


MONITOR DISPLAY MODULE

Product Specification

Customer	Standard		
Product Number	DM-215BD-MPGR01		
Ordering Part Number	DM-215BD-MPGR01		
Customer Approval		Date:	

Internal Approvals		
Product Mgr	Doc. Control	Electr. Eng.
Bazile Peter	Bazile Peter	Filip Kaczorowski
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Revision Record

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1.0 General Descriptions

1.1 Introduction

This is a 21.5" bar cut Monitor, 3840 x 1080 resolution, 1.07B with 10 bit colour, 178-degree wide viewing angle, providing high image from the analogue DP.

1.2 Main Features

Item	Contents
Screen Size	21.55"
Display Format	3840(H) x 1080(V)
Colour	1.07B colours 10 bits
Overall Dimensions	547.60 (W) × 178.97 (H) × 47.00 (D) mm
Active Area	527.40 (W) x 148.23 (H) mm
Pixel Pitch	0.13725 (H) x 0.13725 (W) mm
Viewing Angle	L/R: 89/89° U/D: 89/89°
Contrast Ratio	1000: 1 (Typ.)
Brightness	300 cd/m ²
I/O	2 x HDMI, 1 x DP, 1 x DP TX
Backlight	LED
Response Time	14 ms (Rising + Falling)
Mechanism	Bezel Frame (Chassis Frame)
Plug & Play	DDC2B (VESA Standard)
Operating temperature	0°C ~ +50°C
Storage temperature	-20°C ~ +60°C

1.3 eDP Output Clock

Item	Symbol	Max.	Unit
Unit Interval for high bit	HBR	2.7	GHz
Unit Interval for high bit	HBR2	5.4	GHz

1.4 Input Resolution [HDMI, DP]

Item	Contents
Recommended Resolution	3840x2160@ 60Hz
Supported Input Resolution	640x480@60/72/75 Hz 800x600@56/60/72/75 Hz 1024x768@60/70/75 Hz 1280x1024@60/75 Hz 1920x1080@60 Hz 3840x2160@60 Hz

1.5 Input Signal

Item	Contents						
HDMI	Swing Voltage: $400\text{mV} \leq V_{\text{swing}} \leq 600\text{mV}$ Termination Resistance: $50 \pm 10\%$ ohm						
DP	Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
	Unit Interval for high bit rate (5.4Gbps / lane)	UI-HBR2	-	185	-	ps	
		Amplitude	0	-	0.5	%	
	Link Clock Down Spreading	Frequency	30	-	33	kHz	
	Differential peak-to-peak voltage at Sink side connector	$V_{\text{RX_DIFFp-p}}$	-	-	1.38	V	
	EYE width at Sing side connector	$T_{\text{RX_EYE-CONN}}$	0.38	-	-	UI	
	Lane-to-Lane skew	$L_{\text{RX_SKEW-INTER-PAIR}}$			4UI+500ps		
	Lane intra-pair skew	$L_{\text{RX_SKEW-INTER-PAIR}}$	-	-		ps	
AC Coupling Capacitor	$C_{\text{SOURCE_ML}}$	75			nF	Source side	

In HDMI mode, the latest HDMI2.0 (6GHz) supported HDMI (2.0), up to 4096x2160@60Hz, Display Port (1.2), up to 4096x2160@60Hz

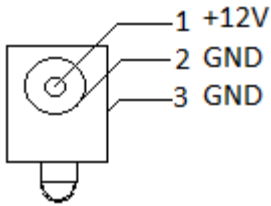
1.6 Output Signal

Output Signal Connector

- DP: DP-TX

1.7 Power Supply Rating

Power Input (DC Jack, Ø2.5)



Item	Contents
Power Consumption	20.3 Watt (Typ.) @Set
DC Output	12Vdc 5.0A
AC input	100~240Vac

1.8 User Controls

Item	Contents
OSD Key Button	5 Key
OSD Language	English

1.9 Key Button Function



Button	Function
Power	Turns On/Off the system
Menu	Display the OSD menu on no menu status Select highlighted function
EXIT	Exit a menu of sub-menu
Up	Select next menu item Increase slider value
Down	Select previous menu item Decrease slider value

