Chroma

3-Way Scanning Box

A190201/A190202

User's Manual

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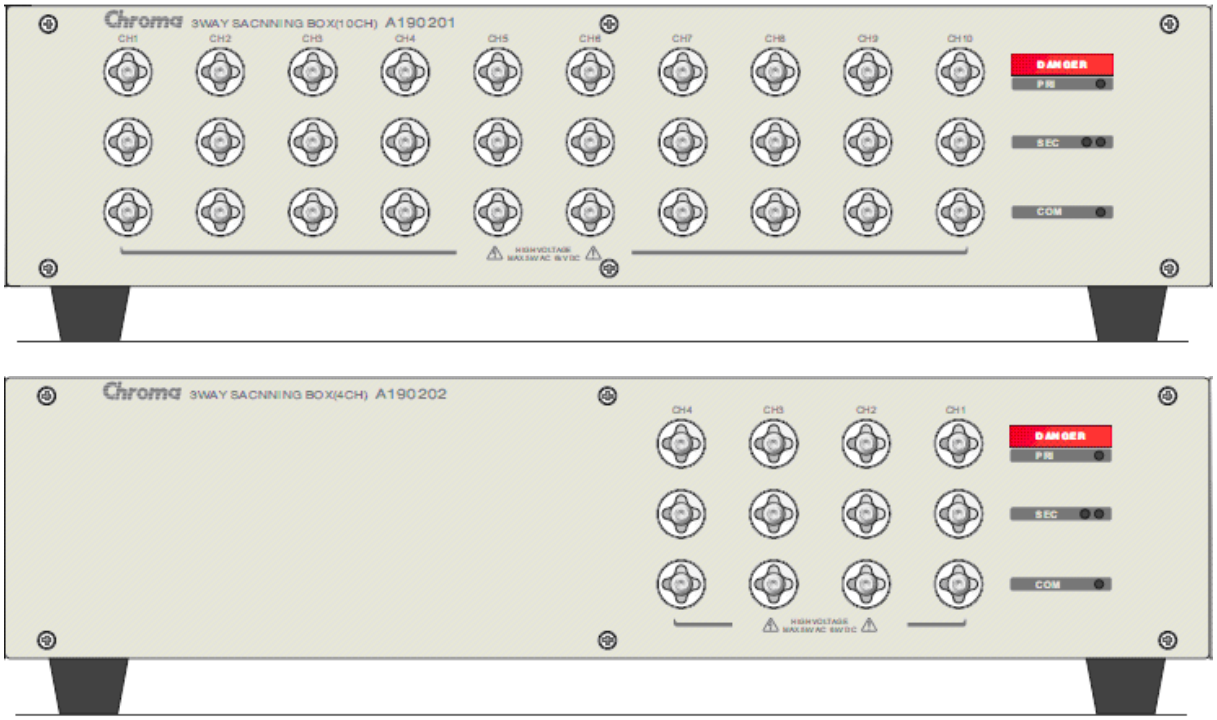


Version 1.0
June 2013

Legal Notices

The information in this document is subject to change without notice.

Chroma ATE INC. makes no warranty of any kind with regard to this manual, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Chroma ATE INC. shall not be held liable for errors contained herein or direct, indirect, special, incidental or consequential damages in connection with the furnishing, performance, or use of this material.

CHROMA ATE INC.
66 Hwaya 1st Rd., Kueishan Hwaya Technology Park, Taoyuan County 33383, Taiwan

Warranty

All of Chroma's instruments are warranted against defects in material and workmanship for a period of one year from date of shipment. Chroma agrees to repair or replace any assembly or component found to be defective, under normal use during this period. Chroma's obligation under this warranty is limited solely to repairing any such instrument, which in Chroma's sole opinion proves to be defective within the scope of the warranty when returned to the factory or to an authorized service center. Purchaser is responsible for the shipping and cost of the service item to Chroma factory or service center. Shipment should not be made without prior authorization by Chroma.

This warranty does not apply to any products repaired or altered by persons not authorized by Chroma, or not in accordance with instructions furnished by Chroma. If the instrument is defective as a result of misuse, improper repair, or abnormal conditions or operations, repairs will be billed at cost.

