

**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\_TestBoard |
| PCB Version: | V2 |
| Sample number: | #1 |
| Test Engineer: | hujinping |
| Test Date: | 10/26/18 17:57:14 |
| Test Place: | Second floor laboratory |
| Test Equipment: | WT200 |
| Test Bin | V146 |
| Cable loss/dB: | 12.8 |
| Backoff(4=1dB): |  |
| Pi match/s11 smith: | 2.0 |
| 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

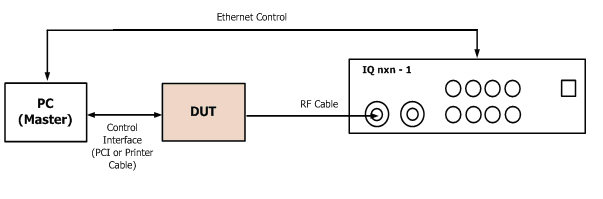
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| Table 4 | | |
| No. | Test Items | Pass/Fail |
| 1 | BR sensitivity | pass |
| 2 | 2M EDR sensitivity | pass |
| 3 | 3M EDR sensitivity | pass |
| 3 | BLE sensitivity | pass |

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) | -0.52 | -0.32 | -0.16 | -0.31 | -0.25 | -0.20 | -0.28 | 0.06 | 0.36 |
| Init Freq Error(KHz) | -22.03 | -19.32 | -19.84 | -22.62 | -19.42 | -19.99 | -22.33 | -20.47 | -20.55 |
| deltaF2Max(kHz) | 146.50 | 146.73 | 145.45 | 146.08 | 147.04 | 146.62 | 147.33 | 144.32 | 144.20 |
| deltaF2Avg(kHz) | 140.25 | 140.26 | 139.97 | 139.98 | 140.44 | 140.56 | 141.38 | 137.97 | 138.38 |
| **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) | -0.51 | -0.31 | -0.17 | -0.31 | -0.25 | -0.16 | -0.15 | -0.04 | 0.22 |
| Init Freq Error(KHz) | -22.42 | -18.95 | -19.69 | -21.97 | -19.80 | -19.54 | -22.77 | -19.40 | -20.28 |
| deltaF1Avg(kHz) | 155.52 | 156.17 | 154.07 | 155.17 | 156.88 | 155.12 | 153.04 | 155.82 | 156.89 |
| **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) | -0.52 | -0.29 | -0.19 | -0.35 | -0.22 | -0.20 | -0.22 | -0.03 | 0.25 |
| Init Freq Error(KHz) | -22.17 | -19.15 | -19.91 | -22.34 | -19.80 | -19.33 | -22.29 | -19.91 | -20.27 |
| Bandwidth20dB(kHz) | 870.00 | 900.00 | 900.00 | 900.00 | 900.00 | 900.00 | 900.00 | 900.00 | 900.00 |
| **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) | -0.64 | -0.41 | -0.34 | -0.46 | -0.34 | -0.32 | -0.35 | -0.16 | 0.12 |
| Init Freq Error(kHz) | -21.78 | -19.25 | -20.15 | -22.14 | -19.63 | -20.11 | -22.48 | -20.13 | -20.54 |
| OMEGA\_I(kHz) | -20.21 | -20.35 | -20.36 | -20.79 | -20.90 | -21.23 | -21.37 | -21.14 | -21.46 |
| OMEGA\_O(kHz) | -1.18 | -1.15 | -1.72 | -1.43 | -1.61 | -1.35 | -2.17 | -1.78 | -2.52 |
| OMEGA\_IO(kHz) | -21.39 | -21.50 | -22.09 | -22.23 | -22.51 | -22.58 | -23.54 | -22.92 | -23.98 |
| DEVM Average(%) | 3.38 | 3.41 | 3.39 | 3.39 | 3.35 | 3.33 | 3.44 | 3.47 | 3.85 |
| DEVM Peak(%) | 5.46 | 5.74 | 5.48 | 5.59 | 5.74 | 5.58 | 5.63 | 6.15 | 6.80 |
| EdrprobEVM99pass(%) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| EdrPowDiffdB(dB) | -0.20 | -0.19 | -0.19 | -0.18 | -0.19 | -0.17 | -0.18 | -0.19 | -0.19 |
| **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) | -0.70 | -0.48 | -0.38 | -0.53 | -0.38 | -0.36 | -0.40 | -0.20 | 0.07 |
| Init Freq Error(kHz) | -22.05 | -19.33 | -20.38 | -22.52 | -19.81 | -19.99 | -22.62 | -20.36 | -20.55 |
| OMEGA\_I(kHz) | -20.51 | -20.79 | -20.42 | -20.93 | -20.60 | -20.86 | -21.05 | -20.49 | -21.24 |
| OMEGA\_O(kHz) | -1.74 | -1.61 | -1.02 | -1.84 | -1.87 | -1.35 | -2.24 | -2.24 | -2.36 |
