



VTag Product Specification

Version 7 as of December 2024

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1. Label Family Introduction

The SESimagotag Electronic Shelf Label family offers high-quality display options, operating with a replaceable battery, thus working without any external power supply.

The performance of the labels (updates per hour) depends on the mode of the access point.

With our customers do not just receive an electronic shelf label but also a direct communication feature between them and their customers. Via its electronic paper display updates on the image shown can be changed automatically based on specific scenarios hence allowing a different pricing strategy and given information at certain stages.

1.1. General Key Features

In general, the following key features can be mentioned.

- 2.4 GHz proprietary radio protocol
- Radio coverage: up to 25 meters
- Bi-directional communication
- 11 available communication channels
- Ultra-low power consumption
- Customer-replaceable battery (Depends on configuration)
- Full graphical e-ink display with paper-like readability
- Different configurations available (theft protection, display protection, LED flash)
- Label versions for deep-freezing environments
- Super wide viewing angle (nearly 180 degrees)
- Flexible mounting options available
- May be used in landscape and portrait mode
- Fast response time (less than 15/30 seconds, depends on wakeup time)
- 128-bit AES encryption with secure key exchange
- Multiple pages support with preloading and fast page switching
- Integrated indirect NFC

1.2. The SESimagotag Electronic Shelf Label family

The SESimagotag Electronic Shelf Label family (2.4GHz) is capable of changing all pixels to black, white, red or yellow. The current line-up has display sizes from 1.6 inch to 12.2 inch. They may be used in landscape and portrait mode and can be configured in terms of radio, theft protection, display protection and LED flash.

Caption	Model	Display Resolution	Density (dpi)	Display Colours	Usable Pages	Active Display Area (mm)	Updates/hour/AP (standard / FCC&IC mode)
VTag 1.3	=DS-0100-A	178 x 200	100	black/white/yellow	4	10.4 x 11.9	6000/1000
V300 1.5	=DS-0180-A	200 x 200	108	black/white/yellow	4	20.0 x 20.0	6000/1000
	=DS-0180-B						
V100 1.6	=DS-0160-A	152 x 152	140	black/white	4	27.5 x 27.5	4500/2500
V300 1.6	=DS-0160-A	152 x 152	140	black/white/yellow	4	27.5 x 27.5	4500/2500
	=DS-0160-B						
V300 2.1	=DS-0210-A =DS-0210-B	240 x 120	135	black/white/yellow	4	48.4 x 24.2	6000/1000
V100 2.2	=DS-0220-B	212 x 104	111	black/white	4	43.8 x 25.8	3500/5000
V300 2.2	=DS-0220-A	212 x 104	111	black/white/yellow	4	43.8 x 25.8	3500/5000
	=DS-0220-B						
	=DS-0220-C						
	=DS-0220-D						
V100 1.6	=DS-0280-A	208 x 152	125	black/white	4	60.1 x 30.7	4500/2500
V300 2.6	=DS-0280-A	208 x 152	125	black/white/yellow	4	60.1 x 30.7	4500/2500
	=DS-0280-B						
V300 2.6 WP	=W-1-0280-A	208 x 152	125	black/white	4	60.1 x 30.7	4500/2500
VSmart 2.6	=DF-0260-B	208 x 152	125	black/white	4	60.0 x 30.0	10000/8000
V300 2.7	=DS-0270-A	281 x 175	117	black/white	4	57.3 x 33.2	4500/2500
	=DS-0270-B						
V300 2.9	=DS-0290-A	180 x 561	147	black/white/yellow	4	67.6 x 20.8	4500/2500
V300 3.5	=DS-0350-A	400 x 240	155	black/white/yellow	4	66.45 x 30.92	2000/1500
	=DS-0350-B						
V300 3.7	=DS-0370-A	400 x 240	130	black/white	4	80.51 x 48.01	2000/1500
V300 4.2	=DS-0420-A	400 x 300	120	black/white/yellow	4	81.3 x 63.8	2000/1500
	=DS-0420-B						
	=DS-0420-C						
V300 4.2 WP	=W-1-0420-A	400 x 300	120	black/white/yellow	4	81.3 x 63.8	2000/1500
V300 4.5	=DS-0450-A	400 x 178	117	black/white	4	104.2 x 33.2	2500/2000
	=DS-0450-B						
VSmart 4.5	=DF-0450-B	400 x 178	117	black/white	4	104.2 x 33.2	2500/2000
V300 5.9	=DS-0590-A	670 x 250	134	black/white	4	130.96 x 19.40	1000/500
	=DS-0590-B						

	±DS1 0.000 A						
	±DS1 0.000 A						
V8mmv5.9	±DS1 0.000 A	720 x 250	121	h ^h ww ^t	4	130.000 x 19.40	2100/200
V9006.0	±DS5 0.000 A	600 x 140	120	h ^h ww ^t	4	117.9 x 6.2	1500/600
V9007.4	±DS5 0.010 A	400 x 100	128	h ^h ww ^t /s ^h	4	9.7 x 181.8	600/900
V9008.2	±DS2 0.000 A	1024 x 576	144	h ^h ww ^t /s ^h /b/g	4	149.8 x 137.0	600/900
V9009.7	±DS5 0.000 A						
	±DS5 0.000 A	960 x 640	121	h ^h ww ^t /s ^h	4	200.00 x 111.12	900/150
	±DS1 0.000 A						
	±DS1 0.000 A						
V9012.2	±DS5 12.200 A	400 x 180	100	h ^h ww ^t	6	190.00 x 25.75	900/150
	±DS5 12.200 A						

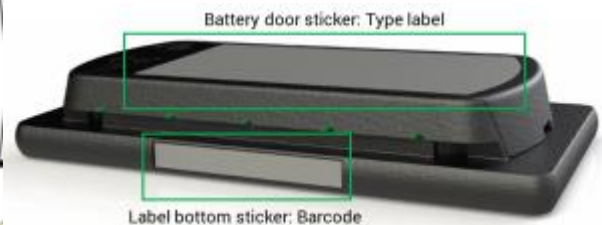
™ There will be a BWR as well as a BWRY option available

2. Type label information

The **type label** of SESimagotag Electronic Shelf Labels is located at the backside of labels on the battery door.

