

User Manual

Please read this manual before operating the SSI-065
(this instruction manual is based on software Ver:1.00)



Made in China

WWW.MACLAN-RACING.COM



CAUTION : Failure to comply to a CAUTION may cause damage to the product or other equipment.



WARNING : Failure to comply to a WARNING may result in serious injury to the user or others.



NOTE : Annotations, operation notes or additional information.

1. Safety Statement

1.1 General Safety



- Use only certified power source/adapters from your region. (please refer to Section 3 for specifications)
- Do not operate in an overly humid environment.
- Do not operate in a flammable/explosive environment.
- Keep the surface of the product clean and dry.

1.2 Working condition

Working condition	Requirements
Temperature	Operating Condition: from 32°F to 122°F (0°C to + 50°C)
	Storage Condition : from -4°F to 140°F (-20°C to + 60°C)
Humidity	Operating Condition: from 104°F to 122°F (40°C to 50°C), 0 % to 60 % RH
	Operating Condition: from 32°F to 104°F (0°C to 40°C), 10 % to 90% RH
	Storage Condition: from 104°F to 140°F (40°C to 60°C), 5 % to 60 % RH
	Storage Condition : Low temperature: from 32°F to 104°F (0°C to 40°C), 5% to 90 % RH

1.3 Warnings



When using SSI-065,
- Turn the power off (unplug) when not in use, or left unattended.
- When power is ON, be very careful to avoid touching the hot soldering tip.
- Please do not operate SSI-065 when it's wet or operate it with wet hands as this can create a possibility of an electric shock.

1.4 Cautions



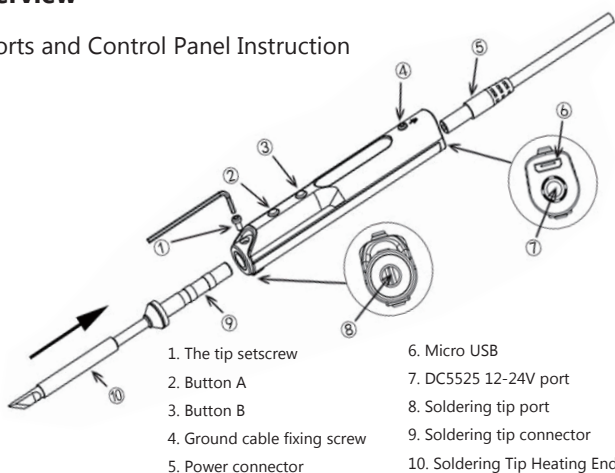
When using SSI-065,
- Please avoid dropping the unit as this can cause damage to the tip port.
- After continuous extended use, the handle surface temperature can get warm (122°F to 140°F (50°C to 60°C)).
- When using the SSI-065 for the first time, it may generate some light smoke due to the initial heating of heating elements, this is a normal.

1.5 Liability Statement

Maclan Racing is not responsible for bodily injury and/or property damage that may occur from the use of, or caused by, this product.

2. Overview

2.1 Ports and Control Panel Instruction



- The tip setscrew
- Button A
- Button B
- Ground cable fixing screw
- Power connector
- Micro USB
- DC5525 12-24V port
- Soldering tip port
- Soldering tip connector
- Soldering Tip Heating End

2.2 Features

- MCU control and program for precise temperature and safety control
- Maximum 840+°F (450°C) temperature for RC applications
- OLED display for easy reading status
- Portable size and light weight for easy transportation to race events
- Maximum 65W output with 24V power input
- Built-in safety parameters to protect battery voltage and soldering iron tip lifespan
- CE & FCC certified

2.3 Hardware Specifications

Screen		OLED
USB port		Micro USB (for firmware update only)
Power port		DC5525
Dimensions	Operation unit	Length:97mm, Diameter:16.5mm
	Heating unit	Length:76 + 33mm, Diameter:5.5mm
Weight		30g

