

**Espressif IOT ESP**

**Bluetooth Auto Test Report**

**Version 1.0**

Espressif Systems IOT Team

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A2 Report Revision History:

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| --- | --- | --- | --- |
| Table 1 | | | |
| Revision | Date | Changes | Author |
|  |  |  |  |

Module&Test Information

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| Table 2 | |
| Module Name: | ESP32\_Test\_Board |
| PCB Version: | None |
| Sample number: | #1 |
| Test Engineer: | zengaiqin |
| Test Date: | 10/23/18 21:13:56 |
| Test Place: | Second floor laboratory |
| Test Equipment: | WT-200 |
| Test Bin | V145 |
| Cable loss/dB: | 12.8 |
| Pi match/s11 smith: | default |
| RF Port: | 1.0 |
| Note: | |

1. Test Item Summary

1.1. Static Performance

1.1.1. Basic rate TX

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| Table 3 | | |
| No. | Test Items | Pass/Fail |
| 1 | Basic rate TX | pass |
| 2 | 2M EDR TX | pass |
| 3 | 3M EDR TX | pass |
| 4 | BLE TX | pass |

1.1.2. Receiver sensitivity

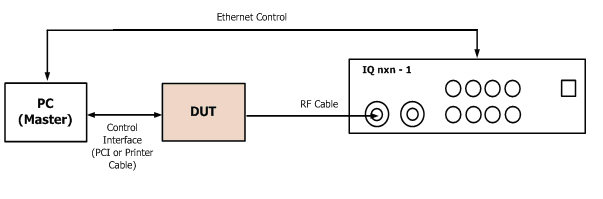
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| Table 4 | | |
| No. | Test Items | Pass/Fail |
| 1 | BR sensitivity | pass |
| 2 | 2M EDR sensitivity | pass |
| 3 | 3M EDR sensitivity | pass |
| 3 | BLE sensitivity | pass |

1. Test Result

2.1. Test setup

a. Maximum Transmit Power Profile vs. Operation Channel

Test Setup:



**Figure 1: WiFi TX Performance Environment Setup**

Note :

1. Config the instrument setup as above.
2. Select Tx Rate/Channel/BW as tables specified below.
3. Run the Test script and record test results.

2.2. Basic rate TX

Requirement

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| Table 5 | |
| Specification | Requirement |
| Frequency range(MHz) | (2400,2483.5) |
| Output Power(dBm) | (-3, +3) @power\_level=4； |
| Init Freq Error(kHz) | (-75kHz,+75kHz) |
| Bandwidth20dB(kHz) | ≤ 1000kHz |
| deltaF2Max(kHz) | (115kHz ,500kHz)(at least 99%) |
| deltaF2Avg(kHz) | (112kHz, 500kHz) |
| deltaF1Avg(kHz) | (140kH, 175kHz) |

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| Table 6 | | | | | | | | | |
| Data rate | 1M\_DH5\_1010 | | | | | | | | |
| Channel | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 78 |
| Frequency | 2402 | 2412 | 2422 | 2432 | 2442 | 2452 | 2462 | 2472 | 2480 |
| Output Power(dBm) | -0.14 | -0.10 | -0.15 | -0.45 | -0.57 | -0.63 | -0.82 | -0.39 | -0.01 |
| Init Freq Error(KHz) | -17.27 | -12.80 | -14.94 | -17.53 | -13.86 | -15.47 | -19.25 | -15.08 | -18.37 |
| deltaF2Max(kHz) | 144.62 | 145.97 | 148.05 | 144.87 | 146.94 | 147.20 | 148.79 | 145.55 | 145.41 |
| deltaF2Avg(kHz) | 138.80 | 139.56 | 140.81 | 138.67 | 140.42 | 140.45 | 142.68 | 139.03 | 138.36 |
| **Pass/Fail** | pass | pass | pass | pass | pass | pass | pass | pass | pass |
| Power by channel | bt_pwr_1M_DH5_1010 | | | | | | | | |
| Init Freq Error by channel | bt_Init_Freq_Err_1M_DH5_1010 | | | | | | | | |
| deltaF2Max by channel | bt_deltaF2Max_1M_DH5_1010 | | | | | | | | |
| deltaF2Avg by channel | bt_deltaF2Avg_1M_DH5_1010_pwr | | | | | | | | |
| **Note：** | **1M\_DH5\_1010 meets the test requirements** | | | | | | | | |

