ESP8089_蜂汇物联

RF Verification Report

April 8, 2018

Version 1.2

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1. Optimized Matching

1.1. Module Photo

The test instrument used was the WT200 tester. The test method applied was the Conductive test.The external power supply was used and the Device Under Test (DUT) was placed inside a shielding box. After matching modulated by Espressif, the suitable parameters of the RF components are as Figure 1-1 shows.

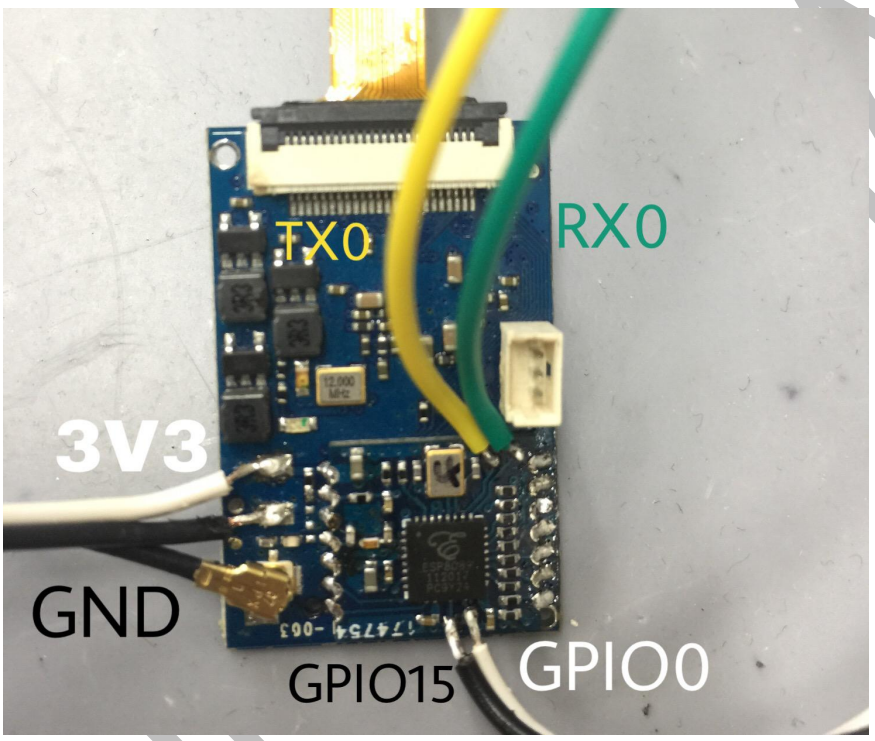


Figure 1-1. Matching Results

Table 1-1 RF matching Parameters

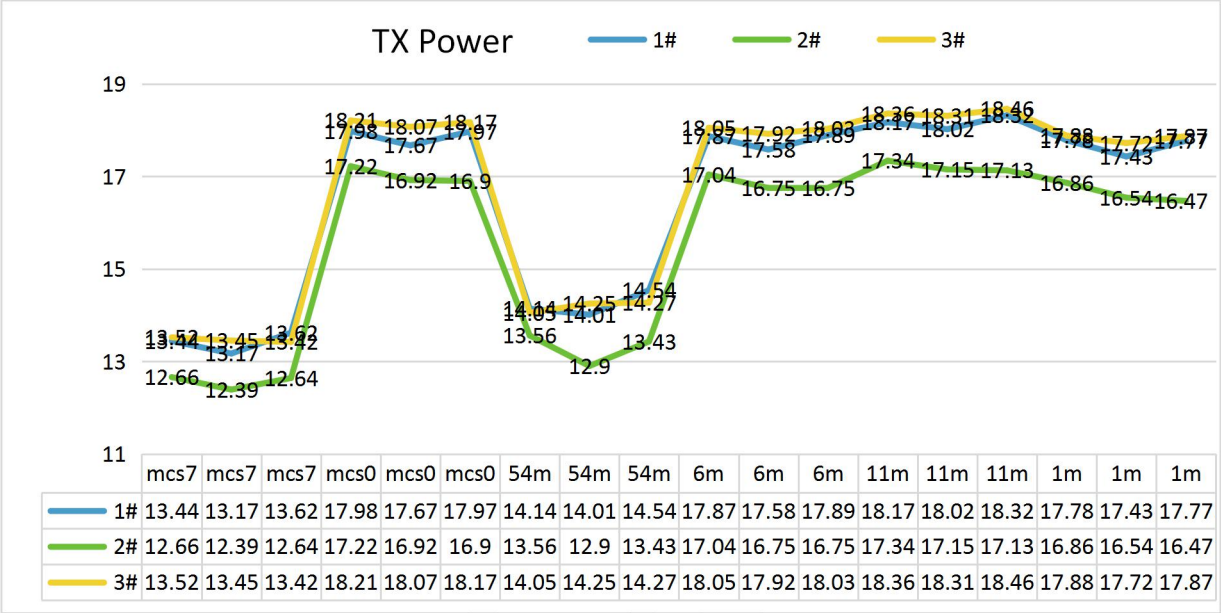
Test Bin :ESP8089_RF_TXRX_BIN_26m_LOG102_20171130.bin	
Matching Parameters	Part number
Original Matching	

