LIQUID CRYSTAL DISPLAY DIVISION

FEATURES
1. 10.4"XGA display size for notebook PC
2. LVDS interface system
3. Slim(5.5mmMAX) & light weight(265gTYP) design

MECHANICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensional Outline (typ.)</td>
<td>241.5(W) x 171.9(H) x 5.5max(D) mm</td>
</tr>
<tr>
<td>Number of Pixels</td>
<td>1024(W) x 768(H) pixels</td>
</tr>
<tr>
<td>Active Area</td>
<td>210.432(W) x 157.824(H) mm</td>
</tr>
<tr>
<td>Pixel Pitch</td>
<td>0.2055(W) x 0.2055(H)</td>
</tr>
<tr>
<td>Weight (approximately)</td>
<td>265g</td>
</tr>
<tr>
<td>Backlight</td>
<td>Single CCFL, Sidelight type</td>
</tr>
</tbody>
</table>

MECHANICAL SPECIFICATIONS

ABSOLUTE MAXIMUM RATINGS

<table>
<thead>
<tr>
<th>Item</th>
<th>Min.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Voltage (VDD)</td>
<td>-0.3</td>
<td>4.5</td>
<td>V</td>
</tr>
<tr>
<td>FL Driving Frequency (fL)</td>
<td>0</td>
<td>2.0</td>
<td>kHz</td>
</tr>
<tr>
<td>Input Signal Voltage (Vin)</td>
<td>-0.3</td>
<td>VDD+0.3</td>
<td>V</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0</td>
<td>50</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-20</td>
<td>60</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Humidity</td>
<td>10</td>
<td>90</td>
<td>%RH</td>
</tr>
</tbody>
</table>

ELECTRICAL SPECIFICATION

<table>
<thead>
<tr>
<th>Item</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Voltage (VDD)</td>
<td>3.0</td>
<td>3.3</td>
<td>3.6</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>(Vin)</td>
<td>---</td>
<td>(650)</td>
<td>---</td>
<td>Vrms</td>
<td>fL=2.5 mArms</td>
</tr>
<tr>
<td>FL Start Voltage (Ta=0°C)</td>
<td>(1200)</td>
<td></td>
<td>1600</td>
<td>Vrms</td>
<td></td>
</tr>
<tr>
<td>Receiver Input Voltage</td>
<td>0</td>
<td>---</td>
<td>2.4</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Differential Input High Threshold(Vthh)*1</td>
<td>---</td>
<td>---</td>
<td>VDD+0.1</td>
<td>V</td>
<td>VDD=+1.2V</td>
</tr>
<tr>
<td>Differential Input Low Threshold(Vthl)*1</td>
<td>VDD+0.1</td>
<td>---</td>
<td>---</td>
<td>V</td>
<td>VDD=+1.2V</td>
</tr>
<tr>
<td>Current Consumption</td>
<td>---</td>
<td>360</td>
<td>---</td>
<td>mA</td>
<td></td>
</tr>
<tr>
<td>*3 (Idd)</td>
<td>2.0</td>
<td>2.5</td>
<td>5.0</td>
<td>mArms</td>
<td></td>
</tr>
<tr>
<td>*2 *3 Power Consumption</td>
<td>---</td>
<td>(2.8)</td>
<td>---</td>
<td>W</td>
<td>@70cd/m²</td>
</tr>
</tbody>
</table>

*1 : Refer to DF-90CF364 Specification by National Semiconductor Corporation. This LCD module conforms to LVDS standard (TIA/EIA-644)
*2 : 8 color bars pattern
*3 : Excepting the efficiency FL inverter

OPTICAL SPECIFICATION (Ta=25°C)

