HYBRID SINGLE SITE TEST HANDLER
MODEL 3110

Chroma 3110 is a single site pick & place IC handler which supports various types of package such as QFP, QFN, TSOP, BGA, μBGA and CSP, etc. The handler uses P & P technology to pick up devices from JEDEC trays, move them to the test site. The 3110 consists of system level tests that are designed to fully exercise programs as a whole and check all integrated elements function properly. It is capable to handle tri-temperature test environment since ambient to thermal or low temperature.

In addition to the capability of handling 3x3mm to 55x55mm devices, the machine is equipped with 1 auto stacks and 2 manual bin plates to maximize the loading and unloading capacity. It features a user-friendly graphic user interface based on Windows system and also provides interfaces for docking with various testers.

**KEY FEATURES**

- FT + SLT handler – two in one
- Perfect for device engineering characterization gathering and analysis
- Auto tray load/unload & device sorting capability
- Tester zero waiting time
- Without socket damage issue
- Air damper for good contact balance
- Shuttle remain IC check function
- Camera for real time system monitoring
- Tri-temp IC test function (optional)
- High power cooling function (optional)
- Diskless download function (optional)
**CHROMA THERMAL CONTROL SOLUTIONS**

### Tri-temp Control
- Temperature accuracy: ± 1°C
- Device temperature feedback (Thermocouple/RTD/Thermistor)
- PID Ramp Control (with auto-tuning capability)
- PWM TE Power Control
- Die Cushion (Dual Force) Control
- Modularized dry air chamber
- Water chiller
- Dry air supplier

### Closed-loop Active Thermal Control (ATC) Module
- Temperature accuracy: ± 1°C
- All in one attached on test arm
- Device temperature feedback
- PID Ramp Control (with auto-tuning capability)
- PWM TE Power Control
- Die Cushion (Dual Force) Control
- Closed-loop cooling system (no external piping)
- Chamber-less

### Unity PTC (Passive Thermal Control)
- Temperature range: < 85°C (up to 300W dissipation)
- Closed-loop cooling system (no external piping)
- All in one attached on test arm
- Die Cushion (Dual Force) Control
- Neither water chiller nor dry air supplier

### Cooling Pipe
- Temperature range: < 85°C (up to 125W heat dissipation)
- Compressed air from test plant. air: 0.7MPa, 70 LPM
- Die Cushion (Dual Force) Control
- Change KIT alike
- Neither water chiller nor dry air supplier

---

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Model</th>
<th>3110</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions and Weight</td>
<td>Dimensions: 900 mm (W) by 1250mm (D) by 1800 mm (H) (Signal Tower excluded)  &lt;br&gt;Net Weight: 500kg</td>
</tr>
<tr>
<td>Power Requirement</td>
<td>Power Supply: AC 220V, 50/60 Hz Single-phase  &lt;br&gt;Maximum Power Consumption: 3.0kVA Max  &lt;br&gt;Controller Circuit: 1.0 KVA Max  &lt;br&gt;Heater Circuit: 2.0 KVA (Option)</td>
</tr>
<tr>
<td>Compressed Air</td>
<td>Dry Air of 5.0 kg/cm² (0.49 Mpa) or higher, constant supply</td>
</tr>
<tr>
<td>Applicable Device</td>
<td>Type: BGA series, μ BGA, QFP series, QFN, Flip-Chip, TSOP</td>
</tr>
<tr>
<td>Outer dimensions</td>
<td>3 mm x 3 mm to 55 mm x 55 mm</td>
</tr>
<tr>
<td>Lead / Ball pitch</td>
<td>0.4 mm / 0.5 mm and above</td>
</tr>
<tr>
<td>Tester Interface</td>
<td>Standard RS-232, TCP/IP, Optional GPIB and TTL</td>
</tr>
<tr>
<td>Jam Rate</td>
<td>1/3000</td>
</tr>
<tr>
<td>Categories</td>
<td>3 Categories (128 bin signals for RS232)</td>
</tr>
<tr>
<td>Contact Force</td>
<td>50 kgf (Accuracy ±1kgf)  &lt;br&gt;125Kgf (Option)</td>
</tr>
<tr>
<td>Temperature</td>
<td>Operating Mode: Ambient  &lt;br&gt;High Temperature (Option)  &lt;br&gt;Operating Mode: 40°C ~ 125°C* (Heating Time: within 30 min.)  &lt;br&gt;Accuracy: Contact Head ± 3°C, Pre-heater ± 5°C</td>
</tr>
<tr>
<td>Tri Temp Control (Option)</td>
<td>Temperature Range: -40°C ~ 135°C ± 1°C (150°C Optional)</td>
</tr>
<tr>
<td>ATC Module (Option)</td>
<td>Temperature Range: Ambient ~ 135°C ± 1°C (150°C Optional)</td>
</tr>
<tr>
<td>Unity PTC (Option)</td>
<td>Temperature Range: Room ~ 85°C (up to 300W Heat Dissipation)</td>
</tr>
<tr>
<td>Cooling Pipe (Option)</td>
<td>Temperature Range: Room ~ 85°C (up to 125W Heat Dissipation)</td>
</tr>
</tbody>
</table>

