



Wireless LED Helmet Brake & Turn Signal Indicators

(Patent Pending)

USER MANUAL

The contents of this user manual are subject to change without any prior notice.

Important

Thank you for purchasing our product. Please read this manual in its entirety before using the product & follow all instructions contained herein. This manual also serves as the warranty certificate; please keep it readily available for future reference.

Features

LIFE SPARX is a wireless LED brake & turn signal indicators for motorcyclist safety helmet. It serves as an accessory providing motorcyclist with extra level of safety by complementing the primary brake & turn signal indicator found on the motorcycle.

The LEDs on the indicator module will blink or light up according to the brake or signal applied by the motorcyclist & hence increases the chances of being seen by other vehicles especially the taller ones such as buses, trucks, trailers, tractors etc.

- **Suit almost all types of motorcyclist safety helmets**
- **Powered by high brightness LEDs** – for maximum visibility, reducing conspicuity related accident.
- **Auto power on** – preventing user from forgetting to power on the device. (for Slot-In type only)
- **High capacity rechargeable battery** – save the trouble of replacing the disposable battery & save money in the long run.
- **Battery low indication** – reminding user to recharge the battery when it is running low.
- **Transmitter & indicator module pairing capability** – enabling indicator modules to be swapped within different motorcycles.
- **Detachable indicator module** – preventing the indicator module from theft when unattended & enabling helmet to helmet portability. i.e. the device should normally be used on a pillion rider when one is present. (for Slot-In type only)

Important Precautions

- ✓ **Always ensure that the indicator module is TURNED OFF** when the device is not in use. Leaving the indicator module turned on will result in unnecessary drainage of the battery.
- ✓ **USE ONLY** the supplied wall adapter for battery charging purpose.
- ✗ **DO NOT** rely on this device as the sole source of brake & turn signal indicator. This device was designed to complement the primary brake & turn signal for extra level of safety.
- ✗ **DO NOT** drop, bend, or subject the device to strong vibration.
- ✗ **DO NOT** use this device when the battery is in LOW condition.
- ✗ **DO NOT** expose the device under extreme hot condition, such as near a radiator or oven.
- ✗ **DO NOT** store the device where strong magnetic field may occur, such as on a loudspeaker box surface.

FCC Warning

Changes or modifications to this unit not expressly approved by the party responsible of compliance could void the user authority to operate the equipment. 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, & (2) this device must accept any interference received, including interference that may cause undesired operation.

The user's manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly

approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Statement

This equipment has been tested & 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 & can radiate radio frequency energy &, if not installed & 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 tuning the equipment off & on, the user is encouraged to try to correct the interference by one or more of the following measure:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment & 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.

Specifications

Transmitter Module

Input Voltage:	9 – 16 V _{DC}
Standby Current:	3.4 mA @ 12 V _{DC}
Current Consumption:	20 mA max @ 12 V _{DC}
Carrier Frequency:	433.92 MHz
Effective Isotropic Radiated Power:	< 50 mW
Dimension (W x D x H):	57 x 28 x 11.5 mm

Indicator Module

Power Source:	Li-Po Battery Pack with Circuit Protection Module
Battery Capacity:	350 mAh, typical
Battery Voltage:	3.7 V _{DC} typical
Standby Current:	11 mA @ 3.7 V _{DC}
Current Consumption:	90 mA max @ 3.7 V _{DC}
Dimension (W x D x H):	134 x 32 x 41 mm

Estimated Hours of Continuous Operation per Charge Cycle

The table below illustrates the estimated hours of continuous operation per charge cycle based on different operating conditions. In example, if the brake and turn signal were applied 10% of the total usage time throughout the operation, the device is estimated to last up to 19 hours per charge.