<table>
<thead>
<tr>
<th>Item</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contrast Ratio (CR)</td>
<td>100</td>
<td>250</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Response Time</td>
<td>---</td>
<td>---</td>
<td>50</td>
<td>ms</td>
<td></td>
</tr>
<tr>
<td>(tON)</td>
<td>---</td>
<td>---</td>
<td>50</td>
<td>ms</td>
<td></td>
</tr>
<tr>
<td>(tOFF)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Luminance (L)</td>
<td>50</td>
<td>70</td>
<td>---</td>
<td>cd/m²</td>
<td>lL=2.5mArms</td>
</tr>
<tr>
<td></td>
<td>---</td>
<td>200</td>
<td>---</td>
<td>cd/m²</td>
<td>lL=5mArms</td>
</tr>
</tbody>
</table>

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1999-03-18 (Ver.2.2)
TIMING CHART

(1) Vertical Timing

(2) Horizontal Timing

(NCLK) E(NAB) (R5-R0 G5-G0 B5-B0) (X76, X78, X79, X80)
### TIMING SPECIFICATION 2) 3) 4)

<table>
<thead>
<tr>
<th>Item</th>
<th>Symbol</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame Period</td>
<td>t1</td>
<td>(778) x t3</td>
<td>806 x t3</td>
<td>(860) x t3</td>
<td>16.67 ms</td>
<td>1) 5)</td>
</tr>
<tr>
<td>Vertical Display Term</td>
<td>t2</td>
<td>768 x t3</td>
<td>768 x t3</td>
<td>768 x t3</td>
<td>---</td>
<td>1)</td>
</tr>
<tr>
<td>One Line Scanning Time</td>
<td>t3</td>
<td>1319 x tc</td>
<td>1344 x tc</td>
<td>1362 x tc</td>
<td>--- µs</td>
<td>1) 5)</td>
</tr>
<tr>
<td>Horizontal Display Term</td>
<td>t4</td>
<td>1024 x tc</td>
<td>1024 x tc</td>
<td>1024 x tc</td>
<td>---</td>
<td>1)</td>
</tr>
<tr>
<td>Clock Period</td>
<td>tc</td>
<td>15.0</td>
<td>15.38</td>
<td>---</td>
<td>ns</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Refer to TIMING CHART at page 4 and LVDS specification (DS90CF364) by National Semiconductor Corporation.

Note 2) When ENAB is fixed to “H” level or “L” level after NCLK input, the panel is displayed as black. However, it may be occurred a flicker on the display.

Note 3) When NCLK is fixed to “H” level or “L” level, the panel becomes white stage after several seconds.

Note 4) Do not change t1 and t3 values in the operation. When t1 or t3 is changed, the panel is displayed as black.

Note 5) Please adjust LCD operating signal timing and FL driving frequency, to optimize the display quality. There is a possibility that flicker is observed by the interference of LCD operating signal timing and FL driving condition (especially driving frequency).
## CONNECTOR PIN ASSIGNMENT FOR INTERFACE

### CN1  INPUT SIGNAL

Connector: 55176-1491 / MOLEX JAPAN CO., LTD.
Mating Connector: 51146-1400(housing) / MOLEX JAPAN CO., LTD.

<table>
<thead>
<tr>
<th>Terminal No.</th>
<th>Symbol</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VDD</td>
<td>Power Supply : +3.3V</td>
</tr>
<tr>
<td>2</td>
<td>VDD</td>
<td>Power Supply : +3.3V</td>
</tr>
<tr>
<td>3</td>
<td>GND</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>GND</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>CK+</td>
<td>Sampling Clock (Positive : + )</td>
</tr>
<tr>
<td>6</td>
<td>CK-</td>
<td>Sampling Clock (Negative : - )</td>
</tr>
<tr>
<td>7</td>
<td>IN2+</td>
<td>Transmission Data of Pixels 2 (Positive : + )</td>
</tr>
<tr>
<td>8</td>
<td>IN2-</td>
<td>Transmission Data of Pixels 2 (Negative : - )</td>
</tr>
<tr>
<td>9</td>
<td>IN1+</td>
<td>Transmission Data of Pixels 1 (Positive : + )</td>
</tr>
<tr>
<td>10</td>
<td>IN1-</td>
<td>Transmission Data of Pixels 1 (Negative : - )</td>
</tr>
<tr>
<td>11</td>
<td>IN0+</td>
<td>Transmission Data of Pixels 0 (Positive : + )</td>
</tr>
<tr>
<td>12</td>
<td>IN0-</td>
<td>Transmission Data of Pixels 0 (Negative : - )</td>
</tr>
<tr>
<td>13</td>
<td>GND</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>GND</td>
<td></td>
</tr>
</tbody>
</table>

