PCM8210

10.4" Industrial Panel PC
5th Gen. Core i5 5200U 2.2GHz CPU
Full IP67 Rated Enclosure

User Manual

ACNODES

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IMPORTANT SAFETY INSTRUCTIONS

1. Please read these instructions carefully before using the product and save for later reference.

2. Follow all warnings and instructions marked on the product.

3. Our military devices complied to ITAR – FREE for import/export to US territory.

4. All products comply to ROHS and REACH regulation.

5. No halogen or toxic metal contains or generated toxic material in use.

6. Cleaning notice: the product with a damp soft cloth. Do not use liquid or aerosol cleaners as it may cause permanent damage to the screen.

7. Do not use this product near water.

8. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.

9. Slots and openings in the cabinet and the back or bottom are provided for ventilation; to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. The openings should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation is provided.

10. This product should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.

11. Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.

12. If an extension cord is used with this product, make sure that the total of the ampere ratings on the products plugged into the extension cord does not exceed the extension cord ampere rating. Also make sure that the total of all products plugged into the wall outlet does not exceed 15 amps.

13. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on the product.

14. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks and will void the warranty. Refer all servicing to qualified service personnel.

15. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

    - When the power cord or plug is damaged or frayed.

    - If liquid has been spilled into the product.

    - If the product has been exposed to rain or water.

    - If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.

    - If the product has been dropped or the cabinet has been damaged.

    - If the product exhibits a distinct change in performance, indicating a need for service.

CAUTION		
Read manual prior to installing the product. The operation of products depends on you reading and following the information in this manual. Re-check your work prior to operating the product.		
EVENT	**EFFECT**	**PREVENTION**
	Sunlight shines directly will cause the panel damage.	You should avoid placing the product under direct sunlight.
	If the product is close to the wet ground such as grassplot, the moisture between panel and glass will make the product malfunction.	For None-IP level proof models, please do not splash water or put into water from all direction.
	Avoid settling the product close to fire or explosive zones	All components comply to LFH definition, no toxic fumes generated when the device put in the fire
	Products comply to ROHS and REACH regulations	

Contents

1. Getting Started

1.1. About the Rugged display

This rugged product adopts a high quality TFT LCD panel. (Options for high brightness, optical bonding features.) It is designed to fit to the harsh environment and requirements of today's business in the heavy duty / military applications.

The model can separated to 2 categories:

Basic Configuration: Standard Connectors / Front IP65

Advanced Configuration: D38999 Connectors / Full IP65 or IP67

Besides, there would be more advanced options on LCD display or on its specifications.

1.2. Notice

a.   Do not touch the LCD panel surface with sharp or hard objects.

b.   Do not use abrasive cleaners, waxes or solvents for cleaning, use only a dry or damp, soft

cloth.

c.   Use only with a high quality, safety-approved, AC/DC power adapter.

If any items are missing or damaged, please contact your dealer immediately.

1.3. Order Option

a.   LCD

Brightness Enhancement	1,000 nits sunlight readable high brightness
Touch Screen	5-wire resistive touch
Optical Bonding	Optical bonded by panel and touch or glass

b.   Protective Glass

AR protective glass	Anti-reflective glass in front
ITO coating glass	ITO conductive glass for MIL-STD-461F
Heater glass	Heater glass for low temperature (-40degC)
Mesh filter	Mesh filter for MIL-STD-461F

c.   Connectors

MIL. connectors	D38999 MIL. connectors
Connector Position	Down side or Bottom side
USB Port	USB TypeA port for USB Drive

d.   System Protection

Heater Board	Heater board for low temperature (-40degC)
Wide range DC Input	9~36V DC Input (reversed current protection)
IP Level	Full IP65 or IP67

