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ILI5120

1200/1152/1080/960-Output Channels TFT LCD Gate Driver

Specification
Preliminary

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1. Introduction

ILI5120 is a 1200/1152/1080/960-channel outputs gate driver used for driving the gate of TFT LCD panel. After a start pulse is triggered, output pins will output high-driving voltage pulses sequentially for the gate signals of the LCD Panel. This chip also provides shift up/down selection and cascade functions for dot expansion.

2. Features

- Gate driver for TFT-LCD panels
- 1200/1152/1080/960 channel outputs and 2 dummy outputs
- Bi-directional data shift function
- Driving voltage:VEE+40V
- Maximum +40V output driving voltage
- Cascade dot-expansion function
- Maximum 200KHz operation frequency
- 2.3 ~ 3.6V logical interface
- High voltage CMOS process technology
- COG/COF package

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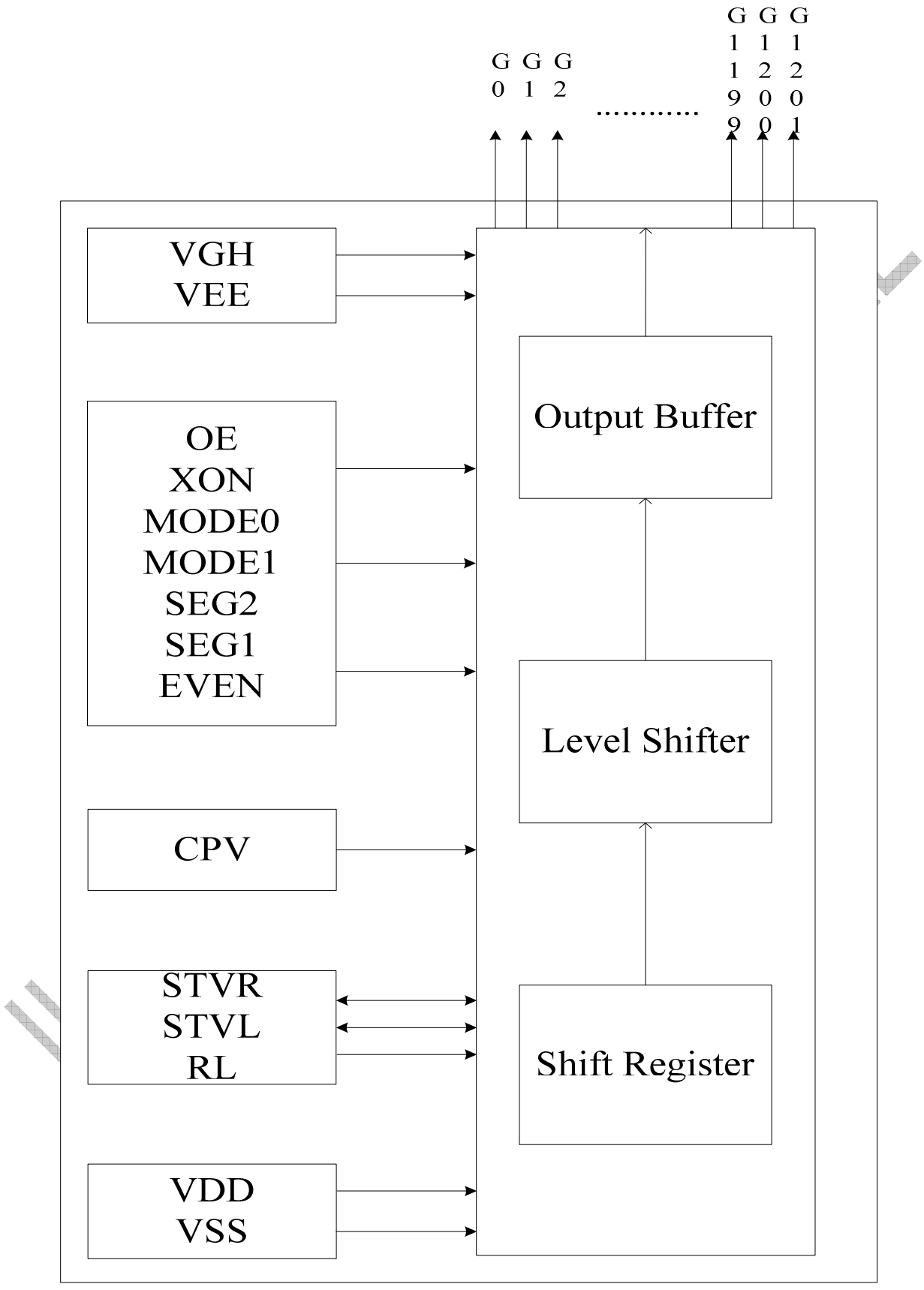
3. Block Diagram



* Note: (1) G0 and G1201 are LCD panel auxiliary pins. These pins always keep at VEE.

4. Pin Descriptions

<table>
<tr><th>Pin Name</th><th>I/O</th><th>Function</th><th>Descriptions</th></tr>
<tr><td>CPV</td><td>I</td><td>Shift clock input</td><td>Clock signal for internal shift register.</td></tr>
<tr><td>SEG1
SEG2
(Pull-low)</td><td>I</td><td>Output sequence control</td><td>This pin controls the driver output sequence
Remark:pull low
<table>
<tr><th>SEG2</th><th>SEG1</th><th>Scan type</th></tr>
<tr><td>L</td><td>L</td><td>Z</td></tr>
<tr><td>H</td><td>L</td><td>Z</td></tr>
<tr><td>L</td><td>H</td><td>弓</td></tr>
<tr><td>H</td><td>H</td><td>Z+弓</td></tr>
</table>
Scan function select,default SEG1=L,SEG2=L.</td></tr>
<tr><td>EVEN</td><td></td><td>Frame control</td><td>This pin decides to inverse output sequence or not in odd or even frame.
<table>
<tr><th>Frame</th><th>EVEN</th></tr>
<tr><td>Odd</td><td>L(Default)</td></tr>
<tr><td>Even</td><td>H</td></tr>
</table></td></tr>
<tr><td>RL
(Pull-low)</td><td>I</td><td>Shift direction control pin</td><td>This pin controls the output shifting direction as listed below.
Remark:pull low
RL =H:STVR→G[1]→G[2]→…→G[1199]→G[1200]→STVL
RL =L(Default):STVL→G[1200]→G[1199]→…→G[2]→G[1]→STVR</td></tr>
<tr><td>STVR
STVL</td><td>I/O</td><td>Start pulse input/output pin</td><td>These two pins are the device start pulse input or output pin. The function of these two pins depends on the status of RL pin.
<table>
<tr><th></th><th>STVR</th><th>STVL</th></tr>
<tr><td>RL=H</td><td>input</td><td>output</td></tr>
<tr><td>RL=L</td><td>output</td><td>input</td></tr>
</table></td></tr>
<tr><td>OE1
OE2
OE3</td><td>I</td><td>Output enable control</td><td>The OE1 signal controls the G1,G4….G1195,G1198
The OE2 signal controls the G2,G5….G1196,G1199
The OE3 signal controls the G3,G6….G1197,G1200</td></tr>
<tr><td>XON
(Pull-high)</td><td>I</td><td>Output all-on control</td><td>When XON input pin is L, all the output pins are forced to VGH level. Note that this pin has higher priority than OE. The chip internal shift register is not cleared when XON input is active.
Remark: Also it has an internal pull high resistor, keep it to VDD is preferred when unused.</td></tr>
</table>

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<table>
<tr><th>Pin Name</th><th>I/O</th><th>Function</th><th>Descriptions</th></tr>
<tr><td>MODE
(Pull-high)</td><td>I</td><td>Output Channel number selection</td><td>They is the output channel number selection pin: Remark:pull high
<table>
<tr><th>MODE1</th><th>MODE0</th><th>Output channel</th><th>Remark</th></tr>
<tr><td>H</td><td>H</td><td>1200</td><td>Default</td></tr>
<tr><td>H</td><td>L</td><td>1152</td><td>G577~G624 fixed to VEE</td></tr>
<tr><td>L</td><td>H</td><td>1080</td><td>G541~G660 fixed to VEE</td></tr>
<tr><td>L</td><td>L</td><td>960</td><td>G481~G720 fixed to VEE</td></tr>
</table></td></tr>
<tr><td>G1
~
G1200</td><td>O</td><td>Driver output pins for driving gate electrode of LCD</td><td>The output voltage is either VGH or VEE for driving the gate electrode of TFT LCD panel depending on the data stored in shift register and the state of OE</td></tr>
<tr><td>G0
G1201</td><td>O</td><td>Auxiliary pins</td><td>LCD panel auxiliary pins, these pins always output VEE level.</td></tr>
<tr><td>VGH</td><td>P</td><td>Power supply</td><td>Power supply for Gate drive output High</td></tr>
<tr><td>VDD</td><td>P</td><td>Power supply</td><td>Digital power</td></tr>
<tr><td>VSS</td><td>P</td><td>Power supply</td><td>Digital ground</td></tr>
<tr><td>VEE</td><td>P</td><td>Power supply</td><td>Power supply for Gate drive output low.</td></tr>
<tr><td>PATH1~3</td><td>-</td><td>Internal link</td><td>Linked together internal.</td></tr>
</table>

Note1: I: Input; O: Output; I/O: Input/Output; P: Power; S: Shorted line;

Note2: The unused input pins are recommended that this pin be connected to either VDD or VSS.

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5. Operation Description

5.1 Device operation principle

In the condition of MODE0=H,MODE1=H & RL=H, the STVR start pulse input is sensed at the rising edge of CPV and stored in the first stage of shift register, which causes the first scan signal is outputted from the OUT1 output pin. While stored data is transferred to the next stage shift register at the rising edge of next CPV, new data of STVR is sensed and stored simultaneously.

The output pin (G1 to G1200) supplies VGH voltage or VEE voltage to the LCD panel depending on the data stored in the shift register. For normal operation, a VGH voltage is outputted one by one from G1 to G1200 in sync with CPV pulse.

After 1200 CLK rising edge are past, the STVL goes up to high level at the 800th falling edge of CPV and goes down to low level at the 1201st falling edge of CPV. This STVL output signal becomes the STVR start pulse input of next cascaded gate driver device.

During any H state of OE, the corresponding output channels are forced to VEE level regardless of CPV. The channel output returns to normal status as soon as OE go back to L. The mechanism is as shown below!

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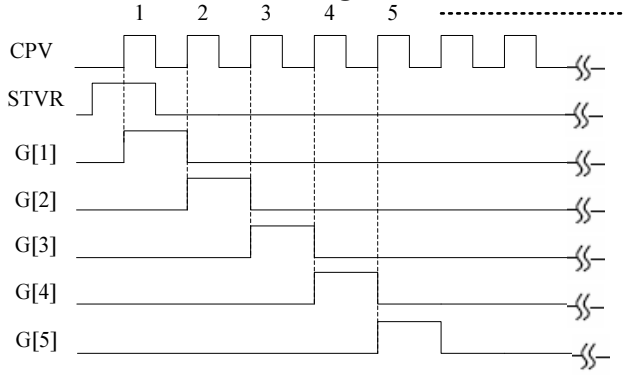
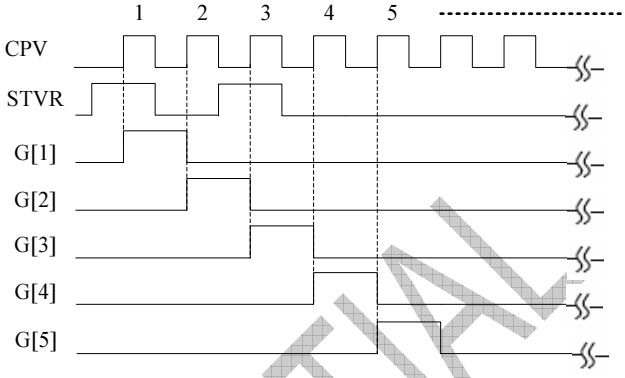
Device operation

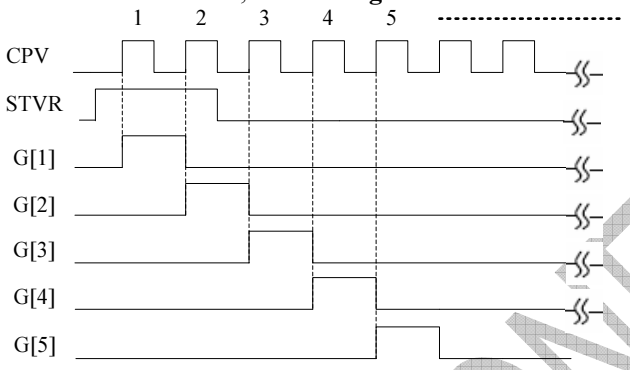
MODE=Default, SEG=Default,
EVEN=Default ,RL=H **Single Start Pulse Mode**



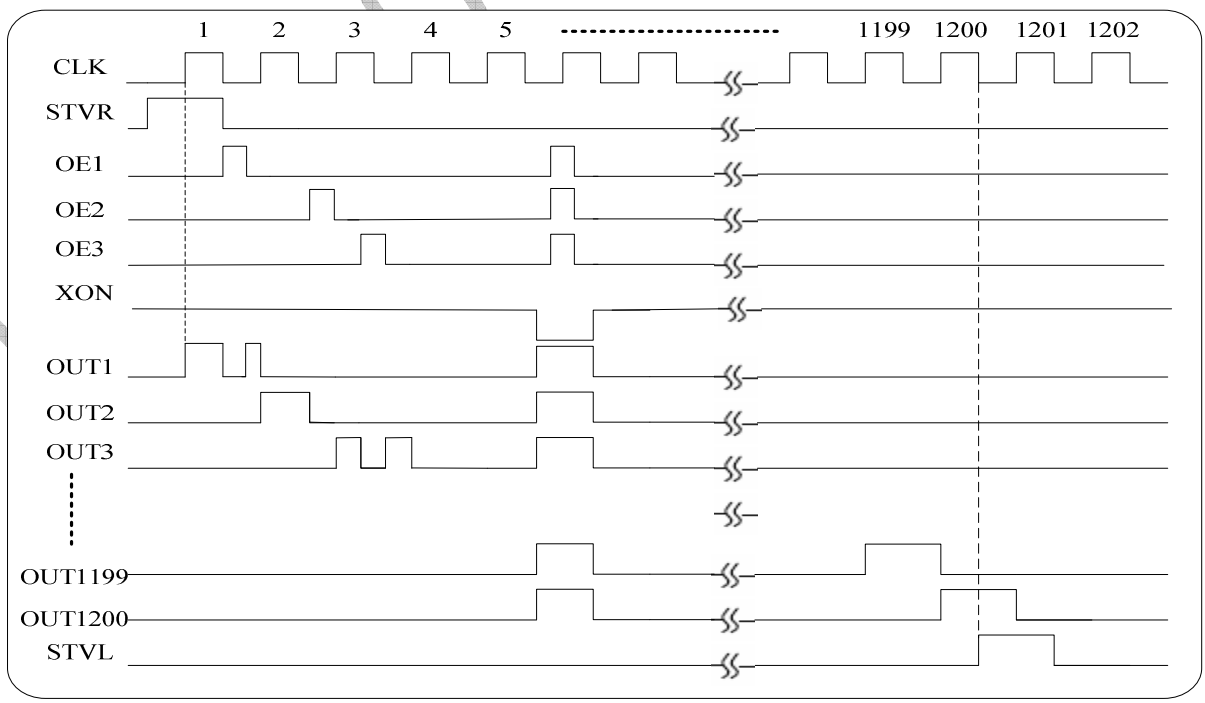
MODE=Default, SEG=Default,
EVEN=Default ,RL=H **Dual Start Pulse Mode**



