# SPECIFICATION FOR APPROVAL

| | |
|---|---|
| Customer | |
| Model | GIPAD14624BAA |
| Panel | AUO 46 inch 24 Lamps |
| Customer P/N | |

| ACCEPTING STATUS |
|---|
| ACCEPTED DATE : M/ D/ Y/ |

| PERP. | Mudi | CHKD. | Dannies | APPR. | William |
|---|---|---|---|---|---|
| DATE | 2007.06.15 | DATE | 2007.06.15 | DATE | 2007.06.15 |

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# Modified History

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GREATCHIP Technology

# LIPS SPECIFICATION SHEET for GIPAD14624BAA

1. GREATCHIP's Parts No. : GIPAD14624BAA

2. SCOPE : This specification requirements of the subject parts used in 46 inch 24 Lamps LIPS ( LCD Integrated Power System ).

3. SUITABLE LOAD : AUO 46" Full HD Color TFT-LCD Module
   Panel Model : T460HW02 V1

4. Input Characteristic :
   4-1. AC Input Voltage ---------- 90Vac ~ 264Vac
   4-2. AC Input Frequency ---------- 47Hz ~ 63Hz
   4-3. Input Power ---------- Max. 340W @ 110V with 46" 24L
   4-4. Input Current ---------- Max. 4A @ 90V with 46" 24L
   4-5. Power Factor ---------- >= 0.9
   4-6. Inrush Current ---------- <= 100Apeak @ 240Vac
   4-7. Fuse ---------- 6.3A/250V
   4-8. Power saving ---------- ≤1W@240Vac , PSON -- off

5. OUTPUT CHARACTERISTIC :
   5-1. Power Unit

| Channel | Stand-by | V1 | V2 |
|---|---|---|---|
| Regular Output Voltage | 5VSB | 5.0V | 12V |
| Output Voltage | 4.8V ~ 5.25V | 4.8V ~ 5.25V | 11.6V ~ 12.7V |
| Minimum Load Current | 0.02A | 0A | 0A |
| Typical Load Current | 0.15A | 2.5A | 2.5A |
| Maximum Load Current | 0.5A | 3.5A | 3.5A |
| Variable Load | 0.02A ~ 0.5A | 0A ~ 3.5A | 0A ~ 3.5A |

   5-2. Ripple & Noise

| Regular Output Voltage | 5VSB | 5.0V | 12V |
|---|---|---|---|
| Ripple & Noise | 100mV | 100mV | 150mV |

Note: A 1μF Ceramic and 10μF Tantalum capacitors should be put across output terminals during ripple & noise test. The oscilloscope bandwidth is set at 20MHz and co-axial probe will be used to measure it. The test condition is max. load and normally line.

*remark 1 ) Over / Under Shoot : Less than 5% of nominal value.*
*remark 2 ) Turn On Time : 2 seconds Maximum.*

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6. Protection :

5.1 Switching Power Protection

5.1.1 SCP :

Over Current Protection will act when output is short circuit.

* 5VSB/5V: Auto Recovery
* 12V: Latch Off

5.1.2 OVP :

Over Voltage Protection will act when output voltage reach 50% of nominal value.

*5VSB/5V: Recover after riddance
*12V: Latch Off

5.1.3 OTP :

Over Temperature Protection will act when environment temperature is over 120℃.

7. Control Function :

| Signal | 5VSB | V2 | V1 | | Inverter |
|---|---|---|---|---|---|
| PS/ON= High | 5V | 12V | 5V | | - |
| PS/ON= Low | 5V | 0V | 0V | | Disable |

| | | | | | |
|---|---|---|---|---|---|
| BLON=High | 5V | 12V | 5V | - | Enable |
| BLON=Low | 5V | 12V | 5V | - | Disable |

8. E.M.I. :

The power supply will design to meet following international regulations.
FCC Class B, VCCI Class B, and CISPR 22 Class B.

9. Safety Characteristics :

The power supply will design to meet following international regulations.

