Chaam Tech

User Manual

Model No. COP-170HB

17inches High Bright TFT-LCD LCD Monitor

- Chaam Tech High Bright TFT LCD Panel

- High performance up-Scaling characteristic

- Automatic Scanning

- Wide Viewing Angle, High Speed Response

- Enhanced Video Quality

- Slim Type Design

- Test Pattern for Burn-in & Self Check

FCC RF
INTERFERENCE STATEMENT

NOTE :

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio, TV technical for help.
- Only shielded interface cable should be used.

Finally, any changes or modifications to the equipment by the user not expressly approved by the grantee or manufacturer could void the users authority to operate such equipment,

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1. GENERAL DESCRIPTION

1-1. Overview

Chaam Tech open frame LCD Monitor COP-170HB is a high performance TFT LCD monitor providing high quality image from the analog RGB, DVI-D, composite VIDEO and S-video input. This monitor supports wide range signal input from VGA to SXGA resolution at vertical refresh rate of 60 to 75Hz. It includes integrated signal processing unit, named LSP(LCD Signal Processor), which had all electronic function for user application.

It is designed for industrial use with Auto power on, up scaling performance adequate for low-resolution application and enhanced design margin for reliability
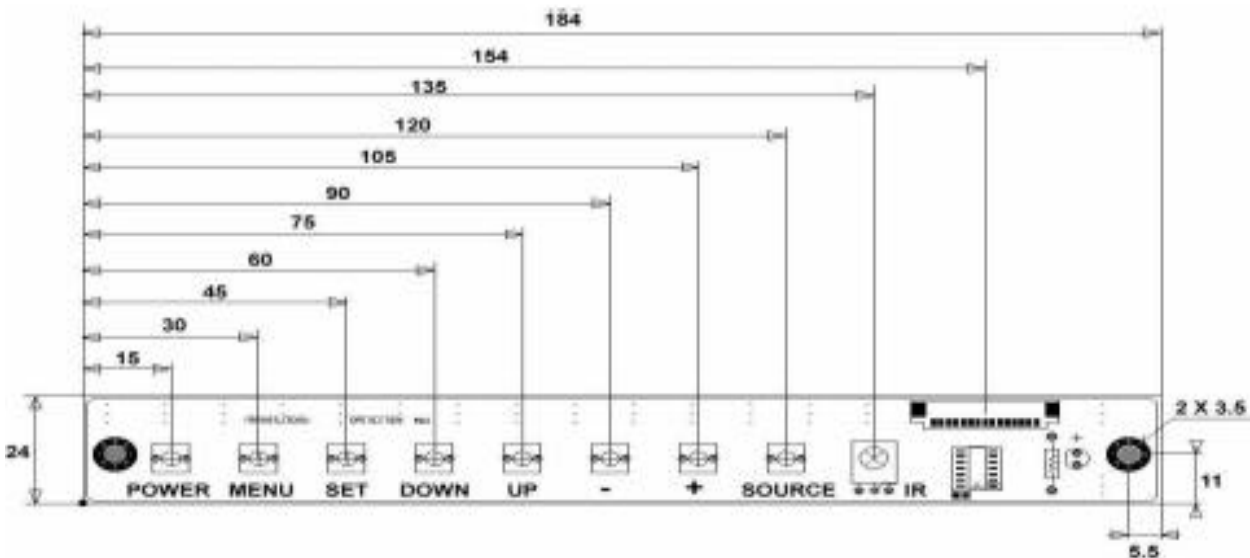
1-2. Quick reference table of Characteristics

Panel **(Chaam Tech)**	Size	17" Diagonal
	Active Display Area	337.9 x 270.3 mm
	Type No.	Chaam Tech OP170BK,OP170WH
	Number of Pixels	1280 (H) x 1024 (V)
	Pixel Arrangement	RGB Vertical Stripe
	Pixel Pitch	0.264mm x 0.264mm
	Color Depth	16.7M True Color
	Surface Treatments	Hard Coating (3H),Haze 44%
	Viewing Angle (CR 10)	170BK(L,R,H,L)--- 89/89/89/89 170WH(L,R,H,L)--- 75/75/75/60
	Contrast Ratio	Typ. 500:1
	Response Time(Typ.)	Rise time(tr) :15ms/10ms (170BK/170WH) Rise time(tr) :10ms/ 3ms (170BK/170WH)
	Average Brightness	Typ. 170BK-750cd/ , 170WH-1,000cd/
	Frame Rate	Typ. 60Hz , Max. 70Hz
	Panel Dimension(WHD)	170BK : 358.5 x 296.5 x 24.80mm 170WH : 358.5 x 296.5 x 24.80mm
	CCFL	12Lamp

