Bolymin, Inc.

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LCD MODULE SPECIFICATION

MODEL NO.

ST64PNPP

FOR MESSRS:

_____

ON DATE OF :

_____

APPROVED BY:

_____ _____ _____

1. APPLICATION

NAVIGATION, SEAT VIDEO (airline, car, boat), INSTRUMENT, SECURITY, VIDEO PHONE, DOOR PHONE, TELEVISION

2. FEATURES

- HIGH RESOLUTION
- LOW POWER CONSUMPTION
- NO RADIATION
- SPEEDY RESPONSE TIME
- WIDE VIEW ANGLE

3. PHYSICAL SPECIFICATIONS

No.	Item	Specification	Remark
1	Display Resolution (dot)	960(H)×234(V)	
2	Active Area (mm)	130.6(W)×97.3(H)	
3	Screen Size (inch)	6.4" (Diagonal)	
4	Dot Pitch (mm)	0.136(W)×0.416(H)	
5	Outline Dimension(mm)	166.7(W)×119.8(H)×21.9(D)	Note 1
6	Color Configuration	Stripe	

Note 1: Refer to Fig. 1

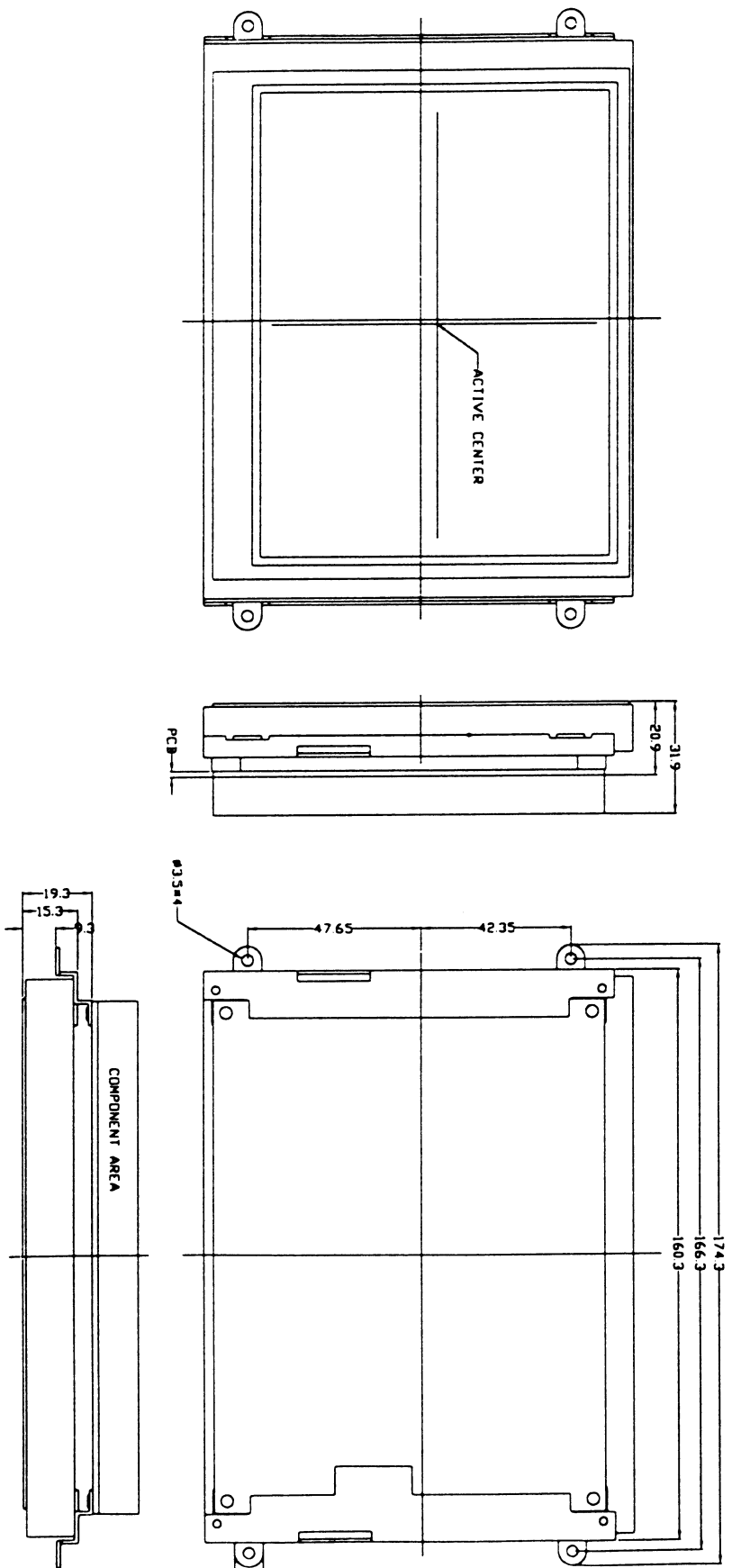

ACTIVE CENTER
PCB
20.9
31.9
19.3
15.3
COMPONENT AREA
47.65