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| Table 7 | | | | | | | | | |
| Data rate | 1M\_DH5\_00001111 | | | | | | | | |
| Channel | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 78 |
| Frequency | 2402 | 2412 | 2422 | 2432 | 2442 | 2452 | 2462 | 2472 | 2480 |
| Output Power(dBm) | -0.50 | -0.22 | -0.35 | -0.63 | -0.72 | -0.73 | -0.86 | -0.50 | -0.21 |
| Init Freq Error(KHz) | -19.07 | -14.53 | -16.40 | -19.30 | -14.60 | -17.01 | -20.11 | -15.93 | -18.89 |
| deltaF1Avg(kHz) | 157.56 | 154.53 | 157.15 | 155.99 | 156.31 | 154.10 | 156.92 | 155.71 | 157.31 |
| **Pass/Fail** | pass | pass | pass | pass | pass | pass | pass | pass | pass |
| Power by channel | bt_pwr_1M_DH5_00001111 | | | | | | | | |
| Init Freq Error by channel | bt_Init_Freq_Err_1M_DH5_00001111 | | | | | | | | |
| deltaF1Avg by channel | bt_deltaF1Avg_1M_DH5_00001111 | | | | | | | | |
| **Note：** | **1M\_DH5\_00001111 meets the test requirements** | | | | | | | | |

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| Table 8 | | | | | | | | | |
| Data rate | 1M\_DH5\_prbs9 | | | | | | | | |
| Channel | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 78 |
| Frequency | 2402 | 2412 | 2422 | 2432 | 2442 | 2452 | 2462 | 2472 | 2480 |
| Output Power(dBm) | -0.54 | -0.35 | -0.38 | -0.70 | -0.76 | -0.84 | -0.89 | -0.54 | -0.24 |
| Init Freq Error(KHz) | -19.83 | -15.34 | -17.65 | -20.05 | -15.45 | -18.43 | -21.17 | -16.88 | -19.18 |
| Bandwidth20dB(kHz) | 910.00 | 910.00 | 910.00 | 910.00 | 910.00 | 910.00 | 910.00 | 910.00 | 910.00 |
| **Pass/Fail** | pass | pass | pass | pass | pass | pass | pass | pass | pass |
| Power by channel | bt_pwr_1M_DH5_prbs9 | | | | | | | | |
| Init Freq Error by channel | bt_Init_Freq_Err_1M_DH5_prbs9 | | | | | | | | |
| Bandwidth20dB by channel | bt_bandwidth20dB_1M_DH5_prbs9 | | | | | | | | |
| **Note：** | **1M\_DH5\_prbs9 meets the test requirements** | | | | | | | | |

2.3 Enhanced data rate 2M TX

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| Table 9 | |
| Specification | Requirement |
| Output Power(dBm) | (-3, +3) @power\_level=4； |
| Init Freq Error(kHz) | (-75,+75) |
| OMEGA\_I(kHz) | (-75kHz, +75kHz)，for all packets |
| OMEGA\_O(kHz) | (-10kHz, 10kHz)，for all block |
| OMEGA\_IO(kHz) | (-75kHz, +75kHz)，for all block |
| DEVM Average(%) | (0, 20) @ 2M |
| DEVM Peak(%) | (0, 35) @ 2M |
| EdrprobEVM99pass(%) | (0, 30) @ 2M |
| EdrPowDiffdB(dB) | (-4dBm, 1dBm) |