2.1. Standard V100 – V700 labels

All standard ESL labels have in addition a second sticker, containing barcode information, placed at the bottom of each label.



The **type label** contains following information:

1. Product description including product configuration information (display size, display color, radio type, theft protection)
2. Serial number (see *Serial Number* on page 8)
3. Model code (see *Barcode information* on page 7)
4. Information concerning standard and product compliance
5. Label ID shown as barcode and 8-digit hexadecimal

2.2. Peghook label

The **type label** of the peghook label is also located at the backdoor of the product. The label ID is directly stuck on the backside of the PCBA and will be also available after exchanging the battery.



2.3. Barcode information

The labels come with a label ID (which is a **unique identifier** – like a MAC address) and this label ID is also shown as a barcode on the display as well as printed on both the back and bottom of the ESL. The label ID consists of 8 hexadecimal digits (0-9 / A-F). The first 2 digits identify the different label types, shown on the following table:

Please reach out to support or your installation partner regarding an overview of the latest Label-ID ranges.

Caption	Display Colors	Label-ID	Model Code
VPeg 1.3	b/w/r/y	See Label ID Overview (Customer Portal) Or contact MusonGroup Installation partner	FDE5-0150-A
V300 1.5	b/w/r/y		FDG5-0150-A FDG5-0150-A
V100 1.6	b/w/r		FDG5-0160-A
V300 1.6	b/w/r/y		FDG2-0160-A FDG5-0160-A
V300 2.1	b/w/r/y		FDG5-0210-A FDG5-0210-A
V100 2.2	b/w/r		FDG5-0220-B
V300 2.2	b/w/r/y		FDG2-0220-A
			FDG5-0220-A
			FDG5-0220-B
			FDG5-0220-A
V100 2.6	b/w/r		FDG5-0260-A
V300 2.6	b/w/r/y		FDG2-0260-A
			FDG5-0260-A
			FDG5-0260-A
V300 2.6 W/P	b/w/r		FWP1-0260-A
VSway 2.6	b/w/r		FDE3-0260-B
V300 2.7	b/w/r		FDG2-0270-A FDG2-0270-B
V300 2.9	b/w/r/y		FDG5-0290-A
V300 3.5	b/w/r/y		FDG5-0350-A FDG5-0350-B
V300 3.7	b/w/r		FDG2-0370-A
V300 4.2	b/w/r/y	FDG2-0/ 20-A	
		FDG2-0/ 20-B	
		FDG5-0/ 20-A	
V300 4.2 W/P	b/w/r/y	FWP1-0/ 20-A	
V300 4.5	b/w/r/y	FDG2-0/ 50-A	
		FDG5-0/ 50-A	
VSway 4.5	b/w/r	FDE3-0/ 50-B	
V300 5.9	b/w/r	FDG2-0590-A	
		FDG5-0590-A	
		FDG4-0590-A	

Caption	Display Colors	Label-ID	Model Code
			FDG1-0580-B
VSway 5.9	b/w/r		FDF3-0580-B
V300 6.0	b/w/r		FDG5-0600-A
V300 7.4	b/w/r/y		FDG2-0710-A FDG5-0710-A
V700 8.2	b/w/r/y		FDF2-0820-A
V300 9.7	b/w/r/y		FDG2-0970-A FDG5-0970-A FDG1-0970-A FDG1-0970-B
V300 12.2	b/w/r		FDG2-1220-A FDG5-1220-A

- Cloud-customers are updated automatically
- non-cloud customers must update to latest CS-version to enter Labels with a new Label-ID range (excl. Engage and other cloud only devices which will not be supported)

2.4. Serial Number

Part	Description	Format	Example	Comment	Source
A	Producer	2 alpha	01		Spec: final by VisionGroup GmbH format for each lab
B	Product family	3 alpha	R22		Spec: final by VisionGroup GmbH final no product specification document
C	Product version	3 alpha	N01	N with NFC	
D	Product revision	3 alpha	001	Incremented on every change of specification	
-	Separator	-	-		Fixed
E	Year	1 alpha	F	A 2010, B 2011, ..., I 2018	Calculated during production
F	Week	2 dec	13		
G	Internal	8 dec	000065	Continuous Serial Number (Counter)	

Format: ABBBBCCDDDD-EFFGGGGGGG **Example:** 02G1B302001-E13000056

Note: Calendar week date is calculated according to ISO 8601

3. Electrical & RF Characteristics

The power for the ESL is supplied by one or more coin-cell batteries. The following table below will give you a short overview of all kinds of labels and their respective batteries.

