# 1.18 系统时钟 (3.10)

测试人员：郑焕龙 测试时间：2020-08-18

1. 测试仪器：直流稳压电源（IT6932A）；数字示波器（TDS2022C）；
2. 测试工具：CS2110 下载器，CS2110 MPA DEMO VER1.2
3. 上位机下载软件及烧写程序：CS2110 3.0.0
4. 测试方法：进入测试模式，TRIM不同的值看各时钟模块的步进及范围（59进测试模式）；
5. 要求：2.2V-5.5V，系统时钟最大为4MHz；3.3V-5.5V，系统时钟最大为16M。
6. 测试数据：

5V供电

各时钟模块频率范围

低频02PA4，高频01PA5(128分频）

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | 1# | | 2# | | 3# | |
|  |  | 最慢 | 最快 | 最慢 | 最快 | 最慢 | 最快 |
| 14K | 8C0200 | 2.86 | 40.29 | 2.94 | 42.07 | 2.61 | 37.78 |
| 910K | 8C0100 | 5.17 | 10.18 | 4.91 | 9.9 | 5.23 | 10.44 |
| 8M | 8C0105 | 38.63 | 73.53 | 36.83 | 71.05 | 38.58 | 74.05 |
| 32K | 8C0205 | 7.99 | 85.96 | 8.15 | 89.66 | 7.55 | 81.47 |
| 16M | 8C0106 | 70.08 | 134.8 | 67.64 | 132 | 69.9 | 135.4 |
| 4M | 8C0103 | 20.92 | 39.62 | 20.31 | 38.28 | 21.26 | 40.18 |

各时钟模块频率TRIM步进

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 14K | 1# | 2# | 3# | 32K | 1# | 2# | 3# |
| 0 | 3.15 | 2.67 | 3.34 | 0 | 8.54 | 7.17 | 8.99 |
| 1 | 3.16 |  |  | 1 | 5.59 |  |  |
| 2 | 3.17 |  |  | 2 | 8.63 |  |  |
| 3 | 3.19 |  |  | 3 | 8.68 |  |  |
| 4 | 3.2 |  |  | 4 | 8.71 |  |  |
| 5 | 3.22 |  |  | 5 | 8.76 |  |  |
| 6 | 3.23 |  |  | 6 | 8.8 |  |  |
| 7 | 3.25 |  |  | 7 | 8.86 |  |  |
| 8 | 3.27 | 2.78 | 3.46 | 8 | 8.95 | 7.53 | 9.37 |
| 9 | 3.29 |  |  | 9 | 9.01 |  |  |
| 10 | 3.31 |  |  | 10 | 9.06 |  |  |
| 11 | 3.33 |  |  | 11 | 9.12 |  |  |
| 12 | 3.34 |  |  | 12 | 9.15 |  |  |
| 13 | 3.36 |  |  | 13 | 9.21 |  |  |
| 14 | 3.37 |  |  | 14 | 9.25 |  |  |
| 15 | 3.39 |  |  | 15 | 9.32 |  |  |
| 16 | 3.42 | 2.91 | 3.59 | 16 | 9.39 | 7.92 | 9.79 |
| 17 | 3.44 |  |  | 17 | 9.46 |  |  |
| 18 | 3.46 |  |  | 18 | 9.51 |  |  |
| 19 | 3.48 |  |  | 19 | 9.58 |  |  |
| 20 | 3.49 |  |  | 20 | 9.63 |  |  |
| 21 | 3.52 |  |  | 21 | 9.7 |  |  |
| 22 | 3.53 |  |  | 22 | 9.75 |  |  |
| 23 | 3.56 |  |  | 23 | 9.84 |  |  |
| 24 | 3.6 | 3.08 | 3.77 | 24 | 9.95 | 8.39 | 10.31 |
| 25 | 3.63 |  |  | 25 | 10.02 |  |  |
| 26 | 3.65 |  |  | 26 | 10.09 |  |  |
| 27 | 3.68 |  |  | 27 | 10.18 |  |  |
| 28 | 3.69 |  |  | 28 | 10.21 |  |  |
| 29 | 3.72 |  |  | 29 | 10.3 |  |  |
| 30 | 3.74 |  |  | 30 | 10.37 |  |  |
| 31 | 3.77 |  |  | 31 | 10.46 |  |  |
| 32 | 3.79 | 3.25 | 3.95 | 32 | 10.51 | 8.88 | 10.85 |
| 33 | 3.82 |  |  | 33 | 10.61 |  |  |
| 34 | 3.85 |  |  | 34 | 10.67 |  |  |
| 35 | 3.88 |  |  | 35 | 10.76 |  |  |
| 36 | 3.89 |  |  | 36 | 10.82 |  |  |
| 37 | 3.93 |  |  | 37 | 10.92 |  |  |
| 38 | 3.96 |  |  | 38 | 10.99 |  |  |
| 39 | 3.99 |  |  | 39 | 11.11 |  |  |
| 40 | 4.04 | 3.47 | 4.21 | 40 | 11.27 | 9.53 | 11.58 |
| 41 | 4.09 |  |  | 41 | 11.38 |  |  |
| 42 | 4.11 |  |  | 42 | 11.45 |  |  |
| 43 | 4.15 |  |  | 43 | 11.58 |  |  |
| 44 | 4.17 |  |  | 44 | 11.63 |  |  |
| 45 | 4.22 |  |  | 45 | 11.75 |  |  |
| 46 | 4.25 |  |  | 46 | 11.84 |  |  |
| 47 | 4.3 |  |  | 47 | 11.97 |  |  |
| 48 | 4.35 | 3.74 | 4.52 | 48 | 12.13 | 10.27 | 12.43 |
| 49 | 4.4 |  |  | 49 | 12.26 |  |  |
| 50 | 4.43 |  |  | 50 | 12.36 |  |  |
| 51 | 4.48 |  |  | 51 | 12.51 |  |  |
| 52 | 4.51 |  |  | 52 | 12.57 |  |  |
| 53 | 4.56 |  |  | 53 | 12.72 |  |  |
| 54 | 4.6 |  |  | 54 | 12.82 |  |  |
| 55 | 4.66 |  |  | 55 | 12.97 |  |  |
| 56 | 4.74 | 4.09 | 4.91 | 56 | 13.22 | 11.2 | 13.5 |
| 57 | 4.8 |  |  | 57 | 13.38 |  |  |
| 58 | 4.84 |  |  | 58 | 13.5 |  |  |
| 59 | 4.91 |  |  | 59 | 13.68 |  |  |
| 60 | 4.93 |  |  | 60 | 13.76 |  |  |
| 61 | 5.01 |  |  | 61 | 13.93 |  |  |
| 62 | 5.05 |  |  | 62 | 14.06 |  |  |
| 63 | 5.12 |  |  | 63 | 14.27 |  |  |
| 64 | 5.25 | 4.53 | 5.42 | 64 | 14.59 | 12.39 | 14.87 |
| 65 | 5.32 |  |  | 65 | 14.8 |  |  |
| 66 | 5.38 |  |  | 66 | 14.95 |  |  |
| 67 | 5.45 |  |  | 67 | 15.18 |  |  |
| 68 | 5.49 |  |  | 68 | 15.25 |  |  |
| 69 | 5.58 |  |  | 69 | 15.49 |  |  |
