

PREPARED BY : DATE	SHARP Mobile Liquid Crystal Display Group SHARP CORPORATION SPECIFICATION	SPEC No. LD-17443
		FILE No.
APPROVED BY : DATE		ISSUE : May.11.2005
		PAGE : 38 pages
		APPLICABLE GROUP Mobile Liquid Crystal Display Group

DEVICE SPECIFICATION FOR

TFT-LCD Module

MODEL No.

LQ190E1LW01

英文仕様書確認印

モバイル液晶事業本部 第3設計センター 第2開発部

副所長	副参事	係 長	主 事	主 事	主 事	担 当
						

モバイル液晶事業本部 第3製品品質センター

部 長	副参事	係 長	係 長	主 事	担 当
					

FDTC 引継ぎGr

副参事	副参事	副参事	主 事	主 事	主 事
					

ユーザー名:

備考: 19.0型SXGAカラーモジュール

☐ CUSTOMER'S APPROVAL

DATE _____

BY _____

PRESENTED

BY 次ページにサイン願います _____

PREPARED BY : DATE	SHARP Mobile Liquid Crystal Display GROUP SHARP CORPORATION SPECIFICATION	SPEC No. LD17443
APPROVED BY : DATE		FILE No.
		ISSUE : May.11.2005
		PAGE : 38 pages
		APPLICABLE GROUP Mobile Liquid Crystal Display Group

DEVICE SPECIFICATION

TFT-LCD Module

MODEL No.

LQ190E1LW01

(FLC48SXC8V-11AA)

CUSTOMER : _____

☐ CUSTOMER'S APPROVAL

DATE _____

BY _____

PRESENTED

BY

T. Yatsui

Department general manager

Product Quality Assurance DEPT. III Mobile LCD Design Center III

Mobile Liquid Crystal Display Group Engineering Department II

SHARP Corporation

BY

T. Naka

Division deputy general manager of

Mobile LCD Design Center III

Mobile LCD Design Center III

Mobile LCD Design Center III

Mobile Liquid Crystal Display Group

SHARP Corporation

A

B

C

D

E

F

A

A

B

B

C

C

D

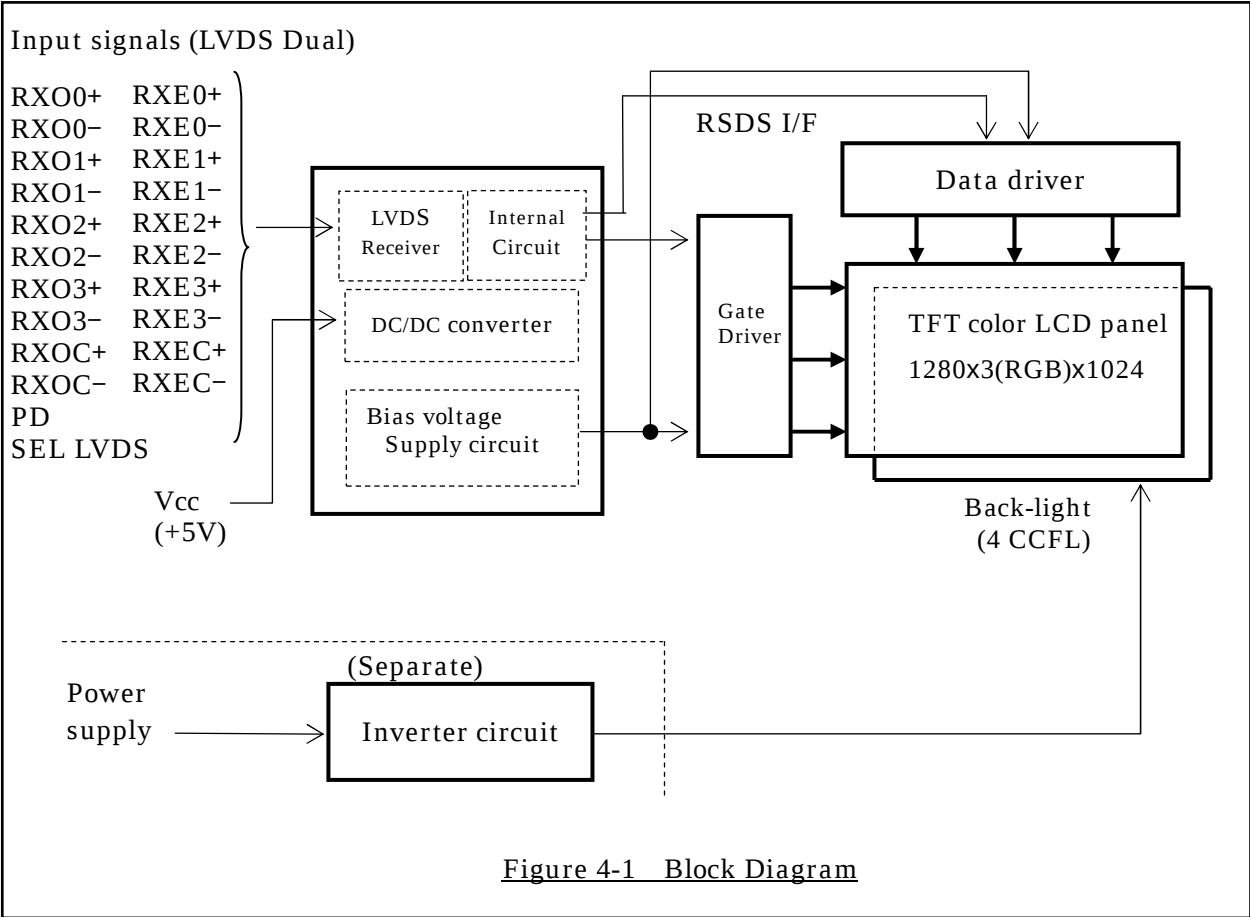
D

E

F

1

	1		2			3		4	
A	1. APPLICATION This specification is applied to the 19-inch SXGA supported TFT-LCD module.								A
B	2. PRODUCT NAME AND MODEL NUMBER 2-1 Product Name : LCD Module 2-2 Model Name : LQ190E1LW01 (FLC48SXC8V-11AA)								B
C	3. OVERVIEW This LCD module has a TFT active matrix type liquid crystal panel 1280x1024 pixels, and diagonal size of 48cm(19-inch). This LCD has a LVDS dual interface and can display 16,777,216 colors. The power supply of this LCD module is +5V DC voltage.								C
D	4. CONFIGURATION This LCD module consists of a color TFT-LCD panel that is mounted with TFT driver ICs and a cold-cathode fluorescent tube back-light. The inverter for the back-light is not included. Figure 4-1 shows a block diagram of this LCD module.								D
E									E
F									F
DOCUMENT CONTROL SECTION							TITLE LQ190E1LW01 (FLC48SXC8V-11AA)		
							DRAW. NO. LD17443		
							CUST.		
	07	20050420				The model name was changed.			
	EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION	SHARP CORPORATION		
	DESIG.		CHECK		APPR.	3/			
	1								



5. MECHANICAL SPECIFICATIONS

Table 5-1 shows the mechanical specifications of this LCD module.

Table 5-1 Mechanical Specifications

Item	Specifications	Unit	Remark
Dimensions	404.2x330x20(TYP.)	mm	Edge type back-light is used. (CCFLx4) Without inverter. For details on dimensions, see dimensional outline drawing. (Figure 20-1,2) Excluding inverter.
Display Resolution	(1280x3)x1024	—	
Display Dot Area	376.32x301.056	mm	
Dot Pitch	(0.098x3)x0.294	mm	
Pixel Aspect Ratio	1:1	—	
Weight	2,800 MAX.	g	
FG-SG	Short circuit	—	

DOCUMENT CONTROL SECTION

DATE

EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION
DESIG.			CHECK		APPR.

TITLE	LQ190E1LW01 (FLC48SXC8V-11AA)
DRAW. NO.	LD17443
CUST.	
SHARP CORPORATION	
4/	

1234

A

6. ABSOLUTE MAXIMUM RATING

Table 6-1 shows the absolute maximum rating of this LCD module.

Table 6-1 Absolute Maximum Rating

Item	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Supply Voltage	V _{CC}	Ta=25°C	−0.3	—	6.0	V
Input Signal Voltage (LVDS signal, PD,SEL LVDS)	V _{IN}	Ta=25°C	−0.3	—	3.6	V

B

7. RECOMMENDED OPERATING CONDITIONS

Table 7-1 shows the recommended operating conditions of this LCD module.

Table 7-1 Recommended Operating Conditions

Item		Symbol	MIN.	TYP.	MAX.	Unit
Supply Voltage(Logic)		V _{CC}	4.75	—	5.25	V
Ripple Voltage	V _{CC}	V _{RP}	—	—	0.1	V

DATE	DOCUMENT CONTROL SECTION

						TITLE		LQ190E1LW01	
								(FLC48SXC8V-11AA)	
						DRAW. NO.		LD17443	
								CUST.	
EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION		SHARP CORPORATION		5 /
DESIG.			CHECK			APPR.			

8. ELECTRICAL SPECIFICATIONS

Table 8-1 shows the electrical specifications of this LCD module. Figure 8-1 shows the measurement circuit. Figure 8-2(A) shows the equivalent circuit of the logic signal input area. Figure 8-2(B) shows the equivalent circuit of the supply voltage Input area.

Table 8-1 Electrical Specifications

Item		Symbol	Condition		MIN.	TYP.	MAX.	Unit	Remark
Differential-input Voltage (Hign)		V _{IH}		V _{CM} =+1.2V	—	—	100	mV	
Differential-input Voltage (Low)		V _{IL}			−100	—	—	mV	
Input Voltage (High)		V _{IH}	V _{CC} =+5.0±0.25V V _{SS} =0V DCLK=54MHz Ta=25° C		2.0	—	3.3	V	PD SEL LVDS
Input Voltage (Low)		V _{IL}			0	—	0.8	V	
Supply Current		I _{CC}			—	900	1500	mA	*1
Supply Rush Current		I _{SCC}			—	—	3.5	A	*2
Supply Rush Current Duration(1.5A excess)		T _{SCC}			—	—	1.0	ms	
B A C K L I G H T (*3)	CCFL Turn on Voltage	V _S	f _L =50kHz,Ta=25°C	—	1400	1600	V _{rms}		
			f _L =50kHz,Ta=0°C	—	1500	1600			
	Lighting Voltage	V _L	f _L =50kHz I _L =7mA	—	750	—	V _{rms}		
	Lighting Frequency	f _L	V _L =750V _{rms}	40	50	60	kHz		
	Tube Current	I _L	f _L =50kHz V _L =750V _{rms}	4	7	8	mArms	*4	

(*) Typical current situation : Color bar pattern. Vcc=5.0V
Maximum current situation : White pattern. Vcc=4.75V
Without rush current.

(*2) These items prescribe the rush current for starting internal DC/DC.
Charging current to capacitors of Vcc is not prescribed.

(*3) Back-light specifications are valid when using a suitable inverter such as the LQ0DDJ5006 (FLCV-13)

(*4) Tube current (I_L) shows the value of the current that is consumed at one lamp. This LCD module has 4 lamps. Each 2 lamps are placed at upper side and lower side of the display. 2 lamps is connected in parallel. Each low voltage terminals are connected with separate cable to Back-light connector.

