CHI MEI OPTOELECTRONICS CORP.

Issued Date: Oct. 22 , 2009
CMO Model No.: V315B6 -C02
Approval

TFT LCD Approval Specification
FUNAI MODELNO. TLCD10CME011
MODEL NO.:V315B6-C02

RoHS Verified

Customer: FUNAI

Approved by: _____

Note:

Approved By	TV Product Marketing & Management Div
	Chao-Chun Chung

Reviewed By	QRA Dept.	Product Development Div.
	Kc-Ko	WT Lin

Prepared By	LCD TV Marketing and Product Management Div.	
	CY Chang	Lee-Lee Chang

Version2.0

- Contents -

Record of Revision

Version	Date	Page (New)	Section	Description
Ver 2.0	Oct. 7,'09	All	All	Approval Specification was first issued.

1.0 Handling Precautions

- The LCD panel is made of glass and may break or crack if dropped on a hard surface. It is necessary to handle it carefully.
- Since front polarizer is easily damaged, pay attention not to scratch it.
- When the panel surface is soiled, wipe it with absorbent cotton or other soft cloth gently.
- Do not touch the front screen surface when assembling.

- The information contained herein is presented only as a guide for the representative applications of Chi Mei Optoelectronics Crop. products and is not intended to guarantee any design or license any intellectual property right. Chi Mei Optoelectronics Crop. takes no responsibility for any problems related to any intellectual property right of a third party resulting from the use of Chi Mei Optoelectronics Crop. products.

2.0 General Description

This specification is applied to the Type V315B6 TFT/LCD cell. This cell is designed for a display unit for TV application.

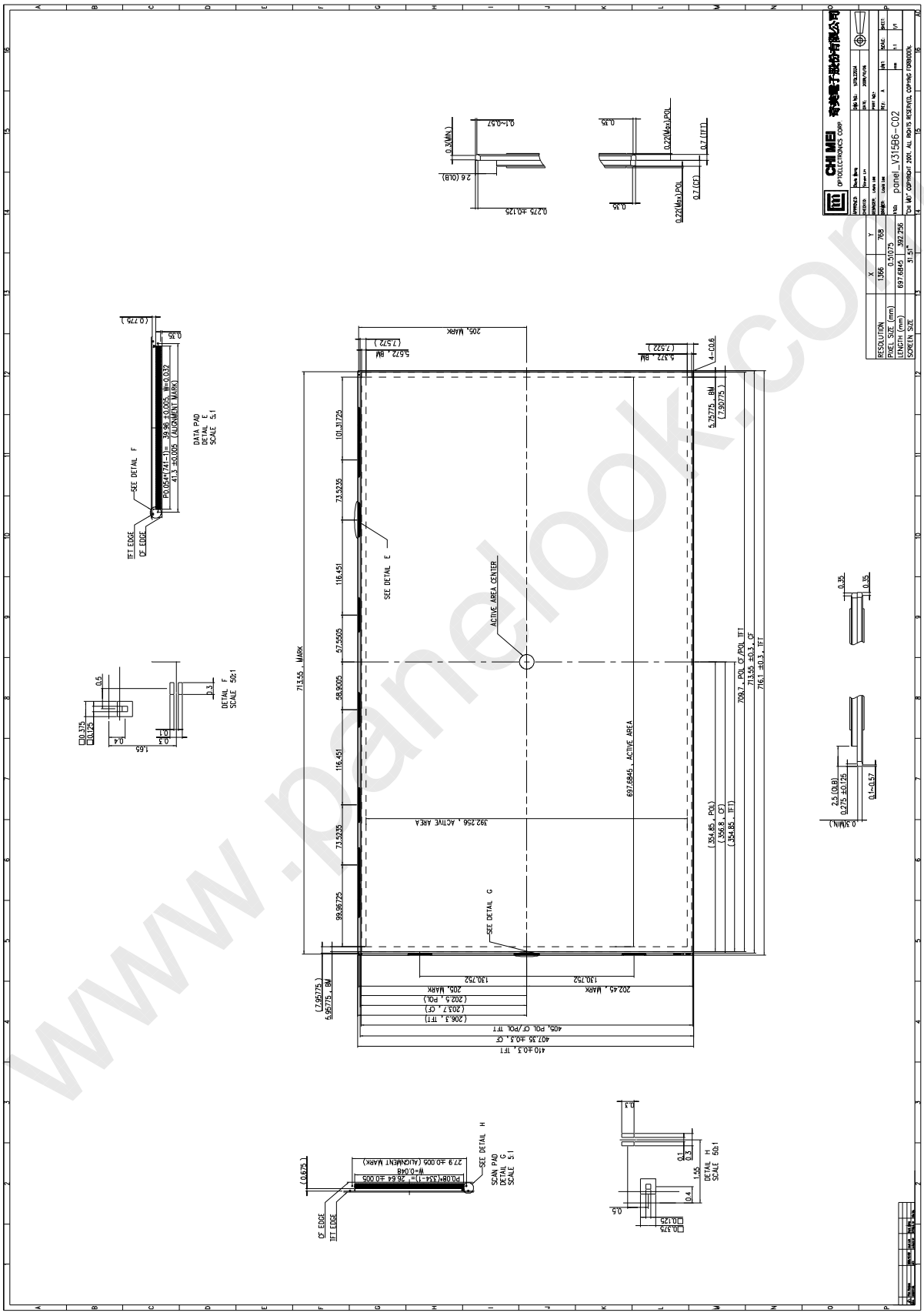
The screen format is intended to support the WXGA (1366(H) x 768(V)) screen

