# 1.11 A/D输入电压 ；1.12 A/D输入参考电压范围

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1. 测试仪器：直流稳压电源（IT6932A）；串口调试助手
2. 测试工具：CS2110 下载器，CS2110 MPA DEMO VER1.2, 串口调试助手V2.2
3. 上位机下载软件及烧写程序：CS2110 3.0.0



1. 测试方法：烧录ADC测试程序，选用不同参考基准，AN3口输入不同电压，通过串口助手读AN3的AD转换值（波特率2400，发送指令6881）；
2. 要求工作电压（V）：VAD在0-VREF之间可正常工作。

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| 1.8VLDO做基准 | 1# | 2# | 3# |
| 0.1 | C3 | C0 | C7 |
| 0.2 | 1AA | 1A9 | 1AE |
| 0.3 | 292 | 290 | 298 |
| 0.4 | 378 | 376 | 380 |
| 0.5 | 462 | 45D | 465 |
| 0.6 | 543 | 545 | 554 |
| 0.7 | 630 | 62D | 638 |
| 0.8 | 710 | 714 | 715 |
| 0.9 | 800 | 800 | 800 |
| 1 | 8E7 | 8E3 | 8F7 |
| 1.1 | 9CF | 9CA | 9E5 |
| 1.2 | AB5 | AB7 | AC7 |
| 1.3 | B97 | B9D | BB3 |
| 1.4 | C82 | C81 | C9C |
| 1.5 | D67 | D6B | D8B |
| 1.6 | E51 | E53 | E72 |
| 1.7 | F3A | F37 | F58 |
| 1.8 | FFF | FFF | FFF |

1. 测试数据：

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| VDD3V做基准 | 1# | 2# | 3# |
| 0.1 | 76 | 74 | 75 |
| 0.2 | FD | FE | FD |
| 0.3 | 187 | 185 | 186 |
| 0.4 | 210 | 20E | 210 |
| 0.5 | 298 | 298 | 296 |
| 0.6 | 322 | 31F | 321 |
| 0.7 | 3AB | 3AC | 3AA |
| 0.8 | 434 | 433 | 433 |
| 0.9 | 4BD | 4BB | 4BD |
| 1 | 547 | 543 | 545 |
| 1.1 | 5CF | 5CE | 5D8 |
| 1.2 | 658 | 657 | 661 |
| 1.3 | 6E3 | 6E1 | 6EE |
| 1.4 | 76C | 76B | 780 |
| 1.5 | 7F5 | 7F4 | 813 |
| 1.6 | 881 | 880 | 8A0 |
| 1.7 | 909 | 908 | 92A |
| 1.8 | 991 | 98E | 994 |
| 1.9 | A19 | A16 | A1C |
| 2 | AA1 | A9E | AA2 |
| 2.1 | B2A | B28 | B2A |
| 2.2 | BB3 | BB2 | BB4 |
| 2.3 | C3C | C39 | C3D |
| 2.4 | CC5 | CC3 | CC8 |
| 2.5 | D4E | D4C | D51 |
| 2.6 | DD7 | DD5 | DD9 |
| 2.7 | E60 | E5D | E64 |
| 2.8 | EE7 | EE6 | EEC |
| 2.9 | F6C | F6B | F6D |
| 3 | FE5 | FE5 | FE7 |

