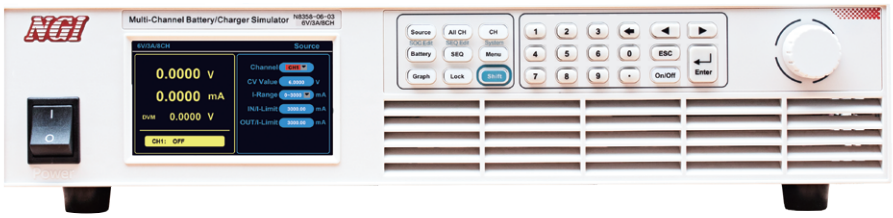
N8358 Series High-accuracy Multi-channel Programmable Battery Simulator



Product Introduction

N8358 is a programmable battery simulator with low power, high accuracy and multi-channel. By adopting dual-quadrant design, the current can be charged and discharged, which can satisfy the needs of BMS test. N8358 standalone supports up to 8 channels, which can offer four-station test and meet the demands of ATE test in consumer electronics. The voltage & current of each channel can be set on application software. N8358 software is easy to use, which can meet demands of battery simulators in multi-channel, multi-parameter, and complex test environments. N8358 software supports multi-channel batch operation. Data and curve for each channel can be displayed. Meanwhile, data analysis and report function are supported.

Application Fields

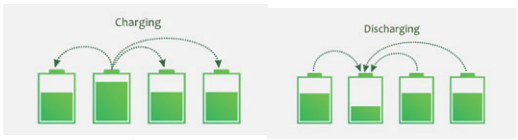
- BMS/CMS test for new energy vehicle, UAV and energy storage
- Portable consumer electronics R&D and production, such as mobiles, bluetooth earphones, smartwatch, etc.
- Battery maintenance device test
- Electric tools manufacturing test, such as electric screw driver

Main Features

- Voltage range: 0-5V/0-6V/0-15V
- Remote sense for high output accuracy
- Each channel isolated, series connection available
- Voltage accuracy up to 0.01%+1mV
- Active/passive balancing test
- μA level current measurement
- Standard 19 inch 2U, available for rack installation
- Fault simulation: short circuit, open circuit, reverse polarity
- Current range: -1~1A/-2~2A/-3~3A/-5~5A
- Single device up to 8 channels
- Voltage ripple noise low to 2mVrms
- Dual LAN port and RS232 interface

Active/passive balancing test

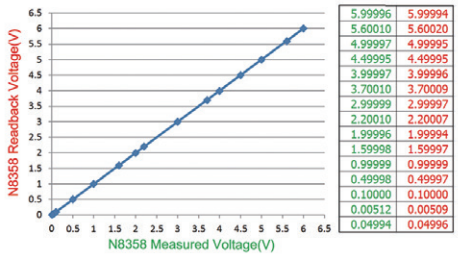
By bidirectional design, current input and output directions of each channel can be respectively controlled. Users can customize the battery charge and discharge model, which fully meets the requirements of BMS active/passive balancing test.



Active Balancing Diagram

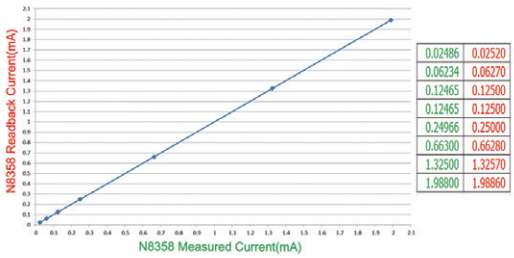
Ultra-high accuracy, supporting static power consumption test

N8358 has high current accuracy, up to 1μA. By supplying power to the DUT, static power consumption of the DUT in standby mode can be intuitively tested. The unqualified products are screened out to ensure the product standby time is within the nominal range after delivery.



5.99996	5.99994
5.60010	5.60020
4.99997	4.99995
4.49995	4.49995
3.99997	3.99996
3.70010	3.70009
2.99999	2.99997
2.20010	2.20007
1.99996	1.99994
1.59998	1.59997
0.99999	0.99999
0.49998	0.49997
0.10000	0.10000
0.00512	0.00509
0.04994	0.04996

Voltage Accuracy Comparison

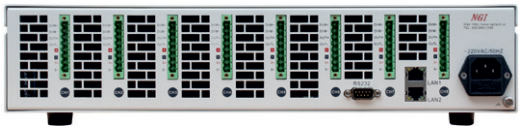


0.02486	0.02520
0.06234	0.06270
0.12465	0.12500
0.12465	0.12500
0.24966	0.25000
0.66300	0.66280
1.32500	1.32570
1.98800	1.98860

Current Accuracy Comparison

Ultra-high integration, built-in fault simulation

N8358 integrates 8 channels in 19-inch 2U size. Each channel has built-in positive & negative polarity short circuit, open circuit, and reverse polarity. Users can control directly on the front panel or on PC. The application of N8358 can eliminate use of external component for battery fault simulation, which can save cost and space for users.