2.1 Characteristics

CHARACTERISTICS ITEMS	SPECIFICATIONS
Screen Diagonal [in]	31.5
Pixels [lines]	1366×768
Active Area [mm]	697.6845 (H) x 392.256 (V)
Sub -Pixel Pitch [mm]	0.17025(H) x 0.51075 (V)
Pixel Arrangement	RGB vertical stripe
Weight [g]	TYP. 1125g
Physical Size [mm]	716(W) x 410.8(H) x 2.00(D) Typ.
Display Mode	Transmissive mode / Normally black
Contrast Ratio	(3000:1) Typ. (Typical value measured at CMO's module)
Glass thickness (Array/CF) [mm]	0.7 / 0.7
Viewing Angle(CR>20)	+88/-88(H),+88/-88(V) Typ. (CR≥20) (Typical value measured at CMO's module)
Color White	Color Filter R=(0.642, 0.332) G=(0.277, 0.598) B=(0.145, 0.066) W=(0.285, 0.293) *White color is calibrated value measured at Color Filter by CMO's module
Cell Transparency [%]	(5.8)%Typ. (Typical value measured at CMO's module)
Polarizer (CF side)	Wide View, Anti-glare coating, 709.7 (W) x 405 (H). Hardness: 3H
Polarizer (TFT side)	Wide View, 709.7 (W) x 405 (H)

3.0 Cell Outline

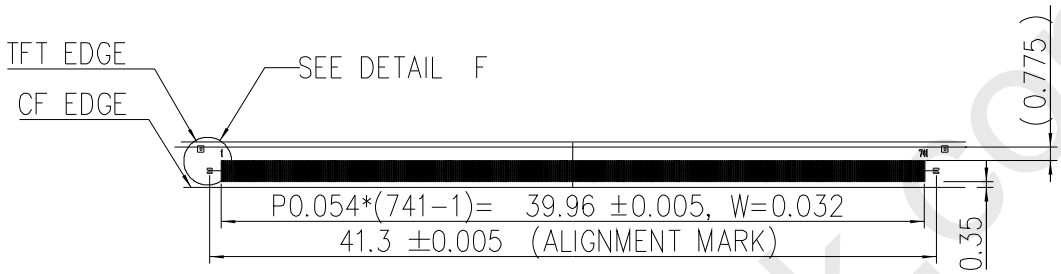
The following figure shows cell outline.



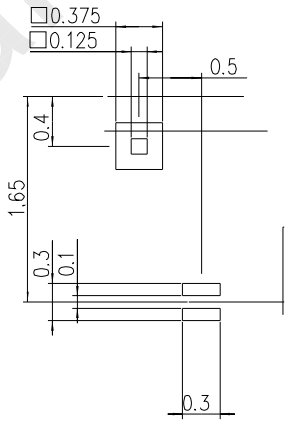
3.1 PAD Design

The following figure shows Data & Scan pad design.

[**Data Pad**] Unit [mm]

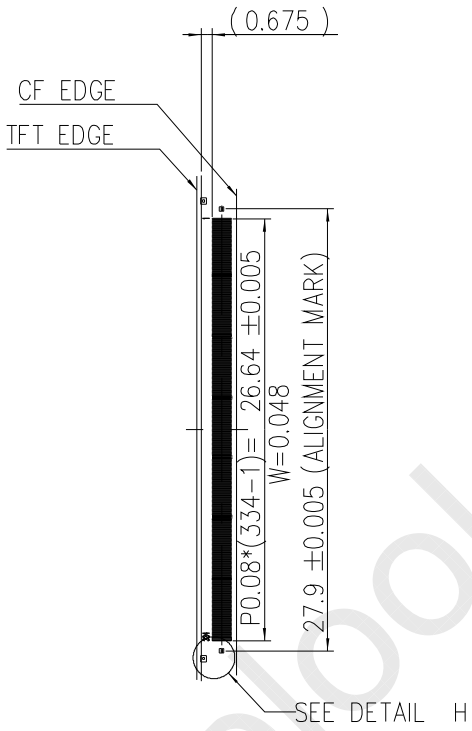


DATA PAD
DETAIL E
SCALE 5:1

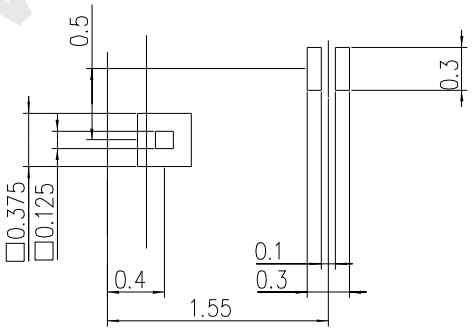


DETAIL F
SCALE 50:1

[**Scan Pad**] Unit [mm]