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| 3.3VLDO做基准 | 1# | 2# | 3# |
| 0.1 | 5A | 59 | 5B |
| 0.2 | DA | D8 | DB |
| 0.3 | 157 | 155 | 15A |
| 0.4 | 1D5 | 1D5 | 1DA |
| 0.5 | 253 | 255 | 25A |
| 0.6 | 2D1 | 2D2 | 2DA |
| 0.7 | 34F | 34F | 357 |
| 0.8 | 3CF | 3CD | 3D7 |
| 0.9 | 44A | 44B | 457 |
| 1 | 4CA | 4CC | 4D7 |
| 1.1 | 549 | 547 | 557 |
| 1.2 | 5C8 | 5C7 | 5D5 |
| 1.3 | 647 | 647 | 657 |
| 1.4 | 6C7 | 6C4 | 6D5 |
| 1.5 | 745 | 742 | 757 |
| 1.6 | 7C3 | 7C3 | 7D7 |
| 1.7 | 843 | 841 | 857 |
| 1.8 | 8C0 | 8C0 | 8D7 |
| 1.9 | 941 | 940 | 954 |
| 2 | 9BF | 9BB | 9D7 |
| 2.1 | A40 | A3A | A57 |
| 2.2 | ABC | ABB | AD7 |
| 2.3 | B38 | B39 | B56 |
| 2.4 | BBB | BB7 | BD7 |
| 2.5 | C3A | C37 | C57 |
| 2.6 | CB5 | CB7 | CD7 |
| 2.7 | D34 | D33 | D57 |
| 2.8 | DB3 | DAF | DD5 |
| 2.9 | E35 | E38 | E56 |
| 3 | EA7 | EAF | EDC |
| 3.1 | F2E | F2D | F57 |
| 3.2 | FAA | FAD | FD8 |
| 3.3 | FFF | FFF | FFF |

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| 2.2VLDO做基准 | 1# | 2# | 3# |
| 0.1 | A1 | A0 | A1 |
| 0.2 | 15F | 15C | 162 |
| 0.3 | 21C | 21A | 21E |
| 0.4 | 2D8 | 2D7 | 2DC |
| 0.5 | 396 | 394 | 39B |
| 0.6 | 453 | 451 | 45D |
| 0.7 | 510 | 510 | 51A |
| 0.8 | 5D1 | 5CD | 5D9 |
| 0.9 | 68B | 68A | 699 |
| 1 | 748 | 747 | 757 |
| 1.1 | 808 | 807 | 818 |
| 1.2 | 8C7 | 8C4 | 8D8 |
| 1.3 | 986 | 981 | 999 |
| 1.4 | A44 | A41 | A57 |
| 1.5 | B03 | B01 | B17 |
| 1.6 | BC0 | BBC | BD3 |
| 1.7 | C77 | C77 | C91 |
| 1.8 | D36 | D37 | D52 |
| 1.9 | DF7 | DFD | E0F |
| 2 | EB1 | EAB | ECB |
| 2.1 | F67 | F65 | F89 |
| 2.2 | FFF | FFF | FFF |

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| 2.4VLDO做基准 | 1# | 2# | 3# |
| 0.1 | 94 | 92 | 95 |
| 0.2 | 144 | 141 | 145 |
| 0.3 | 1F0 | 1EB | 1F3 |
| 0.4 | 29E | 29A | 2A3 |
| 0.5 | 34C | 348 | 353 |
| 0.6 | 3F9 | 3F6 | 400 |
| 0.7 | 4A7 | 4A3 | 4B0 |
| 0.8 | 554 | 551 | 55D |
| 0.9 | 603 | 600 | 60E |
| 1 | 6AA | 6AC | 6BB |
| 1.1 | 75C | 759 | 76B |
| 1.2 | 80D | 808 | 820 |
| 1.3 | 8BA | 8BA | 8D0 |
| 1.4 | 96A | 967 | 97C |
| 1.5 | A17 | A14 | A30 |
| 1.6 | AC7 | AC1 | ADD |
| 1.7 | B70 | B70 | B87 |
| 1.8 | C1F | C18 | C37 |
| 1.9 | CCD | CC8 | CE7 |
| 2 | D79 | D73 | D93 |
| 2.1 | E2B | E23 | E43 |
| 2.2 | ED4 | ED3 | EEF |
| 2.3 | F7F | F80 | F9F |
| 2.4 | FFF | FFF | FFF |

1. 测试结果：根据测试结果表明，选择外部擦参考电压作为基准，A/D输入电压接近VREF。
2. CS2110 MPA DEMO VER1.2原理图：



