



VUSION Product Specification

Version 5 as of January 2024

Contents

1.	Label Family Introduction	3
1.1.	General Key Features.....	3
1.2.	The SESImagotag Electronic Shelf Label family	4
2.	Type label information	6
2.1.	Barcode information	7
2.2.	Serial Number.....	8
3.	Electrical & RF Characteristics	9
3.1.	Power and Current Consumption.....	9
4.	E-Paper Display	10
5.	LED	11
5.1.	Photobiological safety	11
5.2.	Configuration Versions	11
5.3.	Flashing patterns / brightness.....	11
6.	Environmental	12
6.1.	General.....	12
6.2.	Cleaning Instructions.....	12
6.3.	Temperature and Humidity Conditions.....	12
7.	Storage and warehousing	13
7.1.	Pool/Spare labels in the store.....	14
8.	Battery lifetime	15
9.	Information Notice about lithium battery risks	17
9.1.	Good practices to avoid these risks - during the replacement.....	17
9.2.	During storage of batteries and unused labels.....	18
9.3.	During transportation.....	19
9.4.	Recycling of lithium button batteries	20
10.	Reliability Test Items	21
11.	Certifications	23
11.1.	Types and Product Certifications	23
11.2.	Applied Standards.....	23
11.3.	Declaration.....	23
12.	Improper Use	28

1. Label Family Introduction

The SES Imagotag 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 VUSION 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 passive 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/AIP (standard / FCC&IC mode)
VUSION 1.6	=DS2 0160 A =DS3 0160 A	152 x 152	140	black/white/yellow	<1	2 x 5 x 2 x 5	AsIC/25000
VUSION 2.2	=DS2 0220 A =DS3 0220 A =DS5 0220 B =DS5 0220 A	212 x 104	111	black/white/yellow	<1	43.8 x 25.8	2500/25000
VUSION 2.6	=DS2 0260 A =DS3 0260 A =DS5 0260 A	298 x 152	125	black/white/yellow	<1	60.1 x 30.7	4500/25000
VUSION Smart 2.8	=DS1 0280 B	298 x 125	125	black/red	<1	60.6 x 21.0	10000/60000
VUSION 2.7	=DS2 0270 A =DS2 0270 B	264 x 178	117	black/red	<1	57.3 x 33.2	4500/25000
VUSION 2.9	=DS3 0290 A	180 x 361	147	black/white/yellow	<1	67.6 x 29.8	4500/25000
VUSION 3.5	=DS3 0350 A =DS3 0350 B	400 x 242	155	black/white/yellow	<1	68.45 x 37.89	2000/15000
VUSION 3.7	=DS2 0370 A	418 x 240	140	black/red	<1	81.51 x 41.04	2000/15000
VUSION 4.2	=DS2 0420 A =DS2 0420 B =DS3 0420 A	400 x 300	120	black/white/yellow	<1	81.3 x 63.8	2000/15000
VUSION 4.5	=DS2 0450 A =DS3 0450 A	400 x 178	117	black/red	<1	104.2 x 38.2	2500/25000
VUSION Smart 4.5	=DS1 0450 B	400 x 178	117	black/red	<1	104.2 x 38.2	2500/25000
VUSION 5.9	=DS2 0590 A =DS3 0590 A =DS4 0590 A =DS4 0590 B	720 x 256	137	black/red	<1	130.98 x 49.40	1100/2500
VUSION Smart 5.9	=DS1 0590 B	720 x 256	137	black/red	<1	130.98 x 49.40	2100/2500
VUSION 6.0	=DS3 0600 A	600 x 400	120	black/red	<1	117.8 x 88.7	1500/5000
VUSION 7.4	=DS2 0740 A =DS3 0740 A	400 x 800	128	black/white/yellow	<1	97 x 181.8	600/3000
VUSION 9.7	=DS2 0970 A =DS3 0970 A =DS4 0970 A =DS4 0970 B	960 x 672	121	black/white/yellow	<1	201.98 x 141.12	200/150
VUSION 12.2	=DS2 1220 A	400 x 980	101	black/red	6	190.08 x 257.8	200/150

eDGS 1220 A

™ There will be a BWR as well as a BWR^W option available

Option	Model	Display Resolution	Density (dpi)	Display Colors	Usable Pages	Active Display Area (mm)	Updates/hour/ (standard / FCC&IC mode)
VUSION 2.6 W/P	eV1-1 0280 A	208 x 152	125	b/w/r/g	<1	60.1 x 39.7	4500/2500
VUSION 4.2 W/P	eV1-1 0420 A	400 x 300	120	b/w/r/g/y	<1	54.3 x 33.8	2000/1500

In addition to the VUSION range there is also the VUSION Engage Series which incorporates a BWR/Y E-paper display with a higher resolution and DPI rate. It also uses the proprietary IoT protocol in the 2.4 GHz bandwidth and incorporates the latest new and improved Easylock® mechanism.