Chroma assumes no responsibility for its product being used in a hazardous or dangerous manner either alone or in conjunction with other equipment. High voltage used in some instruments may be dangerous if misused. Special disclaimers apply to these instruments. Chroma assumes no liability for secondary charges or consequential damages and in any event, Chroma's liability for breach of warranty under any contract or otherwise, shall not exceed the purchase price of the specific instrument shipped and against which a claim is made.

Any recommendations made by Chroma regarding the use of its products are based upon tests believed to be reliable; Chroma makes no warranty of the results to be obtained. This warranty is in lieu of all other warranties, expressed or implied, and no representative or person is authorized to represent or assume for Chroma any liability in connection with the sale of our products other than set forth herein.

CHROMA ATE INC.
66 Hwaya 1st Rd., Kueishan Hwaya Technology Park,
Taoyuan County 33383, Taiwan
Tel: 886-3-327-9999
Fax: 886-3-327-2886
e-mail: info@chromaate.com

http://www.chromaate.com

Material Contents Declaration

The recycling label shown on the product indicates the Hazardous Substances contained in the product as the table listed below.


: See **<Table 1>**.


: See **<Table 2>**.

<Table 1>

Part Name	Hazardous Substances					
	Lead	Mercury	Cadmium	Hexavalent Chromium	Polybrominated Biphenyls	Polybromodiphenyl Ethers
	Pb	Hg	Cd	Cr^{6+}	PBB	PBDE
PCBA	O	O	O	O	O	O
CHASSIS	O	O	O	O	O	O
ACCESSORY	O	O	O	O	O	O
PACKAGE	O	O	O	O	O	O

“O” indicates that the level of the specified chemical substance is less than the threshold level specified in the standards of SJ/T-11363-2006 and EU 2005/618/EC.

“×” indicates that the level of the specified chemical substance exceeds the threshold level specified in the standards of SJ/T-11363-2006 and EU 2005/618/EC.

Disposal

Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities. Contact your local government for information regarding the collection systems available. If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being. When replacing old appliances with new one, the retailer is legally obligated to take back your old appliances for disposal at least for free of charge.

<Table 2>

Part Name	Hazardous Substances					
	Lead	Mercury	Cadmium	Hexavalent Chromium	Polybrominated Biphenyls	Polybromodiphenyl Ethers
	Pb	Hg	Cd	Cr^{6+}	PBB	PBDE
PCBA	×	O	O	O	O	O
CHASSIS	×	O	O	O	O	O
ACCESSORY	×	O	O	O	O	O
PACKAGE	O	O	O	O	O	O

"O" indicates that the level of the specified chemical substance is less than the threshold level specified in the standards of SJ/T-11363-2006 and EU 2005/618/EC.

"×" indicates that the level of the specified chemical substance exceeds the threshold level specified in the standards of SJ/T-11363-2006 and EU 2005/618/EC.

1. Chroma is not fully transitioned to lead-free solder assembly at this moment; however, most of the components used are RoHS compliant.
2. The environment-friendly usage period of the product is assumed under the operating environment specified in each product's specification.

Disposal

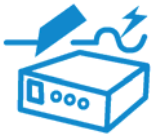
Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities. Contact your local government for information regarding the collection systems available. If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being. When replacing old appliances with new one, the retailer is legally obligated to take back your old appliances for disposal at least for free of charge.

Safety Summary

The following general safety precautions must be observed during all phases of operation, service, and repair of this instrument. Failure to comply with these precautions or specific WARNINGS given elsewhere in this manual will violate safety standards of design, manufacture, and intended use of the instrument. *Chroma* assumes no liability for the customer's failure to comply with these requirements.

BEFORE APPLYING POWER
Verify that the power is set to match the rated input of this power supply.

PROTECTIVE GROUNDING
Make sure to connect the protective grounding to prevent an electric shock before turning on the power.



NECESSITY OF PROTECTIVE GROUNDING
Never cut off the internal or external protective grounding wire, or disconnect the wiring of protective grounding terminal. Doing so will cause a potential shock hazard that may bring injury to a person.

FUSES
Only fuses with the required rated current, voltage, and specified type (normal blow, time delay, etc.) should be used. Do not use repaired fuses or short-circuited fuse holders. To do so could cause a shock or fire hazard.

DO NOT OPERATE IN AN EXPLOSIVE ATMOSPHERE
Do not operate the instrument in the presence of flammable gases or fumes. The instrument should be used in an environment of good ventilation.

