附件3

4项通信行业标准修改单

YD/T 2575-2016

《TD-LTE数字蜂窝移动通信网 终端设备技术要求

（第一阶段）》

第2号修改单

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| 1. 8.3.2改用新条文：   “8.3.2 分集特性  除明确Cat 1单天线终端接收机基准配置是一个接收端口外，其余本部分内容（8.3）非特殊说明，都假设接收机基准配置是两个接收端口（Rx port）,并且适用于UE所有类别。”   1. 8.3.3第一段末补充一句话：   “单天线设备参考灵敏度QPSK PREFSENS见表35A。”   1. 表35后补充新表35A： 2. 参考灵敏度QPSK PREFSENS（单天线设备）  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | E-UTRA 频带 | 信道带宽 | | | | | | | | 1.4 MHz  (dBm) | 3 MHz  (dBm) | 5 MHz  (dBm) | 10 MHz  (dBm) | 15 MHz  (dBm) | 20 MHz  (dBm) | 双工模式 | | 34 |  |  | -97.5 | -94.5 | -92.7 |  | TDD | | 39 | - | - | -97.5 | -94.5 | -92.7 | -91.5 | TDD | | 40 | - | - | -97.5 | -94.5 | -92.7 | -91.5 | TDD | | 41 | - | - | -95.5 | -92.5 | -90.7 | -89.5 | TDD |  1. 表39的第二段后补充新段：   “单天线设备REFSENS应符合表35A。”   1. 表41的第二段后补充新段：   “单天线设备REFSENS应符合表35A。”   1. 表45的第二段后补充新段：   “单天线设备REFSENS应符合表35A。”   1. 表48的第三段后补充新段：   “单天线设备REFSENS应符合表35A。” |

YD/T 2576.2-2013

《TD-LTE 数字蜂窝移动通信网 终端设备测试方法

（第一阶段） 第2部分：无线射频性能测试》

第2号修改单

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 1. 6.3.3第一段末补充一句话：   “单天线设备参考灵敏度QPSK PREFSENS见表138A　。”   1. 表138后补充新表138A 2. 参考灵敏度QPSK PREFSENS（单天线设备）  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | 信道带宽 | | | | | | | | | E-UTRA 频带 | * 1. 1.4 MHz   (dBm) | 3 MHz  (dBm) | 5 MHz  (dBm) | 10 MHz  (dBm) | 15 MHz  (dBm) | 20 MHz  (dBm) | 双工模式 | | 34 |  |  | -97.5 | -94.5 | -92.7 |  | TDD | | 39 | - | - | -97.5 | -94.5 | -92.7 | -91.5 | TDD | | 40 | - | - | -97.5 | -94.5 | -92.7 | -91.5 | TDD | | 41 | - | - | -95.5 | -92.5 | -90.7 | -89.5 | TDD |  1. 