



EMPEROR

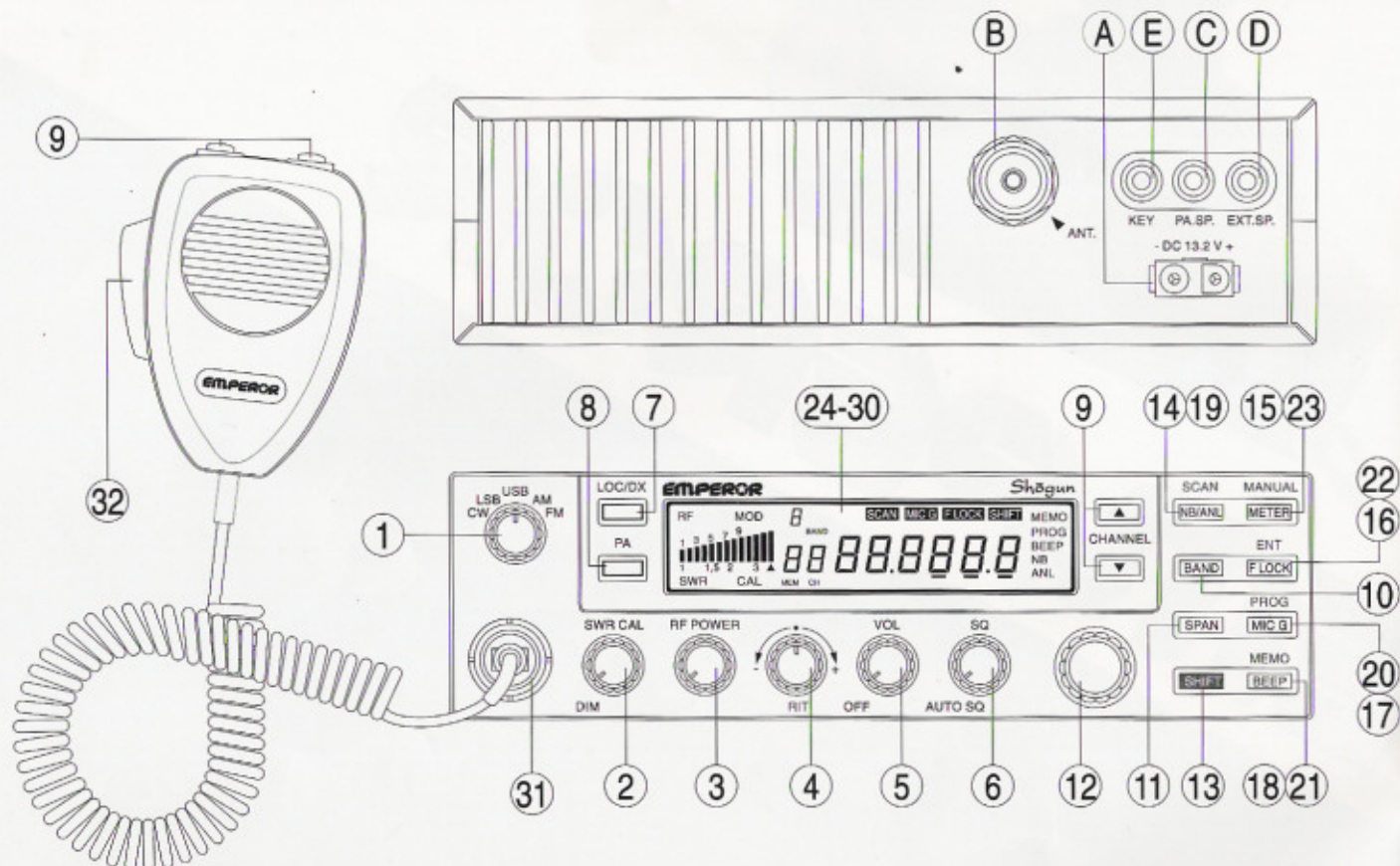
Shōgun

Manuel d'utilisation / Manual del usuario / Owner's manual / Handbuch

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Votre EMPEROR Shōgun en un coup d'oeil

Un vistazo a vuestro EMPEROR Shōgun



Your EMPEROR Shōgun at a glance

Ihr EMPEROR Shōgun auf einen Blick

WARNING !

