20171005

Refresh rate measurements:

|  |  |  |  |
| --- | --- | --- | --- |
| PWM Quantum | Number of Panels | Color Depth | Timing Data |
| 1 (50 ns @ 20MHz SCLK) | 5 (64x64) | 8 bit @ color | 1-bit Line WR Cycle: 16 us  Line WR Cycle: 144 us  Frame Cycle: 4.6 ms  Refresh Rate: 217Hz |
| 15 (760 ns @ 20MHz) | 5 | 8 bit | Line WR Cycle: 322 us  Frame Cycle: 10 ms  Refresh Rate: 100Hz |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

20171006

Controls:

|  |  |  |  |
| --- | --- | --- | --- |
|  | OFF | ON |  |
|  |  |  |  |
|  |  |  |  |
| SW[9] | DPI Clock Input | Internal 25 MHz |  |

Prices comparison:

|  |  |  |  |
| --- | --- | --- | --- |
| [10M40DCF256C8G](http://analytics.supplyframe.com/trackingservlet/track/?r=gPVv3S5fz9WS0muSSENj7he0udszuXZp1mEm7HbdzOJoYT8H46HN4pexdIh4QtM31yzdKCAjagElTY-Dk5RbHnFrSmEU80Nt08zyz-QbJedHwaQdM6QywEJ5fBTpcKzpOreSHuM8Feo1KN7p_bVAwJ-Z9pogmrdL9Ugv-lOJMqssOOU1PEe3aC0sWqDY7OXwIppZh84Kw0SD048vrGlyNfK-9RKRLmd5plnUCscaAFM7p003XzE-f-h638TWaPvPTJHcowoh31wEGP-lyqicrTo6VHx5dfV02XeN1W_-hFa6Qtf2k0WE-6zDOHAALP7-MXIRnUEBGWDZD_lDNvU6Q168dfgnahTIUjRB4FmDtOxHcR-Ael-0Xw28bWlP48klbBjxEuqAerHbUBNn300weMtAYNnbGKlT3zHMO39TudGX6UsMleZpTVUceAlixRZeCFoUrx91MZyLJvVuGB-naSVKq945EbPZsnA-wxwZBgmo0XwwJQuMvn5FiQVKIzINGlcwQS_AdEvNMlVno_TeTwIS07Hmyf5ubZ0NRSS5t-IISNf2DVJbjbaFxDgeSxHYnNtxVNbkYcSyX7v4Sem3JxYwgdrjjy2CWpzUXwdjdNmq1zzstoz2Osqw1cOafP2u8yBecg58OsQYmqetUmgtydNzRMJ_6TzJXOo9MYns9H9sTcms4YZMUHs2UFsKyw_lxuTLVPfVQEdXTfHcvS4IMOY15H1lHOUd437X1ywQWls) | [10M25DAF256C8G](http://analytics.supplyframe.com/trackingservlet/track/?r=gPVv3S5fz9WS0muSSENj7rQeLFG6D0IIgJciuKzS4G1tRiLkQq8TPyFlhR5hSAccj5vNQppONGz13i50HzXV28XjB9S9LwJ-NpCEYCPgmSqpfFxMqwplgIYbGh_DLvamhh0mXIghAZOiye5I0vcGpTqTfCbBjq4jmVznhRLzNrZNSqzhwRCr3CRhEL3lUmD7c4-CEG26b-Hv-TIVGVjHTtggke141ARQCWa3PujeHS1TMcnaK-E0koGrhm7Q7_KX3rxRiIcMKH5XHxa72bVyVTDW_MRu03AyIGQP-LjTymhdzb47WLG3M1qI1PK3dWAQXnuHW_hmw_nXe-amlZNAkoJmuUbUA5z6rkbXwKIv0PMM9p_8AF5nV4LKgzlATKfN4_af2up8fmtMYEfRAl5J24AY9T5r-4IP1UsW5O8DFtC-pXWSDbj-d1TILNZWYUjmCiOH-0WJLOJln7LdL72X9CoQI4MbwHKAK1B_nndYq7Q8PTTK4D1mQIbw3x6baJ5XnEEWl-Mkz7NwGyamcMq6Le5ruHnpvveDkMqEUjRps5XbAmvTKyPE9bn-gnM8iD0qww0xhP4Cffhp90a7r5qgts9eowoInZNu1WdcJhv0j_uJSMrZ18L2bm2tz9Z8gdk5PtRG_8Sm7vwDVKZlZx2si0IOIeyvqjVJe8BQhOyaqAoFSVyIGlffGSZtU08Vm_v_aC8si-9kxY4QKiO7L3sqdg) | [10CL040YF484I7G](http://analytics.supplyframe.com/trackingservlet/track/?r=gPVv3S5fz9WS0muSSENj7hzTcaasNjg3z_mVNIfWqe04jG0XcI5QtLx7IEcbpLkSs5vJwQJ2dJZaMrgRGtru8zaraUhjY-QusrMnGEECoZ2pfFxMqwplgIYbGh_DLvamhh0mXIghAZOiye5I