6.3.4.1列项1）改用新内容：   “1）连接SS到UE天线连接处，如3GPP TS 36.508中图 A.3（单天线设备仅连接主天线）。”   1. 6.3.4.2列项3）改用新内容：   “3）设置下行信号电平为表144　（单天线设备设置下行信号电平为表144A　）定义的合适的REFSENS值。在上行调度信息中向UE发送连续的上行功率控制“up”命令，以确保UE至少在吞吐量测试期间发送PUMAX电平。”   1. 6.3.5第一段末补充一句话：   “单天线设备参考灵敏度QPSK PREFSENS见表144A　。”   1. 表144后补充新表144A 2. 参考灵敏度 QPSK PREFSENS（单天线设备）  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | 信道带宽 | | | | | | | | | E-UTRA 频带 | 1.4 MHz  (dBm) | 3 MHz  (dBm) | 5 MHz  (dBm) | 10 MHz  (dBm) | 15 MHz  (dBm) | 20 MHz  (dBm) | 双工模式 | | 34 |  |  | -96.8 | -93.8 | -92 | - | TDD | | 39 | - | - | -96.8 | -93.8 | -92 | -90.8 | TDD | | 40 | - | - | -96.8 | -93.8 | -92 | -90.8 | TDD | | 41 | - | - | -94.8 | -91.8 | -90 | -88.8 | TDD |  1. 6.4.4.1列项1）改用新内容：   “连接SS到UE天线连接处，如3GPP TS 36.508图 A.3（单天线设备仅连接主天线）所示。”   1. 表151中补充新注：   “注3：单天线设备REFSENS参考表138A。”   1. 6.5.4.1列项1）改用新内容：   “连接SS及干扰源到UE天线连接器，如 3GPP TS 36.508 图 A.4（单天线设备仅连接主天线）所示。”   1. 表156中补充新注：   “注3：单天线设备REFSENS参考表138A”。   1. 表158中补充新注：   “注3：单天线设备REFSENS参考表138A”。   1. 6.6.1.4.1列项1）改用新内容：   “连接SS及干扰源到UE天线连接器，如 3GPP TS 36.508 图 A.4（单天线设备仅连接主天线）所示。”   1. 表163中补充新注：   “注3：单天线设备REFSENS应参考表138A”。   1. 表171中补充新注：   “注3：单天线设备REFSENS应参考表138A”。   1. 6.6.3.4.1列项1）改用新内容：   “连接SS到UE天线连接器，如 3GPP TS 36.508 图 A.5（单天线设备仅连接主天线）所示。”   1. 表174中补充新注：   “注3：单天线设备REFSENS应参考表138A”。   1. 表180中补充新注：   “注4：单天线设备REFSENS应参考表138A”。   1. 6.8.1.4.1列项1）改用新内容：   “连接SS到UE天线连接器，如 3GPP TS 36.508 图 A.6（单天线设备仅连接主天线）所示。”   1. 表183中补充新注：   “注4：单天线设备REFSENS应参考表138A”。   1. 6.9.4.1列项1）改用新内容：   “连接频谱仪或其他合适设备到UE天线连接器，如 3GPP TS 36.508 图 A.8（单天线设备仅连接主天线）所示。” |