Option	Model	Display Resolution	Density (dpi)	Display Colors	Usable Pages	Active Display Area (mm)	Updates/hour/ (standard / FCC&IC mode)
VUSION Engage 1.6	eDE2 0160 A	180 x 180	147	b/w/r/g/y	<1	20.8 x 20.8	4500/2500
VUSION Engage 2.4	eDE1 0240 A eDE2 0240 A	198 x 198	147	b/w/r/g/y	<1	22.0 x 22.1	5500/3000
VUSION Engage 3.0	eDE2 0300 A	400 x 180	147	b/w/r/g/y	<1	40.2 x 20.5	4000/2500
VUSION Engage 4.4	eDE1 0440 A eDE2 0440 A	512 x 180	147	b/w/r/g/y	<1	38.8 x 21.7	1400/1000
VUSION Engage 8.2	eDE2 0820 A	1024 x 512	147	b/w/r/g/y	<1	100.2 x 50.0	600/400

2. Type label information

The **type label** of SESimagotag Electronic Shelf Labels is located at the backside of labels on the battery door. In addition, a second sticker containing barcode information is placed at the bottom of each label.



The **type label** contains following information:

- Product description including product configuration information (display size, display colour, radio type, theft protection)
- Serial number (see *Serial Number* on page 8)
- Model code (see *Barcode information* on page 6)
- Information concerning standard and product compliance
- Label ID shown as barcode and 8-digit hexadecimal

2.1. Barcode information

The labels come with a label ID (which is a **unique identifier** – like a MAC address) and this label ID as a barcode on the display and printed on **both**, a sticker located on the bottom of the label and on a sticker on the **battery door**.

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
VUSION 1.6	b/w/r/y	See Label ID Overview (Customer Portal) Or contact VusionGroup Installation partner	FDQ2-0160-A FDQ5-0160-A
VUSION 2.2	b/w/r/y		FDQ2-0220-A FDQ5-0220-A FDQ5-0220-B FDQ5-0220-A
VUSION 2.6	b/w/r/y		FDQ2-0260-A FDQ5-0260-A FDQ5-0260-A
VUSION Sway 2.6	b/w/r		FDE3-0260-B
VUSION 2.7	b/w/r		FDQ2-0270-A FDQ2-0270-B
VUSION 2.9	b/w/r/y		FDQ5-0290-A
VUSION 3.5	b/w/r/y		FDQ5-0350-A FDQ5-0350-B
VUSION 3.7	b/w/r		FDQ2-0370-A
VUSION 4.2	b/w/r/y		FDQ2-0/ 20-A FDQ2-0/ 20-B FDQ5-0/ 20-A
VUSION 4.5	b/w/r/y		FDQ2-0/ 50-A FDQ5-0/ 50-A
VUSION Sway 4.5	b/w/r		FDE3-0/ 50-B
VUSION 5.9	b/w/r		FDQ2-0590-A FDQ5-0590-A FDQ4-0590-A FDQ4-0590-B
VUSION Sway 5.9	b/w/r		FDE3-0590-B
VUSION 6.0	b/w/r		FDQ5-0600-A
VUSION 7.4	b/w/r/y		FDQ2-0740-A FDQ5-0740-A
VUSION 9.7	b/w/r/y		FDQ2-0970-A FDQ5-0970-A FDQ4-0970-A FDQ4-0970-B

Caption	Display Colors	Label-ID	Model Code
VUSION 12.2	b/w/r		FDG2-1220-A FDG3-1220-A
VUSION 2.6 WP	b/w/r		FWP1-0200-A
VUSION 4.2 WP	b/w/r/y		FWP1-0220-A
VUSION Engage 1.6	b/w/r/y		FDF2-0160-A
VUSION Engage 2.4	b/w/r/y		FDF1-0240-A FDF2-0240-A
VUSION Engage 3.0	b/w/r/y		FDF2-0300-A
VUSION Engage 4.4	b/w/r/y		FDF1-0440-A FDF2-0440-A
VUSION Engage 8.2	b/w/r/y		FDF2-0820-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)