2. TX Performance

2.1. Conductive Test Results

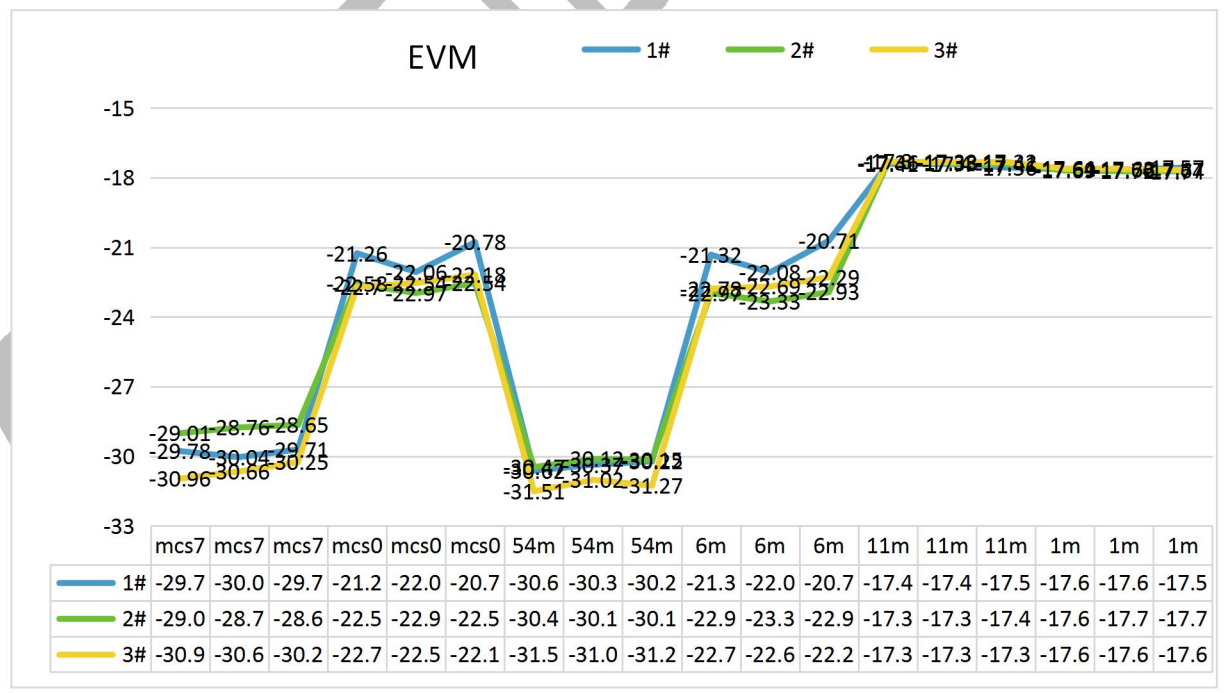
The Conductive TX performance results are shown in Table 2-1,Table 2-2&Table 2-3.