SCAN PAD
DETAIL G
SCALE 5:1



DETAIL H
SCALE 50:1

3.2 OLB PAD Assignment

GATE

SCAN1		
PIN	CELL	INPUT
1	ATST	TEST
2	ATST	TEST
3	RP1	NC
4	RP2	NC
5	VCOM	VCOM
6	VCOM	VCOM
7	STVR	STVR
8	LR	LR
9	XAO	XAO
10	OE	OE
11	CPV	CPV
12	STV1	STV1
13	MODE	MODE
14	VSS	VSS
15	VSS	VSS
16	VDD	VDD
17	VDD	VDD
18	VGL	VGL
19	VGL	VGL
20	VGL	VGL
21	VGL	VGL
22	DUMMY	NC
23	VGH	VGH
24	VGH	VGH
25	VGH	VGH
26	VGH	VGH
27	DUMMY	NC
28	VEE	VEE
29	VEE	VEE
30	VEE	VEE
31	DUMMY	NC
32	SCAN_0_NC	NC
33	SCAN_1_NC	NC
34	SCAN_2_NC	NC
35	SCAN_3_NC	NC
36	SCAN_4_NC	NC
37	SCAN_5_NC	NC
38	SCAN_6_NC	NC
39	SCAN_7_NC	NC
40	SCAN_8	S1
41	SCAN_9	S2
...	...	...
...	...	...
294	SCAN_262	S255
295	SCAN_263	S256
296	SCAN_264_NC	NC
297	SCAN_265_NC	NC
298	SCAN_266_NC	NC
299	SCAN_267_NC	NC
300	SCAN_268_NC	NC
301	SCAN_269_NC	NC
302	SCAN_270_NC	NC
303	SCAN_271_NC	NC
304	DUMMY	NC
305	VEE	VEE
306	VEE	VEE
307	VEE	VEE
308	DUMMY	NC
309	VGH	VGH
310	VGH	VGH
311	VGH	VGH
312	VGH	VGH
313	DUMMY	NC
314	VGL	VGL
315	VGL	VGL
316	VGL	VGL
317	VGL	VGL
318	VDD	VDD
319	VDD	VDD
320	VSS	VSS
321	VSS	VSS
322	MODE	MODE
323	STV2	STV2
324	CPV	CPV
325	OE	OE
326	XAO	XAO
327	LR	LR
328	STVR	STVR
329	VCOM	VCOM
330	VCOM	VCOM
331	RP2	NC
332	RP1	NC
333	ATST	TEST
334	ATST	TEST

SCAN2		
PIN	CELL	INPUT
1	ATST	TEST
2	ATST	TEST
3	RP1	NC
4	RP2	NC
5	VCOM	VCOM
6	VCOM	VCOM
7	STVR	STVR
8	LR	LR
9	XAO	XAO
10	OE	OE
11	CPV	CPV
12	STV1	STV1
13	MODE	MODE
14	VSS	VSS
15	VSS	VSS
16	VDD	VDD
17	VDD	VDD
18	VGL	VGL
19	VGL	VGL
20	VGL	VGL
21	VGL	VGL
22	DUMMY	NC
23	VGH	VGH
24	VGH	VGH
25	VGH	VGH
26	VGH	VGH
27	DUMMY	NC
28	VEE	VEE
29	VEE	VEE
30	VEE	VEE
31	DUMMY	NC
32	SCAN_0_NC	NC
33	SCAN_1_NC	NC
34	SCAN_2_NC	NC
35	SCAN_3_NC	NC
36	SCAN_4_NC	NC
37	SCAN_5_NC	NC
38	SCAN_6_NC	NC
39	SCAN_7_NC	NC
40	SCAN_8	S1
41	SCAN_9	S2
...	...	...
...	...	...
294	SCAN_262	S255
295	SCAN_263	S256
296	SCAN_264_NC	NC
297	SCAN_265_NC	NC
298	SCAN_266_NC	NC
299	SCAN_267_NC	NC
300	SCAN_268_NC	NC
301	SCAN_269_NC	NC
302	SCAN_270_NC	NC
303	SCAN_271_NC	NC
304	DUMMY	NC
305	VEE	VEE
306	VEE	VEE
307	VEE	VEE
308	DUMMY	NC
309	VGH	VGH
310	VGH	VGH
311	VGH	VGH
312	VGH	VGH
313	DUMMY	NC
314	VGL	VGL
315	VGL	VGL
316	VGL	VGL
317	VGL	VGL
318	VDD	VDD
319	VDD	VDD
320	VSS	VSS
321	VSS	VSS
322	MODE	MODE
323	STV2	STV2
324	CPV	CPV
325	OE	OE
326	XAO	XAO
327	LR	LR
328	STVR	STVR
329	VCOM	VCOM
330	VCOM	VCOM
331	RP2	NC
332	RP1	NC
333	ATST	TEST
334	ATST	TEST

SCAN3		
PIN	CELL	INPUT
1	ATST	TEST
2	ATST	TEST
3	RP1	NC
4	RP2	NC
5	VCOM	VCOM
6	VCOM	VCOM
7	STVR	STVR
8	LR	LR
9	XAO	XAO
10	OE	OE
11	CPV	CPV
12	STV1	STV1
13	MODE	MODE
14	VSS	VSS
15	VSS	VSS
16	VDD	VDD
17	VDD	VDD
18	VGL	VGL
19	VGL	VGL
20	VGL	VGL
21	VGL	VGL
22	DUMMY	NC
23	VGH	VGH
24	VGH	VGH
25	VGH	VGH
26	VGH	VGH
27	DUMMY	NC
28	VEE	VEE
29	VEE	VEE
30	VEE	VEE
31	DUMMY	NC
32	SCAN_0_NC	NC
33	SCAN_1_NC	NC
34	SCAN_2_NC	NC
35	SCAN_3_NC	NC
36	SCAN_4_NC	NC
37	SCAN_5_NC	NC
38	SCAN_6_NC	NC
39	SCAN_7_NC	NC
40	SCAN_8	S1
41	SCAN_9	S2
...	...	...
...	...	...
294	SCAN_262	S255
295	SCAN_263	S256
296	SCAN_264_NC	NC
297	SCAN_265_NC	NC
298	SCAN_266_NC	NC
299	SCAN_267_NC	NC
300	SCAN_268_NC	NC
301	SCAN_269_NC	NC
302	SCAN_270_NC	NC
303	SCAN_271_NC	NC
304	DUMMY	NC
305	DUMMY	NC
306	DUMMY	NC
307	DUMMY	NC
308	DUMMY	NC
309	DUMMY	NC
310	DUMMY	NC
311	DUMMY	NC
312	DUMMY	NC
313	DUMMY	NC
314	Date_Gate	VGL
315	Date_Gate	VGL
316	Date_Gate	VGL
317	Date_Gate	VGL
318	DUMMY	NC
319	DUMMY	NC
320	DUMMY	NC
321	DUMMY	NC
322	DUMMY	NC
323	STV2	STVR
324	DUMMY	NC
325	DUMMY	NC
326	DUMMY	NC
327	DUMMY	NC
328	STVR	STVR
329	VCOM	VCOM
330	VCOM	VCOM
331	RP2	NC
332	RP1	NC
333	ATST	TEST
334	ATST	TEST