### CN2  CCFL POWER SOURCE

Connector: HV-2S-C1C3 / JAPAN AVIATION ELECTRONICS INDUSTRY, LTD.
Mating Connector: HV-2P-HF / JAPAN AVIATION ELECTRONICS INDUSTRY, LTD.

<table>
<thead>
<tr>
<th>Terminal No.</th>
<th>Symbol</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VL</td>
<td>CCFL Power Supply (high voltage)</td>
</tr>
<tr>
<td>2</td>
<td>GL</td>
<td>CCFL Power Supply (low voltage)</td>
</tr>
</tbody>
</table>
## Case 1: 6-bit Transmitter

### DS90CF363

<table>
<thead>
<tr>
<th>Input Terminal No.</th>
<th>Symbol</th>
<th>DS90CF363 Symbol</th>
<th>Input Signal (Graphics controller output signal)</th>
<th>Output Signal Symbol</th>
<th>Terminal</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIN0</td>
<td>44</td>
<td>R0</td>
<td>Red Pixels Display Data (LSB)</td>
<td>TOUT0-</td>
<td>No. 12</td>
<td>IN0-</td>
</tr>
<tr>
<td>TIN1</td>
<td>45</td>
<td>R1</td>
<td>Red Pixels Display Data</td>
<td>TOUT0+</td>
<td>No. 11</td>
<td>IN0+</td>
</tr>
<tr>
<td>TIN2</td>
<td>47</td>
<td>R2</td>
<td>Red Pixels Display Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN3</td>
<td>48</td>
<td>R3</td>
<td>Red Pixels Display Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN4</td>
<td>1</td>
<td>R4</td>
<td>Red Pixels Display Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN5</td>
<td>3</td>
<td>R5</td>
<td>Red Pixels Display Data (MSB)</td>
<td>TOUT1-</td>
<td>No. 10</td>
<td>IN1-</td>
</tr>
<tr>
<td>TIN6</td>
<td>4</td>
<td>G0</td>
<td>Green Pixels Display Data (LSB)</td>
<td>TOUT1+</td>
<td>No. 9</td>
<td>IN1+</td>
</tr>
<tr>
<td>TIN7</td>
<td>6</td>
<td>G1</td>
<td>Green Pixels Display Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN8</td>
<td>7</td>
<td>G2</td>
<td>Green Pixels Display Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN9</td>
<td>9</td>
<td>G3</td>
<td>Green Pixels Display Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN10</td>
<td>10</td>
<td>G4</td>
<td>Green Pixels Display Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN11</td>
<td>12</td>
<td>G5</td>
<td>Green Pixels Display Data (MSB)</td>
<td>TOUT2-</td>
<td>No. 8</td>
<td>IN2-</td>
</tr>
<tr>
<td>TIN12</td>
<td>13</td>
<td>B0</td>
<td>Blue Pixels Display Data (LSB)</td>
<td>TOUT2+</td>
<td>No. 7</td>
<td>IN2+</td>
</tr>
<tr>
<td>TIN13</td>
<td>15</td>
<td>B1</td>
<td>Blue Pixels Display Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN14</td>
<td>16</td>
<td>B2</td>
<td>Blue Pixels Display Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN15</td>
<td>18</td>
<td>B3</td>
<td>Blue Pixels Display Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN16</td>
<td>19</td>
<td>B4</td>
<td>Blue Pixels Display Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN17</td>
<td>20</td>
<td>B5</td>
<td>Blue Pixels Display Data (MSB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN18</td>
<td>22</td>
<td>NC</td>
<td>Non Connection (open)</td>
<td>TCLK OUT-</td>
<td>No. 6</td>
<td>CLK IN-</td>
</tr>
<tr>
<td>TIN19</td>
<td>23</td>
<td>NC</td>
<td>Non Connection (open)</td>
<td>TCLK OUT+</td>
<td>No. 5</td>
<td>CLK IN+</td>
</tr>
<tr>
<td>TIN20</td>
<td>25</td>
<td>ENAB</td>
<td>Compound Synchronization Signal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLK IN</td>
<td>26</td>
<td>NCLK</td>
<td>Data Sampling Clock</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Diagram

```
IN0
   TIN6  TIN5  TIN4  TIN3  TIN2  TIN1  TIN0
     G0   R5   R4   R3   R2   R1   R0

IN1
   TIN13 TIN12 TIN11 TIN10 TIN9  TIN8  TIN7
     B1   B0   G5   G4   G3   G2   G1

IN2
   TIN20 TIN19 TIN18 TIN17 TIN16 TIN15 TIN14
     ENAB NC   NC   B5   B4   B3   B2
```
## Case2: 8bit Transmitter

