# VM03B1 V2    3.5″ QVGA High Brightness Color TFT-LCD Module

| FEATURES | |
|---|---|
|  | - 320 x 240 resolution<br>- 800nits high brightness<br>- Normally white<br>- 140/120 view angle<br>- 50ms response time<br>- RGB interface<br>- -20~70C Wide operation temperature<br>- 20K Hrs long backlight life design<br>- RoHS Compliance |

Display Specifications

| Items | Unit | Specification |
|---|---|---|
| Screen Diagonal | inch | 3.5" |
| Active Area | mm | 70.08 (H) X 52.56 (V) |
| Pixels H x V | pixels | 320 x3(RGB) x 240 |
| Pixels Pitch | um | 219 (per one triad) x 219 |
| Pixel Arrangement | | RGB Vertical stripe |
| Display mode | | Normally white |
| White luminance (center) | Cd/m$^2$ | 800 (Typ) |
| Contrast ratio | | 300:1 (Typ.) |
| Optical Response Time | msec | 50 ms (Typ. On/off) |
| Normal Input Voltage VDD | Volt | 3.3 |
| Power Consumption<br>(Vcc Line + LED backlight) | Watt | TBD<br>(VDD line=TBD W; LED lines= 0.384 W) |
| Weight | Grams | TBD |
| Physical size | mm | 76.9 (W)×63.9 (H)×3.2 (D) |
| Electrical Interface | | Digital 24 bit RGB serial |
| Support colors | | 16.7M colors |
| Surface Treatment | | Anti-glare and hard-coating 3H |
| Driver IC | | HX8238D |
| Viewing direction | | 12:00 o'clock |
| Temperature range | | |
|    Operating | $^0$C | -20 ~ 70 |
|    Storage | $^0$C | -30 ~ 80 |
| RoHS Compliance | | RoHS Compliance |

Tentative
Specification

Note: This specification is subject to change without notice.

- Accessories for option:

>> Industrial grade Signal control board & SoC

| Input | Output | Resolution |
|---|---|---|
| RGB with voltage integration | RGB | TBD |
| LVDS with voltage & backlight driver integration | RGB | WXGA (max) |
| LVDS with voltage & backlight driver integration | LVDS | WXGA (max) |
| VGA/DVI/DP…etc. | RGB/ LVDS / mipi / eDP / V-by-One | 4K (max.) |
| ARM Cortex A17/A53 (Android 6, 8, & 11) | LVDS / eDP / V-by-One | 4K (max.) |

>> Industrial grade LED driver board:

| Input | Max Output | Dimming control |
|---|---|---|
| 12V DC | 36V *1 port | PWM |
| 12~24V DC | 53V * 1 port | PWM / Analog |
| 12~24V DC | 53V * 2 port | PWM / Analog |
| 24V | 120V / 150V * 1/2 port | PWM |

>> Industrial grade interactive interface:

| Type | Input | Output | Protection glass thickness |
|---|---|---|---|
| Projected capacitive touch panel | Fingers / stylus | USB / i2C | Max 6mm |
| 4wire / 5 wire resistance touch panel | Fingers / stylus | USB / RS232 | TBD |
| Option: 1. Customized cover glass design, special color printing 2. AG/AR/AF Surface treatment, 3. Lamination process, 4. Gloved touch function design, 5. Waterproof touch function design | | | |

6. EMI shielding touch design

● HANDLING PRECAUTIONS

1) Since front polarizer is easily damaged, pay attention not to scratch it.

2) Be sure to turn off power supply when inserting or disconnecting from input connector.

3) Wipe off water drop immediately. Long contact with water may cause discoloration or spots.

4) When the panel surface is soiled, wipe it with absorbent cotton or other soft cloth.

5) Since the panel is made of glass, it may break or crack if dropped or bumped on hard surface.

6) Since CMOS LSI is used in this module, take care of static electricity and insure human earth when handling.

7) Do not open or modify the Module Assembly.

8) Do not press the reflector sheet at the back of the module to any directions.

9) In case if a Module has to be put back into the packing container slot after once it was taken out from the container, do not press the center of TFTLCD panel.

10) At the insertion or removal of the Signal Interface Connector, be sure not to rotate nor tilt the Interface Connector of the TFT Module.

11) After installation of the TFT Module into an enclosure, do not twist nor bend the TFT Module even momentary. At designing the enclosure, it should be taken into consideration that no bending/twisting forces are applied to the TFT Module from outside. Otherwise the TFT Module may be damaged.