


|                      |       |                      |            |
|----------------------|-------|----------------------|------------|
| MC20803A6W-GPR       | 2 x 8 | 5mm Character Height | LCD Module |
| <b>Specification</b> |       |                      |            |
| Version: 1           |       | Date: 29/09/2016     |            |
| <b>Revision</b>      |       |                      |            |
|                      |       |                      |            |

| Display Features      |                         |  |                  |
|-----------------------|-------------------------|---|------------------|
| Character Count       | 2 x 8                   |   |                  |
| Appearance            | Black on Grey           |   |                  |
| Logic Voltage         | 5V                      |   |                  |
| Interface             | Parallel                |   |                  |
| Font Set              | English / Japanese      |   |                  |
| Display Mode          | Reflective              |   |                  |
| Character Height      | 2.595mm                 |   |                  |
| LC Type               | STN                     |   |                  |
| Module Size           | 25.00 x 17.50 x 4.30 mm |   |                  |
| Operating Temperature | 0°C ~ +50°C             |   |                  |
| Construction          | COB                     |   |                  |
| LED Backlight         | ---                     | Box Quantity  | Weight / Display |
|                       |                         | ---   | ---              |

\* - For full design functionality, please use this specification in conjunction with the ST7066U specification. (Provided Separately)

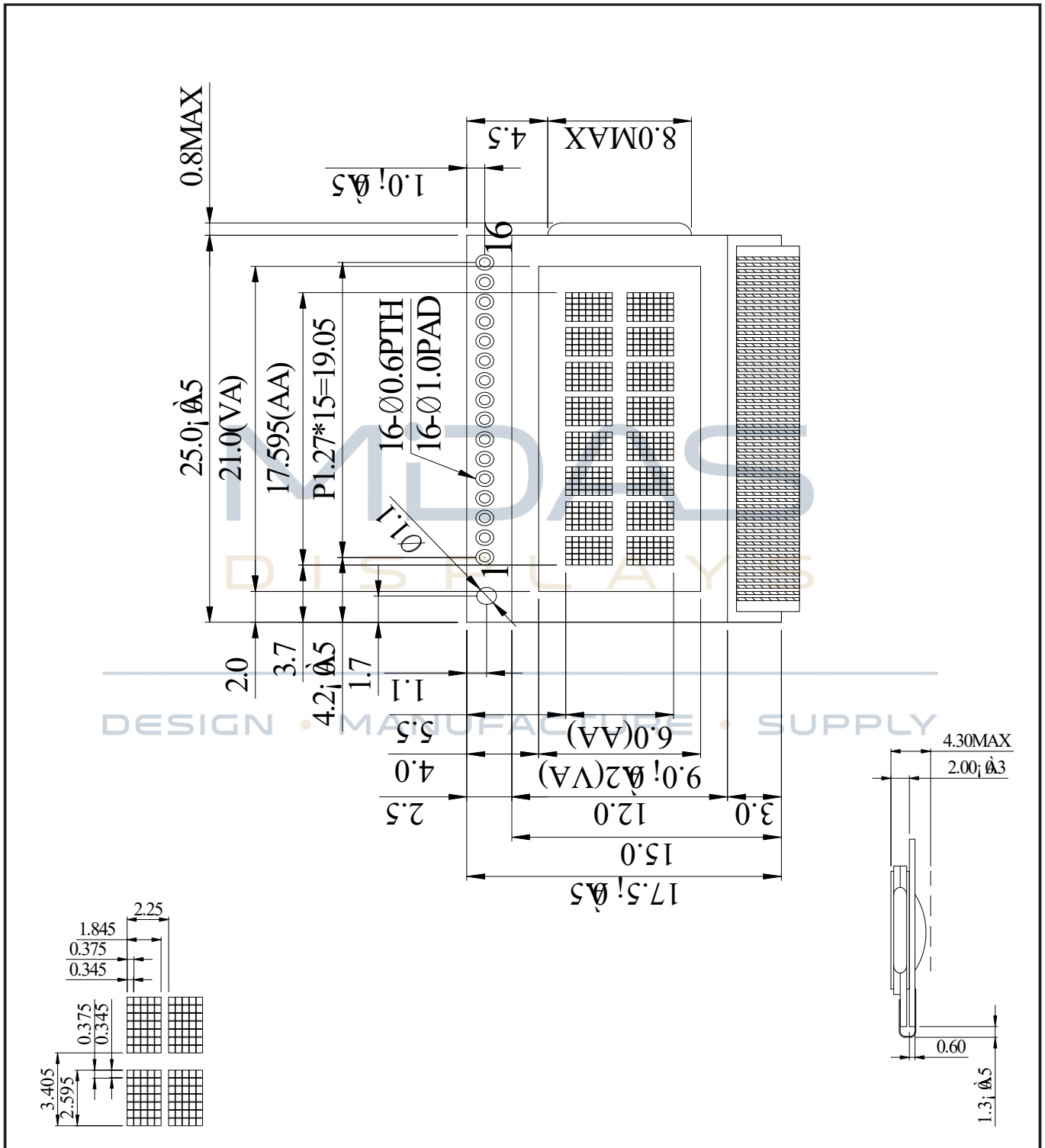
| Display Accessories      |  |
|--------------------------|--|
| Part Number              | Description  |
| MCCMDB-16DIL             | LCD Interconnect board, can be driven from either a PC or a single Board computer with a USB output. |
| MCCBL1A16SLIP-16DILS-150 | 16 Way, Single in-line to Dual In-line connector Cable.  |
| MCCBL1A16SLIP-16SILS-150 | 16 Way, Single in-line to Single In-line connector Cable.  |

