


MONITOR DISPLAY MODULE

Product Specification

| | | | |
|----------------------|-----------------|-------|--|
| Customer | Standard | |  |
| Product Number | DM-285BD-MPGR01 | | |
| Ordering Part Number | DM-285BD-MPGR01 | | |
| Customer Approval | | Date: | |

| Internal Approvals | | |
|--------------------|------------------|-------------------|
| Product Mgr | Doc. Control | Electr. Eng. |
| Bazile Peter | Bazile Peter | Filip Kaczorowski |
| Date: 14/08/2018 | Date: 14/08/2018 | Date: 14/08/2018 |



Revision Record

| Rev. | Date | Page | Chapt. | Comment | ECR no. |
|------|------------|------|--------|-------------|---------|
| A | 14/08/2018 | -- | -- | Preliminary | |
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1.0 General Descriptions

1.1 Introduction

This is a 28.5" bar cut Monitor with a PCT touch, 1920 x 540 resolution, 16.7M colour, 178-degree wide viewing angle, providing high image quality from the analogue RGB, DVI-D.

1.2 Main Features

| Item | Contents |
|------------------------|--------------------------------------|
| Screen Size | 28.5" |
| Display Format | 1920(H) x 540(V) |
| Colour | 16.7M |
| Touch | PCT 10 finger touch |
| Overall Dimensions | 757.30 (W) × 255.60(H) × 57.0 (D) mm |
| Active Area | 698.40 (W) x 196.43 (H) mm |
| Pixel Pitch | 0.3637 (H) x 0.3637 (W) mm |
| Viewing Angle | L/R: 178° U/D: 178° |
| Contrast Ratio | 6000: 1 (Typ.) |
| Brightness | 700 CD/m2 |
| I/O | 1 x VGA, 1 x DVI-D, 1 x HDMI |
| Backlight | LED |
| Mechanism | Bezel Frame (Chassis Frame) |
| Plug & Play | DDC2B (VESA Standard) |
| Response time (G to G) | 8ms |
| Touch Panel | PCT |
| Touch Interface | USB (B Type) |
| Operating temperature | 0°C ~ +50°C |
| Storage temperature | -20°C ~ +60°C |

1.3 Scanning Frequency

| Item | Contents |
|------------|--------------|
| Horizontal | 31.5 ~ 80KHz |
| Vertical | 55 ~ 75Hz |

1.4 Input Resolution [Analog RGB & DVI-D & HDMI]

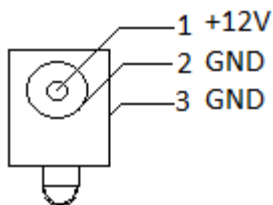
| Item | Contents |
|----------------------------|--|
| Recommended Resolution | 1920x1080@ 60Hz |
| Supported Input Resolution | 640x480@60/72/75 Hz 800x600@56/60/72/75 Hz 1024x768@60/70/75 Hz 1280x1024@60/75 Hz 1920x1080@60 Hz |

1.5 Input Signal

| Item | Contents |
|-------------|---|
| RGB (VGA) | Analog RGB Amplitude: $0.7 \pm 0.05V$ Input Impedance: $75 \pm 2\% \text{ ohm}$ Sync: H/V Separate (TTL Level) |
| DVI-D, HDMI | Swing Voltage: $400mV \leq V_{\text{sing}} \leq 600mV$ Termination Resistance: $50 \pm 10\% \text{ ohm}$ |

1.6 Power Supply Rating

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

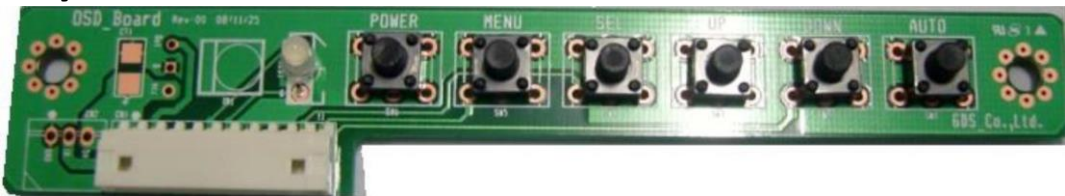


| Item | Contents |
|-------------------|------------------------|
| Power Consumption | 38.71 Watt (Typ.) @Set |
| DC Output | 12Vdc 6.0A |
| AC input | 100~240Vac |

1.7 User Controls

| Item | Contents |
|----------------|----------|
| OSD Key Button | 6 Key |
| OSD Language | English |