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| Table 10 | | | | | | | | | |
| Data rate | 2M\_DH5\_1010 | | | | | | | | |
| Channel | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 78 |
| Frequency | 2402 | 2412 | 2422 | 2432 | 2442 | 2452 | 2462 | 2472 | 2480 |
| Output Power(dBm) | -0.71 | -0.51 | -0.56 | -0.86 | -0.94 | -1.01 | -1.05 | -0.72 | -0.40 |
| Init Freq Error(kHz) | -19.65 | -15.79 | -18.40 | -20.51 | -16.25 | -17.51 | -20.83 | -16.65 | -19.45 |
| OMEGA\_I(kHz) | -17.07 | -16.93 | -17.52 | -17.81 | -17.74 | -17.32 | -17.21 | -17.83 | -17.60 |
| OMEGA\_O(kHz) | -1.55 | -1.07 | -2.01 | -2.47 | -2.29 | -1.87 | -2.68 | -1.36 | -1.72 |
| OMEGA\_IO(kHz) | -18.62 | -18.01 | -19.54 | -20.28 | -20.03 | -19.18 | -19.88 | -19.19 | -19.31 |
| DEVM Average(%) | 4.04 | 3.99 | 3.92 | 3.86 | 4.01 | 4.12 | 4.30 | 4.17 | 4.16 |
| DEVM Peak(%) | 6.38 | 6.51 | 6.29 | 6.26 | 6.62 | 6.69 | 6.50 | 6.78 | 6.66 |
| EdrprobEVM99pass(%) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| EdrPowDiffdB(dB) | -0.19 | -0.19 | -0.19 | -0.18 | -0.18 | -0.20 | -0.22 | -0.20 | -0.21 |
| **Pass/Fail** | pass | pass | pass | pass | pass | pass | pass | pass | pass |
| Power by channel | bt_pwr_2M_DH5_1010 | | | | | | | | |
| Init Freq Error by channel | bt_Init_Freq_Err_2M_DH5_1010 | | | | | | | | |
| DEVM Average(%) by channel | bt_EdrEVMAv_2M_DH5_1010 | | | | | | | | |
| DEVM Peak(%) | bt_EdrEVMpk_2M_DH5_1010 | | | | | | | | |
| EdrPowDiffdB by channel | bt_EdrPowDiffdB_2M_DH5_1010 | | | | | | | | |
| **Note:** | **2M\_DH5\_1010 meets the test requirements** | | | | | | | | |

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| Table 11 | | | | | | | | | |
| Data rate | 2M\_DH5\_00001111 | | | | | | | | |
| Channel | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 78 |
| Frequency | 2402 | 2412 | 2422 | 2432 | 2442 | 2452 | 2462 | 2472 | 2480 |
| Output Power(dBm) | -0.78 | -0.60 | -0.63 | -0.94 | -0.99 | -1.08 | -1.12 | -0.78 | -0.47 |
| Init Freq Error(kHz) | -20.78 | -15.19 | -17.82 | -20.57 | -15.82 | -17.75 | -21.70 | -17.13 | -19.87 |
| OMEGA\_I(kHz) | -17.03 | -17.29 | -17.70 | -17.94 | -17.67 | -17.92 | -17.56 | -18.18 | -18.29 |
| OMEGA\_O(kHz) | -1.98 | -1.73 | -1.64 | -2.93 | -1.15 | -1.93 | -1.48 | -2.36 | -2.47 |
| OMEGA\_IO(kHz) | -19.00 | -19.02 | -19.34 | -20.87 | -18.82 | -19.85 | -19.04 | -20.54 | -20.76 |
| DEVM Average(%) | 5.09 | 4.75 | 5.23 | 5.03 | 5.57 | 5.22 | 5.34 | 5.22 | 5.30 |
| DEVM Peak(%) | 8.52 | 8.37 | 9.34 | 8.33 | 9.77 | 8.70 | 9.02 | 9.21 | 8.93 |
| EdrprobEVM99pass(%) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| EdrPowDiffdB(dB) | -0.25 | -0.25 | -0.24 | -0.23 | -0.25 | -0.26 | -0.25 | -0.23 | -0.23 |
| **Pass/Fail** | pass | pass | pass | pass | pass | pass | pass | pass | pass |
| Power by channel | bt_pwr_2M_DH5_00001111 | | | | | | | | |
| Init Freq Error by channel | bt_Init_Freq_Err_2M_DH5_00001111 | | | | | | | | |
| DEVM Average(%) by channel | bt_EdrEVMAv_2M_DH5_00001111 | | | | | | | | |
| DEVM Peak(%) | bt_EdrEVMpk_2M_DH5_00001111 | | | | | | | | |
| EdrPowDiffdB by channel | bt_EdrPowDiffdB_2M_DH5_00001111 | | | | | | | | |
| **Note:** | **2M\_DH5\_00001111 meets the test requirements** | | | | | | | | |