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9.1 Safety Meet Requirements

UL : UL60950 Third Edition & UL6500
cUL :: CSA 22.2 No.60950 & E60065
TUV : EN60950 & EN60065
CCC : GB4943 & GB8898
CB : IEC60950 & IEC60065

9.2 Withstand Voltage

Primary to secondary : 1500Vac 10mA for 3 seconds.

9.3 Isolation Resistance : More than 10MΩ while withstanding of 500Vdc.

10. Environmental Condition :

10.1 Operationg:

The operating ambient temperature is 0℃ to 60℃
The operating relative humidity is 25% to 85%.

10.2 Storage : (without frosting or clewdrop)

The storage temperature is -20℃ to 80℃.
The storage relative humidity is 25% to 95%.

11. Life :

11.1 On-Off Life

To verify the LIPS withstand 10,000 time on-off repetition of primary power without failure or damage at 115Vac or 230Vac input.

11.2 Operational Life

The LIPS is designed for a minimum life of 50,000 power-on hours at 25℃ Ambient temperature.

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## 12. Inverter Unit

These specifications are applied to GIPAD14624BAA for driving 46" 24L AUO panel.

| Item | Symbol | Minimum | Typical | Maximum | Unit | Remark |
|---|---|---|---|---|---|---|
| Input Voltage | Vin | ----- | 380.0 | ----- | Vdc | |
| Input Current | Iin | ----- | 0.58 | ----- | A | Vin = 380V Full Load (after heat run 30min) |
| Input Power | Pin | ----- | 220.0 | ----- | W | |
| $BL_{ON}$ ON / OFF Control | ON | 2.0 | ----- | 3.3 | Vdc | On Stage |
| | OFF | 0.0 | ----- | 0.8 | Vdc | Off Stage |
| PWM Dimming Control | $BL_{DIM}$ | 0.0 | ----- | 3.20 | Vdc | |
| HV-Side Output Current | | 62.0 | 72.0 | 82.0 | mA | Trans o/p side (Iout = 5.5mA for 1 Lamp) |
| HV-Side Total Output Current | $I_T$ | 248.0 | 288.0 | 328.0 | mA | |
| Output Current $BL_{DIM}$ = 3.2V | Iout ( max. ) | 5.0 | 5.5 | 6.0 | mA | for 1 Lamp (ref.) |
| Burst-Mode PWM Duty $BL_{DIM}$ = 3.2V | Dpwm ( max. ) | 90.0 | 93.5 | 97.0 | % | TBD |
| Burst-Mode PWM Duty $BL_{DIM}$ = 0V | Dpwm ( min. ) | 22 | 27 | 32 | % | TBD |
| Operating Frequency | Freq. | 40 | 45 | 50 | KHz | |
| Operating Voltage | Vload ( max. ) | ----- | 600 | ----- | Vrms | |
| Kick-off Voltage | Vs | 900 | ----- | 1400.0 | Vrms | Ta = 0°C (CN203 & 204 open) |
| Burst-Mode Frequency | FB1 | 156 | 166 | 176 | Hz | Internal PWM |
| | | | | | | |

*Load : AUO 46" 24 Lamps TFT-LCD Panel*

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## 13. CONNECTOR PIN ASSIGNMENT :

### 13-1. AC Input Connector

CN2 : JST B3P-VH-B/3P3.96mm or CS JS-1120-03N02 or Equivalent

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Signal | L | N/A | N |

### 13-2. Signal Connector

CN201 : HR A2004WVA-2*08P or Equivalent

| Pin No. | 1 | 3 | 5 | 7 | 9 | 11 | 13 | 15 |
|---|---|---|---|---|---|---|---|---|
| Signal | $PS_{ON}$ | GND | 12V | 12V | 5V | GND | $5V_{SB}$ | $BL_{ON}$ |
| Pin No. | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 |
| Signal | GND | GND | 12V | GND | 5V | GND | GND | $BL_{DIM}$ |