1.8 Key Button Function



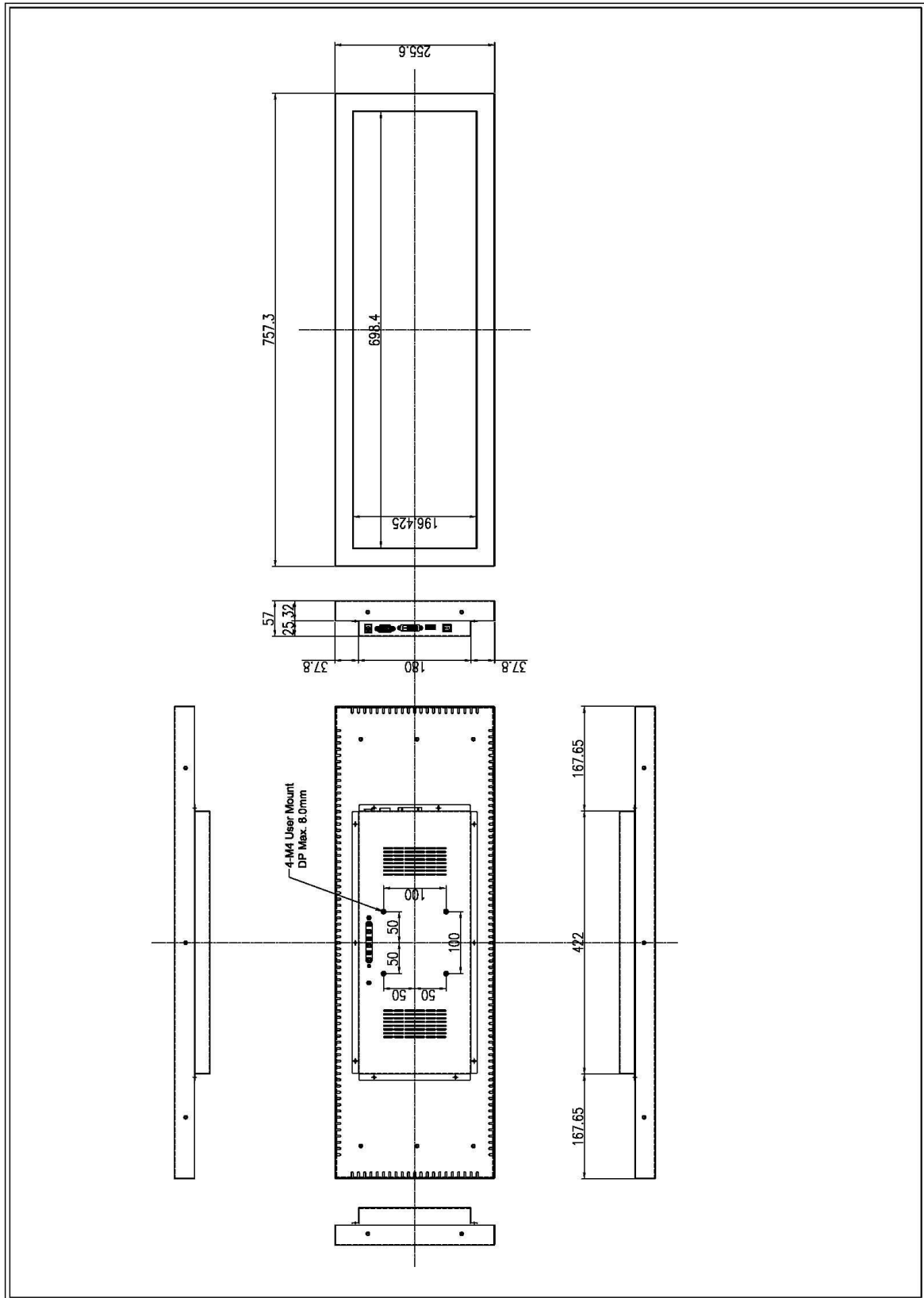
| Button | Function |
|--------|--|
| Power | Turns On/Off the system |
| Menu | Activates the OSD menu or Previous Menu, Exit |
| Select | Select input function (hotkey) or Sub Menu select |
| Up | Adjust Button/ Brightness & Contrast menu on Move the bar right to increase the Adjustment Move the main menu or sub menu Brightness & Contrast menu on |
| Down | Adjust Button/ Brightness & Contrast menu on Move the bar left to increase the Adjustment Move the main menu or sub menu |
| Auto | Adjustment RGB(Hotkey), disabled main menu |