| Optional Variants |             |         |
|-------------------|-------------|---------|
| Fonts             | Appearances | Voltage |
|                   |             |         |



## Mechanical Specifications

|                |  |          |                 |               |              |
|----------------|--|----------|-----------------|---------------|--------------|
| Module Size    | 58.00 x 32.00 x 9.5 ( Without Backlight) |          |                 |               | W x H x D mm |
| Viewing Area   | 21.0 x 9.00                              | W x H mm | Hole-to-Hole    | 53.00 x 27.00 | W x H mm     |
| Character Size | 1.845 x 2.595                            | W x H mm | Character Pitch | 2.250 x 3.405 | W mm         |
| Dot Size       | 0.345 x 0.345                            | W x H mm | Dot Pitch       | 0.375 x 0.375 | W x H mm     |

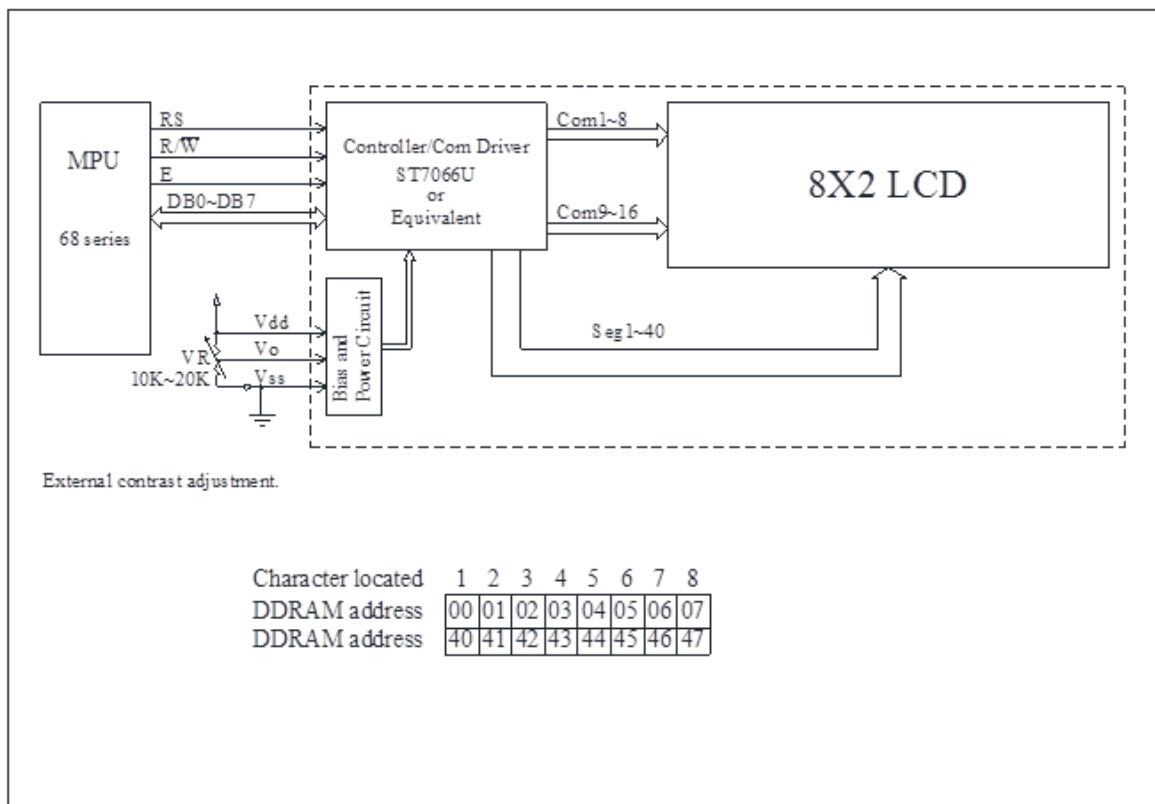


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# Pin Layout

| PI | SYMBOL | DESCRIPTION            | REMARKS |
|----|--------|------------------------|---------|
| 1  | Vss    | GND                    |         |
| 2  | Vdd    | Power supply for LCM   | 5.0V    |
| 3  | V      | Contrast Adjust        |         |
| 4  | RS     | Register Select Signal |         |
| 5  | R/W    | Data Read / Write      |         |
| 6  | E      | Enable Signal          |         |
| 7  | DB0    | Data bus line          |         |
| 8  | DB1    | Data bus line          |         |
| 9  | DB2    | Data bus line          |         |
| 10 | DB3    | Data bus line          |         |
| 11 | DB4    | Data bus line          |         |
| 12 | DB5    | Data bus line          |         |
| 13 | DB6    | Data bus line          |         |
| 14 | DB7    | Data bus line          |         |
| 15 | NC     | No Connection          | 5.0V    |
| 16 | NC     | No Connection          |         |



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# Font Map

| Upper<br>4bit<br>Lower<br>4bit | LLLL             | LLLH | LLHL | LLHH | LHLL | LHLH | LHHL | LHHH | HLLL | HLLH | HLHL | HLHH | HHLL | HHLH | HHHL | HHHH |
|--------------------------------|------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| LLLL                           | CG<br>RAM<br>(1) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LLLH                           | (2)              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LLHL                           | (3)              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LLHH                           | (4)              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LHLL                           | (5)              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LHLH                           | (6)              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LHHL                           | (7)              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LHHH                           | (8)              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| HLLL                           | (1)              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| HLLH                           | (2)              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| HLHL                           | (3)              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| HLHH                           | (4)              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| HHLL                           | (5)              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| HHLH                           | (6)              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| HHHL                           | (7)              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| HHHH                           | (8)              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