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ITEM	DESCRIPTION	REMARKS
Input Signal	Analog RGB DVI-D Composite Video & S-Video DC 15V/4.5A	Option Available Option Available
Resolution	Hor : 15 to 80 KHz Ver : 50 to 77 Hz Analog RGB : VGA/SVGA/XGA/WXGA/SXGA DVI-D : VGA/SVGA/XGA/WXGA/SXGA CVBS & S-VIDEO : NTSC/PAL/SECAM	Special timing available 1280 X 1024 @ 75Hz Max 1280 X 1024 @ 60Hz Max
Regulation (Safety , Ergonomics , EMC)		
Receptacle	DC Power Jack, D-SUB, DVI-D, VHS, SVHS	
Environmental Conditions	Operating : Temperature : 10 to 50 / Humidity : 8 to 80% Storage : Temperature : -20 to 60 / Humidity : 5 to 90%	
Demonstrated MTBF	More than 20,000 hours	
Power	AC Input (Universal) Max. Power dissipation Adapter Rating	AC100~240V @60/50Hz 60W atts 15V 4.5A

Input Signal	Description	Unit	Min	Typical	Max	Remarks
DC input	DC Voltage	Vdc	12	15	18	
	Power Consumption	Watts	43	45	50	for full Option
15Pin D-Sub	Video (SOG)	Vp-p		0.714(1.0)		75 Terminated
	Sync Voltage	Vp-p		5.0		
	Horizontal Frequency	kHz	15	64	80	Depends on Mode
	Vertical Frequency	Hz	50	75	77	Depends on Mode
DVI-D	Digital RGB	mVp-p	150		1560	
		mVdc	150		1260	
	Dot Clock	MHz	25		130	Depends on Mode
CVBS	Video + Sync	Vp-p		1.0		
S-VHS	LUMA Signal Input	Vp-p	0.339		0.961	
	CHROMA Signal Input	Vp-p	0.339		0.961	

2. USER CONTROL & OSD

2-1. Key Control Board

2.2 Key Name and Function

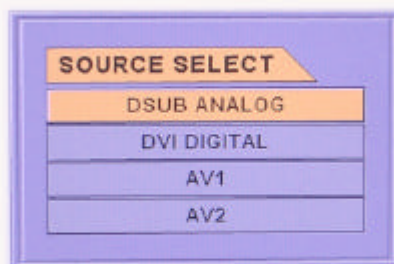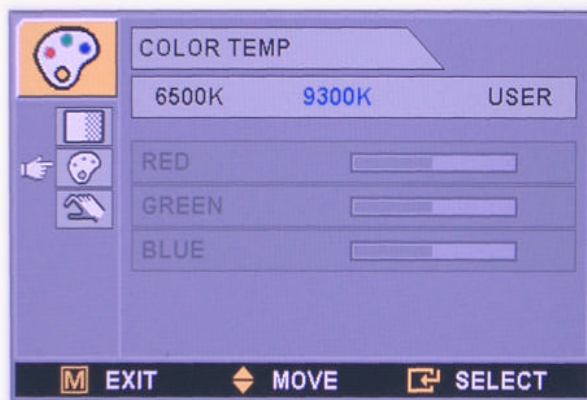| Key Name	Description
Power	Turns ON/OFF the system
Menu	Activates the OSD menu or goes to previous menu
set	-When the OSD menu is off, press more than 3 seconds : Performs "Auto-adjustment" function -When the OSD menu is on : Selects the highlighted icon that user wants
Down	Moves the highlight icon up to the function that user wants
up	Moves the highlight icon down to the function that user wants
-	Decreases the adjustment of the selected function
+	Increases the adjustment of the selected function
Source	Selects the Input Signal among analog RGB, Digital DVI, CVBS and S-VHS
IR	Receives the signal from Remote Control

Accessing the menu system

1.With the OSD off, push the Menu button to activate the main OSD menu.