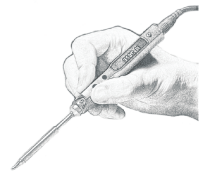
2.4 Operation Specifications

Power	65W
Temperature range	22\$°F to 84\$°F (100°C-450°C)
Temperature stability	±2%
Operation temperature under heat	%(S #40°C
Soldering tip resistance to the ground	< 2Ω

3. Power Source Selection

For best performance, we recommend using a fully charge 6S Li-Po battery pack (sold separately). A 6S Li-Po will provide the best heating performance to work on large size (12AWG or larger) cables. SSI-065 will also work with AC/DC power adapter from a 3rd party. Before connecting it to a power adapter, please check if the adapter is capable to supply enough wattage, and be sure to use correct power cable (sold separately) with correct power setup on the SSI-065. We recommend using at least 19V AC/DC adapter.

Operation voltage	Power	Electric current	Time required to increased tip temperature from 30°C to 300°C
12V	17W	> 1.4A	40s
16V	30W	> 1.9A	20s
19V	40W	> 2.1A	15s
24V	65W	> 2.7A	11s



4. Operation

4.1 SSI-065 Installation

- Loosen the tip setscrew, insert the soldering tip connector and tighten the screw.
- Connect the ground wire to the ground wire setscrew.
- Connect the DC connector to SSI-065, connect the power cord and turn on the power accordingly.

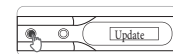
Note: If the screen displays "sen-err" when the tip was installed, that means the soldering iron tip is not properly installed, please re-install it properly.

4.2 Basic Control

4.2.1 Screen Display



When plugged into DC12-24V power, SSI-065 will display Maclan logo, Version number and its standby screen in sequence.



When plugging into DC 12-24V power, push Button A at the same time, and the device will enter update mode. Update mode allows you to update the firmware of the device. Please visit Maclan-Racing.com for the latest firmware info. To exit Update mode, unplug and plug power in the device again without pressing any button, the SSI-065 will enter standby mode.

4.2.2 Sfety First

Safety is always number one on the list when you use the SSI-065. Please ensure that you set the correct input power voltage before you start using the iron. Please refer to section 4.3 System Parameters/ Default Setting to set the input power.

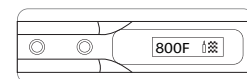


The SSI-065 features a secondary protection in the parameter Off Voltage (OffVolt), that has a default setting of 10V. It is your responsibility to make sure this setting is set to a correct value before you start using the iron. We suggest to set the Off Voltage at 3.2V per cell count. For example, if you use a 6S battery pack, we'd suggest to set the Off Voltage at 19.2V.

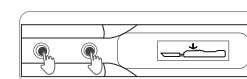
4.2.3 Heating up and Cooling Down



When pressing Button A in standby mode, SSI-065 will heat up to it's preset wake up temperature.

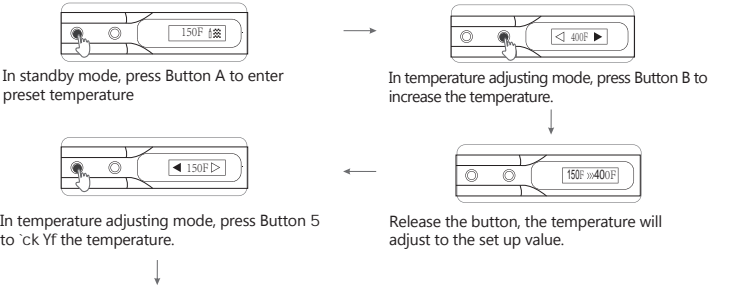


When OLED displays the iron logo as shown, it's ready for soldering.



In operation mode, hold both buttons for 3 seconds, the device will return to STANDBY MODE to cool down the soldering iron.

4.2.4 Temperature Adjustment



In standby mode, press Button A to enter preset temperature

In temperature adjusting mode, press Button B to increase the temperature.

In temperature adjusting mode, press Button S to 'ck Yf the temperature.

Release the button, the temperature will adjust to the set up value.