MODE=Default, SEG=Default,
EVEN=Default ,RL=H **Long Start Pulse Mode**



MODE=Default, SEG=Default, EVEN=Default ,RL=H with OE1 and XON



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Output Sequence&Frame Control

1. Output Sequence Control

RL=H

SEG2	SEG1	EVEN	Scan type	Output Sequence
X	L	0	Z	G[1]→G[2]→G[3]→G[4]→G[5]→G[6]→G[7]→G[8]→……Note1
		1	Inverse Z	G[2]→G[1]→G[4]→G[3]→G[6]→G[5]→G[8]→G[7]→……Note2
L	H	0	弓	G[1]→G[2]→G[4]→G[3]→G[5]→G[6]→G[8]→G[7]→……Note3
		1	Inverse 弓	G[2]→G[1]→G[3]→G[4]→G[6]→G[5]→G[7]→G[8]→……
H	H	0	Z+弓	G[1]→G[2]→G[3]→G[4]→G[6]→G[5]→G[8]→G[7]→……Note4
		1	Inverse(Z+弓)	G[2]→G[1]→G[4]→G[3]→G[5]→G[6]→G[7]→G[8]→……

RL=L

SEG2	SEG1	EVEN	Scan type	Output Sequence
X	L	0	Z	……G[8]→G[7]→G[6]→G[5]→G[4]→G[3]→G[2]→G[1]
		1	Inverse Z	……G[7]→G[8]→G[5]→G[6]→G[3]→G[4]→G[1]→G[2]
L	H	0	弓	……G[8]→G[7]→G[5]→G[6]→G[4]→G[3]→G[1]→G[2]
		1	Inverse 弓	……G[7]→G[8]→G[6]→G[5]→G[3]→G[4]→G[2]→G[1]
H	H	0	Z+弓	……G[8]→G[7]→G[6]→G[5]→G[3]→G[4]→G[1]→G[2]
		1	Inverse(Z+弓)	……G[7]→G[8]→G[5]→G[6]→G[4]→G[3]→G[2]→G[1]

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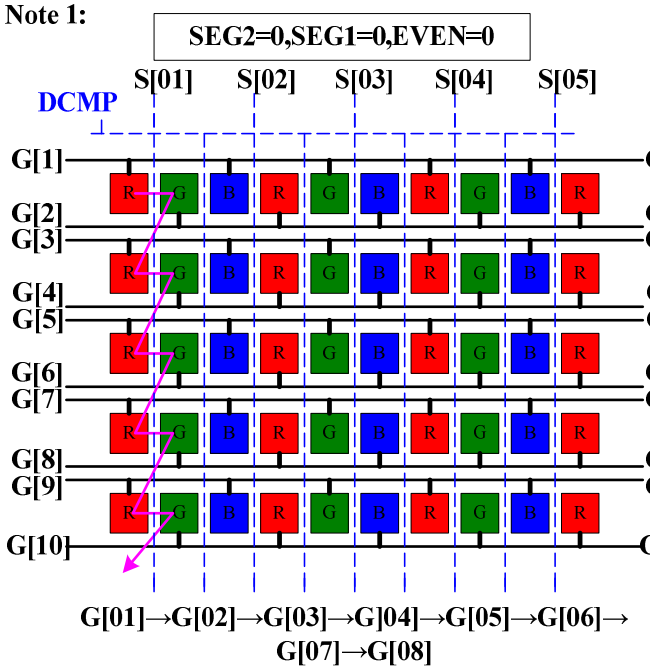
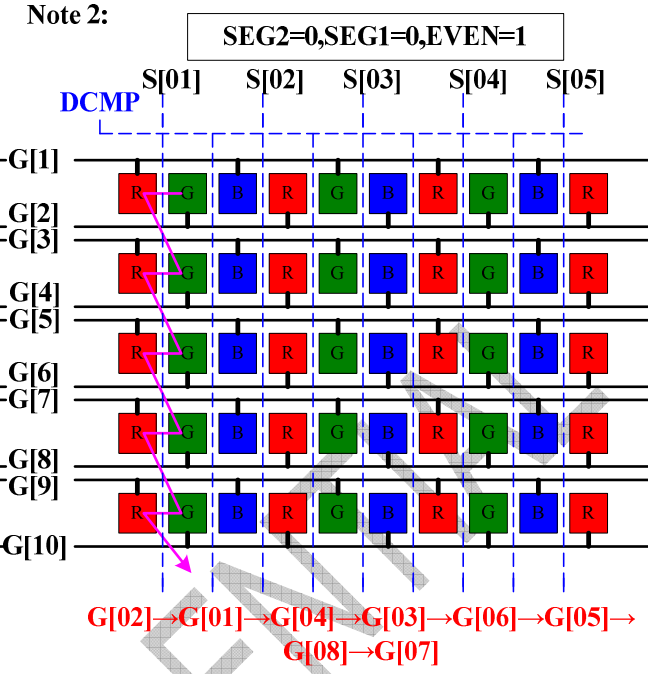
Note 1:



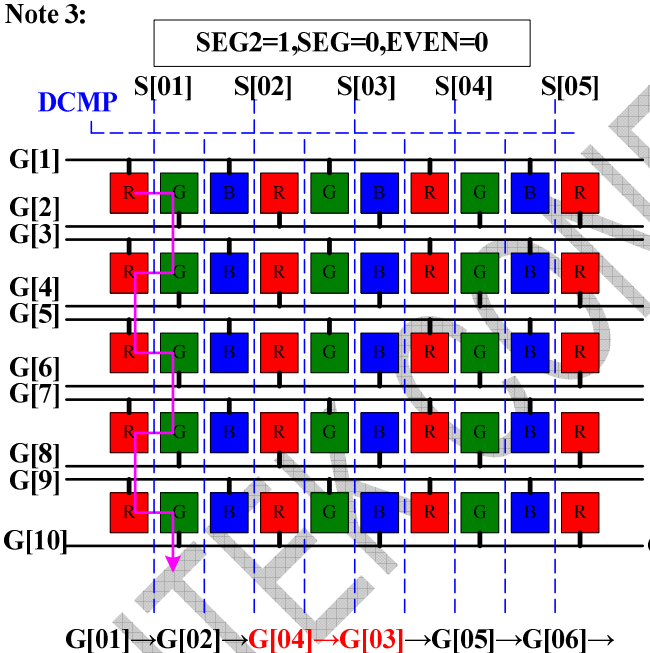
G[01]→G[02]→G[03]→G[04]→G[05]→G[06]→
G[07]→G[08]

Note 2:



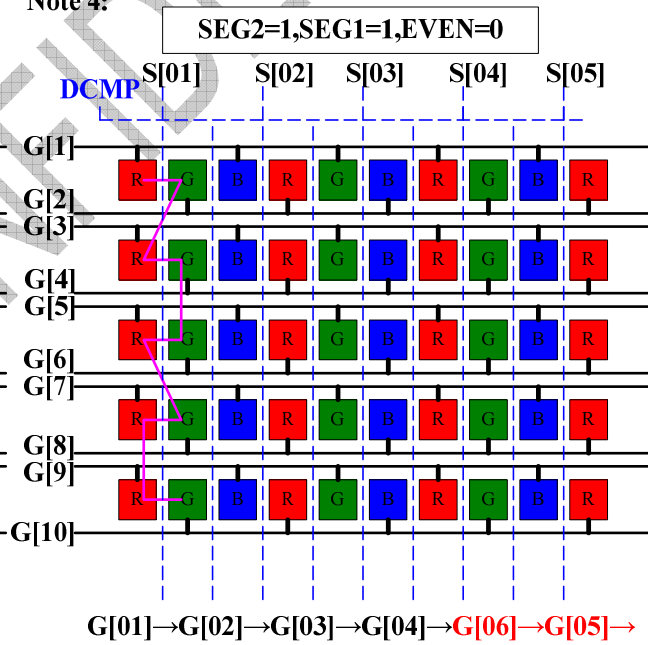
G[02]→G[01]→G[04]→G[03]→G[06]→G[05]→
G[08]→G[07]

Note 3:



G[01]→G[02]→G[04]→G[03]→G[05]→G[06]→
G[08]→G[07]

Note 4:



G[01]→G[02]→G[03]→G[04]→G[06]→G[05]→
G[08]→G[07]

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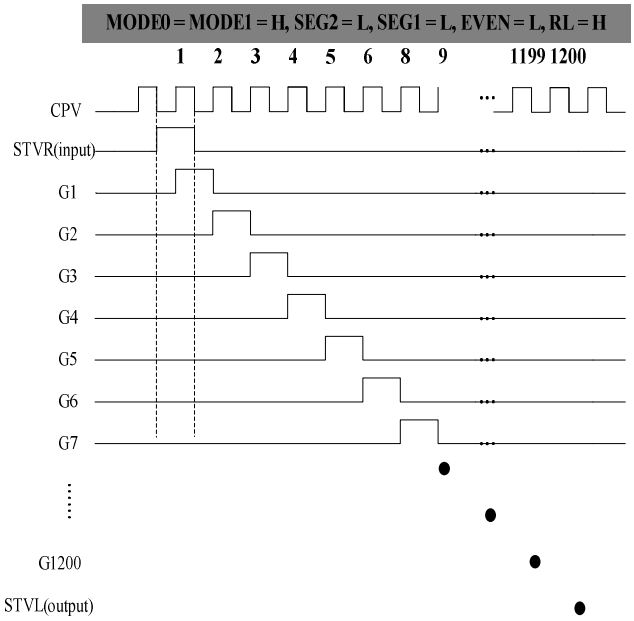
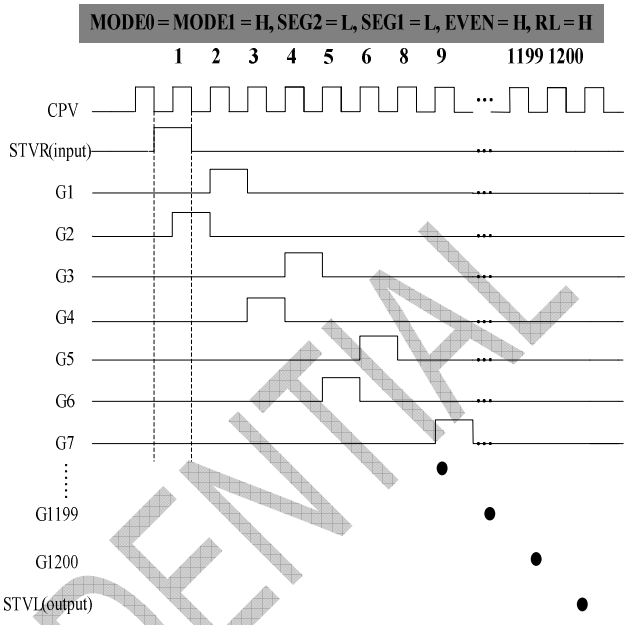
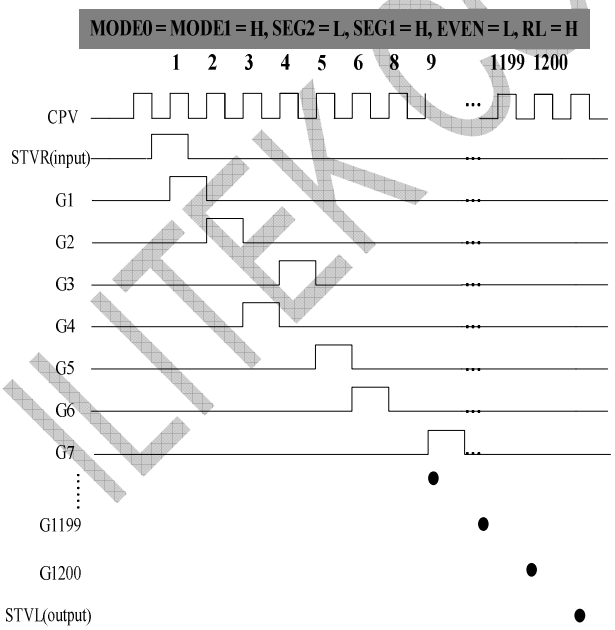
2. Output Sequence Timing

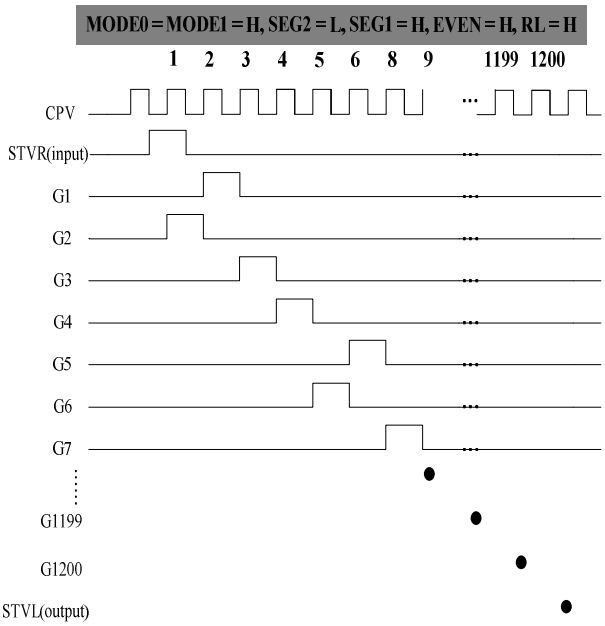
Case1





Case2





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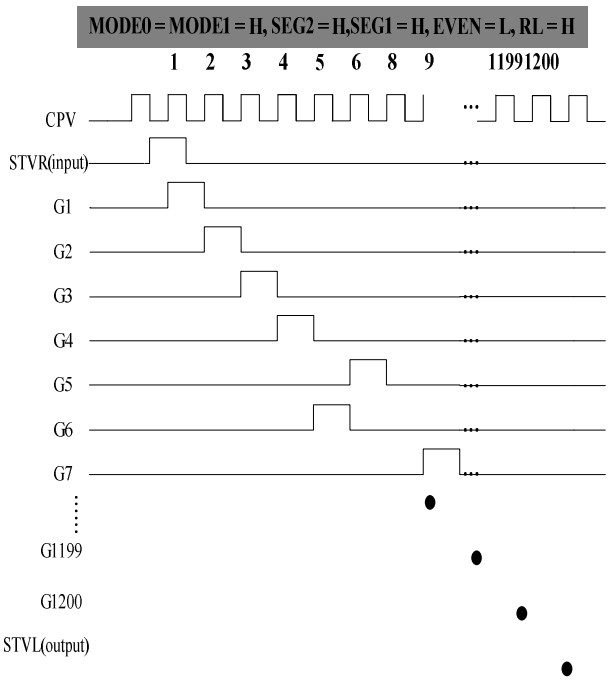
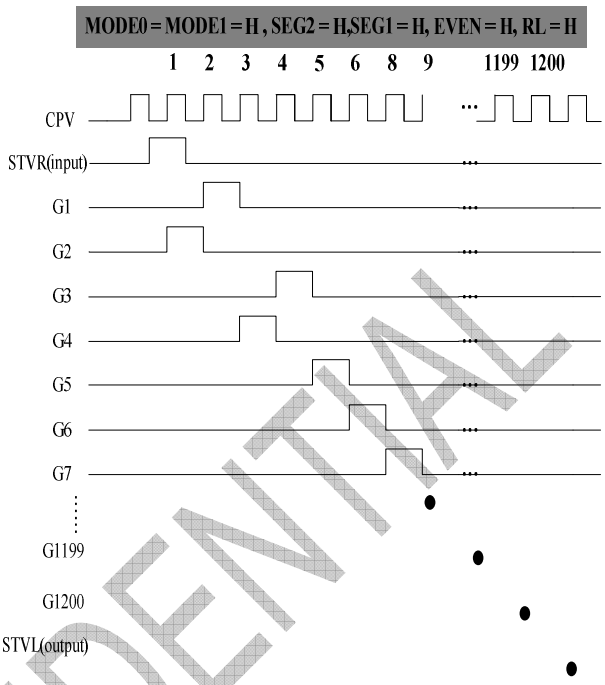
Case3