2. Use the **Up** or **Down** buttons to move from one function to another. As you move from one icon to
   another, the function name changes to reflect the function or group of functions represented by that icon.
   Please refer to the following clause on the next page to view a complete list of all of the functions
   available for the driver board.

3. Press the Set button once to activate the highlighted function, use the **Up** or **Down** buttons to select the
   functions

4. After selecting a function, use the **-** or + buttons to make optimum adjustments. The setting bar moves
   and the numeric value indicator changes to reflect your adjustments.
   NOTE: The numeric value indicator is provided as a point of reference only and has nothing to
   do with a real measurement.

5. Press the **Menu** button once to return to the main menu to select another function or press twice to exit
   from the OSD.

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2.3 OSD Adjustment

menus	Sub - menus	Function DescriPtions
Adjustment(PC) Adjustment is used to fine tune and get the best image by removing noises that creates unstable images with jitters and Shimmers.	Brightness	Adjusts the brightness of video.
	Contrast	Adjusts the contrast of video.
	Clock	Removes the noises. When frequency value is wrong, the image has horizontal lines especially in 1 dot on and off.
	Phase	Removes the noises. When phase value is wrong, the image has vertical lines especially in 1 dot on and off
	Auto Adjust	"Auto adjustment" allows the monitor to self-adjust to the incoming video signal. The value of phase, frequency and position are adjusted automatically.
Adjustment(DVI) This function is active if you select a digital DVI source	Contrast	Adjusts the contrast of image.
	Brightness	Adjusts the brightness of image.
Adjustment(Video) This function is active if you select an input source other than PC.(DVD,VCR)	Brightness	Adjusts the brightness of video.
	Contrast	Adjusts the contrast of video.
	Color	Changes the richness of color.
	Tint	Changes the tone of color.
	Sharpness	Adjusts the sharpness of video image.
Color The color can be changed from redish to bluish white.	6500°K	Redish white.
	9300°K	Bluish white.
	User	User customizable.
Setup Setup is used to adjust OSD menu information and image.	Image	-H Position : Adjusts the horizontal position of the image. -V Position : Adjusts the vertical position of the image. -GAMMA : Bypass -Information : Displays current display mode.
	OSD	-Language : English, Germany, French, Italy, Spanish. -Color : Changes the opaqueness of the OSD background. -Position : Moves the OSD Window. -Duration : Indicates time until the OSD Menu will disappear after adjusting the menu. -OSD Lock : Avoids OSD control except HOT key.
	Mode Recall	Changes the image information to factory outgoing status.
	Backlight	Changes the brightness of image by controlling the backlight of panel.
	Auto sleep	Goes to soft power off after 10 minutes when input cable is disconnected.

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2-4. OSD Menu Screen

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3. CONNECTOR PIN DESCRIPTIONS

3-1. DC Input

Part No.	Pin No.	Description	Remarks
DJ023	1	Vcc(15V/4.5A)	
	2	GND	
	3	GND	

3-2. DVI-D Input (Option Available)

Part No.	Pin No.	Description	Remarks
SD74320-003	1	TMDS DATA 2-	
(MOLEX)	2	TMDS DATA 2+	
	3	TMDS DATA 2/4 Shield	
	4	TMDS DATA 4- (NC)	
	5	TMDS DATA 4+ (NC)	
	6	DDC Clock	
	7	DDC Data	
	8	NC	
	9	TMDS DATA 1-	
	10	TMDS DATA 1+	
	11	TMDS DATA 1/3 Shield	
	12	TMDS DATA 3- (NC)	
	13	TMDS DATA 3+ (NC)	
	14	5V	
	15	GND	
	16	Hot Plug Detect	
	17	TMDS DATA 0-	
	18	TMDS DATA 0+	
	19	TMDS DATA 0/5 Shield	
	20	TMDS DATA 5- (NC)	
	21	TMDS DATA 5+ (NC)	
	22	TMDS DATA Clock Shield	
	23	TMDS Clock+	
	24	TMDS Clock-	

