

SIGMA^{EQ} TOUCH II

Dual Power

80W

LiPo/LiFe/LiIon: 1 - 6S
NiMH/NiCd: 1 - 16S
Pb: 2 - 20V
Charge Power: 80W
Charge Rate: 0.1-10.0A
Discharge Rate: 0.1-2.0A

Intelligent Balance Charger Operating Manual



Please read this operating manual completely and carefully as it contains a wide variety of specific programming and safety information.

The selection of the correct operating parameters is the responsibility of the user. Keep this manual in a safe place, and be sure to pass it on to the new owner if you ever sell your Sigma EQ Touch II.

Ripmax

Performance Parameters

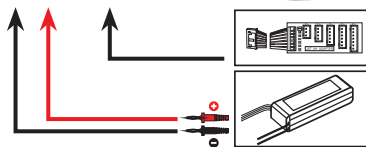
AC Input Voltage.....	100~240V
DC Input Voltage.....	11~18V
Charge Current.....	0.1~10A
Discharge Current.....	0.1~2.0A
Charge Power.....	80W
Discharge Power.....	10W
Balance Current.....	350mA
Balance Tolerance.....	±0.01V
Charging Capability NiMH/NiCd.....	1~16Cells
Charging Capability LiPo/LiFe/LiIon.....	1~6Series
Pb Battery Voltage.....	2~20V
Discharge LiPo/LiFe/LiIon.....	2.0~4.2V/Cell
Weight.....	591g
Dimensions.....	140 x 180 x 56mm

Connection

Connection Diagram for Balance Charging/Storage/Discharge Mode



WARNING! Read the *ENTIRE* instruction manual to become familiar with the features of the product before operating.



WARNING! Never leave the charger unattended, exceed maximum charge rate, charge with non-approved batteries or charge batteries in the wrong mode. Failure to do so may result in excessive heat, fire, explosions and injury.

Only operate on a fire resistant surface for both the charger & battery.
Always charge in a well ventilated area.



CAUTION! Always ensure the battery you are charging meets the specifications of this charger and that the charger settings are correct. Failure to do so can result in excess heat and product malfunction. This can lead to user injury or property damage.

Exterior

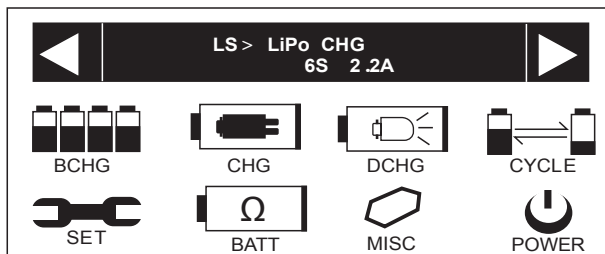
Sigma EQ Touch II Charger as viewed from the left hand side





CAUTION! Always power ON the charger before connecting a battery to it or damage to the charger and the battery may result.


1. Connect the Charger to an appropriate power source (AC or DC but **NEVER** both)
2. Make program selections in the charger for battery charging
3. Connect balance adaptor board to the charger balance socket
4. Connect the battery to the charger (connect main charging connectors before connecting cell-balancing connectors, where used)
5. Start Battery Charging

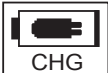
Main Screen




- 1)   Select the charger's stored memories.

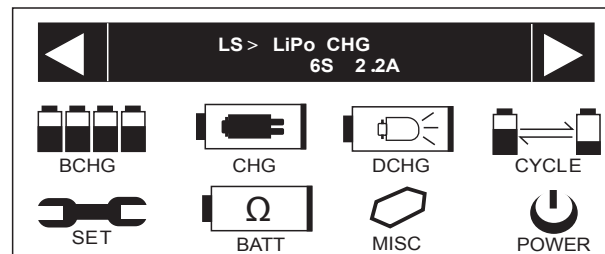
- 2)  Enter the memory into the charging/ balance charging/ discharging/ cycle.


- 3)  Enter into the balance charging mode.
(For Lithium batteries with balance connector only).


- 4)  Enter into the charging mode.

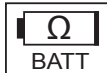
- 5)  Enter into the discharging mode.


Main Screen (Continued)




- 6)  Enter into the cycle mode. (For NiMH/NiCD only).

- 7)  Enter into the setup mode.
(To adjust overall parameters and customise).

- 8)  Enter into the battery's checking mode.
(For Lithium batteries with balance connector only).

- 9)  Enter into the external function mode.
(For Servo testing and USB output monitor).

- 10)  Enter into digital power mode.
(To power external devices only).

* LS>Last working mode entered.