| 70 | 5.64 |  |  | 70 | 15.66 |  |  |
| 71 | 5.73 |  |  | 71 | 15.92 |  |  |
| 72 | 5.88 | 5.08 | 6.06 | 72 | 16.29 | 13.85 | 16.56 |
| 73 | 5.98 |  |  | 73 | 16.56 |  |  |
| 74 | 6.05 |  |  | 74 | 16.76 |  |  |
| 75 | 6.16 |  |  | 75 | 17.03 |  |  |
| 76 | 6.2 |  |  | 76 | 17.15 |  |  |
| 77 | 6.31 |  |  | 77 | 17.44 |  |  |
| 78 | 6.4 |  |  | 78 | 17.65 |  |  |
| 79 | 6.52 |  |  | 79 | 17.98 |  |  |
| 80 | 6.66 | 5.76 | 6.86 | 80 | 18.35 | 15.62 | 18.65 |
| 81 | 6.79 |  |  | 81 | 18.69 |  |  |
| 82 | 6.89 |  |  | 82 | 18.95 |  |  |
| 83 | 7.03 |  |  | 83 | 19.3 |  |  |
| 84 | 7.1 |  |  | 84 | 19.48 |  |  |
| 85 | 7.25 |  |  | 85 | 19.89 |  |  |
| 86 | 7.35 |  |  | 86 | 20.15 |  |  |
| 87 | 7.52 |  |  | 87 | 20.57 |  |  |
| 88 | 7.77 | 6.74 | 7.99 | 88 | 21.24 | 18.11 | 21.55 |
| 89 | 7.95 |  |  | 89 | 21.72 |  |  |
| 90 | 8.09 |  |  | 90 | 22.07 |  |  |
| 91 | 8.29 |  |  | 91 | 22.58 |  |  |
| 92 | 8.39 |  |  | 92 | 22.81 |  |  |
| 93 | 8.61 |  |  | 93 | 23.33 |  |  |
| 94 | 8.77 |  |  | 94 | 23.78 |  |  |
| 95 | 9 |  |  | 95 | 24.34 |  |  |
| 96 | 9.3 | 8.05 | 9.54 | 96 | 25.11 | 21.41 | 25.43 |
| 97 | 9.57 |  |  | 97 | 25.77 |  |  |
| 98 | 9.76 |  |  | 98 | 26.27 |  |  |
| 99 | 10.06 |  |  | 99 | 26.98 |  |  |
| 100 | 10.18 |  |  | 100 | 27.33 |  |  |
| 101 | 10.52 |  |  | 101 | 28.14 |  |  |
| 102 | 10.74 |  |  | 102 | 28.71 |  |  |
| 103 | 11.12 |  |  | 103 | 29.63 |  |  |
| 104 | 11.72 | 10.16 | 12.01 | 104 | 31.07 | 26.53 | 31.42 |
| 105 | 12.16 |  |  | 105 | 32.14 |  |  |
| 106 | 12.49 |  |  | 106 | 32.86 |  |  |
| 107 | 12.99 |  |  | 107 | 34.12 |  |  |
| 108 | 13.18 |  |  | 108 | 34.59 |  |  |
| 109 | 13.75 |  |  | 109 | 35.93 |  |  |
| 110 | 14.18 |  |  | 110 | 36.92 |  |  |
| 111 | 14.84 |  |  | 111 | 38.44 |  |  |
| 112 | 15.74 | 13.67 | 16.12 | 112 | 40.45 | 34.68 | 40.87 |
| 113 | 16.53 |  |  | 113 | 42.26 |  |  |
| 114 | 17.15 |  |  | 114 | 43.63 |  |  |
| 115 | 18.12 |  |  | 115 | 45.8 |  |  |
| 116 | 18.6 |  |  | 116 | 46.84 |  |  |
| 117 | 19.75 |  |  | 117 | 49.3 |  |  |
| 118 | 20.63 |  |  | 118 | 51.21 |  |  |
| 119 | 22.06 |  |  | 119 | 54.22 |  |  |
| 120 | 24.48 | 21.32 | 25.07 | 120 | 59.12 | 50.88 | 59.68 |
| 121 | 26.49 |  |  | 121 | 63.15 |  |  |
| 122 | 28.19 |  |  | 122 | 66.32 |  |  |
| 123 | 30.96 |  |  | 123 | 71.46 |  |  |
| 124 | 32.33 |  |  | 124 | 73.98 |  |  |
| 125 | 36.06 |  |  | 125 | 80.45 |  |  |
| 126 | 39.21 |  |  | 126 | 85.7 |  |  |
| 127 | 44.85 | 39.17 | 45.62 | 127 | 94.58 | 82.03 | 95.23 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 910K | 1# | 2# | 3# | 4M | 1# | 2# | 3# |
| 0 | 5.221 | 5.24 | 4.945 | 0 | 21.69 | 21.758 | 20.143 |
| 1 | 5.23 |  |  | 1 | 21.725 |  |  |
| 2 | 5.239 |  |  | 2 | 21.761 |  |  |
| 3 | 5.249 |  |  | 3 | 21.804 |  |  |
| 4 | 5.259 |  |  | 4 | 21.844 |  |  |
| 5 | 5.268 |  |  | 5 | 21.882 |  |  |
| 6 | 5.278 |  |  | 6 | 21.921 |  |  |
| 7 | 5.288 |  |  | 7 | 21.954 |  |  |
| 8 | 5.298 | 5.322 | 5.03 | 8 | 21.995 | 22.065 | 20.442 |
| 9 | 5.307 |  |  | 9 | 22.033 |  |  |
| 10 | 5.317 |  |  | 10 | 22.071 |  |  |
| 11 | 5.327 |  |  | 11 | 22.115 |  |  |
| 12 | 5.337 |  |  | 12 | 22.155 |  |  |
| 13 | 5.346 |  |  | 13 | 22.188 |  |  |
| 14 | 5.356 |  |  | 14 | 22.231 |  |  |
| 15 | 5.366 |  |  | 15 | 22.272 |  |  |
| 16 | 5.376 | 5.407 | 5.101 | 16 | 22.307 | 22.381 | 20.746 |
| 17 | 5.387 |  |  | 17 | 22.347 |  |  |
| 18 | 5.397 |  |  | 18 | 22.386 |  |  |
| 19 | 5.407 |  |  | 19 | 22.428 |  |  |
| 20 | 5.418 |  |  | 20 | 22.471 |  |  |
| 21 | 5.428 |  |  | 21 | 22.513 |  |  |
| 22 | 5.438 |  |  | 22 | 22.553 |  |  |
| 23 | 5.449 |  |  | 23 | 22.592 |  |  |
| 24 | 5.459 | 5.5 | 5.183 | 24 | 22.634 | 22.709 | 21.056 |
| 25 | 5.47 |  |  | 25 | 22.673 |  |  |
| 26 | 5.481 |  |  | 26 | 22.712 |  |  |