	Turn Signal					
	0%	1%	2%	3%	6%	10%
0%	25	25	25	24	23	22
1%	25	25	24	24	23	22
2%	24	24	24	23	23	21
3%	24	24	23	23	22	21
6%	23	22	22	22	21	20
10%	21	21	20	20	19	19

Wall Battery Charger Adapter

Input Voltage:	100 – 240 V _{AC}
Output Voltage:	5 V _{DC}
Output Current:	500 mA max
Charging Time:	≈ 2 hours
Cord Length:	1 m

Operating Environment

Charging Temperature:	10 ~ 40 °C
Charging Environment:	Indoor only
Operating Temperature:	0 ~ 55 °C, non-condensation

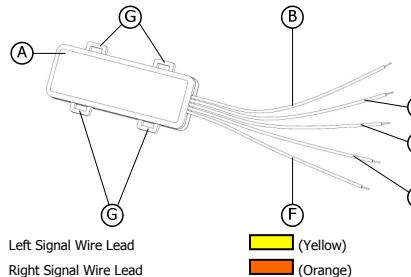
* Specifications & designs are subject to change without any prior notice or obligation on the part of the manufacturer.

Included Parts & Descriptions

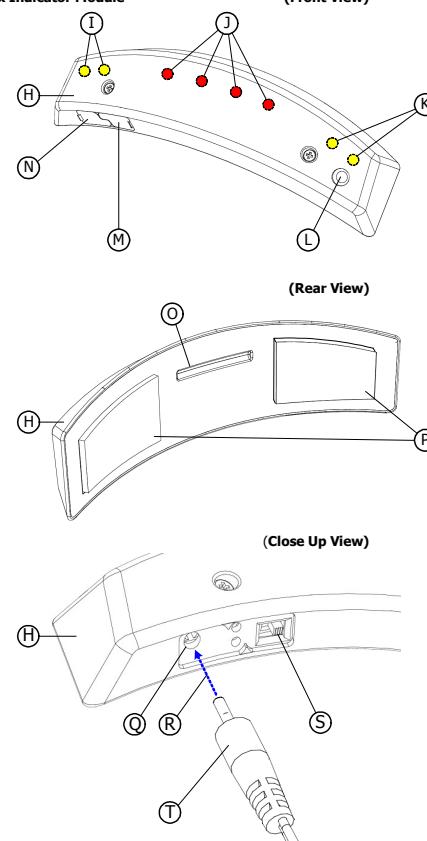
1 x Transmitter Module

- A. Transmitter Module
- B. Positive Power Wire Lead (Blue)
- C. Negative Power Wire Lead (Black)
- D. Brake Signal Wire Lead (Red)

¹ Not including the wire leads (B), (C), (D), (E) & (F).



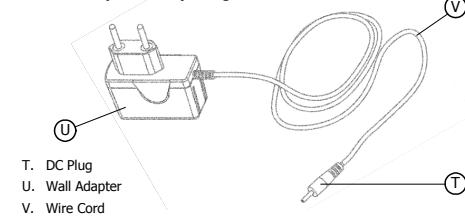
1 x Indicator Module



- H. Indicator Module
- I. Left Turn Signal Light Indicator
- J. Brake Light Indicator
- K. Right Turn Signal Light Indicator
- L. Pairing Button
- M. Slide Switch Cover (For Snap-On Type Only)
- N. DC Jack Cover
- O. Locking Guide
- P. Foam Adhesive Tape (For Snap-On Type Only)
- Q. DC Jack Socket
- R. DC Plug Insert Direction
- S. Slide Switch (For Snap-On Type Only)

² Cable tie not included.

1 x Wall Adaptor Battery Charger



* Drawing not to scale.