SIGNAL

DATA1		
PIN	CELL	INPUT
1	ATST	TEST
2	ATST	TEST
3	RP1	NC
4	RP2	NC
5	VCOM	VCOM
6	VCOM	VCOM
7	STVR	STVR
8	LR	LR
9	XAO	XAO
10	OE	OE
11	CPV	CPV
12	STV1	STV1
13	MODE	MODE
14	VSS	VSS
15	VSS	VSS
16	VDD	VDD
17	VDD	VDD
18	DUMMY	NC
19	VGL	VGL
20	VGL	VGL
21	VGL	VGL
22	DUMMY	NC
23	VGH	VGH
24	VGH	VGH
25	VGH	VGH
26	DUMMY	NC
27	VEE	VEE
28	VEE	VEE
29	VEE	VEE
30	DUMMY	NC
31	VGL	VGL
32	VGL	VGL
33	DUMMY	NC
34	VCOM	VCOM
35	VCOM	VCOM
36	DUMMY	NC
37	VCOM	VCOM
38	VCOM	VCOM
39	REP	NC
40	DUMMY	NC
41	DUMMY	NC
42	DATA_1_NC	NC
43	DATA_2_NC	NC
44	DATA_3_NC	NC
45	DATA_4	D1
...	...	...
...	...	...
722	DATA_681	D678
723	DATA_682	D679
724	DATA_683	D680
725	DATA_684	D681
726	DUMMY	NC
727	DUMMY	NC
728	REP	NC
729	DUMMY	NC
730	VCOM	VCOM
731	VCOM	VCOM
732	DUMMY	NC
733	DUMMY	NC
734	DUMMY	NC
735	DUMMY	NC
736	DUMMY	NC
737	DUMMY	NC
738	VCOM	VCOM
739	VCOM	VCOM
740	ATST	TEST
741	ATST	TEST

DATA2		
PIN	CELL	INPUT
1	ATST	TEST
2	ATST	TEST
3	DUMMY	NC
4	DUMMY	NC
5	VCOM	VCOM
6	VCOM	VCOM
7	DUMMY	NC
8	DUMMY	NC
9	DUMMY	NC
10	DUMMY	NC
11	DUMMY	NC
12	DUMMY	NC
13	DUMMY	NC
14	DUMMY	NC
15	DUMMY	NC
16	DUMMY	NC
17	DUMMY	NC
18	DUMMY	NC
19	DUMMY	NC
20	DUMMY	NC
21	DUMMY	NC
22	DUMMY	NC
23	DUMMY	NC
24	DUMMY	NC
25	DUMMY	NC
26	DUMMY	NC
27	DUMMY	NC
28	DUMMY	NC
29	DUMMY	NC
30	DUMMY	NC
31	DUMMY	NC
32	DUMMY	NC
33	DUMMY	NC
34	VCOM	VCOM
35	VCOM	VCOM
36	DUMMY	NC
37	VCOM	VCOM
38	VCOM	VCOM
39	REP	NC
40	DUMMY	NC
41	DUMMY	NC
42	DATA_1	D1
43	DATA_2	D2
44	DATA_3	D3
45	DATA_4	D4
...	...	...
...	...	...
722	DATA_681	D681
723	DATA_682	D682
724	DATA_683	D683
725	DATA_684	D684
726	DUMMY	NC
727	DUMMY	NC
728	REP	NC
729	DUMMY	NC
730	VCOM	VCOM
731	VCOM	VCOM
732	DUMMY	NC
733	DUMMY	NC
734	DUMMY	NC
735	DUMMY	NC
736	DUMMY	NC
737	DUMMY	NC
738	VCOM	VCOM
739	VCOM	VCOM
740	ATST	TEST
741	ATST	TEST

