

ESP32\_S2\_Beta\_DEVKITC\_V1.1 验证结果

版本 1.0

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# Tx Performance

## Test Condition

|  |  |
| --- | --- |
| **Information** | **Condition** |
| Chip Name | Chip722 |
| Temperature | 25℃ |
| DC | 串口供电 |
| Test Method | 辐射 |

## Transmitter ( Tx ) Test Result

经多次阻抗调试，RF性能无法满足要求，高低信道EVM 不平非常明显，做过如下Debug：

1. 将串口5v转3v3 供电的方式改为 外部单独3v3 供电的方式，无改善；
2. 怀疑是CPU 80M 时钟的干扰，将时钟修改为160M， 无改善；
3. 怀疑是晶振的干扰，将串联电阻修改为100ohm，无改善；
4. 将天线边的排针去掉，现象变为低信道EVM 差，高信道EVM OK;
5. 怀疑为天线本身特性导致的channel不一致，查看天线S11，中心频点偏离大于100Mhz，将天线

|  |  |  |  |
| --- | --- | --- | --- |
| **Rate** | **Power(dBm)** | **Max\_Curr(mA)** | **Avg\_Curr(mA)** |
| 1m | 19.24 | 417.47 | 266.33 |
| 2m | 19.2 | 418.89 | 267.34 |
| 5.5m | 19.31 | 432.23 | 274.04 |
| 11m | 19.2 | 414.21 | 265.11 |
| 6m | 17.7 | 328.66 | 222.19 |
| 9m | 17.71 | 334.67 | 225.31 |
| 12m | 17.71 | 336.62 | 226.18 |
| 18m | 17.71 | 335.23 | 225.51 |
| 24m | 16.73 | 307.62 | 211.65 |
| 36m | 16.73 | 311.42 | 213.53 |
| 48m | 15.76 | 293.42 | 204.52 |
| 54m | 13.74 | 269.66 | 192.67 |
| HT20 MCS0 | 17.66 | 338.01 | 226.79 |
| HT20 MCS1 | 17.64 | 337.7 | 226.64 |
| HT20 MCS2 | 17.64 | 331.14 | 223.33 |
| HT20 MCS3 | 16.68 | 319.6 | 217.59 |
| HT20 MCS4 | 16.68 | 316.12 | 215.88 |
| HT20 MCS5 | 15.71 | 298.45 | 207.04 |
| HT20 MCS6 | 13.71 | 266.57 | 191.05 |
| HT20 MCS7 | 13.43 | 256.62 | 185.96 |
| HT40 MCS0 | 18.02 | 337.48 | 229.37 |
| HT40 MCS1 | 18 | 336.64 | 229.41 |
| HT40 MCS2 | 17.98 | 339.28 | 230.59 |
| HT40 MCS3 | 17.06 | 315.14 | 218.64 |
| HT40 MCS4 | 17.05 | 313.77 | 217.98 |
| HT40 MCS5 | 16.1 | 304.42 | 213.03 |
| HT40 MCS6 | 14.12 | 272.6 | 197.39 |
| HT40 MCS7 | 13.21 | 261.77 | 191.95 |

## Receiver ( Rx) Current Test Result

|  |  |  |
| --- | --- | --- |
| **Rate** | **Max\_Curr(mA)** | **Avg\_Curr(mA)** |
| 1m | 114.93 | 114.09 |
| 2m | 114.93 | 114.03 |
| 5.5m | 114.98 | 113.81 |
| 11m | 114.93 | 114.1 |
| 6m | 115.9 | 114.21 |
| 9m | 115.09 | 114.21 |
| 12m | 115.14 | 114.18 |
| 18m | 115.14 | 114.2 |
| 24m | 115.09 | 113.91 |
| 36m | 115.04 | 114.27 |
| 48m | 115.04 | 114.21 |
| 54m | 115.52 | 113.74 |
| HT20 MCS0 | 115.09 | 114.18 |
| HT20 MCS1 | 114.98 | 114.24 |
| HT20 MCS2 | 115.04 | 114.02 |
| HT20 MCS3 | 115.2 | 114.19 |
| HT20 MCS4 | 115.3 | 114.18 |
| HT20 MCS5 | 115.09 | 114.09 |
| HT20 MCS6 | 115.73 | 114.16 |
| HT20 MCS7 | 116 | 114.24 |
| HT40 MCS0 | 124.39 | 121.36 |
| HT40 MCS1 | 124.22 | 121.3 |
| HT40 MCS2 | 124.06 | 121.37 |
| HT40 MCS3 | 124.39 | 121.48 |
| HT40 MCS4 | 126.16 | 121.38 |
| HT40 MCS5 | 124.12 | 121.49 |
| HT40 MCS6 | 124.44 | 121.45 |
| HT40 MCS7 | 125.03 | 121.56 |