						TITLE					LQ190E1LW01 (FLC48SXC8V-11AA)		
						DRAW. NO.					LD17443		CUST.
EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION					SHARP CORPORATION		START	6/
	DESIG.			CHECK				APPR.					

A



C

C



D



F

TITLE		LQ190E1LW01 (FLC48SXC8V-11AA)	
DRAW. NO.		LD17443	CUST.
SHARP CORPORATION		SHEET	7/

Note 1) Definition of Viewing Angle (1)

Based on Figure 9-1.

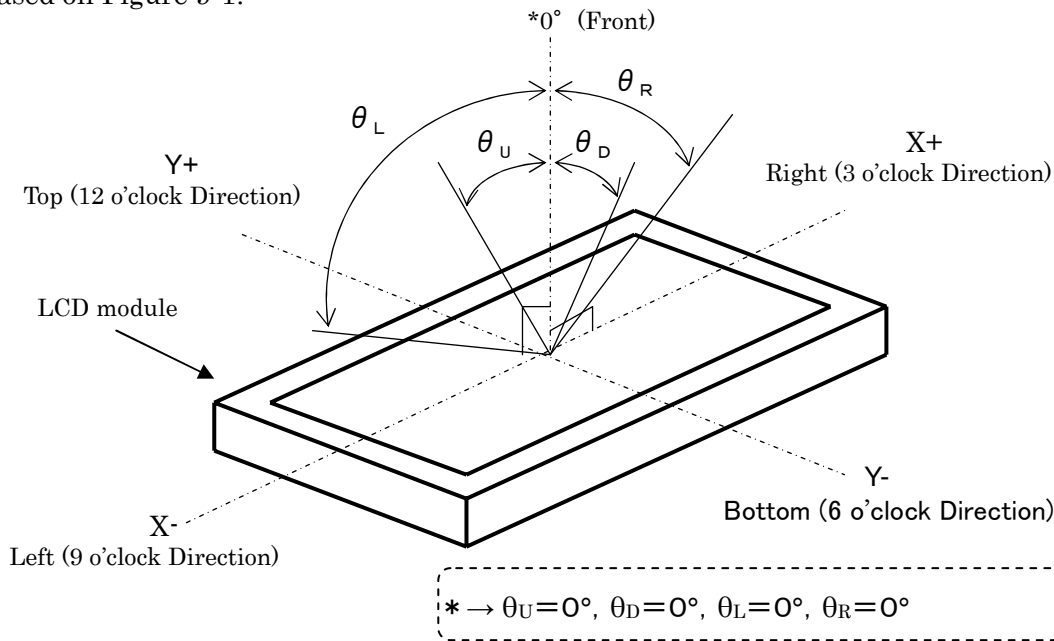


Figure 9-1 Definition of Viewing Angle (1)

Note 2) Definition of Viewing Angle (2)

Based on Figure 9-2.

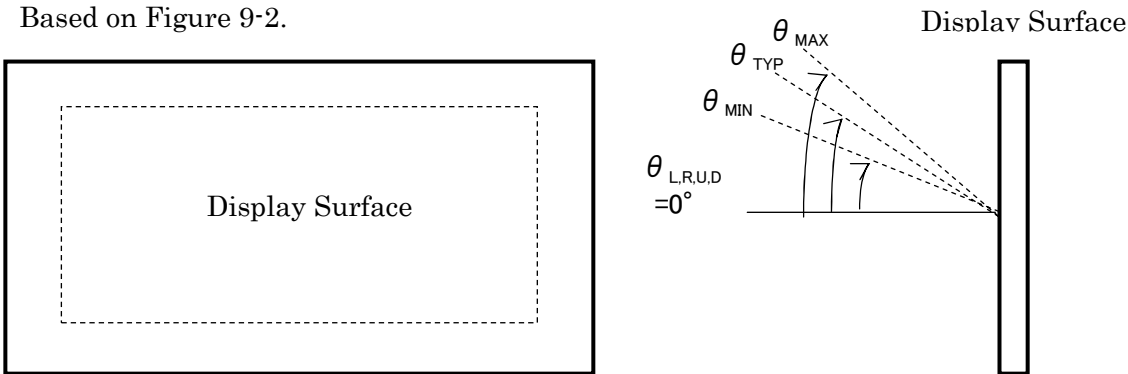


Figure 9-2 Definition of Viewing Angle (2)

Note 3) Definition of Contrast Ratio (CR)

Determined by Formula (1) based on Figure 9-3 Voltage-Brightness characteristics.

$$= \frac{L_W \text{ (Brightness at white)}}{L_B \text{ (Brightness at black)}} \dots\dots(1)$$

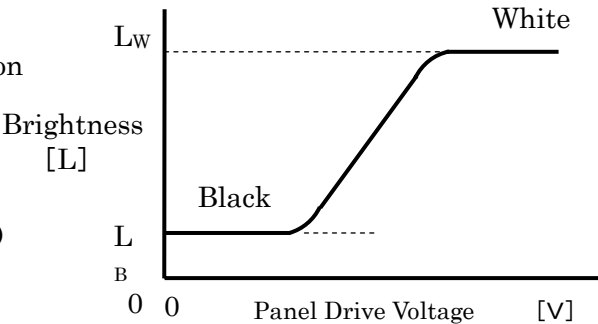


Figure 9-3 Voltage-Brightness Characteristics

DATE	DOCUMENT CONTROL SECTION					TITLE		LQ190E1LW01	
								(FLC48SXC8V-11AA)	
						DRAW. NO.		CUST.	
								LD17443	
EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION		SHARP CORPORATION		9 /
DESIG.				CHECK		APPR.			

Note 4) Definition of Response Time

Based on Figure 9-4.

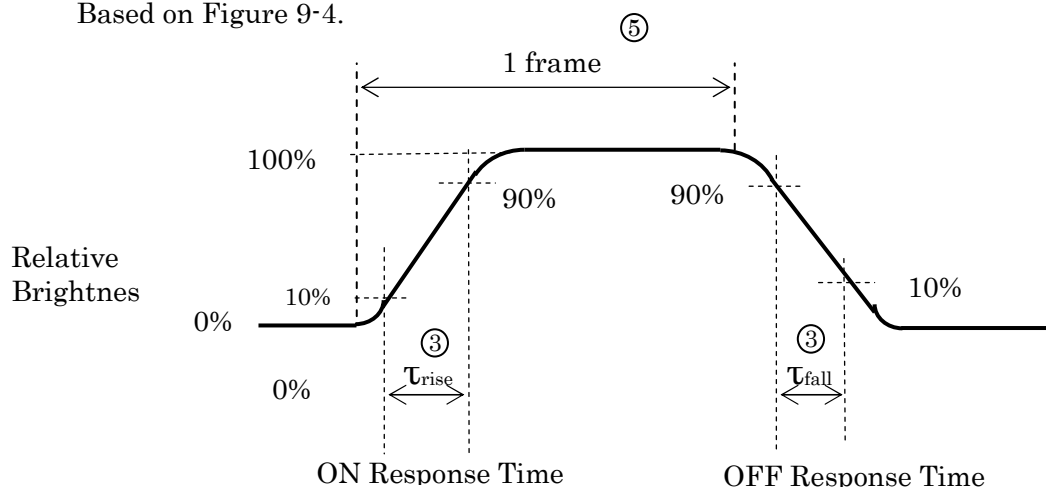


Figure 9-4 Definition of Response Time

Note 5) Contrast Ratio and Response Measurement System

Based on Figure 9-5.

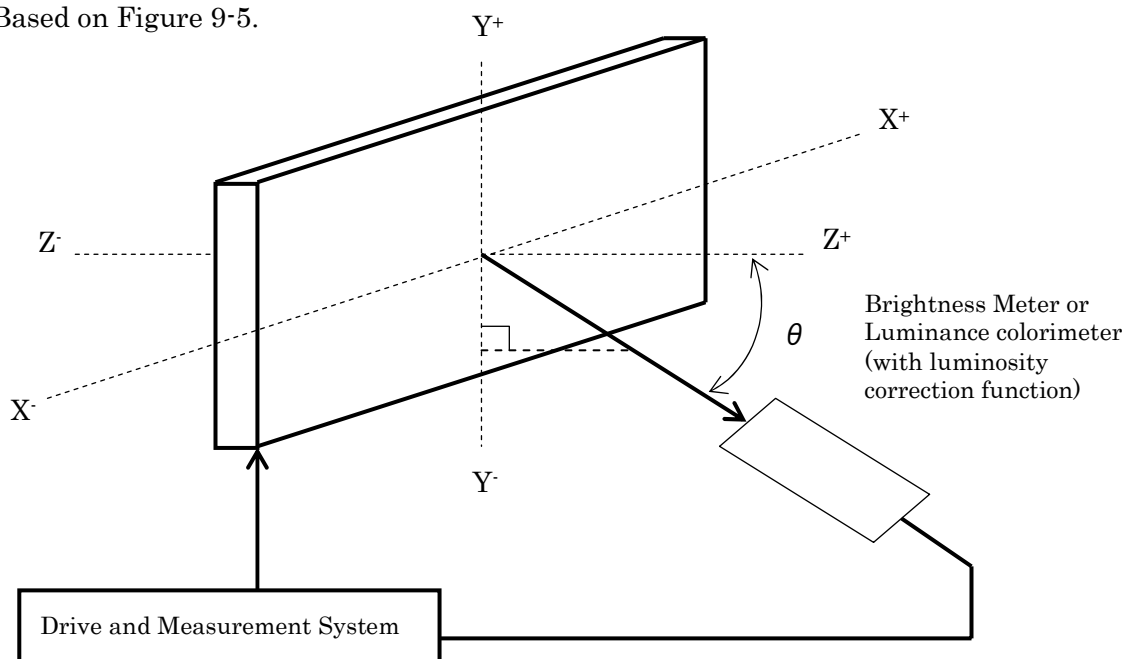


Figure 9-5 Contrast Ratio and Response Time Measurement System

DOCUMENT CONTROL SECTION

DATE

						TITLE	LQ190E1LW01 (FLC48SXC8V-11AA)	
05	20040802				Addition of response time definition.	DRAW. NO.	LD17443	CUST.
03	20040625				Change response time definition.			
02	20040602				Change response time definition.			
EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION	SHARP CORPORATION		
	DESIG.			CHECK				10/

Note 6) Definition of Optimum Viewing Angle

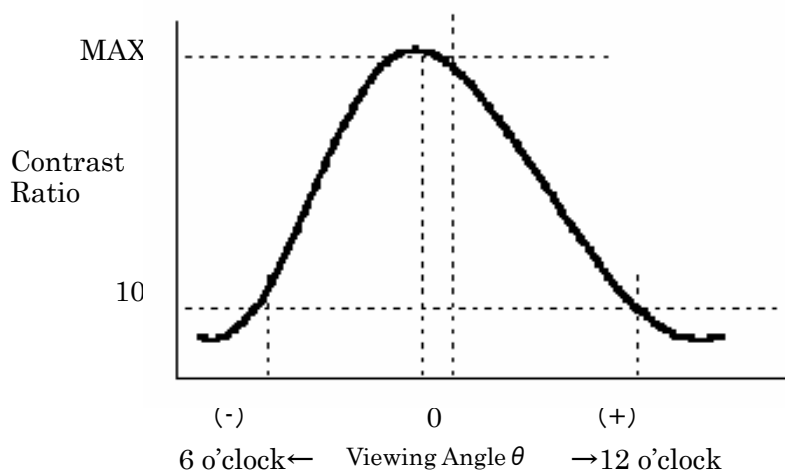


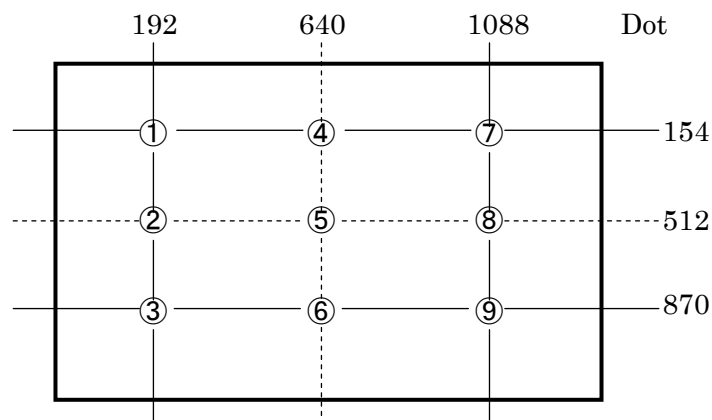
Figure 9-6 Definition of Viewing Angle

Note 7) Definition of Brightness Uniformity

Brightness uniformity is defined by the following formula.