DATA3		
PIN	CELL	INPUT
1	ATST	TEST
2	ATST	TEST
3	DUMMY	NC
4	DUMMY	NC
5	VCOM	VCOM
6	VCOM	VCOM
7	DUMMY	NC
8	DUMMY	NC
9	DUMMY	NC
10	DUMMY	NC
11	DUMMY	NC
12	DUMMY	NC
13	DUMMY	NC
14	DUMMY	NC
15	DUMMY	NC
16	DUMMY	NC
17	DUMMY	NC
18	DUMMY	NC
19	DUMMY	NC
20	DUMMY	NC
21	DUMMY	NC
22	DUMMY	NC
23	DUMMY	NC
24	DUMMY	NC
25	DUMMY	NC
26	DUMMY	NC
27	DUMMY	NC
28	DUMMY	NC
29	DUMMY	NC
30	DUMMY	NC
31	DUMMY	NC
32	DUMMY	NC
33	DUMMY	NC
34	VCOM	VCOM
35	VCOM	VCOM
36	DUMMY	NC
37	VCOM	VCOM
38	VCOM	VCOM
39	REP	NC
40	DUMMY	NC
41	DUMMY	NC
42	DATA_1	D1
43	DATA_2	D2
44	DATA_3	D3
45	DATA_4	D4
...	...	...
...	...	...
722	DATA_681	D681
723	DATA_682	D682
724	DATA_683	D683
725	DATA_684	D684
726	DUMMY	NC
727	DUMMY	NC
728	REP	NC
729	DUMMY	NC
730	VCOM	VCOM
731	VCOM	VCOM
732	DUMMY	NC
733	DUMMY	NC
734	DUMMY	NC
735	DUMMY	NC
736	DUMMY	NC
737	DUMMY	NC
738	VCOM	VCOM
739	VCOM	VCOM
740	ATST	TEST
741	ATST	TEST

DATA4		
PIN	CELL	INPUT
1	ATST	TEST
2	ATST	TEST
3	DUMMY	NC
4	DUMMY	NC
5	VCOM	VCOM
6	VCOM	VCOM
7	DUMMY	NC
8	DUMMY	NC
9	DUMMY	NC
10	DUMMY	NC
11	DUMMY	NC
12	DUMMY	NC
13	DUMMY	NC
14	DUMMY	NC
15	DUMMY	NC
16	DUMMY	NC
17	DUMMY	NC
18	DUMMY	NC
19	DUMMY	NC
20	DUMMY	NC
21	DUMMY	NC
22	DUMMY	NC
23	DUMMY	NC
24	DUMMY	NC
25	DUMMY	NC
26	DUMMY	NC
27	DUMMY	NC
28	DUMMY	NC
29	DUMMY	NC
30	DUMMY	NC
31	DUMMY	NC
32	DUMMY	NC
33	DUMMY	NC
34	VCOM	VCOM
35	VCOM	VCOM
36	DUMMY	NC
37	VCOM	VCOM
38	VCOM	VCOM
39	REP	NC
40	DUMMY	NC
41	DUMMY	NC
42	DATA_1	D1
43	DATA_2	D2
44	DATA_3	D3
45	DATA_4	D4
...	...	...
...	...	...
722	DATA_681	D681
723	DATA_682	D682
724	DATA_683	D683
725	DATA_684	D684
726	DUMMY	NC
727	DUMMY	NC
728	REP	NC
729	DUMMY	NC
730	VCOM	VCOM
731	VCOM	VCOM
732	DUMMY	NC
733	DUMMY	NC
734	DUMMY	NC
735	DUMMY	NC
736	DUMMY	NC
737	DUMMY	NC
738	VCOM	VCOM
739	VCOM	VCOM
740	ATST	TEST
741	ATST	TEST

DATA5		
PIN	CELL	INPUT
1	ATST	TEST
2	ATST	TEST
3	DUMMY	NC
4	DUMMY	NC
5	VCOM	VCOM
6	VCOM	VCOM
7	DUMMY	NC
8	DUMMY	NC
9	DUMMY	NC
10	DUMMY	NC
11	DUMMY	NC
12	DUMMY	NC
13	DUMMY	NC
14	DUMMY	NC
15	DUMMY	NC
16	DUMMY	NC
17	DUMMY	NC
18	DUMMY	NC
19	DUMMY	NC
20	DUMMY	NC
21	DUMMY	NC
22	DUMMY	NC
23	DUMMY	NC
24	DUMMY	NC
25	DUMMY	NC
26	DUMMY	NC
27	DUMMY	NC
28	DUMMY	NC
29	DUMMY	NC
30	DUMMY	NC
31	DUMMY	NC
32	DUMMY	NC
33	DUMMY	NC
34	VCOM	VCOM
35	VCOM	VCOM
36	DUMMY	NC
37	VCOM	VCOM
38	VCOM	VCOM
39	REP	NC
40	DUMMY	NC
41	DUMMY	NC
42	DATA_1	D1
43	DATA_2	D2
44	DATA_3	D3
45	DATA_4	D4
...	...	...
...	...	...
722	DATA_681	D681
723	DATA_682	D682
724	DATA_683	D683
725	DATA_684	D684
726	DUMMY	NC
727	DUMMY	NC
728	REP	NC
729	DUMMY	NC
730	VCOM	VCOM
731	VCOM	VCOM
732	DUMMY	NC
733	DUMMY	NC
734	DUMMY	NC
735	DUMMY	NC
736	DUMMY	NC
737	DUMMY	NC
738	VCOM	VCOM
739	VCOM	VCOM
740	ATST	TEST
741	ATST	TEST