| 27 | 5.491 |  |  | 27 | 22.753 |  |  |
| 28 | 5.502 |  |  | 28 | 22.797 |  |  |
| 29 | 5.512 |  |  | 29 | 22.833 |  |  |
| 30 | 5.522 |  |  | 30 | 22.877 |  |  |
| 31 | 5.534 |  |  | 31 | 22.917 |  |  |
| 32 | 5.545 | 5.597 | 5.267 | 32 | 22.962 | 23.042 | 21.383 |
| 33 | 5.556 |  |  | 33 | 23.003 |  |  |
| 34 | 5.568 |  |  | 34 | 23.044 |  |  |
| 35 | 5.579 |  |  | 35 | 23.088 |  |  |
| 36 | 5.591 |  |  | 36 | 23.129 |  |  |
| 37 | 5.601 |  |  | 37 | 23.175 |  |  |
| 38 | 5.613 |  |  | 38 | 23.223 |  |  |
| 39 | 5.624 |  |  | 39 | 23.266 |  |  |
| 40 | 5.636 | 5.701 | 5.355 | 40 | 23.305 | 23.394 | 21.728 |
| 41 | 5.647 |  |  | 41 | 23.348 |  |  |
| 42 | 5.66 |  |  | 42 | 23.392 |  |  |
| 43 | 5.672 |  |  | 43 | 23.437 |  |  |
| 44 | 5.683 |  |  | 44 | 23.486 |  |  |
| 45 | 5.694 |  |  | 45 | 23.525 |  |  |
| 46 | 5.707 |  |  | 46 | 23.568 |  |  |
| 47 | 5.719 |  |  | 47 | 23.612 |  |  |
| 48 | 5.731 | 5.808 | 5.444 | 48 | 23.662 | 23.756 | 22.073 |
| 49 | 5.743 |  |  | 49 | 23.705 |  |  |
| 50 | 5.755 |  |  | 50 | 23.749 |  |  |
| 51 | 5.769 |  |  | 51 | 23.792 |  |  |
| 52 | 5.782 |  |  | 52 | 23.84 |  |  |
| 53 | 5.795 |  |  | 53 | 23.891 |  |  |
| 54 | 5.807 |  |  | 54 | 23.935 |  |  |
| 55 | 5.82 |  |  | 55 | 23.976 |  |  |
| 56 | 5.833 | 5.921 | 5.54 | 56 | 24.028 | 24.134 | 22.439 |
| 57 | 5.846 |  |  | 57 | 24.077 |  |  |
| 58 | 5.859 |  |  | 58 | 24.122 |  |  |
| 59 | 5.872 |  |  | 59 | 24.165 |  |  |
| 60 | 5.885 |  |  | 60 | 24.214 |  |  |
| 61 | 5.899 |  |  | 61 | 24.257 |  |  |
| 62 | 5.913 |  |  | 62 | 24.302 |  |  |
| 63 | 5.926 |  |  | 63 | 24.354 |  |  |
| 64 | 5.939 | 6.037 | 5.637 | 64 | 24.407 | 24.515 | 22.808 |
| 65 | 5.954 |  |  | 65 | 24.453 |  |  |
| 66 | 5.969 |  |  | 66 | 24.5 |  |  |
| 67 | 5.983 |  |  | 67 | 24.55 |  |  |
| 68 | 5.998 |  |  | 68 | 24.598 |  |  |
| 69 | 6.012 |  |  | 69 | 24.653 |  |  |
| 70 | 6.026 |  |  | 70 | 24.694 |  |  |
| 71 | 6.042 |  |  | 71 | 24.749 |  |  |
| 72 | 6.057 | 6.154 | 5.739 | 72 | 24.805 | 24.922 | 23.197 |
| 73 | 6.072 |  |  | 73 | 24.853 |  |  |
| 74 | 6.087 |  |  | 74 | 24.903 |  |  |
| 75 | 6.103 |  |  | 75 | 24.958 |  |  |
| 76 | 6.116 |  |  | 76 | 25.006 |  |  |
| 77 | 6.133 |  |  | 77 | 25.054 |  |  |
| 78 | 6.148 |  |  | 78 | 25.107 |  |  |
| 79 | 6.165 |  |  | 79 | 25.161 |  |  |
| 80 | 6.181 | 6.271 | 5.845 | 80 | 25.209 | 25.335 | 23.596 |
| 81 | 6.196 |  |  | 81 | 25.263 |  |  |
| 82 | 6.213 |  |  | 82 | 25.315 |  |  |
| 83 | 6.229 |  |  | 83 | 25.371 |  |  |
| 84 | 6.247 |  |  | 84 | 25.42 |  |  |
| 85 | 6.263 |  |  | 85 | 25.472 |  |  |
| 86 | 6.278 |  |  | 86 | 25.526 |  |  |
| 87 | 6.295 |  |  | 87 | 25.582 |  |  |
| 88 | 6.313 | 6.39 | 5.956 | 88 | 25.632 | 25.769 | 24.015 |
| 89 | 6.329 |  |  | 89 | 25.688 |  |  |
| 90 | 6.345 |  |  | 90 | 25.746 |  |  |
| 91 | 6.362 |  |  | 91 | 25.797 |  |  |
| 92 | 6.379 |  |  | 92 | 25.853 |  |  |
| 93 | 6.396 |  |  | 93 | 25.906 |  |  |
| 94 | 6.412 |  |  | 94 | 25.957 |  |  |
| 95 | 6.43 |  |  | 95 | 26.015 |  |  |
| 96 | 6.48 | 6.509 | 6.069 | 96 | 26.074 | 26.216 | 24.442 |
| 97 | 6.465 |  |  | 97 | 26.132 |  |  |
| 98 | 6.483 |  |  | 98 | 26.184 |  |  |
| 99 | 6.501 |  |  | 99 | 26.241 |  |  |
| 100 | 6.518 |  |  | 100 | 26.304 |  |  |
| 101 | 6.535 |  |  | 101 | 26.355 |  |  |
| 102 | 6.553 |  |  | 102 | 26.414 |  |  |
| 103 | 6.57 |  |  | 103 | 26.473 |  |  |
| 104 | 6.588 | 6.631 | 6.192 | 104 | 26.532 | 26.688 | 24.895 |
| 105 | 6.605 |  |  | 105 | 26.598 |  |  |
| 106 | 6.623 |  |  | 106 | 26.656 |  |  |
| 107 | 6.64 |  |  | 107 | 26.719 |  |  |
| 108 | 6.657 |  |  | 108 | 26.774 |  |  |
| 109 | 6.674 |  |  | 109 | 26.834 |  |  |
| 110 | 6.691 |  |  | 110 | 26.893 |  |  |
| 111 | 6.709 |  |  | 111 | 26.95 |  |  |