DO NOT REMOVE THE COVER OF THE INSTRUMENT
Operating personnel must not remove the cover of the instrument. Component replacement and internal adjustment can be done only by qualified service personnel.

⚠WARNING

1. Lethal voltage. The output may up to 6000V voltage.
2. Touching the output terminal on the front or rear panel or connecting circuit to output when the power is on may result in death.

Safety Symbols

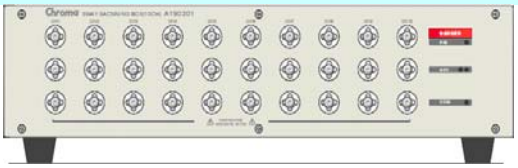
	**DANGER –** High voltage.
	**Explanation:** To avoid injury, death of personnel, or damage to the instrument, the operator must refer to an explanation in the instruction manual.
	**High temperature:** This symbol indicates the temperature is now higher than the acceptable range of human. Do not touch it to avoid any personal injury.
	**Protective grounding terminal:** To protect against electrical shock in case of a fault. This symbol indicates that the terminal must be connected to ground before operation of equipment.
WARNING	The **WARNING** sign denotes a hazard. It calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury. Do not proceed beyond a **WARNING** sign until the indicated conditions are fully understood and met.
CAUTION	The **CAUTION** sign denotes a hazard. It may result in personal injury or death if not noticed timely. It calls attention to procedures, practices and conditions.
Notice	The **Notice** sign denotes important information in procedures, applications or the areas that require special attention. Be sure to read it carefully.

Unpacking for Check & Inspection

Before shipment this instrument was inspected and found to be free of mechanical and electrical defects. As soon as the instrument is unpacked, inspect for any damage that may have occurred in transit. Save all packing materials in case the instrument has to be returned. If damage is found, please file claim with carrier immediately. Do not return the instrument to Chroma without prior approval.

A190201/A190202 Standard Package & Accessories

Standard Equipment



A190201 or A190202 x 1

High voltage hazard label x 1

User's Manual CD x 1

TA Board

A190201 TA Board
1 pc.

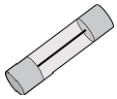
Quick Start Guide x 1

Standard Accessories (Cables)

Power Cord
US Standard
90 Degree Elbow
1 pc

Power Adapter
3PIN to 2PIN
Converter 1 pc

High Voltage
Head + High
Voltage Cable
A190201: 30 pcs.
A190202: 12 pcs.



1.6A fuse
2 pcs.

Cable
BNC-BNC
A190201: 10 pcs.
A190202: 4 pcs.

High Voltage
Head*2+ High
Voltage Cable
A190201: 10 pcs.
A190202: 4 pcs.

Control Cable
1 pc.

Note When additional items are required, contact Chroma and provide item's description.

Hazard Operations

This scanning box is able to output high voltage via remote control. For safety precaution, it is necessary to follow the guidelines listed below when performing the control remotely.

- Do not output any unexpected high voltage as it may cause danger.
- Operators and other personnel are not allowed to touch the UUT, test cable and the probe terminal when there is high voltage output.
- The remote control is usually conducted using the high voltage bar. However, it can also use other circuit for control without using the high voltage bar. As the bar is the switch for high voltage output, it is necessary to keep the connected control cable away from the high voltage bar and the test cable to avoid causing any danger.

⚠WARNING Do not tie up the high voltage cable with RS232, Handler and GPIB control cables or other low voltage side wires. If so, it could cause the product or PC to be down or damaged.

Storage, Freight & Maintenance

Storage
When not in use, please pack the device properly and store in a suitable environment.

Freight
Please pack the device carefully before moving it. If any of the original packing material is missing, please use suitable alternative material and mark it “fragile” and “keep away from water” to avoid damaging the product.

This product is a piece of precision test equipment, so please do not drop or hit it.

Maintenance
In case of any malfunction or abnormality, please refer to the manual, or contact our local distributor for prompt service. Do not touch any parts inside the instrument to avoid any danger to yourself or damage to the product.

Revision History

The following lists the additions, deletions and modifications in this manual at each revision.

Date	Version	Revised Sections
Jun. 2013	1.0	Complete this manual.

Table of Contents

1. Preface

1.1 Overview

The scan input of this 3-Way Scanning Box connects to the Multi-Channel Hipot Tester of Chroma Model 19020 or 19020-4 (AC 5kV/DC 6kV) to perform multi-channel, multi-dot high voltage scanning test for UUT''s primary, secondary or core testing.