| OMEGA\_IO(kHz) | -22.25 | -22.41 | -21.44 | -22.78 | -22.48 | -22.21 | -23.29 | -22.73 | -23.61 |
| DEVM Average(%) | 4.49 | 4.45 | 4.43 | 4.53 | 4.51 | 4.53 | 4.75 | 4.56 | 4.66 |
| DEVM Peak(%) | 8.07 | 7.70 | 7.83 | 7.89 | 8.15 | 7.75 | 8.16 | 8.14 | 8.50 |
| EdrprobEVM99pass(%) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| EdrPowDiffdB(dB) | -0.24 | -0.23 | -0.25 | -0.24 | -0.25 | -0.24 | -0.24 | -0.26 | -0.24 |
| **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) | -0.61 | -0.39 | -0.29 | -0.44 | -0.30 | -0.29 | -0.32 | -0.12 | 0.15 |
| Init Freq Error(kHz) | -22.94 | -19.06 | -19.65 | -21.81 | -18.50 | -19.24 | -22.90 | -19.96 | -21.14 |
| OMEGA\_I(kHz) | -20.56 | -20.23 | -20.48 | -20.73 | -20.32 | -20.76 | -21.27 | -20.96 | -21.10 |
| OMEGA\_O(kHz) | -1.75 | -1.95 | -0.93 | -2.07 | -1.36 | -1.38 | -2.17 | -1.33 | -2.02 |
| OMEGA\_IO(kHz) | -22.31 | -22.18 | -21.41 | -22.80 | -21.68 | -22.14 | -23.44 | -22.29 | -23.12 |
| DEVM Average(%) | 4.76 | 4.90 | 4.78 | 4.83 | 4.79 | 4.65 | 4.76 | 4.93 | 4.84 |
| DEVM Peak(%) | 10.13 | 10.33 | 9.95 | 10.61 | 9.92 | 9.93 | 10.24 | 10.48 | 10.71 |
| EdrprobEVM99pass(%) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| EdrPowDiffdB(dB) | -0.14 | -0.15 | -0.16 | -0.15 | -0.16 | -0.15 | -0.15 | -0.17 | -0.15 |
| **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) | -0.63 | -0.42 | -0.31 | -0.45 | -0.32 | -0.30 | -0.33 | -0.14 | 0.15 |
| Init Freq Error(kHz) | -22.02 | -19.00 | -20.10 | -21.66 | -19.45 | -19.95 | -23.10 | -19.74 | -19.90 |
| OMEGA\_I(kHz) | -20.39 | -20.70 | -20.18 | -20.17 | -20.58 | -20.72 | -20.36 | -20.18 | -21.08 |
| OMEGA\_O(kHz) | -1.77 | -1.68 | -1.29 | -1.44 | -1.29 | -1.38 | -1.48 | -2.14 | -2.04 |
| OMEGA\_IO(kHz) | -22.16 | -22.38 | -21.46 | -21.62 | -21.87 | -22.09 | -21.84 | -22.32 | -23.13 |
| DEVM Average(%) | 6.52 | 6.49 | 6.51 | 6.46 | 6.55 | 6.47 | 6.58 | 6.53 | 6.67 |
| DEVM Peak(%) | 9.56 | 9.84 | 9.46 | 9.61 | 9.54 | 9.33 | 9.52 | 10.21 | 10.17 |
| EdrprobEVM99pass(%) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| EdrPowDiffdB(dB) | -0.18 | -0.14 | -0.17 | -0.17 | -0.16 | -0.17 | -0.18 | -0.17 | -0.18 |
| **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) | -0.63 | -0.41 | -0.33 | -0.44 | -0.31 | -0.27 | -0.30 | -0.13 | 0.14 |
| Init Freq Error(kHz) | -21.94 | -18.84 | -20.22 | -21.92 | -18.95 | -19.83 | -22.66 | -19.43 | -21.19 |
| OMEGA\_I(kHz) | -20.53 | -20.03 | -20.54 | -20.42 | -20.32 | -20.39 | -20.71 | -20.48 | -20.87 |
| OMEGA\_O(kHz) | -2.46 | -1.21 | -1.64 | -1.56 | -2.49 | -1.55 | -1.12 | -1.93 | -2.44 |
| OMEGA\_IO(kHz) | -22.99 | -21.25 | -22.18 | -21.98 | -22.81 | -21.94 | -21.83 | -22.41 | -23.31 |
| DEVM Average(%) | 4.69 | 4.79 | 4.33 | 4.51 | 5.27 | 4.53 | 4.37 | 4.85 | 4.49 |
| DEVM Peak(%) | 7.72 | 7.99 | 7.42 | 7.52 | 8.23 | 7.69 | 7.22 | 8.33 | 7.65 |
| EdrprobEVM99pass(%) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| EdrPowDiffdB(dB) | -0.17 | -0.18 | -0.16 | -0.16 | -0.18 | -0.15 | -0.13 | -0.15 | -0.18 |
| **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) | -0.61 | -0.40 | -0.31 | -0.44 | -0.31 | -0.27 | -0.32 | -0.12 | 0.15 |