Table 2-1 TX Power Test Date Map



	mcs7	mcs7	mcs7	mcs0	mcs0	mcs0	54m	54m	54m	6m	6m	6m	11m	11m	11m	1m	1m	1m
1#	13.44	13.17	13.62	17.98	17.67	17.97	14.14	14.01	14.54	17.87	17.58	17.89	18.17	18.02	18.32	17.78	17.43	17.77
2#	12.66	12.39	12.64	17.22	16.92	16.9	13.56	12.9	13.43	17.04	16.75	16.75	17.34	17.15	17.13	16.86	16.54	16.47
3#	13.52	13.45	13.42	18.21	18.07	18.17	14.05	14.25	14.27	18.05	17.92	18.03	18.36	18.31	18.46	17.88	17.72	17.87

Table 2-2 EVM Test Date Map



	mcs7	mcs7	mcs7	mcs0	mcs0	mcs0	54m	54m	54m	6m	6m	6m	11m	11m	11m	1m	1m	1m
1#	-29.7	-30.0	-29.7	-21.2	-22.0	-20.7	-30.6	-30.3	-30.2	-21.3	-22.0	-20.7	-17.4	-17.4	-17.5	-17.6	-17.6	-17.5
2#	-29.0	-28.7	-28.6	-22.5	-22.9	-22.5	-30.4	-30.1	-30.1	-22.9	-23.3	-22.9	-17.3	-17.3	-17.4	-17.6	-17.7	-17.7
3#	-30.9	-30.6	-30.2	-22.7	-22.5	-22.1	-31.5	-31.0	-31.2	-22.7	-22.6	-22.2	-17.3	-17.3	-17.3	-17.6	-17.6	-17.6

Table 2-2 Frequency Error Date

Crystal(New)		After Matching			Result
Vender	PN	C1	C2	Frequency Error	PASS
Original BOM				-5~2ppm	

2.2. Conclusion------[PASS]

The TX Power and EVM performance conform to the requirements after the RF modulation, the Frequency Offset also meet the spec. It is recommended that users adjust the RF components according to the parameters shown in Table 1-1.

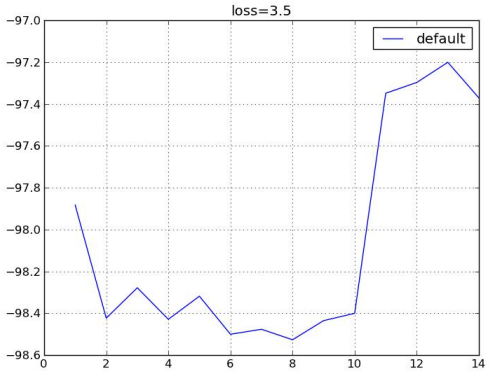
3. Rx Sensitivity

The test equipment for Rx sensitivity was the WT200 tester, and the DUT was placed inside a shielded box.

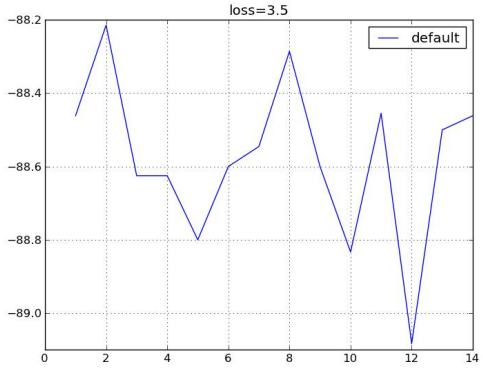
3.1. Conductive Test Results

The Conductive Rx sensitivity test results are shown in Table 3-1.

