

## Electrical Safety Test Scanner

### MODEL 19200

#### Key Features :

- Support Electrical Safety Test:
  - Withstanding Voltage Test
  - Insulation Resistance Test
  - Ground Bond Test
  - Earth Leakage Current Test
  - Enclosure Leakage Current Test
  - Patient Leakage Current Test
  - Patient Auxiliary Leakage Current Test
- Support High / Low voltage circuit insulation (Switch module)
- Support 8 slots for plug-in (removable)
- Max.8 units for multiple scanners (master/ slave interface)
- Standard RS232 and USB interface
- Optional GPIB interface
- CE Mark
- 19200 Can be installed in Chroma Electrical Equipment ATS model 8900.



## ELECTRICAL SAFETY TEST SCANNER MODEL 19200

In recent years, International Electrotechnical Commission (IEC) in order to make consumers safer while using the electrical products, join more requirements to test in the standard. In addition to AC/DC Hi-Pot (Withstanding Voltage) test, IR (Insulating Resistance) test, impulse test of component, GB (Ground Bond) test, ELC (Earth Leakage Current) test, we also need to test ECLC (Enclosure Leakage Current), PLC (Patient Leakage Current), PALC (Patient Auxiliary Leakage Current) for Medical Equipment Electrical Safety Test. It makes electric to fit requirements by all tests be performed which are very complicated and different. The problem not only the course is complicated and apt to make mistakes, but also the manpower costs more.

Chroma 19200 can perform high / low voltage switching and scan all safety tests with EST Analyzer (Chroma 19032) inputs. All channels can perform 5kVac/6kVdc and 40mA for withstanding test; Some modules support 20A for Leakage Current test and Function Test; GB & GBF modules support 40A and Ground Floating. All output controls operated by RS232, GPIB or USB interface.

Chroma 19200 can be installed in Chroma 8900 electrical equipment ATS for DUT which needs a lot of procedures to test like medical equipment, medical power, UPS, motor, etc., ATS can save the manpower cost, reduce manual mistake, data management to improve quality and efficiency.

#### Removable and Master/Slave design

Because different products have different requirements and test procedures, Chroma 19200 offers different scanning modules for combinations. These modules are: AC LINE module, GENERAL module, AC LINE2 module, EARTH module, GB&GBF module and SWITCH module. Due to different modules have different functions, users are able to combine different modules for your needs.

Chroma 19200 can support max. 288 test points by 8 removable slots for module plug-in and Max. 8 units for multiple scanners (master/ slave). User can directly program different test circuits and report editors, what has been made many kinds of associations by switching.

#### High / Low voltage circuit insulation

Most of products have to perform Electrical Safety Test (high voltage) and Function Test (low voltage). Chroma 19200 supports high and low voltage isolation by SWITCH module. User can combine high and low voltage tests like LCR measurement, power performance and function test for one sequence in one station and data collecting. That improves test efficiency and reduces occurred test risk.



**Chroma**



## MODULE DESCRIPTION

### ACLIN Module

ACLIN module can switch over High and RTN for WV test or the Line /Natural power entry for Leakage current test. Main purpose is for connecting to power input socket which are suitable for all kinds of electrical equipment, such as IT product, medical equipment, Audio appliance etc. with power inlet.



### AC LINE2 Module

AC LINE2 module can switch over High and Low for WV test and the patient point #1 and #2 for Leakage current. The other specified function is output 110V from transformer #2 to SIP/SIP for leakage current test.



### GB & GBF Module

For GB scan and multiple output, Chroma 19200 provides GB & GBF modules with four terminals. These modules support multiple Drive±, Sense± channels of Ground Bond test. GBF module is floating module which support max. 5kV/30A for HV isolation. These modules are suitable for UPS, Relocatable Power Taps (RPT) and multi-plug equipment. GBF module can perform insulation of High Voltage Test and Ground Bond Test for medical equipment and POWER electrical safety scanning test.



### GENERAL Module

GENERAL module is used frequently which can switch over High and RTN for WV test and the patient point #1 and #2 for Leakage current. This module can be used for all kinds of electrical equipment which need to connect to HV test point and general LC test point.



### EARTH Module

EARTH module can switch over RTN for WV test, the patient point #2 and earth point for Leakage current test. Generally, speaking, DUT needs two test steps for earth connecting ON and OFF which wrote in safety requirement. Main purpose of EARTH module is earthing ON/OFF switch which mainly applied on multi-earthing like medical equipment and system.