| 112 | 6.726 | 6.755 | 6.317 | 112 | 27.011 | 27.176 | 25.357 |
| 113 | 6.742 |  |  | 113 | 27.074 |  |  |
| 114 | 6.762 |  |  | 114 | 27.142 |  |  |
| 115 | 6.779 |  |  | 115 | 27.203 |  |  |
| 116 | 6.796 |  |  | 116 | 27.265 |  |  |
| 117 | 6.813 |  |  | 117 | 27.327 |  |  |
| 118 | 6.831 |  |  | 118 | 27.391 |  |  |
| 119 | 6.848 |  |  | 119 | 27.455 |  |  |
| 120 | 6.866 | 6.884 | 6.452 | 120 | 27.516 | 27.693 | 25.845 |
| 121 | 6.883 |  |  | 121 | 27.583 |  |  |
| 122 | 6.901 |  |  | 122 | 27.647 |  |  |
| 123 | 6.919 |  |  | 123 | 27.71 |  |  |
| 124 | 6.935 |  |  | 124 | 27.775 |  |  |
| 125 | 6.953 |  |  | 125 | 27.837 |  |  |
| 126 | 6.971 |  |  | 126 | 27.901 |  |  |
| 127 | 6.989 |  |  | 127 | 27.968 |  |  |
| 128 | 7.005 | 7.017 | 6.589 | 128 | 28.035 | 28.215 | 26.346 |
| 129 | 7.023 |  |  | 129 | 28.101 |  |  |
| 130 | 7.041 |  |  | 130 | 28.173 |  |  |
| 131 | 7.058 |  |  | 131 | 28.238 |  |  |
| 132 | 7.078 |  |  | 132 | 28.303 |  |  |
| 133 | 7.093 |  |  | 133 | 28.373 |  |  |
| 134 | 7.111 |  |  | 134 | 28.44 |  |  |
| 135 | 7.13 |  |  | 135 | 28.507 |  |  |
| 136 | 7.148 | 7.157 | 6.732 | 136 | 28.578 | 28.775 | 26.875 |
| 137 | 7.165 |  |  | 137 | 28.647 |  |  |
| 138 | 7.184 |  |  | 138 | 28.718 |  |  |
| 139 | 7.201 |  |  | 139 | 28.784 |  |  |
| 140 | 7.22 |  |  | 140 | 28.856 |  |  |
| 141 | 7.239 |  |  | 141 | 28.928 |  |  |
| 142 | 7.255 |  |  | 142 | 28.998 |  |  |
| 143 | 7.274 |  |  | 143 | 29.071 |  |  |
| 144 | 7.294 | 7.303 | 6.884 | 144 | 29.141 | 29.349 | 27.42 |
| 145 | 7.311 |  |  | 145 | 29.214 |  |  |
| 146 | 7.33 |  |  | 146 | 29.294 |  |  |
| 147 | 7.348 |  |  | 147 | 29.366 |  |  |
| 148 | 7.367 |  |  | 148 | 29.44 |  |  |
| 149 | 7.386 |  |  | 149 | 29.513 |  |  |
| 150 | 7.404 |  |  | 150 | 29.583 |  |  |
| 151 | 7.424 |  |  | 151 | 29.658 |  |  |
| 152 | 7.443 | 7.456 | 7.043 | 152 | 29.733 | 29.956 | 27.995 |
| 153 | 7.462 |  |  | 153 | 29.812 |  |  |
| 154 | 7.48 |  |  | 154 | 29.886 |  |  |
| 155 | 7.5 |  |  | 155 | 29.965 |  |  |
| 156 | 7.52 |  |  | 156 | 30.042 |  |  |
| 157 | 7.538 |  |  | 157 | 30.115 |  |  |
| 158 | 7.558 |  |  | 158 | 30.193 |  |  |
| 159 | 7.577 |  |  | 159 | 30.272 |  |  |
| 160 | 7.597 | 7.62 | 7.204 | 160 | 30.349 | 30.584 | 28.592 |
| 161 | 7.616 |  |  | 161 | 30.428 |  |  |
| 162 | 7.637 |  |  | 162 | 30.51 |  |  |
| 163 | 7.658 |  |  | 163 | 30.593 |  |  |
| 164 | 7.679 |  |  | 164 | 30.676 |  |  |
| 165 | 7.699 |  |  | 165 | 30.756 |  |  |
| 166 | 7.72 |  |  | 166 | 30.835 |  |  |
| 167 | 7.741 |  |  | 167 | 30.92 |  |  |
| 168 | 7.762 | 7.794 | 7.376 | 168 | 31.002 | 31.252 | 29.219 |
| 169 | 7.784 |  |  | 169 | 31.091 |  |  |
| 170 | 7.804 |  |  | 170 | 31.168 |  |  |
| 171 | 7.826 |  |  | 171 | 31.252 |  |  |
| 172 | 7.847 |  |  | 172 | 31.342 |  |  |
| 173 | 7.868 |  |  | 173 | 31.425 |  |  |
| 174 | 7.889 |  |  | 174 | 31.508 |  |  |
| 175 | 7.91 |  |  | 175 | 31.598 |  |  |
| 176 | 7.933 | 7.978 | 7.548 | 176 | 31.682 | 31.948 | 29.869 |
| 177 | 7.955 |  |  | 177 | 31.768 |  |  |
| 178 | 7.978 |  |  | 178 | 31.856 |  |  |
| 179 | 8.002 |  |  | 179 | 31.951 |  |  |
| 180 | 8.023 |  |  | 180 | 32.041 |  |  |
| 181 | 8.046 |  |  | 181 | 32.127 |  |  |
| 182 | 8.07 |  |  | 182 | 32.22 |  |  |
| 183 | 8.093 |  |  | 183 | 32.309 |  |  |
| 184 | 8.116 | 8.178 | 7.732 | 184 | 32.405 | 32.681 | 30.555 |
| 185 | 8.14 |  |  | 185 | 32.495 |  |  |
| 186 | 8.164 |  |  | 186 | 32.587 |  |  |
| 187 | 8.188 |  |  | 187 | 32.68 |  |  |
| 188 | 8.212 |  |  | 188 | 32.774 |  |  |
| 189 | 8.235 |  |  | 189 | 32.87 |  |  |
| 190 | 8.261 |  |  | 190 | 32.962 |  |  |
| 191 | 8.286 |  |  | 191 | 33.061 |  |  |
| 192 | 8.311 | 8.393 | 7.921 | 192 | 33.159 | 33.444 | 31.276 |
| 193 | 8.336 |  |  | 193 | 33.251 |  |  |