User Set Up



Touch The Line To Select

Display and Sound

USER SETUP (1/5)		
Back Light	:	80%
LCD Contrast	:	40
Button Sound	:	ON
Buzzer Sound	:	ON
Max Out Watt	:	80W
<div> <div>BACK</div> <div>▲</div> <div>▼</div> <div>NEXT</div> </div>		

- 20%-80%
- 30-60
- on/off
- on/off
- 50-80W

Save and Back INC Values DEC

USER SETUP (2/5)		
Input Cut	:	10.0V
Safety Timer	:	240min
Int.Cut-Off	:	80°C
Temp.Cut-Off	:	60°C
Max Out CAPA	:	10.1AH
<div> <div>BACK</div> <div>▲</div> <div>▼</div> <div>NEXT</div> </div>		

Safety and Protection Settings

- 10.0-18.0V-(Cuts operation)
- 10-600min-(Total operation time)
- 50-80-(Internal temperature)
- 50-80-(when using sensor)
- 500mAh-50Ah-(Limits total charge capacity)

USER SETUP (3/5)		
Nixx Cycle Mode	:	C->D
Nixx Cycle Cnt	:	2 T
Cycle Wastertime	:	5Min
NiMH DeltaV	:	7mv
NiCd DeltaV	:	10mv
<div> <div>BACK</div> <div>▲</div> <div>▼</div> <div>NEXT</div> </div>		

Custom Settings

- C->D/D->C
- 1-5T
- 5-60Min
- 5-25mV
- 5-20mV

USER SETUP (4/5)		
LiPo CHG Cut	:	4.20V
LiPo DCHG Cut	:	3.20V
LiFe CHG Cut	:	3.60V
LiFe DCHG Cut	:	2.00V
PB CHG Cut	:	2.40V
<div> <div>BACK</div> <div>▲</div> <div>▼</div> <div>NEXT</div> </div>		

- 4.00-4.25V
- 3.00-4.00V
- 3.50-3.70V
- 1.80-3.30V
- 2.00-2.50V

USER SETUP (5/5)		
PB DCHG Cut	:	1.50V
NiMH DCHG Cut	:	1.00V
NiCD DCHG Cut	:	0.80V
Lilo CHG Cut	:	4.10V
Lilo DCHG Cut	:	3.10V
<div> <div>BACK</div> <div>▲</div> <div>▼</div> <div>NEXT</div> </div>		

- 1.20-2.00V
- 0.80-1.50V
- 0.50-1.50V
- 4.00-4.15V
- 3.00-3.90V

Getting Started Balancing/Charging/Discharging/Cycling

Select From Main Screen



TYPE	CELLS	CURR
LiPo	6S	2.2A
Set Battery type		
LiPo		
<div> <div>BACK</div> <div>● SAVE</div> <div>START</div> </div>		

- 1) Battery type - **WARNING!**
It is important to get this selection correct.

TYPE	CELLS	CURR
LiPo	6S	2.2A
Number Of Cells		
6 (s)		
<div> <div>BACK</div> <div>● SAVE</div> <div>START</div> </div>		

- 2) Number of cells.
(Automatic for BCHG)
Take care when selecting cell count.

TYPE	CELLS	CURR
LiPo	6S	2.2A
Set Charge Current		
2.2 A		
<div> <div>BACK</div> <div>● SAVE</div> <div>START</div> </div>		

- 3) Charge/Discharge Current.

M11	M12	M13M	14
M15M	16	M17M	18
<div> <div>←</div> <div>OK</div> </div>			

- 4) Save the above settings to a memory.

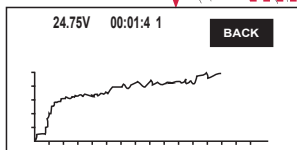
LiPo CHG Confirm	
-Connect -	
Input Vol	... OK
Mainport	... OK
Bala Port	... OK
<div> <div>BACK</div> <div>START</div> </div>	

- 5) Input Voltage / Battery Check,
(if not OK, check connections).

Starting Balancing/Charging/Discharging/Cycling

LiPo BCHG 6S 00:00:20			
Voltage	:	24.76V	
Current	:	2.16A	
Capacity	:	7mAh	
Int Temp.	:	33°C	
Ext Temp.	:	29°C	
STOP	DATA	GRAPH	CELL

LiPo BCHG 6S 00:00:45			
Input Volt	:	12.51 V	
End Volt.	:	25.20V	
CAPA Cut-Off	:	10.0A h	
Safety Timer	:	240min	
Temp.Cut-Off	:	60°C	
STOP	DATA	GRAPH	CELL



1) 4.124
2) 4.130
3) 4.113
4) 4.122
5) 4.135
6) 4.117

A bar chart with five bars of equal height. A red arrow points to the top of the first bar.

Option	Value
1)	4.124
2)	4.130
3)	4.113
4)	4.122
5)	4.135

STOP DATA GRAPH CELL

Nixx Cycle record			
C1 :	9	D1 :	0mAh
C2 :	0	D2 :	0mAh
C3 :	0	D3 :	0mAh
C4 :	0	D4 :	0mAh
C5 :	0	D5 :	0mAh
STOP	DATA	GRAPH	CYCLE

1) Charging/Discharging Data.
Displays Status.