### SWITCH Module

SWITCH module has input and output for isolation between High & Low voltage circuits (5kVac/6kVdc) or different tester/meter (refer to application). If you need High & Low voltage circuits or Function Test items, such as start test of motor, power performance test and LCR measurement, the SWITCH can be used for isolating.



## MODULE SELECTION GUIDE

Specification	AC LINE	GENERAL	AC LINE2	EARTH	GB	GBF-1	GBF-2	SWITCH
Port No.	4	4	4	4	4	2	4	8
HIGH/LOW switch	•	•	•	•	•			
Max. Voltage	5kVac 6kVdc	5kVac 6kVdc	5kVac 6kVdc	5kVac 6kVdc	15 V peak	5kVac 6kVdc	5kVac 6kVdc	5kVac 6kVdc
Max. current	20A	100mA	100mA	100mA	40A	40A	40A	100mA
Test Function channel								
AC/DC/IR Test	HIGH LOW	• •	• •	• •				
GB Test	Drive±, Sense±				Earthed 2 channels	Floating 1 channel	Floating 2 channels	
	LINE	•						
	NETURAL	•						
LC Test	SENSE HIGH SENSE LOW EARTH LINE2	• • • •	• • • •	• • • •				

\*note1. GB, GBF-1 and GBF-2 only can be used on frame #0.

\*note2. GBF-1 and GBF-2 have GB floating function.

\*note3. The GENERAL, ACLINE2, EARTH modules have flexible design which can be exchanged flexibly by terminals for different tests.

## CHROMA 8900 ELECTRICAL EQUIPMENT ATS SUPPORT

19200 can combine with Analysis instrument and other testers via communication interface in the same software platform of Chroma 8900 electrical safety test system. A total solution for EST test can reduce the production cost and making product line effectively. Test procedure and result can store via computer for data mining and researching of line manager and Quality control department.

**GO/NO Function** : GO/NG operation

**Test Program** : Test program selecting and editing

**Report Editor/ Report Wizard** : Editing your own report with measure result

**Report Generator** : Report output

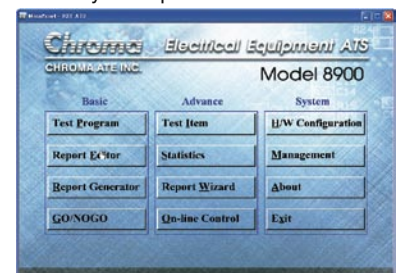
**Test Item** : Test Item editing for single test procedure.

**Statistics** : Various statistics report

**On-line Control** : Instrument control directly while test

**H/D Configuration** : Supporting general instrument like oscilloscope and meter

**Management** : Authorization, password and account management



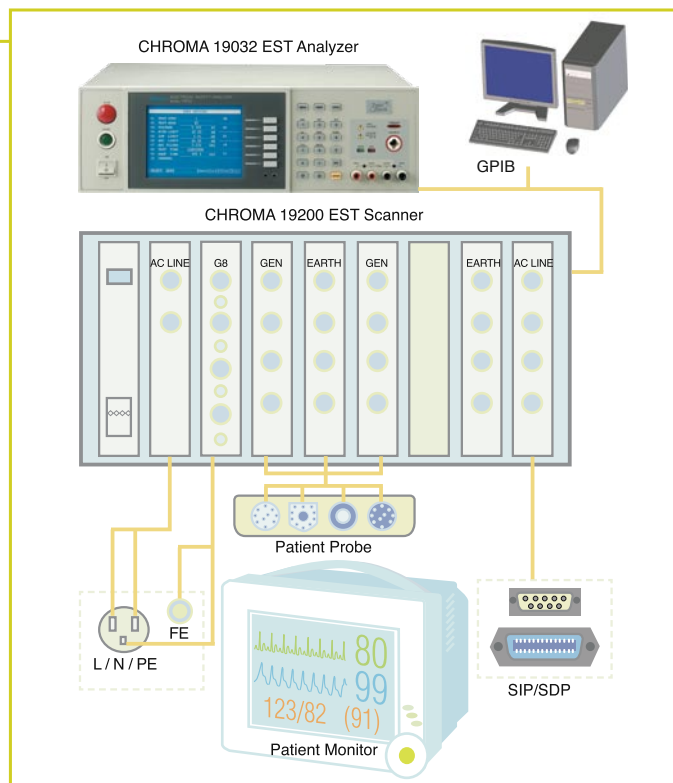
## APPLICATION

### Medical Equipment

The safety standard of medical equipment is very strict. Because the medical equipment keeps in touch with the health of the doctor and patient frequently, make several Electrical safety tests can't be ignored especially leakage current test which has already become the most important test in electrical safety test.