| 194 | 8.362 |  |  | 194 | 33.351 |  |  |
| 195 | 8.388 |  |  | 195 | 33.452 |  |  |
| 196 | 8.413 |  |  | 196 | 33.552 |  |  |
| 197 | 8.441 |  |  | 197 | 33.649 |  |  |
| 198 | 8.467 |  |  | 198 | 33.751 |  |  |
| 199 | 8.495 |  |  | 199 | 33.853 |  |  |
| 200 | 8.521 | 8.63 | 8.12 | 200 | 33.955 | 34.257 | 32.032 |
| 201 | 8.548 |  |  | 201 | 34.057 |  |  |
| 202 | 8.574 |  |  | 202 | 34.157 |  |  |
| 203 | 8.604 |  |  | 203 | 34.263 |  |  |
| 204 | 8.631 |  |  | 204 | 34.363 |  |  |
| 205 | 8.66 |  |  | 205 | 34.472 |  |  |
| 206 | 8.688 |  |  | 206 | 34.573 |  |  |
| 207 | 8.718 |  |  | 207 | 34.681 |  |  |
| 208 | 8.747 | 8.883 | 8.325 | 208 | 34.787 | 35.1 | 32.822 |
| 209 | 8.777 |  |  | 209 | 34.888 |  |  |
| 210 | 8.808 |  |  | 210 | 35.001 |  |  |
| 211 | 8.839 |  |  | 211 | 35.117 |  |  |
| 212 | 8.868 |  |  | 212 | 35.225 |  |  |
| 213 | 8.9 |  |  | 213 | 35.336 |  |  |
| 214 | 8.931 |  |  | 214 | 35.449 |  |  |
| 215 | 8.965 |  |  | 215 | 35.564 |  |  |
| 216 | 8.998 | 9.162 | 8.544 | 216 | 35.683 | 36.005 | 33.663 |
| 217 | 9.029 |  |  | 217 | 35.793 |  |  |
| 218 | 9.061 |  |  | 218 | 35.906 |  |  |
| 219 | 9.097 |  |  | 219 | 36.021 |  |  |
| 220 | 9.128 |  |  | 220 | 36.138 |  |  |
| 221 | 9.162 |  |  | 221 | 36.254 |  |  |
| 222 | 9.197 |  |  | 222 | 36.371 |  |  |
| 223 | 9.231 |  |  | 223 | 36.493 |  |  |
| 224 | 9.269 | 9.449 | 8.772 | 224 | 36.611 | 36.945 | 34.544 |
| 225 | 9.303 |  |  | 225 | 36.731 |  |  |
| 226 | 9.339 |  |  | 226 | 36.853 |  |  |
| 227 | 9.378 |  |  | 227 | 36.976 |  |  |
| 228 | 9.415 |  |  | 228 | 37.104 |  |  |
| 229 | 9.451 |  |  | 229 | 37.225 |  |  |
| 230 | 9.492 |  |  | 230 | 37.348 |  |  |
| 231 | 9.533 |  |  | 231 | 37.474 |  |  |
| 232 | 9.573 | 9.749 | 9.014 | 232 | 37.604 | 37.952 | 35.478 |
| 233 | 9.613 |  |  | 233 | 37.731 |  |  |
| 234 | 9.651 |  |  | 234 | 37.855 |  |  |
| 235 | 9.694 |  |  | 235 | 37.985 |  |  |
| 236 | 9.732 |  |  | 236 | 38.113 |  |  |
| 237 | 9.774 |  |  | 237 | 38.248 |  |  |
| 238 | 9.817 |  |  | 238 | 38.377 |  |  |
| 239 | 9.858 |  |  | 239 | 38.514 |  |  |
| 240 | 9.899 | 10.048 | 9.27 | 240 | 38.649 | 39.017 | 36.467 |
| 241 | 9.943 |  |  | 241 | 38.781 |  |  |
| 242 | 9.988 |  |  | 242 | 38.92 |  |  |
| 243 | 10.033 |  |  | 243 | 39.054 |  |  |
| 244 | 10.078 |  |  | 244 | 39.195 |  |  |
| 245 | 10.12 |  |  | 245 | 39.335 |  |  |
| 246 | 10.165 |  |  | 246 | 39.476 |  |  |
| 247 | 10.209 |  |  | 247 | 39.615 |  |  |
| 248 | 10.253 | 10.353 | 9.544 | 248 | 39.763 | 40.144 | 37.514 |
| 249 | 10.294 |  |  | 249 | 39.904 |  |  |
| 250 | 10.339 |  |  | 250 | 40.046 |  |  |
| 251 | 10.386 |  |  | 251 | 40.195 |  |  |
| 252 | 10.428 |  |  | 252 | 40.338 |  |  |
| 253 | 10.472 |  |  | 253 | 40.484 |  |  |
| 254 | 10.518 |  |  | 254 | 40.637 |  |  |
| 255 | 10.562 | 10.625 | 9.796 | 255 | 40.785 | 41.178 | 38.468 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 8M | 1# | 2# | 3# | 16M | 1# | 2# | 3# |
| 0 | 39.139 | 39.657 | 37.365 | 0 | 70.875 | 71.906 | 68.092 |
| 1 | 39.213 |  |  | 1 | 71.011 |  |  |
| 2 | 39.283 |  |  | 2 | 71.147 |  |  |
| 3 | 39.361 |  |  | 3 | 71.282 |  |  |
| 4 | 39.432 |  |  | 4 | 71.422 |  |  |
| 5 | 39.505 |  |  | 5 | 71.551 |  |  |
| 6 | 39.584 |  |  | 6 | 71.692 |  |  |
| 7 | 39.655 |  |  | 7 | 71.825 |  |  |
| 8 | 39.736 | 40.267 | 37.937 | 8 | 71.966 | 73.029 | 69.166 |
| 9 | 39.807 |  |  | 9 | 72.106 |  |  |
| 10 | 39.881 |  |  | 10 | 72.246 |  |  |
| 11 | 39.959 |  |  | 11 | 72.385 |  |  |
| 12 | 40.04 |  |  | 12 | 72.521 |  |  |
| 13 | 40.115 |  |  | 13 | 72.64 |  |  |
| 14 | 40.192 |  |  | 14 | 72.778 |  |  |
| 15 | 40.269 |  |  | 15 | 72.918 |  |  |
| 16 | 40.346 | 40.893 | 38.517 | 16 | 73.058 | 74.173 | 70.244 |
| 17 | 40.424 |  |  | 17 | 73.211 |  |  |