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5.3 Relationship between RL, STVR and STVL

MODE1=H MODE0=H →1200CH

RL	Start pulse		Data transfer direction
	Input	Output	
H	STVR	STVL	G[1]→ G[2] →…G[481] → G720] →…G[1199] → G[1200]
L	STVL	STVR	G[1200] → G[1199]…→ G[720] → G[481] →…→ G[2] → G[1]

MODE1=H MODE0=L →1152CH

RL	Start pulse		Data transfer direction
	Input	Output	
H	STVR	STVL	G[1] → G[2]→…G[576] → G[625] →…G[1199] → G[1200]
L	STVL	STVR	G[1200] → G[1199]…→ G[625] → G[576] →…→ G[2] → G[1]

MODE1=L MODE0=H →1080CH

RL	Start pulse		Data transfer direction
	Input	Output	
H	STVR	STVL	G[1] → G[2]→…G[540] →G[661] →…G[1199] → G[1200]
L	STVL	STVR	G[1200] → G[1199]…→ G[661] → G[540] →…→G[2] → G[1]

MODE1=L MODE0=L →960CH

RL	Start pulse		Data transfer direction
	Input	Output	
H	STVR	STVL	G[1] → G[2]→…G[480] →G[721] →…G[1199] → G[1200]
L	STVL	STVR	G[1200] → G[1199]…→ G[721] → G[480] →…→G[2] → G[1]

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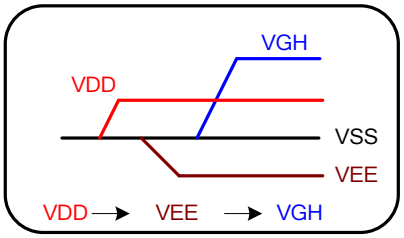
5.4 Device power supply

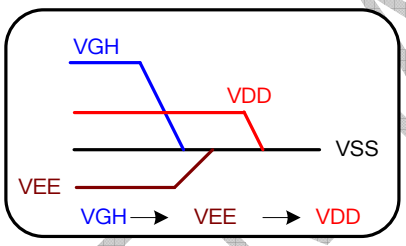
The input signal level of CPV, RL, OE1, OE2, OE3, MODE0, MODE1, SEG1, SEG2, EVEN, STVR and STVL have to swing between VDD and VSS. The signal output level of start pulse (STVR or STVL) to the next stage cascaded device is VDD for H and VSS for L. The following conditions should be followed.

VGH – VEE=40V (max)

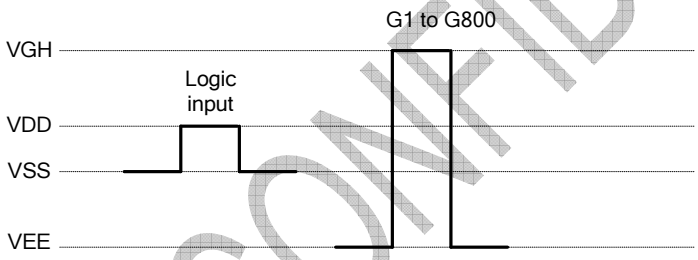
VGH – VSS =7~35V



Power ON Sequence



Power OFF Sequence



Note:

(1). Input signals of CPV, RL, OE1, OE2, OE3, MODE0, MODE1, SEG1, SEG2, EVEN, STVR and STVL.

(2). The “High” level=VDD and “Low” level=VSS.

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6. DC Characteristic

6.1 Absolute Maximum Rating

Parameter	Symbol	Rating			Unit
		Min	Typ	Max	
Power supply voltage (1)	VGH	-0.3	-	+42	V
Power supply voltage (2)	VDD	-0.3	-	+7	V
Power supply voltage (3)	VEE	VGH-42	-	+0.3	V
Input Voltage	Vxo	-0.3	-	40	V
Operating temperature	TOTG	-40	-	+95	◦ C
Storage temperature	TSTG	-55	-	+125	◦ C

Note:

(1)The maximum applicable voltage on any pin with respect to 0V

(2)Device is subject to be damaged permanently if stresses beyond those absolute maximum ratings listed above.

(3)Condition VDD = 3.3V

6.2 Recommended operating conditions

(VSS=0V , TA= -40 ~ +95 ◦ C)

Parameter	Symbol	Rating			Unit
		Min	Typ	Max	
Power supply voltage (1)	VGH	7	-	VEE+40	V
Power supply voltage (2)	VDD	2.3	3.3	3.6	V
Power supply voltage (3)	VEE	-20	-	-5	V
Power supply voltage (4)	VGH-VEE	12	-	40	V
Operation frequency	Fcpv	-	-	200	KHz
Operation temperature	Ta	-40	-	+95	◦ C

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6.3 Electrical Characteristics

(VGH=25V, VEE=-15V, VDD=2.3 to 3.3V, VSS=0V, TA=-40 ~ +85 ◦ C)

Parameter	Symbol	Condition	Rating			Unit	Application pin
			Min	Typ	Max		
Input H voltage	VIH	VCC=3.3V	0.7VDD	-	VDD	V	All input
Input L voltage	VIL	VCC=3.3V	VSS	-	0.3VDD	V	All input
Output H voltage	VOH	IOH=40uA	VDD-0.4	-	VDD	mA	All output
Output L voltage	VOL	IOL=40uA	VSS	-	VSS+0.4-	mA	All output
Output H resistance	ROH	VOUT=VGH-0.5V	-	-	1000	Ω	All output
Output L resistance	ROL	VOUT=VGL+0.5V	-	-	1000	Ω	All output
Input leakage current	IIL	Note (1)	-	-	±1	μA	Note (b)
Pull high/low resistance	RIN	VDD=3.3V Note(2)	70	200	400	kΩ	Mode0,Mode1 , SEG1,SEG2, EVEN,RL pin,when VDD=3.3V and TA=25℃
Pull high resistance	RIN	VIN=VSS	40		200	kΩ	XON
VDD operating current	IVDD	Note (3)	-	-	100	μA	-
VGH operating current	IVGH	Note (3)	-	-	200	μA	-

(1) All input except XAO

(2) MODE0, MODE1, SEG1, SEG2, EVEN, L/R

(3) Power consumption in the following condition:

Output no load, VGH=20V, VEE=-8V, VDD=3.0V, VIH=VDD, VIL=VSS, FCPV=50khZ, OE=VIL, XAO=VIH

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7. AC Characteristic

(VGH=25V, VEE=-15V, VDD=2.3 to 3.6V, VSS=0V, TA=-20 ~ +85 ◦ C)

Parameter	Symbol	Condition	Spec			Unit
			Min	Typ	Max	
CPV period	**TCPV**	-	5	-	-	μs
CPV pulse width	**TCPVPW,**	50% duty cycle	2.5	-	-	μs
OE pulse width	**TWOE**	-	1	-	-	μs
XON pulse width	**Txon**	-	10	-	-	μs
CPV to output delay time	**TPD1**	CL=300pF	-	-	0.9	μs
Start pulse output delay time	**TPD2**	CL=30pF	-	-	1.2	μs
OE to output delay time	**TPD3**	CL=300pF	-	-	0.8	μs
XON to output delay time	**TPD4**	CL=200pF	-	-	50	μs
Data setup Time	**Tthl**	-	-	0.4	0.8	μs
Data hold Time	**Ttlh**	-	-	0.5	1	μs
EVEN setup time	**TMSU**	-	1	-	-	μs
EVEN hold time	**TMHD**	-	1	-	-	μs

Note: The measurement point for all of above signals is at 50% of input/output amplitude

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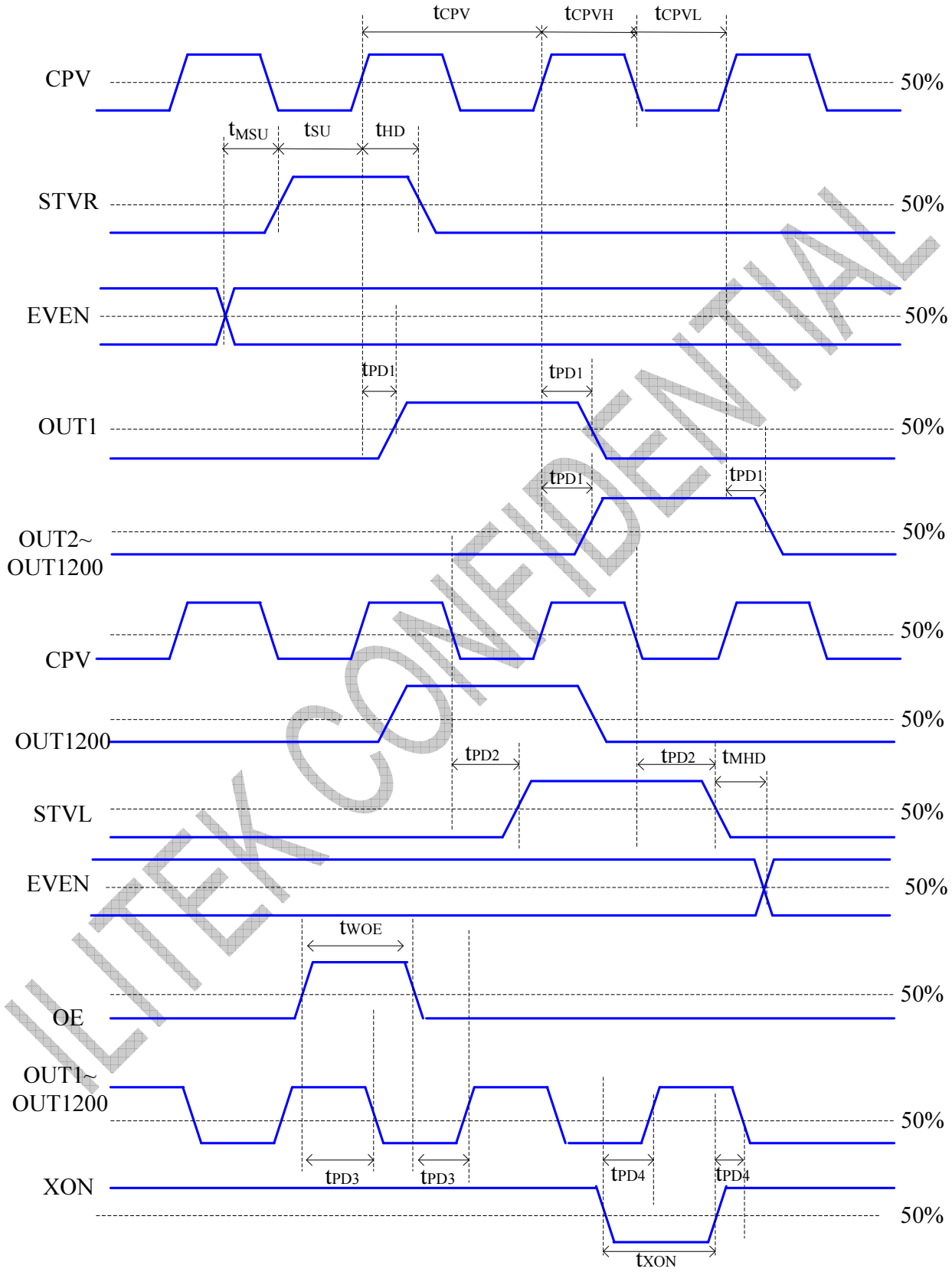
8. Timing Chart



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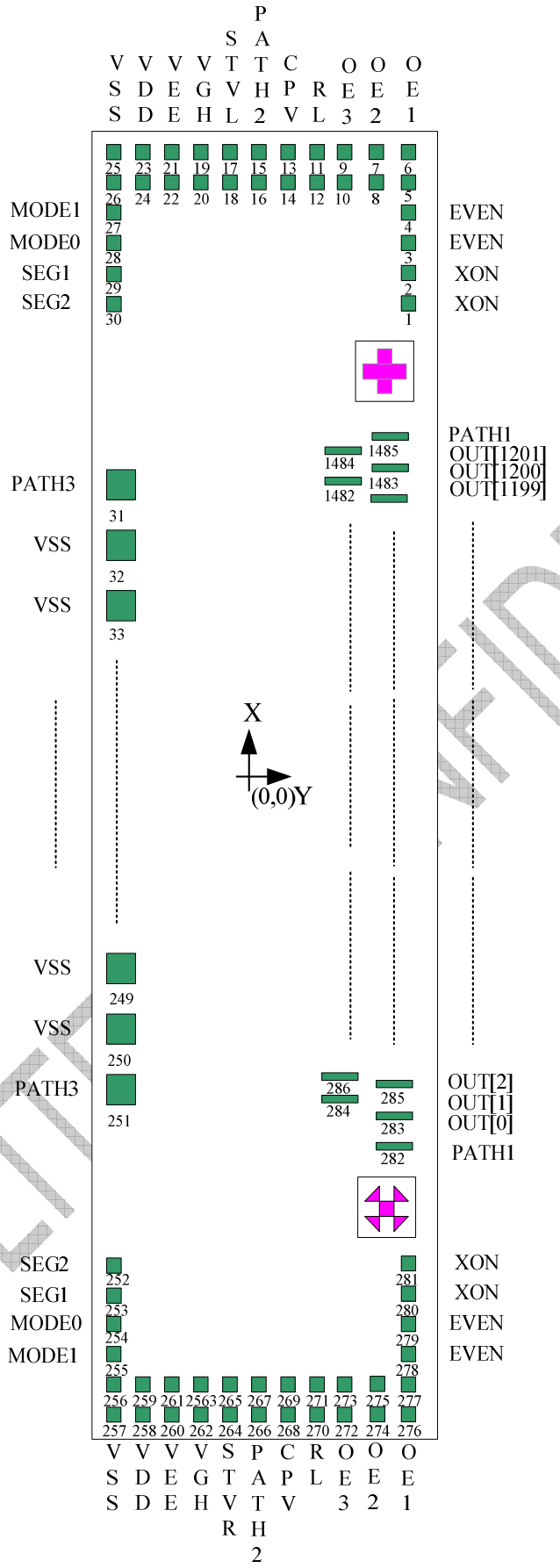
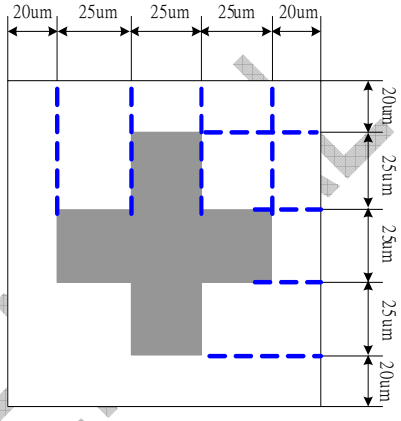
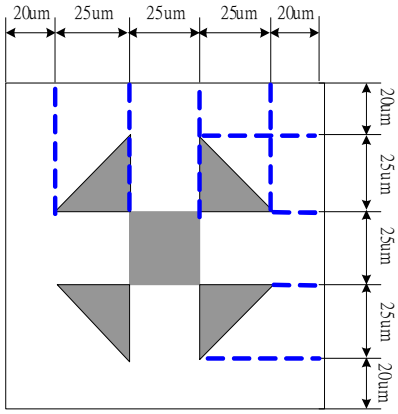
9. Pin Assignment (IC Face View)