2.2. Serial Number

Part	Description	Format	Example	Comment	Source
A	Producer	2 alpha	01		Spec. fixed by VisionGroup GmbH. Unique for each lab.
B	Product family	3 alpha	R22		
C	Product version	3 alpha	N01	N with NFC	Spec. fixed by VisionGroup GmbH. In the product specification document.
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	5 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

3.1. Power and Current Consumption

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
VUSION 1.6	b/w/r/y	1x CR2450	3 V	550 mAh
VUSION 2.2	b/w/r/y	2x CR2450	3 V	1100 mAh
VUSION 2.2 F	b/w	2x CR2450D	3 V	1100 mAh
VUSION 2.6 WP	b/w/r/y	2x CR2450	3 V	1100 mAh
VUSION 2.6 F	b/w	2x CR2450D	3 V	1100 mAh
VUSION Sway 2.6	b/w/r	1x CR2450	3 V	550 mAh
VUSION 2.9	b/w/r/y	2x CR2450	3 V	1100 mAh
VUSION 3.5	b/w/r/y	3x CR2450	3 V	1650 mAh
VUSION 3.7	b/w/r	3x CR2450	3 V	1650 mAh
VUSION 4.2 WP	b/w/r/y	3x CR2450	3 V	1650 mAh
VUSION 4.5	b/w/r/y	3x CR2450	3 V	1650 mAh
VUSION Sway 4.5	b/w/r	Pouch cell	3 V	920 mAh
VUSION 5.9	b/w/r	5x CR2450	3 V	2750 mAh
VUSION Sway 5.9	b/w/r	Pouch cell	3 V	2000 mAh
VUSION 6.0	b/w/r	3x CR2450	3 V	1650 mAh
VUSION 7.4	b/w/r/y	4x CR2450	3 V	2200 mAh
VUSION 9.7	b/w/r/y	6x CR2450	3 V	4400 mAh
VUSION 12.2	b/w/r/y	8x CR2450	3 V	3300 mAh
VUSION Engage 1.6	b/w/r/y	Pouch Cell	3 V	900 mAh
VUSION Engage 2.4	b/w/r/y	Pouch Cell	3 V	1600 mAh
VUSION Engage 3.0	b/w/r/y	Pouch Cell	3 V	1600 mAh
VUSION Engage 4.4	b/w/r/y	Pouch Cell	3 V	1600 mAh
VUSION Engage 8.2	b/w/r/y	Pouch Cell	3 V	3500 mAh

4. E-Paper Display

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

Colour specification and tolerances for SES Imagotag Electronic Shelf Labels (ΔE is defined as CIEDE2000.).

Colour measurement procedure:

- Colour measurement devices (spectrophotometer) must be calibrated.
- Test images to be used:
 - White colour measurements: Full white image
 - Red colour measurements: Full red image
 - Yellow colour measurements: Full yellow image
- Measurements must be performed at room temperature (21°C) and between 30% - 70% humidity.
- Execute following steps for colour 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 colour measurement 10 minutes after display update (T10)

Please note that the EPD colours 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.

5. LED

5.1. Photobiological safety

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

5.2. 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)

5.3. Flashing patterns / brightness

The actual LED blinking pattern can be changed. For SES Imagotag 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.

6. Environmental

6.1. 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*

	BW (Freezer)	BWR R2.0	BWRY E5 (incl. SE)	BWY Y1.2
Operating temperature	-25 °C to +10 °C*	0 °C to +40 °C	0 °C to +40 °C	0 °C to +40 °C
Operating humidity (non condensing)	10% - 60%	35% - 70%	40% - 80%	40% - 60%

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

6.2. Cleaning Instructions

To clean the electronic label only a damp cloth should be used. Use only pH-neutral common household cleaners and no other aggressive cleaning agents. For the VUSION waterproof Range please refer to the dedicated cleaning instructions available on the customer portal or provided by your regional partner.

Do not clean the label with alcohol, solvents and / or abrasive cleaning products as the can react with the used materials and alter the product appearance and functionality.

Note: Do not use liquid or aerosol cleaners and keep it away from water.

6.3. 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)

7. 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
Storage temperature	-25 °C to 160 °C	-25 °C to 160 °C	-20 °C to 60 °C	-25 °C to 160 °C
Storage humidity	30% - 90%	40% - 70%	30% - 70%	40% - 80%
Optimal storage temperature	-10 °C to 135 °C	-10 °C to 135 °C	-10 °C to 135 °C	-10 °C to 135 °C
Optimal storage humidity (non-condensing)	40% - 60%	45% - 65%	40% - 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.