With different option which might impact the parameter in the specification should be double checked by your sales representative to acquire the correct parameter.
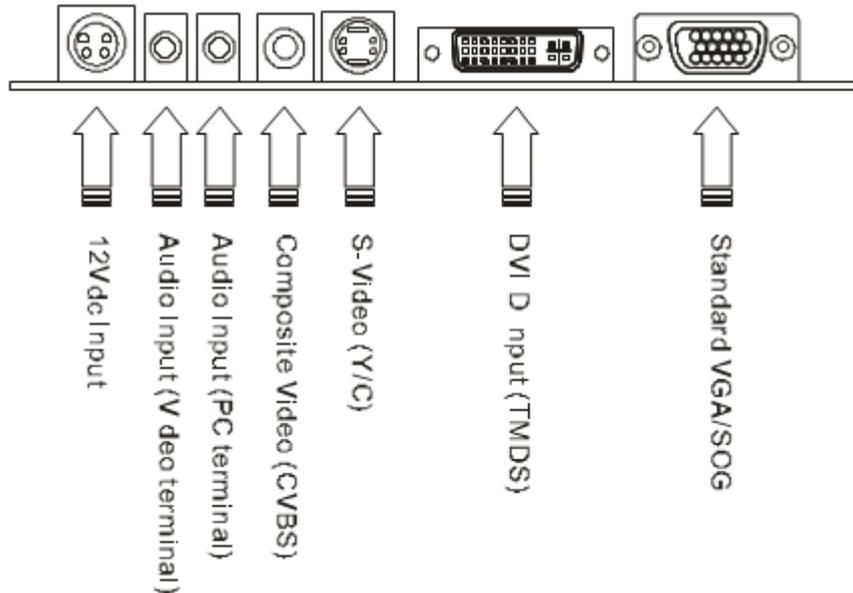The major impact would be on, i.e. power consumption, LCD brightness, operating temperature…etc.

1. Input / Output Overview

1.1. For Non-Military Connectors

The default output signal is VGA for the main display and S-Video for PIP display. The LCD output can be configured to use any of the available input formats (VGA, DVI, S-Video, and Composite).

1.2. Typical Type

12Vdc Input

Audio Input (Video terminal)

Audio Input (PC terminal)

Composite Video (CVBS)

S-Video (Y/C)

DVI D nput (TMDS)

Standard VGA/SOG

Power cable connection:

Connect the power cord to the AC outlet, and connect the power to the monitor through the AC/DC adapter.

VGA cable connection:

Plug 15-pin VGA signal cable to the VGA connector in the rear of PC system, and plug the other end to the monitor. Secure cable connectors with screws.

DVI cable connection:

Plug DVI signal cable to the DVI connector in the rear of PC system, and plug the other end to the monitor. Secure cable connectors with screws.

1.3. Military (D38999) Type

Type A: Connectors at down side
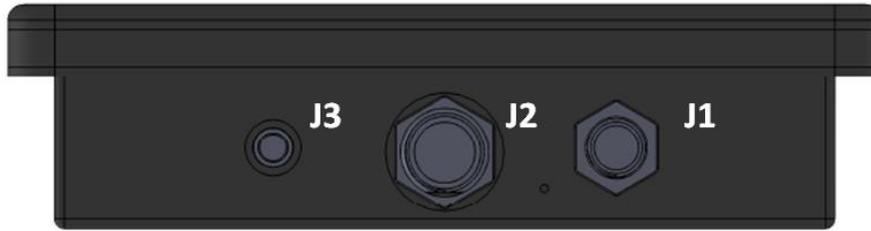
The default signal is VGA (J2) and power input (J1)
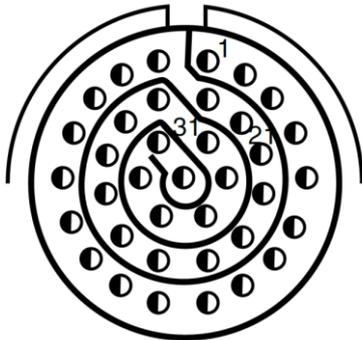
J1: Power Input (D38999/24WA98PN)
Wide Range DC Input is default definition in military LCD monitors, connect the power cord to the DC outlet, and connect the power to the monitor through pins as below

