# DISPLAY MULTI-PROBE ATS
# MODEL 7660

Chroma 7660 Display Multi-Probe ATS adopts the design of non-contact type measurement with the sensor that complied with CIE 1931 and CIE1976 UCS color matching function can measure the luminance and chromaticity uniformity of display panels accurately. Developed with the most advanced digital signal processor and the technology of optoelectronic transfer as well as precision optical parts and circuit design, the probes are able to perform high speed, accurate and stable color tests.

Chroma 7660 Multi-Probe Measurement Software is structured on the OS of Windows XP for graphics operation. The comprehensive and easy to use interface design not only improves the test efficiency effectively but also reduces the human cost for manufacturers. Users can execute all programmed measurement items within a short time by pressing one button when a Video Pattern Generator is integrated. In the mean time, the acceptance and archive are determined automatically as well.

To satisfy different requirements from user, Chroma 7660 provides the user-defined test items that can be edited as need. The "Pre Test" function provided by control software allows users to monitor the readings of each sensor on every pattern in real time for analysis. Chroma 7660 has the function of self-calibration that makes the system maintenance fairly convenient and reduces the succeeding calibration cost effectively.
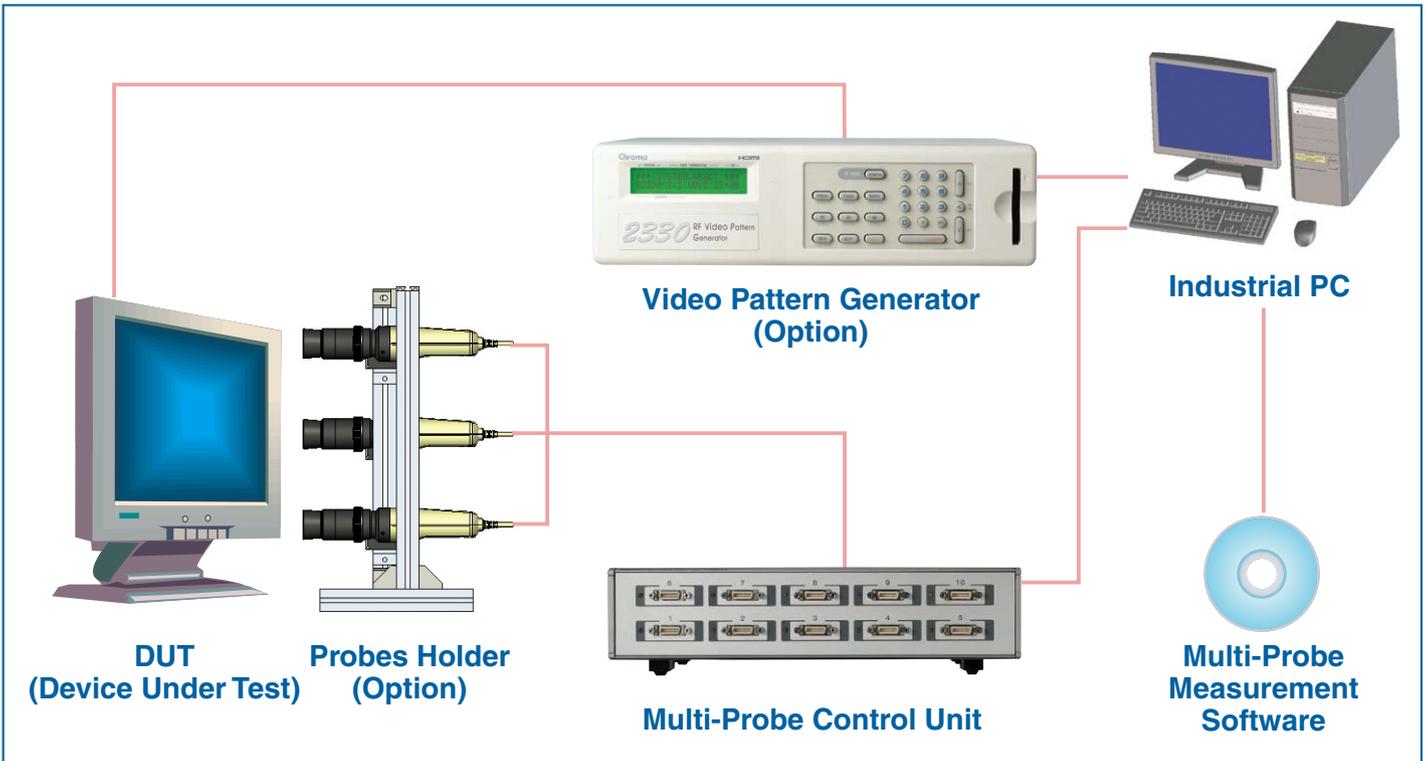
When the presentation of light chromaticity becomes a key factor for display products, the identification of color has to be standardized and more efficient. As the technology and products of flat panel displays have turned into the mainstream in the market today, the consistency of product quality and the improvement of production efficiency as well as the reduction of cost are the competitions of all manufacturers. Chroma 7660 with excellent capability is the device of best choice for gaining and increasing competitiveness.