Before using, be careful never to transmit without first having connected the antenna (connection "B" situated on the back panel of the equipment) or without having set the SWR (Standing Wave Ratio) ! Failure to do so may result in destruction of the power amplifier, which is not covered by the guarantee.

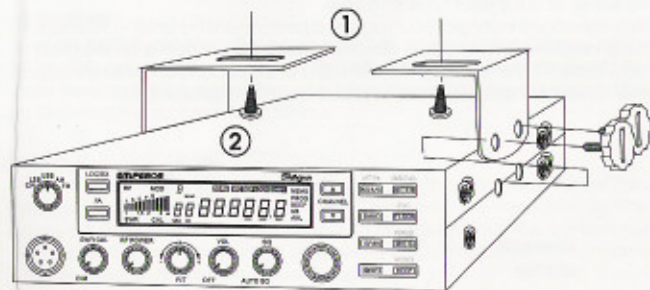
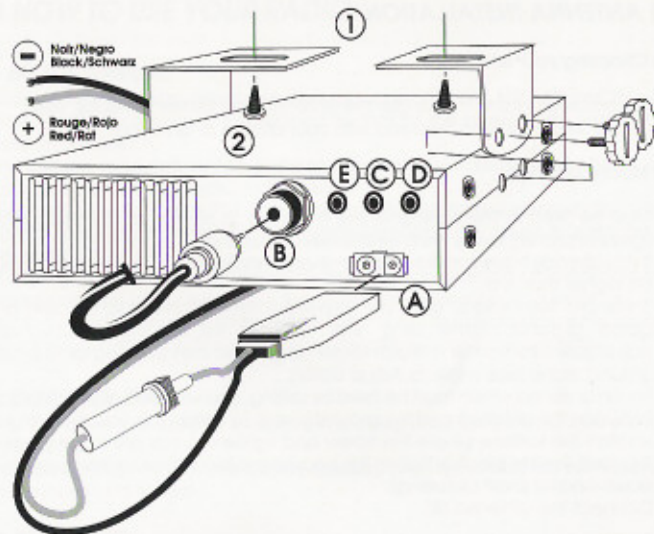
The guarantee of this transceiver is valid only in the purchase country.

Welcome to the world of the most sophisticated microprocessor controlled Amateur radios. This entirely new generation of EMPEROR Amateur Radio will give you the most complete access to amateur radio communication. Introducing state-of-the-art technology for the most advanced features, this EMPEROR Shōgun is a new milestone in user friendliness and prompt response to the most demanding amateur. To assure you get the most enjoyment of all the features, please read this guide thoroughly before installing and operating your EMPEROR Shōgun.

A) INSTALLATION :

1) WHERE AND HOW TO MOUNT YOUR MOBILE RADIO :

- You should choose the most appropriate setting from a simple and practical point of view.
- Your radio should not interfere with the driver or the passengers.



MOUNTING DIAGRAM

- Remember to provide for the passing and protection of different wires (e.g. power, antenna, accessory cabling) so that they do not in any way interfere with the driving of the vehicle.
- To install your equipment, use the cradle (1) and the self-tapping screws (2) provided (drilling diameter 3.2 mm). Take care not to damage the vehicle's electrical system while drilling the dash board.
- Choose where to place the microphone support and remember that the microphone cord must stretch to the driver without interfering with the controls of the vehicle.

- **N.B. :** As the transceiver has a frontal microphone socket, it can be set into the dash board. In this case, you will need to add an external loud speaker to improve the sound quality of communications (connector EXT.SP situated on the back panel : D). Ask your dealer for advice on mounting your radio.

2) ANTENNA INSTALLATION :

a) Choosing your antenna :

- For amateur radios, the longer the antenna, the better its results. Your dealer will be able to help you with your choice of antenna.

b) Mobile antenna :

- Must be fixed to the vehicle where there is a maximum of metallic surface (ground plane), away from windscreen mountings.
- If you already have a radio-telephone antenna installed, the antenna should be higher than this.
- There are two types of antenna : *pre-regulated* which should be used on a good ground plane (e.g. car roof or lid of the boot), and *adjustable* which offer a much larger range and can be used on a smaller ground plane (see «How to Adjust SWR»).
- For an antenna which must be fixed by drilling, you will need a good contact between the antenna and the ground plane. To obtain this, you should lightly scratch the surface where the screw and tightening star are to be placed.
- Be careful not to pinch or flatten the coaxial cable (as this runs the risk of break down and/or short circuiting).
- Connect the antenna (B).