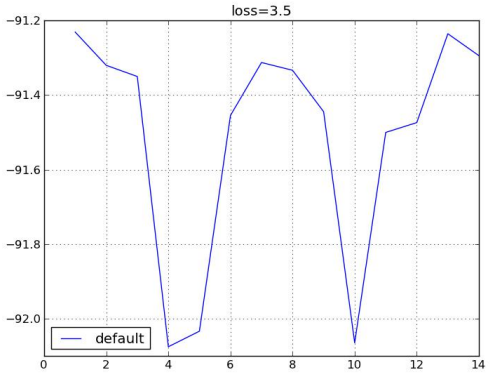
Table 3-1 Conductive RX Sensitivity



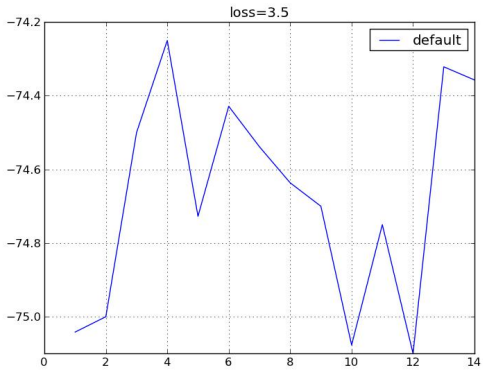
1M <-98dBm>



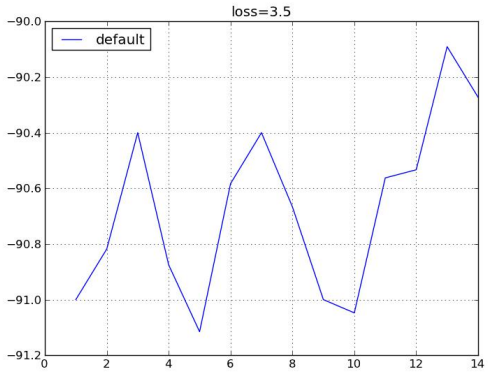
11M<-91dBm>



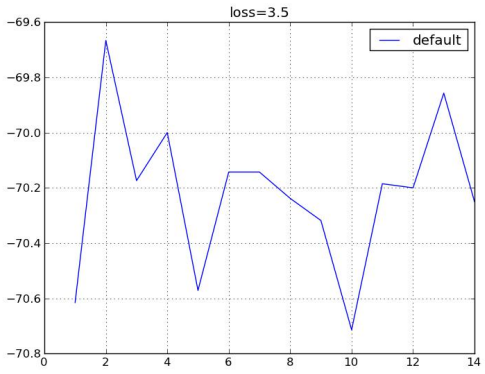
6M <-93dBm>



54M <-74dBm>



MCS0 <-92dbm>



MCS7 <-70dBm>

3.2. Conclusion------[PASS]

The Rx sensitivity results conform to the requirements after the RF modulation. It is recommended that users adjust the RF components according to the parameters shown in Figure 1-1.

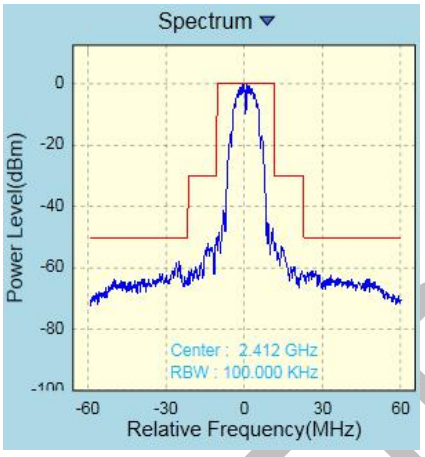
4. Spectrum Mask

The test equipment for Spectrum Mask used was the WT200 tester, and the DUT was placed inside a shielded box.