| 18 | 40.505 |  |  | 18 | 73.357 |  |  |
| 19 | 40.581 |  |  | 19 | 73.508 |  |  |
| 20 | 40.666 |  |  | 20 | 73.656 |  |  |
| 21 | 40.741 |  |  | 21 | 73.803 |  |  |
| 22 | 40.821 |  |  | 22 | 73.943 |  |  |
| 23 | 40.899 |  |  | 23 | 74.088 |  |  |
| 24 | 40.978 | 41.54 | 39.118 | 24 | 74.245 | 75.374 | 71.366 |
| 25 | 41.058 |  |  | 25 | 74.391 |  |  |
| 26 | 41.143 |  |  | 26 | 74.532 |  |  |
| 27 | 41.226 |  |  | 27 | 74.682 |  |  |
| 28 | 41.311 |  |  | 28 | 74.831 |  |  |
| 29 | 41.392 |  |  | 29 | 74.984 |  |  |
| 30 | 41.473 |  |  | 30 | 75.133 |  |  |
| 31 | 41.556 |  |  | 31 | 75.283 |  |  |
| 32 | 41.64 | 42.2 | 39.744 | 32 | 75.442 | 76.581 | 72.5 |
| 33 | 41.726 |  |  | 33 | 75.592 |  |  |
| 34 | 41.808 |  |  | 34 | 75.75 |  |  |
| 35 | 41.893 |  |  | 35 | 75.905 |  |  |
| 36 | 41.978 |  |  | 36 | 76.062 |  |  |
| 37 | 42.065 |  |  | 37 | 76.204 |  |  |
| 38 | 42.152 |  |  | 38 | 76.361 |  |  |
| 39 | 42.242 |  |  | 39 | 76.522 |  |  |
| 40 | 42.324 | 42.891 | 40.383 | 40 | 76.682 | 77.848 | 73.686 |
| 41 | 42.408 |  |  | 41 | 76.831 |  |  |
| 42 | 42.495 |  |  | 42 | 76.997 |  |  |
| 43 | 42.584 |  |  | 43 | 77.149 |  |  |
| 44 | 42.667 |  |  | 44 | 77.303 |  |  |
| 45 | 42.756 |  |  | 45 | 77.465 |  |  |
| 46 | 42.842 |  |  | 46 | 77.622 |  |  |
| 47 | 42.927 |  |  | 47 | 77.792 |  |  |
| 48 | 43.018 | 43.593 | 41.047 | 48 | 77.957 | 79.143 | 74.893 |
| 49 | 43.108 |  |  | 49 | 78.114 |  |  |
| 50 | 43.198 |  |  | 50 | 78.282 |  |  |
| 51 | 43.291 |  |  | 51 | 78.449 |  |  |
| 52 | 43.382 |  |  | 52 | 78.612 |  |  |
| 53 | 43.468 |  |  | 53 | 78.773 |  |  |
| 54 | 43.562 |  |  | 54 | 78.944 |  |  |
| 55 | 43.653 |  |  | 55 | 79.115 |  |  |
| 56 | 43.745 | 44.334 | 41.737 | 56 | 79.282 | 80.493 | 76.165 |
| 57 | 43.837 |  |  | 57 | 79.452 |  |  |
| 58 | 43.928 |  |  | 58 | 79.611 |  |  |
| 59 | 44.026 |  |  | 59 | 79.787 |  |  |
| 60 | 44.115 |  |  | 60 | 79.958 |  |  |
| 61 | 44.213 |  |  | 61 | 80.126 |  |  |
| 62 | 44.304 |  |  | 62 | 80.302 |  |  |
| 63 | 44.401 |  |  | 63 | 80.475 |  |  |
| 64 | 44.496 | 45.098 | 42.439 | 64 | 80.648 | 81.871 | 77.458 |
| 65 | 44.585 |  |  | 65 | 80.822 |  |  |
| 66 | 44.684 |  |  | 66 | 81.002 |  |  |
| 67 | 44.784 |  |  | 67 | 81.182 |  |  |
| 68 | 44.882 |  |  | 68 | 81.353 |  |  |
| 69 | 44.978 |  |  | 69 | 81.529 |  |  |
| 70 | 45.076 |  |  | 70 | 81.705 |  |  |
| 71 | 45.177 |  |  | 71 | 81.89 |  |  |
| 72 | 45.271 | 45.885 | 43.173 | 72 | 82.065 | 83.313 | 78.812 |
| 73 | 45.374 |  |  | 73 | 82.245 |  |  |
| 74 | 45.474 |  |  | 74 | 82.425 |  |  |
| 75 | 45.572 |  |  | 75 | 82.605 |  |  |
| 76 | 45.679 |  |  | 76 | 82.793 |  |  |
| 77 | 45.776 |  |  | 77 | 82.975 |  |  |
| 78 | 45.874 |  |  | 78 | 83.148 |  |  |
| 79 | 45.975 |  |  | 79 | 83.342 |  |  |
| 80 | 46.076 | 46.691 | 43.935 | 80 | 83.525 | 84.785 | 80.201 |
| 81 | 46.176 |  |  | 81 | 83.732 |  |  |
| 82 | 46.282 |  |  | 82 | 83.921 |  |  |
| 83 | 46.385 |  |  | 83 | 84.105 |  |  |
| 84 | 46.494 |  |  | 84 | 84.303 |  |  |
| 85 | 46.593 |  |  | 85 | 84.478 |  |  |
| 86 | 46.698 |  |  | 86 | 84.672 |  |  |
| 87 | 46.802 |  |  | 87 | 84.872 |  |  |
| 88 | 46.906 | 47.543 | 44.724 | 88 | 85.058 | 86.327 | 81.613 |
| 89 | 47.014 |  |  | 89 | 85.251 |  |  |
| 90 | 47.121 |  |  | 90 | 85.445 |  |  |
| 91 | 47.223 |  |  | 91 | 85.637 |  |  |
| 92 | 47.333 |  |  | 92 | 85.804 |  |  |
| 93 | 47.438 |  |  | 93 | 85.994 |  |  |
| 94 | 47.546 |  |  | 94 | 86.197 |  |  |
| 95 | 47.656 |  |  | 95 | 86.392 |  |  |
| 96 | 47.767 | 48.408 | 45.533 | 96 | 86.598 | 87.908 | 83.104 |
| 97 | 47.873 |  |  | 97 | 86.798 |  |  |
| 98 | 47.989 |  |  | 98 | 86.985 |  |  |
| 99 | 48.095 |  |  | 99 | 87.195 |  |  |
| 100 | 48.216 |  |  | 100 | 87.405 |  |  |