c) Fixed antenna :

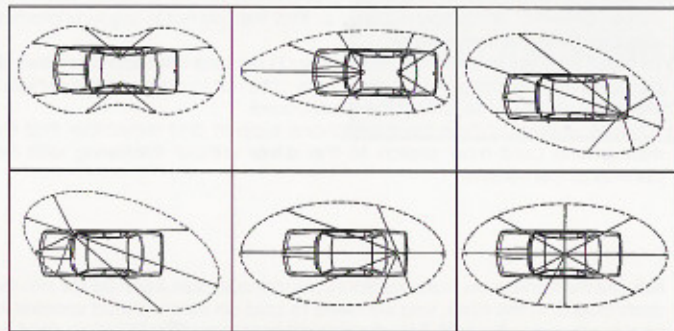
- A fixed antenna should be installed in a clear space as possible. If it is fixed to a mast, it will perhaps be necessary to stay it, according to the laws in force (you should seek professional advice).

3) POWER CONNECTION :

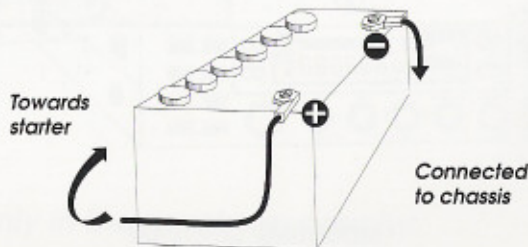
Your EMPEROR Shōgun is protected against an inversion of polarities. However, before switching it on, you are advised to check all the connections. Your equipment must be supplied with a continued current of 12 volts (A). Today, most cars and lorries are negative earth. You can check this by making sure that the negative terminal of the battery is connected either to the engine block or to the chassis. If this is not the case, you should consult your dealer.

WARNING : Lorries generally have two batteries and an electrical installation of 24 volts, in which case it will be necessary to insert a 24/12 volt converter (type CV 24/12 EMPEROR) into the electrical circuit. The following connection steps should be carried out with the power cable disconnected from the set.

- Check that the battery is of 12 volts.
- Locate the positive and negative terminals of the battery (+ is red and - is black). Should it be necessary to lengthen the power cable, you should use the same or a superior type of cable.
- It is necessary to connect your radio to a permanent (+) and (-). We advise you to connect the power cable directly to the battery (as the connection of the radio cable to the wiring of the car-radio or other parts of the electrical circuit may, in some cases, increase the likelihood of interference).



OUTPUT RADIUS PATTERNS



- d) Connect the red wire (+) to the positive terminal of the battery and the black (-) wire to the negative terminal of the battery.
- e) Connect the power cable to your radio.

WARNING : Never replace the original fuse by one of a different value.

4) BASIC OPERATIONS TO BE CARRIED OUT BEFORE USING YOUR SET FOR THE FIRST TIME (without transmitting and without using the «push-to-talk» switch on the microphone):

- a) Connect the microphone
- b) Check the antenna connections
- c) Turn the set on by turning the knob (1) clockwise.
- d) Turn the squelch knob to minimum (anti-clockwise). Adjust the volume to a comfortable level.

5) HOW TO ADJUST SWR (Standing Wave Ratio):

With the integrated SWR meter:

Put the unit into AM or FM. Using **12) VFO** position the unit in the middle of the band (you are advised to check the values obtained on the extreme frequencies, in all cases it is necessary to calibrate). Check that **3) RF POWER** is at maximum.

Calibration:

Press **15) METER** until a small triangle and **CAL** appear in the display. Keep the PPT switch depressed and, using **2) SWR CAL**, bring the bar graph to the same level as the triangle. When you have done this, you are ready to take an SWR reading as described below.

Reading:

Once the SWR Meter has been calibrated (as above), press **15) METER** until **SWR** appears in the display. Press the PTT switch on the microphone, the bar graph will show the SWR value. It should be taken from the bottom figures and should be as close to **1** as possible, a value of above **2** may damage your set (destruction of the power amplifier).