Caption	Display colors	Battery Type	Operating Voltage	Nominal capacity
VPeg 1.3	b/w/r/y	Pouch Cell	3 V	200 mAh
V300 1.5	b/w/r/y	1x CR2/ 50	3 V	550 mAh
V100 1.6	b/w/r	1x CR2/150	3 V	550 mAh
V300 1.6	b/w/r/y	1x CR2/150	3 V	550 mAh
V300 1.6 CR	b/w/r/y	1x CR2/150	3 V	550 mAh
V300 2.1	b/w/r/y	2x CR2/150	3 V	1100 mAh
V300 2.1 F	b/w	2x CR2/150D	3 V	1100 mAh
V100 2.2	b/w/r	1x CR2/150	3 V	550 mAh
V300 2.2	b/w/r/y	2x CR2/150	3 V	1100 mAh
V300 2.2 F	b/w	2x CR2/150D	3 V	1100 mAh
V100 2.6	b/w/r	1x CR2/150	3 V	550 mAh
V300 2.6	b/w/r/y	2x CR2/150	3 V	1100 mAh
V300 2.6 W/P	b/w/r/y	2x CR2/150	3 V	1100 mAh
V300 2.6 F	b/w	2x CR2/150D	3 V	1100 mAh
VSway 2.6	b/w/r	1x CR2/150	3 V	550 mAh
V300 2.9	b/w/r/y	2x CR2/150	3 V	1100 mAh
V300 2.9 F	b/w	2x CR2/150D	3 V	1100 mAh
V300 3.5	b/w/r/y	3x CR2/150	3 V	1650 mAh
V300 3.5 F	b/w	3x CR2/150D	3 V	1650 mAh
V300 3.7	b/w/r	3x CR2/150	3 V	1650 mAh
V300 4.2	b/w/r/y	3x CR2/150	3 V	1650 mAh
V300 4.2 W/P	b/w/r/y	3x CR2/150	3 V	1650 mAh
V300 4.5	b/w/r/y	3x CR2/150	3 V	1650 mAh
V300 5.9	b/w/r	5x CR2/ 50	3 V	2750 mAh
V300 5.9 F	b/w	5x CR2/ 50D	3 V	2750 mAh
V300 6.0	b/w/r	3x CR2/150	3 V	1650 mAh
V300 7.4	b/w/r/y	4x CR2/150	3 V	2200 mAh
V700 8.2	b/w/r/y/g/b	Pouch Cell	3 V	3000 mAh
V300 9.7	b/w/r/y	6x CR2/150	3 V	4100 mAh
V300 12.2	b/w/r/y	6x CR2/150	3 V	3300 mAh

4. NFC

The majority of SESimagotag Electronic Shelf Labels can be ordered to have an integrated NFC functionality. As the NFC-functionality requires specific testing we can confirm that SESimagotag Electronic Shelf Labels NFC complies with ISO 14443. Where the NFC operating frequency is 13,56 MHz.

4.1. Functionality

Placing your NFC reader on a label with an integrated NFC chip will automatically redirect you to the following URL:

<https://nfc.ses-imagotag.com/<Label-ID>>

This URL/information can then be used for the following cases:

- You can use it for your own developed application
- or redirection/forwarding to a specific URL.

To ensure NFC communication between the reader and the label, align the NFC antennas of both devices as closely as possible. The following overview shows the NFC antenna position for each label size.

The Peghook label does not have an integrated NFC antenna.



4.1.1. Application

A mobile application can extract the label ID information from the NFC tag. Based on the label ID, the application can receive further details about the matched article and e.g. show these details via a dedicated push message. The required application needs to be developed by the customer if this functionality is required since the “VUSION Link” application only provides the matching information of the ESL.

Example - Digital camera accessories

A customer starts the mobile application and put his/her smartphone next to the label with integrated NFC chip which is associated to a product such as a digital camera. The developed application retrieves the product information data from the ESL system and pushes matching accessories for this digital camera model to his/her smartphone.

Example - Recipe information

A customer starts the mobile application and put his/her smartphone next to the label with integrated NFC chip which is associated to pasta. The developed application retrieves the product information data from the ESL system and pushes corresponding recipes to his/her smartphone.

4.1.2.Redirection/Forwarding (for demo purposes only)

If you don't want to develop your own application to handle NFC readings, there's the possibility to request a redirection for your specific NFC label range to a URL of your choice. This functionality is just for demo purposes.

Example - Customer's website

You have bought several NFC tags and want to redirect to its website when reading the tags. Write an email with your forwarding request (relevant labels, customer, URL) to:

- EMEA: support@vusion.com
- AMERICAS: support.na@vusion.com
- ASIA: support.asia@vusion.com
- CEE: support.cee@vusion.com

The support team will manage the request and gives you feedback as soon as the forwarding works.

E.g. Customer XY, 1/300 2.7 BWR GL440 labels with IDs: B501ABC1, B501B324, forward to <http://www.myownwebsite.com>

5. E-Paper Display

To specify E-Paper Display colors and color tolerances the CIELAB color space (also known as CIE L*a*b* or Lab color space) is used at end of line testing.

Color specification and tolerances for SESimagotag Electronic Shelf Labels (ΔE is defined as CIEDE2000.).

Color measurement procedure:

- Color measurement devices (spectrophotometer) must be calibrated.
- Test images to be used:
 - White color measurements: Full white image
 - Red color measurements: Full red image
 - Yellow color measurements: Full yellow image
- Measurements must be performed at room temperature (21°C) and between 30% - 70% humidity.
- Execute following steps for color measurement:
 - 1) Put display in environmental conditions and store for 1h
 - 2) Send a full white image to display. wait 2 min
 - 3) Send test image to display
 - 4) Execute color measurement 10 minutes after display update (T10)

Please note that the EPD colors may evolve in time due to various external factors (non-regular display updates, non-regular change of template, humidity, temperature). etc.. This is to be considered as normal wear and tear.