Release Button when display reads the dFYZ/fFYX temperature, and GG+ (\$) will automatically adjust to it.

Note: When screen displays arrow pointing to left or right this means the adjustment has already reached its upper/lower limit. Settings will not be saved when the device is powered is off.

When GG+ (\$) temperature is stable for 60 seconds, it will automatically enter sensing mode. Temperature status will VY a cbjtc fYX UbX sensed every 5 seconds. H.Y gmgYa 'k J' U tca UHw m UX t ghjgY Z to hold the required temperature "H.Y ghU gk J' VY g'ck b Ug h.Y VY ck [fUd\Jg"

Arrows up-heating Arrows down-cooling horizontal lines-temperature stabilized

4.2.5 Sleep Mode / Stand By Mode

When GG+ (\$) jg gHs idle Z:f % \$ g'VebXgZjnk J' YbHf fH.Y G99D A C 8 9 "H.Y H'a dYfUH fY k J' U tca UHw mUX t ghjtc dFYgfhgYYd a cXY" The preset SLEEP MODE is 400°F (204°C).

When SSI-065 is in sleep mode for 360 seconds without any detected action, it will then enter STAND BY MODE. STAND BY MODE will cut off the power until you enable the soldering iron again by pressing button A.

When you pick up the SSI-065 when its in the SLEEP MODE, it will automatically resume to preset WAKE UP TEMPERATURE.

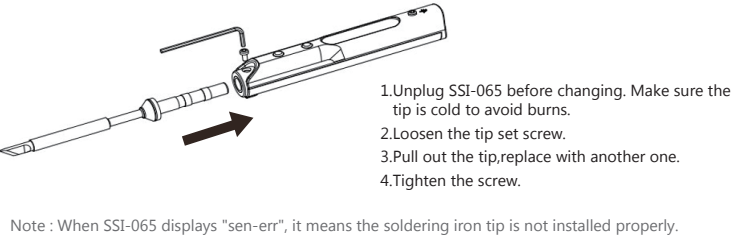
4.3 System Parameters/ Default Setting

Parameter	Descriptions	Default	Adjustable Range
Inpt_Pwr	This sets the input power for how you are powering the iron.	6S Li-Po	3S~6S
Wrk_Temp	This sets the working temperature of the iron.	550°F	220°F-840°F
Slp_Temp	This sets the temperature of the tip during sleep mode.	400°F	220°F-400°F
Slp_Time	This sets the number of seconds before the iron goes into sleep mode.	180 seconds	60-900 seconds
Idl_Time	This sets the number of seconds before the iron goes into standby mode.	360 seconds	100-900 seconds
Temp_Stp	This sets the increment in which the temp steps up with each button click.	10	1-25
Off_Volt	This sets when the iron shuts off when the input power reaches this value	10V	10-20V
Unit	This sets the display value for the temperature	°F	°C/ °F
Scr_Flip	This sets the screen orientation for right or left handed use.	RT	RT/LT

- To change default settings with SSI-065 buttons, follow the below steps:
- Plug in power.
 - After SSI-065 finishes the power on sequence, press **button B** to enter **CONFIG MODE**.
 - Use button A and B to navigate parameters.
 - When you see the parameter you wish to program, long press button A or B for 1 second to enter the parameter adjustment.
 - After you set the parameter to the preferred value, the SSI-065 will commit and save the change after 5 seconds. Any key presses will reset this timer.
- To change default settings on a Windows PC, follow the below steps:
- Connect SSI-065 micro USB to your Windows PC, the OLED screen will display "CONFIG". The SSI-065 is now in the **CONFIG MODE**.
 - In Windows, the SSI-065 will be detected like a thumb drive. Open CONFIG.TXT file in the detected USB drive.
 - You will be able to change all parameters to your preferred value.
 - Save the CONFIG.TXT file, disconnect the SSI-065, and the device is ready for use.

5. Soldering Iron Tip

5.1 Changing Soldering Tips



1.Unplug SSI-065 before changing. Make sure the tip is cold to avoid burns.