| 101 | 48.322 |  |  | 101 | 87.605 |  |  |
| 102 | 48.436 |  |  | 102 | 87.813 |  |  |
| 103 | 48.553 |  |  | 103 | 88.016 |  |  |
| 104 | 48.665 | 49.32 | 46.377 | 104 | 88.223 | 89.568 | 84.651 |
| 105 | 48.781 |  |  | 105 | 88.438 |  |  |
| 106 | 48.895 |  |  | 106 | 88.635 |  |  |
| 107 | 49.009 |  |  | 107 | 88.846 |  |  |
| 108 | 49.125 |  |  | 108 | 89.053 |  |  |
| 109 | 49.237 |  |  | 109 | 89.257 |  |  |
| 110 | 49.355 |  |  | 110 | 89.472 |  |  |
| 111 | 49.468 |  |  | 111 | 89.673 |  |  |
| 112 | 49.588 | 50.251 | 47.238 | 112 | 89.898 | 91.27 | 86.227 |
| 113 | 49.703 |  |  | 113 | 90.107 |  |  |
| 114 | 49.828 |  |  | 114 | 90.324 |  |  |
| 115 | 49.951 |  |  | 115 | 90.548 |  |  |
| 116 | 50.063 |  |  | 116 | 90.771 |  |  |
| 117 | 50.185 |  |  | 117 | 90.982 |  |  |
| 118 | 50.308 |  |  | 118 | 91.205 |  |  |
| 119 | 50.431 |  |  | 119 | 91.436 |  |  |
| 120 | 50.558 | 51.241 | 48.159 | 120 | 91.664 | 93.062 | 87.896 |
| 121 | 50.678 |  |  | 121 | 91.875 |  |  |
| 122 | 50.798 |  |  | 122 | 92.095 |  |  |
| 123 | 50.925 |  |  | 123 | 92.335 |  |  |
| 124 | 51.047 |  |  | 124 | 92.554 |  |  |
| 125 | 51.174 |  |  | 125 | 92.781 |  |  |
| 126 | 51.303 |  |  | 126 | 93.007 |  |  |
| 127 | 51.428 |  |  | 127 | 93.235 |  |  |
| 128 | 51.554 | 52.254 | 49.098 | 128 | 93.468 | 94.899 | 89.603 |
| 129 | 51.68 |  |  | 129 | 93.705 |  |  |
| 130 | 51.811 |  |  | 130 | 93.938 |  |  |
| 131 | 51.945 |  |  | 131 | 94.185 |  |  |
| 132 | 52.078 |  |  | 132 | 94.412 |  |  |
| 133 | 52.209 |  |  | 133 | 94.644 |  |  |
| 134 | 52.341 |  |  | 134 | 94.889 |  |  |
| 135 | 52.474 |  |  | 135 | 95.132 |  |  |
| 136 | 52.607 | 53.323 | 50.079 | 136 | 95.382 | 96.816 | 91.401 |
| 137 | 52.737 |  |  | 137 | 95.618 |  |  |
| 138 | 52.877 |  |  | 138 | 95.853 |  |  |
| 139 | 53.013 |  |  | 139 | 96.104 |  |  |
| 140 | 53.152 |  |  | 140 | 96.343 |  |  |
| 141 | 53.282 |  |  | 141 | 96.587 |  |  |
| 142 | 53.411 |  |  | 142 | 96.843 |  |  |
| 143 | 53.558 |  |  | 143 | 97.084 |  |  |
| 144 | 53.69 | 54.414 | 51.094 | 144 | 97.344 | 98.825 | 93.263 |
| 145 | 53.833 |  |  | 145 | 97.593 |  |  |
| 146 | 53.984 |  |  | 146 | 97.848 |  |  |
| 147 | 54.121 |  |  | 147 | 98.109 |  |  |
| 148 | 54.258 |  |  | 148 | 98.365 |  |  |
| 149 | 54.404 |  |  | 149 | 98.618 |  |  |
| 150 | 54.542 |  |  | 150 | 98.876 |  |  |
| 151 | 54.685 |  |  | 151 | 99.137 |  |  |
| 152 | 54.836 | 55.565 | 52.171 | 152 | 99.408 | 100.93 | 95.233 |
| 153 | 54.977 |  |  | 153 | 99.674 |  |  |
| 154 | 55.128 |  |  | 154 | 99.931 |  |  |
| 155 | 55.277 |  |  | 155 | 100.204 |  |  |
| 156 | 55.418 |  |  | 156 | 100.467 |  |  |
| 157 | 55.568 |  |  | 157 | 100.738 |  |  |
| 158 | 55.717 |  |  | 158 | 101.006 |  |  |
| 159 | 55.861 |  |  | 159 | 101.282 |  |  |
| 160 | 56.014 | 56.762 | 53.283 | 160 | 101.554 | 103.11 | 97.251 |
| 161 | 56.167 |  |  | 161 | 101.823 |  |  |
| 162 | 56.316 |  |  | 162 | 102.096 |  |  |
| 163 | 56.475 |  |  | 163 | 102.383 |  |  |
| 164 | 56.632 |  |  | 164 | 102.666 |  |  |
| 165 | 56.788 |  |  | 165 | 102.943 |  |  |
| 166 | 56.939 |  |  | 166 | 103.229 |  |  |
| 167 | 57.104 |  |  | 167 | 103.523 |  |  |
| 168 | 57.261 | 58.016 | 54.458 | 168 | 103.808 | 105.398 | 99.397 |
| 169 | 57.421 |  |  | 169 | 104.098 |  |  |
| 170 | 57.576 |  |  | 170 | 104.374 |  |  |
| 171 | 57.731 |  |  | 171 | 104.677 |  |  |
| 172 | 57.894 |  |  | 172 | 104.962 |  |  |
| 173 | 58.062 |  |  | 173 | 105.262 |  |  |
| 174 | 58.218 |  |  | 174 | 105.558 |  |  |
| 175 | 58.383 |  |  | 175 | 105.845 |  |  |
| 176 | 58.548 | 59.32 | 55.664 | 176 | 106.148 | 107.771 | 101.586 |
| 177 | 58.706 |  |  | 177 | 106.445 |  |  |
| 178 | 58.878 |  |  | 178 | 106.755 |  |  |
| 179 | 59.054 |  |  | 179 | 107.073 |  |  |