6. LED

6.1. Photobiological safety

All LED's used in SESimagotag Electronic Shelf Labels comply with IEC 62471:2006 - Photobiological safety of lamps and lamp systems.

6.2. Configuration Versions

It is configurable if there are LEDs built into the label or not. If there are none, the casing is also adapted (has no holes for the LEDs and no lightguide).

So, the possible configurations are:

- No LED
- White and RGB LED
- Only RGB LED (not a default configuration)

6.3. Flashing patterns / brightness

The actual LED blinking pattern can be changed. For SESimagotag Electronic Shelf Labels 2.4GHz, there is a set of predefined LED blinking patterns.

- Slow: one short flash every 4 seconds
- Medium: one short flash every 2 seconds
- Fast: one short flash every second
- "Findbox": eight short flashes every second

Please note that LED flashing results in an increased power consumption and can influence the battery lifetime depending on blinking pattern and duration.

The default setting for the flash is "Medium" which can however be changed via a dedicated API call. Further information regarding battery impacts can be found below.

7. Environmental

7.1. General

E-Paper displays are moisture and UV sensitive. Exposing the ESL to direct UV sources should be avoided seeing as those can impact the casing quality as well as image clarity. The absolute operating environments rating describes the boundary conditions for updating the display while the absolute storage environment rating (see *Storage and warehousing* on page) describes the boundary conditions for a display not updating.

*10°C - 25°C is as possible but display can have a lower optical performance

	BW (Freezer)*	BWR	BWRY E5 (incl. SE)	BWRYGB E5
Operating temperature	-25 °C to +10 °C	0 °C to +10 °C	0 °C to +10 °C	0 °C to +10 °C
Optimal operating temperature	-15 °C to +10 °C	10 °C to +25 °C	10 °C to +25 °C	10 °C to +25 °C
Operating humidity (non-condensing)	10% - 80%	35% - 70%	40% - 80%	40% - 80%

7.2. Cleaning Instructions

To clean the electronic label, use only a damp cloth. Ensure that only pH-neutral household cleaners are used and avoid aggressive cleaning agents. For the V300 waterproof range, please refer to the specific cleaning instructions available in the customer portal or provided by your regional partner.

Avoid using alcohol, solvents, and/or abrasive cleaning products as they may react with the materials, potentially altering the product's appearance and functionality.

For Chemical Resistance labels, it is required to clean them regularly, at least ones in a month, only with a damp cloth and water. Do not use cleaning products or alcohol with a high concentration. If there are spray stains from substances like perfumes on the label, gently polish it with clean water and a microfiber cloth.

Note: Do not use liquid or aerosol cleaners and keep the label away from water. It is not permitted to place any stickers on the label surfaces, as adhesive residues can damage the display or lens.

7.3. Temperature and Humidity Conditions

- High humidity combined with low temperature is not recommended



- Overall, an operation outside of the above given ranges are not covered and hence not recommended to use the ESL outside of this range
- Temperatures differing room temperature may have an impact on battery lifetime (excl. Freezer)

8. Storage and warehousing

While displays are rated to perform according to the specifications for the warranty period at the specified absolute operating environment the storage conditions prior to installation also need to be considered. Testing showed that the storage conditions close to the operation conditions of the E-Paper displays performed better than if it is stored outside of the storage conditions mentioned in the table below. Similar to other moisture and UV sensitive components, we recommend that our labels be stored in temperature- and humidity-controlled environments, and whenever possible, under below defined "*Optimal Storage Conditions*", away from sunlight, to optimize their performance.

It is strongly recommended to monitor the following conditions to ensure the best operation, functionality and battery lifetime:

- Storage temperature and humidity

	BW (Freezer)	BWR	BWY	BWRY	BWRYGB
Storage temperature	-25 °C to +60 °C	-25° C to +60° C	-20 °C to +60 °C	-25°C to +60°C	-25°C to +60°C
Storage humidity	30% - 90%	40% - 70%	30% - 70%	40% - 80%	40% - 80%
Optimal storage temperature	-10 °C to +35 °C	15 °C to 25 °C	15 °C to 25 °C	15 °C to 25 °C	15 °C to 25 °C
Optimal storage humidity (non-condensing)	40% - 60%	45% - 65%	40% - 60%	45% - 60%	45% - 60%

- Do not operate any ESL Infrastructure in a warehouse storing labels or where the radio coverage could activate stored labels.
The label will permanently try to connect to the access point, leading to a reduced usable battery lifetime.
- To reach the optimal performance of the label, VusionGroup recommends storing the labels according to the above stated conditions and limit the storage period to a maximum timeframe of one year as this may have an influence on the battery lifetime as well as general ESL performance.

Please note that these Optimal Storage Conditions grant the best battery lifetime, thus non-compliance with these thresholds may severely impact the lifetime of your batteries and the optical display quality of the products.

8.1. Pool/Spare labels in the store

If it is necessary to have a pool of labels or spare labels in a store the following requirements need to be fulfilled to ensure best operation, functionality, and battery lifetime.

All labels must be:

- Registered
- ONLINE (good radio coverage) and UNMATCHED (ready for further matchings)
- Stored in a defined area (store staff to be trained)

9. Battery lifetime

The radio sync quality between labels and access points has to be "PERFECT" or "GOOD".

To comply with these specifications, a Site Survey according to VusionGroup guidelines is necessary.