The leakage current test of medical equipment includes four kinds - ELC, ECLC, PLC, PALC - to test besides AC/DC/IR/GB test. Additionally, normal / reverse / single fault normal / single fault reverse four powers and earth switch, let medical equipment safety test difficulty and complexity further.

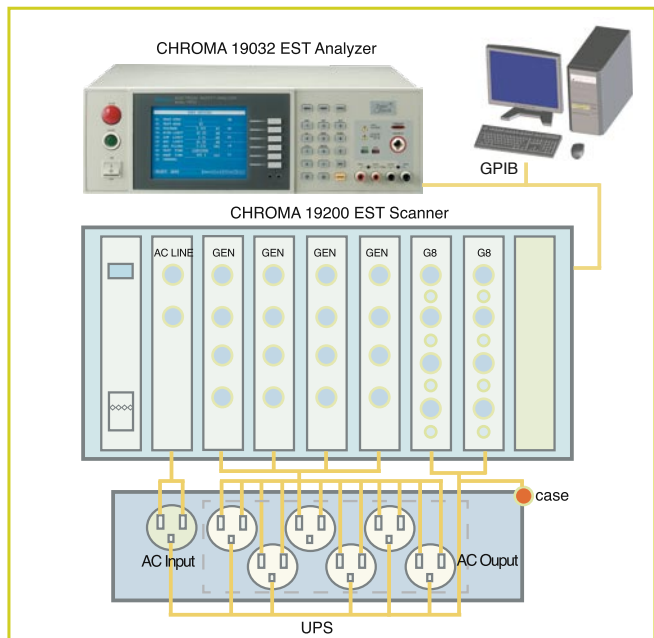
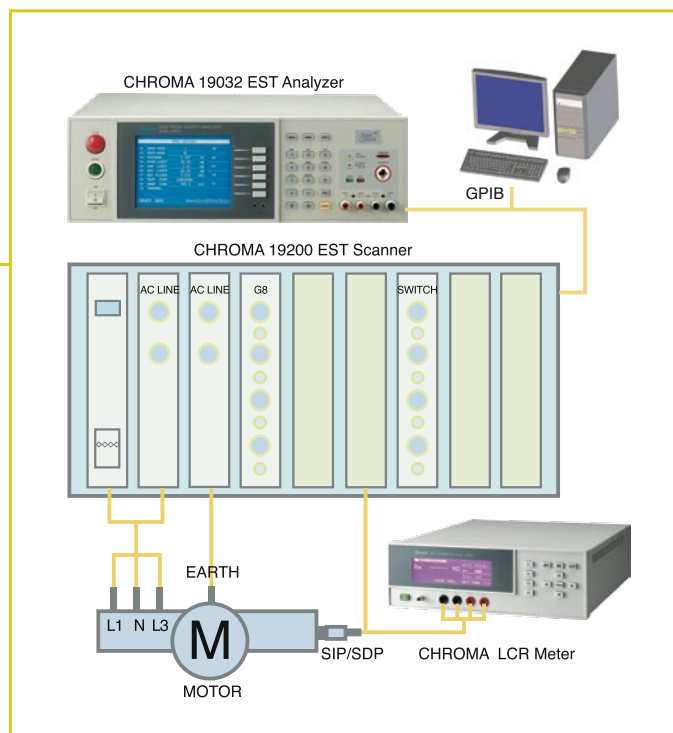
Chroma 19200 can allocate different modules for special medical equipment test reach flexible and time saving. Chroma 19200 with 8900/8910 test system can store test procedure and result via computer for data mining and researching of line manager and Quality control department.



### UPS, Relocatable Power Taps (RPT) and multi-plug equipment

Because of UPS and relevant equipment of power, includes single group power input and multi-groups power output, transformer and cover, etc. all need safety test.

Chroma 19200 can allocate max. 8 modules including 16 points for GB test. 19200 supports master/slave connection, you can test all electrical safety test (AC/DC/IR/GB/LC) of UPS With max. 9 slaves of 19200 to saving your time and cost.