B) HOW TO USE YOUR RADIO:

1) MODE Switch:

This control is used to select the desired mode: AM, FM, LSB, USB or CW. The mode chosen must correspond to that of the person with whom you communicate.
 Amplitude modulation/AM: For communicating in areas where there are obstacles and over medium distances.
 Frequency modulation/FM: is used for nearby communications in flat open areas, and gives better quality communications, but squelch is harder to adjust.
 Lower Side Band/LSB and Upper Side Band/USB: are used for prompt communications over long distances (depending on atmospheric conditions).
 CW: coded in Morse. In order to use this mode, an external key is necessary. For your comfort, the Shōgun has an integrated one tone oscillator.

2) DIM/SWR CAL:

- a) This control is used to calibrate the integrated SWR meter. See section **15) METER**
- b) **DIM** position: to dim the display backlighting, turn this knob fully counter clockwise until it clicks.

3) RF POWER:

This control enables you to adjust RF power continuously over a range of about 1 Watt to 10 Watt in AM, FM and 10 Watt to 21 Watt in CW. When you turn this knob fully clockwise RF power is at maximum. You should reduce output power when communicating with someone close by and who is not equipped with an RF Gain function.

4) RIT:

This knob is used in modes USB, LSB or CW to fine tune the reception signal in order to obtain maximum clarity. This knob can tune the received frequency about +/- 2.3 kHz. This control will not effect the transmitting frequency, or the frequency display, but changes only the reception frequency.

5) ON/OFF - VOLUME CONTROL:

Use this control to turn the unit on or off and to adjust the volume.

6) SQUELCH:

This control is used to suppress undesirable background noise when there is no communication. Turn the squelch knob clockwise to the exact point where all background noise disappears. This adjustment should be done with precision as, if set to maximum, only the strongest of signals can be received. Squelch does not affect either sound nor transmission power, but allows for considerable improvement in listening comfort. To use the automatic squelch, turn the control to the position **AUTO** (anti clockwise until it clicks).

7) LOC/DX Switch:

This is used to vary the RF input to the receiver, to help eliminate strong, adjacent signals.

8) PA (Public Address):

An external loud speaker can be connected to your Shōgun by using the jack plug situated on the back panel **PA.SP (C)**. By pressing the **PA key**, the message transmitted into the microphone will be directed towards the external speaker and be amplified. Hold the microphone far enough away from this loud speaker so as to avoid the Larsen effect. Press this button once to activate the function. To cancel, depress the same key.

9) CHANNEL SELECTOR: CHANNEL ▲ and ▼:

The two keys are available on the front panel and on the microphone **CHANNEL ▲** and **▼** allow you to step up or down to the next 10 KHz channel. This can also be done using the rotary channel knob. The selected channel is displayed next to the frequency display. These keys can select any 10 KHz channel within a band (50 channels in Band **a**: 28.0000 to 28.4900, in band **b**: 28.5000 to 28.9900, in band **c**: 29.0000 to 29.4900 and 20 channels in band **d**: 29.5000 to 29.6900 MHz). The step of 10 KHz is preprogrammed and cannot be changed. When stepping up or down the channels using the keys **CHANNEL ▲** and **▼**, the unit tunes itself to the nearest channel and not to the ± 10 KHz frequency indicated. When you get to channel 50 (or channel 20 in band **d**), by pressing the button **CHANNEL ▲**, the set will go to channel 1 of the current band, and if you are on channel 1 and you depress **CHANNEL ▼**, the set will go to channel 50 (or channel 20 in band **d**).

10) BAND:

Use this knob to select one of the following band segments.

- a**: 28.0000 to 28.4999 MHz
- b**: 28.5000 to 28.9999 MHz
- c**: 29.0000 to 29.4999 MHz
- d**: 29.5000 to 29.6999 MHz.

Press this button until the letter of the required band shows in the display (the letter is displayed above the channel number and the band selected appears on the display). See Section «Display»

11) SPAN:

This control, used with **12) VFO**, allows you to select the frequency with precision which can be adjusted by steps of either 10 KHz, 1 kHz or 100 Hz. The selected step is indicated by a line under the relevant digit on the frequency display.