- The declared number of updates per day on the Datasheets is an average value applied on the specified battery lifetime.
- Most of the time the operation temperature of the labels has to be close or equal to 21° C.
- To reach the best battery performance possible, the requirements regarding *Storage and warehousing* on page 30 also needs to be observed.
- Performing less than specified updates doesn't extend the battery lifetime significantly.
- The battery power status is displayed in SES-imagotag Core Service or in Jeegy S3/Jeegy Cloud management software as well as VUSION Cloud and categorized as follows:
 - **GOOD:** The Battery is okay and no further actions are necessary.
 - **BAD:** Due to low battery voltage, unexpected behaviour can occur in this status. Therefore, an immediate battery replacement is recommended.
 - **UNKNOWN:** No recent power sensor value available or label is outside its allowed temperature range. In this case try removing and reinstalling the battery as well as placing the ESL in a different environment to make sure that the operation conditions stated above are met.

These conditions are not only applicable to the batteries initially used when the ESL is produced but also applicable to all certified replacement batteries provided by VusionGroup.



Battery Classification | White paper

⊕ Remaining battery lifetime with BAD battery status

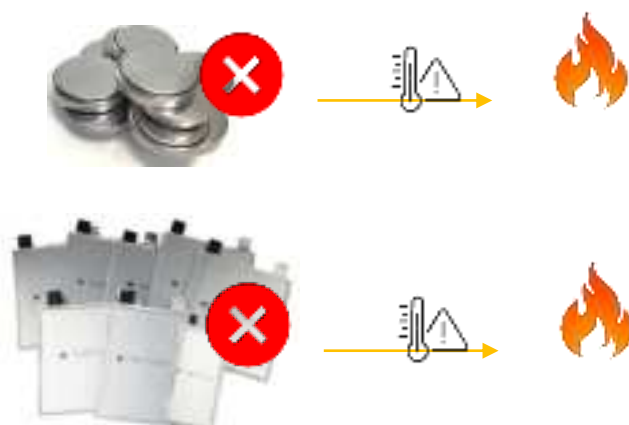
— Assumed use cases: V300 1.6 and Freezer Labels and other V300 sizes

GOOD	BAD	No ESL operation
Battery status GOOD	Remaining battery lifetime in BAD status: At least (worst case): V300 1.6 and Freezer Labels 1,5 months Other V300 Label sizes 2-3 months Average: V300 1.6 and Freezer Labels 3 months Other V300 Label sizes 5 months	No further ESL operation can be guaranteed.
No actions required	Battery change recommended!	
GOOD → BAD voltage threshold		Critical battery voltage threshold

10. Information Notice about lithium battery risks

The electronic tags are powered by lithium batteries, which can present certain risks if not stored properly.

Lithium batteries are inflammable if improperly stored.



It depends on the SESimagotag Electronic Shelf Label which type of battery is used. Labels will be powered by either coin cells or pouch cells.

Coin cells feature a solid housing, making them heavier but more durable, while pouch cells are thin and lightweight with a lithium layer protected by a thin plastic cover. Damage to the cover or contact short-circuiting can cause pouch cells to ignite immediately. Similarly, lithium button batteries have a fully conductive surface and can also catch fire if shorted. NEVER store these batteries together without protection.

Note: If a few electronic tags show signs of strain, it is common to replace the batteries in all the tags at once. In this situation, some of the batteries you remove from your tags may not be completely empty, increasing the risk of inflammation and the power of the fire.

10.1. Good practices to avoid these risks - during the replacement.

Several solutions can be used to limit the risks:

- Use a specialized company to change lithium button battery. They are used to this and have packaging designed to isolate these batteries.
- If you plan to change the batteries yourself, we recommend that you use the clip removal tool to open the doors of your labels and/or the battery compartment.
- Using any other tool may damage your labels and batteries.



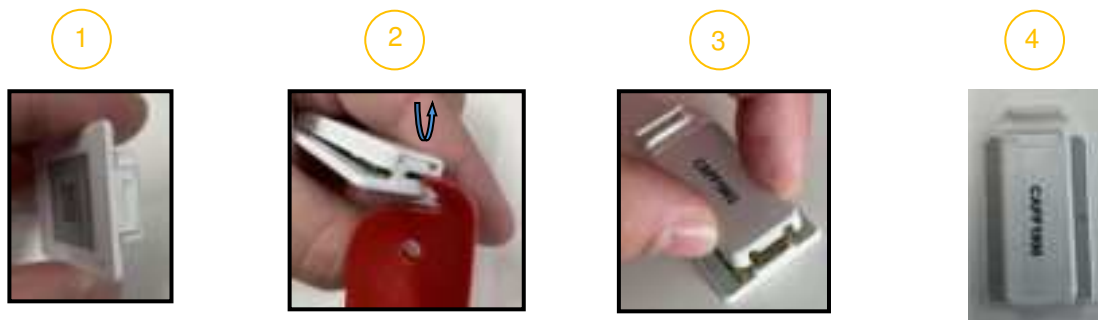


Please note this does not concern Waterproof ESL's

Here is how to replace lithium coin cell batteries



Here is how to replace lithium pouch cell batteries



Once the batteries have been replaced, you must isolate the old batteries from each other. The VPeg replacement battery will arrive pre-mounted in its casing, meaning the battery replacement also includes a replacement of the Peghook's back side.

Improper storage, such as bulk storage, significantly increases the risk of battery ignition.

New batteries are delivered in storage racks or separated inside of a carton; we strongly recommend keeping the original packaging for used batteries as well. Once packaged, please contact your collection and recycling service for safe disposal of used batteries.



10.2. During storage of batteries and unused labels

Lithium batteries should NEVER be stored in contact with each other and without sufficient protection.



Use the storage racks or the delivery packaging (strongly recommended)

We highly recommend using the original packaging for your new batteries.