1.2 Feature

- **Fixed test mode**
  The scanning box can work with the Chroma Model 19020/19020-4 to perform the built-in scanning test. It can test 10 UUTs (A190201) or 4 UUTs (A190202) simultaneously for Primary, Secondary or Core scanning tests.

2. Specification

■ **Scanner**	HV INPUT: AC 5kV/ DC 6kV maximum HV OUTPUT: P/S/C ON/OFF INTERFACE: Link to 19020/19020-4 scan interface CAPACITY: Maximum 1 Box
■ **Indicator**	UNDER TEST LED P: Primary, S: Secondary, C: Core
■ **Line Input**	90Vac ~ 250Vac, 50 or 60 Hz 80Watt Rated Power
■ **Operable Range**	0°C to 40°C, Maximum relative humidity 80% for temperature up to 31°C (88°F).Decreasing linearly to 50% relative humidity at 40°C (104°F)
■ **Storage Range**	-10 to 60°C (14 to 140°F), ≤ 80% RH.
■ **Dimension(WxHxD)**	430 x 100 x 600 mm / 16.929 x 3.937 x 23.62 in.
■ **Weight**	A190201: < 20 kg / < 44lb. A190202: <14.8kg / <33lb

3. Precautions before Use

1. The A190201/A190202 can only work with the Chroma Model 19020/19020-4 for use. The maximum operating voltage is AC 5kV/DC 6kV and the firmware version must be 2.02 or later.

2. Whe the A190201/A190202 is working with the Chroma Model 19020/19020-4, the main control signal has to connect to A190201 TA board.

3. Front panel high voltage output terminals

A190201

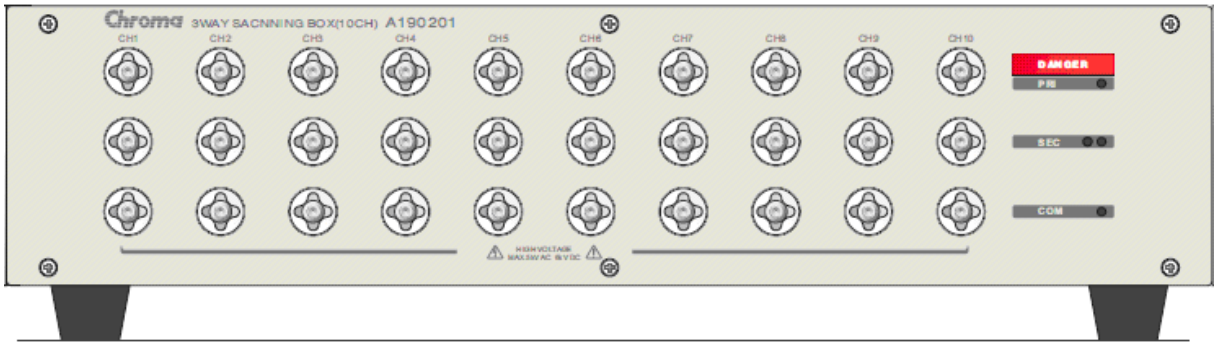


Figure 3-1

A190202

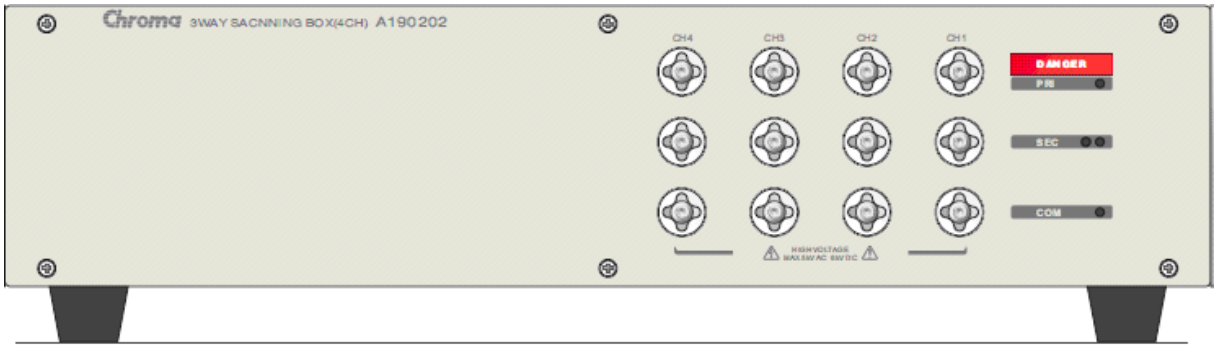


Figure 3-2

4. Storage
The temperature range for storing the scanning box is -10°C~ 60°C, ≤ 80% RH. It is suggested to pack the scanning box with its original package if it is not in use for a long time. For proper testing and safety's sake, do not place the scanning box in a place with direct sunshine, high temperature, frequent oscillations, humidity and dust.