12) VFO: (Variable Frequency Oscillator)

Use this control to select the transmitting and receiving frequency. First check that the button **16) F-LOCK** is not depressed and then turn the rotary knob to obtain the desired frequency. In order to change the frequency step, press **11) SPAN** so that the underlining shows under the digit required. Tuning is continuous throughout the entire range of the Shogun there is no need to select band segments. See Section «Display»

13) SHIFT:

This control is used to select the second function mode which is written in the same colour as the **SHIFT** button. First press **SHIFT**, followed by the desired function. When activated, **SHIFT** appears in the display.

14) NB/ANL:

Noise Blanker/Automatic Noise Limiter. These filters allow the reduction of back ground noise and some reception interference. They also help to eliminate interference generated by the ignition system of vehicles. Press this key once to activate **NB**, twice to activate both **NB** and **ANL**, three times to have **ANL** only and four times to cancel them. The display follows the same sequence.

15) METER SWITCH:

This switch is used to select the mode for the multi function meter:

- a) Position RF: Indicates the received signal strength and transmitted power.
- b) Position MOD: Gives you an indication of the strength of your modulation when transmitting (there is no function for this meter in reception).
- c) Position CAL: to calibrate the SWR meter See how to regulate SWR.
- d) Position SWR : SWR reading. See how to regulate SWR.

In reception mode (RX), this key is locked into position RF. Each time you press this key, the next function is selected in the given order. The selected mode is shown on the display.

16) F-LOCK:

Pressing the Frequency Lock button will disable all the frequency determining controls on the front panel, in order to prevent any accidental changes of frequency.

17) MIC GAIN:

Pressing this switch activates the built-in microphone attenuator. This feature is designed to be used when operating the Shogun in high ambient noise environments.

18) BEEP:

When you finish speaking and you release the «push to talk» switch to allow your correspondent to speak, a «beep» sounds. Amateur radio is what is known as a «simplex» method of communication, that is to say that you cannot listen and speak at the same time (as you can, for example, with the telephone). It was custom to say «Roger» to indicate to your correspondent that you had finished speaking and that it was his turn to talk. The word «Roger» has now been replaced with a «beep», hence its name «Roger Beep». Press this key once to activate **ROGER BEEP**, the word **BEEP** appears in the display. To cancel out the beep, depress the same key. This key has no function in mode CW.

Functions available using SHIFT

In order to use the second functions, first depress **SHIFT**, followed by the key concerned.

19) SCAN:

This function allows you to «scan» the 50 channels of the chosen band and to find the active channels. It is possible to scan 50 channels in Bands **a, b, c** and 20 channels in band **d**. Scanning always starts with the lowest channels and moves upwards to the higher ones, and always by steps of 10 KHz.

To start scanning, press **13) SHIFT** followed by **SCAN**. Scanning commences, and stops on an active frequency, depending on the squelch level. At the end of the transmission, the **Shōgun** waits for about 1.5 seconds before resuming the scan cycle. If you want to communicate press the PTT switch on the microphone during the 1.5 seconds. To exit from the scan mode, press the **23) MANUAL** button.

It is also possible to use this function to scan only on the channels stored in the memory, by pressing **21) MEMO** and then **SCAN**. To cancel this function, press **23) MANUAL**.

20) PROG:

This switch is used for stocking frequencies in the memory. Press **PROG**, (**PROG** appears in the display). Press **21) MEMO**. The number of the memory appears (from 0 to 9). Each time you press **21) MEMO**, the memory number changes. Find the frequency you wish to memorise (using **12) VFO**), then press **22) ENT**.

21) MEMO:

This switch is used for obtaining access to a frequency stored in the memory. Press **MEMO** (from 0 to 9) until you find the frequency desired. This switch can also be used with **20) PROG** (to stock frequencies in the memory) or **19) SCAN** for scanning (see above for further information).

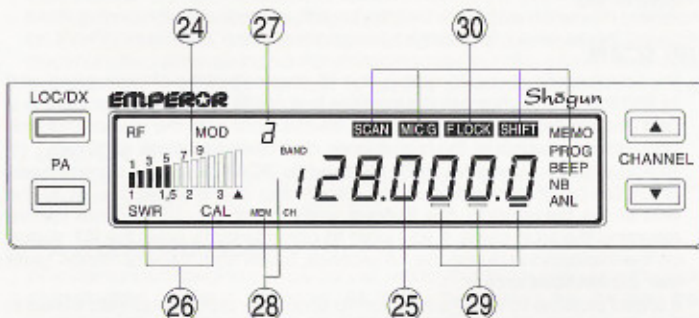
22) ENT (ENTER):

This switch is used with **20) PROG** and **21) MEMO** to stock frequencies in the memory. See above for further information.