3-3. S-Video Input (Option Available)

Part No.	Pin No.	Description	Remarks
DJ-M404	1	GND	
	2	GND	
	3	CHROMA	
	4	LUMA	
	5	GND	

3-4. CVBS Input (Option Available)

Part No.	Pin No.	Description	Remarks
DC003Y	1 2 3	Composite Video GND GND	

3-5. Analog RGB Input

Part No.	Pin No.	Description	Remarks
DB15HD	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	RED GREEN BLUE GND GND (DDC RETURN) GND-RED GND-GREEN GND-BLUE NC GND-SYNC/SELF TEST GND DDC DATA HORIZONTAL SYNC VERTICAL SYNC DDC CLOCK	

3-6. Output to Key Control

Part No.	Pin No.	Description	Remarks
12505WR15P (Yeonho)	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	5V POWER MENU SET DOWN UP MINUS PLUS SOURCE LED NC IR GND GND GND	 Option

4. STANDARD DISPLAY MODE

Resolution / Timing Item	640x350 @70Hz	720x400 @70Hz	640x480 @60Hz	640x480 @75Hz	800x600 @60Hz	800x600 @75Hz	1024x768 @60Hz
Pixel Clock (MHz)	25.175	28.324	25.175	31.500	40.000	49.500	65.000
Sync Polarity(H/V)	P/N	N/P	N/N	N/N	P/P	P/P	N/N
Scaning Type	Progressive	Progressive	Progressive	Progressive	Progressive	Progressive	Progressive
-Hor Frequency(kHz)	31.468	31.469	31.469	37.500	37.879	46.875	48.363
-Period(us)	31.778	31.780	31.778	26.667	26.400	21.333	20.677
-Active time(us)	25.418	25.420	25.422	20.317	20.000	16.162	15.754
-Front porch(us)	0.638	0.640	0.636	0.508	1.000	0.323	0.369
-Sync width(us)	3.823	3.810	3.813	2.032	3.200	1.616	2.092
-Back porch(us)	1.909	1.906	1.907	3.810	2.200	3.232	2.462
-Ver Frequency(Hz)	70.090	70.082	59.940	75.000	60.317	75.000	60.004
-Period(ms)	14.268	14.270	16.683	13.333	16.579	13.333	16.666
-Active time(ms)	11.122	12.710	15.253	12.800	15.840	12.800	15.880
-Front porch(ms)	0.381	0.413	0.064	0.027	0.026	0.021	0.062
-Sync width(ms)	0.064	0.064	0.064	0.080	0.106	0.064	0.124
-Back porch(ms)	1.111	1.080	0.794	0.427	0.626	0.448	0.600

Resolution / Timing Item	1024x768 @75Hz	1280x1024 @60Hz	1280x1024 @75Hz	1152x864 @60Hz	1152x864 @75Hz		
Pixel Clock (MHz)	78.750	108.50	135.00	80.000	108.00		
Sync Polarity(H/V)	P/P	P/P	P/P	P/P	P/P		
Scaning Type	Progressive	Progressive	Progressive	Progressive	Progressive		
-Hor Frequency(kHz)	60.023	63.974	79.976	54.348	67.500		
-Period(us)	16.660	15.631	12.504	18.400	14.815		
-Active time(us)	13.003	11.797	9.481	14.400	10.667		
-Front porch(us)	0.203	0.590	0.119	0.400	0.593		
-Sync width(us)	1.219	1.180	1.067	1.200	1.185		
-Back porch(us)	2.235	2.065	1.837	2.400	2.370		
-Ver Frequency(Hz)	75.029	60.013	75.025	60.053	75.029		
-Period(ms)	13.328	16.663	13.329	16.652	13.333		
-Active time(ms)	12.795	16.006	12.804	15.898	12.800		
-Front porch(ms)	0.017	0.016	0.013	0.017	0.015		
-Sync width(ms)	0.050	0.047	0.038	0.055	0.044		
-Back porch(ms)	0.466	0.594	0.475	0.681	0.474		