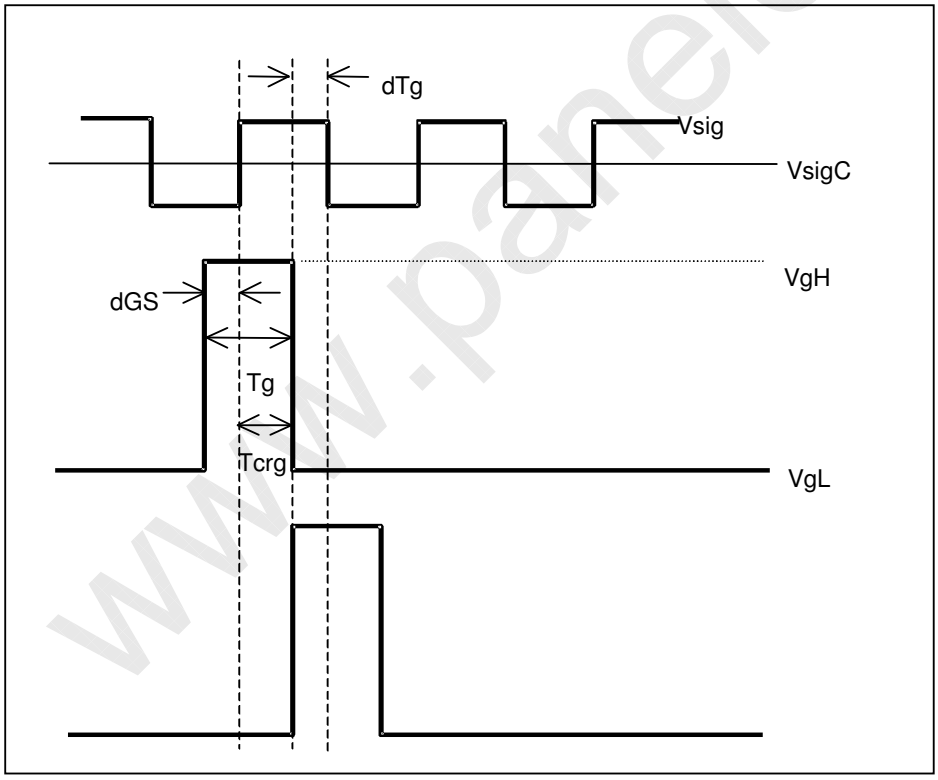
DATA6		
PIN	CELL	INPUT
1	ATST	TEST
2	ATST	TEST
3	DUMMY	NC
4	DUMMY	NC
5	VCOM	VCOM
6	VCOM	VCOM
7	DUMMY	NC
8	DUMMY	NC
9	DUMMY	NC
10	DUMMY	NC
11	DUMMY	NC
12	DUMMY	NC
13	DUMMY	NC
14	DUMMY	NC
15	DUMMY	NC
16	DUMMY	NC
17	DUMMY	NC
18	DUMMY	NC
19	DUMMY	NC
20	DUMMY	NC
21	DUMMY	NC
22	DUMMY	NC
23	DUMMY	NC
24	DUMMY	NC
25	DUMMY	NC
26	DUMMY	NC
27	DUMMY	NC
28	DUMMY	NC
29	DUMMY	NC
30	DUMMY	NC
31	DUMMY	NC
32	DUMMY	NC
33	DUMMY	NC
34	VCOM	VCOM
35	VCOM	VCOM
36	DUMMY	NC
37	VCOM	VCOM
38	VCOM	VCOM
39	REP	NC
40	DUMMY	NC
41	DUMMY	NC
42	DATA_1	D1
43	DATA_2	D2
44	DATA_3	D3
45	DATA_4	D4
...	...	...
...	...	...
722	DATA_681	D681
723	DATA_682_NC	NC
724	DATA_683_NC	NC
725	DATA_684_NC	NC
726	DUMMY	NC
727	DUMMY	NC
728	REP	NC
729	DUMMY	NC
730	VCOM	VCOM
731	VCOM	VCOM
732	SCAN-Gate	VGL
733	DUMMY	NC
734	G1	NC
735	G2	NC
736	RP2	NC
737	RP1	NC
738	VCOM	VCOM
739	VCOM	VCOM
740	ATST	TEST
741	ATST	TEST

Note1: NC is CMO reserve.

3.3 Operating condition

The following table describes operating condition at CMO cell inspection

Item		Cell Inspection Condition
Gate	Vgh	23.0V
	Vgl	-5.5V
	dGS	-1.2us
	dTg1	4.7us
	Tg(Gate On Time)	14.8us
	Tcrg(Writing Time)	14.8us
Frame Frequency		60Hz
Signal	(Black) Vsig Center	8.78V
	(White) Vsig Center	8.74V
Common	Vcom Center	8.1V
	Vcom Amplitude	0.00V
	Vcom Adjustment	±0.5V
LC	(Black)	0.77V
	(White)	8.14V



4.0 ABSOLUTE RATINGS OF ENVIRONMENT

4.1 ABSOLUTE RATINGS OF ENVIRONMENT(BASED on LCD MODULE V315B6-L01)

Item	Symbol	Value		Unit	Note
		Min.	Max.		
Storage Temperature	T_{ST}	-20	+60	ºC	(1)
Operating Ambient Temperature	T_{OP}	0	+50	ºC	(1), (2), (3)

Note (1) Temperature and relative humidity range is shown in the figure below.