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| Table 12 | | | | | | | | | |
| Data rate | 2M\_DH5\_prbs9 | | | | | | | | |
| Channel | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 78 |
| Frequency | 2402 | 2412 | 2422 | 2432 | 2442 | 2452 | 2462 | 2472 | 2480 |
| Output Power(dBm) | -0.72 | -0.52 | -0.58 | -0.85 | -0.96 | -1.02 | -1.07 | -0.71 | -0.40 |
| Init Freq Error(kHz) | -20.36 | -15.42 | -17.99 | -20.60 | -15.54 | -18.53 | -21.86 | -16.44 | -20.40 |
| OMEGA\_I(kHz) | -17.27 | -17.65 | -17.54 | -17.22 | -18.29 | -18.36 | -18.47 | -18.88 | -17.59 |
| OMEGA\_O(kHz) | -2.16 | -2.26 | -1.42 | -1.69 | -2.32 | -1.92 | -2.60 | -2.76 | -1.84 |
| OMEGA\_IO(kHz) | -19.43 | -19.91 | -18.97 | -18.91 | -20.61 | -20.28 | -21.07 | -21.65 | -19.43 |
| DEVM Average(%) | 5.12 | 5.21 | 5.21 | 5.05 | 4.96 | 5.07 | 5.40 | 5.46 | 5.33 |
| DEVM Peak(%) | 10.73 | 10.97 | 10.56 | 10.63 | 10.93 | 10.70 | 11.39 | 11.29 | 11.14 |
| EdrprobEVM99pass(%) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| EdrPowDiffdB(dB) | -0.16 | -0.16 | -0.16 | -0.18 | -0.14 | -0.14 | -0.13 | -0.14 | -0.17 |
| **Pass/Fail** | pass | pass | pass | pass | pass | pass | pass | pass | pass |
| Power by channel | bt_pwr_2M_DH5_prbs9 | | | | | | | | |
| Init Freq Error by channel | bt_Init_Freq_Err_2M_DH5_prbs9 | | | | | | | | |
| DEVM Average(%) by channel | bt_EdrEVMAv_2M_DH5_prbs9 | | | | | | | | |
| DEVM Peak(%) | bt_EdrEVMpk_2M_DH5_prbs9 | | | | | | | | |
| EdrPowDiffdB by channel | bt_EdrPowDiffdB_2M_DH5_prbs9 | | | | | | | | |
| **Note:** | **2M\_DH5\_prbs9 meets the test requirements** | | | | | | | | |

2.4Enhanced data rate 3M TX

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| Table 13 | |
| Specification | Requirement |
| Output Power(dBm) | (-3, +3) @power\_level=4； |
| Init Freq Error(kHz) | (-75,+75) |
| OMEGA\_I(kHz) | (-75kHz, +75kHz)，for all packets |
| OMEGA\_O(kHz) | (-10kHz, 10kHz)，for all block |
| OMEGA\_IO(kHz) | (-75kHz, +75kHz)，for all block |
| DEVM Average(%) | (0, 13)@ 3M |
| DEVM Peak(%) | (0, 25)@ 3M |
| EdrprobEVM99pass(%) | (0, 20)@ 3M |
| EdrPowDiffdB(dB) | (-4dBm, 1dBm) |