7.1.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)

8. 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 SESimagotag 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.

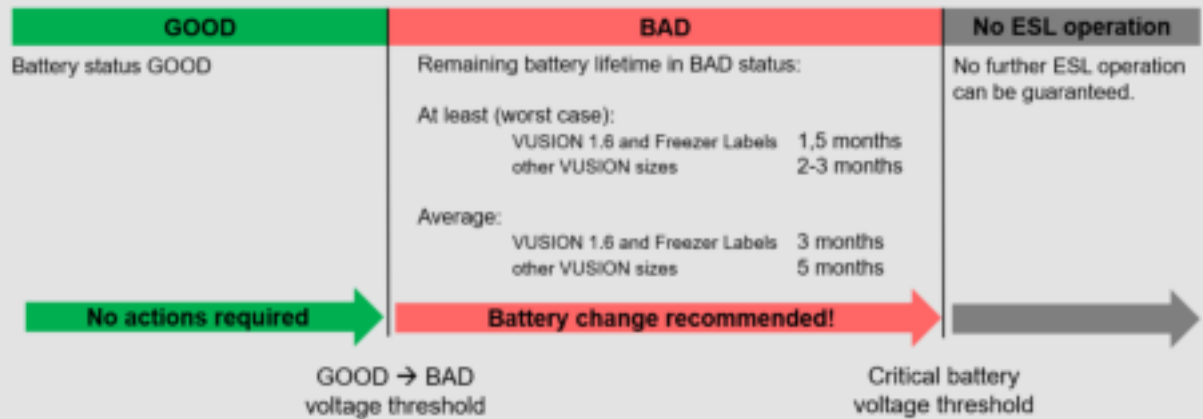
These conditions are not only applicable to the batteries initially used when the ESL is produced but also applicable to all certified replacement batteries provided by VusionGroup.



Battery Classification | White paper

⊕ Remaining battery lifetime with BAD battery status

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



9. 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.



The entire surface of lithium button batteries is conductive, and they can short-circuit and **catch fire quickly**. 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.

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

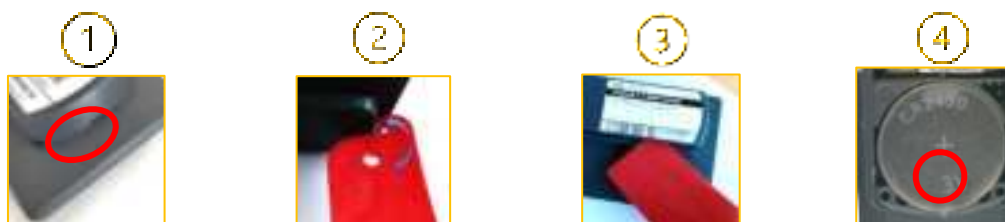
Several solutions can be used to limit the risks:

- 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.
- Using any other tool may damage your labels and batteries.



Please note this does not concern Waterproof & Engage ESL's

Here is how to replace lithium batteries



Once the batteries have been replaced, you must isolate the old batteries from each other.

Improper storage of your batteries (e.g., "bulk") significantly increases the risk of ignition of your batteries.

New batteries are delivered in storage racks, we strongly recommend that you keep the original packaging to store used batteries.

Once packaged, we recommend that you contact your collection and recycling organization for the removal and disposal of used batteries.



9.2. During storage of batteries and unused labels



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

Use the storage racks (strongly recommended)

We strongly recommend that you use the original packaging of your new batteries.

Thanks to these storage racks, each battery is isolated in a compartment, by clipping it into the slot provided for this purpose.



We recommend that you stack each battery tray and add a divider, respecting the quantity per box you received, then secure 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.

