**3GPP TSG- Meeting #**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **3** | **CR** |  | **rev** | 1 | **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:*** | R4 |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** | B |  | ***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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
|  |  |
| ***Reason for change:*** | Introduction of test case of MSG3-based channel quality reporting on non-anchor carrier |
|  |  |
| ***Summary of change:*** | Introduction of test case of MSG3-based channel quality reporting on non-anchor carrier |
|  |  |
| ***Consequences if not approved:*** | MSG3-based channel quality reporting on non-anchor carrier is not verified.  |
|  |  |
| ***Clauses affected:*** | 9.14.3 (new), 9.14.4 (new) |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **x** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** | **x** |  |  Test specifications | TS36.521-3 ... CR ...  |
| ***(show related CRs)*** |  | **x** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | Rev1: Fix typo: ndpcch-CarrierIndex-r14 -> npdcch-CarrierIndex-r14 |

----------------------------------------------------- Beginning of Change ------------------------------------------------------------

### A.9.14.3 E-UTRAN HD-FDD Downlink channel quality reporting accuracy on non-anchor carrier for UE Category NB1 Standalone mode under normal coverage

#### A.9.14.3.1 Test Purpose and Environment

The purpose of this test is to verify that the downlink channel quality reporting accuracy on non-anchor carrier is within the specified limits. This test will verify the requirements in Section 9.1.22.16.

#### A.9.14.3.2 Test parameters

In this set of test cases all cells are on the same carrier frequency. The MSG3-based downlink channel quality reporting accuracy on non-anchor carrier is tested by using the parameters in Tables A.9.14.3.2-1 and A.9.14.3.2-2.

Table A.9.14.3.2-1: General Test Parameters for Downlink channel quality reporting accuracy test on non-anchor carrier for E-UTRAN HD-FDD Category NB1 UE in Standalone mode under normal coverage

|  |  |  |
| --- | --- | --- |
| Parameter | Unit | Value |
| NB-IoT operational mode |  | Standalone |
| CP Length |  | Normal |
| DRX |  | OFF |
| NPRACH configuration |  | As specified in A.3.18 |
| NPUSCH repetition level |  | 1 |
| NPDCCH carrier index (npdcch-CarrierIndex-r14) |  | 1 (Note 1) |
| Note 1: Index of non-anchor carrier configured in SystemInformationBlockType22-NB (See TS 36.331 [2]) |

Table A.9.14.3.2-2: nCell specific Test Parameters for Downlink channel quality reporting accuracy test on non-anchor carrier for E-UTRAN HD-FDD Category NB1 UE in Standalone mode under normal coverage

|  |  |  |
| --- | --- | --- |
| Parameter | Unit | Test 1 |
| BWchannel | kHz | 200 |
| NPDCCH parameter |  | R.31 HD-FDD |
| NPDCCH repetition level for RAR on non-anchor |  | 4 |
| NPBCH\_RB | dB | 0 |
| NPSS\_RA | dB |
| NSSS\_RA | dB |
| NPDCCH\_RA | dB |
| NPDCCH\_RB | dB |
| NPDSCH\_RA | dB |
| NPDSCH\_RB | dB |
| OCNG\_RANote1 | dB |
| OCNG\_RBNote1  | dB |
| Note2 | dBm/15 kHz | -98 |
| NRS  | dB | -6 |
| Propagation condition |  | AWGN |
| Antenna Configuration |  | 2x1 |
| Scheduling delay in RAR (IDelay) Note3 |  | 0 |
| Channel quality IE Note4 |  | CQI-NPDCCH-NB |
| Note 1: OCNG shall be used such that active cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.Note 2: Interference from other cells and noise sources not specified in the test are assumed to be constant over subcarriers and time and shall be modelled as AWGN of appropriate power for  to be fulfilled.Note 3: See section 16.3.3 in TS 36.213 [23].Note 4: See TS 36.331 [2]. |

#### A.9.14.3.3 Test Requirements

The downlink channel quality reporting accuracy shall fulfil the requirements in section 9.1.22.16.

### A.9.14.4 E-UTRAN HD-FDD Downlink channel quality reporting accuracy on non-anchor carrier for UE Category NB1 Standalone mode under enhanced coverage

#### A.9.14.4.1 Test Purpose and Environment

The purpose of this test is to verify that the downlink channel quality reporting accuracy on non-anchor carrier is within the specified limits. This test will verify the requirements in Section 9.1.22.16.

#### A.9.14.4.2 Test parameters

In this set of test cases all cells are on the same carrier frequency. The MSG3-based downlink channel quality reporting accuracy on non-anchor carrier is tested by using the parameters in Tables A.9.14.4.2-1 and A.9.14.4.2-2.

Table A.9.14.4.2-1: General Test Parameters for Downlink channel quality reporting accuracy test on non-anchor carrier for E-UTRAN HD-FDD Category NB1 UE in Standalone mode under enhanced coverage

|  |  |  |
| --- | --- | --- |
| Parameter | Unit | Value |
| NB-IoT operational mode |  | Standalone |
| CP Length |  | Normal |
| DRX |  | OFF |
| NPRACH configuration |  | As specified in A.3.18 |
| NPUSCH repetition level |  | 1 |
| NPDCCH carrier index (npdcch-CarrierIndex-r14) |  | 1 (Note 1) |
| Note 1: Index of non-anchor carrier configured in SystemInformationBlockType22-NB (See TS 36.331 [2]). |

Table A.9.14.4.2-2: nCell specific Test Parameters for Downlink channel quality reporting accuracy test on non-anchor carrier for E-UTRAN HD-FDD Category NB1 UE in Standalone mode under enhanced coverage

|  |  |  |
| --- | --- | --- |
| Parameter | Unit | Test 1 |
| BWchannel | kHz | 200 |
| NPDCCH parameter |  | R.31 HD-FDD |
| NPDCCH repetition level for RAR on non-anchor |  | 16 |
| NPBCH\_RB | dB | 0 |
| NPSS\_RA | dB |
| NSSS\_RA | dB |
| NPDCCH\_RA | dB |
| NPDCCH\_RB | dB |
| NPDSCH\_RA | dB |
| NPDSCH\_RB | dB |
| OCNG\_RANote1 | dB |
| OCNG\_RBNote1  | dB |
| Note2 | dBm/15 kHz | -98 |
| NRS  | dB | -12 |
| Propagation condition |  | AWGN |
| Antenna Configuration |  | 2x1 |
| Scheduling delay in RAR (IDelay) Note3 |  | 0 |
| Channel quality IE Note4 |  | CQI-NPDCCH-NB |
| Note 1: OCNG shall be used such that active cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.Note 2: Interference from other cells and noise sources not specified in the test are assumed to be constant over subcarriers and time and shall be modelled as AWGN of appropriate power for  to be fulfilled.Note 3: See section 16.3.3 in TS 36.213 [23].Note 4: See TS 36.331 [2]. |

#### A.9.14.4.3 Test Requirements

The downlink channel quality reporting accuracy shall fulfil the requirements in section 9.1.22.16.

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