0vcGpQryRhih6c0gaRziYsMyrC2uCNWUBuENcX7sFAwB5J5AE1x5bfpSglVSwO70rrf8M7N1mpWpOLUJiQHv7Wm2rRS0Lzz4yWJEtQ6aXmCk_y3acPkxwUW9mGGQZXF0hL3Jb1JfPbYSO2TPKJ_Mw10DOd50YKcj5n9OLK0Lyid3PCmSsYhiHIjkm_v93BUYv3vvXmK-SSJfOKHAbERxRaGy9j4LED7nie3FsEm7eLetjcy9tYqSRE7Y5xCa6VuqE5jCI_DiL2ldxfn53sx3ztaI9JvgyBBHDpGqopmNBdMCZELF8DCFuq48B02-HOPzUEszUTLrMcC1e4n5_9pV4Wx6GND7W8C19c3xw-qT3pCFBysGqAi6ZIP6A46sdDFfWLQz_S1TwrGa2_jg5yeRc4nQc2_QFWemiPdjZ2UAqBu595EqpJTnmNTm1R8fRYSPN0yGgpbuPsehHtr9XJJ7wckXYAL7Z455PMbJT_6HcgCItszR3q6Rt8uHZ8Xzd_QIAbx4uw) | [10CL025YU256I7G](http://analytics.supplyframe.com/trackingservlet/track/?r=gPVv3S5fz9WS0muSSENj7sfeauEpa2g8IbqswflFD60k34nS9_dai4HxHuG8ZDRai8oU1QCzhDmrWlqGnZti02XWpQwGpGe-0vS-n4U6cURun6XagyjQlXryZeGAmYtqo-jWCAy342ULb60M_KehakqsQLUL76-HV-adQEbauks0YtIxKyOrhoBAKrfyni2UpICQHu14Va6chcbApl9Dji-8Uz_7xXRoTpxlQUqCUMA9vml0ILHXF4fAjGs70CNpkTLnDhk4lCR5BJa-a0X4vYo88K0ebimCGnTzfsDZL0Xzj9TwmCYFQbu5CoLFI1Naf8RcSqvZ0JTP_YMVs6T4V5JqR_xCmIeFicJdC_LKAFlqUzU2a9yP1w97J6k-kGHmLVPCsZrb-ODnJ5FzidBzb92ZwWeDELPu1Wq49J1YGdZahfhkNzRtyhiRlW1jw-KlYw8V_Z4Oy7V1Q5FITNmiwI8m9tPh_9gaDoSzMD7c92tM8yO7MfkKs1eF_Gz_4XHeNawthvugUG2KxDR934Q1NptsIJTT83JkTMKMPalQcw8) |
| RAM: 1,260 Kb | 675 Kb | 1,134 Kb | 594 Kb |
| LED Modules:  12 x (64x64) | 6 x (64x64) | 10 x (64x64) | 6 x (64x64) |
| Price: $60  (it is possible to upgrade to 10M50)  (it is possible downgrade to $50 10M25) | $50  (it is possible to downgrade to $30 10M16) | $40  (it is possible to upgrade to 10CL055)  (it is NOT possible to downgrade to 10CL025) | $25  (it is NOT possible to upgrade to 10CL040)  (it is possible to downgrade to $30 10CL016) |
| Additionally: |  | + EPCQ16 ($7) | + EPCQ16 ($7) |
| Price: |  | = $47 | = $32 |
| Additionally: + QSPI ($2) | | | |
| Additionally: + PSU ($5) | | | |
| Additionally: + Connectors/Switches ($3) | | | |
| Additionally: + PCB ($5) | | | |
| Price: $75 | $65 | $62 | $47 |
| Resources: |  | + 2 weeks for SCH/PCB | |
|  | + 1 month design time to add external memory  + $5 – memory chip |  | + 1 month design time to add external memory  + $5 – memory chip |
| Total: $75 | $70 | $67 | $53 |

**Required resources**

Nnumbers of pins:

|  |  |
| --- | --- |
|  |  |
| CLOCKS | 3 |
| SDRAM | 39 |
| VGA | 14 |
| KEYS | 2 |
| LEDS | 2 |
| SWITHES | 2 |
| HUB75 | 42 |
| DPI | 28 |
| QSPI | 6 |
| UART | 2 |
| I2C | 2 |
| MCU Interface | 4 |
| **TOTAL:** | 146 |

* BGA256

Memory:

|  |  |
| --- | --- |
| LED Panels: | Bits: |
| 12 x (64x64) | 1,179,648 |
| 10 x (64x64) | 983,040 |
| 6 x (64x64) | 589,824 |