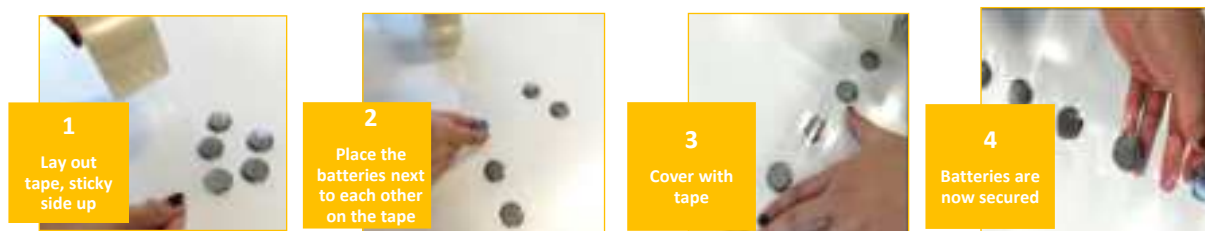
In case of missing, defective, or not correctly closed battery trap, the batteries must imperatively be removed from the electronic label and recycled locally by the approved eco-organization that collects used batteries in your store.



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



9.3. 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.

9.4. 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.

10. Reliability Test Items

Testing of the operation conditions (temperature and humidity)

To evaluate the performance and image quality of the SESImagotag Electronic Shelf Labels range multiple image updates are run at high and low temperature ranges and also 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 SESImagotag 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 SESImagotag 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 SESImagotag 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.

11. Certifications

11.1. 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.

11.2. 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 V2.2.0

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)

11.3. Declaration

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



Hereby, VusionGroup GmbH declares that the radio equipment:



VUSION 1.6 (EDG2-0160-A, EDG3-0160-A), VUSION 2.2 (EDG2-0220-A, EDG3-0220-A, EDG3-0220-B), VUSION 2.6 (EDG2-0260-A, EDG3-0260-A), VUSION 2.6 WP (EWP1-0260-A), VUSION 2.7 (EDG2-0270-A, EDG2-0270-B), VUSION 2.9 (EDG3-0290-A), VUSION 3.5 (EDG3-0350-A, EDG3-0350-B), VUSION 3.7 (EDG2-0370-A), VUSION 4.2 (EDG2-0420-A, EDG2-0420-B, EDG3-0420-A), VUSION 4.2 WP (EWP1-0420-A), VUSION 4.5 (EDG2-0450-A, EDG3-0450-A), VUSION 5.9 (EDG2-0590-A, EDG3-0590-A, EDG4-0590-A, EDG4-0590-B), VUSION 6.0 (EDG3-0600-A), VUSION 7.4 (EDG2-0740-A, EDG3-0740-A), VUSION 9.7 (EDG2-0970-A, EDG3-0970-A, EDG4-0970-A, EDG4-0970-B), VUSION 12.2 (EDG2-1220-A, EDG3-1220-A), VUSION Sway 2.6 (EDF3-0260-A), VUSION Sway 4.5 (EDF3-0450-B), VUSION Sway 5.9 (EDF3-0590-B), VUSION 2.3 DYN (LCG3-0230-A), VUSION Engage 1.6 (EDE2-0160-A), VUSION Engage 2.4 (EDE1-0240-A, EDE2-0240-A), VUSION Engage 3.0 (EDE2-0300-A), VUSION Engage 4.4 (EDE1-0440-A, EDE2-0440-A) and VUSION Engage 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.vusion.com/fr/doc_esl/



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: VUSION 1.6 (EDG2-0160-A, EDG3-0160-A), VUSION 2.2 (EDG2-0220-A, EDG3-0220-A, EDG3-0220-B), VUSION 2.6 (EDG2-0260-A, EDG3-0260-A), VUSION 2.6 WP (EWP1-0260-A), VUSION 2.7 (EDG2-0270-A, EDG2-0270-B), VUSION 2.9 (EDG3-0290-A), VUSION 3.5 (EDG3-0350-B), VUSION 3.7 (EDG2-0370-A), VUSION 4.2 (EDG2-0420-A, EDG2-0420-B, EDG3-0420-A), VUSION 4.2 WP (EWP1-0420-A), VUSION 4.5 (EDG2-0450-A, EDG3-0450-A), VUSION 5.9 (EDG2-0590-A, EDG3-0590-A), VUSION 6.0 (EDG3-0600-A), VUSION

7.4 (EDG2-0740-A, EDG3-0740-A), VUSION 9.7 (EDG2-0970-A, EDG3-0970-A), VUSION 12.2 (EDG2-1220-A, EDG3-1220-A), VUSION Sway 2.6 (EDF3-0260-A, EDF3-0260-B), VUSION 2.3 DYN (LCG3-0230-A), VUSION Engage 1.6 (EDE2-0160-A), VUSION Engage 2.4 (EDE2-0240-A), VUSION Engage 3.0 (EDE2-0300-A), VUSION Engage 4.4 (EDE2-0440-A) and VUSION Engage 8.2 (EDE2-0820-A)