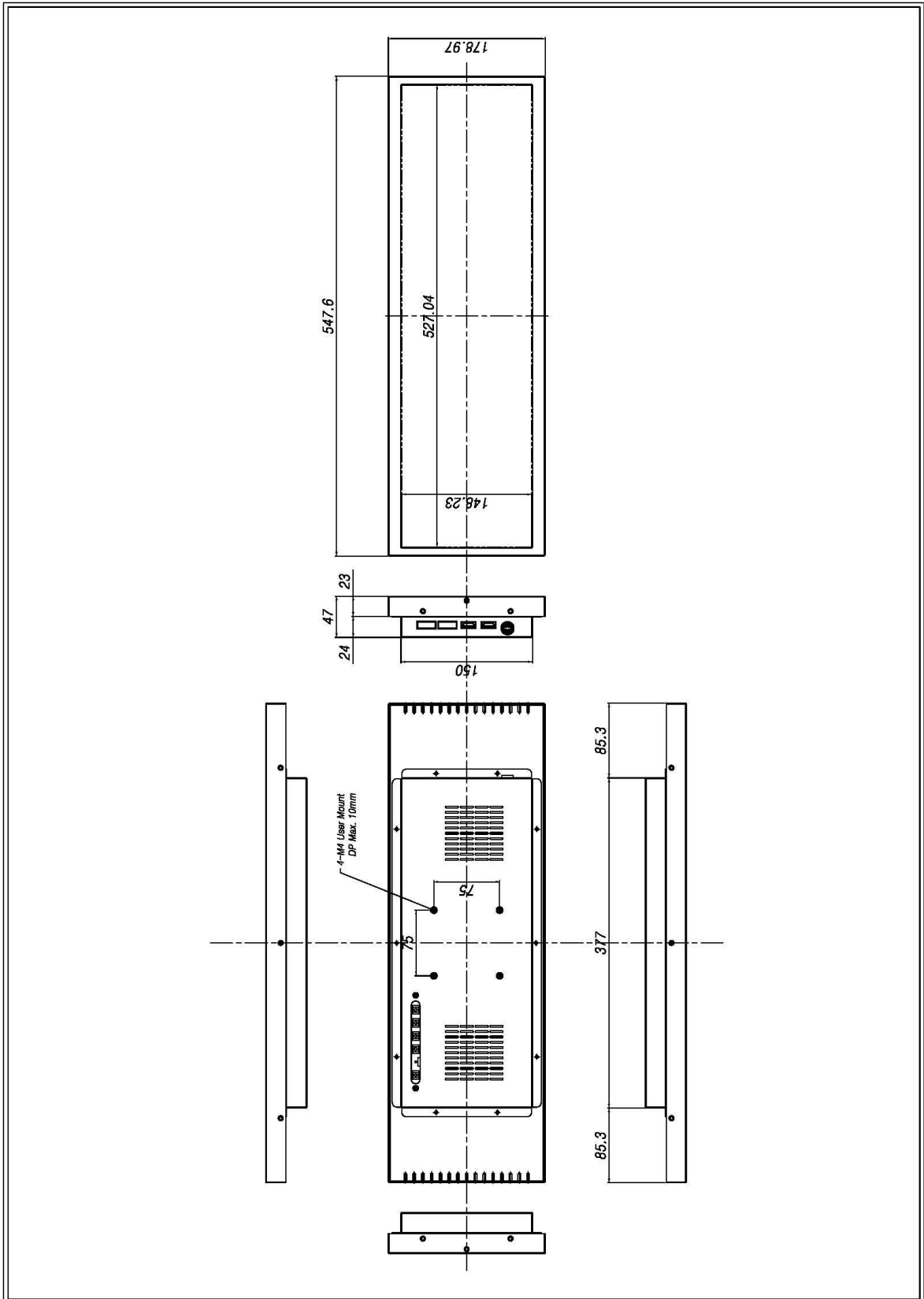


2.0 Mechanical Specification

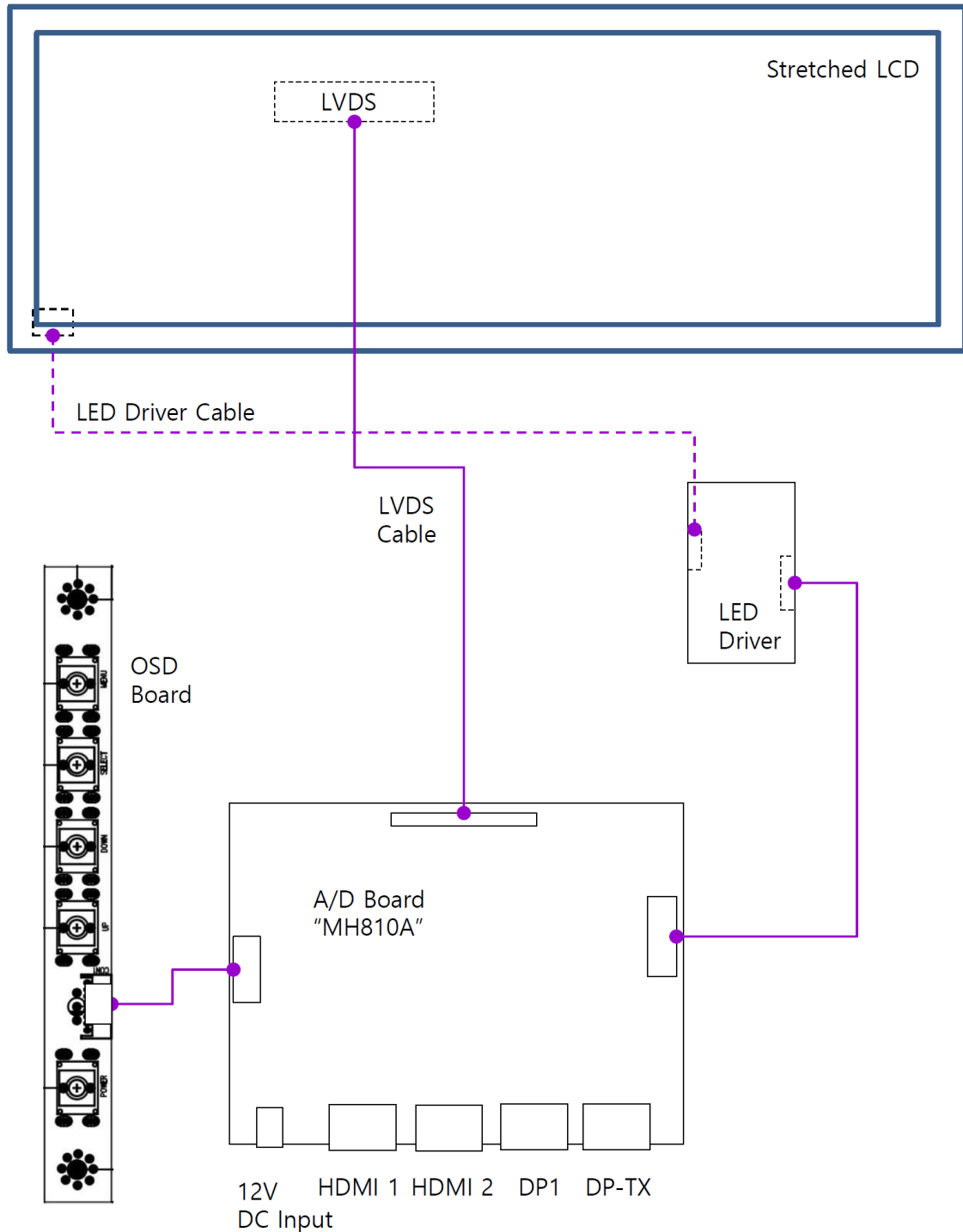
2.1 Mechanical Characteristics

Item	Characteristic	Unit
Display Format	3840(H) x 1080(V)	Dots
Overall Dimensions	547.6 (W) × 178.97 (H) × 47.0 (D)	mm
Active Area	527.04 (W) x 148.23 (H)	mm
Display colour	10.7M	colours
Mounting	User hole for M4 Screw depth max 10mm 75 x 75 mm	