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| Table 14 | | | | | | | | | |
| Data rate | 3M\_DH5\_1010 | | | | | | | | |
| Channel | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 78 |
| Frequency | 2402 | 2412 | 2422 | 2432 | 2442 | 2452 | 2462 | 2472 | 2480 |
| Output Power(dBm) | -0.75 | -0.56 | -0.60 | -0.90 | -0.97 | -1.06 | -1.08 | -0.73 | -0.44 |
| Init Freq Error(kHz) | -20.34 | -16.46 | -17.92 | -21.03 | -15.70 | -18.63 | -21.59 | -16.45 | -20.18 |
| OMEGA\_I(kHz) | -17.20 | -17.57 | -17.98 | -17.87 | -17.82 | -18.11 | -17.98 | -18.56 | -18.25 |
| OMEGA\_O(kHz) | -1.66 | -2.26 | -1.77 | -2.09 | -1.33 | -2.22 | -2.76 | -2.28 | -2.71 |
| OMEGA\_IO(kHz) | -18.86 | -19.83 | -19.75 | -19.96 | -19.15 | -20.33 | -20.74 | -20.84 | -20.97 |
| DEVM Average(%) | 6.69 | 6.56 | 6.57 | 6.65 | 6.60 | 6.61 | 6.73 | 6.67 | 6.71 |
| DEVM Peak(%) | 10.03 | 10.36 | 9.71 | 9.79 | 9.94 | 9.81 | 10.15 | 10.23 | 10.06 |
| EdrprobEVM99pass(%) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| EdrPowDiffdB(dB) | -0.16 | -0.17 | -0.16 | -0.16 | -0.17 | -0.17 | -0.16 | -0.16 | -0.15 |
| **Pass/Fail** | pass | pass | pass | pass | pass | pass | pass | pass | pass |
| Power by channel | bt_pwr_3M_DH5_1010 | | | | | | | | |
| Init Freq Error by channel | bt_Init_Freq_Err_3M_DH5_1010 | | | | | | | | |
| DEVM Average(%) by channel | bt_EdrEVMAv_3M_DH5_1010 | | | | | | | | |
| DEVM Peak(%) | bt_EdrEVMpk_3M_DH5_1010 | | | | | | | | |
| EdrPowDiffdB by channel | bt_EdrPowDiffdB_3M_DH5_1010 | | | | | | | | |
| **Note:** | **3M\_DH5\_1010 meets the test requirements** | | | | | | | | |

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| Table 15 | | | | | | | | | |
| Data rate | 3M\_DH5\_00001111 | | | | | | | | |
| Channel | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 78 |
| Frequency | 2402 | 2412 | 2422 | 2432 | 2442 | 2452 | 2462 | 2472 | 2480 |
| Output Power(dBm) | -0.76 | -0.53 | -0.61 | -0.95 | -0.99 | -1.05 | -1.06 | -0.76 | -0.47 |
| Init Freq Error(kHz) | -20.79 | -15.96 | -18.54 | -20.36 | -16.63 | -18.86 | -21.68 | -16.91 | -20.25 |
| OMEGA\_I(kHz) | -17.08 | -17.30 | -17.38 | -18.11 | -18.21 | -18.18 | -17.57 | -18.30 | -18.31 |
| OMEGA\_O(kHz) | -1.40 | -1.90 | -2.23 | -1.33 | -1.84 | -1.85 | -1.79 | -1.86 | -2.31 |
| OMEGA\_IO(kHz) | -18.49 | -19.20 | -19.61 | -19.44 | -20.05 | -20.03 | -19.36 | -20.16 | -20.62 |
| DEVM Average(%) | 4.93 | 5.30 | 4.98 | 4.08 | 4.34 | 4.88 | 5.25 | 4.53 | 4.65 |
| DEVM Peak(%) | 8.17 | 8.34 | 8.03 | 7.41 | 7.75 | 7.99 | 8.23 | 7.70 | 8.08 |
| EdrprobEVM99pass(%) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| EdrPowDiffdB(dB) | -0.17 | -0.14 | -0.16 | -0.17 | -0.16 | -0.17 | -0.13 | -0.14 | -0.17 |
| **Pass/Fail** | pass | pass | pass | pass | pass | pass | pass | pass | pass |
| Power by channel | bt_pwr_3M_DH5_00001111 | | | | | | | | |
| Init Freq Error by channel | bt_Init_Freq_Err_3M_DH5_00001111 | | | | | | | | |
| DEVM Average(%) by channel | bt_EdrEVMAv_3M_DH5_00001111 | | | | | | | | |
| DEVM Peak(%) | bt_EdrEVMpk_3M_DH5_00001111 | | | | | | | | |
| EdrPowDiffdB by channel | bt_EdrPowDiffdB_3M_DH5_00001111 | | | | | | | | |
| **Note:** | **3M\_DH5\_00001111 meets the test requirements** | | | | | | | | |