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: VUSION 1.6 (EDG2-0160-A, EDG3-0160-A), VUSION 2.2 (EDG2-0220-A, EDG3-0220-A, EDG3-0220-B), VUSION 2.6 (EDG2-0260-A, EDG3-0260-A), VUSION 2.6 WP (EW/P1-0260-A), VUSION 2.7 (EDG2-0270-A, EDG2-0270-B), VUSION 2.9 (EDG3-0290-A), VUSION 3.5 (EDG3-0350-B), VUSION 3.7 (EDG2-0370-A), VUSION 4.2 (EDG2-0420-A, EDG2-0420-B, EDG3-0420-A), VUSION 4.2 WP (EW/P1-0420-A), VUSION 4.5 (EDG2-0450-A, EDG3-0450-A), VUSION 5.9 (EDG2-0590-A, EDG3-0590-A), VUSION 6.0 (EDG3-0600-A), VUSION 7.4 (EDG2-0740-A, EDG3-0740-A), VUSION 9.7 (EDG2-0970-A, EDG3-0970-A), VUSION 12.2 (EDG2-1220-A, EDG3-1220-A), VUSION Sway 2.6 (EDF3-0260-A, EDF3-0260-B), VUSION 2.3 DYN (LCG3-0230-A), VUSION Engage 1.6 (EDE2-0160-A), VUSION Engage 2.4 (EDE2-0240-A), VUSION Engage 3.0 (EDE2-0300-A), VUSION Engage 4.4 (EDE2-0440-A) and VUSION Engage 8.2 (EDE2-0820-A)



NCC rules apply to the following products: VUSION 1.6 (EDG2-0160-A, EDG3-0160-A), VUSION 2.2 (EDG2-0220-A, EDG3-0220-B), VUSION 2.6 (EDG2-0260-A, EDG3-0260-A), VUSION 2.7 (EDG2-0270-A, EDG2-0270-B), VUSION 4.2 (EDG2-0420-A, EDG2-0420-B, EDG3-0420-A), VUSION 4.5 (EDG2-0450-A, EDG3-0450-A), VUSION 7.4 (EDG2-0740-A), VUSION

9.7 (EDG2-0970-A, EDG3-0970-A), VUSION 12.2 (EDG2-1220-A, EDG3-1220-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)):

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

Complies with
IMDA Standards
DA106041

Valid for: VUSION 1.6 (EDG3-0160-A), VUSION 2.2 (EDG3-0220-B), VUSION 2.6 (EDG3-0260-A), VUSION 4.2 (EDG2-0420-B, EDG3-0420-A), VUSION 12.2 (EDG3-1220-A)

Thailand



Applicable to the following products: VUSION 1.6 (EDG2-0160-A), VUSION 2.2 (EDG2-0220-A, EDG3-0220-B), VUSION 2.6 (EDG2-0260-A, EDG3-0260-A), VUSION 4.2 (EDG2-0420-A, EDG2-0420-B), VUSION 7.4 (EDG2-0740-A).

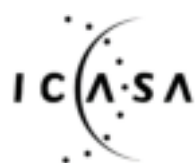
เครื่องโพรคมนาอมและอุปกรณ์นี้
มีความสอดคล้องตามมาตรฐานหรือข้อกำหนดของ
กสทช

South Africa

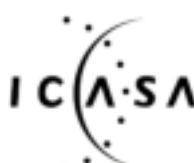
VUSION 1.6

EDG2-0160-A

EDG3-0160-A



TA-2022/3593

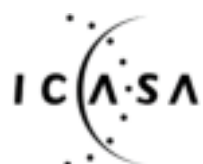


TA-2022/3685

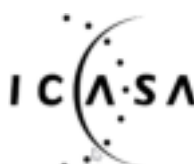
VUSION 2.6

EDG2-0260-A

EDG3-0260-A



TA-2022/3730

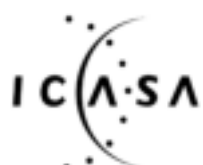


TA-2022/3752

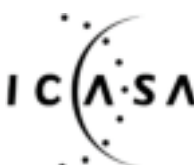
VUSION 4.2

EDG2-0420-A

EDG2-0420-B

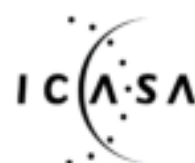


TA-2022/3630



TA-2022/3684

EDG3-0420-A



TA-2023/2718

12. 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.