2.2 Mechanical Drawing



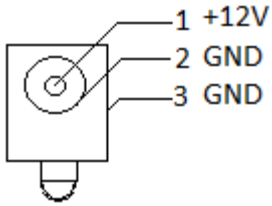
2.3 Block Diagram



3.0 Electrical Specification

3.1 Power

Power Input (DC Jack, $\varnothing 2.5$)



Item	Remark
Normal Input Voltage Range	12V DC $\pm 10\%$
Power Connector	Molex 5559-04P
Power Consumption	20.3 W Typical

4.0 OSD structure

Item	Sub Menu	Description	Default
Display	Display Rotate	0, 180, V mirror, H mirror	0
Picture	Backlight	0 ~ 100	100
	Brightness	0 ~ 100	50
	Contrast	0 ~ 100	50
	Sharpness	0 ~ 4	2
Color	Gamma	OFF, 1.8, 2.0, 2.2, 2.4	OFF
	Color Temp	9300, 7500, 6500, 5800, sRGB, USER	6500
	Color Effect	Standard, Game, Movie, Photo, Vivid, User	Standard
	Hue	0 ~ 100	50
	Saturation	0 ~ 100	50
Advance	Aspect Ratio	Full, 16:9, 4:3, 5:5, 1:1, User	FULL
	Overscan	On, Off	ON
	Overdrive	On, Off OD Gain (0 ~ 100)	OFF
	DP Option	1.1, 1.2	
	DP TX	On, Off	OFF
Input	Input	Auto, DP, HDMI1, HDMI2	AUTO
Audio	Volume	0 ~ 100	50
	Mute	On, Off	OFF
Other	Reset	Reset to factory settings	
	Menu Time	10 ~ 60	11
	OSD H Position	0 ~ 100	50
	OSD V Position	0 ~ 100	50
	Language	Select OSD menu language	
	Transparency	0 ~ 255	0
	Rotate	0, 90, 270	0
Information	Information		



5.0 Optical Specification

5.1 Optical Characteristics

Characteristics	Symbol	Min.	Typ.	Max.	Unit
Brightness	L _{br}	-	300	-	cd/m ²
Dark Room Contrast	CR	-	1000:1	-	
View Angle(LR/UD)	Θ	-	178/178	-	degree

6.0 Environmental Specification

6.1 Environmental Characteristics

Item	Remark
Operating Temperature	0°C ~ +50°C
Storage Temperature	-20°C ~ +60°C
Storage Humidity	5~90% RH
Operating Humidity	10~80% RH

7.0 Densitron Part numbering

Ordering Part number	Description
DM-215BD-MPGR01	21.5" Button Deck, 300 Nits, Metal Bezel, Glass, Generic AD board

1	O	Densitron Monitor
2	M	
3	-	
4~6	0	TFT Size: 043=4.3", 057=5.7", 070=7", 101=10.1"
	4	
	3	
7~8	G	SKUs: GN: Generic, BD: Button deck, 3D:3D, TP: Transparent, WT: Wide temp, DP: Dual Side, NB: Narrow Bezel, FM: Floating monitor, PT: Player Tracker
	N	
9	-	
10	O	Bezel: O: Open frame, M: Metal bezel, P: Plastic bezel, F: Flat surface K: Display kit only
11	P	Touch Screen: G: Glass, R: Resistive, S: SCT, P: PCT, D: DST, A: Acoustic, N: No need
12	1	- Control Board(AD Board): ranges from 1 to 9 (a to z if needed) - G: Generic - X: X86 Platform - Y: Arm Platform
13	R	Revision
14~15	0	Code for different configuration, ranges from 01 to 99 (a to z if needed)
	1	