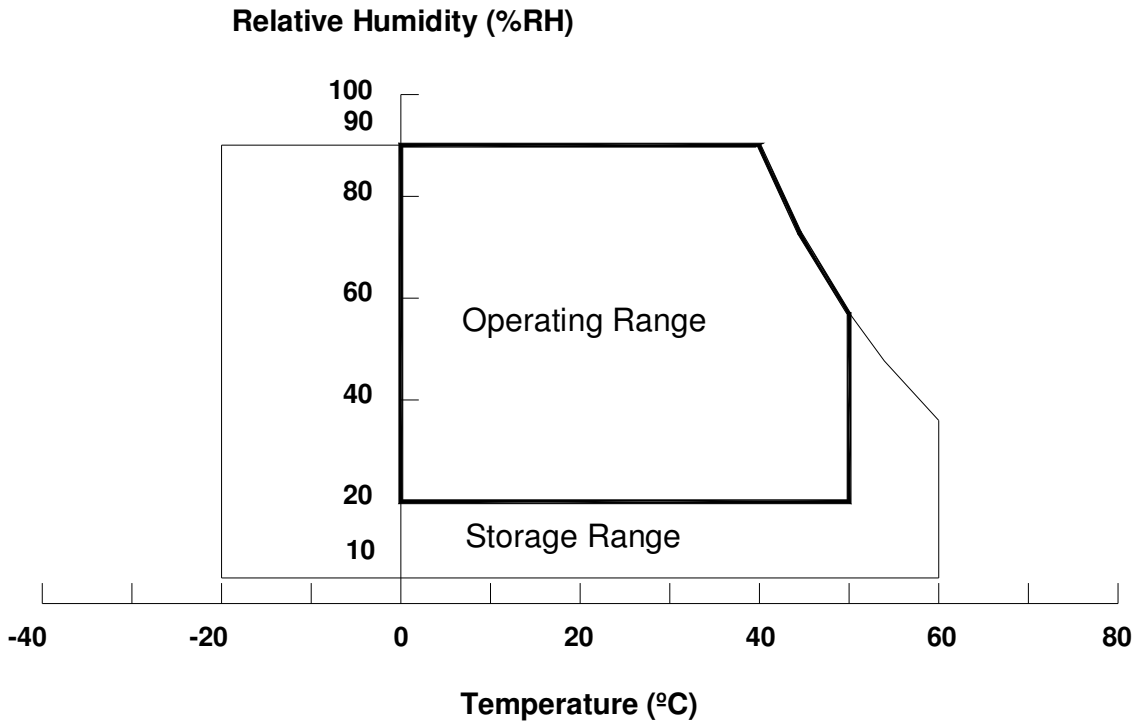
(a) 90 %RH Max. (Ta ≦ 40 ºC).

(b) Wet-bulb temperature should be 39 ºC Max. (Ta > 40 ºC).

(c) No condensation.

Note (2) The maximum operating temperature is based on the test condition that the surface temperature of display area is less than or equal to 65 ºC with LCD module alone in a temperature controlled chamber. Thermal management should be considered in final product design to prevent the surface temperature of display area from being over 65 ºC. The range of operating temperature may degrade in case of improper thermal management in final product design.

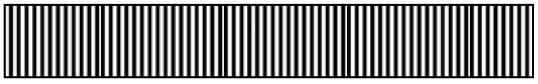
Note (3) The rating of environment is based on LCD module. Leave LCD cell alone, this environment condition can't be guaranteed. Except LCD cell, the customer has to consider the ability of other parts of LCD module and LCD module process.



5.0 Packaging

5.1 Label

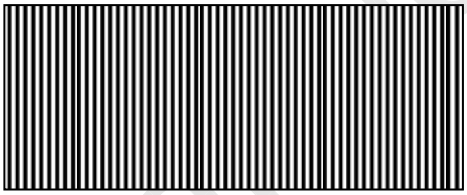
5.1.1 PANEL LABEL



T6243036NY01

5.1.2 DENSE BOX AND CARTON LABEL

Model Name	V315B6-C02
Panel Type	315WX01
Quantity	22
Case ID	(CMO internal define)
Note1	Funai model no.:TLCD10CME011



XXXXXXXXXXXXXXX

5.2 PACKING SPECIFICATIONS

(1) 22 LCD TV Panels / 1 Box

(2) Dense box dimensions : 810(L) X 510 (W) X 156 (H)

(3) Weight : approximately 33.5Kg (22 panels per box)

5.3 PACKING METHOD

Figures 5-1 and 5-2 are the packing method

Box dimensions: 815(L)x510(W)x156(H)mm
Weight : Approx.33.5Kg(22 panels per box)