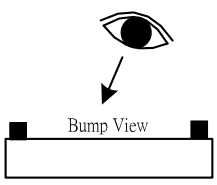




Alignment Mark: Left



Alignment Mark: Right



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10. Pad Location

Pad No.	Name	X	Y	Bump si size(um)	Pad No.	Name	X	Y	Bump si size(um)
1	XON	-11283	262	70x32	61	VSS	-8000	-243	80x70
2	XON	-11373	262	70x32	62	VSS	-7900	-243	80x70
3	EVEN	-11463	262	70x32	63	VSS	-7800	-243	80x70
4	EVEN	-11553	262	70x32	64	VSS	-7700	-243	80x70
5	OE1	-11643	262	70x32	65	VSS	-7600	-243	80x70
6	OE1	-11733	262	70x32	66	VSS	-7500	-243	80x70
7	OE2	-11733	208	70x32	67	VSS	-7400	-243	80x70
8	OE2	-11643	208	70x32	68	VSS	-7300	-243	80x70
9	OE3	-11733	156	70x32	69	VSS	-7200	-243	80x70
10	OE3	-11643	156	70x32	70	VSS	-7100	-243	80x70
11	RL	-11733	104	70x32	71	VSS	-7000	-243	80x70
12	RL	-11643	104	70x32	72	VSS	-6900	-243	80x70
13	CPV	-11733	52	70x32	73	VSS	-6800	-243	80x70
14	CPV	-11643	52	70x32	74	VSS	-6700	-243	80x70
15	PATH2	-11733	0	70x32	75	VSS	-6600	-243	80x70
16	PATH2	-11643	0	70x32	76	VSS	-6500	-243	80x70
17	STVL	-11733	-52	70x32	77	VSS	-6400	-243	80x70
18	STVL	-11643	-52	70x32	78	VSS	-6300	-243	80x70
19	VGH	-11733	-104	70x32	79	VSS	-6200	-243	80x70
20	VGH	-11643	-104	70x32	80	VSS	-6100	-243	80x70
21	VEE	-11733	-156	70x32	81	VSS	-6000	-243	80x70
22	VEE	-11643	-156	70x32	82	VSS	-5900	-243	80x70
23	VDD	-11733	-208	70x32	83	VSS	-5800	-243	80x70
24	VDD	-11643	-208	70x32	84	VSS	-5700	-243	80x70
25	VSS	-11733	-262	70x32	85	VSS	-5600	-243	80x70
26	VSS	-11643	-262	70x32	86	VSS	-5500	-243	80x70
27	MODE1	-11553	-262	70x32	87	VSS	-5400	-243	80x70
28	MODE0	-11463	-262	70x32	88	VSS	-5300	-243	80x70
29	SEG1	-11373	-262	70x32	89	VSS	-5200	-243	80x70
30	SEG2	-11283	-262	70x32	90	VSS	-5100	-243	80x70
31	PATH3	-11000	-243	80x70	91	VSS	-5000	-243	80x70
32	VSS	-10900	-243	80x70	92	VSS	-4900	-243	80x70
33	VSS	-10800	-243	80x70	93	VSS	-4800	-243	80x70
34	VSS	-10700	-243	80x70	94	VSS	-4700	-243	80x70
35	VSS	-10600	-243	80x70	95	VSS	-4600	-243	80x70
36	VSS	-10500	-243	80x70	96	VSS	-4500	-243	80x70
37	VSS	-10400	-243	80x70	97	VSS	-4400	-243	80x70
38	VSS	-10300	-243	80x70	98	VSS	-4300	-243	80x70
39	VSS	-10200	-243	80x70	99	VSS	-4200	-243	80x70
40	VSS	-10100	-243	80x70	100	VSS	-4100	-243	80x70
41	VSS	-10000	-243	80x70	101	VSS	-4000	-243	80x70
42	VSS	-9900	-243	80x70	102	VSS	-3900	-243	80x70
43	VSS	-9800	-243	80x70	103	VSS	-3800	-243	80x70
44	VSS	-9700	-243	80x70	104	VSS	-3700	-243	80x70
45	VSS	-9600	-243	80x70	105	VSS	-3600	-243	80x70
46	VSS	-9500	-243	80x70	106	VSS	-3500	-243	80x70
47	VSS	-9400	-243	80x70	107	VSS	-3400	-243	80x70
48	VSS	-9300	-243	80x70	108	VSS	-3300	-243	80x70
49	VSS	-9200	-243	80x70	109	VSS	-3200	-243	80x70
50	VSS	-9100	-243	80x70	110	VSS	-3100	-243	80x70
51	VSS	-9000	-243	80x70	111	VSS	-3000	-243	80x70
52	VSS	-8900	-243	80x70	112	VSS	-2900	-243	80x70
53	VSS	-8800	-243	80x70	113	VSS	-2800	-243	80x70
54	VSS	-8700	-243	80x70	114	VSS	-2700	-243	80x70
55	VSS	-8600	-243	80x70	115	VSS	-2600	-243	80x70
56	VSS	-8500	-243	80x70	116	VSS	-2500	-243	80x70
57	VSS	-8400	-243	80x70	117	VSS	-2400	-243	80x70
58	VSS	-8300	-243	80x70	118	VSS	-2300	-243	80x70
59	VSS	-8200	-243	80x70	119	VSS	-2200	-243	80x70
60	VSS	-8100	-243	80x70	120	VSS	-2100	-243	80x70

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Pad No.	Name	X	Y	Bump si size(um)	Pad No.	Name	X	Y	Bump si size(um)
121	VSS	-2000	-243	80x70	181	VSS	4000	-243	80x70
122	VSS	-1900	-243	80x70	182	VSS	4100	-243	80x70
123	VSS	-1800	-243	80x70	183	VSS	4200	-243	80x70
124	VSS	-1700	-243	80x70	184	VSS	4300	-243	80x70
125	VSS	-1600	-243	80x70	185	VSS	4400	-243	80x70
126	VSS	-1500	-243	80x70	186	VSS	4500	-243	80x70
127	VSS	-1400	-243	80x70	187	VSS	4600	-243	80x70
128	VSS	-1300	-243	80x70	188	VSS	4700	-243	80x70
129	VSS	-1200	-243	80x70	189	VSS	4800	-243	80x70
130	VSS	-1100	-243	80x70	190	VSS	4900	-243	80x70
131	VSS	-1000	-243	80x70	191	VSS	5000	-243	80x70
132	VSS	-900	-243	80x70	192	VSS	5100	-243	80x70
133	VSS	-800	-243	80x70	193	VSS	5200	-243	80x70
134	VSS	-700	-243	80x70	194	VSS	5300	-243	80x70
135	VSS	-600	-243	80x70	195	VSS	5400	-243	80x70
136	VSS	-500	-243	80x70	196	VSS	5500	-243	80x70
137	VSS	-400	-243	80x70	197	VSS	5600	-243	80x70
138	VSS	-300	-243	80x70	198	VSS	5700	-243	80x70
139	VSS	-200	-243	80x70	199	VSS	5800	-243	80x70
140	VSS	-100	-243	80x70	200	VSS	5900	-243	80x70
141	VSS	0	-243	80x70	201	VSS	6000	-243	80x70
142	VSS	100	-243	80x70	202	VSS	6100	-243	80x70
143	VSS	200	-243	80x70	203	VSS	6200	-243	80x70
144	VSS	300	-243	80x70	204	VSS	6300	-243	80x70
145	VSS	400	-243	80x70	205	VSS	6400	-243	80x70
146	VSS	500	-243	80x70	206	VSS	6500	-243	80x70
147	VSS	600	-243	80x70	207	VSS	6600	-243	80x70
148	VSS	700	-243	80x70	208	VSS	6700	-243	80x70
149	VSS	800	-243	80x70	209	VSS	6800	-243	80x70
150	VSS	900	-243	80x70	210	VSS	6900	-243	80x70
151	VSS	1000	-243	80x70	211	VSS	7000	-243	80x70
152	VSS	1100	-243	80x70	212	VSS	7100	-243	80x70
153	VSS	1200	-243	80x70	213	VSS	7200	-243	80x70
154	VSS	1300	-243	80x70	214	VSS	7300	-243	80x70
155	VSS	1400	-243	80x70	215	VSS	7400	-243	80x70
156	VSS	1500	-243	80x70	216	VSS	7500	-243	80x70
157	VSS	1600	-243	80x70	217	VSS	7600	-243	80x70
158	VSS	1700	-243	80x70	218	VSS	7700	-243	80x70
159	VSS	1800	-243	80x70	219	VSS	7800	-243	80x70
160	VSS	1900	-243	80x70	220	VSS	7900	-243	80x70
161	VSS	2000	-243	80x70	221	VSS	8000	-243	80x70
162	VSS	2100	-243	80x70	222	VSS	8100	-243	80x70
163	VSS	2200	-243	80x70	223	VSS	8200	-243	80x70
164	VSS	2300	-243	80x70	224	VSS	8300	-243	80x70
165	VSS	2400	-243	80x70	225	VSS	8400	-243	80x70
166	VSS	2500	-243	80x70	226	VSS	8500	-243	80x70
167	VSS	2600	-243	80x70	227	VSS	8600	-243	80x70
168	VSS	2700	-243	80x70	228	VSS	8700	-243	80x70
169	VSS	2800	-243	80x70	229	VSS	8800	-243	80x70
170	VSS	2900	-243	80x70	230	VSS	8900	-243	80x70
171	VSS	3000	-243	80x70	231	VSS	9000	-243	80x70
172	VSS	3100	-243	80x70	232	VSS	9100	-243	80x70
173	VSS	3200	-243	80x70	233	VSS	9200	-243	80x70
174	VSS	3300	-243	80x70	234	VSS	9300	-243	80x70
175	VSS	3400	-243	80x70	235	VSS	9400	-243	80x70
176	VSS	3500	-243	80x70	236	VSS	9500	-243	80x70
177	VSS	3600	-243	80x70	237	VSS	9600	-243	80x70
178	VSS	3700	-243	80x70	238	VSS	9700	-243	80x70
179	VSS	3800	-243	80x70	239	VSS	9800	-243	80x70
180	VSS	3900	-243	80x70	240	VSS	9900	-243	80x70

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Pad No.	Name	X	Y	Bump si size(um)	Pad No.	Name	X	Y	Bump si size(um)
241	VSS	10000	-243	80x70	301	OUT18	10476	235.5	18x85
242	VSS	10100	-243	80x70	302	OUT19	10458	125.5	18x85
243	VSS	10200	-243	80x70	303	OUT20	10440	235.5	18x85
244	VSS	10300	-243	80x70	304	OUT21	10422	125.5	18x85
245	VSS	10400	-243	80x70	305	OUT22	10404	235.5	18x85
246	VSS	10500	-243	80x70	306	OUT23	10386	125.5	18x85
247	VSS	10600	-243	80x70	307	OUT24	10368	235.5	18x85
248	VSS	10700	-243	80x70	308	OUT25	10350	125.5	18x85
249	VSS	10800	-243	80x70	309	OUT26	10332	235.5	18x85
250	VSS	10900	-243	80x70	310	OUT27	10314	125.5	18x85
251	PATH3	11000	-243	80x70	311	OUT28	10296	235.5	18x85
252	SEG2	11283	-262	70x32	312	OUT29	10278	125.5	18x85
253	SEG1	11373	-262	70x32	313	OUT30	10260	235.5	18x85
254	MODE0	11463	-262	70x32	314	OUT31	10242	125.5	18x85
255	MODE1	11553	-262	70x32	315	OUT32	10224	235.5	18x85
256	VSS	11643	-262	70x32	316	OUT33	10206	125.5	18x85
257	VSS	11733	-262	70x32	317	OUT34	10188	235.5	18x85
258	VDD	11733	-208	70x32	318	OUT35	10170	125.5	18x85
259	VDD	11643	-208	70x32	319	OUT36	10152	235.5	18x85
260	VEE	11733	-156	70x32	320	OUT37	10134	125.5	18x85
261	VEE	11643	-156	70x32	321	OUT38	10116	235.5	18x85
262	VGH	11733	-104	70x32	322	OUT39	10098	125.5	18x85
263	VGH	11643	-104	70x32	323	OUT40	10080	235.5	18x85
264	STVR	11733	-52	70x32	324	OUT41	10062	125.5	18x85
265	STVR	11643	-52	70x32	325	OUT42	10044	235.5	18x85
266	PATH2	11733	0	70x32	326	OUT43	10026	125.5	18x85
267	PATH2	11643	0	70x32	327	OUT44	10008	235.5	18x85
268	CPV	11733	52	70x32	328	OUT45	9990	125.5	18x85
269	CPV	11643	52	70x32	329	OUT46	9972	235.5	18x85
270	RL	11733	104	70x32	330	OUT47	9954	125.5	18x85
271	RL	11643	104	70x32	331	OUT48	9936	235.5	18x85
272	OE3	11733	156	70x32	332	OUT49	9918	125.5	18x85
273	OE3	11643	156	70x32	333	OUT50	9900	235.5	18x85
274	OE2	11733	208	70x32	334	OUT51	9882	125.5	18x85
275	OE2	11643	208	70x32	335	OUT52	9864	235.5	18x85
276	OE1	11733	262	70x32	336	OUT53	9846	125.5	18x85
277	OE1	11643	262	70x32	337	OUT54	9828	235.5	18x85
278	EVEN	11553	262	70x32	338	OUT55	9810	125.5	18x85
279	EVEN	11463	262	70x32	339	OUT56	9792	235.5	18x85
280	XON	11373	262	70x32	340	OUT57	9774	125.5	18x85
281	XON	11283	262	70x32	341	OUT58	9756	235.5	18x85
282	PATH1	10836	235.5	18x85	342	OUT59	9738	125.5	18x85
283	OUT0	10800	235.5	18x85	343	OUT60	9720	235.5	18x85
284	OUT1	10782	125.5	18x85	344	OUT61	9702	125.5	18x85
285	OUT2	10764	235.5	18x85	345	OUT62	9684	235.5	18x85
286	OUT3	10746	125.5	18x85	346	OUT63	9666	125.5	18x85
287	OUT4	10728	235.5	18x85	347	OUT64	9648	235.5	18x85
288	OUT5	10710	125.5	18x85	348	OUT65	9630	125.5	18x85
289	OUT6	10692	235.5	18x85	349	OUT66	9612	235.5	18x85
290	OUT7	10674	125.5	18x85	350	OUT67	9594	125.5	18x85
291	OUT8	10656	235.5	18x85	351	OUT68	9576	235.5	18x85
292	OUT9	10638	125.5	18x85	352	OUT69	9558	125.5	18x85
293	OUT10	10620	235.5	18x85	353	OUT70	9540	235.5	18x85
294	OUT11	10602	125.5	18x85	354	OUT71	9522	125.5	18x85
295	OUT12	10584	235.5	18x85	355	OUT72	9504	235.5	18x85
296	OUT13	10566	125.5	18x85	356	OUT73	9486	125.5	18x85
297	OUT14	10548	235.5	18x85	357	OUT74	9468	235.5	18x85
298	OUT15	10530	125.5	18x85	358	OUT75	9450	125.5	18x85
299	OUT16	10512	235.5	18x85	359	OUT76	9432	235.5	18x85
300	OUT17	10494	125.5	18x85	360	OUT77	9414	125.5	18x85