### Input Terminal No. | Input Signal (Graphics controller output signal) | Output Signal Symbol | LTM10C306L Interface (CN1) Terminal | Symbol |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TIN0 51</td>
<td>R0 Red Pixels Display Data (LSB)</td>
<td>TOUT0+</td>
<td>No.12 IN0-</td>
<td></td>
</tr>
<tr>
<td>TIN1 52</td>
<td>R1 Red Pixels Display Data</td>
<td></td>
<td>No.11 IN0</td>
<td></td>
</tr>
<tr>
<td>TIN2 54</td>
<td>R2 Red Pixels Display Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN3 55</td>
<td>R3 Red Pixels Display Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN4 56</td>
<td>R4 Red Pixels Display Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN6 3</td>
<td>R5 Red Pixels Display Data (MSB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN7 4</td>
<td>G0 Green Pixels Display Data (LSB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN8 6</td>
<td>G1 Green Pixels Display Data</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>TIN9 7</td>
<td>G2 Green Pixels Display Data</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>TIN12 11</td>
<td>G3 Green Pixels Display Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN13 12</td>
<td>G4 Green Pixels Display Data</td>
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<td></td>
</tr>
<tr>
<td>TIN14 14</td>
<td>G5 Green Pixels Display Data (MSB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN15 15</td>
<td>B0 Blue Pixels Display Data (LSB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN18 19</td>
<td>B1 Blue Pixels Display Data</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>TIN19 20</td>
<td>B2 Blue Pixels Display Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN20 22</td>
<td>B3 Blue Pixels Display Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN21 23</td>
<td>B4 Blue Pixels Display Data</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>TIN22 24</td>
<td>B5 Blue Pixels Display Data (MSB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN24 27</td>
<td>NC Non Connection (open)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN25 28</td>
<td>NC Non Connection (open)</td>
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<tr>
<td>TIN26 30</td>
<td>ENAB Compound Synchronization Signal</td>
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</tr>
<tr>
<td>TIN27 50</td>
<td>NC Non Connection (open)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>TIN5 2</td>
<td>NC Non Connection (open)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN10 8</td>
<td>NC Non Connection (open)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN11 10</td>
<td>NC Non Connection (open)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN16 16</td>
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<td>TIN17 18</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIN23 25</td>
<td>NC Non Connection (open)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLK IN 31</td>
<td>NCLK Data Sampling Clock</td>
<td>TCLK OUT-</td>
<td>No.6 CLK IN-</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TCLK OUT+</td>
<td>No.5</td>
<td></td>
</tr>
</tbody>
</table>

---

![Diagram](image)