Battery Charging & Level Indication

The rechargeable battery inside the indicator module is partially charged upon shipment. To use this device for the 1st time, the user is advised to fully charge the battery following the procedures below:

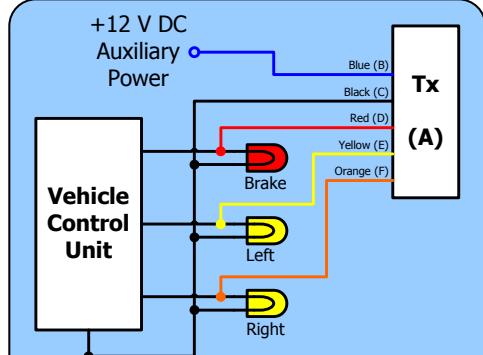
1. Detach the indicator module (H) from the helmet compartment. (for Slot-In type only)
2. Plug the wall adapter (U) onto the wall socket.
3. Pull out the DC jack cover (N) from the indicator module (H).
4. Insert DC plug (T) into the DC jack socket (Q) on the indicator module (H) as shown by the direction (R).
5. Turn the wall socket's switch on. A green light should be observed near the left turn signal light indicator (I), indicating the battery charging is now in progress.
6. When the green light goes off, the battery is now fully charged.
7. Turn off the wall socket switch; pull out the DC plug (T) from the DC jack socket (Q).
8. Put the DC Jack cover (N) back to the DC jack socket (Q). The device is now ready to be used.

Battery Level Indication

When the indicator module (H) is turned on, the initial blink of the indicator lights report the battery condition. A good battery condition will result in all left (I), brake (J) & right (K) indicators blinking once.

A LOW battery condition will result in only the left (I) & right (K) indicators blinking once. User is advised to perform the battery charging operation immediately. Continue using the device under LOW battery condition is NOT recommended.

Installation



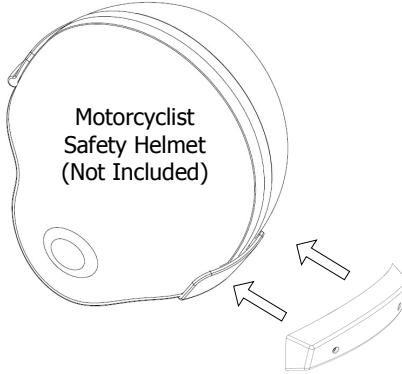
Transmitter Module

The transmitter module (A) is to be installed at the tail section of the motorcycle via 5 wires (B), (C), (D), (E) & (F). Each wire is individually coloured for easier reference.

IMPORTANT: Connect the negative power wire lead (C) to the vehicle chassis **BEFORE** connecting the other wire leads. Please ensure the connection is done correctly to prevent damage or malfunction to the device.

Depending on different situation, the transmitter module (A) should be secured inside the motorcycle's body using either a double-sided adhesive tape, a long strip of insulating tape, or a cable tie at suitable length at your convenience or suitability.

Snap-On Type Indicator Module



The Snap-On type indicator module (H) is to be attached onto the rear section of the safety helmet permanently by following the attachment instruction steps as below:

1. Clean the rear section of the safety helmet with a dry cloth.
2. Peel off the protection sheet from the foam adhesive tape (P).
3. Attach the indicator module (H) horizontally to the rear of the safety helmet towards the center bottom as shown in the diagram above.
4. Press the indicator module (H) firmly toward the safety helmet surface for 10 seconds. For best result, leave for 2 hours before using the device for the adhesive to cure.
5. Turn on the indicator module (H) by sliding the slide switch (S) toward left position. You should see the LEDs blinking once (refer to *Battery Charging & Level Indication* section) & the device is now ready to use.

Slot-In Type Indicator Module

Installation is not required for the Slot-In type indicator module. Simply slot the indicator module (H) into the compartment on a compatible helmet. You should see the LEDs blinking once (refer to *Battery Charging & Level Indication* section) & the device is now ready to be used.