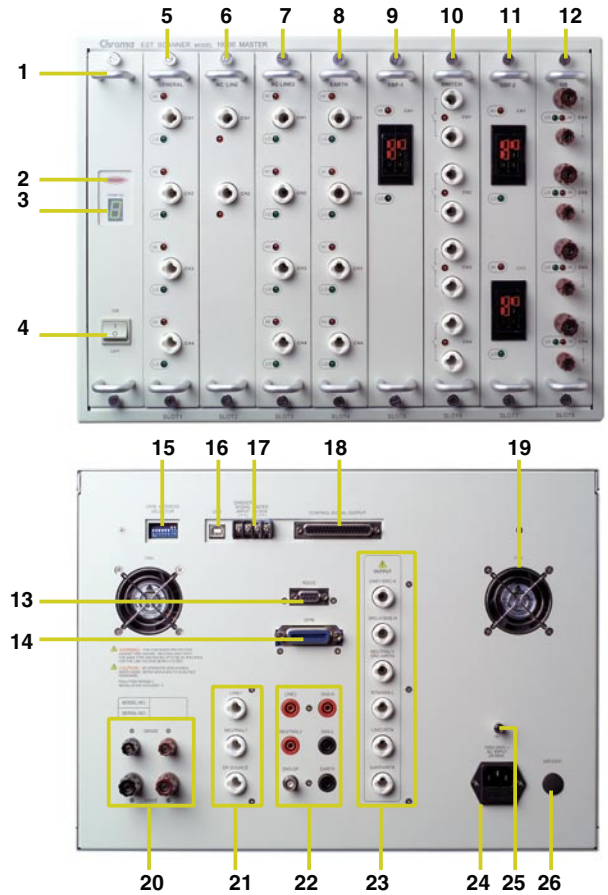
### Function Test - Motor-related or others Appliance

Except for safety test scanning, Chroma 19200 can combine different modules for different tester/meter for different tests need to switch Electrical Safety Test and Function Test. For example, lifting motor needs AC / DC / IR / GB / LC safety tests, and CW/CCW tests, variable resistance test, motor capacitor C measurement, switch/relay check.

Chroma 19200 can perform all kinds of tests, not only motor test, but also medical equipment, power supply, multi-functions household appliances and IT product, by module combination and customize design. Chroma 19200 is not only improving reliability and quality, but also manage and control production efficiently.

## MASTER AND SLAVE PANEL DESCRIPTION

- 1 Easy removable screw
- 2 Danger indicator
- 3 Frame number
- 4 Power switch
- 5 GENERAL module (4 outputs)
- 6 ACLINE module (2 outputs)
- 7 ACLINE2 module (4 outputs)
- 8 EARTH module (4 outputs)
- 9 GBF1 module (1 output with drive and sense)
- 10 SWITCH module (4 inputs and 4 outputs)
- 11 GBF2 module (2 outputs with drive and sense)
- 12 GB module (8 outputs with drive and sense)
- 13 RS232 interface (standard)
- 14 GPIB interface (option)
- 15 GPIB address selector (standard)
- 16 USB interface (standard)
- 17 Interlock and danger signal
- 18 Control signal output for slave (standard)
- 19 Fan
- 20 Drive and sense input for master
- 21 High voltage source input
- 22 Line input from transformer #2 and sense of leakage current test
- 23 Output channels for slave (without drive and sense)
- 24 AC input
- 25 Earth terminal
- 26 Fuse



## SPECIFICATIONS (MASTER AND SLAVE)

<b>Model</b>	19200
<b>Mode</b>	SCAN
<b>Withstanding Voltage Test Scan</b>	
Max. Voltage	AC : 5kV, DC : 6kV
<b>Insulation Resistance Test Scan</b>	
Max. Voltage	DC : 5kV
<b>Ground Bond Test Scan</b>	
Max. Current	40A
<b>Leakage Current Test Scan</b>	
Max. Voltage	AC 300V
Max. Current	20A
<b>Interface</b>	
RS232 , USB (Standard), GPIB (Optional).	
<b>General</b>	
Operation Environment	Temperature : 0°C ~ 45°C, Humidity: 15% to 95% R.H@ ≤40°C
Power Consumption	500VA
Power Requirements	90~132Vac or 198~264Vac, 47~66Hz
Weight	Approx.20kg

\*All specifications are subject to change without notice.

## ORDERING INFORMATION

**19200 (Master)** Electrical Safety Test Scanner (Master)

**19200 (Slave)** Electrical Safety Test Scanner (Slave)

- A192000** AC LINE module
- A192002** GENERAL module
- A192003** AC LINE2 module
- A192004** EARTH module
- A192005** GB module
- A192006** GBF-1 module
- A192007** GBF-2 module
- A192008** SWITCH module

Developed and Manufactured by :

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