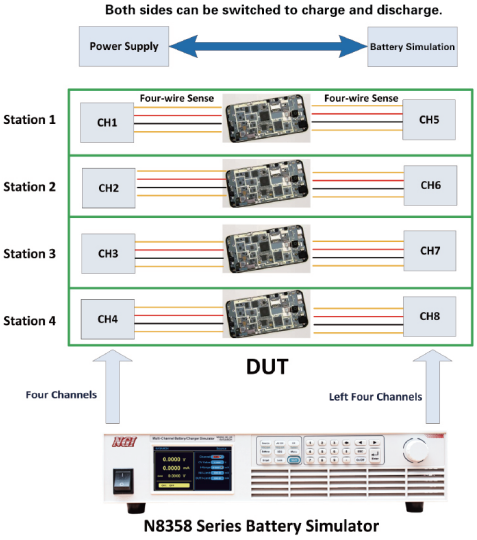


▲ N8358 Rear Panel with High Integration

Application-ATE Test

Advantages

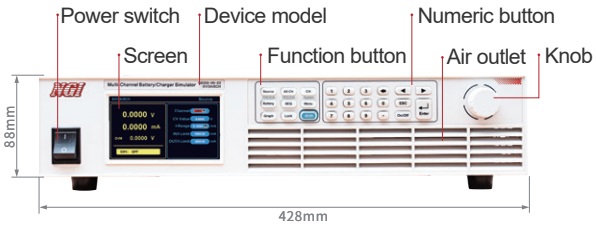
N8358 standalone has 8 channels with each channel isolated. Each channel can be used for current input or output. In ATE (Automatic Test Equipment) test system for consumer electronics such as smart phones, Bluetooth headsets, etc., the single production line often uses four stations. During the test, four channels are used as power supply to provide high-accuracy and stable power output. The left four channels are used for battery simulation. Paired channels simulate various operation conditions to check if they can meet the built-in graph requirements. N8358 standalone can be built into a four-station test system, which greatly improves the test efficiency and saves the investment.

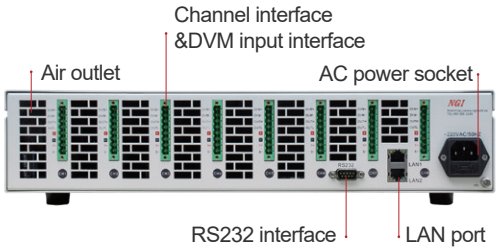


Test Items

- Charging current test
- Static power consumption test
- Protection parameter test

Product Dimension





Technical Data Sheet(1)