Transmitter & Indicator Modules Pairing

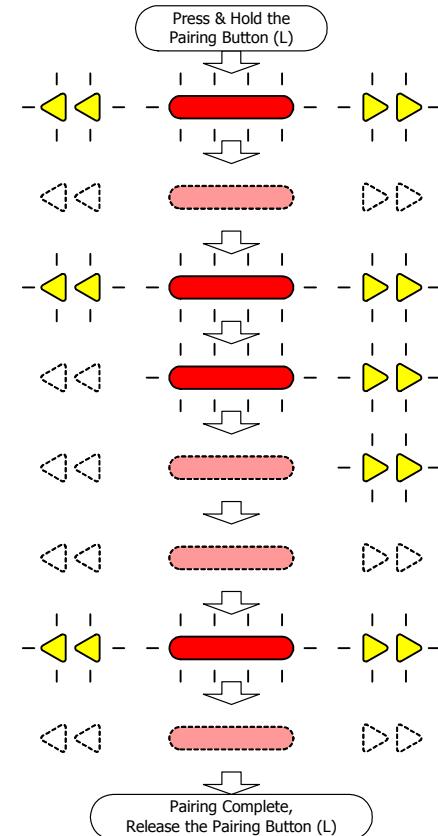
Each transmitter module (A) is programmed with a serial number. A pairing procedure must be performed in order for the indicator module (H) to be able to identify the correct transmission source. Some of the circumstances that might require a pairing procedure to be carried out include the following:

- Using the device for the first time.
- Replacing a new transmitter module (A) or indicator module (H).
- Switching from one motorcycle to another motorcycle that is installed with a different LifeSparX transmitter module (A).

To perform the pairing procedure, follow the pairing steps as below:

1. Complete the installation of the transmitter module (A) (refer to *Installation - Transmitter Module* section)
2. Turn on the indicator module (H) by:
 - **Snap-On Type:** slide the slide switch (S) toward left position.
 - **Slot-In Type:** slot the indicator module (H) into the compartment on the helmet.

3. Turn on the ignition switch of your motorcycle. Apply & hold the brake. Ensure that the rear brake light is on. Some motorcycles may require the engine to be running for the rear brake light to function.
4. Within a radius of 2 meters ($\approx 6\frac{1}{2}$ ft) from the motorcycle, press & hold the pairing button (L) on the indicator module (H).
5. The pairing process is now in progress. During the pairing process, the left (I), brake (J) & right (K) indicator will light up following the sequence as shown in the following figure.
6. The entire pairing procedure will take approximately 5 seconds. Release the pairing button (L) when the light up sequence is completed.



Using this Device

With the completion of the installation & pairing procedures, the device is now ready to be used. Apply the brake of the motorcycle & the indicator module's brake light indicator (J) should blink accordingly.

The same apply to the left & right signal indicator – the left & right turn signal indicator (I) & (K) on the indicator module will blink in sync with the motorcycle main signal lamp.

While most motorcycles are designed to carry up to two people, it is important that the indicator module (H) is being placed on the correct helmet to ensure better visibility.

- When riding alone or carrying a children passenger who is of lower height compared to the rider, it is advisable that the indicator module (H) to be equipped on the rider's helmet.
- When carrying an adult passenger, it is advisable that the indicator module (H) to be equipped on the pillion rider's helmet.

Care & Maintenance

Storage

When this device will not be used for an extended period of time, switch off the indicator module (H) by sliding the slide switch (S) toward right position (for Snap-On type). Remove the indicator module (H) from the helmet compartment

(for Slot-In type). Store the transmitter & indicator module in cool & dry place. The DC jack cover (N) & slide switch cover (M) must be inserted firmly into its original position.

DO NOT stores the indicator module (H) at places with presence of strong magnetic field, such as on top of a loudspeaker box or near a permanent magnet.

Cleaning

Wipe the surface of all parts with a piece of soft cloth that is lightly damped with water. Abrasive cleaners, solvents or other harsh chemicals **MUST NOT** be used for cleaning purpose.

While cleaning the surface of the indicator module (H), the DC jack cover (N) & slide switch cover (M) must be inserted firmly into its original position.

Troubleshooting

If your device behaves abnormally, check the list of common problems below before contacting your dealer for assistance.