These storage racks isolate each battery in its own compartment by securely clipping it into a designated slot.



We recommend stacking each battery tray with a divider, following the original box quantity, and securing them firmly together.

Carefully store the racks in a box so that they do not move during transportation and contact your collection and recycling organization for removal and destruction, notifying them of the presence of these batteries.

Without a storage rack

When storing unused electronic tags, it is important to pack them properly and not to put them in boxes with unprotected batteries.

In case of missing, defective, or not correctly closed battery trap, the batteries must imperatively be removed from the electronic label and recycled locally by the approved eco-organization that collects used batteries in your store.



It is also strictly forbidden to return batteries alone (outside of the electronic labels).

NEVER put unprotected batteries in a box with other materials such as labels

Here is a simple way to store your batteries safely: Stick them on adhesive tape



10.3. During transportation

It is strictly forbidden to return batteries alone outside the electronic labels. Any shipment containing batteries outside of the electronic labels will be rejected by VusionGroup and may be invoiced for processing costs. In the event of non-compliance with these instructions resulting in damage caused by fire or otherwise, VusionGroup reserves the right to claim compensation for the damage suffered, including damage suffered by our partners or carriers.

Batteries alone must be collected by your recycling organization. It is imperative that the batteries are secured in the storage racks or by keeping them secured with tape as

shown above. We advise you to inform your recycling organization of the presence of these batteries in the packages that will be entrusted to them.

It is your responsibility to take all measures required by law and regulations concerning the transport of dangerous products, particularly in terms of marking the boxes in transit.

10.4. Recycling of lithium button batteries

No single battery (outside of ESL) should be returned to VusionGroup.

To proceed with the collection and recycling of your batteries, you can contact an organization specialized in the collection and destruction of batteries in your country. (e.g.: France: Corepile).

We recommend that you follow the above packaging instructions when handing over your batteries to the collection organization and inform them of the presence of these batteries.

11. Reliability Test Items

Testing of the operation conditions (temperature and humidity)

To evaluate the performance and image quality of the SES Imagotag Electronic Shelf Labels range multiple image updates are run at high and low temperature ranges and different humidities. By conducting these tests, we make sure that the given operation conditions indicated in the Chapter "Environment" are to the customers satisfaction.

Testing of the storage conditions (temperature and humidity)

To make sure that the SES Imagotag Electronic Shelf Labels are not influenced by any condition that falls under the indicated values for humidity and temperature stated in the chapter "*Storage and warehousing*" a series of test cycles are conducted. These then make sure that the conditions do not have an impact on image quality, product lifetime as well as operational quality when the product is finally installed in a store.

Temperature Shock (Storage)

As there can be certain situations where the optimum storage conditions are not met the SES Imagotag Electronic Shelf Labels is put through cycles which are out of the given values on temperature and humidity. This ensures short periods of storage that do not meet the given requirements do not have an influence on the quality of the product in any way.

Label Drop Test

Seeing as a SES Imagotag Electronic Shelf Labels might be dropped in a store from different heights our mechanical testing also covers this aspect. The label drop test covers different heights where the ESL is dropped onto a steel surface and then checked for any form of damage. If there is no damage and no impact on updating the image the test is seen as "passed".

Package Drop Test

Similar to the label drop test the package containing our ESLs is also tested for its protection against any form of damage to our products. This serves the purpose of ensuring that the product arrives at the customer unharmed.

Package Random Vibration Test

In order to ensure all products that are delivered to our customers arrive intact and can therefore be used straight away we perform specific vibration tests simulating the different means of transportation. This allows us to make sure, that the applicable

vibrations do not cause any damage to the internal electronics as well as the structural integrity of our products overall.

Food Contact Test

As some of our products may come into direct food contact, we make sure, that the materials used also pass a dedicated food contact test. This ensures that no harmful substances can be transferred to the product it comes into contact with.

Compression Test

When handling our ESLs there might be the case, that pressure is applied to either the screen or front cover. To cover the potential applied pressure a dedicated test has to be passed, where the display has to sustain an applied force on multiple locations without causing the display to break and hence assuring an intact surface and functionality.

UL-Test for Classification

To make sure that the Label meets any mandatory requirements regarding fire retarding capabilities we conduct all necessary test for the classification according to the UL range. By doing this we can guarantee that our products meet all the given requirements by our customers as well as logistics partners to meet transport regulations.

12. Certifications

12.1. Types and Product Certifications



Housing, board and the display are in line with the ROHS Directive

You can find the status about certifications of SESimagotag Electronic Shelf Labels either directly on the [Nexus](#) or the dedicated Customer Portal.

12.2. Applied Standards

Information Technology Equipment

IEC 62368-1:2018

EN 62368-1:2020

UL 62368-1:2019

NZS 62368.1:2022

EMC

EN 301489-1 V2.2.3

EN 301489-17 V3.2.5

RED

EN 300 328 V2.1.1

EN 300 328 V2.2.2

Human Exposure to Electromagnetic Fields

EN 62479:2010

Federal Communications Commission / Industry Canada

FCC: 47 CFR Part 15 (USA)

IC: RSS-210 Issue 10 (Canada)

12.3. Declaration

The company VusionGroup GmbH declares on his own responsibility that the SESimagotag Electronic Shelf Labels correspond to the standards mentioned above.