YD/T 2577-2013

《LTE FDD数字蜂窝移动通信网 终端设备技术要求

（第一阶段）》

第1号修改单

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| 1. 8.3.2 改用新条文：   “8.3.2 分集特性  除明确Cat 1单天线终端接收机基准配置是一个接收端口外，其余本部分内容（8.3）非特殊说明，都假设接收机基准配置是两个接收端口（Rx port），并且适用于所有UE类别。”   1. 8.3.3第一段末补充一句话：   “单天线设备最小性能指标要求见表43A。”   1. 表43后补充新表43A： 2. 参考灵敏度QPSK PREFSENS（单天线设备）  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | E-UTRA 频带 | 信道带宽 | | | | | | | | 1.4 MHz  (dBm) | 3 MHz  (dBm) | 5 MHz  (dBm) | 10 MHz  (dBm) | 15 MHz  (dBm) | 20 MHz  (dBm) | 双工模式 | | 1 |  |  | -97.5 | -94 | -92.2 | -91 | FDD | | 2 | -100.2 | -97.2 | -95.5 | -92 | -90.2 | -89 | FDD | | 3 | -99.2 | -96.2 | -94.5 | -91 | -89.2 | -88 | FDD | | 4 | -102.2 | -99.2 | -97.5 | -94 | -92.2 | -91 | FDD | | 5 | -100.7 | -97.7 | -95.5 | -92.5 |  |  | FDD | | 7 |  |  | -95.5 | -92 | -90.2 | -89 | FDD | | 8 | -99.7 | -96.7 | -94.5 | -91.5 |  |  | FDD |  1. 表48的第二段后补充新段：   “单天线设备REFSENS参考表43A。”   1. 表50的第一段后补充新段：   “单天线设备REFSENS参考表43A。”   1. 表54的第一段后补充新段：   “单天线设备REFSENS参考表43A。”   1. 表57的第三段后补充新段：   “4.单天线设备REFSENS参考表43A。”   1. 8.4.1.1 的第一句话更改描述：   “性能要求如未特殊标注，均是基于终端使用双天线接收器提出的要求。”   1. 8.4.6后补充新条文8.4.7：   “8.4.7 PDSCH解调（适用于Cat 1单天线终端）  8.4.7.1 公共测试参数  除非有特别申明，在表101A中的参数适用于所有Cat 1单天线终端的FDD测试。  表101A 公共测试参数 (FDD)（FDD和半双工FDD）   |  |  |  | | --- | --- | --- | | 参数 | 单位 | 数值 | | TTI间距离 |  | 1 | | HARQ进程数量 | 进程 | 8 | | 最大HARQ传输数目 |  | 4 | | 冗余版本编码序列 |  | QPSK和16QAM采用{0,1,2,3}  64QAM采用{0,0,1,2} | | PDCCH使用的OFDM符号数量 | OFDM 符号 | 1.4MHz带宽使用4个OFDM符号；3MHz和5MHz带宽的使用3个OFDM符号；10 MHz, 15 MHz 和 20 MHz 带宽的使用2个OFDM符号 | | 循环前缀 |  | 正常 |   8.4.7.2发射分集性能（小区专用参考信号）  8.4.7.2.1 2天线发射端口的最小需求  具体需求在表101C中给出，其中使用到的附加参数在表101B中给出，关于下行物理信道设置参数在3GPP TS 36.101中的附录C.3.2将给出。其目的是为了验证2天线配置的发射分集（SFBC）性能。  表101B 发射分集性能的测试参数(固定参考信道)   |  |  |  |  | | --- | --- | --- | --- | | 参数 | | 单位 | 测试1-2 | | 下行功率分配 |  | dB | -3 | |  | dB | -3a | | σ | dB | 0 | | 天线端口的 | | dBm/15kHz | -98 | | PDSCH 传输模式 | |  | 2 | | a ，PB 和参数*ρA、ρB*的对应关系参见36.213的表5.2-1 。 | | | |   表101C 发射分集的最小性能(固定参考信道)   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 测试  编号 | 带宽 | 参考  信道 | OCNG 形式 | 传播  条件 | 相关矩阵和  天线配置 | 参考值 | | 终端  等级 | | 最大吞吐量占用比  (%) | SNR (dB) | | 1 | 10 MHz | R.84 FDD | OP.1 FDD | EPA5 | 2x1 Low | 70 | 9.3 | Cat 1 |   ” |