J1	Power
A	VCC+
B	VCC-

J2: Signal Pins (D38999/24WD35PN)   (Default: VGA, Optional: VGA+DVI)
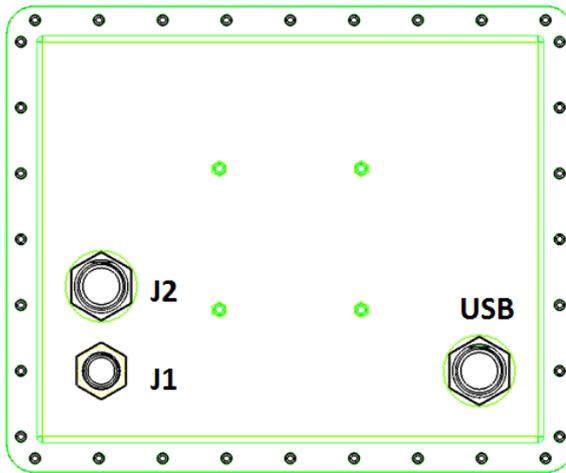Default is VGA Input, with additional one DVI-D could be for optional.

J2	VGA	J2	DVI-D
J2 Pin	**Pin Name**	**J2 Pin**	**Pin Name**
1	ANALOG RED INPUT	15	RXC-1N
18	ANALOG GROUND	28	RXC+1N
2	ANALOG GREEN INPUT	33	GND
19	ANALOG GROUND	13	DVI 5V
3	ANALOG BLUE INPUT	23	GND
20	ANALOG GROUND	12	DVI CAB
4	DDC SERIAL DATA	11	DVI SDA
17	H-SYNC	10	DVI SCL
30	V-SYHC	35	RX0-IN
31	DDC SERIAL CLOCK	34	RX0+IN
21	DIGITAL GROUND-	24	GND
32	VGA DETECT	14	RX1-IN
		27	RX1+IN
		8	GND
		25	RX2-IN
		26	RX2+IN
		9	GND

J3: Video Input (BNC)
This is a BNC connector for NTSC/PAL video input signal.

Type B: Connectors at Rear side
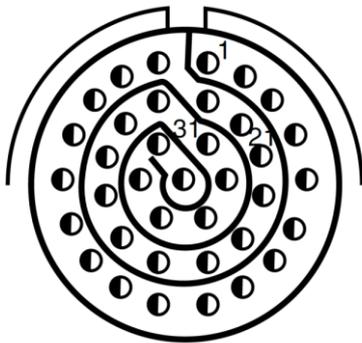

J1: Power Input (D38999/24WA98PN)
Wide Range DC Input is default definition in military LCD monitors, connect the power cord to the DC outlet, and connect the power to the monitor through pins as below

J1	Power
A	VCC+
B	VCC-

J2: Signal Pins (D38999/24WD35PN)   (Default: VGA, Optional: VGA+DVI)
Default is VGA Input, with additional one DVI-D could be for optional.

J2	VGA	J2	DVI-D
J2 Pin	Pin Name	J2 Pin	Pin Name
1	ANALOG RED INPUT	15	RXC-1N
18	ANALOG GROUND	28	RXC+1N
2	ANALOG GREEN INPUT	33	GND
19	ANALOG GROUND	13	DVI 5V
3	ANALOG BLUE INPUT	23	GND
20	ANALOG GROUND	12	DVI CAB
4	DDC SERIAL DATA	11	DVI SDA
17	H-SYNC	10	DVI SCL
30	V-SYHC	35	RX0-IN
31	DDC SERIAL CLOCK	34	RX0+IN
21	DIGITAL GROUND-	24	GND
32	VGA DETECT	14	RX1-IN
Option	**USB (for touch)**	27	RX1+IN
5	**D+**	8	GND
6	**D-**	25	RX2-IN
7	**Vcc**	26	RX2+IN
22	**GND**	9	GND

J3: Video Input (BNC) (Optional)
This is a BNC connector for NTSC/PAL video input signal.