Brightness (I1~I9) are measured at the following 9 points (①-⑨) on the display area that is shown in Figure 9-7.

$$\text{Brightness Uniformity } (\Delta L) = \frac{|\text{Min. In}|}{|\text{Max. In}|} \times 100 (\%) , n = 1 \text{ to } 9$$



Note) Each measurement point (①-⑨) defines the center spot of view of Brightness Meter.
The tolerance of measurement position is $\pm 3\text{mm}$.

Figure 9-7 Measurement Points

DOCUMENT CONTROL SECTION

DATE

						TITLE					LQ190E1LW01 (FLC48SXC8V-11AA)		
						DRAW. NO.					CUST.		
											LD17443		
EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION					SHARP CORPORATION		STAMP	11/
DESIG.			CHECK				APPR.						

1		2		3		4																																																																																																																													
10. INTERFACE SPECIFICATIONS																																																																																																																																			
10-1 Signal descriptions																																																																																																																																			
Table 10-1 shows the description and configuration of interface signals (CN1).																																																																																																																																			
Table 10-1 Interface signals (CN1)																																																																																																																																			
<table><tr><td>Pin No.</td><td>Symbol</td><td>I/O</td><td>Function</td></tr><tr><td>1</td><td>RxO0-</td><td>I</td><td>Negative differential input</td></tr><tr><td>2</td><td>RxO0+</td><td>I</td><td>Positive differential input</td></tr><tr><td>3</td><td>RxO1-</td><td>I</td><td>Negative differential input</td></tr><tr><td>4</td><td>RxO1+</td><td>I</td><td>Positive differential input</td></tr><tr><td>5</td><td>RxO2-</td><td>I</td><td>Negative differential input</td></tr><tr><td>6</td><td>RxO2+</td><td>I</td><td>Positive differential input</td></tr><tr><td>7</td><td>GND</td><td>—</td><td>Ground</td></tr><tr><td>8</td><td>RxOC-</td><td>I</td><td>Negative differential input</td></tr><tr><td>9</td><td>RxOC+</td><td>I</td><td>Positive differential input</td></tr><tr><td>10</td><td>RxO3-</td><td>I</td><td>Negative differential input</td></tr><tr><td>11</td><td>RxO3+</td><td>I</td><td>Positive differential input</td></tr><tr><td>12</td><td>RxE0-</td><td>I</td><td>Negative differential input</td></tr><tr><td>13</td><td>RxE0+</td><td>I</td><td>Positive differential input</td></tr><tr><td>14</td><td>GND</td><td>—</td><td>Ground</td></tr><tr><td>15</td><td>RxE1-</td><td>I</td><td>Negative differential input</td></tr><tr><td>16</td><td>RxE1+</td><td>I</td><td>Positive differential input</td></tr><tr><td>17</td><td>GND</td><td>—</td><td>Ground</td></tr><tr><td>18</td><td>RxE2-</td><td>I</td><td>Negative differential input</td></tr><tr><td>19</td><td>RxE2+</td><td>I</td><td>Positive differential input</td></tr><tr><td>20</td><td>RxEC-</td><td>I</td><td>Negative differential input</td></tr><tr><td>21</td><td>RxEC+</td><td>I</td><td>Positive differential input</td></tr><tr><td>22</td><td>RxE3-</td><td>I</td><td>Negative differential input</td></tr><tr><td>23</td><td>RxE3+</td><td>I</td><td>Positive differential input</td></tr><tr><td>24</td><td>GND</td><td>—</td><td>Ground</td></tr><tr><td>25</td><td>SEL LVDS</td><td>I</td><td>Select LVDS Mapping</td></tr><tr><td>26</td><td>PD</td><td>—</td><td>LVDS Core Power Down</td></tr><tr><td>27</td><td>TST</td><td>—</td><td>Test pin *1</td></tr><tr><td>28</td><td>Vcc</td><td>—</td><td>+5V power supply</td></tr><tr><td>29</td><td>Vcc</td><td>—</td><td>+5V power supply</td></tr><tr><td>30</td><td>Vcc</td><td>—</td><td>+5V power supply</td></tr></table>								Pin No.	Symbol	I/O	Function	1	RxO0-	I	Negative differential input	2	RxO0+	I	Positive differential input	3	RxO1-	I	Negative differential input	4	RxO1+	I	Positive differential input	5	RxO2-	I	Negative differential input	6	RxO2+	I	Positive differential input	7	GND	—	Ground	8	RxOC-	I	Negative differential input	9	RxOC+	I	Positive differential input	10	RxO3-	I	Negative differential input	11	RxO3+	I	Positive differential input	12	RxE0-	I	Negative differential input	13	RxE0+	I	Positive differential input	14	GND	—	Ground	15	RxE1-	I	Negative differential input	16	RxE1+	I	Positive differential input	17	GND	—	Ground	18	RxE2-	I	Negative differential input	19	RxE2+	I	Positive differential input	20	RxEC-	I	Negative differential input	21	RxEC+	I	Positive differential input	22	RxE3-	I	Negative differential input	23	RxE3+	I	Positive differential input	24	GND	—	Ground	25	SEL LVDS	I	Select LVDS Mapping	26	PD	—	LVDS Core Power Down	27	TST	—	Test pin *1	28	Vcc	—	+5V power supply	29	Vcc	—	+5V power supply	30	Vcc	—	+5V power supply
Pin No.	Symbol	I/O	Function																																																																																																																																
1	RxO0-	I	Negative differential input																																																																																																																																
2	RxO0+	I	Positive differential input																																																																																																																																
3	RxO1-	I	Negative differential input																																																																																																																																
4	RxO1+	I	Positive differential input																																																																																																																																
5	RxO2-	I	Negative differential input																																																																																																																																
6	RxO2+	I	Positive differential input																																																																																																																																
7	GND	—	Ground																																																																																																																																
8	RxOC-	I	Negative differential input																																																																																																																																
9	RxOC+	I	Positive differential input																																																																																																																																
10	RxO3-	I	Negative differential input																																																																																																																																
11	RxO3+	I	Positive differential input																																																																																																																																
12	RxE0-	I	Negative differential input																																																																																																																																
13	RxE0+	I	Positive differential input																																																																																																																																
14	GND	—	Ground																																																																																																																																
15	RxE1-	I	Negative differential input																																																																																																																																
16	RxE1+	I	Positive differential input																																																																																																																																
17	GND	—	Ground																																																																																																																																
18	RxE2-	I	Negative differential input																																																																																																																																
19	RxE2+	I	Positive differential input																																																																																																																																
20	RxEC-	I	Negative differential input																																																																																																																																
21	RxEC+	I	Positive differential input																																																																																																																																
22	RxE3-	I	Negative differential input																																																																																																																																
23	RxE3+	I	Positive differential input																																																																																																																																
24	GND	—	Ground																																																																																																																																
25	SEL LVDS	I	Select LVDS Mapping																																																																																																																																
26	PD	—	LVDS Core Power Down																																																																																																																																
27	TST	—	Test pin *1																																																																																																																																
28	Vcc	—	+5V power supply																																																																																																																																
29	Vcc	—	+5V power supply																																																																																																																																
30	Vcc	—	+5V power supply																																																																																																																																
Connector : FI-X30SSL-HF (Japan Aviation Electronics)																																																																																																																																			
User's connector : FI-X30M (FPC type)																																																																																																																																			
FI-X30H (Wire type) , FI-X30HL (Wire with lock)																																																																																																																																			
FI-X30C (Coaxial cable type) , FI-X30C2L (Coaxial cable with lock)																																																																																																																																			
*1: Keep open. (Internal test use only.)																																																																																																																																			
*2: When using a connector other than the recommended one , a defect in the initial stage or a problem concerning long term reliability may occur.																																																																																																																																			
<table><tr><td>EDIT</td><td>DATE</td><td>DESIG.</td><td>CHECK</td><td>APPR.</td><td>DESCRIPTION</td></tr><tr><td>DESIG.</td><td></td><td></td><td>CHECK</td><td></td><td>APPR.</td></tr></table>						EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION	DESIG.			CHECK		APPR.	<table><tr><td>TITLE</td><td>LQ190E1LW01 (FLC48SXC8V-11AA)</td></tr><tr><td>DRAW. NO.</td><td>LD17443</td></tr><tr><td>CUST.</td><td></td></tr><tr><td colspan="2">SHARP CORPORATION</td></tr></table>		TITLE	LQ190E1LW01 (FLC48SXC8V-11AA)	DRAW. NO.	LD17443	CUST.		SHARP CORPORATION																																																																																																									
EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION																																																																																																																														
DESIG.			CHECK		APPR.																																																																																																																														
TITLE	LQ190E1LW01 (FLC48SXC8V-11AA)																																																																																																																																		
DRAW. NO.	LD17443																																																																																																																																		
CUST.																																																																																																																																			
SHARP CORPORATION																																																																																																																																			
1						12/																																																																																																																													