## MODEL 7660

### Key Features:

- Multiple dots non-contact luminance and chromaticity measurements for color display
- Wide luminance range:
  0.1 to 9999 cd/m² (0.029 to 2918 fL)
- High accuracy measurement:
  ±2% ±1digit for luminance (Y)
  ±0.002 for chromaticity coordinates (xy)
- Support LCD, PDP and various types of flat panels
- Support 2, 5, 9, 16, 25 sensors measurement simultaneously with fast speed
- Able to store 200 channels of calibration data
- Available test items are:
  Luminance, chromaticity, color temperature, luminance uniformity, chromaticity uniformity and contrast
- Exclusive test software that can be programmed by user with high flexibility and operation efficiency
- User can complete all planned measurements by pressing a single button when integrated with video pattern generator
- Multiple Pre Test modes:
  Y, xyY, TΔuvY, u' v' Y, XYZ
- Pre Test function provides user a single step to track the reading of each sensor in real time
- Both English and Chinese operation interfaces are available for switch as need
- Test results can be saved and output automatically for statistics analysis
- Provide access authority control setting for system management
- Support Bar Code Reader input

**Video Pattern Generator (Option)**

**Industrial PC**

**DUT (Device Under Test)**

**Probes Holder (Option)**

**Multi-Probe Control Unit**

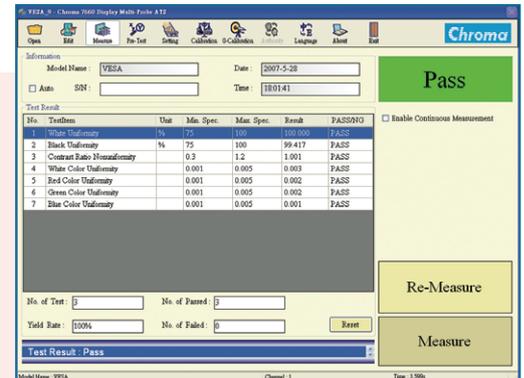**Multi-Probe Measurement Software**

## 7660 MULTI-PROBE MEASUREMENT SOFTWARE

Through the connection of multiple probes on the Multi-Probe Control Unit and the output patterns generated by the integrated Video Pattern Generator, the Multi-Probe Measurement Software worked on Chroma 7660 Display Multi-Probe ATS is able to send the measured readings to PC for calculation. The software will calculate the color and luminance uniformity that should be measured by the probe for assessment. It shows Pass if the uniformity is within the specification and shows NG if otherwise. In the end, the test result can be saved to PC and exported to Excel® for process.

## MAIN SCREEN

It is the major screen displayed for test execution. Click the key of "Measure" can perform the measurement of all test items and display the test results. This screen provides the test information including model name, serial number, date, time and etc. It also lists the test items, specifications as well as the outcome of test. The obvious production information in the statistics area helps understanding the quantity tested, the yield rate, the defect rate and etc. of the production line at present. Continuous test function allows users to do long hour test for one single DUT such as product stability test.
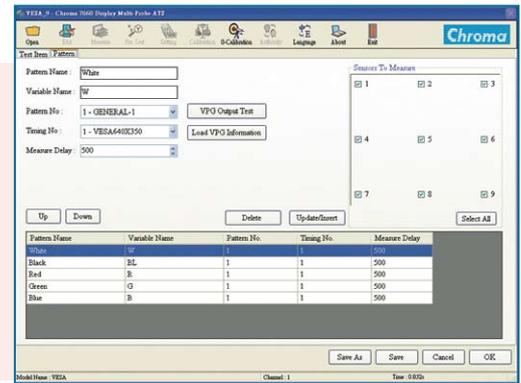


## PRE TEST

Pre Test function allows users to monitor the readings of each measurement also to analyze the DUT's status effectively in real time by showing the differences of single scale in histogram. The multiple Pre Test modes enable users to select the mode they need. Functions of single step test, single test item and continuous test are provided with the concurrent results display, users are able to do further accurate analysis on DUT.



Display Multi-Probe ATS

## PATTERN EDITOR

Multi-Probe Measurement Software can be used to set the patterns for test and timings, output patterns in real time and inspect the set patterns and timings are correct when integrated with Chroma Series Video Pattern Generator. Users can download the pattern and timing names on the Video Pattern Generator to program directory for easy editing. Different patterns can set different measurement dots that make the usage even more flexible.
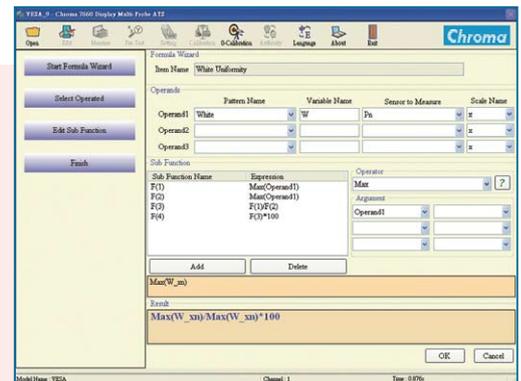
## TEST ITEM EDITOR