42.35
160.3
166.3
174.3

Fig. 1

4. ELECTRICAL SPECIFICATIONS

4.1 INPUT/OUTPUT TERMINAL

PIN No.	Symbol	I/O	Description	Remark
1	DC IN	I	Power Supply for Board & Panel	Note 2
6	AV IN 1	I	Composite Video/Audio Signal Input	Note 2
8	AV IN 2	I	Composite Video/Audio Signal Input	Note 2
9	AV OUT	O	Composite Video/Audio Signal Output	Note 2
11	Ear Phone	O	Audio Signal for Earphone	Note 2
12	AU OUT	O	Audio Signal Output	Note 2

NOTE 2 : Refer to Fig 2

4.2 ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min.	Typical	Max.	Unit	Remark
Composite Signal Video	AV IN 1	0.8Vp-p	1.0Vp-p	1.2Vp-p	V	NOTE 2
	AV IN 2	0.8Vp-p	1.0Vp-p	1.2Vp-p	V	NOTE 2
Composite Signal Audio	AV IN 1	-	-	70	mVRMS	NOTE 2
	AV IN 2	-	-	70	mVRMS	NOTE 2
Supply Voltage	DC IN	10.8	12	13.2	V	NOTE 2
Audio Out	AU OUT			0.1	W	NOTE 2 8OHM
Audio Out for Earphone	Earphone	-	-	-	-	NOTE 2