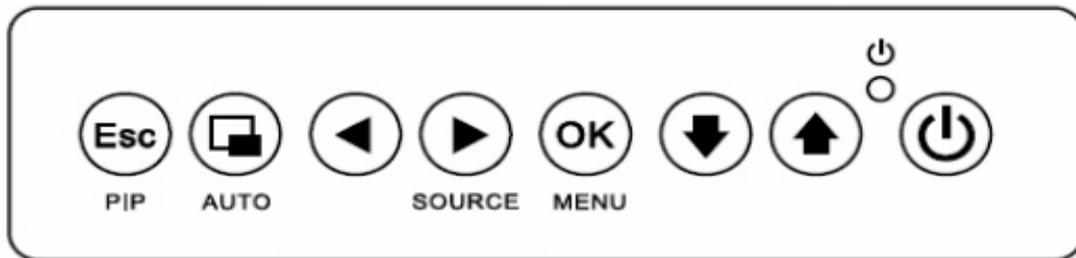**USB: USB Connector for USB Type A Drive (D38999/USBFTV71G w/ cap)**
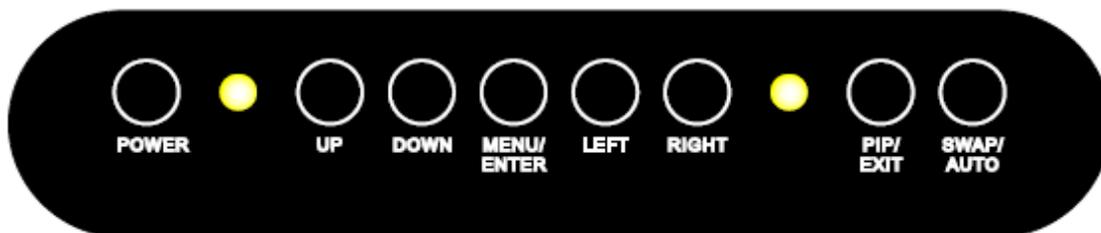
2. Using the LCD Monitor

2.1.OSD Key Definition

There are two types OSD keypad,

Type A

Type B

POWER

    Initiates power-up sequence from low power mode or enters low power mode from normal

    operation.

AUTO

    Perform Auto Adjustment

Esc (EXIT)

    i.   When OSD is enabled, it returns to the previous menu level or closes the OSD.

OK/MENU (ENTER)

    ii.   When OSD is disabled, it displays the OSD Main Menu.

    iii.   When OSD is enabled, it confirms a selection.

LEFT ◀

    Moves left in the menu or bar

RIGHT ▶

    Moves right in the menu or bar
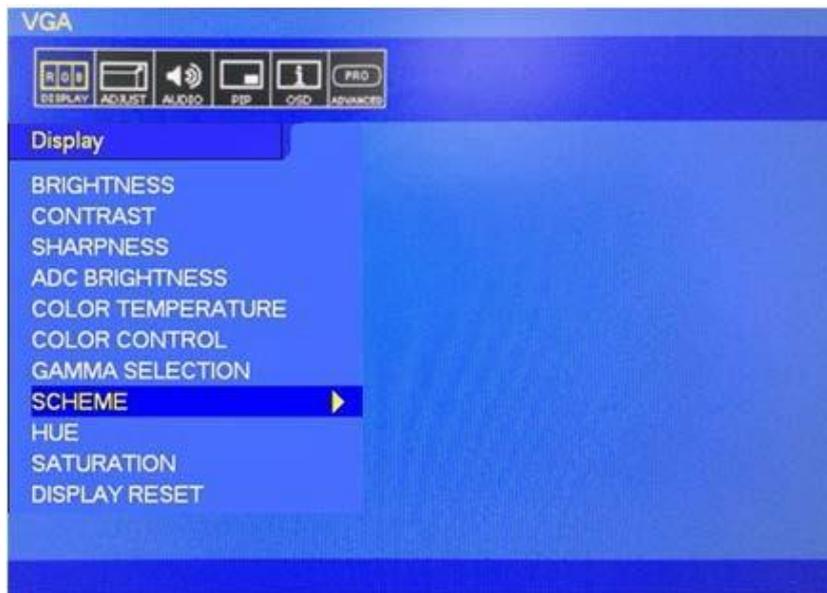
UP ▲

    iv. Selects the previous item in the Menu.

DOWN ▼

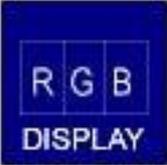   v. Selects the next item in the Menu.