2.Loosen the tip set screw.

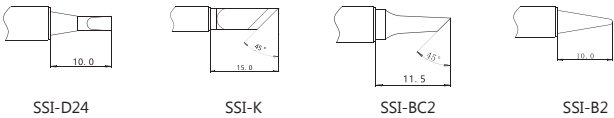
3.Pull out the tip,replace with another one.

4.Tighten the screw.

Note : When SSI-065 displays "sen-err", it means the soldering iron tip is not installed properly.

5.2 Choosing Soldering Iron Tips

The SSI-065 comes with TS-D24 soldering iron tip as standard. You can use different optional tips for your hobby projects (sold separately).



5.3 Soldering Iron Tip Maintenance

- Before switching off, tin the tip's soldering side with some solder and wipe off any excess.
- Do not leave the tip in high temperature for long time, which may cause permanent damage.
- Do not apply too much force while soldering. It can damage the tip.
- Do not use a rough or abrasive material to clean the tip.
- If the tip surface is oxidized and makes it hard to apply solder on it, you may use 600-800 grit sandpaper or wipe the tip with Ethanol or Isotropy alcohol, heat up to 400°F (200°C) and apply solder immediately to avoid oxidation again.
- Do not use Flux that contains high chlorine or acid, use only resin based flux.

5.4 Soldering Iron Tip Lifespan

A soldering iron tips lifespan is related to its maintenance and usage. Once used, it is not covered by the factory limited warranty.

6. Trouble Shooting Guide

Problem 1: No Display	Check: If the cable is broken Check: Is there any data in USB CONFIG mode Check: If the screen needs to be replaced
Problem 2:Every time when installing a new tip , the temperature status displays random numbers	Means the device is checking status, which is normal
Problem 3: Soldering iron restarts automatically	Check 1: Is it properly plugged into the power source? Check 2: Is the voltage too low? (needs to be set up in the config file)
Problem 4: Soldering iron is heating up and cooling down simultaneously	Check 1: Is the tip first time in use? Check 2: Is the power cord in loose or a defective contact? Check 3: Is the tip overheating? Set the temperature to an appropriate level? Check 4 : Is the soldering iron clean? refer to "Soldering iron tip maintenance"
Problem 5: OLED displays "Warning"	Check 1: Is the SSI-065 overheating? Check 2: Is SSI-065 temperature higher than the maximum operating temperature? Check 3: Check all connections and ensure the tip is in proper condition.
Problem 6: OLED displays "High-Vt"	Check: If the voltage is too high? (over 24V)
Problem 7: OLED displays "Sen-err"	Check 1: Is the soldering iron installed propely? Check 2: If check 1 passes, then replace the soldering iron tip
Problem 8: The tip doesn't work with the solder	1. Tip temperature is over 400°C 2. The soldering side of the tip is not applied with solder properly 3. Lack of flux during operation 4. Rub the tip against dry or high sulfur sponge or fabric 5. Tip touched organic material like plastic, silicone oil or other chemicals 6. Using impure solder or solder that contains low proportion of tin
Problem 9: SSI-065 returns to standby mode during operation	Check 1: The power source could have a low operating voltage that triggered voltage protection.

7. Firmware Update

- In an event of firmware update for the SSI-065, follow the below steps:
- Visit Maclan-Racing.com and download the latest SSI-065 firmware to your PC.
 - Press button A while connecting SSI-065 micro USB to your PC, the SSI-065 will enter UPDATE MODE and display "Update" on the OLED screen. Windows will detect the SSI-065 as a new USB drive.
 - Copy the firmware file to the USB drive.
 - Unplug the micro USB connector, power on the SSI-065 with your battery, and the SSI-065 will complete the firmware updating automatically.

8. Warranty and Service

The SSI-065 has one year factory limited warranty on the control logic board. Please contact Maclan Racing in the event of a warranty service. Please visit Maclan-Racing.com or HADRMA.com for service inquiries.

Tips are consumable parts, once it's used, it's no longer convered by the warranty.