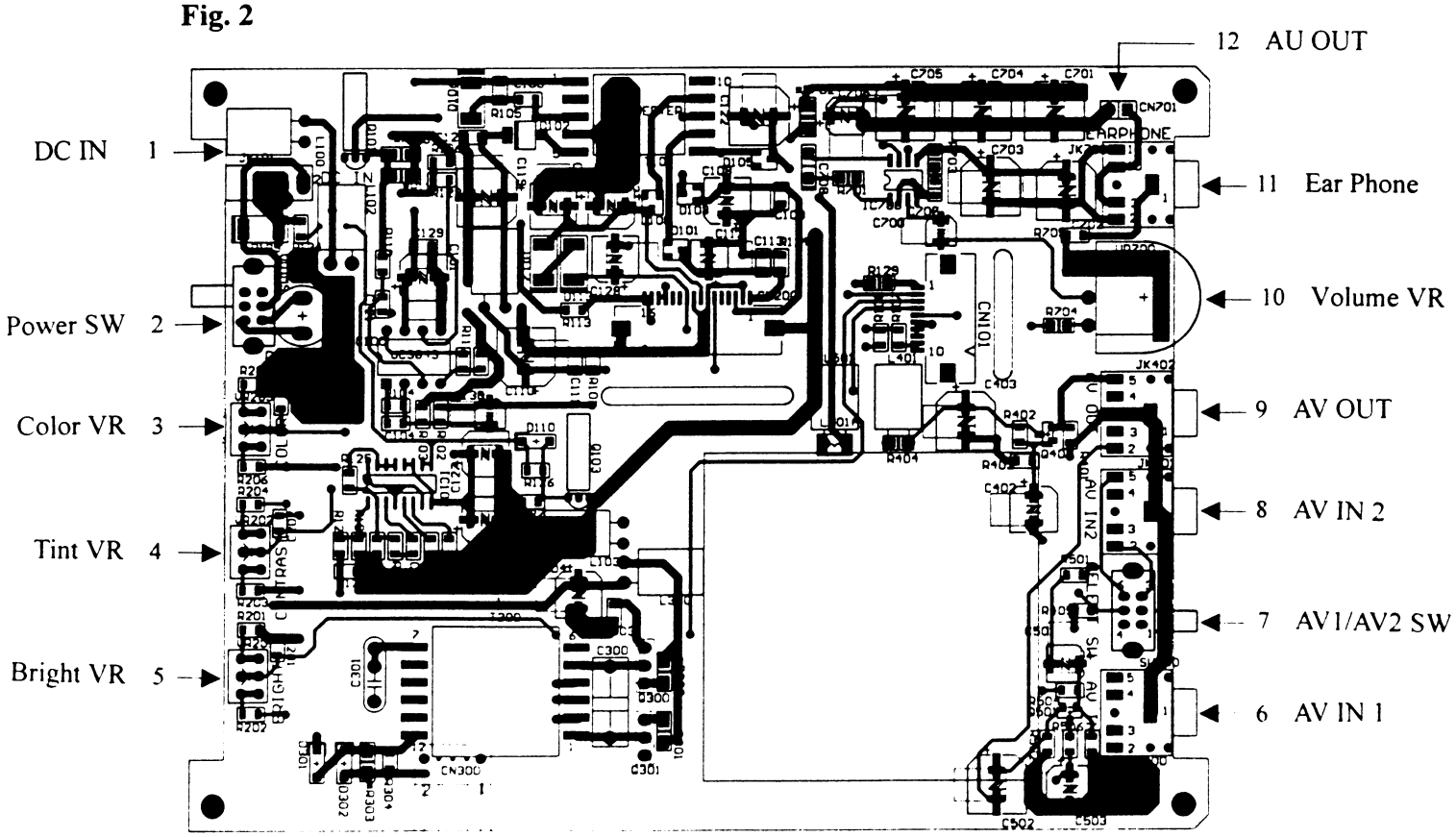
4.3 ALIGNMENT

Symbol	Description	Remark
COLOR VR	for Color Alignment	NOTE 2
TINT VR	for Tint Alignment	NOTE 2
BRIGHT VR	for Brightness Alignment	NOTE 2
VOLUME VR	for Audio Volume Alignment	NOTE 2

4.4 CURRENT CONSUMPTION

Parameter	Condition	Min.	Typ.	Max.	Units	Remark
Current for Unit	Vcc = 12V	-	-	600	mA	