European Union Hereby, VusionGroup GmbH declares that the radio equipment:



V300 1.5 (EDG3-0150-A, EDG5-0150-A), V100 1.6 (EDG3-0160-A), V300 1.6 (EDG2-0160-A, EDG3-0160-A), V300 2.1 (EDG3-0210-A, EDG5-0210-A), V100 2.2 (EDG3-0220-A), V300 2.2 (EDG2-0220-A, EDG3-0220-A, EDG3-0220-B, EDG5-0220-A), V100 2.6 (EDG3-0260-A), V300 2.6 (EDG2-0260-A, EDG3-0260-A, EDG5-0260-A, EDG6-0260-A), V300 2.6 W/P (EWP1-0260-A), V300 2.7 (EDG2-0270-A, EDG2-0270-B), V300 2.9 (EDG3-0290-A), V300 3.5 (EDG3-0350-A, EDG3-0350-B), V300 3.7 (EDG2-0370-A), V300 4.2 (EDG2-0420-A, EDG2-0420-B, EDG3-0420-A), V300 4.2 W/P (EWP1-0420-A), V300 4.5 (EDG2-0450-A, EDG3-0450-A), V300 5.9 (EDG2-0590-A, EDG3-0590-A, EDG4-0590-A, EDG4-0590-B), V300 6.0 (EDG3-0600-A), V300 7.4 (EDG2-0740-A, EDG3-0740-A), V300 9.7 (EDG2-0970-A, EDG3-0970-A, EDG4-0970-A, EDG4-0970-B), V300 12.2 (EDG2-1220-A, EDG3-1220-A), VPeg 1.3 (EDF5-0130-A), VSway 2.6 (EDF3-0260-A), VSway 4.5 (EDF3-0450-B), VSway 5.9 (EDF3-0590-B) and V700 8.2 (EDE2-0820-A)

is in compliance with Directive 2014/53/EU.

The full text of the EU Declaration of Conformity is available at the following QR code or internet address: <https://www.ses-imagotag.com/en/electronic-shelf-labels/doc-vusion-labels/>

United States of America 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) this device must accept any interference received, including interference that may cause undesired operation.



CAUTION TO USERS

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



FCC rules apply to the following products: V300 1.5 (EDG3-0150-A, EDG5-0150-A), V300 1.6 (EDG2-0160-A, EDG3-0160-A), V300 2.1 (EDG3-0210-A, EDG5-0210-A), V300 2.2 (EDG2-0220-A, EDG3-0220-A, EDG3-0220-B, EDG5-0220-A), V300 2.6 (EDG2-0260-A, EDG3-0260-A, EDG5-0260-A), V300 2.6 WP (EWP1-0260-A), V300 2.7 (EDG2-0270-A, EDG2-0270-B), V300 2.9 (EDG3-0290-A), V300 3.5 (EDG3-0350-B), V300 3.7 (EDG2-0370-A), V300 4.2 (EDG2-0420-A, EDG2-0420-B, EDG3-0420-A), V300 4.2 WP (EWP1-0420-A), V300 4.5 (EDG2-0450-A, EDG3-0450-A), V300 5.9 (EDG2-0590-A, EDG3-0590-A), V300 6.0 (EDG3-0600-A), V300 7.4 (EDG2-0740-A, EDG3-0740-A), V300 9.7 (EDG2-0970-A, EDG3-0970-A), V300 12.2 (EDG2-1220-A, EDG3-1220-A), VPeg 1.3 (EDF5-0130-A), VSway 2.6 (EDF3-0260-A, EDF3-0260-B), VSway 4.5 (EDF3-0450-B), VSway 5.9 (EDF3-0590-B) and V700 8.2 (EDE2-0820-A)

Canada

IC

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.

L'émetteur/récepteur exempt de licence contenu dans 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'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

IC standards apply to the following products: V300 1.5 (EDG3-0150-A, EDG5-0150-A), V300 1.6 (EDG2-0160-A, EDG3-0160-A), V300 2.1 (EDG3-0210-A, EDG5-0210-A), V300 2.2 (EDG2-0220-A, EDG3-0220-A, EDG3-0220-B, EDG5-0220-A), V300 2.6 (EDG2-0260-A, EDG3-0260-A, EDG5-0260-A), V300 2.6 WP (EWP1-0260-A), V300 2.7 (EDG2-0270-A, EDG2-0270-B), V300 2.9 (EDG3-0290-A), V300 3.5 (EDG3-0350-B), V300 3.7 (EDG2-0370-A), V300 4.2 (EDG2-0420-A, EDG2-0420-B, EDG3-0420-A), V300 4.2 WP (EWP1-0420-A), V300 4.5 (EDG2-0450-A, EDG3-0450-A), V300 5.9 (EDG2-0590-A, EDG3-0590-A), V300 6.0 (EDG3-0600-A), V300 7.4 (EDG2-0740-A, EDG3-0740-A), V300 9.7 (EDG2-0970-A, EDG3-0970-A), V300 12.2 (EDG2-1220-A, EDG3-1220-A), VSway 2.6 (EDF3-0260-A, EDF3-0260-B) and V700 8.2 (EDE2-0820-A)

Taiwan



NCC rules apply to the following products: V300 1.5 (EDG3-0150-A, EDG5-0150-A), V300 1.6 (EDG2-0160-A, EDG3-0160-A), V300 2.1 (EDG3-0210-A, EDG5-0210-A), V300 2.2 (EDG2-0220-A, EDG3-0220-B), V300 2.6 (EDG2-0260-A, EDG3-0260-A, EDG5-0260-A), V300 2.7 (EDG2-0270-A, EDG2-0270-B), V300 3.5 (EDG3-0350-B), V300 4.2 (EDG2-0420-A, EDG2-0420-B, EDG3-0420-A), V300 4.5 (EDG2-0450-A, EDG3-0450-A), V300 7.4 (EDG2-0740-A), V300 9.7 (EDG2-0970-A, EDG3-0970-A), V300 12.2 (EDG2-1220-A, EDG3-1220-A), V700 8.2 (EDE2-0820-A)