Problem	Possible Cause & Solution
The battery charging status indicator does not light up during charging.	<ul style="list-style-type: none"> • Is the switch at the wall socket being turned on? • Have you tried another wall socket? • Are you using a faulty multi-socket adapter? • Is the DC plug (T) inserted firmly into the DC jack socket (Q)?
The indicator module (H) light up unexpectedly while not in use.	<ul style="list-style-type: none"> • Is the indicator module placed near a strong magnetic field source such as a permanent magnet, a wire that is conducting large current, a loudspeaker box or anything alike?
The indicator module (H) does not light up accordingly.	<ul style="list-style-type: none"> • Has the battery been fully charged? • Is the indicator module (H) securely slotted onto the helmet compartment? • Is the indicator module (H) located more than 2 meters ($\approx 6\frac{1}{2}$ ft) from the motorcycle? • Is the serial number pairing procedure been performed properly? • Is the DC plug (T) still inserted into the DC jack socket (Q)? • Has the transmitter module (A) been installed properly? • Is the motorcycle ignition key at [ON] position?
The indicator module (H) can't be properly slotted into the helmet compartment.	<ul style="list-style-type: none"> • Is the orientation of the indicator module (H) correct? • Is there any particle/debris in the helmet compartment?
The left (I) & right (K) indicators are blinking when the indicator module (H) has just been turned on.	<ul style="list-style-type: none"> • The battery is running critically low, please recharge the battery immediately.

If the problem still persists, please contact your dealer for assistance.

Warranty

The manufacturer guarantees the provision of free repair for this product for a period of **ONE (1) year** from the date of original purchase, subjected to the terms & conditions as below:

1. This warranty applies to each new product purchased from **Universal Test Solution Sdn. Bhd.** or its authorized dealers, whereby the product has been supplied by **Universal Test Solution Sdn. Bhd.**
2. This warranty covers repair by **Universal Test Solution Sdn. Bhd.** or by **Universal Test Solution**'s authorized service dealers.
3. This warranty covers any manufacturing defects arising from normal usage within the warranty period & that determination is strictly at the discretion of **Universal Test Solution Sdn. Bhd.** **Universal Test Solution Sdn. Bhd.** or its authorized service dealers will at its discretion, repair or replace the defective components or parts of the product.
4. The maximum liability of **Universal Test Solution Sdn. Bhd.** in connection with this warranty shall not under any circumstances exceed the original purchase price of the product claimed to be defective.
5. In no event shall **Universal Test Solution Sdn. Bhd.** be liable for direct, indirect, incidental, consequential, or multiple damages arising out of the use of the item, regardless of the legal theory on which such claim is based, even

if **Universal Test Solution Sdn. Bhd.** has been advised of the possibility of such damage. Consequential damages, even if foreseeable, shall include, but are not limited to: inconvenience; loss of life, time, profits, savings or revenue; or loss of use of the vehicle.

6. Any parts replaced under this warranty shall become the property of **Universal Test Solution Sdn. Bhd.**

You are required to present this warranty certificate together with the original purchase receipt for your free warranty service. Failing which **Universal Test Solution Sdn. Bhd.** or its authorized service dealers reserves the right to decline any warranty claim.

Warranty Exclusions

Universal Test Solution Sdn. Bhd.'s warranty shall exclude damage, defects or failures resulting from:

1. Abnormal use, misuse, negligence, mistreatment or use contrary to the care maintenance instructions set forth, or neglect by the customer.
2. Acts of nature, including but not limited to hurricanes, tornadoes, fire, lightning, pollutions, heavy rains & wind or other inclement weather conditions.
3. Attack of household pests or pets.
4. Abuse, tampering, alteration or unauthorized repair.

Customer Information

Name: _____

Address: _____

City: _____

Postcode: _____ State/Province: _____

Country: _____

Tel: (Home/Office) _____

(Mobile) _____

E-mail: _____

Type: Snap-On Slot-In (Please the correct type)

Serial **Warranty VOID** Date of Purchase: _____
No: without Serial No. Sticker Here! _____

Dealer's Name & Address Stamp:

Customer Care Center

Universal Test Solution Sdn. Bhd. (691340-H)

1-5-22, Krystal Point II, Lebuh Bukit Kecil 6,
11900 Bayan Lepas, Pulau Pinang, MALAYSIA.

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