4. Operating

4.1 Connecting Rear Panel

Connect the A190201/A190202 Scanning Box to the Model 19020/19020-4:

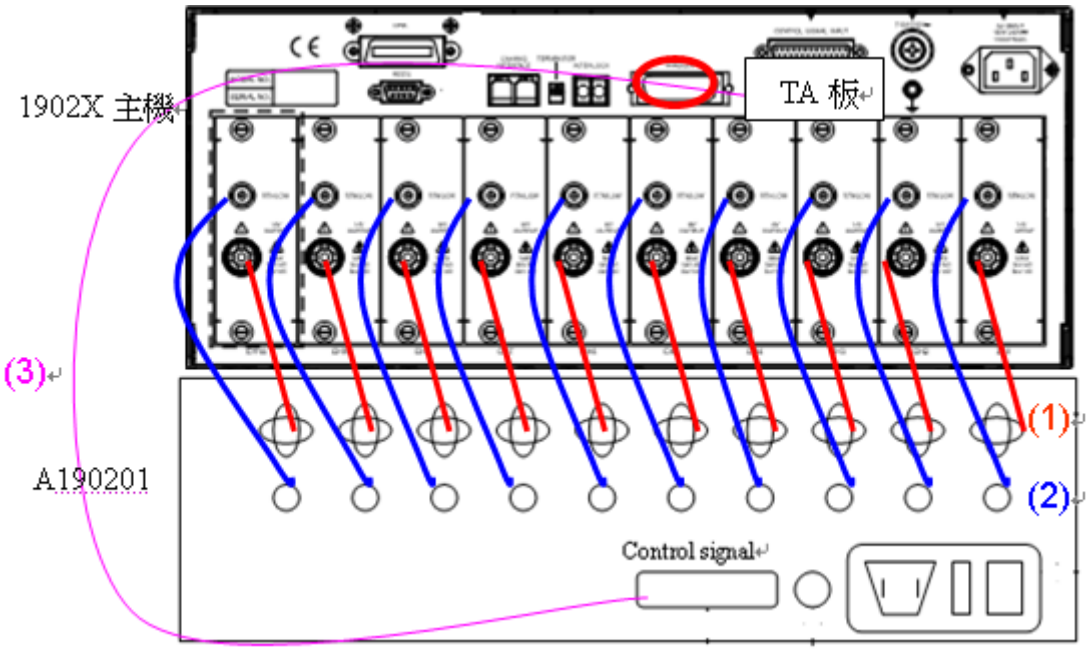


Figure 4-1

1. Use the connecting cable to connect the Handler Interface of 19020.
2. It should go through A190201 TA board before connecting to the 19020.
3. Avoid contacting the high voltage cable and the grounding wire with the control cables.
4. The main grounding wire of the A190201 and the 19020 has to be connected.