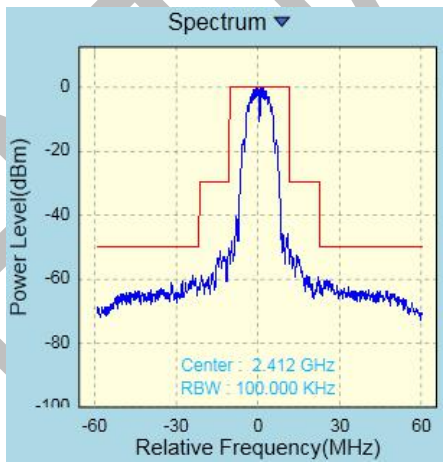
4.1. Conductive Test Results

The Conductive Spectrum Mask test results are shown in Table 4-1.

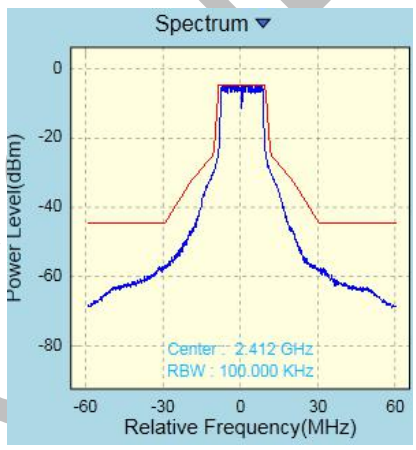
Table 4-1 Conductive Spectrum Mask



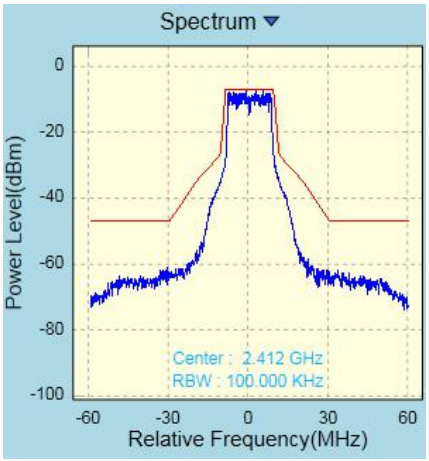
1M



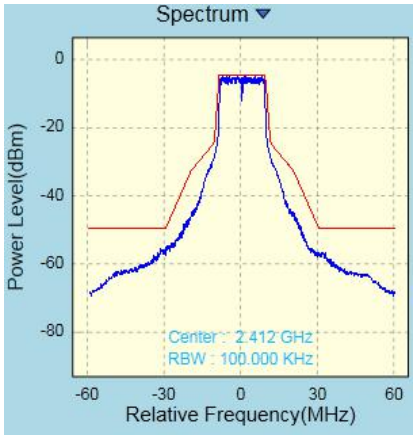
11M



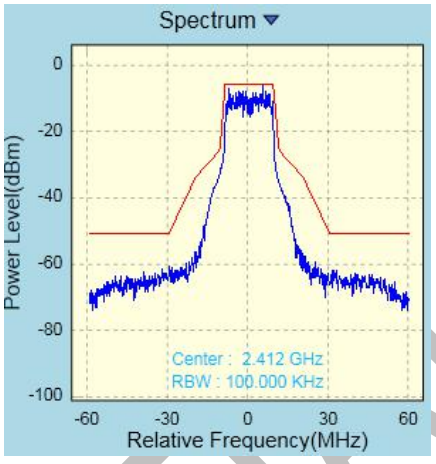
6M



54M



MCS0



MCS7

4.2. Conclusion------[PASS]

The Conductive Spectrum Mask test results conform to the requirements.

5. Spurious Emission

The test equipment for Spurious Emission used was the Spectrum Analyzer, and the DUT was placed inside a shielded box.

5.1. Conductive Test Results

The Conductive Spurious Emission test results are shown in Table 5-1.

Table 5-1 Conductive Spurious Emission date

5.2. Conclusion------[PASS]

The Conductive Spurious Emission test results conform to the requirements.

*Note:

The Spurious Emission has complex environment require in certification process, and the spectrum analyzer has limited function. So the Spectrum Emission result just for reference, you can get the actual result from certification lab.

Espressif IOT Team

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