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Pad No.	Name	X	Y	Bump si size(um)	Pad No.	Name	X	Y	Bump si size(um)
361	OUT78	9396	235.5	18x85	421	OUT138	8316	235.5	18x85
362	OUT79	9378	125.5	18x85	422	OUT139	8298	125.5	18x85
363	OUT80	9360	235.5	18x85	423	OUT140	8280	235.5	18x85
364	OUT81	9342	125.5	18x85	424	OUT141	8262	125.5	18x85
365	OUT82	9324	235.5	18x85	425	OUT142	8244	235.5	18x85
366	OUT83	9306	125.5	18x85	426	OUT143	8226	125.5	18x85
367	OUT84	9288	235.5	18x85	427	OUT144	8208	235.5	18x85
368	OUT85	9270	125.5	18x85	428	OUT145	8190	125.5	18x85
369	OUT86	9252	235.5	18x85	429	OUT146	8172	235.5	18x85
370	OUT87	9234	125.5	18x85	430	OUT147	8154	125.5	18x85
371	OUT88	9216	235.5	18x85	431	OUT148	8136	235.5	18x85
372	OUT89	9198	125.5	18x85	432	OUT149	8118	125.5	18x85
373	OUT90	9180	235.5	18x85	433	OUT150	8100	235.5	18x85
374	OUT91	9162	125.5	18x85	434	OUT151	8082	125.5	18x85
375	OUT92	9144	235.5	18x85	435	OUT152	8064	235.5	18x85
376	OUT93	9126	125.5	18x85	436	OUT153	8046	125.5	18x85
377	OUT94	9108	235.5	18x85	437	OUT154	8028	235.5	18x85
378	OUT95	9090	125.5	18x85	438	OUT155	8010	125.5	18x85
379	OUT96	9072	235.5	18x85	439	OUT156	7992	235.5	18x85
380	OUT97	9054	125.5	18x85	440	OUT157	7974	125.5	18x85
381	OUT98	9036	235.5	18x85	441	OUT158	7956	235.5	18x85
382	OUT99	9018	125.5	18x85	442	OUT159	7938	125.5	18x85
383	OUT100	9000	235.5	18x85	443	OUT160	7920	235.5	18x85
384	OUT101	8982	125.5	18x85	444	OUT161	7902	125.5	18x85
385	OUT102	8964	235.5	18x85	445	OUT162	7884	235.5	18x85
386	OUT103	8946	125.5	18x85	446	OUT163	7866	125.5	18x85
387	OUT104	8928	235.5	18x85	447	OUT164	7848	235.5	18x85
388	OUT105	8910	125.5	18x85	448	OUT165	7830	125.5	18x85
389	OUT106	8892	235.5	18x85	449	OUT166	7812	235.5	18x85
390	OUT107	8874	125.5	18x85	450	OUT167	7794	125.5	18x85
391	OUT108	8856	235.5	18x85	451	OUT168	7776	235.5	18x85
392	OUT109	8838	125.5	18x85	452	OUT169	7758	125.5	18x85
393	OUT110	8820	235.5	18x85	453	OUT170	7740	235.5	18x85
394	OUT111	8802	125.5	18x85	454	OUT171	7722	125.5	18x85
395	OUT112	8784	235.5	18x85	455	OUT172	7704	235.5	18x85
396	OUT113	8766	125.5	18x85	456	OUT173	7686	125.5	18x85
397	OUT114	8748	235.5	18x85	457	OUT174	7668	235.5	18x85
398	OUT115	8730	125.5	18x85	458	OUT175	7650	125.5	18x85
399	OUT116	8712	235.5	18x85	459	OUT176	7632	235.5	18x85
400	OUT117	8694	125.5	18x85	460	OUT177	7614	125.5	18x85
401	OUT118	8676	235.5	18x85	461	OUT178	7596	235.5	18x85
402	OUT119	8658	125.5	18x85	462	OUT179	7578	125.5	18x85
403	OUT120	8640	235.5	18x85	463	OUT180	7560	235.5	18x85
404	OUT121	8622	125.5	18x85	464	OUT181	7542	125.5	18x85
405	OUT122	8604	235.5	18x85	465	OUT182	7524	235.5	18x85
406	OUT123	8586	125.5	18x85	466	OUT183	7506	125.5	18x85
407	OUT124	8568	235.5	18x85	467	OUT184	7488	235.5	18x85
408	OUT125	8550	125.5	18x85	468	OUT185	7470	125.5	18x85
409	OUT126	8532	235.5	18x85	469	OUT186	7452	235.5	18x85
410	OUT127	8514	125.5	18x85	470	OUT187	7434	125.5	18x85
411	OUT128	8496	235.5	18x85	471	OUT188	7416	235.5	18x85
412	OUT129	8478	125.5	18x85	472	OUT189	7398	125.5	18x85
413	OUT130	8460	235.5	18x85	473	OUT190	7380	235.5	18x85
414	OUT131	8442	125.5	18x85	474	OUT191	7362	125.5	18x85
415	OUT132	8424	235.5	18x85	475	OUT192	7344	235.5	18x85
416	OUT133	8406	125.5	18x85	476	OUT193	7326	125.5	18x85
417	OUT134	8388	235.5	18x85	477	OUT194	7308	235.5	18x85
418	OUT135	8370	125.5	18x85	478	OUT195	7290	125.5	18x85
419	OUT136	8352	235.5	18x85	479	OUT196	7272	235.5	18x85
420	OUT137	8334	125.5	18x85	480	OUT197	7254	125.5	18x85

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Pad No.	Name	X	Y	Bump si size(um)	Pad No.	Name	X	Y	Bump si size(um)
481	OUT198	7236	235.5	18x85	541	OUT258	6156	235.5	18x85
482	OUT199	7218	125.5	18x85	542	OUT259	6138	125.5	18x85
483	OUT200	7200	235.5	18x85	543	OUT260	6120	235.5	18x85
484	OUT201	7182	125.5	18x85	544	OUT261	6102	125.5	18x85
485	OUT202	7164	235.5	18x85	545	OUT262	6084	235.5	18x85
486	OUT203	7146	125.5	18x85	546	OUT263	6066	125.5	18x85
487	OUT204	7128	235.5	18x85	547	OUT264	6048	235.5	18x85
488	OUT205	7110	125.5	18x85	548	OUT265	6030	125.5	18x85
489	OUT206	7092	235.5	18x85	549	OUT266	6012	235.5	18x85
490	OUT207	7074	125.5	18x85	550	OUT267	5994	125.5	18x85
491	OUT208	7056	235.5	18x85	551	OUT268	5976	235.5	18x85
492	OUT209	7038	125.5	18x85	552	OUT269	5958	125.5	18x85
493	OUT210	7020	235.5	18x85	553	OUT270	5940	235.5	18x85
494	OUT211	7002	125.5	18x85	554	OUT271	5922	125.5	18x85
495	OUT212	6984	235.5	18x85	555	OUT272	5904	235.5	18x85
496	OUT213	6966	125.5	18x85	556	OUT273	5886	125.5	18x85
497	OUT214	6948	235.5	18x85	557	OUT274	5868	235.5	18x85
498	OUT215	6930	125.5	18x85	558	OUT275	5850	125.5	18x85
499	OUT216	6912	235.5	18x85	559	OUT276	5832	235.5	18x85
500	OUT217	6894	125.5	18x85	560	OUT277	5814	125.5	18x85
501	OUT218	6876	235.5	18x85	561	OUT278	5796	235.5	18x85
502	OUT219	6858	125.5	18x85	562	OUT279	5778	125.5	18x85
503	OUT220	6840	235.5	18x85	563	OUT280	5760	235.5	18x85
504	OUT221	6822	125.5	18x85	564	OUT281	5742	125.5	18x85
505	OUT222	6804	235.5	18x85	565	OUT282	5724	235.5	18x85
506	OUT223	6786	125.5	18x85	566	OUT283	5706	125.5	18x85
507	OUT224	6768	235.5	18x85	567	OUT284	5688	235.5	18x85
508	OUT225	6750	125.5	18x85	568	OUT285	5670	125.5	18x85
509	OUT226	6732	235.5	18x85	569	OUT286	5652	235.5	18x85
510	OUT227	6714	125.5	18x85	570	OUT287	5634	125.5	18x85
511	OUT228	6696	235.5	18x85	571	OUT288	5616	235.5	18x85
512	OUT229	6678	125.5	18x85	572	OUT289	5598	125.5	18x85
513	OUT230	6660	235.5	18x85	573	OUT290	5580	235.5	18x85
514	OUT231	6642	125.5	18x85	574	OUT291	5562	125.5	18x85
515	OUT232	6624	235.5	18x85	575	OUT292	5544	235.5	18x85
516	OUT233	6606	125.5	18x85	576	OUT293	5526	125.5	18x85
517	OUT234	6588	235.5	18x85	577	OUT294	5508	235.5	18x85
518	OUT235	6570	125.5	18x85	578	OUT295	5490	125.5	18x85
519	OUT236	6552	235.5	18x85	579	OUT296	5472	235.5	18x85
520	OUT237	6534	125.5	18x85	580	OUT297	5454	125.5	18x85
521	OUT238	6516	235.5	18x85	581	OUT298	5436	235.5	18x85
522	OUT239	6498	125.5	18x85	582	OUT299	5418	125.5	18x85
523	OUT240	6480	235.5	18x85	583	OUT300	5400	235.5	18x85
524	OUT241	6462	125.5	18x85	584	OUT301	5382	125.5	18x85
525	OUT242	6444	235.5	18x85	585	OUT302	5364	235.5	18x85
526	OUT243	6426	125.5	18x85	586	OUT303	5346	125.5	18x85
527	OUT244	6408	235.5	18x85	587	OUT304	5328	235.5	18x85
528	OUT245	6390	125.5	18x85	588	OUT305	5310	125.5	18x85
529	OUT246	6372	235.5	18x85	589	OUT306	5292	235.5	18x85
530	OUT247	6354	125.5	18x85	590	OUT307	5274	125.5	18x85
531	OUT248	6336	235.5	18x85	591	OUT308	5256	235.5	18x85
532	OUT249	6318	125.5	18x85	592	OUT309	5238	125.5	18x85
533	OUT250	6300	235.5	18x85	593	OUT310	5220	235.5	18x85
534	OUT251	6282	125.5	18x85	594	OUT311	5202	125.5	18x85
535	OUT252	6264	235.5	18x85	595	OUT312	5184	235.5	18x85
536	OUT253	6246	125.5	18x85	596	OUT313	5166	125.5	18x85
537	OUT254	6228	235.5	18x85	597	OUT314	5148	235.5	18x85
538	OUT255	6210	125.5	18x85	598	OUT315	5130	125.5	18x85
539	OUT256	6192	235.5	18x85	599	OUT316	5112	235.5	18x85
540	OUT257	6174	125.5	18x85	600	OUT317	5094	125.5	18x85

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Pad No.	Name	X	Y	Bump si size(um)	Pad No.	Name	X	Y	Bump si size(um)
601	OUT318	5076	235.5	18x85	661	OUT378	3996	235.5	18x85
602	OUT319	5058	125.5	18x85	662	OUT379	3978	125.5	18x85
603	OUT320	5040	235.5	18x85	663	OUT380	3960	235.5	18x85
604	OUT321	5022	125.5	18x85	664	OUT381	3942	125.5	18x85
605	OUT322	5004	235.5	18x85	665	OUT382	3924	235.5	18x85
606	OUT323	4986	125.5	18x85	666	OUT383	3906	125.5	18x85
607	OUT324	4968	235.5	18x85	667	OUT384	3888	235.5	18x85
608	OUT325	4950	125.5	18x85	668	OUT385	3870	125.5	18x85
609	OUT326	4932	235.5	18x85	669	OUT386	3852	235.5	18x85
610	OUT327	4914	125.5	18x85	670	OUT387	3834	125.5	18x85
611	OUT328	4896	235.5	18x85	671	OUT388	3816	235.5	18x85
612	OUT329	4878	125.5	18x85	672	OUT389	3798	125.5	18x85
613	OUT330	4860	235.5	18x85	673	OUT390	3780	235.5	18x85
614	OUT331	4842	125.5	18x85	674	OUT391	3762	125.5	18x85
615	OUT332	4824	235.5	18x85	675	OUT392	3744	235.5	18x85
616	OUT333	4806	125.5	18x85	676	OUT393	3726	125.5	18x85
617	OUT334	4788	235.5	18x85	677	OUT394	3708	235.5	18x85
618	OUT335	4770	125.5	18x85	678	OUT395	3690	125.5	18x85
619	OUT336	4752	235.5	18x85	679	OUT396	3672	235.5	18x85
620	OUT337	4734	125.5	18x85	680	OUT397	3654	125.5	18x85
621	OUT338	4716	235.5	18x85	681	OUT398	3636	235.5	18x85
622	OUT339	4698	125.5	18x85	682	OUT399	3618	125.5	18x85
623	OUT340	4680	235.5	18x85	683	OUT400	3600	235.5	18x85
624	OUT341	4662	125.5	18x85	684	OUT401	3582	125.5	18x85
625	OUT342	4644	235.5	18x85	685	OUT402	3564	235.5	18x85
626	OUT343	4626	125.5	18x85	686	OUT403	3546	125.5	18x85
627	OUT344	4608	235.5	18x85	687	OUT404	3528	235.5	18x85
628	OUT345	4590	125.5	18x85	688	OUT405	3510	125.5	18x85
629	OUT346	4572	235.5	18x85	689	OUT406	3492	235.5	18x85
630	OUT347	4554	125.5	18x85	690	OUT407	3474	125.5	18x85
631	OUT348	4536	235.5	18x85	691	OUT408	3456	235.5	18x85
632	OUT349	4518	125.5	18x85	692	OUT409	3438	125.5	18x85
633	OUT350	4500	235.5	18x85	693	OUT410	3420	235.5	18x85
634	OUT351	4482	125.5	18x85	694	OUT411	3402	125.5	18x85
635	OUT352	4464	235.5	18x85	695	OUT412	3384	235.5	18x85
636	OUT353	4446	125.5	18x85	696	OUT413	3366	125.5	18x85
637	OUT354	4428	235.5	18x85	697	OUT414	3348	235.5	18x85
638	OUT355	4410	125.5	18x85	698	OUT415	3330	125.5	18x85
639	OUT356	4392	235.5	18x85	699	OUT416	3312	235.5	18x85
640	OUT357	4374	125.5	18x85	700	OUT417	3294	125.5	18x85
641	OUT358	4356	235.5	18x85	701	OUT418	3276	235.5	18x85
642	OUT359	4338	125.5	18x85	702	OUT419	3258	125.5	18x85
643	OUT360	4320	235.5	18x85	703	OUT420	3240	235.5	18x85
644	OUT361	4302	125.5	18x85	704	OUT421	3222	125.5	18x85
645	OUT362	4284	235.5	18x85	705	OUT422	3204	235.5	18x85
646	OUT363	4266	125.5	18x85	706	OUT423	3186	125.5	18x85
647	OUT364	4248	235.5	18x85	707	OUT424	3168	235.5	18x85
648	OUT365	4230	125.5	18x85	708	OUT425	3150	125.5	18x85
649	OUT366	4212	235.5	18x85	709	OUT426	3132	235.5	18x85
650	OUT367	4194	125.5	18x85	710	OUT427	3114	125.5	18x85
651	OUT368	4176	235.5	18x85	711	OUT428	3096	235.5	18x85
652	OUT369	4158	125.5	18x85	712	OUT429	3078	125.5	18x85
653	OUT370	4140	235.5	18x85	713	OUT430	3060	235.5	18x85
654	OUT371	4122	125.5	18x85	714	OUT431	3042	125.5	18x85
655	OUT372	4104	235.5	18x85	715	OUT432	3024	235.5	18x85
656	OUT373	4086	125.5	18x85	716	OUT433	3006	125.5	18x85
657	OUT374	4068	235.5	18x85	717	OUT434	2988	235.5	18x85
658	OUT375	4050	125.5	18x85	718	OUT435	2970	125.5	18x85
659	OUT376	4032	235.5	18x85	719	OUT436	2952	235.5	18x85
660	OUT377	4014	125.5	18x85	720	OUT437	2934	125.5	18x85