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| Table 16 | | | | | | | | | |
| Data rate | 3M\_DH5\_prbs9 | | | | | | | | |
| Channel | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 78 |
| Frequency | 2402 | 2412 | 2422 | 2432 | 2442 | 2452 | 2462 | 2472 | 2480 |
| Output Power(dBm) | -0.76 | -0.58 | -0.62 | -0.92 | -0.98 | -1.05 | -1.10 | -0.75 | -0.44 |
| Init Freq Error(kHz) | -21.08 | -16.80 | -17.84 | -21.23 | -16.51 | -18.65 | -21.09 | -17.73 | -20.09 |
| OMEGA\_I(kHz) | -17.17 | -17.98 | -18.16 | -17.22 | -17.87 | -17.87 | -18.55 | -18.09 | -18.49 |
| OMEGA\_O(kHz) | -2.09 | -1.95 | -1.57 | -1.93 | -1.27 | -1.53 | -2.19 | -1.74 | -2.25 |
| OMEGA\_IO(kHz) | -19.25 | -19.93 | -19.73 | -19.15 | -19.13 | -19.40 | -20.74 | -19.84 | -20.74 |
| DEVM Average(%) | 5.04 | 5.01 | 5.08 | 5.52 | 5.16 | 4.97 | 5.13 | 5.10 | 5.33 |
| DEVM Peak(%) | 9.91 | 10.38 | 10.28 | 10.91 | 10.48 | 10.02 | 10.67 | 10.47 | 10.65 |
| EdrprobEVM99pass(%) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| EdrPowDiffdB(dB) | -0.15 | -0.14 | -0.15 | -0.16 | -0.16 | -0.17 | -0.15 | -0.15 | -0.15 |
| **Pass/Fail** | pass | pass | pass | pass | pass | pass | pass | pass | pass |
| Power by channel | bt_pwr_3M_DH5_prbs9 | | | | | | | | |
| Init Freq Error by channel | bt_Init_Freq_Err_3M_DH5_prbs9 | | | | | | | | |
| DEVM Average(%) by channel | bt_EdrEVMAv_3M_DH5_prbs9 | | | | | | | | |
| DEVM Peak(%) | bt_EdrEVMpk_3M_DH5_prbs9 | | | | | | | | |
| EdrPowDiffdB by channel | bt_EdrPowDiffdB_3M_DH5_prbs9 | | | | | | | | |
| **Note:** | **3M\_DH5\_prbs9 meets the test requirements** | | | | | | | | |

2.5 BLE TX

Requirement

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| Table 17 | |
| Specification | Requirement |
| Frequency range(MHz) | (2400,2483.5) |
| Output Power(dBm) | (-3, +3) @power\_level=4； |
| Init Freq Error(kHz) | (-150kHz,+150kHz) |
| deltaF2Max(kHz) | (185kHz ,500kHz)(at least 99%) |
| deltaF2Avg(kHz) | (180kHz, 500kHz) |
| deltaF1Avg(kHz) | (225kH, 275kHz) |

