1. General Outline

1.1 Overview

NEWTON S-Label product is part of SoluM S-Label (Electronic Shelf Label) System, also consisting of NEWTON S-Label Gateway (S-Gate), and Remote Controller (S-RC). The remote control has three buttons. The center button forces the ESL Tag to wake up or has a refresh function. The left and right buttons each have a function of turning over the page of the ESL Tag. Available only for M2, M3 Tag types. Remote Controller consists of RF Power Amp IC, Active NFC IC, 2.4GHz RF SoC, and Tact Switch.

1.2 Features

LED: status Indicator (Magenta, Yellow, RED)
Operating on 13.56MHz Active NFC
Comply with the IEEE802.15.4-2006(250kbps) standard
High-power Transmission
Outline Dimension: 46.75mm X 106.21mm X 20.91mm
RoHS compliant

1.3 Application

Retail industry with the electronic display and platform, solutions, and services
Intelligently communicating, managing, and optimizing price and product informations.

*** FCC Information to User**

WARNING: This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

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.

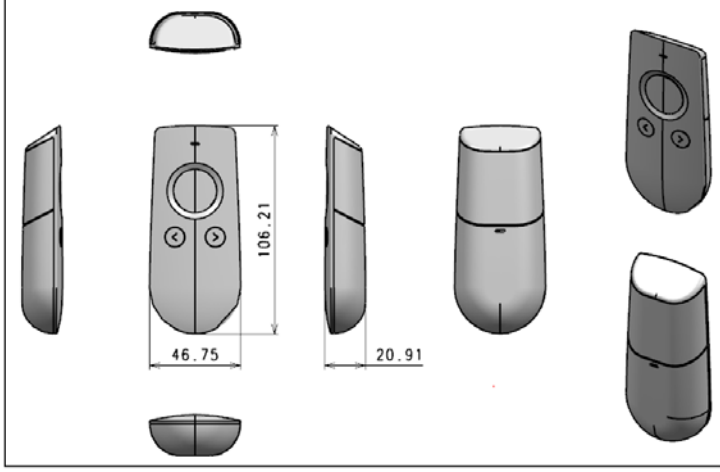
NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications, However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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 0.5 centimeters between the radiator and your body.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

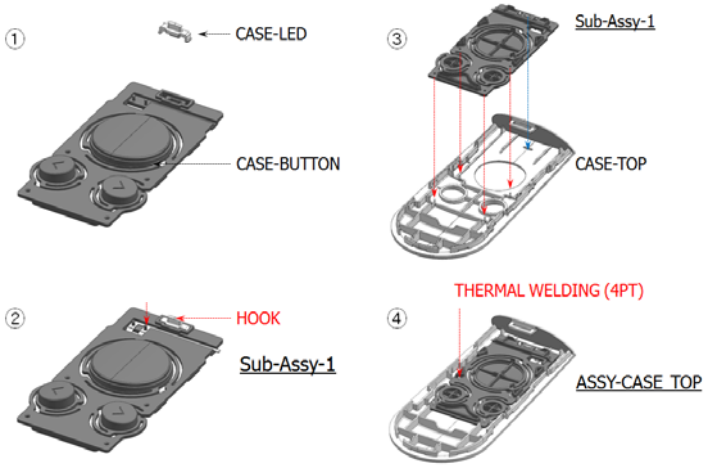
1.4 Physical Dimension

MODEL NAME	TYPE	USAGE				SURR		COLOR	COATING	PART NAME
		GEN	LED	W/H	TI	Amb.	Freez.			1 2 3 4
POWER REMOCON	STD	●				●		-	-	BOX UNIT
										PACKING-PAPER TRAY
										PACKING-PET TRAY
										CUSHION-PAD
										BAG-ALUMINUM
										LABEL-TAG
										TAG-LEVEL
										ASSY-CASE TOP
										CASE-TOP
										CASE-LED
										CASE-BUTTON
										ANTENNA
										ASSY-CASE BOTTOM
										CASE-BOTTOM
										TERMINAL-COMMON
										TERMINAL-POS
										TERMINA-GND
										LABEL-TAG



1.5 Exploded View of RC

ASSY-CASE TOP



TERMINAL-POS / GND

TERMINAL-COMMON

2. Specifications

2.1 Product

Item	Description
Size	46.75mm X 106.21mm X 20.91mm
Battery	LR03 AAA Alkaline Battery (1.5V, 2ea) Walking Voltage : 2.2 ~ 3.3 Vdc (Condition : In active status)
Function	Wakeup / Page Selection
Communication	2.405GHz IEEE 802.15.4 & Active NFC
Wakeup Sensitivity	0.01 ~ 10cm or more.