2.0 Mechanical Specification

2.1 Mechanical Characteristics

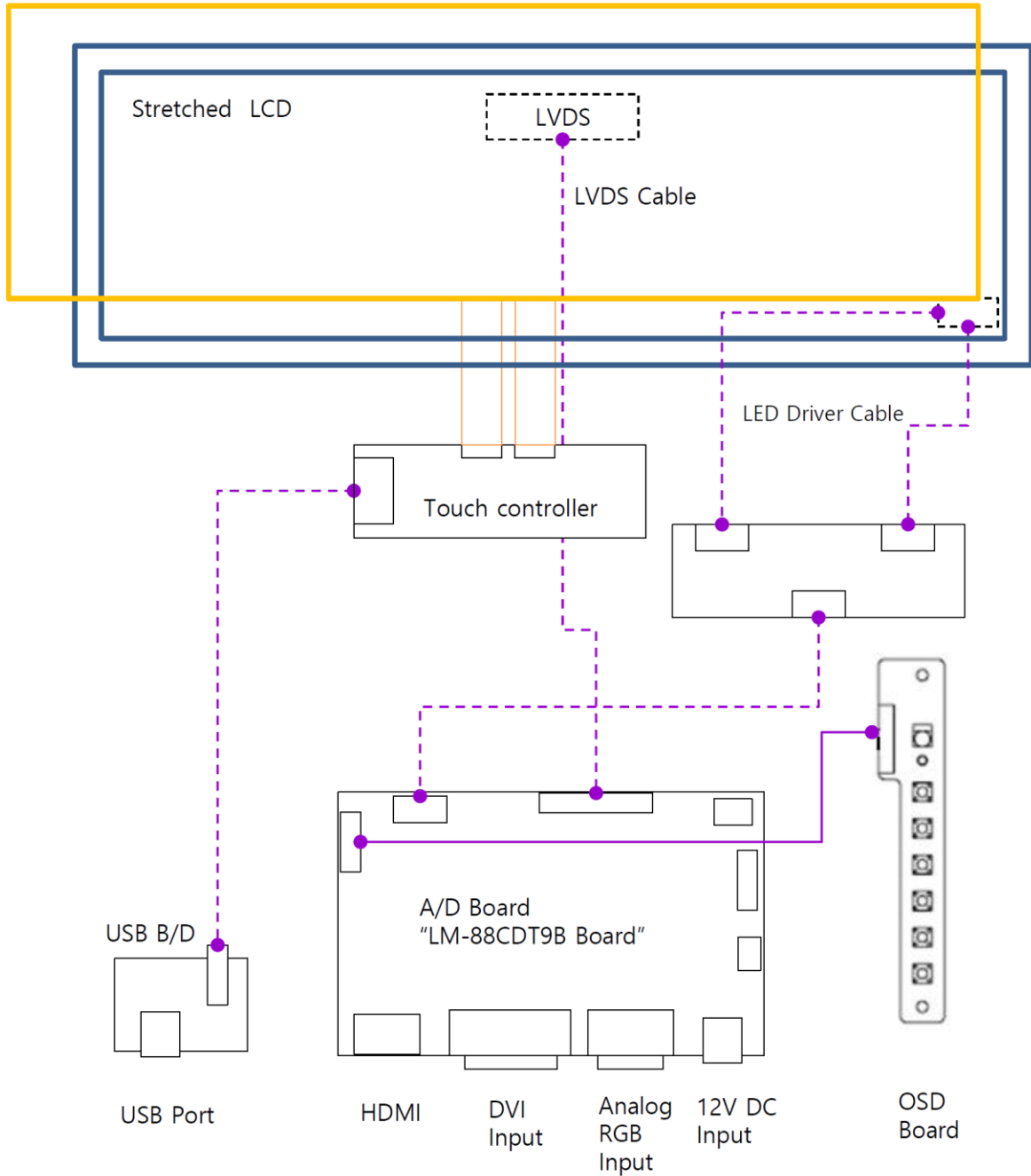
| Item | Characteristic | Unit |
|--------------------|--|------|
| Display Format | 1920(H) x 540(V) | Dots |
| Overall Dimensions | 757.30 (W) × 255.60(H) × 57.0 (D) | mm |
| Active Area | 698.400 (W) x 196.425 (H) | mm |
| Display colour | 16.7M | |
| Mounting | User hole for M4 Screw depth max 5mm 100 x 100 mm | |