### Advantage
- Universal kit design
- ECD function (Easy-edit communication define)
- On-Fly RC
- Contact pick and place system
- Yield control (Average yield of socket)
- Continue Fail

### Option
- Remote Control
- CCD camera for device orientation detection
- Rotation (+/-90 degree)
- Auto Load / Unload: 1 Input/2 Unload (with 2 manual unload)
- Fixed Load / Unload: 1 Input / 4 Unload
- Trestle: 110cm

All specifications are subject to change without notice.

---

**ORDERING INFORMATION**

3110: Hybrid Single Site Test Handler  
3100-TT: Tri-temp Control option  
3100-A: Active Thermal Control Module (option)  
3100-P: Unity Passive Thermal Control (option)  
3100-C: Cooling Pipe (option)

---

**Chroma Thermal Control Solutions**

<table>
<thead>
<tr>
<th>Products</th>
<th>Capability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Thermal Control Solution</td>
<td>3100-TT: -40°C ~ 135°C ± 1°C  &lt;br&gt;3100-A: Ambient ~ 135°C ± 1°C</td>
</tr>
<tr>
<td>Passive Cooling System</td>
<td>3100-P: Ambient ~ 85°C (&lt;300W Heat Dissipation)  &lt;br&gt;3100-C: Ambient ~ 85°C (&lt;125W Heat Dissipation)</td>
</tr>
</tbody>
</table>

**Configurations**

<table>
<thead>
<tr>
<th>Test Plug Design</th>
<th>Compressed Air</th>
<th>Dry Air</th>
<th>Standalone Water Chiller</th>
<th>Chamber</th>
<th>TEC Controller</th>
<th>External Piping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Exchanger+TEC (Peltier)</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Water Chiller+TEC (peltier)</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Closed-loop Liquid Cooling+TEC (peltier)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Closed-loop Liquid Cooling</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Cooling Pipe</td>
<td>70 LPM</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

---

**Developed and Manufactured by:**

CHROMA ATE INCO.  
TAIWAN HEADQUARTERS  
T +886-3-327-9999  
F +886-3-327-8898  
http://www.chromaate.com  
E-mail: info@chromaate.com  

HSINCHU  
T +886-3-563-5358  
F +886-3-563-5358

KAOHSUNG  
T +886-7-365-6188  
F +886-7-364-9500

CHINA CHROMA ELECTRONICS (SHENZHEN) CO., LTD.  
T +86-755-2664-4598  
F +86-755-2641-9620

JAPAN CHROMA JAPAN CORP.  
T +81-45-542-1118  
F +81-45-542-1080

U.S.A. CHROMA ATE INC. (U.S.A.)  
T +1-949-421-0355  
F +1-949-421-0353

EUROPE CHROMA ATE EUROPE B.V.  
T +31-318-648232  
F +31-318-648288

CHROMA SYSTEMS SOLUTIONS, INC.  
T +1-949-600-6400  
F +1-949-600-6401

3110-E-2012-2-PDF