Model	N8358-06-01	N8358-06-02	N8358-06-03
Current	±1A/CH	±2A/CH	±3A/CH
Voltage	6V/CH	6V/CH	6V/CH
Power	6W/CH	12W/CH	18W/CH
Channels	8CH		
CV Mode			
Range	0~6V		
Setting Resolution	0.1mV		
Setting Accuracy (23±5℃)	0.01%+1mV		
Readback Resolution	0.1mV		
Readback Accuracy（23±5℃）	1mV+2d		
Voltage Settling Time	≤10ms		
Load Regulation	0.01%+1mV		
Line Regulation	0.01%+0.1mV		
Temperature Coefficient（0~40℃）	25ppm/℃		
Voltage Ripple (20Hz-20MHz)	2mVrms		
Current Measurement			
Range 1			
Range	-1~1A	-2~2A	-3~3A
Resolution	0.1mA		
Accuracy (23±5℃)	1mA+2d	2mA+2d	3mA+2d
Temperature Coefficient（0~40℃）	50ppm/℃		
Range 2			
Range	-100mA~100mA	-200mA~200mA	-300mA~300mA
Resolution	0.01mA		
Accuracy (23±5℃)	0.1mA+2d	0.2mA+2d	0.3mA+2d
Temperature Coefficient（0~40℃）	50ppm/℃		
Range 3			
Range	-1~1mA		
Resolution	0.1μA		
Accuracy (23±5℃)	1μA+2d		
Temperature Coefficient（0~40℃）	50ppm/℃		
Current Protection Limit			
Range	-1A~+1A	-2A~+2A	-3A~+3A
Current Limit Resolution	0.1mA		
Current Limit Accuracy (23±5℃)	1mA+2d	2mA+2d	3mA+2d
Temperature Coefficient（0~40℃）	50ppm/℃		
Dynamic Characteristics			
Transient Voltage Drop [1]	<200mV		
Transient Recovery Time [2]	<100μs		
DVM Function			
Channels	8CH	Measurement Accuracy	±0.01%F.S.
Voltage Range	-30V~+30V	Measurement Frequency	4Hz
Measurement Resolution	0.1mV	Input Impedance	2MΩ
Terminal	Pluggable terminal	Temperature Coefficient（0~40℃）	30ppm/℃
Others			
Interface	LAN/RS232		
AC Input	Single phase, 220V AC±10%, current <5A, frequency 47Hz~63Hz		
Temperature	Operating temperature: 0℃~40℃, storage temperature: -20℃~60℃		
Operating Environment	Altitude <2000m, relative humidity: 5%~90%RH(non-condensing), atmospheric pressure: 80~110kPa		
Net Weight	Approx. 9kg		
Dimension	2U, 88.0(H)*482.0(W)with handle*557.0(D)mm		

Note 1: Load varies from10% to 90% by full voltage output.
Note 2: Load varies from 10% to 90% by full voltage output, with voltage recovering within 50mV of previous voltage.
Note 3: For other specifications, please contact NGI.
Note 4: All specifications are subject to change without notice.

Technical Data Sheet(2)

Model	N8358-05-05	N8358-15-01	N8358-15-05
Current	±5A/CH	±1A/CH	±5A/CH
Voltage	5V/CH	15V/CH	15V/CH
Power	25W/CH	15W/CH	75W/CH
Channels	8CH		
CV Mode			
Range	0~5V	0~15V	0~15V
Setting Resolution	0.1mV		
Setting Accuracy (23±5℃)	0.01%+1mV	0.01%+3mV	
Readback Resolution	0.1mV		
Readback Accuracy (23±5℃)	1mV+2d	3mV+2d	
Voltage Settling Time	≤10ms		
Load Regulation	0.01%+1mV	0.01%+2mV	
Line Regulation	0.01%+0.1mV	0.01%+0.2mV	
Temperature Coefficient (0~40℃)	25ppm/℃		
Voltage Ripple (20Hz-20MHz)	2mVrms	6mVrms	
Current Measurement			
Range 1			
Range	-5~5A	-1~1A	-5~5A
Resolution	0.1mA		
Accuracy (23±5℃)	5mA+2d	1mA+2d	5mA+2d
Temperature Coefficient (0~40℃)	50ppm/℃		
Range 2			
Range	-500mA~500mA	-100mA~100mA	-500mA~500mA
Resolution	0.01mA		
Accuracy (23±5℃)	0.5mA+2d	0.1mA+2d	0.5mA+2d
Temperature Coefficient (0~40℃)	50ppm/℃		
Range 3			
Range	-1~1mA		
Resolution	0.1μA		
Accuracy (23±5℃)	1μA+2d		
Temperature Coefficient (0~40℃)	50ppm/℃		
Current Protection Limit			
Range	-5A~+5A	-1A~+1A	-5A~+5A
Current Limit Resolution	0.1mA		
Current Limit Accuracy (23±5℃)	5mA+2d	1mA+2d	5mA+2d
Temperature Coefficient (0~40℃)	50ppm/℃		
Dynamic Characteristics			
Transient Voltage Drop [1]	<400mV		
Transient Recovery Time [2]	<200μs		
DVM Function			
Channels	8CH	Measurement Accuracy	±0.01%F.S.
Voltage Range	-30V~+30V	Measurement Frequency	4Hz
Measurement Resolution	0.1mV	Input Impedance	2MΩ
Terminal	Pluggable terminal	Temperature Coefficient (0~40℃)	30ppm/℃
Others			
Interface	LAN/RS232		
AC Input	Single phase, 220V AC±10%, current <5A, frequency 47Hz~63Hz		
Temperature	Operating temperature: 0℃~40℃, storage temperature: -20℃~60℃		
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