1				2		3				4	
10-2 LVDS Data Assignment Table 10-2A,10-2B show the LVDS Data Assignment. Table 10-2A LVDS Data Assignment(SEL LVDS=L)											
A	Input signal *1		Transmitter DS90CF383,C385		Interface connector			Receiver DS90CF386 THC63LVDF84		LCD Control input	
			pin	INPUT	System side	LCD module pin		pin	OUTPUT		
B	LVDS Odd	RO2	51	TxIN0	Tx OUT0+	2	RxO0+	27	RxOUT0	RO2	
		RO3	52	TxIN1				29	RxOUT1	RO3	
		RO4	54	TxIN2				30	RxOUT2	RO4	
		RO5	55	TxIN3				32	RxOUT3	RO5	
		RO6	56	TxIN4	Tx OUT0-	1	RxO0-	33	RxOUT4	RO6	
		RO7	3	TxIN6				35	RxOUT6	RO7	
		GO2	4	TxIN7				37	RxOUT7	GO2	
		GO3	6	TxIN8				38	RxOUT8	GO3	
		GO4	7	TxIN9	Tx OUT1+	4	RxO1+	39	RxOUT9	GO4	
		GO5	11	TxIN12				43	RxOUT12	GO5	
GO6		12	TxIN13	45				RxOUT13	GO6		
GO7		14	TxIN14	46				RxOUT14	GO7		
BO2		15	TxIN15	Tx OUT1-	3	RxO1-	47	RxOUT15	BO2		
BO3		19	TxIN18				51	RxOUT18	BO3		
BO4		20	TxIN19				53	RxOUT19	BO4		
BO5		22	TxIN20				54	RxOUT20	BO5		
BO6		23	TxIN21	Tx OUT2+	6	RxO2+	55	RxOUT21	BO6		
BO7		24	TxIN22				1	RxOUT22	BO7		
RSVD		27	TxIN24				3	RxOUT24	Not use		
RSVD		28	TxIN25				5	RxOUT25	Not use		
ENAB	30	TxIN26	Tx OUT2-	5	RxO2-	6	RxOUT26	ENAB			
RO0	50	TxIN27				7	RxOUT27	RO0			
RO1	2	TxIN5				34	RxOUT5	RO1			
GO0	8	TxIN10				41	RxOUT10	GO0			
GO1	10	TxIN11	Tx OUT3+	11	RxO3+	42	RxOUT11	GO1			
BO0	16	TxIN16				49	RxOUT16	BO0			
BO1	18	TxIN17				50	RxOUT17	BO1			
RSVD	25	TxIN23				2	RxOUT23	Not use			
C	DCLK	31	TxCLK IN	TxCLK OUT+	9	RxCLK IN+	26	RxCLK OUT	DCLK		
				TxCLK OUT-	8	RxCLK IN-					
D	LVDS Even	RE2	51	TxIN0	Tx OUT0+	13	RxEO+	27	RxOUT0	RE2	
		RE3	52	TxIN1				29	RxOUT1	RE3	
		RE4	54	TxIN2				30	RxOUT2	RE4	
		RE5	55	TxIN3				32	RxOUT3	RE5	
		RE6	56	TxIN4	Tx OUT0-	12	RxEO-	33	RxOUT4	RE6	
		RE7	3	TxIN6				35	RxOUT6	RE7	
		GE2	4	TxIN7				37	RxOUT7	GE2	
		GE3	6	TxIN8				38	RxOUT8	GE3	
		GE4	7	TxIN9	Tx OUT1+	16	RxE1+	39	RxOUT9	GE4	
		GE5	11	TxIN12				43	RxOUT12	GE5	
		GE6	12	TxIN13				45	RxOUT13	GE6	
		GE7	14	TxIN14				46	RxOUT14	GE7	
		BE2	15	TxIN15	Tx OUT1-	15	RxE1-	47	RxOUT15	BE2	
		BE3	19	TxIN18				51	RxOUT18	BE3	
		BE4	20	TxIN19				53	RxOUT19	BE4	
		BE5	22	TxIN20				54	RxOUT20	BE5	
		BE6	23	TxIN21	Tx OUT2+	19	RxE2+	55	RxOUT21	BE6	
		BE7	24	TxIN22				1	RxOUT22	BE7	
		RSVD	27	TxIN24				3	RxOUT24	Not use	
		RSVD	28	TxIN25				5	RxOUT25	Not use	
RSVD	30	TxIN26	Tx OUT2-	18	RxE2-	6	RxOUT26	Not use			
RE0	50	TxIN27				7	RxOUT27	RE0			
RE1	2	TxIN5				34	RxOUT5	RE1			
GE0	8	TxIN10				41	RxOUT10	GE0			
GE1	10	TxIN11	Tx OUT3+	23	RxE3+	42	RxOUT11	GE1			
BE0	16	TxIN16				49	RxOUT16	BE0			
BE1	18	TxIN17				50	RxOUT17	BE1			
RSVD	25	TxIN23				2	RxOUT23	Not use			
E	DCLK	31	TxCLK IN	TxCLK OUT+	21	RxCLK IN+	26	RxCLK OUT	Not use		
				TxCLK OUT-	20	RxCLK IN-					
*1 ・RSVD (reserved) pin on a transmitter should be connected with Ground. ・Input odd or even data depending on the display position of the LCD module.											
DATE DESIGN						TITLE LD17443					
DESIGN CHECK						SHARP CORPORATION 13/					

1					2					3					4									
Table 10-2B LVDS Data Assignment(SEL LVDS=H)																								
Input signal *1		Transmitter DS90CF383,C385		Interface connector				Receiver DS90CF386 THC63LVDF84		LCD Control input														
		pin	INPUT	System side		LCD module		pin	OUTPUT															
LVDS Odd	RO0	51	TxIN0	Tx OUT0+	2	RxO0+	27	RxOUT0	RO0															
	RO1	52	TxIN1				29	RxOUT1	RO1															
	RO2	54	TxIN2				30	RxOUT2	RO2															
	RO3	55	TxIN3				32	RxOUT3	RO3															
	RO4	56	TxIN4	Tx OUT0-	1	RxO0-	33	RxOUT4	RO4															
	RO5	3	TxIN6				35	RxOUT6	RO5															
	GO0	4	TxIN7				37	RxOUT7	GO0															
	GO1	6	TxIN8				38	RxOUT8	GO1															
	GO2	7	TxIN9	Tx OUT1+	4	RxO1+	39	RxOUT9	GO2															
	GO3	11	TxIN12				43	RxOUT12	GO3															
	GO4	12	TxIN13				45	RxOUT13	GO4															
	GO5	14	TxIN14				46	RxOUT14	GO5															
	BO0	15	TxIN15	Tx OUT1-	3	RxO1-	47	RxOUT15	BO0															
	BO1	19	TxIN18				51	RxOUT18	BO1															
	BO2	20	TxIN19				53	RxOUT19	BO2															
	BO3	22	TxIN20				54	RxOUT20	BO3															
	BO4	23	TxIN21	Tx OUT2+	6	RxO2+	55	RxOUT21	BO4															
	BO5	24	TxIN22				1	RxOUT22	BO5															
	RSVD	27	TxIN24				3	RxOUT24	Not use															
	RSVD	28	TxIN25				5	RxOUT25	Not use															
	ENAB	30	TxIN26	Tx OUT2-	5	RxO2-	6	RxOUT26	ENAB															
	RO6	50	TxIN27				7	RxOUT27	RO6															
	RO7	2	TxIN5				34	RxOUT5	RO7															
	GO6	8	TxIN10				41	RxOUT10	GO6															
	GO7	10	TxIN11	Tx OUT3+	11	RxO3+	42	RxOUT11	GO7															
BO6	16	TxIN16	49				RxOUT16	BO6																
BO7	18	TxIN17	50				RxOUT17	BO7																
RSVD	25	TxIN23	2				RxOUT23	Not use																
	DCLK	31	TxCLK IN	TxCLK OUT+	9	RxCLK IN+	26	RxCLK OUT	DCLK															
				TxCLK OUT-	8	RxCLK IN-																		
LVDS Even	RE0	51	TxIN0	Tx OUT0+	13	RxEO+	27	RxOUT0	RE0															
	RE1	52	TxIN1				29	RxOUT1	RE1															
	RE2	54	TxIN2				30	RxOUT2	RE2															
	RE3	55	TxIN3				32	RxOUT3	RE3															
	RE4	56	TxIN4	Tx OUT0-	12	RxEO-	33	RxOUT4	RE4															
	RE5	3	TxIN6				35	RxOUT6	RE5															
	GE0	4	TxIN7				37	RxOUT7	GE0															
	GE1	6	TxIN8				38	RxOUT8	GE1															
	GE2	7	TxIN9	Tx OUT1+	16	RxE1+	39	RxOUT9	GE2															
	GE3	11	TxIN12				43	RxOUT12	GE3															
	GE4	12	TxIN13				45	RxOUT13	GE4															
	GE5	14	TxIN14				46	RxOUT14	GE5															
	BE0	15	TxIN15	Tx OUT1-	15	RxE1-	47	RxOUT15	BE0															
	BE1	19	TxIN18				51	RxOUT18	BE1															
	BE2	20	TxIN19				53	RxOUT19	BE2															
	BE3	22	TxIN20				54	RxOUT20	BE3															
	BE4	23	TxIN21	Tx OUT2+	19	RxE2+	55	RxOUT21	BE4															
	BE5	24	TxIN22				1	RxOUT22	BE5															
	RSVD	27	TxIN24				3	RxOUT24	Not use															
	RSVD	28	TxIN25				5	RxOUT25	Not use															
	RSVD	30	TxIN26	Tx OUT2-	18	RxE2-	6	RxOUT26	Not use															
	RE6	50	TxIN27				7	RxOUT27	RE6															
	RE7	2	TxIN5				34	RxOUT5	RE7															
	GE6	8	TxIN10				41	RxOUT10	GE6															
	GE7	10	TxIN11	Tx OUT3+	23	RxE3+	42	RxOUT11	GE7															
BE6	16	TxIN16	49				RxOUT16	BE6																
BE7	18	TxIN17	50				RxOUT17	BE7																
RSVD	25	TxIN23	2				RxOUT23	Not use																
	DCLK	31	TxCLK IN	TxCLK OUT+	21	RxCLK IN+	26	RxCLK OUT	Not use															
				TxCLK OUT-	20	RxCLK IN-																		