(8/10) 1999-03-18 (Ver.2.2)
<table>
<thead>
<tr>
<th>Display</th>
<th>Basic Color</th>
<th>Gray Scale of Red</th>
<th>Gray Scale of Green</th>
<th>Gray Scale of Blue</th>
<th>Gray Scale of White &amp; Black</th>
<th>Gray Scale Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L 0</td>
</tr>
<tr>
<td>Green</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L 0</td>
</tr>
<tr>
<td>Light Blue</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L 0</td>
</tr>
<tr>
<td>Red</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L 0</td>
</tr>
<tr>
<td>Purple</td>
<td>H H H H H H</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L 0</td>
</tr>
<tr>
<td>Yellow</td>
<td>H H H H H H</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L 0</td>
</tr>
<tr>
<td>White</td>
<td>H H H H H H</td>
<td>H H H H H H</td>
<td>H H H H H H</td>
<td>H H H H H H</td>
<td>H H H H H H</td>
<td>L 0</td>
</tr>
<tr>
<td>Black</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L 0</td>
</tr>
<tr>
<td>Green</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L 0</td>
</tr>
<tr>
<td>Light Blue</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L 0</td>
</tr>
<tr>
<td>Red</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L L L L L L</td>
<td>L 0</td>
</tr>
<tr>
<td>Gray Scale Level</td>
<td>Light</td>
<td>L 3...</td>
<td>L 60</td>
<td>L 61</td>
<td>L 62</td>
<td>L 63</td>
</tr>
</tbody>
</table>
FOR SAFETY

LCD module is generally designed with precise parts to achieve light weighted thin mechanical dimensions. In using our Modules, make certain that you fully understand and put into practice the warnings and safety precautions detailed in Engineering Information No.EE-N001, “CAUTIONS AND INSTRUCTIONS FOR TOSHIBA LCD MODULES”. Refer to individual specifications and TECHNICAL DATA sheets (hereinafter called “TD”) for more detailed technical information.

1) SPECIAL PURPOSES

A) Toshiba's Standard LCD Modules have not been customized for operation in extreme environments or for use in applications where performance failures could be life-threatening or otherwise catastrophic.

B) Since Toshiba's Standard LCD Modules have not been designed for operation in extreme environments, they must never be used in devices that will be exposed to abnormally high levels of vibration or shock which exceed Toshiba's published specification limits.

C) In addition, since Toshiba Standard LCD Modules have not been designed for use in applications where performance failures could be life-threatening or catastrophic, they must never be installed in aircraft navigation control systems (such as, but not limited to Traffic Collision Avoidance System and Air Traffic Indicator), in military defense or weapons systems, in critical industrial process-control systems (e.g., those involved in the production of nuclear energy), or in critical medical device or patient life-support systems.

2) DISASSEMBLING OR MODIFICATION

DO NOT DISASSEMBLE OR MODIFY the module. It may damage sensitive parts inside LCD module, and may cause scratches or dust on the display.

Toshiba does not warrant the module, if customer disassembled or modified it.

3) BREAKAGE OF LCD PANEL

DO NOT INGEST liquid crystal material, DO NOT INHALE this material, and DO NOT CONTACT the material with skin, if LCD panel is broken and liquid crystal material spills out.

If liquid crystal material comes into mouth or eyes, rinse mouth or eyes out with water immediately.

If this material contact with skin or cloths, wash it off immediately with alcohol and rinse thoroughly with water.

4) GLASS OF LCD PANEL

BE CAREFUL WITH CHIPS OF GLASS that may cause injuring fingers or skin, when the glass is broken.

5) ELECTRIC SHOCK

DISCONNECT POWER SUPPLY before handling LCD module.

DO NOT TOUCH the parts inside LCD module and the fluorescent lamp's connector or cables in order to prevent electric shock, because high voltage is supplied to these parts from the inverter unit while power supply is turned on.

6) ABSOLUTE MAXIMUM RATINGS AND POWER PROTECTION CIRCUIT

DO NOT EXCEED the absolute maximum rating values under the worst probable conditions caused by the supply voltage variation, input voltage variation, variation in parts’ constants, environmental temperature, etc., otherwise LCD module may be damaged.

Employ protection circuit for power supply, whenever the specification or TD specifies it.

Suitable protection circuit should be applied for each system design.

7) DISPOSAL

When dispose LCD module, obey to the applicable environmental regulations.