Users can set information for different models and save the mapped test items to various test programs. Switching the model to be tested can be done easily by opening the saved file. The serial number can be entered automatically or by user input; in addition it supports the input from bar code reader. Users can define conditions and specifications for the specified pattern and the program will judge if those criteria are met and save the test results automatically for statistics analysis use later on. For the items that do not require complete execution, the Save Time Schedule function enables users to specify test item for Sampling.
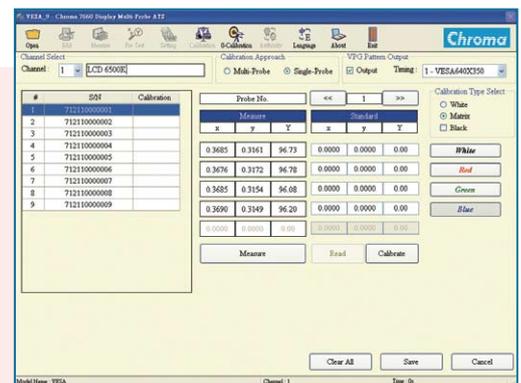
## FORMULA WIZARD

Users are able to define the calculation formula for test item. The Multi-Probe Measurement Software provides a wizard to help users editing the formula. Its easy-to-learn pull-down menus can select the pattern name and scale name directly for calculation. Also, specific probe measurement can be set in the formula for flexible application. The real time on-line function description is provided for help at any time.

## USER CALIBRATION

The function of user calibration allows users to perform calibration directly within the factory without sending the device back to its original producer to save time and cost. There are single probe and multi-probe sync calibrations available for selection. Maximum 200 channels of memory can be used to save different calibration parameters. Calibrations of white, matrix and enhanced matrix are also provided so that the calibration can be closer to the readings of standard unit.

System Requirement
Operation System : Windows® XP

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## SPECIFICATIONS

| Model | | 7660 |
|---|---|---|
| **Probe** | | |
| Measurement Area | | Ø27 mm |
| Measurement Distance | | 30±10 mm |
| Acceptance Angle | | ± 2.5° |
| Measurement Range | | 0.10 to 9999 cd/m² |
| Luminance | Accuracy | ±2%±1digit (Calibrated by standard illuminant A under Chroma's test condition.) |
| | Repeatability | 0.10 to 0.99 cd/m² : 0.2% + 1digit (2σ)<br>1.00 cd/m² or above : 0.1% + 1 digit (2σ) |
| Chromaticity | Accuracy | 0.1  to 2.99  cd/m² : ± 0.008 (for standard illuminant A)<br>3.0  to 4.99  cd/m² : ± 0.005 (for standard illuminant A)<br>5.00  to 9.99  cd/m² : ± 0.003 (for standard illuminant A)<br>10.00 to 9999 cd/m² : ± 0.002 (for standard illuminant A) |
| | Repeatability | 0.10 to 0.19  cd/m² : 0.015 (2σ)<br>0.20 to 0.49  cd/m² : 0.008 (2σ)<br>0.50 to 1.99  cd/m² : 0.003 (2σ)<br>2.00 to 9999 cd/m² : 0.001 (2σ) |
| Sync Mode | | NTSC, PAL, EXT, UNIV, INT |
| Sync Frequency | | 10~100 Hz |
| Dimension | | Ø 46 x 235(D) mm |
| Weight | | 500g (Per Probe) |
| Cord Length | | 2.5m |
| **Multi-Probe Control Unit** | | |
| No. of Port | | 10 |
| Communication Interface | | USB |
| Length of USB Cable | | 4.5m |
| Input Voltage Range | | AC 100~240V, 50/60 Hz, 50VA |
| Temperature Range | | Operating : 0°C to 40°C (32°F to 104°F)<br>Storage : -20°C to 55°C (-4°F to 131°F) |
| Humidity Range | | Less than 85% relative humidity (at 35°C/95°F non-condensing) |
| Dimension | | 303(W)x206(D)x70(H)mm |
| Weight | | 2.0 Kg |
| **Industrial PC** | | |
| Operating System | | Windows® XP |
| Software Installation | | 7660 Multi-Probe Measurement Software |
| Input Voltage Range | | AC 100~240V, 50/60 Hz, 300W (Max.) |
| Option | | LCD Monitor |

*Reference Standard: IEC 61747-6, EIAJ ED-2522, ASTM E455-03, VESA Standard, TCO

*All specifications are subject to change without prior notice.

## ORDERING INFORMATION

**7660 Display Multi-Probe ATS** (Probe *2 + Multi-Probe Control Unit *1 + IPC)

**7660 Display Multi-Probe ATS** (Probe *5 + Multi-Probe Control Unit *1 + IPC)

**7660 Display Multi-Probe ATS** (Probe *9 + Multi-Probe Control Unit *1 + IPC)

**7660 Display Multi-Probe ATS** (Probe *16 + Multi-Probe Control Unit *2 + IPC)

**7660 Display Multi-Probe ATS** (Probe *25 + Multi-Probe Control Unit *3 + IPC)

**A766000** : Multi-Probe Control Unit (10 ports)

**A766001** : 7660 Probe (Including a 2.5m cable)

**A766002** : 7660 Probe (Including a 5m cable)