DOCUMENT CONTROL SECTION

DATE

1

<

		1		2		3		4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
		10-3 Color Data Assignment																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		Table 10-3 shows the Color Data Assignment.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		Table 10-3 Color Data Assignment																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		<table><tr><th colspan="2">Color</th><th colspan="8">R Input data</th><th colspan="8">G Input data</th><th colspan="8">B Input data</th></tr><tr><th rowspan="2"></th><th>Odd</th><th>R7</th><th>R6</th><th>R5</th><th>R4</th><th>R3</th><th>R2</th><th>R1</th><th>R0</th><th>G7</th><th>G6</th><th>G5</th><th>G4</th><th>G3</th><th>G2</th><th>G1</th><th>G0</th><th>B7</th><th>B6</th><th>B5</th><th>B4</th><th>B3</th><th>B2</th><th>B1</th><th>B0</th></tr><tr><th>Even</th><th>R7</th><th>R6</th><th>R5</th><th>R4</th><th>R3</th><th>R2</th><th>R1</th><th>R0</th><th>G7</th><th>G6</th><th>G5</th><th>G4</th><th>G3</th><th>G2</th><th>G1</th><th>G0</th><th>B7</th><th>B6</th><th>B5</th><th>B4</th><th>B3</th><th>B2</th><th>B1</th><th>B0</th></tr><tr><td rowspan="8">Basic Color</td><td>Black</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Blue</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Green</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Cyan</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Red</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Magenta</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Yellow</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>White</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td rowspan="8">Red</td><td>Black</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>↑</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>↑</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr><tr><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr><tr><td>↓</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr><tr><td>Brighter</td><td>253</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>↓</td><td>254</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Red</td><td>255</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td rowspan="8">Green</td><td>Black</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>↑</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>↑</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr><tr><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr><tr><td>↓</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr><tr><td>Brighter</td><td>253</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>↓</td><td>254</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Green</td><td>255</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td rowspan="8">Blue</td><td>Black</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>↑</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>↑</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr><tr><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr><tr><td>↓</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr><tr><td>Brighter</td><td>253</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>1</td></tr><tr><td>↓</td><td>254</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td></tr><tr><td>Blue</td><td>255</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr></table>										Color		R Input data								G Input data								B Input data									Odd	R7	R6	R5	R4	R3	R2	R1	R0	G7	G6	G5	G4	G3	G2	G1	G0	B7	B6	B5	B4	B3	B2	B1	B0	Even	R7	R6	R5	R4	R3	R2	R1	R0	G7	G6	G5	G4	G3	G2	G1	G0	B7	B6	B5	B4	B3	B2	B1	B0	Basic Color	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Blue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	Green	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	Cyan	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Red	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Magenta	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	Yellow	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	White	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Red	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	↑	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	↑	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	↓	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	Brighter	253	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	↓	254	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Red	255	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Green	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	↑	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	↑	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	↓	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	Brighter	253	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	↓	254	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	Green	255	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	Blue	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	↑	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	↑	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	↓	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	Brighter	253	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	↓	254	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	Blue	255	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1		
Color		R Input data								G Input data								B Input data																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	Odd	R7	R6	R5	R4	R3	R2	R1	R0	G7	G6	G5	G4	G3	G2	G1	G0	B7	B6	B5	B4	B3	B2	B1	B0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	Even	R7	R6	R5	R4	R3	R2	R1	R0	G7	G6	G5	G4	G3	G2	G1	G0	B7	B6	B5	B4	B3	B2	B1	B0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Basic Color	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	Blue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	Green	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	Cyan	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	Red	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	Magenta	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	Yellow	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	White	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Red	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	↑	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	↑	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	↓	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	Brighter	253	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	↓	254	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	Red	255	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Green	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	↑	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	↑	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	↓	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	Brighter	253	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	↓	254	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	Green	255	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Blue	Black	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	↑	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	↑	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	↓	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	Brighter	253	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	↓	254	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	Blue	255	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
		Note.1) Definition of gray scale:Color (n)..."n" indicates gray scale level. Larger number means brighter level. Note.2) Data: 1:High, 0:Low Note 3) Color data consist of 8 bit red, green and blue data of odd and even number pixel data. Total data number is 48 signals. This module is able to display 16,777,216 colors because each red, green and blue data is controlled independently.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												

10-4 Input Signal Timing

Table 10-4 and Figure 10-1 shows the Input Signal Timing at LVDS transmitter.

Table 10-4 Timing Characteristics

(Ta=0~50°C, Vcc=5±0.25V)

Item		Symbol	Min.	Typ.	Max.	Unit	Remark
DCLK signal (Clock)	Period	Tc	14.3	18.5	25.0	ns	
	Frequency	1/Tc	40	54	70	MHz	
	Duty	Tch/Tc	45	50	55	%	
	High time	TclkH	5.0	—	—	ns	
	Low time	TclkL	5.0	—	—	ns	
DCLK-Data Timing	Setup time	Tset	3	—	—	ns	LVDS Tr spec.
	Hold time	Thold	5	—	—	ns	
ENAB signal	Hor. Period (1)	Th	5350/Tc+435	844	887 *1	DCLK	Tc=ns
	Hor. Period (2)	Th	648	—	1023	DCLK	*4
	Hor. Display period	Thd	640	640	640	DCLK	*2
	Vertical Period	Tv	1028 *1	1066	1088 *1	Th	16.67ms
	Ver. Frequency	1/Tv	50	60	76.2	Hz	
	Ver. Display period	Tvd	1024	1024	1024	Th	*2
	Data-ENAB timing	Tdn	—	0	—	DCLK	*3

- *1) • horizontal display position is specified by the rise of ENAB.
 The data latched at falling edge of DCLK after rise of ENAB is displayed at the left edge of the display area.
 - Vertical display position is specified by the rise of ENAB after low level continuation over 2048 DCLK.
 The data latched at the rise of ENAB is displayed at the top line of the display area.
- *2) • If the “High” level period of ENAB is less than 640 DCLK or the number of ENAB in a frame period (Tv) is less than 1024, black color is displayed at the rest of the display area.
- *3) • If ENAB does not synchronize with the effective display data, the display position does not fit to the display area.
- *4) • Hor. Period (2) shows the operating range where internal circuit can work correctly.
 - When ENAB signal is out of Hor. Period (1), the display quality may deteriorate.

10-5 Correspondence between Data and Display Position

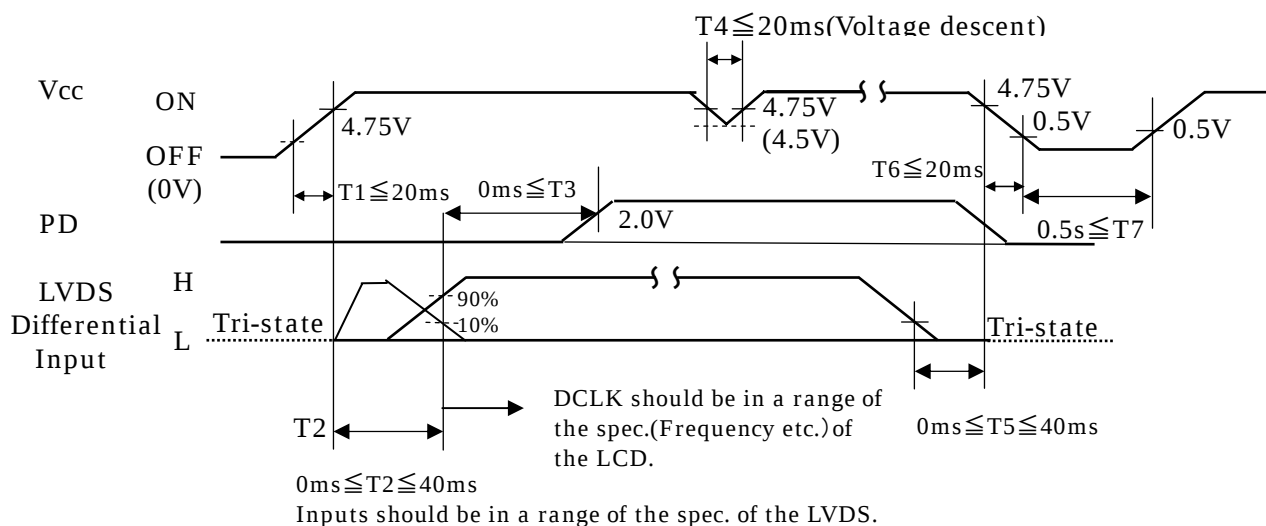
Figure 10-2 shows the Correspondence between Data and Display Position.

S0001 S0002 S0003 S0004 S0005 S0006 S0007 -----										S3839 S3840	
C001	RO 0001	GO 0001	BO 0001	RE 0002	GE 0002	BE 0002	RO 0003	GO 0003		GE 1280	BE 1280
C1024	RO 0001	GO 0001	BO 0001	RE 0002	GE 0002	BE 0002	RO 0003	GO 0003		GE 1280	BE 1280

Figure 10-2 Correspondence Data and Display Position

10-5 Power Supply Sequence

The sequence of input signals and On/Off of the power supply of this LCD module should be in the specification shown in Figure 10-3 to prevent latch-up of the driver ICs and DC driving of the LCD panel.



*Note : PD input can be set open, if it is not used.

Figure 10-3 Power Supply Sequence

DOCUMENT CONTROL SECTION

DATE

EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION	
DESIG.			CHECK		APPR.	

TITLE		LQ190E1LW01 (FLC48SXC8V-11AA)	
DRAW. NO.		LD17443	CUST.
SHARP CORPORATION		18/	

11. BACK-LIGHT SPECIFICATIONS

11-1 Pin configuration for Back-light

Table 11-1 shows the description and Pin assignment of the connectors (CN-A to D) for the Back-light of this LCD module.

Table 11-1 Pin Assignment of CN-A to CN-D

Pin No.	Signal				Function	Cable color
	CN-A	CN-B	CN-C	CN-D		
1	V _{L1}	V _{L2}	V _{L3}	V _{L4}	Power supply	Pink ,Orange
2	—	—	—	—	—	—
3	GND	GND	GND	GND	Ground	Blue, Gray

Connector : Housing : BHR-03VS-1
 Contact : SBH-001T-P0.5
 User's Connector : Post with base: SM02(8.0)B-BHS-1-TB
 Supplier : Japan Solderless Terminal Trading Company LTD. (J.S.T.)

11-2 Life

The life of the back-light is a minimum of 50,000 hours at the following conditions.

(1) Working conditions

- ①Ambient temperature: 25±5℃
- ②Tube current (I_L) : 7mA or less

(2) Definition of life

- ①Brightness becomes 50% or less than the minimum brightness value shown in Table 9-1.
- ②The lamp cannot be lit by the minimum value of the breakdown voltage(1760Vrms) shown in Table 8-1.
- ③Flashing.

11-4 Lamp assembly set (for replacement)

Lamp assembly set(with charge)is prepared for replacing old lamp to new one. This set consists of a upper lamp assembly and a lower lamp assembly.

Type number : LQ0DDB5467(FLCL-33)

Minimum order qty. unit : 20 pcs.

DOCUMENT CONTROL SECTION

DATE

						TITLE					LQ190E1LW01 (FLC48SXC8V-11AA)							
						DRAW. NO.					LD17443					CUST.		
07	20050420					Lamp Assy No. was changed.												
EDIT	DATE		DESIG.		CHECK	APPR.	DESCRIPTION					SHARP CORPORATION					STACK	19/
	DESIG.					CHECK				APPR.								