2.2. OSD Hot Keys (Auto)

Function	Hot Key
Main source	Press "►" to select the main source
Volume	Press "◄" to the volume bar, and press "◄" " ▶" to adjust the volume
Auto adjustment	Press "AUTO" to perform auto adjustment

2.3. OSD Menu Navigation

OSD menu

2.3.1. Display

OSD icon	Sub menu	Settings	Note
R G B DISPLAY	**BRIGHTNESS**	**slider bar**	
	Adjusts the overall image and background brightness. Press "◄" or "►" to adjust.		
	CONTRAST	**slider bar**	
	Adjusts the image brightness in relationship to the background. Press"◄" or " ▶" to adjust.		
	SHARPNESS	**slider bar**	
	Adjusts the crispness of the image. Press"◄" or "►" to adjust.		
	ADC BRIGHTNESS	**slider bar**	

	*VGA CHANNEL ONLY		
	Adjusts the ADC brightness. Press"◀" or " ▶" to adjust.		
	COLOR TEMPERATURE	**USER/6500K/9300K**	
	Adjusts the color temperature of the entire screen. A low color temperature will make The screen reddish. A high color temperature will make the screen bluish.		
	COLOR CONTROL	**R slider bar**	
		G slider bar	
		B slider bar	
		Y slider bar	
		M slider bar	
		C slider bar	
	Adjusts the levels of the Red, Green, Blue, Yellow, magenta, and cyan. Press"◀" or "▶" to adjust.		
	GAMMA SELECTION	**@NATIVE**	
		@1.8	
		@2.2	
	Select a display gamma value for best picture quality.		
	SCHEME	**USER**	
		GAME	
		SPORT	
		VIVID	
		CINEMA	
	Select scheme for different default setting combination.		
	DISPLAY RESET	**YES/NO**	
	Resets the following settings within the DISPLAY menu back to factory setting:		

2.3.2. Adjust

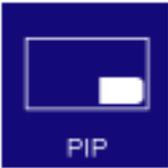|			
	AUTO SETUP *VGA CHANNEL ONLY	**PRESS YES TO AUTO SETUP**	
	Automatically adjusts screen size, H position, V position, Clock, Clock Phase		
	AUTO ADJUSTMENT *VGA CHANNEL ONLY	**ON/OFF**	
	H Position, V Position and Clock Phase are adjusted automatically upon power on.		
	H POSITION *VGA CHANNEL ONLY	**slider bar**	
	Controls the horizontal position of the image within the Display area of the LCD. Press + to move right. Press - to move left.		
	V POSITION *VGA CHANNEL ONLY	**slider bar**	
	Controls the vertical position of the image within the Display area of the LCD. Press + to move up. Press - to move down.		
	CLOCK *VGA CHANNEL ONLY	**slider bar**	
	Press + to expand the width of the image on the right of the screen. Press - to narrow the width of the image on the left.		
	PHASE *VGA CHANNEL ONLY	**slider bar**	
	Adjusts the visual "noise" on the image.		
	WHITE BALANCE *VGA CHANNEL ONLY	**YES/OFF**	
	Perform the white balance		
	SCALING	**@ ASPECT**	
		@ OFF	
		@ FULL	
	Adjust the image scaling setting		
	ADJUST RESET	**YES/NO**	
	Resets the following settings within the ADJUST menu back to factory setting:		
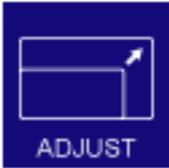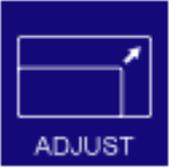
2.3.3. Audio

	VOLUME	slider bar	
	Audio Input	slider bar	
	MUTE	ON/OFF	
	AUDIO RESET	YES/NO	
	Resets "AUDIO" settings back to factory settings.		