| Init Freq Error(kHz) | -21.70 | -18.55 | -19.32 | -22.31 | -19.74 | -19.49 | -22.41 | -19.30 | -20.61 |
| OMEGA\_I(kHz) | -20.10 | -20.46 | -20.47 | -20.29 | -20.81 | -20.12 | -20.80 | -20.43 | -20.23 |
| OMEGA\_O(kHz) | -1.63 | -1.43 | -1.35 | -1.19 | -2.53 | -1.72 | -1.83 | -1.79 | -1.51 |
| OMEGA\_IO(kHz) | -21.73 | -21.89 | -21.82 | -21.48 | -23.34 | -21.84 | -22.63 | -22.22 | -21.74 |
| DEVM Average(%) | 5.19 | 4.85 | 4.85 | 4.80 | 4.99 | 5.08 | 4.98 | 5.02 | 4.94 |
| DEVM Peak(%) | 10.28 | 10.06 | 10.01 | 9.70 | 10.47 | 10.10 | 10.22 | 10.46 | 9.92 |
| EdrprobEVM99pass(%) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| EdrPowDiffdB(dB) | -0.16 | -0.14 | -0.15 | -0.16 | -0.15 | -0.16 | -0.16 | -0.17 | -0.16 |
| **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) | -0.89 | -0.63 | -0.68 | -0.80 | -0.88 | -0.56 | -0.46 | -0.12 | 0.17 |
| Init Freq Error(kHz) | -18.27 | -21.07 | -20.35 | -19.33 | -21.36 | -21.02 | -19.85 | -21.38 | -20.84 |
| deltaF2Max(kHz) | 225.83 | 222.12 | 225.86 | 227.07 | 224.55 | 222.97 | 228.19 | 224.13 | 224.41 |
| deltaF2Avg(kHz) | 218.38 | 215.90 | 220.20 | 220.11 | 218.22 | 216.82 | 222.01 | 217.71 | 218.25 |
| **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) | -0.97 | -0.76 | -0.67 | -0.81 | -0.90 | -0.65 | -0.38 | -0.18 | 0.10 |
| Init Freq Error(kHz) | -19.01 | -21.42 | -20.51 | -19.76 | -21.79 | -21.24 | -20.13 | -21.81 | -20.63 |
| deltaF1Avg(kHz) | 243.17 | 242.85 | 244.31 | 243.74 | 244.78 | 244.44 | 244.85 | 243.57 | 242.03 |
| **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) | -0.98 | -0.77 | -0.67 | -0.81 | -0.89 | -0.66 | -0.38 | -0.20 | 0.10 |
| Init Freq Error(kHz) | -19.05 | -21.10 | -20.87 | -19.58 | -21.38 | -21.02 | -19.85 | -21.30 | -20.93 |
| **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 | -86.00 | -86.00 | -86.00 | -86.00 | -86.00 | -86.00 |
| rssi | -88.42 | -88.42 | -88.48 | -87.59 | -87.57 | -87.48 | -87.45 | -87.56 | -87.46 |
| PER | 15.02 | 27.06 | 20.80 | 19.90 | 19.50 | 8.16 | 13.33 | 14.03 | 24.38 |
| BER | 0.01 | 0.53 | 0.04 | 0.03 | 0.30 | 0.03 | 0.04 | 0.09 | 0.10 |
| **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 | -87.00 | -88.00 | -87.00 | -87.00 | -84.00 |
| rssi | -89.77 | -89.75 | -89.82 | -90.01 | -88.91 | -89.95 | -88.95 | -88.91 | -85.94 |
| PER | 7.96 | 19.90 | 14.33 | 18.01 | 22.59 | 25.67 | 9.85 | 6.47 | 14.03 |
| BER | 0.00 | 0.26 | 0.01 | 0.01 | 0.17 | 0.01 | 0.01 | 0.00 | 0.00 |
| **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 | -77.00 |
| rssi | -83.17 | -82.02 | -82.19 | -82.29 | -82.17 | -82.20 | -82.24 | -82.28 | -78.00 |
| PER | 27.06 | 21.19 | 12.84 | 17.81 | 29.35 | 23.38 | 27.86 | 22.79 | 13.43 |
| BER | 0.01 | 0.20 | 0.00 | 0.01 | 0.07 | 0.01 | 0.01 | 0.01 | 0.02 |
| **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 | -88.00 |
| rssi | -93.87 | -93.86 | -93.89 | -93.13 | -92.97 | -92.96 | -92.95 | -93.18 | -89.83 |
| PER | 21.19 | 28.36 | 29.25 | 10.65 | 23.78 | 13.83 | 21.00 | 16.32 | 28.56 |
| **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** | | | | | | | | |