12. APPEARANCE SPECIFICATIONS

12-1 Appearance

No.	Item		Judgment method and standard		
1	Bright spot (high and Low)		≤ 4 dots (Note 1)		
2	Bright spot connection (high and low)		≤ 2 pair (2 dot connection in horizontal only) (Note 1)		
3	Total of bright spot		≤ 4 dots		
4	Dark spot		≤ 8 dots (Note 2)		
5	Dark spot connection		≤ 3 pairs (Note 2)		
6	Total of dark spot		≤ 8 dots (Note 2)		
7	Total of dot defect (bright and dark)		≤ 8 dots		
8	Distance of bright spot	high-hgh	$\geq 15\text{mm}$		
		others	$\geq 5\text{mm}$		
9	Distance of dark spot		$\geq 5\text{mm}$		
10	Scratch on polarizer, line shape		$W \leq 0.03$	————	Ignore
			$0.03 < W \leq 0.05$	$L \leq 6$	Ignore
				$6 < L \leq 12$	≤ 5
				$12 < L$	0
			$0.05 < W \leq 0.10$	$L \leq 0.6$	Ignore
				$0.6 < L$	0
			$0.10 < W$	————	0
11	Dent on polarizer, dot shape		$D \leq 0.3$		Ignore
			$0.3 < D \leq 0.4$		≤ 5
			$0.4 < D$		0
12	Bubble in polarizer		$D \leq 0.3$		Ignore
			$0.3 < D \leq 0.5$		≤ 5
			$0.5 < D$		0
13	Black white spot (Foreign circular matter)		$D \leq 0.3$		Ignore
			$0.3 < D \leq 0.5$		≤ 5
			$0.5 < D$		0
14	Light leakage by foreign articles		$D \leq 0.3$		Ignore
			$0.3 < D \leq 0.6$		≤ 4
			$0.6 < D$		0
15	Lints, black/white line		$W \leq 0.03$	————	Ignore
			$0.03 < W \leq 0.05$	$L \leq 6$	Ignore
				$6 < L \leq 12$	≤ 4
				$12 < L$	0
			$0.05 < W \leq 0.10$	$L \leq 0.6$	Ignore
				$0.6 < L \leq 5$	≤ 2
			$0.10 < W$	$5 < L$	0
			$(W+L)/2=D$		Conform to No.13
16	Mura		Invisible under 6% ND filter from center of display. (Display pattern : Black, White, 50% gray)		

D:Average diameter [mm], W:Width [mm], L:Length [mm], S=(bright spot size)/(dot size)

DATE	DOCUMENT CONTROL SECTION

						TITLE													
						LQ190E1LW01													
						(FLC48SXC8V-11AA)													
						DRAW. NO.													
						LD17443													
						CUST.													
EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION														
	DESIG.			CHECK			APPR.		SHARP CORPORATION										
									STOCK	20/									

A

B

B

C

C

D

D

- E

(a) $A < 1/3$: Not count. Only one of 4 dark connection is allowed.
 (b) $1/3 \leq A < 2/3$: Considered as 0.5 dot.
 (c) $2/3 \leq A$: Considered as 1 dot.
 (A=Dark spot size/dot size)

1

14. INDICATIONS

This module has the following indications.

- (1) Product name : **LCD unit**
- (2) SHARP Model Number : LQ190E1LW01
- (3) Model Number : FLC48SXC8V-11AA
- (4) Manufacturing Number : **5 6 0 0 0 0 1**

Serial number
(To be reset every month on 1st.)

Manufacturing month
(Oct. = X, Nov. =Y, Dec. =Z)

Last digit of manufacturing year.

- (5) Version number : **01A** (Example)
-1st 2 digits "01" means operational version.
-3rd alphabet means functional version.
- (6) Manufacturer Country Name :
- (7) Company Name : SHARP CORPPRATION
- (8) Disposal method of cold-cathode tubes.
- (9) Caution when changing cold-cathode tubes.

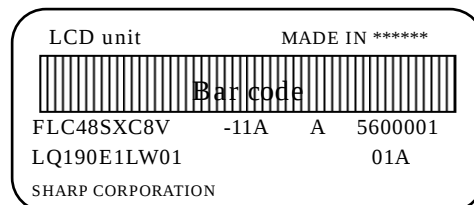


Figure 14-1 Product Label (Example)

15. PACKAGING

15-1 Packing specifications

- (1) 5 LCD modules/1package.
- (2) Weight : approximately 14kg /1package.
- ②(3) Outline dimensions: 499mm (W)x 250mm (D)x 464mm (H)

15-2 Packing method

Figure 15-2 show the packing method.

DOCUMENT CONTROL SECTION

DATE

						TITLE	LQ190E1LW01 (FLC48SXC8V-11AA)
07	20050420					DRAW. NO.	LD17443
02	20040602					Model name and Company Name was changed	
EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION	SHARP CORPORATION	23/
	DESIG.			CHECK			

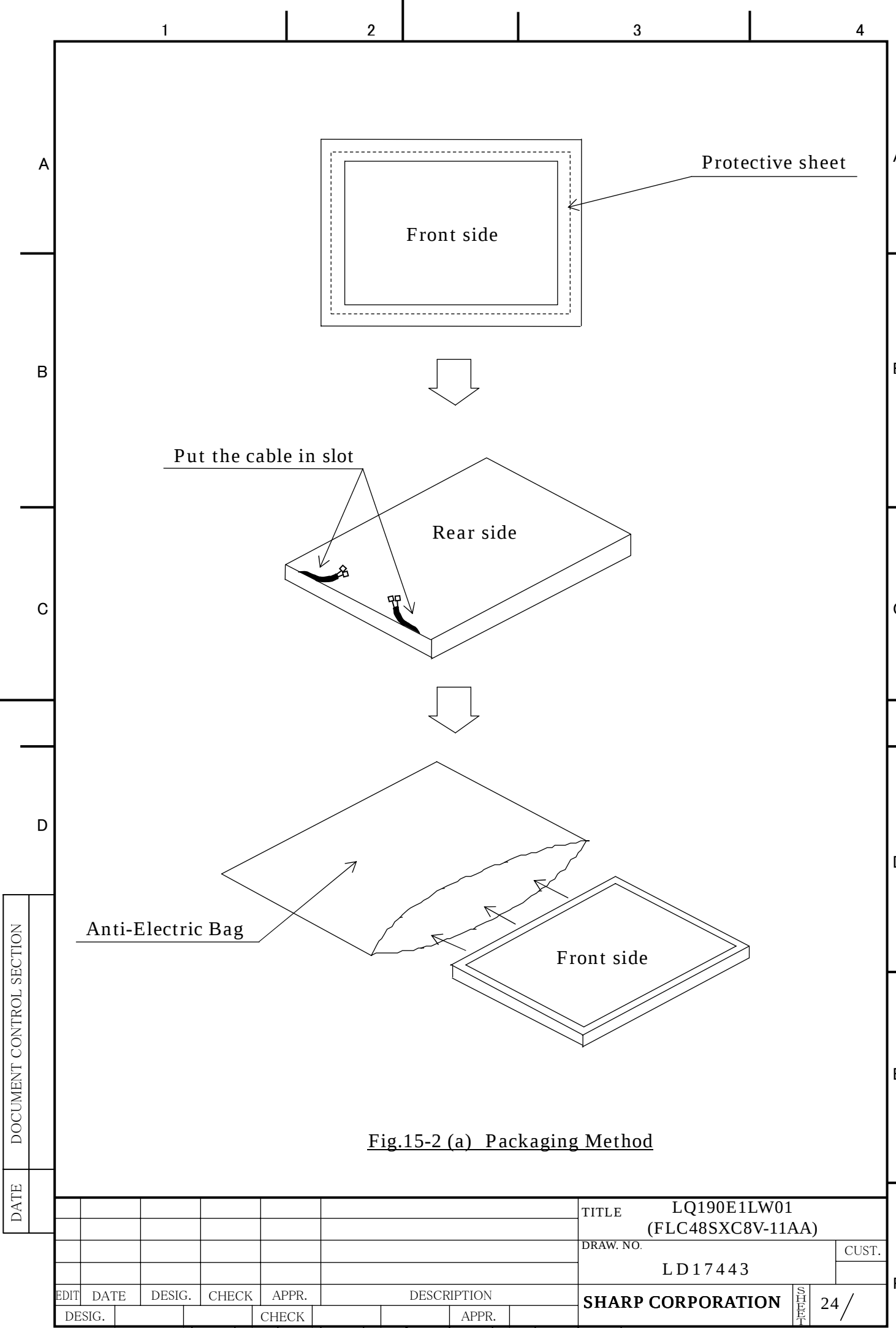
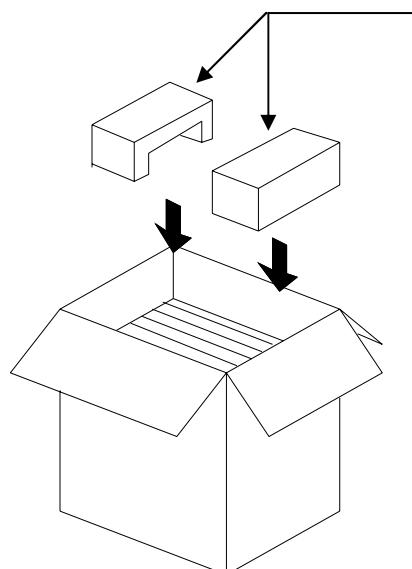
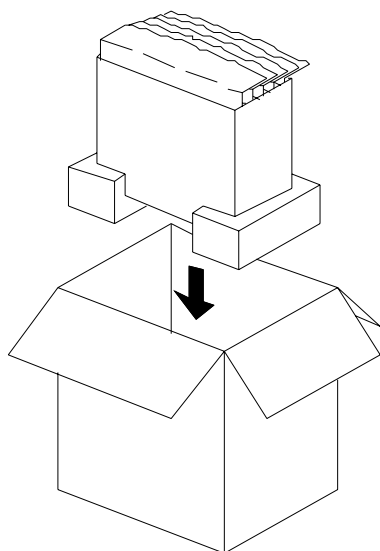


Fig.15-2 (a) Packaging Method

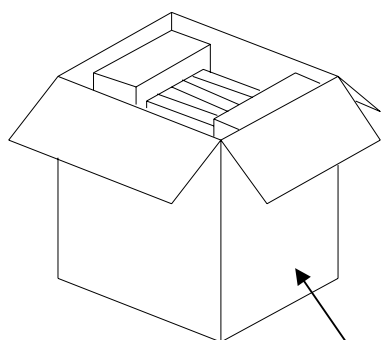
E

						TITLE					LQ190E1LW01 (FLC48SXC8V-11AA)		
						DRAW. NO.					LD17443		CUST.
EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION					SHARP CORPORATION		Sheet	25 /
	DESIG.			CHECK			APPR.						

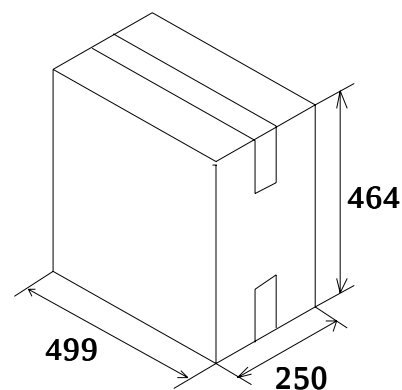
⑥



The Front side of LCD units should be faced to the direction of the making on carton box.