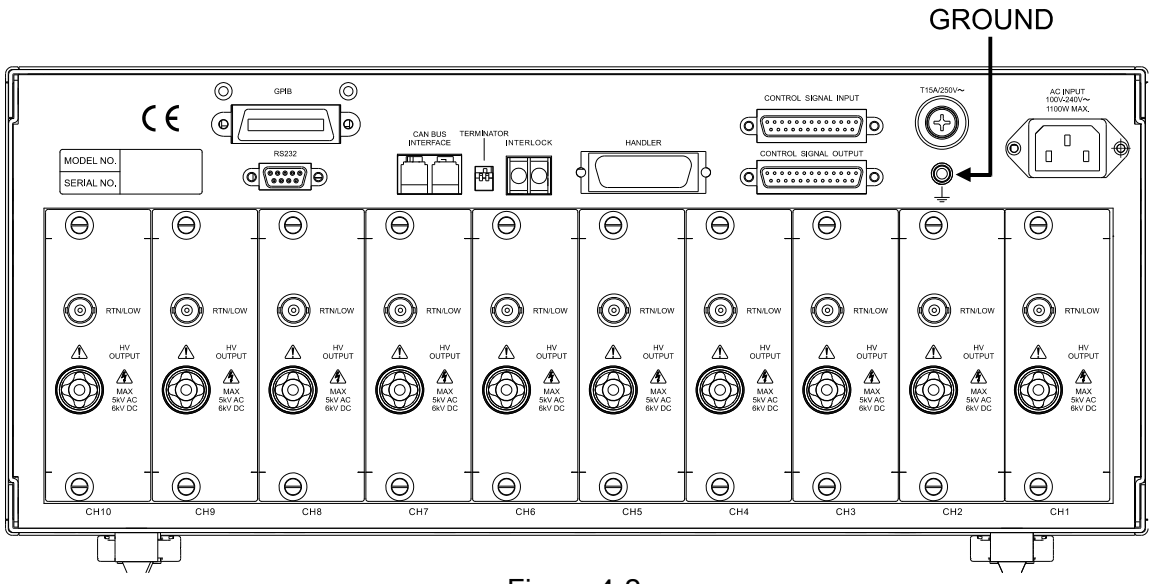


Figure 4-2

4.2 Output Terminals on the Front Panel

1. Front panel of A190201

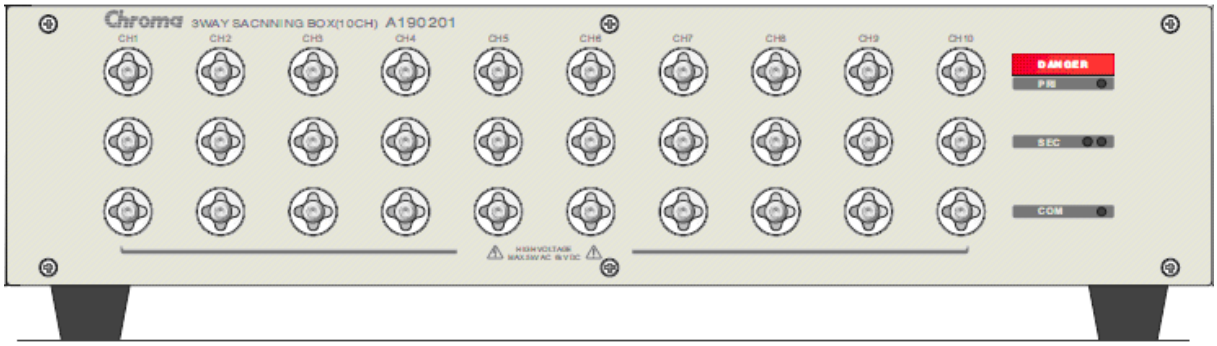


Figure 4-3

2. Front panel of A190202

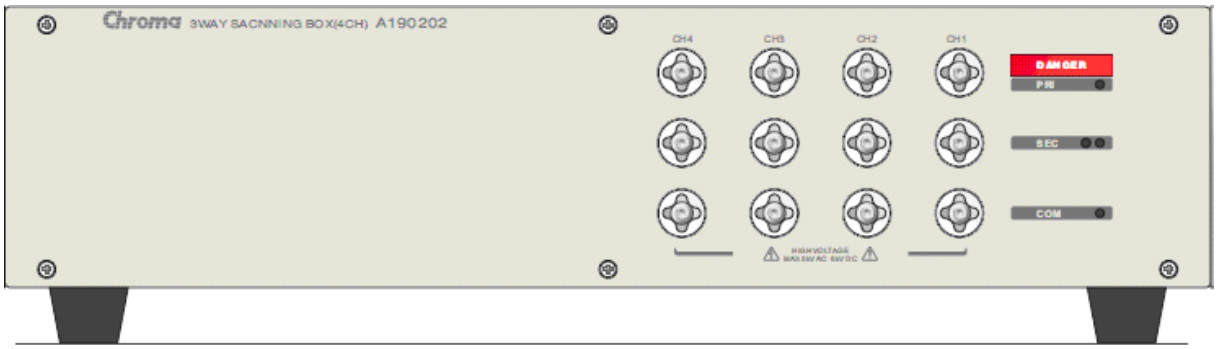


Figure 4-4

The A190201 output has 10 channels and each channel has 3 high voltage output terminals.
The A190202 output has 4 channels and each channel has 3 high voltage output terminals.
The indicators show the output status and all are OFF before controlled.