2.2 Radio (RF)

Items	Parameter	Spec.			Unit	Condition
		Min	Typ.	Max		
TX	Transmit Power	5		9.5	dBm	IEEE 802.15.4
	Error Vector Magnitude	-	10	50	%	When measured for 100 chips
	Tx Current	-	-	200	mA	Total current at max Tx power

* Test Channel : 2405MHz
* The contents in the grayed cells are not necessary to manage by Cpk.
* Operation Temp. : 0 ~ 40℃

2.3 Label Specification

Back Label : 28mmX12mm
Label Color : Silver

Product information is indicated in a printed sticker label. The information consists of Model (model name), MFD(manufacturing date), S/N(serial number)
CE & KC certification mark, FCC ID and Manufacturer.
1) FCC ID : 2AFWN-EL090MBCX0
2) IC : 22800-EL090MBCX0
3) Model Name : EL090MBCX0
4) MFD : (month).(date).(year) ex) APR.17.2017
5) S/N : Daily Production Quantity (6 digits) & Serial Number Information & Bar-code (hexadecimal 10 digits)

2.4 Traceability

Maker : SOLUM Co,.LTD
Manufacturer: VIETNAM Vĩnh Phúc, Bình Xuyên, Lô B3, Khu Công nghiệp Bá Thiện II
HQ: KOREA 357 Guseong-ro, Yongin-si, Gyeonggi-do 16914

3. Cautions for Treatment

Provisions should be made to protect against any damage to the product caused by improper handling. The purchaser assumes any responsibility for damage to the product caused by improper handling.
This RF device operates on the 2.4GHz frequency band and can produce radio interference. The device, therefore, may not be used for applications where safety of human lives is concerned.

3.1 Usage Environment

Take extra cautions when using this RF device in the vicinity of other electronic devices and appliances. Most electronic devices and appliances use electromagnetic waves. Electromagnetic waves emitted by this RF device can affect other electronic devices and appliances.
If using the device in an explosion hazard area, follow all safety regulations, instructions, and signals.

3.2 Storage and Use

- Moisture and liquids can damage internal parts and circuit boards if allowed to enter into the device itself.
- Do not place or store the product on a sloped surface. The product may slide and fall off the surface and damaged.
- Use the product in temperatures ranging from 0℃ to 40℃. Parts and circuits may be damaged if used or stored under temperature extremes.
- Avoid areas with strong magnetism or subject to magnetism.
- Contact between the device and a magnetic object can lead to malfunctions.
- Do not place the product near heat-producing kitchen appliances like a stove or a microwave or in the vicinity of highly pressurized containers.
- External impact to the product, such as from being dropped, can damage the product.
- Twisting and bending the product can damage the exterior casing and the internal components.
- If this product operates abnormally in eliminating battery or replacing battery, you should discharge it by contacting battery terminal (+) and (-).

This product uses 2.4GHz frequency band for wireless communication network.
Radio communications can be limited or affected by other applications which share same frequency band, such as WiFi, Bluetooth, Zigbee, etc.
Frequent use of communication can reduce battery life time.

Hereby, SOLUM CO.,LTD. declares that this EL090MBCX0 is in compliance with the essential requirements and other relevant provisions of directive 1999/5/EC.

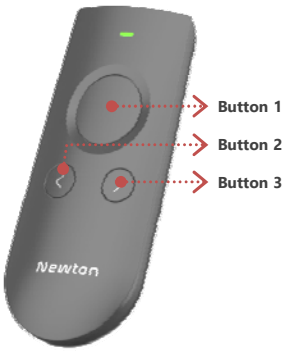
3.3 ISED Information to User

This device complies with Industry Canada licence-exempt RSS standard(s).
Operation is subject to the following two conditions: (1) the device may not cause interference, and (2) the user of the device must accept any interference received, even if the interference is likely to compromise operation. Caution: Any changes or modi_cations not expressly approved by the manufacturer may void the user's authority to operate the equipment. exposure to radio frequency radiation. To comply with IC RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons

Le présent appareil est conforme aux CNR d'Industrie Canac
licence. L'exploitation est autorisée aux deux conditions suivantes :(1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, meme si le brouillage est susceptible d'en compromettre le fonctionnement. Attention: Tout changement ou modi_cation non expressément approuvé par le fabricant peut annuler le droit de l'utilisateur à utiliser l'équipement. exposition aux rayonnements radiofréquences. Pour se conformer aux exigences de conformité de l'exposition IC RF, une distance de séparation d'au moins 0.5 cm doit être maintenue entre l'antenne de cet appareil et toutes les personnes

-PMN(Product Marking Name) : Hybrid Remocon Controller
-FVIN(Firmware Version Identity Number) : 1.0

4. User Scenario for Buttons



User Scenario for **Buttons**

action	TX signal sequence NFC -> 802.15.4	Short press 1 Time	Long press Repetitive action
Button 1	NFC	WakeUp and Refresh	WakeUp and Refresh
	802.15.4	Refresh	Refresh
Button 2	NFC	PageDown	First Page
	802.15.4	PageDown	PageDown
Button 3	NFC	PageUp	Last Page
	802.15.4	PageUp	PageUp
Button 2+3	NFC	-	ShutDown
	802.15.4	-	Refresh
Button 1+2 (hidden)	NFC	-	Refresh
	802.15.4	-	Refresh

User Scenario for **LED Indicator**

Color	LED	Description	Condition	Pattern
Magenta		Button press indicator	NFC RF TX	Blinking
Yellow		Shut down	Button 2+3 Long press	Blinking
Red		Low Battery	Button Press after Low Battery Status	Blinking