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Pad No.	Name	X	Y	Bump si size(um)	Pad No.	Name	X	Y	Bump si size(um)
721	OUT438	2916	235.5	18x85	781	OUT498	1836	235.5	18x85
722	OUT439	2898	125.5	18x85	782	OUT499	1818	125.5	18x85
723	OUT440	2880	235.5	18x85	783	OUT500	1800	235.5	18x85
724	OUT441	2862	125.5	18x85	784	OUT501	1782	125.5	18x85
725	OUT442	2844	235.5	18x85	785	OUT502	1764	235.5	18x85
726	OUT443	2826	125.5	18x85	786	OUT503	1746	125.5	18x85
727	OUT444	2808	235.5	18x85	787	OUT504	1728	235.5	18x85
728	OUT445	2790	125.5	18x85	788	OUT505	1710	125.5	18x85
729	OUT446	2772	235.5	18x85	789	OUT506	1692	235.5	18x85
730	OUT447	2754	125.5	18x85	790	OUT507	1674	125.5	18x85
731	OUT448	2736	235.5	18x85	791	OUT508	1656	235.5	18x85
732	OUT449	2718	125.5	18x85	792	OUT509	1638	125.5	18x85
733	OUT450	2700	235.5	18x85	793	OUT510	1620	235.5	18x85
734	OUT451	2682	125.5	18x85	794	OUT511	1602	125.5	18x85
735	OUT452	2664	235.5	18x85	795	OUT512	1584	235.5	18x85
736	OUT453	2646	125.5	18x85	796	OUT513	1566	125.5	18x85
737	OUT454	2628	235.5	18x85	797	OUT514	1548	235.5	18x85
738	OUT455	2610	125.5	18x85	798	OUT515	1530	125.5	18x85
739	OUT456	2592	235.5	18x85	799	OUT516	1512	235.5	18x85
740	OUT457	2574	125.5	18x85	800	OUT517	1494	125.5	18x85
741	OUT458	2556	235.5	18x85	801	OUT518	1476	235.5	18x85
742	OUT459	2538	125.5	18x85	802	OUT519	1458	125.5	18x85
743	OUT460	2520	235.5	18x85	803	OUT520	1440	235.5	18x85
744	OUT461	2502	125.5	18x85	804	OUT521	1422	125.5	18x85
745	OUT462	2484	235.5	18x85	805	OUT522	1404	235.5	18x85
746	OUT463	2466	125.5	18x85	806	OUT523	1386	125.5	18x85
747	OUT464	2448	235.5	18x85	807	OUT524	1368	235.5	18x85
748	OUT465	2430	125.5	18x85	808	OUT525	1350	125.5	18x85
749	OUT466	2412	235.5	18x85	809	OUT526	1332	235.5	18x85
750	OUT467	2394	125.5	18x85	810	OUT527	1314	125.5	18x85
751	OUT468	2376	235.5	18x85	811	OUT528	1296	235.5	18x85
752	OUT469	2358	125.5	18x85	812	OUT529	1278	125.5	18x85
753	OUT470	2340	235.5	18x85	813	OUT530	1260	235.5	18x85
754	OUT471	2322	125.5	18x85	814	OUT531	1242	125.5	18x85
755	OUT472	2304	235.5	18x85	815	OUT532	1224	235.5	18x85
756	OUT473	2286	125.5	18x85	816	OUT533	1206	125.5	18x85
757	OUT474	2268	235.5	18x85	817	OUT534	1188	235.5	18x85
758	OUT475	2250	125.5	18x85	818	OUT535	1170	125.5	18x85
759	OUT476	2232	235.5	18x85	819	OUT536	1152	235.5	18x85
760	OUT477	2214	125.5	18x85	820	OUT537	1134	125.5	18x85
761	OUT478	2196	235.5	18x85	821	OUT538	1116	235.5	18x85
762	OUT479	2178	125.5	18x85	822	OUT539	1098	125.5	18x85
763	OUT480	2160	235.5	18x85	823	OUT540	1080	235.5	18x85
764	OUT481	2142	125.5	18x85	824	OUT541	1062	125.5	18x85
765	OUT482	2124	235.5	18x85	825	OUT542	1044	235.5	18x85
766	OUT483	2106	125.5	18x85	826	OUT543	1026	125.5	18x85
767	OUT484	2088	235.5	18x85	827	OUT544	1008	235.5	18x85
768	OUT485	2070	125.5	18x85	828	OUT545	990	125.5	18x85
769	OUT486	2052	235.5	18x85	829	OUT546	972	235.5	18x85
770	OUT487	2034	125.5	18x85	830	OUT547	954	125.5	18x85
771	OUT488	2016	235.5	18x85	831	OUT548	936	235.5	18x85
772	OUT489	1998	125.5	18x85	832	OUT549	918	125.5	18x85
773	OUT490	1980	235.5	18x85	833	OUT550	900	235.5	18x85
774	OUT491	1962	125.5	18x85	834	OUT551	882	125.5	18x85
775	OUT492	1944	235.5	18x85	835	OUT552	864	235.5	18x85
776	OUT493	1926	125.5	18x85	836	OUT553	846	125.5	18x85
777	OUT494	1908	235.5	18x85	837	OUT554	828	235.5	18x85
778	OUT495	1890	125.5	18x85	838	OUT555	810	125.5	18x85
779	OUT496	1872	235.5	18x85	839	OUT556	792	235.5	18x85
780	OUT497	1854	125.5	18x85	840	OUT557	774	125.5	18x85

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Pad No.	Name	X	Y	Bump si size(um)	Pad No.	Name	X	Y	Bump si size(um)
841	OUT558	756	235.5	18x85	901	OUT618	-324	235.5	18x85
842	OUT559	738	125.5	18x85	902	OUT619	-342	125.5	18x85
843	OUT560	720	235.5	18x85	903	OUT620	-360	235.5	18x85
844	OUT561	702	125.5	18x85	904	OUT621	-378	125.5	18x85
845	OUT562	684	235.5	18x85	905	OUT622	-396	235.5	18x85
846	OUT563	666	125.5	18x85	906	OUT623	-414	125.5	18x85
847	OUT564	648	235.5	18x85	907	OUT624	-432	235.5	18x85
848	OUT565	630	125.5	18x85	908	OUT625	-450	125.5	18x85
849	OUT566	612	235.5	18x85	909	OUT626	-468	235.5	18x85
850	OUT567	594	125.5	18x85	910	OUT627	-486	125.5	18x85
851	OUT568	576	235.5	18x85	911	OUT628	-504	235.5	18x85
852	OUT569	558	125.5	18x85	912	OUT629	-522	125.5	18x85
853	OUT570	540	235.5	18x85	913	OUT630	-540	235.5	18x85
854	OUT571	522	125.5	18x85	914	OUT631	-558	125.5	18x85
855	OUT572	504	235.5	18x85	915	OUT632	-576	235.5	18x85
856	OUT573	486	125.5	18x85	916	OUT633	-594	125.5	18x85
857	OUT574	468	235.5	18x85	917	OUT634	-612	235.5	18x85
858	OUT575	450	125.5	18x85	918	OUT635	-630	125.5	18x85
859	OUT576	432	235.5	18x85	919	OUT636	-648	235.5	18x85
860	OUT577	414	125.5	18x85	920	OUT637	-666	125.5	18x85
861	OUT578	396	235.5	18x85	921	OUT638	-684	235.5	18x85
862	OUT579	378	125.5	18x85	922	OUT639	-702	125.5	18x85
863	OUT580	360	235.5	18x85	923	OUT640	-720	235.5	18x85
864	OUT581	342	125.5	18x85	924	OUT641	-738	125.5	18x85
865	OUT582	324	235.5	18x85	925	OUT642	-756	235.5	18x85
866	OUT583	306	125.5	18x85	926	OUT643	-774	125.5	18x85
867	OUT584	288	235.5	18x85	927	OUT644	-792	235.5	18x85
868	OUT585	270	125.5	18x85	928	OUT645	-810	125.5	18x85
869	OUT586	252	235.5	18x85	929	OUT646	-828	235.5	18x85
870	OUT587	234	125.5	18x85	930	OUT647	-846	125.5	18x85
871	OUT588	216	235.5	18x85	931	OUT648	-864	235.5	18x85
872	OUT589	198	125.5	18x85	932	OUT649	-882	125.5	18x85
873	OUT590	180	235.5	18x85	933	OUT650	-900	235.5	18x85
874	OUT591	162	125.5	18x85	934	OUT651	-918	125.5	18x85
875	OUT592	144	235.5	18x85	935	OUT652	-936	235.5	18x85
876	OUT593	126	125.5	18x85	936	OUT653	-954	125.5	18x85
877	OUT594	108	235.5	18x85	937	OUT654	-972	235.5	18x85
878	OUT595	90	125.5	18x85	938	OUT655	-990	125.5	18x85
879	OUT596	72	235.5	18x85	939	OUT656	-1008	235.5	18x85
880	OUT597	54	125.5	18x85	940	OUT657	-1026	125.5	18x85
881	OUT598	36	235.5	18x85	941	OUT658	-1044	235.5	18x85
882	OUT599	18	125.5	18x85	942	OUT659	-1062	125.5	18x85
883	OUT600	0	235.5	18x85	943	OUT660	-1080	235.5	18x85
884	OUT601	-18	125.5	18x85	944	OUT661	-1098	125.5	18x85
885	OUT602	-36	235.5	18x85	945	OUT662	-1116	235.5	18x85
886	OUT603	-54	125.5	18x85	946	OUT663	-1134	125.5	18x85
887	OUT604	-72	235.5	18x85	947	OUT664	-1152	235.5	18x85
888	OUT605	-90	125.5	18x85	948	OUT665	-1170	125.5	18x85
889	OUT606	-108	235.5	18x85	949	OUT666	-1188	235.5	18x85
890	OUT607	-126	125.5	18x85	950	OUT667	-1206	125.5	18x85
891	OUT608	-144	235.5	18x85	951	OUT668	-1224	235.5	18x85
892	OUT609	-162	125.5	18x85	952	OUT669	-1242	125.5	18x85
893	OUT610	-180	235.5	18x85	953	OUT670	-1260	235.5	18x85
894	OUT611	-198	125.5	18x85	954	OUT671	-1278	125.5	18x85
895	OUT612	-216	235.5	18x85	955	OUT672	-1296	235.5	18x85
896	OUT613	-234	125.5	18x85	956	OUT673	-1314	125.5	18x85
897	OUT614	-252	235.5	18x85	957	OUT674	-1332	235.5	18x85
898	OUT615	-270	125.5	18x85	958	OUT675	-1350	125.5	18x85
899	OUT616	-288	235.5	18x85	959	OUT676	-1368	235.5	18x85
900	OUT617	-306	125.5	18x85	960	OUT677	-1386	125.5	18x85

