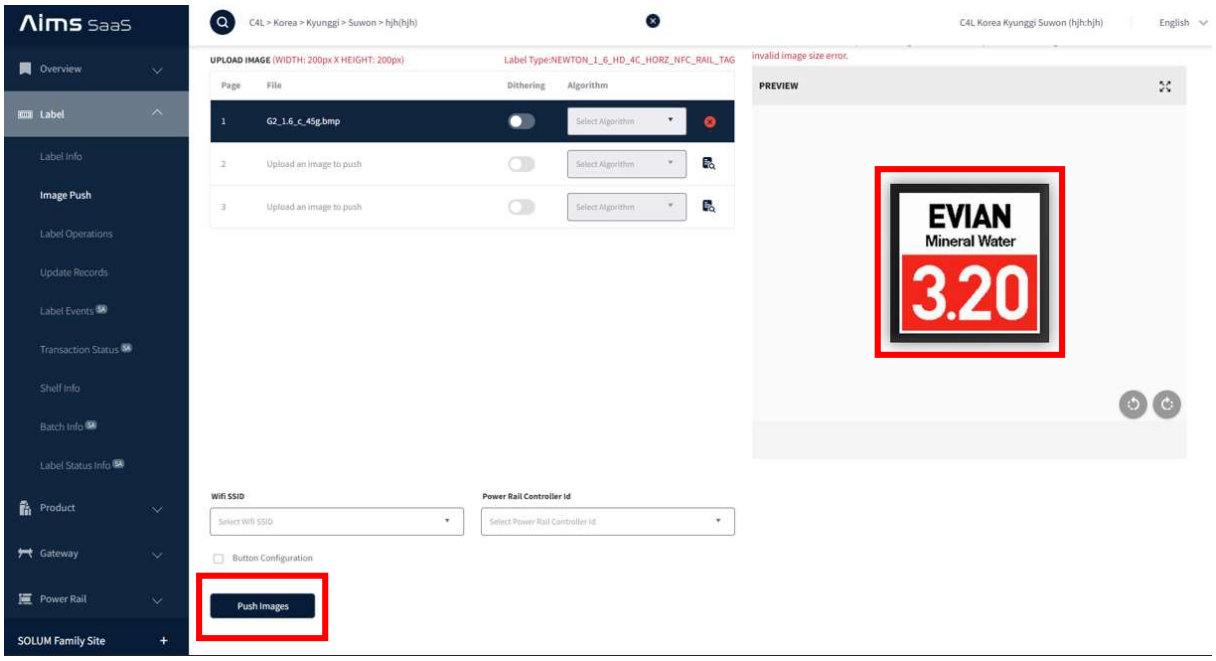
9. Click the **icon on the right-hand side**, choose the image file to upload, then click **Open**..





10. Verify that the selected image is displayed as a Preview on the Rail Tag.

■ Click Push Images, then confirm that the image has been successfully uploaded.


Aims SaaS
Overview
Label
Label Info
Image Push
Label Operations
Update Records
Label Events
Transaction Status
Shelf Info
Batch Info
Label Status Info
Product
Gateway
Power Rail
SOLUM Family Site
C4L > Korea > Kyunggi > Suwon > hjh(hjh)
C4L Korea Kyunggi Suwon (hjh:hjh)
English
UPLOAD IMAGE (WIDTH: 200px X HEIGHT: 200px)
Label Type:NEWTON_1_6_HD_4C_HORZ_NFC_RAIL_TAG
Invalid image size error.
Page
File
Dithering
Algorithm
1
G2_1.6_c_45g.bmp
Select Algorithm
2
Upload an image to push
3
Upload an image to push
PREVIEW
EVIAN
Mineral Water
3.20
Wifi SSID
Select Wifi SSID
Power Rail Controller Id
Select Power Rail Controller Id
Button Configuration
Push Images