3. When the Model 19020 is working with the Model A190201, the 19020 is placed on top of the A190201 as the figure shown below.

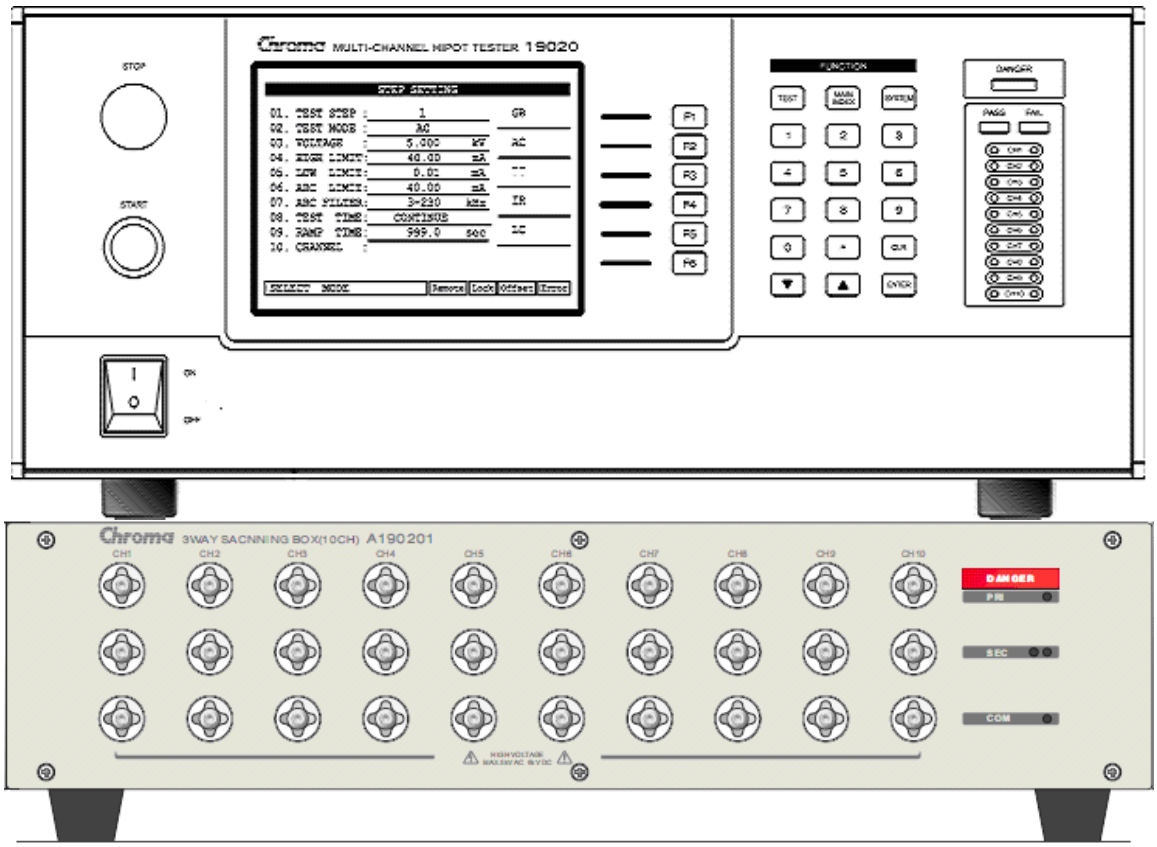
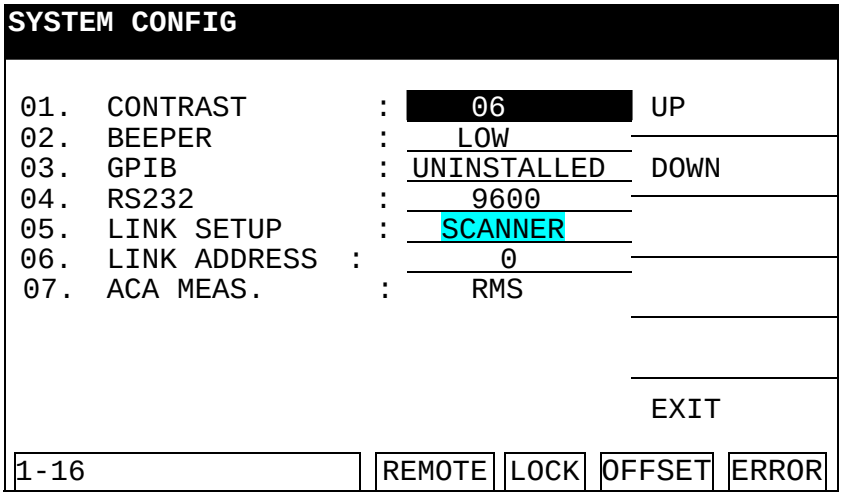