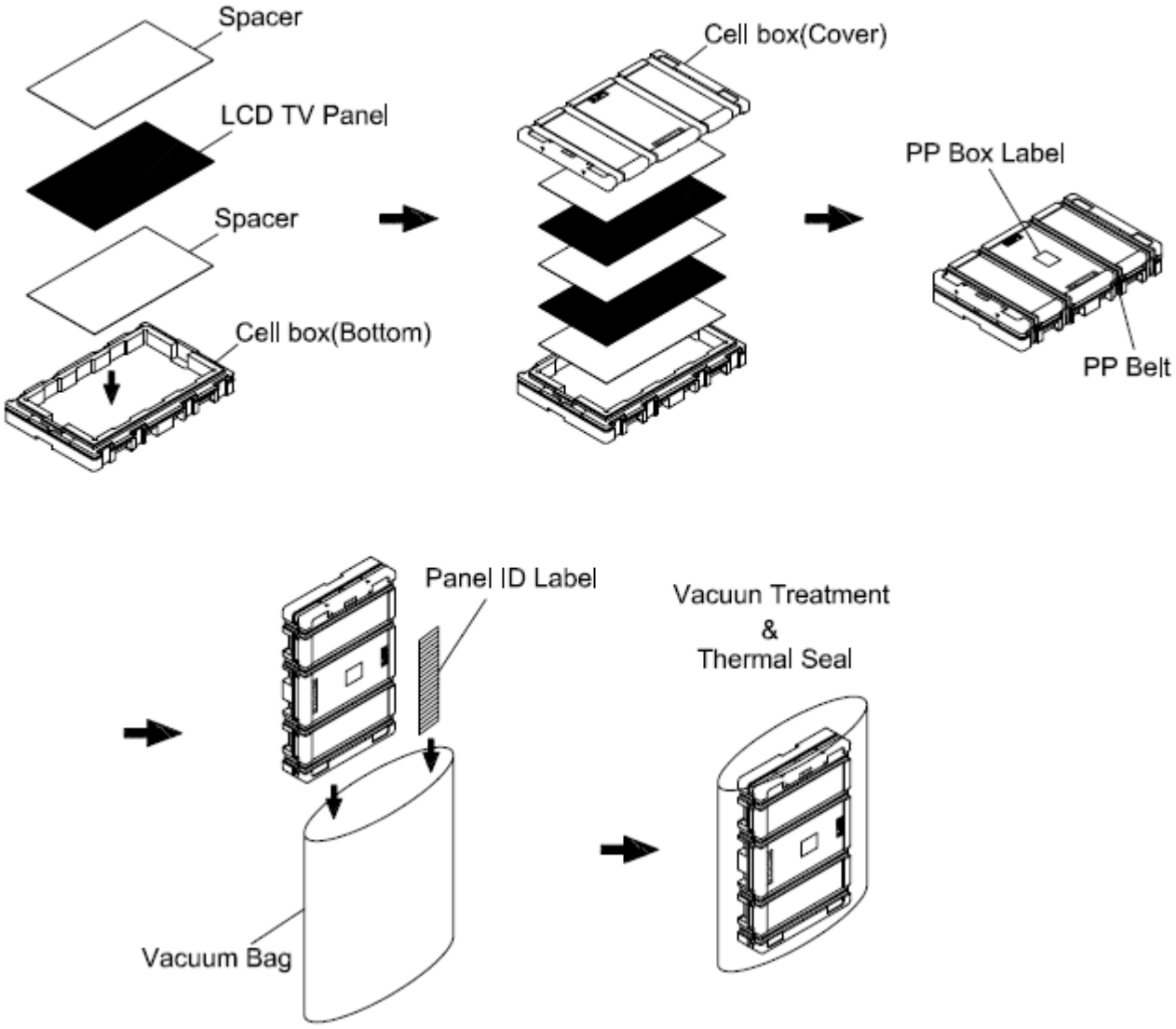


Figure.5-1 packing method

Weight : Approx.554 Kg(308 panels per Steel)

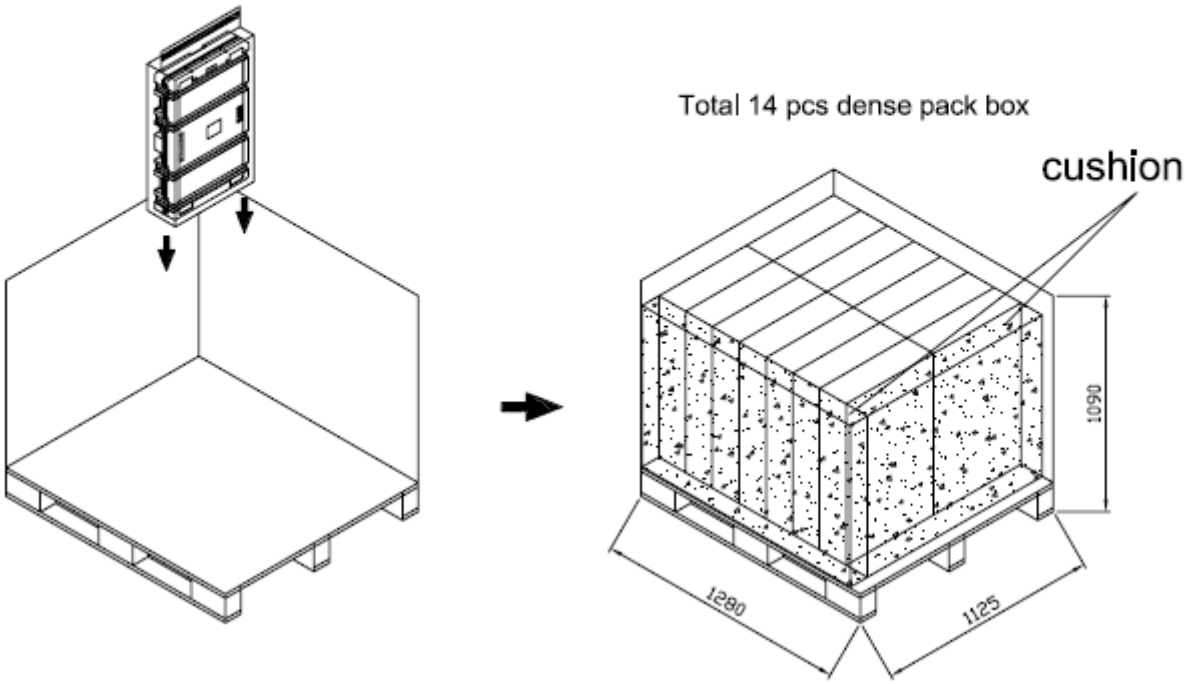


Figure.5-2 packing method

6.0 Others

If any doubt arises in relation to items not defined in this agreement or any articles in this agreement, both parties shall discuss it with sincerity and arrive at a mutual decision.

****** End Of Page ******