**3GPP TSG- Meeting #**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
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|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network |  | Core Network |  |

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| ***Title:***  |  |
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| ***Source to WG:*** |  |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** |  |  | ***Release:*** |  |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | There is no UE Capability “simultaneousReceptionFR2HST-r18” in 38.306. The appropriate UE Capability for HST FR2 with multi-Rx as in 38.306 should be “simultaneousReceptionTwoQCL-r18” |
|  |  |
| ***Summary of change:*** | Replacing *simultaneousReceptionFR2HST-r18* in Table 7.1.1.3-1 with *simultaneousReceptionTwoQCL-r18* and removing the corresponding square brackets |
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| ***Consequences if not approved:*** | No appropriate UE capability for HST FR2 with multi-Rx |
|  |  |
| ***Clauses affected:*** | 7.1.1.3 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **x** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** | **x** |  |  Test specifications | TS/TR 38.521-4 |
| ***(show related CRs)*** |  | **x** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** | This is a revision of R4-2419344 by adding the missing “Source to TSG” in the cover page |
|  |  |
| ***This CR's revision history:*** | R4-2419344 |

# 7 Demodulation performance requirements (Radiated requirements)

## 7.1 General

### 7.1.1 Applicability of requirements

#### 7.1.1.1 General

The minimum performance requirements are applicable to the FR2 operating bands defined in TS 38.101-2 [7] . The minimum requirements for FR2-1 is applicable for FDL\_high not exceeding 48200 MHz. Additional applicability rules for certain operating bands are specified in Clause 7.1.1.6 and 7.1.1.8.

The minimum performance requirements in Clause 7 are mandatary for UE supporting NR operation, except test cases listed in Clause 7.1.1.3, 7.1.1.4, 7.1.1.5, 7.1.1.7.

If same test is listed for different UE features/capabilities in Clauses 7.1.1.3 and 7.1.1.4, then this test shall apply for UEs which support all corresponding UE features/capabilities.

#### 7.1.1.2 Applicability of requirements for different number of RX antenna ports

UE shall support 2 RX ports for different RF operating bands. The UE requirements applicability is defined in Table 7.1.1.2-1.

Table 7.1.1.2-1: Requirements applicability

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| --- | --- | --- |
| **Supported RX antenna ports** | **Test type** | **Test list** |
| UE supports 2RX antenna ports | PDSCH | All tests in Clause 7.2.2All tests in Clause 7.6.2 |
| PDCCH | All tests in Clause 7.3.2 |
| PBCH | All tests in Clause 7.4.2 |

#### 7.1.1.3 Applicability of requirements for optional UE features

The performance requirements in Table 7.1.1.3-1 shall apply for UEs which support optional UE features only.

Table 7.1.1.3-1: Requirements applicability for optional UE features

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| --- | --- | --- | --- |
| UE feature/capability [14] | Test type | Test list | Applicability notes |
| SU-MIMO Interference Mitigation advanced receiver | FR2-1 TDD | PDSCH | Clause 7.2.2.2.1 (Test 3-1) |  |
| Basic DL NR-NR CA operation (*supportedBandCombinationList*) | NR CA | SDR | Clause 7.5A.1 | 1) Up to 16 DL carriers2) Same numerology across carrier for data/control channel at a given time |
| PDSCH repetitions over multiple slots *(pdsch-RepetitionMultiSlots)* | FR2-1 TDD | PDSCH | Clause 7.2.2.2.2 |  |
| Alternative 64QAM MCS table for PDSCHNew 64QAM MCS table for PDSCH (*dl-64QAM-MCS-TableAlt*) | FR2 TDD | PDSCH | Clause 7.2.2.2.2 |  |
| DRX Adaptation (*drx-Adaptation-r16*) | FR2-1 TDD | PDCCH | Clause 7.3.2.2.3 | If the Test 3-1 in Clause 7.3.2.2.3 is passed, the test coverage can be considered fulfilled without executing Test 1-2 in clause 7.3.2.2.1. |
| 256QAM for PDSCH(*pdsch-256QAM-FR2*) | FR2-1 TDD | PDSCH | Clause 7.2.2.2.1 (Test 1-4) |  |
| 256QAM for PDSCH (*pdsch-256QAM-FR2*) | FR2-1 TDD | SDR | Clause 7.5A.1 | For UE capable of *pdsch-256QAM-FR2* for certain band(s), *mcs-Table* is configured to ‘64QAM’ for SDR test. |
| Support of FR2 HST operation [(FR2 UE power class PC6 signalling is used to indicate support of feature group)] | FR2-1 TDD | PDSCH | [Clause 7.2.2.2.4] |  |
| Support of Single Carrier operations with 120kHz SCS for FR2-2(*initialAccessSSB-120kHz-r17)* | FR2-2 TDD | PDSCH | Clause 7.2.2.2.1(Table 7.2.2.2.1-6: Test 4-1, 4-2, 4-3, 4-4) |  |
|  |  | PDCCH | Clause 7.3.2.2(Table 7.3.2.2.1-2: Test 1a-1, 1a-2, 1a-3) (Table 7.3.2.2.2-2, Test 3-1, 3-2) |  |
|  |  | PBCH | Clause 7.4.2.2(Table 7.4.2.2-2: Test 3) |  |
| Support of 480kHz SCS for FR2-2(*ul-FR2-2-SCS-480kHz-r17* and *initialAccessSSB-480kHz-r17)* | FR2-2 TDD | PDSCH | Clause 7.2.2.2.1(Table 7.2.2.2.1-6: Test 4-5, 4-6) |  |
|  |  | PDCCH | Clause 7.3.2.2(Table 7.3.2.2.1-2: Test 1a-4)(Table 7.3.2.2.2-2, Test 3-3) |  |
|  |  | PBCH | Clause 7.4.2.2(Table 7.4.2.2-2: Test 4) |  |
| Support simultaneous reception with different QCL Type-D RSs (simultaneousReceptionDiffTypeD-r16) | FR2TDD | PDSCH | Clause 7.2.2.2.5Clause 7.2.2.2.6Clause 7.2.2.2.7 |  |
| Single DCI based SDM transmission for simultaneous reception support (singleDCI-SDM-scheme-r16) | FR2TDD | PDSCH | Clause 7.2.2.2.7 |  |
| Multi DCI based simultaneous reception non-overlapping support (multiDCI-MultiTRP-r16) | FR2TDD | PDSCH | Clause 7.2.2.2.5 |  |
| Multi DCI based simultaneous reception fully-overlapping support (overlapPDSCHsFullyFreqTime-r16) | FR2TDD | PDSCH | Clause 7.2.2.2.6 |  |
| Support of 2-port DL PTRS (supportTwoPortDL-PTRS-r16) | FR2TDD | PDSCH | Clause 7.2.2.2.7 Test 1-2 |  |
| Support of FR2 HST operation (FR2 UE power class PC6 signalling is used to indicate support of feature group) with simultaneous multiRX reception | FR2-1 TDD | PDSCH | Clause 7.2.2.2.8 | FR2 HST UE should support the following optional capabilities* *simultaneousReceptionTwoQCL-r18;*
* *multiDCI-MultiTRP-r16;*
* *overlapPDSCHsFullyFreqTime-r16;*

Additionally, the UE should report *maxNumberActiveTCI-PerBWP* > 1 |