取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

Brazil

Este equipamento (*Product name (model code)* – *ANATEL homologation number (HHHHH-FF-AAAAA)*):

V300 1.6 (EDG2-0160-A) - 04185-19-09298
V300 2.2 (EDG2-0220-A) - 04185-19-09298
V300 2.2 (EDG3-0220-B) - 10373-21-09298
V300 2.6 (EDG2-0260-A) - 04185-19-09298
V300 2.6 (EDG3-0260-A) - 10377-21-09298
V300 4.2 (EDG2-0420-B) - 04185-19-09298
V300 7.4 (EDG2-0740-A) - 00033-20-09298
V300 12.2 (EDG2-1220-A) - 00032-20-09298



não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados.

Singapore

Valid for: V300 1.5 (EDG3-0150-A, EDG5-0150-A), V300 1.6 (EDG3-0160-A), V300 2.1 (EDG3-0210-A, EDG5-0210-A), V300 2.2 (EDG3-0220-B), V300 2.6 (EDG3-0260-A), V300 4.2 (EDG2-0420-B, EDG3-0420-A), V300 7.4 (EDG2-0740-A, EDG3-0740-A), V300 12.2 (EDG3-1220-A)

Complies with
IMDA Standards
DA106041

Thailand

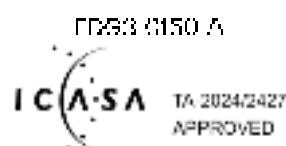


Applicable to the following products: V300 1.5 (EDG3-0150-A, EDG5-0150-A), V300 1.6 (EDG2-0160-A, EDG3-0160-A), V300 2.1 (EDG3-0210-A, EDG5-0210-A), V300 2.2 (EDG2-0220-A, EDG3-0220-B), V300 2.6 (EDG2-0260-A, EDG3-0260-A, EDG5-0260-A), V300 4.2 (EDG2-0420-A, EDG2-0420-B, EDG3-0420-A), V300 4.5 (EDG3-0450-A), V300 7.4 (EDG2-0740-A)

เครื่องโพรคมนาคมและอุปกรณ์นี้ มีความสอดคล้องตามมาตรฐานหรือข้อกำหนดของ กสทช

South Africa

V300 1.6



V300 1.6



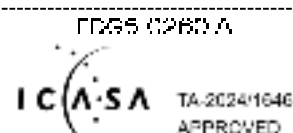
EDG3 0160 A



V300 2.6



EDG3 0260 A



V300 4.2



EDG2 0420 B



13. Improper Use

VusionGroup shall not be responsible for defects resulting:

- from use or storage which is harmful to the proper working of the product (e.g. abnormal use, incorrect maintenance and/or storage) and/or non-compliance with the applicable product environment specifications
- from a use of the product which does not comply with the recommendations and specifications of VusionGroup
- from use or installation which is not compliant with the applicable functional description, or any other technical specifications provided by VusionGroup

Please note the following handling instructions, non-compliance is considered improper use:



- Never open or disassemble the electronic device, only the battery may be replaced by trained users.
- Don't use the electronic device if it is defective. If the screen is defective, the ESL shall be replaced.
- Unauthorized changes or modifications to the electronic device and their components without the consent of VusionGroup are not allowed.
- Don't use the electronic device with spare parts and accessories which are not tested and approved by VusionGroup.
- **WARNING:** Contains lithium pouch or cell batteries
- **NEW AND USED BATTERIES CAN BE HAZARDOUS, KEEP THEM OUT OF REACH OF CHILDREN**
- Swallowing or placing batteries inside any part of the body may lead to severe or fatal injuries within 2 hours, due to chemical burns and potential perforation of the oesophagus.
- If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.
- **CAUTION:** The battery used in this device may present a risk of fire or chemical burn hazard if mistreated. Do not recharge, short-circuit, disassemble, heat above 100°C (212°F), incinerate or bend the battery.
- Do not use labels above the lifetime/usage information (Display updates, LED usage, etc.) which was committed by contracts or given per datasheet.
- Do not use labels out of specification / datasheet, e.g., use in ESLs in freezer area which – per datasheet – are not designed for such environment.
- Please handle the ESL carefully.



- Prevent damage by water and intrusion of liquids into the label. Direct contact to water shall be prevented if the ESL is not declared as IP68.
- Don't drop the label to the floor. If an ESL is dropped, check whether the label is still working or has any visible damages.
- Apply as little pressure as possible when inserting the ESL into the rail or when moving in the rail. Apply pressure only on the edge of the screen and at the level of the battery compartment, not on the screen itself. If the ESL is equipped with Easylock, only remove the ESLs from the rail with the provided tool for this purpose.
- Strictly avoid direct contact with groceries.
- Do not use harsh detergents containing alcohol or abrasive additives to clean the ESL.
- We assume no liability for stolen labels.
- Keep the product and its batteries away from children.
- Examine devices and make sure the battery compartment is correctly closed. Do not use the product if the compartment is not secure.
- Don't throw the batteries into the garbage. Give them to a recycling company or contact VusionGroup for handling advice.
- Don't throw the electronic device into the garbage. Give them to a recycling company or contact VusionGroup for handling advice.
- Preferably transport all ESLs upright like in the original packaging. Never transport loosely packed labels.

Contact VusionGroup for more details.