Carton Box



Sample of carton label

型 格 (TYPE) FLC48SXC8V -11A A 数 量 (QTY.) 5
 图 番(DRG. No.) LQ190E1LW01 ** 版 数(Rev. No.) 01A

5600001
5600002
5600003
5600004
5600005

Bar code

Fig.15-2 (b) Packaging Method

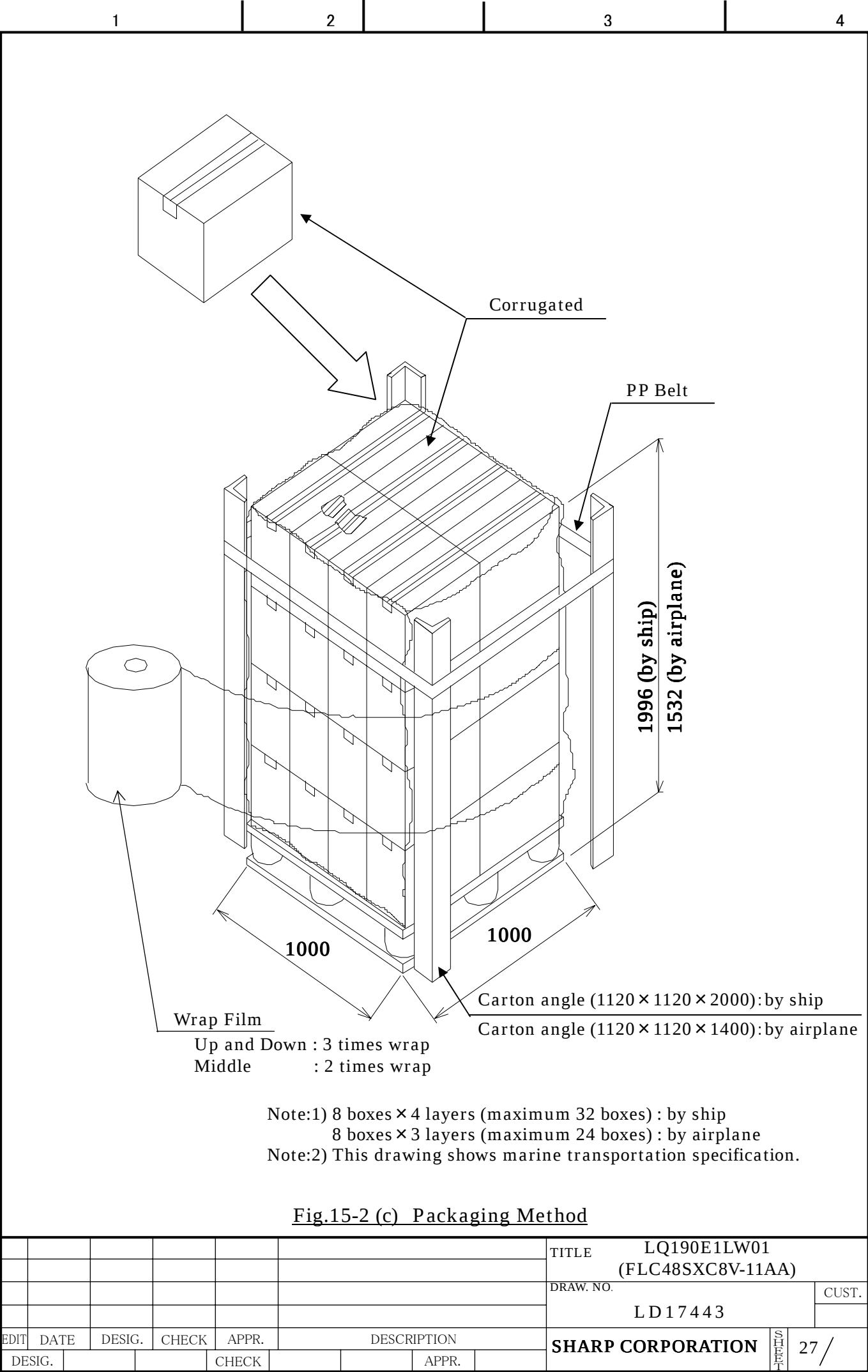
DOCUMENT CONTROL SECTION	Sample of carton label 型 格 (TYPE) FLC48SXC8V -11A A 数 量 (QTY.) 5 図 番(DRG. No.) LQ190E1LW01 ** 版 数(Rev. No.) 01A 5600001 5600002 5600003 5600004 5600005 Bar code
--------------------------	--

Fig.15-2 (b) Packaging Method

DATE						TITLE LQ190E1LW01 (FLC48SXC8V-11AA)
						DRAW. NO.
						CUST.
07	20050420				Model name was changed.	L D 17443
EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION	SHARP CORPORATION
	DESIG.		CHECK		APPR.	

STAMP
26 /

DATE	DOCUMENT CONTROL SECTION				



A

A

Cushioning materialCorrugated carton (A)
with LCD modules

B

B

602
(580)Corrugated fiberboard shipping container (B)446
(430)646
(630)

C

C

Note 1) The carton (A) should be placed in the middle of the container (B) with enough cushioning materials.

Note2) The figures in () show inside measurements of the container (B).

Figure.15-2 (d) Packing method

D

D

DOCUMENT CONTROL SECTION

DATE

E

F

						TITLE		LQ190E1LW01	
								(FLC48SXC8V-11AA)	
						DRAW. NO.		L D 17 4 4 3	
								CUST.	
EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION	SHARP CORPORATION		28 /	
DESIG.				CHECK		APPR.			

A

A

B

B

C

C

D

- D

F

- F

1

- ③ Do not scratch the polarizer film on the LCD panel surface.**

- DOCUMENT CONTROL SECTION

DATE _____

1

1

1

1

						TITLE												
						LQ190E1LW01 (FLC48SXC8V-11AA)												
						DRAW. NO.												
						LD 17443												
						CUST.												
EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION													
	DESIG.			CHECK			APPR.		SHARP CORPORATION									
										Sheet	29 /							

- Do not allow oil to adhere to the module since excessive oil is hard to clean.

This may make some parts of the LCD module distorted and the quality of display may deteriorate.

Disassembly or remodeling of the LCD module may result in malfunctions or deterioration of the display quality and reliability.

If the LCD module is operated when condensation is on the terminals of the LCD panel, the terminals cause electrochemical reaction, and may reach disconnection. Condensation easily occurs especially when the module is moved from cold environment to warm environment.

DATE	DOCUMENT CONTROL SECTION										
(4) Precautions in regards of operating the LCD module ① Adhere to the specified power supply sequence. If not followed, the CMOS-IC may cause a latch-up, or DC voltage may be applied to the liquid crystal, which cause a failure or serious deterioration in display quality. ② Do not operate the LCD module when condensation occurs. If the LCD module is operated when condensation is on the terminals of the LCD panel, the terminals cause electrochemical reaction, and may reach disconnection. Condensation easily occurs especially when the module is moved from cold environment to warm environment.											
						TITLE LQ190E1LW01 (FLC48SXC8V-11AA)					
						DRAW. NO. L D 17443					CUST.
EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION			SHARP CORPORATION			30 /
		DESIG.			CHECK			APPR.			30 /

A

- B

If control signals (DCLK, ENAB) are not input, or if the timing is out of the specified timing, DC voltage may be applied to the liquid crystal and, as a result, cause image sticking or deterioration of contrast.

C

- D

DOCUMENT CONTROL SECTION

- E

F

		1		2		3		4																																																																																																						
A	③ The LCD module is recommended to be stored in humidity controlled, cool and dark locations. Recommended storage environment •Place : Dark (avoid direct sunlight) •Temperature : 10 ~ 35 •Humidity : 50 ~ 60%RH Note) If the module is left in an environment of 60 and above for a long period of time, optical characteristics may deteriorate.									A																																																																																																				
B	(7) Disposal Method ① LCD module The components of this LCD module can be grouped into metal, resin, glass and so on. As the backlight contains CCFL which includes mercury, it must be disposed according to the local ordinance or regulations. ② Package All the packages are made of recyclable papers except the anti-ESD bag.									B																																																																																																				
C	(8) CAUTION IN DESIGNING INVERTER Fluorescent lamps driven by high voltage are included in this LCD module. Please stand to the instructions below when designing inverter that lights the fluorescent lamps. Otherwise it may lead to FATAL FAILURE, such as SMOKING or FIRING. ① APPLY PROTECTIVE CIRCUIT in preparation for lamp breaking, wire breaking and short circuit. The protective circuit should also detect half open circuit and wire breaking in narrow gap etc.. Otherwise it may lead to fatal failure.									C																																																																																																				
D	② KEEP ENOUGH CURRENT CAPACITY of inverter output for leakage current, which leaks from lamps and wire to surrounding metal material. Usually output current of about 1.5 times as same as the lamp current is necessary. But it sometimes varies due to characteristics of the inverter itself. So before determining design, please check characteristics of the inverter by connecting it to the LCD module.									D																																																																																																				
E	③ KEEP ENOUGH TEMPERATURE MARGIN for each parts mounted on inverter. Temperature of the parts becomes higher when they are mounted in the final products due to heating inside. The temperature of each parts MUST NOT increase over the guaranteed temperature.									E																																																																																																				
F	<table border="1"> <tr> <td colspan="2">DATE</td> <td colspan="2">DOCUMENT CONTROL SECTION</td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td>EDIT</td> <td>DATE</td> <td>DESIG.</td> <td>CHECK</td> <td>APPR.</td> <td colspan="5">DESCRIPTION</td> <td>TITLE</td> <td>LQ190E1LW01 (FLC48SXC8V-11AA)</td> </tr> <tr> <td colspan="5"></td> <td colspan="5"></td> <td>DRAW. NO.</td> <td>LD17443</td> </tr> <tr> <td colspan="5"></td> <td colspan="5"></td> <td>CUST.</td> <td></td> </tr> <tr> <td colspan="5"></td> <td colspan="5"></td> <td colspan="2">SHARP CORPORATION</td> </tr> <tr> <td colspan="5"></td> <td colspan="5"></td> <td colspan="2">32 /</td> </tr> </table>									DATE		DOCUMENT CONTROL SECTION																																						EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION					TITLE	LQ190E1LW01 (FLC48SXC8V-11AA)											DRAW. NO.	LD17443											CUST.												SHARP CORPORATION												32 /		F
	DATE		DOCUMENT CONTROL SECTION																																																																																																											
EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION					TITLE	LQ190E1LW01 (FLC48SXC8V-11AA)																																																																																																			
										DRAW. NO.	LD17443																																																																																																			
										CUST.																																																																																																				
										SHARP CORPORATION																																																																																																				
										32 /																																																																																																				

A

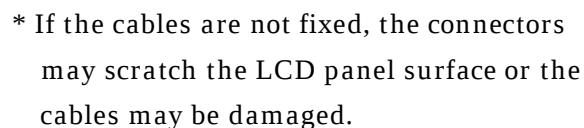
- When the LCD module is returned without following the specified packaging procedures, SHARP will not take responsibility for the damages caused by the failure of the packaging method.

- B

B



D

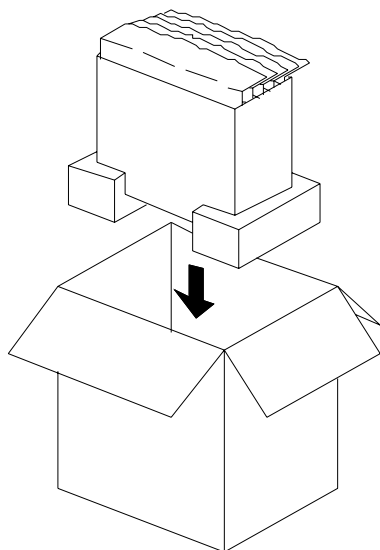


E

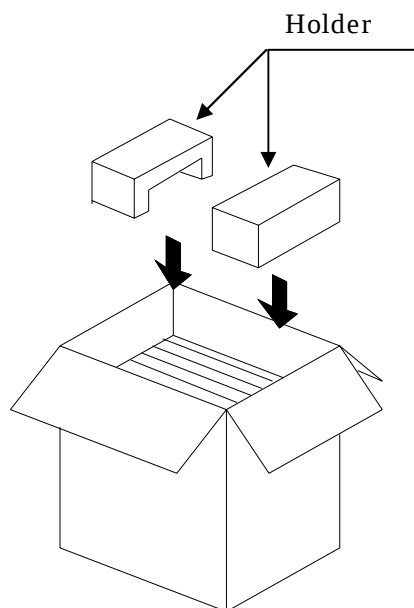
F

A

⑤



⑥



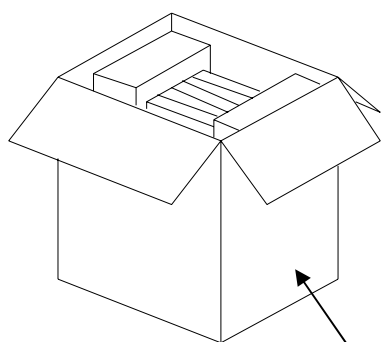
A

B

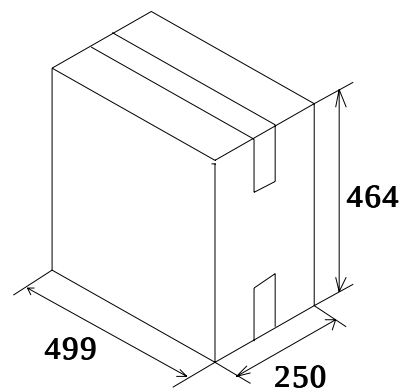
B

The Front side of LCD units should be faced to the direction of the making on carton box.