*remark 1 )*

| | | |
|---|---|---|
| $PS_{ON}$ & $BL_{ON}$ | ON | 2V ~ 3.3V |
| | OFF | 0V ~0.8V |
| $BL_{DIM}$ | Max. | 3.2V ( Burst-Mode PWM Duty =93.5% +/- 3.5% ) |
| | Min. | 0V ( Burst-Mode PWM Duty 27% +/- 5% ) |

CN202 : JST S7B-PH-K or Equivalent

| Pin No. | 1 | 2 | 3 | 4~7 |
|---|---|---|---|---|
| Signal | Vcc | FB | GND | LD |

*remark 2 )*

| | | |
|---|---|---|
| LD Lamp Detection | Lamp Normel State | 9V ~ 12V |
| | Lamp Protection State | 0V ~ 0.8V |

### 13-3. HV Output Connector

CN203, 204 : CS JS-20101-02 or Equivalent

| Pin No. | 1 | 2 |
|---|---|---|
| Signal | HV+ | HV- |

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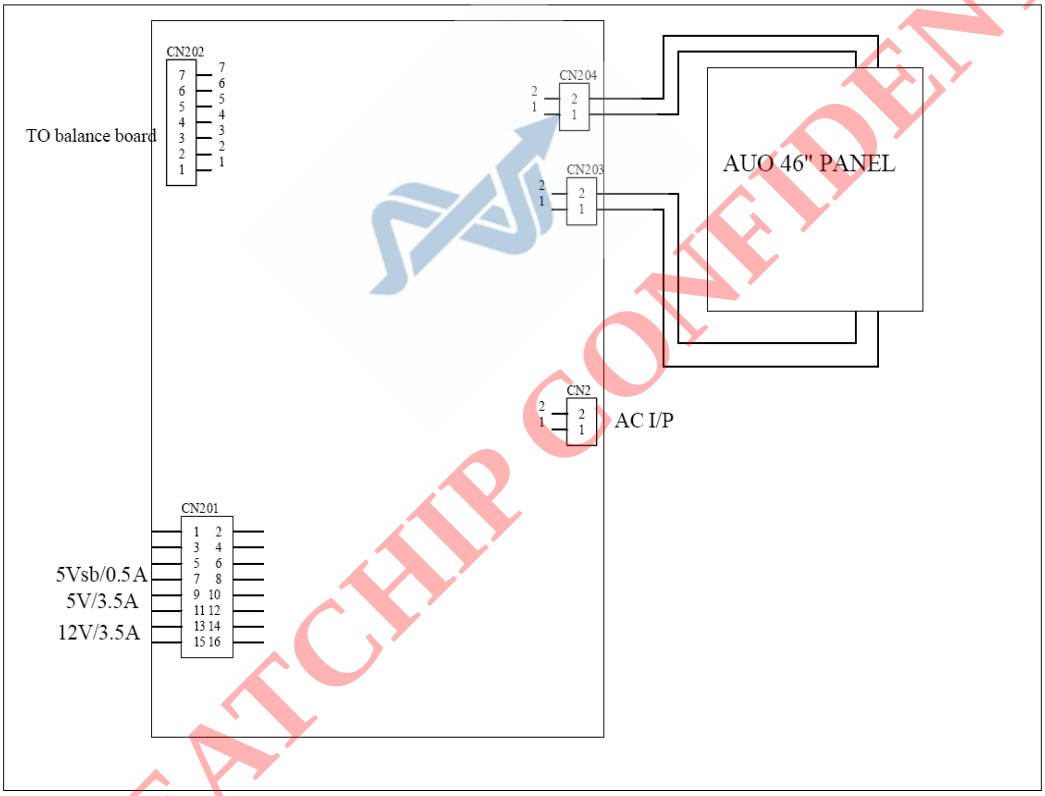
# 14. TEST CIRCUIT :