23) MANUAL:

Use this switch to cancel **13) SHIFT**, (i.e. the second functions are cancelled and the unit reverts to the first functions).

DISPLAY



24) MULTI-FUNCTION METER:

This meter can display:

RF: reading of the output power and the reception level.

MOD: works only in transmission mode (TX). Allows you to measure the modulation level and the correct working of the microphone.

CAL: to calibrate the SWR meter

SWR: reading of the SWR value.

25) FREQUENCY DISPLAY:

Indicates the frequencies chosen.

26) SWR/CAL DISPLAY:

Indicates the mode chosen:

CAL: to calibrate the SWR meter

SWR: reading of the SWR value

27) BAND DISPLAY a/b/c/d:

Indicates the band you have selected.

28) CHANNEL AND MEMORY CHANNEL DISPLAY:

Indicates the channel you have selected, as well as the memory channel.

29) VFO STEP INDICATOR:

Displays the currently selected VFO step (the example shows 100 Hz step selected).

30) FUNCTION INDICATORS:

Shows which functions are activated.

31) 5 PIN MICROPHONE SOCKET:

Is situated on the front panel of the unit in order to ease integration into the dash board. See wiring diagram on page 39.

32) PTT switch on the MICROPHONE:

Press to transmit and release to receive.

A) DC-POWER TERMINAL (13,2 V)

B) ANTENNA CONNECTOR (SO-239)

C) PA SPEAKER JACK (8 Ω , \varnothing 3,5 mm)

D) EXTERNAL SPEAKER JACK (8 Ω , \varnothing 3,5 mm)

E) MORSE KEY (\varnothing 3,5 mm)

C) TECHNICAL CHARACTERISTICS:

1) GENERAL:

- Channels	:	170
- Modulation modes	:	AM/FM/SSB/CW
- Frequency ranges	:	from 26 MHz to 29.7
- Antenna impedance	:	50 ohms
- Power supply	:	13.2 V
- Dimensions (in mm)	:	200 (B) x 215 (H) x 60 (T)
- Weight	:	ca 2,2 kg
- Accessories supplied	:	microphone UP/DOWN with support, mounting cradle, screws and fused power cord.

2) TRANSMISSION:

- Frequency allowance	:	+/- 300 Hz
- Carrier power	:	10 Watts AM/FM
	:	21 Watts CW/SSB
- Transmission interference	:	inferior to -50 dBc
- Audio response	:	300 Hz - 3 kHz AM/FM/SSB
- Microphone sensitivity	:	0,6 mV
- Drain	:	4,5 A (with modulation)
- Modulated signal distortion	:	2,5%

3) RECEPTION:

- Maxl. sensitivity at 20 dB sinad	:	0.5 μ V - 113 dBm (AM/FM) 0.4 μ V - 115 dBm (SSB)
- Frequency response	:	300 Hz to 3 kHz in AM/FM/SSB
- Maximum audio power	:	4 W
- Squelch sensitivity	:	mini 0.5 μ V - maxi 1 mV
- Freq. image rejection rate	:	70 dB
- Drain	:	1 A nominal

D) BREAKDOWN GUIDE:

1) YOUR RADIO WILL NOT TRANSMIT OR YOUR TRANSMISSION IS OF POOR QUALITY:

- Check that the PA function is turned off.
- Check that the antenna is correctly connected and that the SWR is properly adjusted.
- Check that the microphone is properly plugged in.

2) YOUR RADIO WILL NOT RECEIVE OR RECEPTION IS POOR:

- Check that the PA function is not activated
- Check that the squelch level is properly adjusted.
- Check that the volume is set to a comfortable listening level.
- Check that the microphone is properly plugged in.
- Check that the antenna is correctly connected and that the SWR is properly adjusted.
- Check that you are using the same modulation mode as your correspondent.

3) YOUR RADIO WILL NOT LIGHT UP:

- Check the power supply.
- Check the connection wiring.
- Check the fuse.