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| Table1 18 | | | | | | | | | |
| Data rate | LE\_1010 | | | | | | | | |
| Channel | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 39 |
| Frequency | 2402 | 2412 | 2422 | 2432 | 2442 | 2452 | 2462 | 2472 | 2480 |
| Output Power(dBm) | -1.18 | -1.14 | -1.08 | -1.36 | -1.71 | -1.56 | -1.10 | -0.87 | -0.55 |
| Init Freq Error(kHz) | -16.06 | -18.18 | -18.56 | -16.91 | -18.85 | -18.31 | -16.89 | -18.62 | -17.93 |
| deltaF2Max(kHz) | 222.89 | 226.37 | 223.82 | 223.41 | 224.04 | 225.02 | 223.81 | 225.94 | 227.56 |
| deltaF2Avg(kHz) | 216.68 | 219.73 | 217.00 | 216.99 | 217.54 | 218.32 | 217.47 | 219.97 | 220.94 |
| **Pass/Fail** | pass | pass | pass | pass | pass | pass | pass | pass | pass |
| Power by channel | bt_pwr_LE_1010 | | | | | | | | |
| Init Freq Error by channel | bt_Init_Freq_Err_LE_1010 | | | | | | | | |
| deltaF2Max by channel | bt_deltaF2Max_LE_1010 | | | | | | | | |
| deltaF2Avg by channel | bt_deltaF2Avg_LE_1010_pwr | | | | | | | | |
| **Note：** | **LE\_1010 meets the test requirements** | | | | | | | | |

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| Table1 19 | | | | | | | | | |
| Data rate | LE\_00001111 | | | | | | | | |
| Channel | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 39 |
| Frequency | 2402 | 2412 | 2422 | 2432 | 2442 | 2452 | 2462 | 2472 | 2480 |
| Output Power(dBm) | -1.30 | -1.11 | -1.15 | -1.45 | -1.75 | -1.61 | -1.17 | -0.83 | -0.50 |
| Init Freq Error(kHz) | -16.60 | -18.78 | -18.88 | -17.16 | -19.41 | -18.42 | -17.30 | -18.93 | -18.42 |
| deltaF1Avg(kHz) | 241.76 | 242.77 | 242.13 | 241.62 | 245.82 | 242.59 | 246.13 | 244.91 | 241.77 |
| **Pass/Fail** | pass | pass | pass | pass | pass | pass | pass | pass | pass |
| Power by channel | bt_pwr_LE_00001111 | | | | | | | | |
| Init Freq Error by channel | bt_Init_Freq_Err_LE_00001111 | | | | | | | | |
| deltaF1Avg by channel | bt_deltaF1Avg_LE_00001111 | | | | | | | | |
| **Note：** | **LE\_00001111 meets the test requirements** | | | | | | | | |

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| Table1 20 | | | | | | | | | |
| Data rate | LE\_prbs9 | | | | | | | | |
| Channel | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 39 |
| Frequency | 2402 | 2412 | 2422 | 2432 | 2442 | 2452 | 2462 | 2472 | 2480 |
| Output Power(dBm) | -1.32 | -1.12 | -1.17 | -1.47 | -1.76 | -1.61 | -1.18 | -0.84 | -0.51 |
| Init Freq Error(kHz) | -16.40 | -18.62 | -18.31 | -16.98 | -18.50 | -18.42 | -17.32 | -18.53 | -18.30 |
| **Pass/Fail** | pass | pass | pass | pass | pass | pass | pass | pass | pass |
| Power by channel | bt_pwr_LE_prbs9 | | | | | | | | |
| Init Freq Error by channel | bt_Init_Freq_Err_LE_prbs9 | | | | | | | | |
| **Note:** | **LE\_prbs9 meets the test requirements** | | | | | | | | |

2.5 Receiver sensitivity

Requirement

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| Table 21 | |
| Data rate | Sensitivity |
| BR (dBm) | <-80 dBm @PER=30% |
| 2M EDR(dBm) | <-80 dBm @PER=30% |
| 3M EDR(dBm) | <-72 dBm @PER=30% |
| BLE(dBm) | <-85 dBm @PER=30% |