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Pad No.	Name	X	Y	Bump si size(um)	Pad No.	Name	X	Y	Bump si size(um)
961	OUT678	-1404	235.5	18x85	1021	OUT738	-2484	235.5	18x85
962	OUT679	-1422	125.5	18x85	1022	OUT739	-2502	125.5	18x85
963	OUT680	-1440	235.5	18x85	1023	OUT740	-2520	235.5	18x85
964	OUT681	-1458	125.5	18x85	1024	OUT741	-2538	125.5	18x85
965	OUT682	-1476	235.5	18x85	1025	OUT742	-2556	235.5	18x85
966	OUT683	-1494	125.5	18x85	1026	OUT743	-2574	125.5	18x85
967	OUT684	-1512	235.5	18x85	1027	OUT744	-2592	235.5	18x85
968	OUT685	-1530	125.5	18x85	1028	OUT745	-2610	125.5	18x85
969	OUT686	-1548	235.5	18x85	1029	OUT746	-2628	235.5	18x85
970	OUT687	-1566	125.5	18x85	1030	OUT747	-2646	125.5	18x85
971	OUT688	-1584	235.5	18x85	1031	OUT748	-2664	235.5	18x85
972	OUT689	-1602	125.5	18x85	1032	OUT749	-2682	125.5	18x85
973	OUT690	-1620	235.5	18x85	1033	OUT750	-2700	235.5	18x85
974	OUT691	-1638	125.5	18x85	1034	OUT751	-2718	125.5	18x85
975	OUT692	-1656	235.5	18x85	1035	OUT752	-2736	235.5	18x85
976	OUT693	-1674	125.5	18x85	1036	OUT753	-2754	125.5	18x85
977	OUT694	-1692	235.5	18x85	1037	OUT754	-2772	235.5	18x85
978	OUT695	-1710	125.5	18x85	1038	OUT755	-2790	125.5	18x85
979	OUT696	-1728	235.5	18x85	1039	OUT756	-2808	235.5	18x85
980	OUT697	-1746	125.5	18x85	1040	OUT757	-2826	125.5	18x85
981	OUT698	-1764	235.5	18x85	1041	OUT758	-2844	235.5	18x85
982	OUT699	-1782	125.5	18x85	1042	OUT759	-2862	125.5	18x85
983	OUT700	-1800	235.5	18x85	1043	OUT760	-2880	235.5	18x85
984	OUT701	-1818	125.5	18x85	1044	OUT761	-2898	125.5	18x85
985	OUT702	-1836	235.5	18x85	1045	OUT762	-2916	235.5	18x85
986	OUT703	-1854	125.5	18x85	1046	OUT763	-2934	125.5	18x85
987	OUT704	-1872	235.5	18x85	1047	OUT764	-2952	235.5	18x85
988	OUT705	-1890	125.5	18x85	1048	OUT765	-2970	125.5	18x85
989	OUT706	-1908	235.5	18x85	1049	OUT766	-2988	235.5	18x85
990	OUT707	-1926	125.5	18x85	1050	OUT767	-3006	125.5	18x85
991	OUT708	-1944	235.5	18x85	1051	OUT768	-3024	235.5	18x85
992	OUT709	-1962	125.5	18x85	1052	OUT769	-3042	125.5	18x85
993	OUT710	-1980	235.5	18x85	1053	OUT770	-3060	235.5	18x85
994	OUT711	-1998	125.5	18x85	1054	OUT771	-3078	125.5	18x85
995	OUT712	-2016	235.5	18x85	1055	OUT772	-3096	235.5	18x85
996	OUT713	-2034	125.5	18x85	1056	OUT773	-3114	125.5	18x85
997	OUT714	-2052	235.5	18x85	1057	OUT774	-3132	235.5	18x85
998	OUT715	-2070	125.5	18x85	1058	OUT775	-3150	125.5	18x85
999	OUT716	-2088	235.5	18x85	1059	OUT776	-3168	235.5	18x85
1000	OUT717	-2106	125.5	18x85	1060	OUT777	-3186	125.5	18x85
1001	OUT718	-2124	235.5	18x85	1061	OUT778	-3204	235.5	18x85
1002	OUT719	-2142	125.5	18x85	1062	OUT779	-3222	125.5	18x85
1003	OUT720	-2160	235.5	18x85	1063	OUT780	-3240	235.5	18x85
1004	OUT721	-2178	125.5	18x85	1064	OUT781	-3258	125.5	18x85
1005	OUT722	-2196	235.5	18x85	1065	OUT782	-3276	235.5	18x85
1006	OUT723	-2214	125.5	18x85	1066	OUT783	-3294	125.5	18x85
1007	OUT724	-2232	235.5	18x85	1067	OUT784	-3312	235.5	18x85
1008	OUT725	-2250	125.5	18x85	1068	OUT785	-3330	125.5	18x85
1009	OUT726	-2268	235.5	18x85	1069	OUT786	-3348	235.5	18x85
1010	OUT727	-2286	125.5	18x85	1070	OUT787	-3366	125.5	18x85
1011	OUT728	-2304	235.5	18x85	1071	OUT788	-3384	235.5	18x85
1012	OUT729	-2322	125.5	18x85	1072	OUT789	-3402	125.5	18x85
1013	OUT730	-2340	235.5	18x85	1073	OUT790	-3420	235.5	18x85
1014	OUT731	-2358	125.5	18x85	1074	OUT791	-3438	125.5	18x85
1015	OUT732	-2376	235.5	18x85	1075	OUT792	-3456	235.5	18x85
1016	OUT733	-2394	125.5	18x85	1076	OUT793	-3474	125.5	18x85
1017	OUT734	-2412	235.5	18x85	1077	OUT794	-3492	235.5	18x85
1018	OUT735	-2430	125.5	18x85	1078	OUT795	-3510	125.5	18x85
1019	OUT736	-2448	235.5	18x85	1079	OUT796	-3528	235.5	18x85
1020	OUT737	-2466	125.5	18x85	1080	OUT797	-3546	125.5	18x85

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Pad No.	Name	X	Y	Bump si size(um)	Pad No.	Name	X	Y	Bump si size(um)
1081	OUT798	-3564	235.5	18x85	1141	OUT858	-4644	235.5	18x85
1082	OUT799	-3582	125.5	18x85	1142	OUT859	-4662	125.5	18x85
1083	OUT800	-3600	235.5	18x85	1143	OUT860	-4680	235.5	18x85
1084	OUT801	-3618	125.5	18x85	1144	OUT861	-4698	125.5	18x85
1085	OUT802	-3636	235.5	18x85	1145	OUT862	-4716	235.5	18x85
1086	OUT803	-3654	125.5	18x85	1146	OUT863	-4734	125.5	18x85
1087	OUT804	-3672	235.5	18x85	1147	OUT864	-4752	235.5	18x85
1088	OUT805	-3690	125.5	18x85	1148	OUT865	-4770	125.5	18x85
1089	OUT806	-3708	235.5	18x85	1149	OUT866	-4788	235.5	18x85
1090	OUT807	-3726	125.5	18x85	1150	OUT867	-4806	125.5	18x85
1091	OUT808	-3744	235.5	18x85	1151	OUT868	-4824	235.5	18x85
1092	OUT809	-3762	125.5	18x85	1152	OUT869	-4842	125.5	18x85
1093	OUT810	-3780	235.5	18x85	1153	OUT870	-4860	235.5	18x85
1094	OUT811	-3798	125.5	18x85	1154	OUT871	-4878	125.5	18x85
1095	OUT812	-3816	235.5	18x85	1155	OUT872	-4896	235.5	18x85
1096	OUT813	-3834	125.5	18x85	1156	OUT873	-4914	125.5	18x85
1097	OUT814	-3852	235.5	18x85	1157	OUT874	-4932	235.5	18x85
1098	OUT815	-3870	125.5	18x85	1158	OUT875	-4950	125.5	18x85
1099	OUT816	-3888	235.5	18x85	1159	OUT876	-4968	235.5	18x85
1100	OUT817	-3906	125.5	18x85	1160	OUT877	-4986	125.5	18x85
1101	OUT818	-3924	235.5	18x85	1161	OUT878	-5004	235.5	18x85
1102	OUT819	-3942	125.5	18x85	1162	OUT879	-5022	125.5	18x85
1103	OUT820	-3960	235.5	18x85	1163	OUT880	-5040	235.5	18x85
1104	OUT821	-3978	125.5	18x85	1164	OUT881	-5058	125.5	18x85
1105	OUT822	-3996	235.5	18x85	1165	OUT882	-5076	235.5	18x85
1106	OUT823	-4014	125.5	18x85	1166	OUT883	-5094	125.5	18x85
1107	OUT824	-4032	235.5	18x85	1167	OUT884	-5112	235.5	18x85
1108	OUT825	-4050	125.5	18x85	1168	OUT885	-5130	125.5	18x85
1109	OUT826	-4068	235.5	18x85	1169	OUT886	-5148	235.5	18x85
1110	OUT827	-4086	125.5	18x85	1170	OUT887	-5166	125.5	18x85
1111	OUT828	-4104	235.5	18x85	1171	OUT888	-5184	235.5	18x85
1112	OUT829	-4122	125.5	18x85	1172	OUT889	-5202	125.5	18x85
1113	OUT830	-4140	235.5	18x85	1173	OUT890	-5220	235.5	18x85
1114	OUT831	-4158	125.5	18x85	1174	OUT891	-5238	125.5	18x85
1115	OUT832	-4176	235.5	18x85	1175	OUT892	-5256	235.5	18x85
1116	OUT833	-4194	125.5	18x85	1176	OUT893	-5274	125.5	18x85
1117	OUT834	-4212	235.5	18x85	1177	OUT894	-5292	235.5	18x85
1118	OUT835	-4230	125.5	18x85	1178	OUT895	-5310	125.5	18x85
1119	OUT836	-4248	235.5	18x85	1179	OUT896	-5328	235.5	18x85
1120	OUT837	-4266	125.5	18x85	1180	OUT897	-5346	125.5	18x85
1121	OUT838	-4284	235.5	18x85	1181	OUT898	-5364	235.5	18x85
1122	OUT839	-4302	125.5	18x85	1182	OUT899	-5382	125.5	18x85
1123	OUT840	-4320	235.5	18x85	1183	OUT900	-5400	235.5	18x85
1124	OUT841	-4338	125.5	18x85	1184	OUT901	-5418	125.5	18x85
1125	OUT842	-4356	235.5	18x85	1185	OUT902	-5436	235.5	18x85
1126	OUT843	-4374	125.5	18x85	1186	OUT903	-5454	125.5	18x85
1127	OUT844	-4392	235.5	18x85	1187	OUT904	-5472	235.5	18x85
1128	OUT845	-4410	125.5	18x85	1188	OUT905	-5490	125.5	18x85
1129	OUT846	-4428	235.5	18x85	1189	OUT906	-5508	235.5	18x85
1130	OUT847	-4446	125.5	18x85	1190	OUT907	-5526	125.5	18x85
1131	OUT848	-4464	235.5	18x85	1191	OUT908	-5544	235.5	18x85
1132	OUT849	-4482	125.5	18x85	1192	OUT909	-5562	125.5	18x85
1133	OUT850	-4500	235.5	18x85	1193	OUT910	-5580	235.5	18x85
1134	OUT851	-4518	125.5	18x85	1194	OUT911	-5598	125.5	18x85
1135	OUT852	-4536	235.5	18x85	1195	OUT912	-5616	235.5	18x85
1136	OUT853	-4554	125.5	18x85	1196	OUT913	-5634	125.5	18x85
1137	OUT854	-4572	235.5	18x85	1197	OUT914	-5652	235.5	18x85
1138	OUT855	-4590	125.5	18x85	1198	OUT915	-5670	125.5	18x85
1139	OUT856	-4608	235.5	18x85	1199	OUT916	-5688	235.5	18x85
1140	OUT857	-4626	125.5	18x85	1200	OUT917	-5706	125.5	18x85

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Pad No.	Name	X	Y	Bump si size(um)	Pad No.	Name	X	Y	Bump si size(um)
1201	OUT918	-5724	235.5	18x85	1261	OUT978	-6804	235.5	18x85
1202	OUT919	-5742	125.5	18x85	1262	OUT979	-6822	125.5	18x85
1203	OUT920	-5760	235.5	18x85	1263	OUT980	-6840	235.5	18x85
1204	OUT921	-5778	125.5	18x85	1264	OUT981	-6858	125.5	18x85
1205	OUT922	-5796	235.5	18x85	1265	OUT982	-6876	235.5	18x85
1206	OUT923	-5814	125.5	18x85	1266	OUT983	-6894	125.5	18x85
1207	OUT924	-5832	235.5	18x85	1267	OUT984	-6912	235.5	18x85
1208	OUT925	-5850	125.5	18x85	1268	OUT985	-6930	125.5	18x85
1209	OUT926	-5868	235.5	18x85	1269	OUT986	-6948	235.5	18x85
1210	OUT927	-5886	125.5	18x85	1270	OUT987	-6966	125.5	18x85
1211	OUT928	-5904	235.5	18x85	1271	OUT988	-6984	235.5	18x85
1212	OUT929	-5922	125.5	18x85	1272	OUT989	-7002	125.5	18x85
1213	OUT930	-5940	235.5	18x85	1273	OUT990	-7020	235.5	18x85
1214	OUT931	-5958	125.5	18x85	1274	OUT991	-7038	125.5	18x85
1215	OUT932	-5976	235.5	18x85	1275	OUT992	-7056	235.5	18x85
1216	OUT933	-5994	125.5	18x85	1276	OUT993	-7074	125.5	18x85
1217	OUT934	-6012	235.5	18x85	1277	OUT994	-7092	235.5	18x85
1218	OUT935	-6030	125.5	18x85	1278	OUT995	-7110	125.5	18x85
1219	OUT936	-6048	235.5	18x85	1279	OUT996	-7128	235.5	18x85
1220	OUT937	-6066	125.5	18x85	1280	OUT997	-7146	125.5	18x85
1221	OUT938	-6084	235.5	18x85	1281	OUT998	-7164	235.5	18x85
1222	OUT939	-6102	125.5	18x85	1282	OUT999	-7182	125.5	18x85
1223	OUT940	-6120	235.5	18x85	1283	OUT1000	-7200	235.5	18x85
1224	OUT941	-6138	125.5	18x85	1284	OUT1001	-7218	125.5	18x85
1225	OUT942	-6156	235.5	18x85	1285	OUT1002	-7236	235.5	18x85
1226	OUT943	-6174	125.5	18x85	1286	OUT1003	-7254	125.5	18x85
1227	OUT944	-6192	235.5	18x85	1287	OUT1004	-7272	235.5	18x85
1228	OUT945	-6210	125.5	18x85	1288	OUT1005	-7290	125.5	18x85
1229	OUT946	-6228	235.5	18x85	1289	OUT1006	-7308	235.5	18x85
1230	OUT947	-6246	125.5	18x85	1290	OUT1007	-7326	125.5	18x85
1231	OUT948	-6264	235.5	18x85	1291	OUT1008	-7344	235.5	18x85
1232	OUT949	-6282	125.5	18x85	1292	OUT1009	-7362	125.5	18x85
1233	OUT950	-6300	235.5	18x85	1293	OUT1010	-7380	235.5	18x85
1234	OUT951	-6318	125.5	18x85	1294	OUT1011	-7398	125.5	18x85
1235	OUT952	-6336	235.5	18x85	1295	OUT1012	-7416	235.5	18x85
1236	OUT953	-6354	125.5	18x85	1296	OUT1013	-7434	125.5	18x85
1237	OUT954	-6372	235.5	18x85	1297	OUT1014	-7452	235.5	18x85
1238	OUT955	-6390	125.5	18x85	1298	OUT1015	-7470	125.5	18x85
1239	OUT956	-6408	235.5	18x85	1299	OUT1016	-7488	235.5	18x85
1240	OUT957	-6426	125.5	18x85	1300	OUT1017	-7506	125.5	18x85
1241	OUT958	-6444	235.5	18x85	1301	OUT1018	-7524	235.5	18x85
1242	OUT959	-6462	125.5	18x85	1302	OUT1019	-7542	125.5	18x85
1243	OUT960	-6480	235.5	18x85	1303	OUT1020	-7560	235.5	18x85
1244	OUT961	-6498	125.5	18x85	1304	OUT1021	-7578	125.5	18x85
1245	OUT962	-6516	235.5	18x85	1305	OUT1022	-7596	235.5	18x85
1246	OUT963	-6534	125.5	18x85	1306	OUT1023	-7614	125.5	18x85
1247	OUT964	-6552	235.5	18x85	1307	OUT1024	-7632	235.5	18x85
1248	OUT965	-6570	125.5	18x85	1308	OUT1025	-7650	125.5	18x85
1249	OUT966	-6588	235.5	18x85	1309	OUT1026	-7668	235.5	18x85
1250	OUT967	-6606	125.5	18x85	1310	OUT1027	-7686	125.5	18x85
1251	OUT968	-6624	235.5	18x85	1311	OUT1028	-7704	235.5	18x85
1252	OUT969	-6642	125.5	18x85	1312	OUT1029	-7722	125.5	18x85
1253	OUT970	-6660	235.5	18x85	1313	OUT1030	-7740	235.5	18x85
1254	OUT971	-6678	125.5	18x85	1314	OUT1031	-7758	125.5	18x85
1255	OUT972	-6696	235.5	18x85	1315	OUT1032	-7776	235.5	18x85
1256	OUT973	-6714	125.5	18x85	1316	OUT1033	-7794	125.5	18x85
1257	OUT974	-6732	235.5	18x85	1317	OUT1034	-7812	235.5	18x85
1258	OUT975	-6750	125.5	18x85	1318	OUT1035	-7830	125.5	18x85
1259	OUT976	-6768	235.5	18x85	1319	OUT1036	-7848	235.5	18x85
1260	OUT977	-6786	125.5	18x85	1320	OUT1037	-7866	125.5	18x85