YD/T 2578.2-2013

《LTE FDD 数字蜂窝移动通信网 终端设备测试方法

（第一阶段） 第2部分：无线射频性能测试》

第1号修改单

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| 1. 6.3.3第一段末补充一句话：   “单天线设备参考灵敏度QPSK PREFSENS见表168A　。”   1. 表168后补充新表168A： 2. 参考灵敏度QPSK PREFSENS（单天线设备）  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | 信道带宽 | | | | | | | | | E-UTRA 频带 | 1.4 MHz  (dBm) | 3 MHz  (dBm) | 5 MHz  (dBm) | 10 MHz  (dBm) | 15 MHz  (dBm) | 20 MHz  (dBm) | 双工模式 | | 1 |  |  | -97.5 | -94 | -92.2 | -91 | FDD | | 2 | -100.2 | -97.2 | -95.5 | -92 | -90.2 | -89 | FDD | | 3 | -99.2 | -96.2 | -94.5 | -91 | -89.2 | -88 | FDD | | 4 | -102.2 | -99.2 | -97.5 | -94 | -92.2 | -91 | FDD | | 5 | -100.7 | -97.7 | -95.5 | -92.5 |  |  | FDD | | 7 |  |  | -95.5 | -92 | -90.2 | -89 | FDD | | 8 | -99.7 | -96.7 | -94.5 | -91.5 |  |  | FDD |  1. 6.3.4.1列项1）改用新内容：   “1）连接SS到UE天线连接处，如3GPP TS 36.508 附录 A, 图 A.3（单天线设备仅连接主天线）。”   1. 6.3.4.2列项3)改用新内容：   “3）设置下行信号电平为表175　（单天线设备下行信号电平为表175A）定义的合适的REFSENS值。在上行调度信息中向UE发送连续的上行功率控制“up”命令，以确保UE至少在吞吐量测试期间发送PUMAX电平。”   1. 6.3.5第一段末补充一句话：   “单天线设备参考灵敏度QPSK PREFSENS见表175A　”。   1. 表175后补充新表175A：   表175A 参考灵敏度QPSK PREFSENS（单天线设备）   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | 信道带宽 | | | | | | | | | E-UTRA 频带 | 1.4 MHz  (dBm) | 3 MHz  (dBm) | 5 MHz  (dBm) | 10 MHz  (dBm) | 15 MHz  (dBm) | 20 MHz  (dBm) | 双工模式 | | 1 |  |  | -96.8 | -93.3 | -91.5 | -90.3 | FDD | | 2 | -99.5 | -96.5 | -94.8 | -91.3 | -89.5 | -88.3 | FDD | | 3 | -98.5 | -95.5 | -93.8 | -90.3 | -88.5 | -87.3 | FDD | | 4 | -101.5 | -98.5 | -96.8 | -93.3 | -91.5 | -90.3 | FDD | | 5 | -100 | -97 | -94.8 | -91.8 |  |  | FDD | | 7 |  |  | -94.8 | -91.3 | -89.5 | -88.3 | FDD | | 8 | -99 | -96 | -93.8 | -90.8 |  |  | FDD |  1. 6.4.4.1列项1）改用新内容：   “1）连接SS到UE天线连接处，如3GPP TS 36.508 附录 A, 图 A.3（单天线设备仅连接主天线）所示。”   1. 表182中补充新注：   “注3：单天线设备REFSENS参考表168A。”   1. 6.5.4.1列项1）改用新内容：   “1）连接SS及干扰源到UE天线连接器，如 3GPP TS 36.508 图 A.4（单天线设备仅连接主天线）所示。”   1. 表187中补充新注：   “注3：单天线设备REFSENS参考表168A。”   1. 表189中补充新注：   “注3：单天线设备REFSENS参考表168A。”   1. 6.6.1.4.1列项1）改用新内容：   “1）连接SS及干扰源到UE天线连接器，如 3GPP TS 36.508 图 A.4（单天线设备仅连接主天线）所示。”   1. 表194中补充新注：   “注3：单天线设备REFSENS参考表168A。”   1. 表202中补充新注：   “注3：单天线设备REFSENS参考表168A。”   1. 6.6.3.4.1列项1）改用新内容：   “1）连接SS到UE天线连接器，如 3GPP TS 36.508 图 A.5（单天线设备仅连接主天线）所示。”   1. 表205中补充新注：   “注3：单天线设备REFSENS参考表168A。”   1. 表211中补充新注：   “注4：单天线设备REFSENS参考表168A。”   1. 