Fig. 2



5. OPTICAL CHARACTERISTICS

5.1 SPECIFICATION

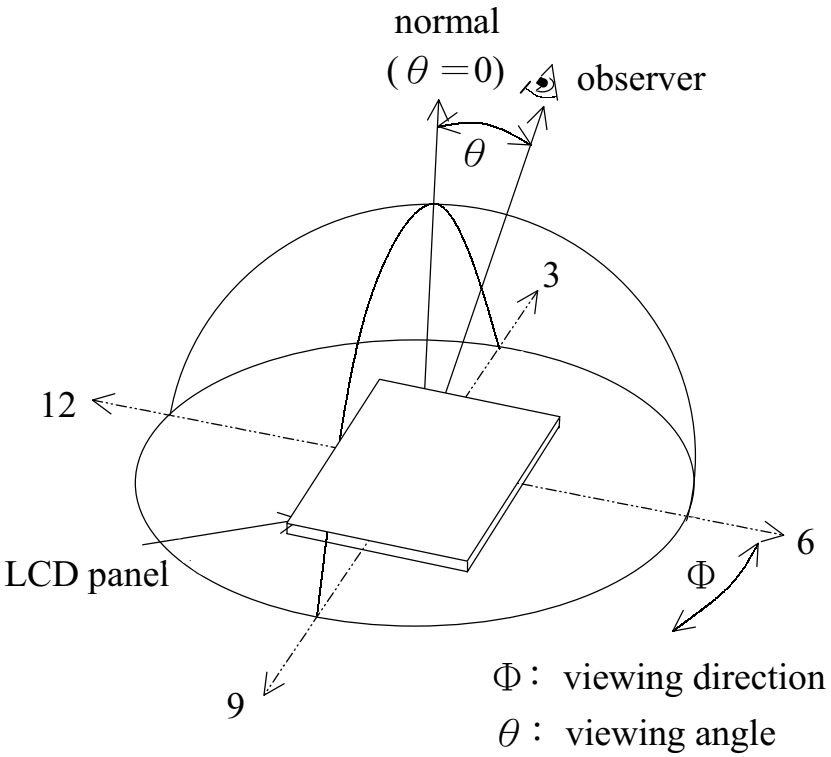
Ta＝25℃

Parameter		Symbol	Condition	MIN.	TYP.	MAX.	Unit	Remarks
Viewing Angle	Horizontal	θ	CR＞10	± 50	± 60		deg	
	Vertical	θ (to 12 o'clock)		10	15		deg	
		θ (to 6 o'clock)		-30	-35		deg	
Contrast Ratio		CR		80	120			Note 1
Response time	Rise	Tr	θ ＝0°		30		ms	
	Fall	Tf			50		ms	
Transmittance	Ratio	T			6.5		%	
Reflectance	Ratio	R			6.0		%	
Brightness				250	300		cd/m^2	Note 2
White Chromaticity		x			.305			Note 2
		y			.350			Note 2
Red Chromaticity		x			.605			
		y			.350			
Green Chromaticity		x			.276			
		y			.635			
Blue Chromaticity		x			.146			
		y			.150			
Lamp Life Time	＋25℃			10,000			hr	
	－30℃			2,000			hr	

$$\text{Note 1 ： CR} = \frac{\text{Luminance when LCD is White}}{\text{Luminance when LCD is Black}}$$

Note 2 ： Topcon BM-7 luminance meter is used in the testing (after 10 minutes operation).

5.2 View Angle Diagram：



6. RELIABILITY TEST

NO	Test Item	Test Condition
1	High Temperature Storage Test	Ta ＝ ＋80℃ , 240 hr
2	Low Temperature Storage Test	Ta ＝ －30℃ , 240 hr
3	High Temperature Operation Test	Tp ＝ ＋60℃ , 240 hr
4	Low Temperature Operation Test	Tp ＝ －10℃ , 240 hr
5	High Temperature & High Humidity Operation Test	Tp ＝ 60℃ , 95％ RH , 240 hr
6	Thermal Cycling (non-operating)	－25℃ →＋25℃ →＋70℃ , 200 Cycle 30 min 5 min 30 min
7	Vibration Test (non-operating)	Frequency ： 10 ～ 55 Hz Amplitude ： 1.5 mm Gravity ： 1 G Sweep time ： 15 min Test period ： 2 hr for each direction of X, Y, Z
8	Shock Test (non-operating)	Max Gravity ： 50 G Direction ： ± X , ± Y , ± Z Cycle ： one cycle／each direction
9	Electrostatic Test	＋200 V , 200 pF (0Ω) one cycle／per terminal

Ta：ambient temperature

Tp：panel temperature