| 180 | 59.222 |  |  | 180 | 107.383 |  |  |
| 181 | 59.388 |  |  | 181 | 107.692 |  |  |
| 182 | 59.558 |  |  | 182 | 108.009 |  |  |
| 183 | 59.735 |  |  | 183 | 108.322 |  |  |
| 184 | 59.913 | 60.7 | 56.951 | 184 | 108.642 | 110.319 | 13.957 |
| 185 | 60.082 |  |  | 185 | 108.952 |  |  |
| 186 | 60.256 |  |  | 186 | 109.277 |  |  |
| 187 | 60.431 |  |  | 187 | 109.593 |  |  |
| 188 | 60.604 |  |  | 188 | 109.917 |  |  |
| 189 | 60.776 |  |  | 189 | 110.245 |  |  |
| 190 | 60.962 |  |  | 190 | 110.561 |  |  |
| 191 | 61.138 |  |  | 191 | 110.902 |  |  |
| 192 | 61.323 | 62.131 | 58.272 | 192 | 111.218 | 112.941 | 106.398 |
| 193 | 61.505 |  |  | 193 | 111.554 |  |  |
| 194 | 61.683 |  |  | 194 | 111.894 |  |  |
| 195 | 61.872 |  |  | 195 | 112.227 |  |  |
| 196 | 62.058 |  |  | 196 | 112.591 |  |  |
| 197 | 62.245 |  |  | 197 | 112.925 |  |  |
| 198 | 62.429 |  |  | 198 | 113.267 |  |  |
| 199 | 62.628 |  |  | 199 | 113.614 |  |  |
| 200 | 62.819 | 63.633 | 59.663 | 200 | 113.963 | 115.725 | 109.002 |
| 201 | 63.005 |  |  | 201 | 114.305 |  |  |
| 202 | 63.202 |  |  | 202 | 114.652 |  |  |
| 203 | 63.383 |  |  | 203 | 115.012 |  |  |
| 204 | 63.575 |  |  | 204 | 115.362 |  |  |
| 205 | 63.768 |  |  | 205 | 115.717 |  |  |
| 206 | 63.967 |  |  | 206 | 116.081 |  |  |
| 207 | 64.173 |  |  | 207 | 116.451 |  |  |
| 208 | 64.375 | 65.201 | 61.115 | 208 | 116.826 | 118.607 | 111.702 |
| 209 | 64.573 |  |  | 209 | 117.178 |  |  |
| 210 | 64.785 |  |  | 210 | 117.556 |  |  |
| 211 | 64.987 |  |  | 211 | 117.944 |  |  |
| 212 | 65.191 |  |  | 212 | 118.347 |  |  |
| 213 | 65.397 |  |  | 213 | 118.688 |  |  |
| 214 | 65.597 |  |  | 214 | 119.072 |  |  |
| 215 | 65.805 |  |  | 215 | 119.461 |  |  |
| 216 | 66.023 | 66.863 | 62.663 | 216 | 119.852 | 121.693 | 114.573 |
| 217 | 66.227 |  |  | 217 | 120.224 |  |  |
| 218 | 66.436 |  |  | 218 | 120.611 |  |  |
| 219 | 66.652 |  |  | 219 | 120.991 |  |  |
| 220 | 66.868 |  |  | 220 | 121.385 |  |  |
| 221 | 67.075 |  |  | 221 | 121.792 |  |  |
| 222 | 67.298 |  |  | 222 | 122.188 |  |  |
| 223 | 67.516 |  |  | 223 | 122.592 |  |  |
| 224 | 67.737 | 68.591 | 64.276 | 224 | 122.992 | 124.912 | 117.557 |
| 225 | 67.961 |  |  | 225 | 123.393 |  |  |
| 226 | 68.186 |  |  | 226 | 123.817 |  |  |
| 227 | 68.413 |  |  | 227 | 124.236 |  |  |
| 228 | 68.638 |  |  | 228 | 124.668 |  |  |
| 229 | 68.862 |  |  | 229 | 125.075 |  |  |
| 230 | 69.098 |  |  | 230 | 125.497 |  |  |
| 231 | 69.331 |  |  | 231 | 125.934 |  |  |
| 232 | 69.565 | 70.452 | 65.992 | 232 | 126.362 | 128.345 | 120.755 |
| 233 | 69.803 |  |  | 233 | 126.802 |  |  |
| 234 | 70.032 |  |  | 234 | 127.217 |  |  |
| 235 | 70.272 |  |  | 235 | 127.672 |  |  |
| 236 | 70.507 |  |  | 236 | 128.105 |  |  |
| 237 | 70.748 |  |  | 237 | 128.546 |  |  |
| 238 | 70.984 |  |  | 238 | 128.992 |  |  |
| 239 | 71.235 |  |  | 239 | 129.424 |  |  |
| 240 | 71.48 | 72.376 | 67.783 | 240 | 129.887 | 131.918 | 124.081 |
| 241 | 71.727 |  |  | 241 | 130.331 |  |  |
| 242 | 71.972 |  |  | 242 | 130.787 |  |  |
| 243 | 72.236 |  |  | 243 | 131.253 |  |  |
| 244 | 72.796 |  |  | 244 | 131.725 |  |  |
| 245 | 72.752 |  |  | 245 | 132.197 |  |  |
| 246 | 73.013 |  |  | 246 | 132.664 |  |  |
| 247 | 73.264 |  |  | 247 | 133.148 |  |  |
| 248 | 73.523 | 74.421 | 69.691 | 248 | 133.643 | 135.754 | 127.677 |
| 249 | 73.788 |  |  | 249 | 134.124 |  |  |
| 250 | 74.051 |  |  | 250 | 134.599 |  |  |
| 251 | 74.322 |  |  | 251 | 135.097 |  |  |
| 252 | 74.59 |  |  | 252 | 135.597 |  |  |
| 253 | 74.856 |  |  | 253 | 136.096 |  |  |
| 254 | 75.121 |  |  | 254 | 136.582 |  |  |
| 255 | 75.402 | 76.318 | 71.446 | 255 | 137.077 | 139.267 | 130.983 |

1. 测试结果：根据测试结果表明，各时钟模块正常，TRIMMING功能精度有一定波动。
2. CS2110 MPA DEMO VER1.2原理图：