Figure 4-5

4.3 Using the 19020/19020-4 to Control A190201/ A190202

Setting SYSTEM CONFIG

In SYSTEM SETUP screen, move the highlight to SYSYEM CONFIG and press the Function Key [ENTER] or **ENTER** on the keyboard. It goes into the SYSYEM CONFIG setup screen as shown below:



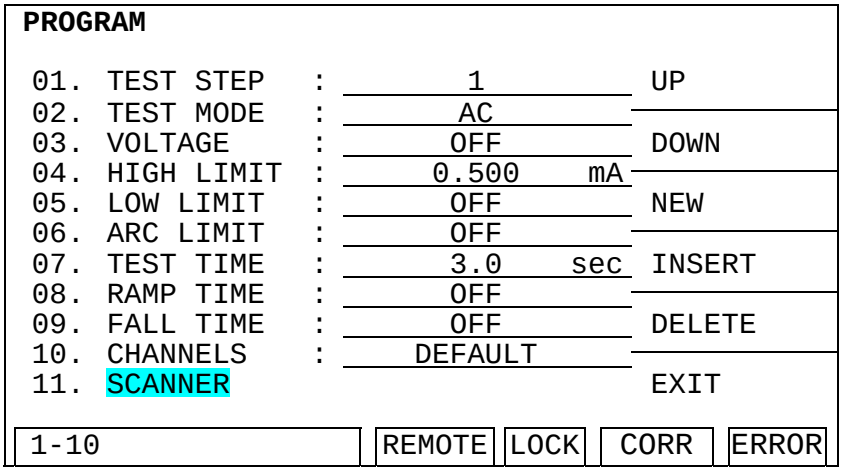
When in the SYSTEM CONFIG setup screen, move the highlight to LINK SETUP and select SCANNER.

4.4 Setting Output Channel Parameter

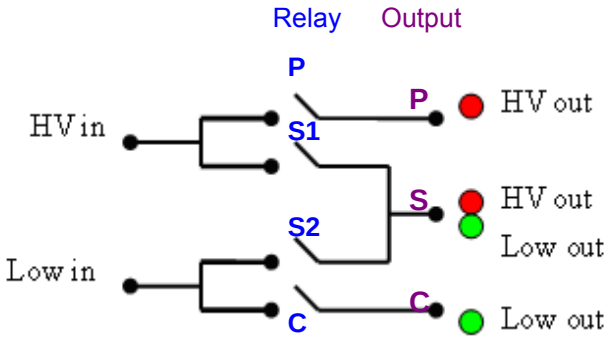
1. Following is the setting of SCANNER:

   AC Withstand Voltage/DC Withstand Voltage/IR Test Mode (WVAC/WVDC/IR)

   Description of test mode:
   P→S: Primary to Secondary
   P→C: Primary to Core
   S→C: Secondary to Core
   P+S→C: Primary with Secondary to Core
   P→S+C: Primary to Secondary with Core



2. Output channel setting:
   Following figure shows the switch mode that maps to the output.



Mode	Output		RELAY			
	HV	**RTN/Low**	**P**	**S1**	**S2**	**C**
1	P	S	ON	OFF	ON	OFF
2	P	C	ON	OFF	OFF	ON
3	S	C	OFF	ON	OFF	ON
4	P+S	C	ON	ON	OFF	ON
5	P	S+C	ON	OFF	ON	ON

CHROMA ATE INC.

致茂電子股份有限公司

66 Hwaya 1st Rd.

Kuei-shan Hwaya Technology Park

Taoyuan County 33383, Taiwan

33383 台灣桃園縣龜山鄉

華亞科技園區華亞一路 66 號

T +886-3-327-9999

F +886-3-327-8898

Mail: info@chromaate.com

http://www.chromaate.com