⑦



⑧



C

C

D

D

****The arrowheads are shown on the holders.****

Fig. 17-1(b) Packaging method

- When not using the carton box manufactured by SHARP

Please pack the LCD modules one by one and make sure not to damage the LCD modules when transporting.

E

DOCUMENT CONTROL SECTION

DATE

F

						TITLE LQ190E1LW01 (FLC48SXC8V-11AA)					
						DRAW. NO. LD 17443				CUST.	
07	20050420				Company Name was changed						
EDIT	DATE	DESIG.	CHECK	APPR.	DESCRIPTION					SHARP	35 /
	DESIG.			CHECK			APPR.				

If the liquid crystal adhere to the body or cloths, wash it off with soap immediately. Follow regular precautions for electronic components.

SHARP has adopted non-wash technology on module assembly process.

This Product is designed, developed and manufactured as contemplated for general use, including without limitation, general office use, personal use, household use, and ordinary industrial use, but is not designed, developed and manufactured as contemplated for use accompanying fatal risks or dangers that, unless extremely high safety is secured, could lead directly to death, personal injury, severe physical damage or other loss (hereinafter “High Safety Required Use”), including without limitation, nuclear reaction control in nuclear facility, aircraft flight control, air traffic control, mass transport control, medical life support system, missile launch control in weapon system. If customer’s product possibly falls under the category of High Safety Required Use, please consult with our sales representatives in charge before such use. In addition, SHARP shall not be liable against the Customer and/or any third party for any claims or damages arising in connection with the High Safety Required Use of the Product without permission.

If any doubt is raised in the content of the specifications, both parties shall discuss and make best effort for the agreement.

1

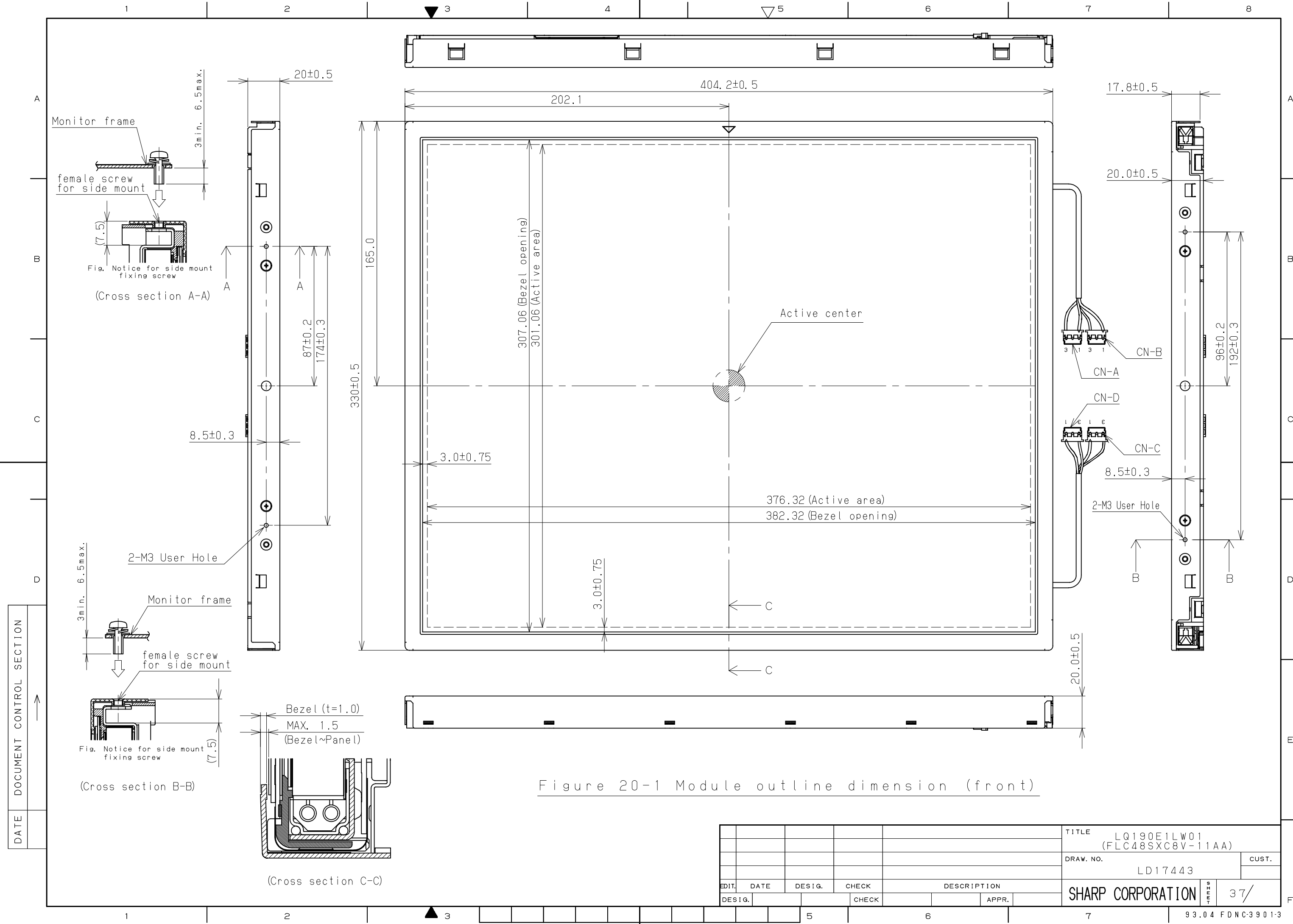


Figure 20-1 Module outline dimension (front)

					TITLE		
					LQ190E1LW01 (FLC48SXC8V-11AA)		
					DRAW. NO.		CUST.
					LD17443		
EDIT.	DATE	DESIG.	CHECK	DESCRIPTION	SHARP CORPORATION		
DESIG.			CHECK	APPR.			
					37/		

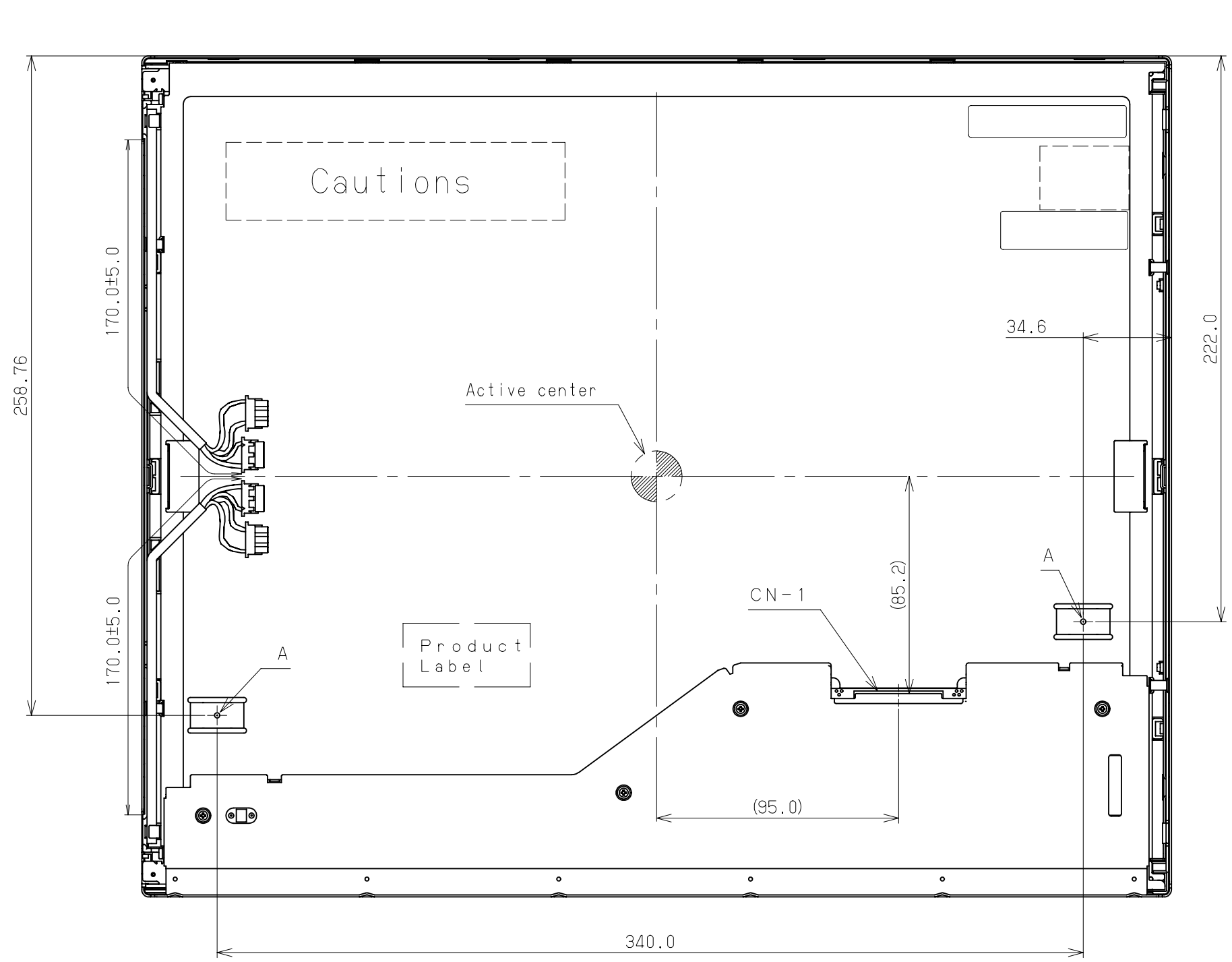


Figure 20-2 Module outline dimension (Rear)

NOTE
1) Unspecified tolerance to be ± 0.5

					TITLE			LQ190E1LW01 (FLC48SXC8V-11AA)		
					DRAW. NO.					CUST.
					LD17443					
EDIT.	DATE	DESIG.	CHECK	DESCRIPTION	SHARP CORPORATION					38/38
DESIG.			CHECK	APPR.						