2.2 Mechanical Drawing



2.3 Block Diagram

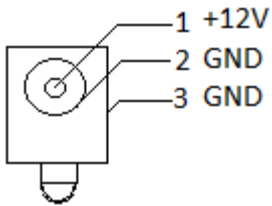
P-cap Touch



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 | 38.71W Typical |

4.0 Timing Characteristics

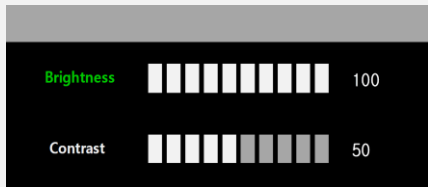

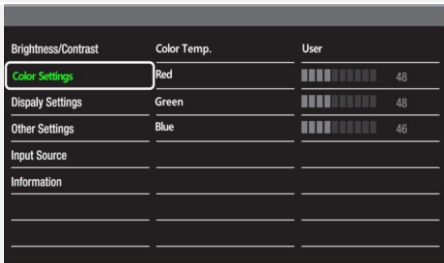
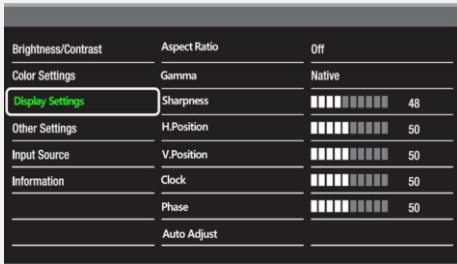
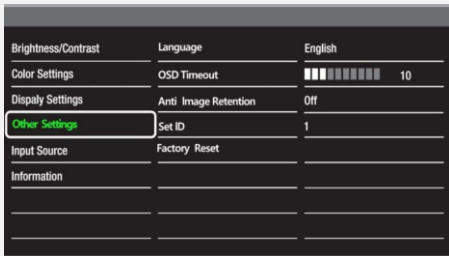
PC/DVI/HDMI Signal resolution (DTV)

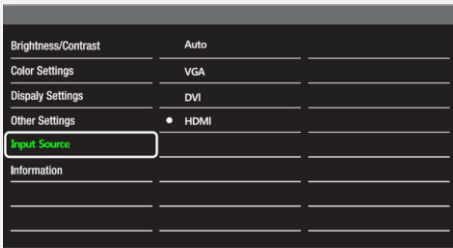
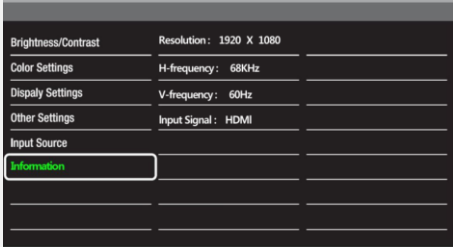
| No. | Resolution | V-freq.(Hz) | Proposed |
|-----|------------|-------------|----------------|
| 1 | 720*480 | 60.00 | SDTV 480p |
| 2 | 720*576 | 50.00 | SDTV 576p |
| 3 | 1280*720 | 50.00 | HDTV 720p 50Hz |
| 4 | 1280*720 | 60.00 | HDTV 720p 60Hz |
| 5 | 1920*540 | 60.00 | HDTV 540p 60Hz |

PC/DVI/HDMI Signal Resolution (PC)

| No. | Resolution | V-freq.(Hz) | Proposed |
|-----|------------|-------------|----------|
| 1 | 640*480 | 60.00 | |
| 2 | 800*600 | 56.00 | |
| 3 | 800*600 | 60.00 | |
| 4 | 1024*768 | 60.00 | |
| 5 | 1280*1024 | 60.00 | |
| 6 | 1280*768 | 60.00 | |
| 9 | 1920*540 | 60.00 | |

5.0 OSD function

| Menu | Pictures | Function |
|----------------------|---|---|
| Brightness /Contrast |  | Brightness: Adjust Back Light Brightness Contrast: Adjust the Contrast |
| Main Menu |  | Adjustment menu contents |
| Colour Setting |  | Adjust the colour temperature: 1000K, 9300K, 6500K User Preset: Adjust the colour gain Red/Green/Blue |
| Display Setting |  | Aspect Ratio: Not available Gamma: Set the Gamma, Native / 2.2 / 1.8 Sharpness: Adjust the picture sharpness Clock: Adjust the clock (frequency) of the screen Phase: Adjust the phase of the screen, move the image position Auto Adjust: Adjust clock and the phase of display automatically |
| Other Settings |  | Language: Select language for OSD menu OST Timeout: Adjust the OSD off timer Anti-Image Retention: moving the horizontal position of OSD menu Set ID: SET ID (RS-232 Option) |

| Menu | Pictures | Function |
|--------------|---|---|
| Input Source |  | Auto: Select the signal input automatically VGA, DVI, HDMI: Select the input |
| Information |  | Displays Information regarding the current input signal |



6.0 Optical Specification

6.1 Optical Characteristics

| Characteristics | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|--------------------|-----------------|------------|------|---------|------|-------------------|
| Brightness | L _{br} | | - | 700 | - | cd/m ² |
| Dark Room Contrast | CR | | - | 6000:1 | - | |
| View Angle | | | - | 178/178 | - | degree |

7.0 Environmental Specification

7.1 Environmental Characteristics

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

8.0 Densitron Part numbering

| Ordering Part number | Description |
|----------------------|---|
| DM-285BD-MPGR01 | 28.5" Button Deck, 700 Nits, Metal Bezel, PCT, 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 | |