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Pad No.	Name	X	Y	Bump si size(um)	Pad No.	Name	X	Y	Bump si size(um)
1321	OUT1038	-7884	235.5	18x85	1381	OUT1098	-8964	235.5	18x85
1322	OUT1039	-7902	125.5	18x85	1382	OUT1099	-8982	125.5	18x85
1323	OUT1040	-7920	235.5	18x85	1383	OUT1100	-9000	235.5	18x85
1324	OUT1041	-7938	125.5	18x85	1384	OUT1101	-9018	125.5	18x85
1325	OUT1042	-7956	235.5	18x85	1385	OUT1102	-9036	235.5	18x85
1326	OUT1043	-7974	125.5	18x85	1386	OUT1103	-9054	125.5	18x85
1327	OUT1044	-7992	235.5	18x85	1387	OUT1104	-9072	235.5	18x85
1328	OUT1045	-8010	125.5	18x85	1388	OUT1105	-9090	125.5	18x85
1329	OUT1046	-8028	235.5	18x85	1389	OUT1106	-9108	235.5	18x85
1330	OUT1047	-8046	125.5	18x85	1390	OUT1107	-9126	125.5	18x85
1331	OUT1048	-8064	235.5	18x85	1391	OUT1108	-9144	235.5	18x85
1332	OUT1049	-8082	125.5	18x85	1392	OUT1109	-9162	125.5	18x85
1333	OUT1050	-8100	235.5	18x85	1393	OUT1110	-9180	235.5	18x85
1334	OUT1051	-8118	125.5	18x85	1394	OUT1111	-9198	125.5	18x85
1335	OUT1052	-8136	235.5	18x85	1395	OUT1112	-9216	235.5	18x85
1336	OUT1053	-8154	125.5	18x85	1396	OUT1113	-9234	125.5	18x85
1337	OUT1054	-8172	235.5	18x85	1397	OUT1114	-9252	235.5	18x85
1338	OUT1055	-8190	125.5	18x85	1398	OUT1115	-9270	125.5	18x85
1339	OUT1056	-8208	235.5	18x85	1399	OUT1116	-9288	235.5	18x85
1340	OUT1057	-8226	125.5	18x85	1400	OUT1117	-9306	125.5	18x85
1341	OUT1058	-8244	235.5	18x85	1401	OUT1118	-9324	235.5	18x85
1342	OUT1059	-8262	125.5	18x85	1402	OUT1119	-9342	125.5	18x85
1343	OUT1060	-8280	235.5	18x85	1403	OUT1120	-9360	235.5	18x85
1344	OUT1061	-8298	125.5	18x85	1404	OUT1121	-9378	125.5	18x85
1345	OUT1062	-8316	235.5	18x85	1405	OUT1122	-9396	235.5	18x85
1346	OUT1063	-8334	125.5	18x85	1406	OUT1123	-9414	125.5	18x85
1347	OUT1064	-8352	235.5	18x85	1407	OUT1124	-9432	235.5	18x85
1348	OUT1065	-8370	125.5	18x85	1408	OUT1125	-9450	125.5	18x85
1349	OUT1066	-8388	235.5	18x85	1409	OUT1126	-9468	235.5	18x85
1350	OUT1067	-8406	125.5	18x85	1410	OUT1127	-9486	125.5	18x85
1351	OUT1068	-8424	235.5	18x85	1411	OUT1128	-9504	235.5	18x85
1352	OUT1069	-8442	125.5	18x85	1412	OUT1129	-9522	125.5	18x85
1353	OUT1070	-8460	235.5	18x85	1413	OUT1130	-9540	235.5	18x85
1354	OUT1071	-8478	125.5	18x85	1414	OUT1131	-9558	125.5	18x85
1355	OUT1072	-8496	235.5	18x85	1415	OUT1132	-9576	235.5	18x85
1356	OUT1073	-8514	125.5	18x85	1416	OUT1133	-9594	125.5	18x85
1357	OUT1074	-8532	235.5	18x85	1417	OUT1134	-9612	235.5	18x85
1358	OUT1075	-8550	125.5	18x85	1418	OUT1135	-9630	125.5	18x85
1359	OUT1076	-8568	235.5	18x85	1419	OUT1136	-9648	235.5	18x85
1360	OUT1077	-8586	125.5	18x85	1420	OUT1137	-9666	125.5	18x85
1361	OUT1078	-8604	235.5	18x85	1421	OUT1138	-9684	235.5	18x85
1362	OUT1079	-8622	125.5	18x85	1422	OUT1139	-9702	125.5	18x85
1363	OUT1080	-8640	235.5	18x85	1423	OUT1140	-9720	235.5	18x85
1364	OUT1081	-8658	125.5	18x85	1424	OUT1141	-9738	125.5	18x85
1365	OUT1082	-8676	235.5	18x85	1425	OUT1142	-9756	235.5	18x85
1366	OUT1083	-8694	125.5	18x85	1426	OUT1143	-9774	125.5	18x85
1367	OUT1084	-8712	235.5	18x85	1427	OUT1144	-9792	235.5	18x85
1368	OUT1085	-8730	125.5	18x85	1428	OUT1145	-9810	125.5	18x85
1369	OUT1086	-8748	235.5	18x85	1429	OUT1146	-9828	235.5	18x85
1370	OUT1087	-8766	125.5	18x85	1430	OUT1147	-9846	125.5	18x85
1371	OUT1088	-8784	235.5	18x85	1431	OUT1148	-9864	235.5	18x85
1372	OUT1089	-8802	125.5	18x85	1432	OUT1149	-9882	125.5	18x85
1373	OUT1090	-8820	235.5	18x85	1433	OUT1150	-9900	235.5	18x85
1374	OUT1091	-8838	125.5	18x85	1434	OUT1151	-9918	125.5	18x85
1375	OUT1092	-8856	235.5	18x85	1435	OUT1152	-9936	235.5	18x85
1376	OUT1093	-8874	125.5	18x85	1436	OUT1153	-9954	125.5	18x85
1377	OUT1094	-8892	235.5	18x85	1437	OUT1154	-9972	235.5	18x85
1378	OUT1095	-8910	125.5	18x85	1438	OUT1155	-9990	125.5	18x85
1379	OUT1096	-8928	235.5	18x85	1439	OUT1156	-10008	235.5	18x85
1380	OUT1097	-8946	125.5	18x85	1440	OUT1157	-10026	125.5	18x85

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Pad No.	Name	X	Y	Bump si size(um)	Pad No.	Name	X	Y	Bump si size(um)
1441	OUT1158	-10044	235.5	18x85					
1442	OUT1159	-10062	125.5	18x85					
1443	OUT1160	-10080	235.5	18x85					
1444	OUT1161	-10098	125.5	18x85					
1445	OUT1162	-10116	235.5	18x85					
1446	OUT1163	-10134	125.5	18x85					
1447	OUT1164	-10152	235.5	18x85					
1448	OUT1165	-10170	125.5	18x85					
1449	OUT1166	-10188	235.5	18x85					
1450	OUT1167	-10206	125.5	18x85					
1451	OUT1168	-10224	235.5	18x85					
1452	OUT1169	-10242	125.5	18x85					
1453	OUT1170	-10260	235.5	18x85					
1454	OUT1171	-10278	125.5	18x85					
1455	OUT1172	-10296	235.5	18x85					
1456	OUT1173	-10314	125.5	18x85					
1457	OUT1174	-10332	235.5	18x85					
1458	OUT1175	-10350	125.5	18x85					
1459	OUT1176	-10368	235.5	18x85					
1460	OUT1177	-10386	125.5	18x85					
1461	OUT1178	-10404	235.5	18x85					
1462	OUT1179	-10422	125.5	18x85					
1463	OUT1180	-10440	235.5	18x85					
1464	OUT1181	-10458	125.5	18x85					
1465	OUT1182	-10476	235.5	18x85					
1466	OUT1183	-10494	125.5	18x85					
1467	OUT1184	-10512	235.5	18x85					
1468	OUT1185	-10530	125.5	18x85					
1469	OUT1186	-10548	235.5	18x85					
1470	OUT1187	-10566	125.5	18x85					
1471	OUT1188	-10584	235.5	18x85					
1472	OUT1189	-10602	125.5	18x85					
1473	OUT1190	-10620	235.5	18x85					
1474	OUT1191	-10638	125.5	18x85					
1475	OUT1192	-10656	235.5	18x85					
1476	OUT1193	-10674	125.5	18x85					
1477	OUT1194	-10692	235.5	18x85					
1478	OUT1195	-10710	125.5	18x85					
1479	OUT1196	-10728	235.5	18x85					
1480	OUT1197	-10746	125.5	18x85					
1481	OUT1198	-10764	235.5	18x85					
1482	OUT1199	-10782	125.5	18x85					
1483	OUT1200	-10800	235.5	18x85					
1484	OUT1201	-10818	125.5	18x85					
1485	PATH1	-10836	235.5	18x85					

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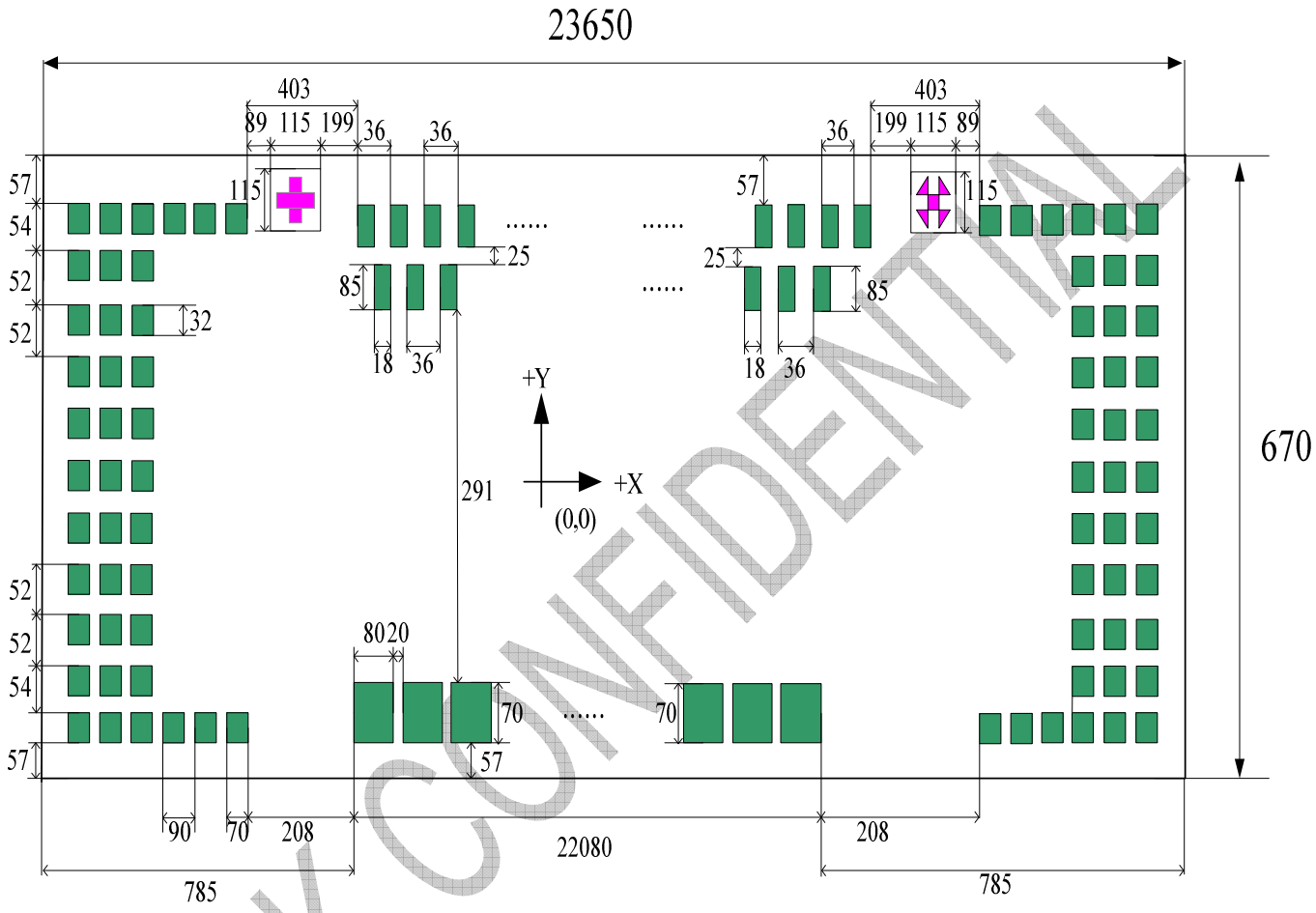
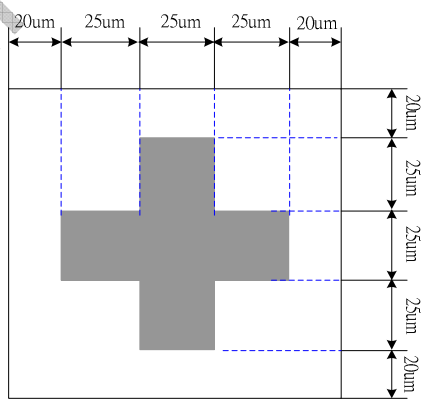
11. Bump Mask Information

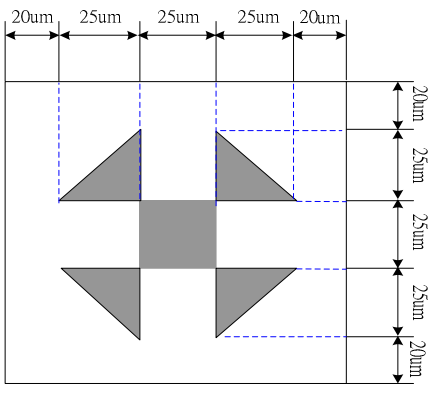
- Chip size: 23650um × 670um(include scribe line : 80um)
- Bump height : 12um ± 3um
- Total area of IC bump:3214120um^2



Alignment Mark type and coordinate



Alignment Mark: Left



Alignment Mark: Right

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12. Revision History

Version No.	Date	Page	Description
0.01	2010/10/12	All	New set up

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