## 14-1. Back-Light Unit

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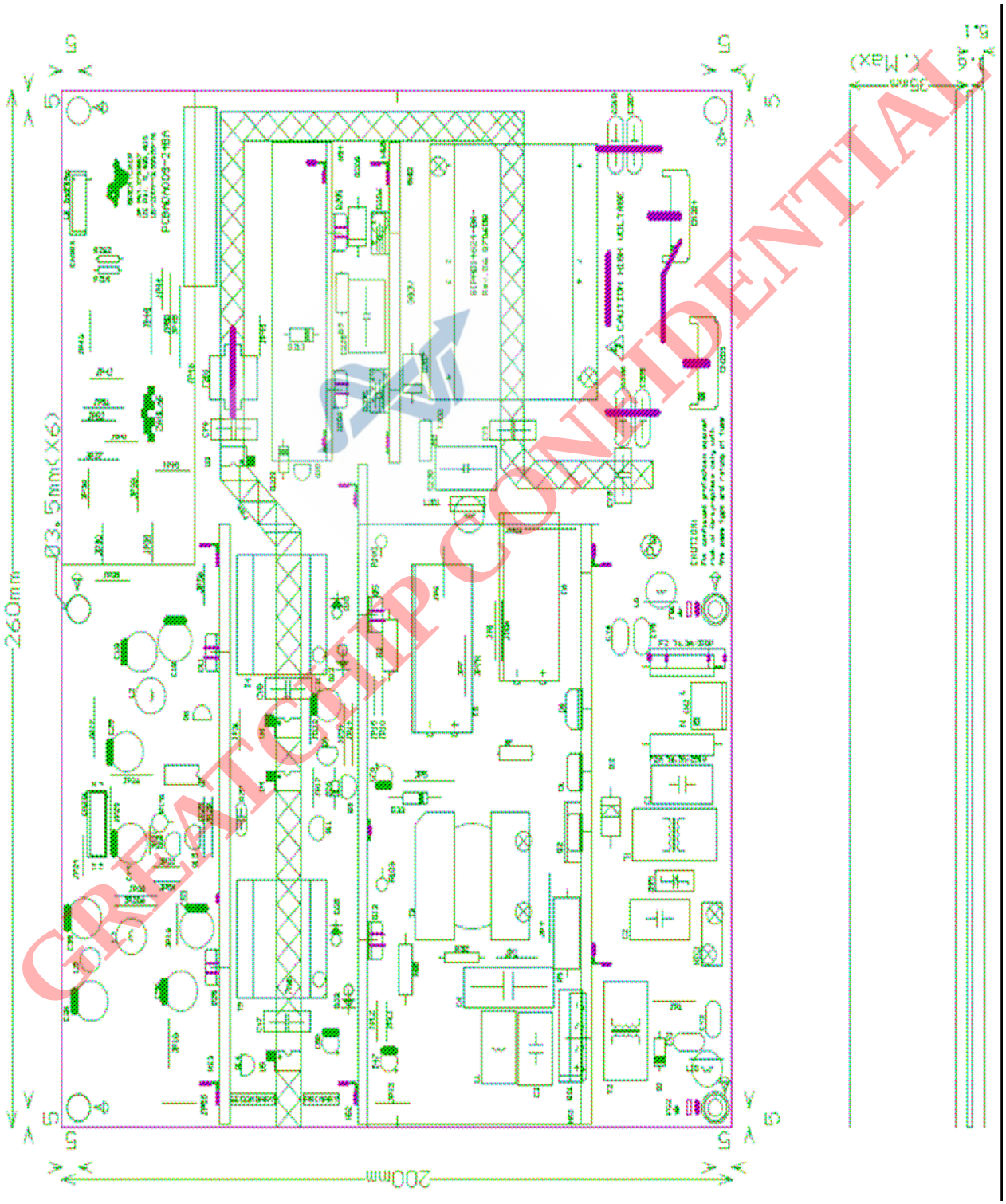
## 17. PCB OUTLINE DIMENSIONS :

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