2.3.4. PIP (Picture in picture)

	PIP SOURCE	VGA	
		DVI	
		Composite	
		S-Video	
	PIP MODE	@OFF	
		@LARGE PIP	
		@SMALL PIP	
		@SIDE BY SIDE ASPECT	
		@SIDE BY SIDE FULL	
	Selects the size of the sub-picture used in Picture-in-Picture (PIP) mode.		
	PIP POSITION	slider bar	
		slider bar	
	Determines where the PIP appears on the screen.		
	PIP RESET	YES/NO	
	Resets the following settings within the PIP menu back to factory setting		

*PIP mode selection guide

X: not support   V : support mode

Sub Main	Composite Video	S-Video	VGA	DVI
Composite Video	X	X	V	V
S-Video	X	X	V	V
VGA	V	V	X	V
DVI	V	V	V	X

2.3.5. OSD settings

	OSD TURN OFF	**slider bar**	
	Turns off the OSD after a period of inactivity. The preset choices are 0-60 seconds.		
	OSD POSITION	**H - slider bar**	
		V - slider bar	
	Determines the location where the OSD appears on the screen.		
	OSD TRANSPARENCY	**@OFF**	
		@TYPE1	
		@TYPE2	
	set the transparency level of OSD		
	OSD Rotated	**@OFF**	
		@90	
		@270	
	Set to rotate the OSD menu		
	MONITOR INFORMATION	**Version**	
		Panel Resolution	
		Main Resolution	
		PIP Resolution	
	Show BIOS version & resolution info.		
	OSD RESET	**YES/NO**	
	Resets the following settings within the OSD menu back to factory setting		

2.3.6. Advanced settings

	CHANNEL SELECT	**VGA**	
		DVI	
		HDMI	
		DP	
	Select the input signal source		
PRO ADVANCED	**FLIP**	**@OFF**	
		@H-FLIP	
		@V-FLIP	
		@HV-FLIP	
	Adjust the flip settings		
	BRIGHTNESS MIN	**Slide bar**	
	ADVANCED RESET	**YES/NO**	
	Resets the following settings within the ADVANCED menu back to factory setting		
	FACTORY RESET	**YES/NO**	
	Resets OSD options back to factory settings EXCEPT FOR: CHANGE SECURITY PASSWORD and SECURITY PASSWORD.		

3. Cleaning the Monitor

1. Make sure the monitor is turned off.
2. Never spray or pour any liquid directly on the screen or case.
3. Wipe the screen with a clean, soft, lint-free cloth. This removes dust and other particles.
4. The display area is highly prone to scratching. Do not use ketone type material (ex. Acetone), Ethyl alcohol, toluene, ethyl acid or Methyl chloride to clear the panel. It may permanently damage the panel and void the warranty.
5. If it is still not clean enough, apply a small amount of non-ammonia, non-alcohol based glass cleaner onto a clean, soft, lint-free cloth, and wipe the screen.
6. Don't use water or oil directly on the monitor. If droplets are allowed to drop on the monitor permanent staining or discoloration may occur.

4. Disclaimer

We do not recommend using any ammonia or alcohol-based cleaners on the monitor screen or case. Some chemical cleaners have been reported to damage the screen and/or case of the monitor. Seller will not be liable for damage resulting from the use of any ammonia or alcohol-based cleaner.

5. Troubleshooting

If your monitor fails to operate correctly, consult the following chart for possible solution before calling for repairs:

Condition	Check Point
1. The picture does not appear	● Check if the signal cable is firmly seated in the socket. ● Check if the Power is ON at the computer ● Check if the brightness control is at the appropriate position, not at the minimum.
2. The screen is not synchronized	● Check if the signal cable is firmly seated in the socket. ● Check if the output level matches the input level of your computer. ● Make sure the signal timings of the computer system are within the specification of the monitor. ● If your computer was working with a CRT monitor, you should check the current signal timing and turn off your computer before you connect the VGA Cable to this monitor.
3. The position of the screen is not in the center	● Adjust the H-position, and V-position, or Perform the Auto adjustment.
4. The screen is too bright (too dark).	● Check if the brightness or contrast control is at the appropriate position, not at the Maximum (Minimum).
5. The screen is shaking or waving	● Perform the Auto adjustment. ● Moving all objects which emit a magnetic field such as motor or transformer, away from the monitor. ● Check if the specific voltage is applied. ● Check if the signal timing of the computer system is within the specification of monitor.
6. VGA signal got noise when using PIP function	● Change PIP mode again.

If you are unable to correct the fault by using this chart, stop using your monitor and contact your distributor or dealer for further assistance