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| Table1 22 | | | | | | | | | |
| Data rate | 1M\_DH5\_prbs9 | | | | | | | | |
| Channel | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 78 |
| Frequency | 2402 | 2412 | 2422 | 2432 | 2442 | 2452 | 2462 | 2472 | 2480 |
| sens | -87.00 | -87.00 | -87.00 | -87.00 | -86.00 | -86.00 | -86.00 | -86.00 | -85.00 |
| rssi | -88.20 | -88.38 | -88.43 | -88.47 | -87.51 | -87.47 | -87.46 | -87.29 | -86.41 |
| PER | 14.73 | 26.57 | 22.89 | 29.25 | 9.45 | 11.74 | 17.51 | 11.64 | 10.35 |
| BER | 0.01 | 0.04 | 0.03 | 0.02 | 0.01 | 0.01 | 0.06 | 0.01 | 0.02 |
| **Pass/Fail** | pass | pass | pass | pass | pass | pass | pass | pass | pass |
| **Sensitivity by channel** | bt_sens_1M_DH5_prbs9 | | | | | | | | |
| **Note：** | **1M\_DH5\_prbs9 meets the test requirements** | | | | | | | | |

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| Table1 23 | | | | | | | | | |
| Data rate | 2M\_DH5\_prbs9 | | | | | | | | |
| Channel | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 78 |
| Frequency | 2402 | 2412 | 2422 | 2432 | 2442 | 2452 | 2462 | 2472 | 2480 |
| sens | -88.00 | -88.00 | -88.00 | -88.00 | -88.00 | -87.00 | -87.00 | -87.00 | -83.00 |
| rssi | -89.53 | -89.62 | -89.77 | -89.90 | -89.93 | -88.90 | -88.89 | -88.66 | -84.72 |
| PER | 8.36 | 22.49 | 14.63 | 23.88 | 26.97 | 6.27 | 14.93 | 7.26 | 8.16 |
| BER | 0.01 | 0.06 | 0.00 | 0.01 | 0.02 | 0.01 | 0.09 | 0.00 | 0.01 |
| **Pass/Fail** | pass | pass | pass | pass | pass | pass | pass | pass | pass |
| **Sensitivity by channel** | bt_sens_2M_DH5_prbs9 | | | | | | | | |
| **Note：** | **2M\_DH5\_prbs9 meets the test requirements** | | | | | | | | |

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| Table1 24 | | | | | | | | | |
| Data rate | 3M\_DH5\_prbs9 | | | | | | | | |
| Channel | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 78 |
| Frequency | 2402 | 2412 | 2422 | 2432 | 2442 | 2452 | 2462 | 2472 | 2480 |
| sens | -82.00 | -81.00 | -81.00 | -81.00 | -81.00 | -81.00 | -81.00 | -81.00 | -76.00 |
| rssi | -82.77 | -81.88 | -82.08 | -82.24 | -82.19 | -82.21 | -82.19 | -81.92 | -77.02 |
| PER | 26.77 | 21.69 | 14.13 | 19.00 | 20.70 | 24.58 | 29.25 | 25.17 | 11.84 |
| BER | 0.02 | 0.09 | 0.00 | 0.00 | 0.00 | 0.01 | 0.09 | 0.01 | 0.01 |
| **Pass/Fail** | pass | pass | pass | pass | pass | pass | pass | pass | pass |
| **Sensitivity by channel** | bt_sens_3M_DH5_prbs9 | | | | | | | | |
| **Note：** | **3M\_DH5\_prbs9 meets the test requirements** | | | | | | | | |

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| Table1 25 | | | | | | | | | |
| Data rate | LE\_prbs9 | | | | | | | | |
| Channel | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 39 |
| Frequency | 2402 | 2412 | 2422 | 2432 | 2442 | 2452 | 2462 | 2472 | 2480 |
| sens | -92.00 | -92.00 | -92.00 | -91.00 | -91.00 | -91.00 | -91.00 | -91.00 | -87.00 |
| rssi | -93.60 | -93.65 | -93.83 | -92.95 | -92.99 | -92.89 | -92.97 | -92.64 | -88.51 |
| PER | 20.70 | 29.95 | 29.65 | 13.93 | 14.93 | 18.01 | 21.09 | 18.71 | 28.36 |
| **Pass/Fail** | pass | pass | pass | pass | pass | pass | pass | pass | pass |
| **Sensitivity by channel** | bt_sens_LE_prbs9 | | | | | | | | |
| **Note：** | **LE\_prbs9 meets the test requirements** | | | | | | | | |

1. Conclusions

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