6.8.1.4.1列项1）改用新内容：   “1）连接SS到UE天线连接器，如 3GPP TS 36.508 图 A.6（单天线设备仅连接主天线）所示。”   1. 表214中补充新注：   “注4：单天线设备REFSENS参考表168A。”   1. 6.9.4.1列项1）改用新内容：   “1）连接频谱仪或其他合适设备到UE天线连接器，如 3GPP TS 36.508 图 A.8（单天线设备仅连接主天线）所示。”   1. 7.1.2.1后补充新条文7.1.2.1A：   “7.1.2.1A FDD PDSCH 发射分集 2×1（单天线设备）   1. 测试目的   验证UE接收预定信号的能力。对于确定的下行参考测量信道，要求比特信息吞吐量的百分比不能低于预设的确定值，其中多径衰落信道由SNR影响。SFBC为两天线端口发射分集使用的算法。   1. 测试适用性   该测试适用于所有第一阶段LTE FDD数字蜂窝移动通信网单天线终端设备。   1. 最低一致性要求   3GPP TS 36.521-1附录A第A3.3.2节中确定了下行参考测量信道的比特信息吞吐量百分比，发射分集性能的测试参数根据3GPP TS 36.521-1附录C3.2表C.3.2-1中下行物理信道和3GPP TS 36.521-1中表8.2.1-1，表230A　中的相关参数进行设置。  使用这种配置的最大吞吐量百分比应达到或超过表230B　中特定信噪比下的最低需求。2发送天线的发射分集（SFBC）性能已确定。  表230A 测试发射分集性能的测试参数   |  |  |  |  | | --- | --- | --- | --- | | 参数 | | 单位 | 测试 1-2 | | 下行功率分配 |  | dB | -3 | |  | dB | -3a | | 天线端口 | | dBm/15kHz | -98 | | a ，PB 和参数*ρA、ρB*的对应关系参见36.213的表5.2-1 。 | | | |  * 1. 表230B 发射分集最小性能 (FRC)  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 测试例编号 | 带宽 | 参考信道 | OCNG 模式 | 传播条件 | 矩阵相关性和天线配置 | 参考值 | | UE 等级 | | 最大吞吐量比 (%) | SNR (dB) | | 1 | 10 MHz | R.84 FDD | OP.1 FDD | EPA5 | 2×1 Low | 70 | 9.3 | 1 |  1. 测试说明 2. 初始条件   初始条件是指设置UE测试需要的配置和SS需要的步骤，使UE达到正常的监测状态。  3GPP TS 36.521-1中附录C.2中确定了测试前PDSCH和PDCCH配置。  测试环境：常规，如3GPP TS 36.508中4.1节所定义。  测试频率：中频，如3GPP TS 36.508中4.3.1.1节所定义。  测试带宽：表230B　中每个测试例指定的带宽，如3GPP TS 36.508中4.3.1.1节所定义。   * 1. 根据3GPP TS 36.508附录A中图A.10天线配置为2×1所示，将SS，衰落器和AWGN噪声源连接到UE天线连接器上。   2. 根据3GPP TS 36.521-1中表8.2.1-1, 表230A　合理设置小区参数。   3. 根据3GPP TS 36.521-1附录C.0、C.1和C.3.2初始建立下行信号，根据3GPP TS 36.521-1附录H.1和H.3.2建立上行信号。   4. 根据3GPP TS 36.521-1附录B.0建立传播条件。   5. 根据3GPP TS 36.508中第5.2A.2节确保UE处于3A-RF状态。并在7.1.2.1A.4.3节定义了消息内容。  1. 测试进程    1. 根据表230A　和表230B　，为了传输DL RMC，SS通过PDCCH DCI格式为1A的C\_RNTI传输PDSCH。SS在DL RMC上发送下行MAC填充比特。    2. 根据表230C　合理设置带宽、MCS、参考信道、传播条件、矩阵相关性、天线配置和SNR参数。    3. 根据3GPP TS 36.521-1附录G第G.3节，周期内平均吞吐量测量足以达到静态统计学。统计上行测试间隔内NACK、ACK、statDTX个数并根据3GPP TS 36.521-1附录G第G.3节中表G3.5和G3.6决定是否通过该测试。    4. 表230C　中每个测试间隔重复步骤1-3。 2. 消息内容   消息内容见3GPP TS 36.508中第4.6节。   1. 测试要求   表230A　定义了基本设置。  3GPP TS 36.521-1附录A第A.3.3.2中每个吞吐量测试例指定的下行参考测试信道下的最大吞吐量百分比应该达到或者超过表230C　中特定SNR下的特定值，该特定SNR包含所有吞吐量测试的测试容忍度。  表230C 发射分集测试要求 (FRC)   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 测试例编号 | 带宽 | 参考信道 | OCNG 模式 | 传播条件 | 矩阵相关性和天线配置 | 参考值 | | UE 等级 | | 最大吞吐量比(%) | SNR (dB) | | 1 | 10 MHz | R.84  FDD | OP.1 FDD | EPA5 | 2×1 Low | 70 | 10.1 | 1 |   ” |