2) Charge/Discharge.
Set Data (Continued).

3) Graph of total Charge/
Discharge progress.

4) Individual Cell Voltage
(Lithium batteries with balance connector only).

5) NiMH/ NiCD Cycle. Charge/
Discharge Capacity per Cycle.



Battery's Checking Program

Lithium batteries with balance connector only



1) 4.110					
2) 4.097					
3) 4.103					
4) 4.105					
5) 4.103					
6) 4.109					
BACK	LiPo	IR	BALA		

1) 08m Ω					
2) 15m Ω					
3) 06m Ω					
4) 09m Ω					
5) 14m Ω					
6) 04m Ω					
BACK	LiPo	VOL	BALA		



1) 4.108	
2) 4.097	
3) 4.103	
4) 4.104	
5) 4.102	
6) 4.108	
STOP	00.00.09

LiPo 1) Select LiPo/
LiFe/LiIo and Voltage
of a pack. Will display
Individual cell.

VOL 2) Select IR and it will
display, individual cell
resistance of a pack.

BALA 3) Balancing. Will start
Independent, balancing
of connected pack.

SERVO/ESC USB Monitor

BACK

- 1) Select USB Monitor or Servo Tester.

--USB MONITOR--

Voltage	:	4.98V
Current	:	0.00 A
Capacity	:	0.00 AH
Out Watt	:	0.00 W
Run Time	:	00:00:13

BACK



- 2) USB Output Monitor.

--- PPM OUT Monitor---

MAX OUT PPM	:	2100
MIN OUT PPM	:	900

VOLTAGEP	PM	CURRENT
4.98V	1500 US	0.00 A

BACK



AUTO

- 3) Servo Tester
(Manual or Auto Test).

DIGITAL POWER SETTING

Out Volt .	:	12.0V
Current	:	5.0A
Max. Watt	:	80W
Run Time	:	240Min

BACK

START

- 1) Set Voltage / Current / Watt / Run Time.
(For powering external devices by using charger as a power supply).

DIGITAL POWER WORKING

Input Volt	:	12.52 V
OUT Volt	:	24.60 V
OUT Curr	:	0.00A
OUT Watt	:	0.00W
Run Time	:	00:00:13

STOP

- 2) Digital Power Working,
Monitors Output.

Warning and Error Messages

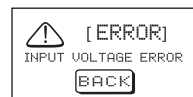
The Sigma EQ Touch II is protected against many fault and operator errors, by a Multi-Protection System. Faults/Errors are displayed on the LCD screen and they interrupt the active process to protect the unit and the battery.



→ The battery has been connected with incorrect polarity.



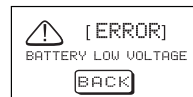
→ The battery is not connected or the connection has been interrupted.



→ Input Voltage Error. It is below or over the limit of 11~18V.



→ Charger Fault.



→ Total Voltage Too Low.

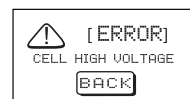


→ Total Voltage Too High.



→ An individual Cell Voltage is Too Low.

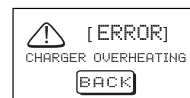
Warning and Error Messages (Continued)



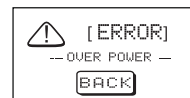
→ An Individual Cell Voltage is Too High.



→ Balance Port Connector Error.



→ Charger is Overheating.



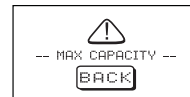
→ Power Exceeds the Limit in Digital Power Mode.



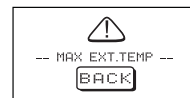
→ Current Exceeds the Setting in Digital Power Mode.



→ The Maximum Safe Time Limit has been Exceeded.



→ The Maximum Capacity Limit has been Exceeded.



→ External Temperature is Too High.

Warranty and Service

We warrant this product for a period of one year (12 months) from the date of purchase. This guarantee applies to materials or operational defects, which are present at the time of purchasing the product. During that period we will repair or replace, without service charge, any product deemed defective due to those causes.

You will be required to present proof of purchase (invoice or receipt). This warranty does not cover the damage due to wear, overloading, incorrect handling or use of incorrect accessories. This does not affect your statutory rights.



Sigma EQ Touch II

This product complies with the essential requirements of all appropriate EU directives. A copy of the declaration of conformity can be obtained from Ripmax Ltd, www.ripmax.com



Instruction for disposal of WEEE by users in the European Union

Electrical equipment marked with the crossed wheellie bin symbol must not be discarded in the standard household waste. Instead, it should be taken to a suitable specialist disposal location or your dealer.

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