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### Absolute Maximum Ratings

| Item                  | Symbol | Condition | Min  | Typ | Max | Unit |
|-----------------------|--------|-----------|------|-----|-----|------|
| Power Supply ( LOGIC) | Vdd    | 25 °C     | -0.3 | --- | 7.0 | V    |
| Power Supply (LCD)    | V0     | 25 °C     | -0.3 | --- | 13  | V    |
| Input Voltage         | Vin    | 25 °C     | Vss  | --- | Vdd | V    |
| Operating Temperature | Vopr   | ---       | 0    | --- | 50  | °C   |
| Storage Temperature   | Vstg   | ---       | -20  | --- | 70  | °C   |

### Electronic Characteristics

| Item                 | Symbol                            | Condition             | Minimum         | Typical | Maximum         | Unit |
|----------------------|-----------------------------------|-----------------------|-----------------|---------|-----------------|------|
| Input Voltage High   | V <sub>IH</sub>                   | ---                   | 0.70            | ---     | V <sub>DD</sub> | V    |
| Input Voltage Low    | V <sub>IL</sub>                   | ---                   | V <sub>SS</sub> | ---     | 0.60            | V    |
| Output Voltage High  | V <sub>OH</sub>                   | ---                   | 3.90            | ---     | V <sub>DD</sub> | V    |
| Output Voltage Low   | V <sub>OL</sub>                   | ---                   | ---             | ---     | 0.40            | V    |
| Supply Voltage Logic | V <sub>DD</sub> ~ V <sub>SS</sub> | ---                   | 4.50            | 5.00    | 5.50            | V    |
| Supply Voltage LCD   | V <sub>DD</sub> ~ V <sub>0</sub>  | T <sub>a</sub> =25°C  | 3.20            | 3.40    | 3.60            | V    |
| Supply Current       | I <sub>DD</sub>                   | V <sub>DD</sub> =5.0V | ---             | 2.00    | ---             | mA   |

### LCD Characteristics

| For STN/FSTN LCD Panel Types |                                 |           |         |         |         |        |
|------------------------------|---------------------------------|-----------|---------|---------|---------|--------|
| Item                         | Symbol                          | Condition | Minimum | Typical | Maximum | Unit   |
| Viewing Angle                | Φ <sub>2</sub> – Φ <sub>1</sub> | CR ≥ 2    | 20      | ---     | ---     | ψ=180° |
|                              | Θ                               | ---       | ---     |         |         |        |
| Contrast Ratio               | CR                              | ---       | ---     | 10      | 15      | ---    |
| Response Time (Rise)         | TR                              | ---       | ---     | 80      | 160     | ms     |
| Response Time (Fall)         | TF                              | ---       | ---     | 100     | 120     | ms     |

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