3GPP TSG-RAN WG4 Meeting #111 revision of R4-2409565

Fukuoka City, Fukuoka, Japan, 20th – 24th May, 2024

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **2** | **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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Updated Draft CR to TS 38.115-2: Clauses 6.12~6.16 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_netcon\_repeater-Perf | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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 can be 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:*** | | Based on Draft BigCR to TS 38.115-2 which was Endorsed in R4-2406136, in this Draft CR we provide further updates to clauses 6.12~6.16. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Clauses 6.12~6.16 | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Missing NCR requirements. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | |  | | |
| ***affected:*** | |  | **X** | Test specifications | | | |  | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

<Start of Change 1>

6.12 OTA reference sensitivity

6.12.1 Definition and applicability

The reference sensitivity power level REFSENS is defined as the EIS level at the centre of the quiet zone in the RX beam peak direction, at which the throughput shall meet or exceed the requirements for the specified reference measurement channel.

6.12.2 Minimum requirement for NCR type 2-O

For WA class NCR type 2-O reference sensitivity level is specified the same as the Wide Area IAB-MT reference sensitivity level requirementin TS 38.174 [22], clause 10.3.3.3.

For LA class NCR type 2-O reference sensitivity level is specified the same as reference sensitivity power level for power class 3 in TS 38.101-2 [14], clause 7.3.2.3.

6.12.3 Test purpose

The test purpose is to verify that the NCR can meet the throughput requirement for a specified measurement channel at the EISREFSENS level and the range of angles of arrival within the *OTA REFSENS RoAoA*.

6.12.4 Method of test

For *NCR type 2-O* of WA class, the test description for OTA reference sensitivity requirement is defined in TS 38.176-2 [x], clause 7.3.4.

For *NCR type 2-O* of LA class, the test description for OTA reference sensitivity requirement is defined in TS 38.521-2 [x], clause 7.3.2.4.

This test procedure applies at MT RIB only.

.

6.12.5 Test requirements

The FR1 EISREFSENS level is the conducted REFSENS requirement value offset by ΔOTAREFSENS. The test requirement is calculated from the EISREFSENS level offset by the EISREFSENS Test Tolerance specified in clause 4.1.

For *NCR type 2-O* of WA class, the test requirement for OTA reference sensitivity requirement is defined in TS 38.176-2 [x], clause 7.3.5.

For *NCR type 2-O* of LA class, the test requirement for OTA reference sensitivity requirement is defined in TS 38.521-2 [x], clause 7.3.2.5.

This test requirement applies at MT RIB only.



## 6.13 OTA maximum input level

### 6.13.1 Definition and applicability

The maximum input level is defined as the maximum mean power, for which the throughput shall meet or exceed the minimum requirements for the specified reference measurement channel.

This requirement applies at MT RIB only.

### 6.13.2 Minimum requirement

For *NCR type 2-O* of LA class, the maximum input power is specified in TS 38.101-2 [x], clause 7.4.

### 6.13.3 Test purpose

Maximum input level tests ability to receive data with a given average throughput for a specified reference measurement channel, under conditions of high signal level, ideal propagation and no added noise.

### 6.13.4 Method of test

For *NCR type 2-O* of LA class, the test description for OTA maximum input level requirement is defined in TS 38.521-2 [x], clause 7.4.4.

This test procedure applies at MT RIB only.

### 6.13.5 Test requirements

For *NCR type 2-O* of LA class, the test requirement for OTA maximum input level is defined in TS 38.521-2 [x], clause 7.4.5.

This test requirement applies at MT RIB only.

## 6.14 OTA adjacent channel selectivity

### 6.14.1 Definition and applicability

Adjacent Channel Selectivity (ACS) is a measure of a receiver's ability to receive a NR signal at its assigned channel frequency in the presence of an adjacent channel signal at a given frequency offset from the centre frequency of the assigned channel. ACS is the ratio of the receive filter attenuation on the assigned channel frequency to the receive filter attenuation on the adjacent channel(s).

This requirement applies at MT RIB only.

### 6.14.2 Minimum requirement

For *NCR type 2-O* of WA class, the ACS requirement is specified in TS 38.174 [x], clause 10.5.1.4.

For *NCR type 2-O* of LA class, the ACS requirement is specified in TS 38.101-2 [x], clause 7.5.

### 6.14.3 Test purpose

Adjacent channel selectivity tests the ability to receive data with a given average throughput for a specified reference measurement channel, in the presence of an adjacent channel signal at a given frequency offset from the centre frequency of the assigned channel, under conditions of ideal propagation and no added noise.

### 6.14.4 Method of test

For *NCR type 2-O* of WA class, the test description for OTA ACS requirement is defined in TS 38.176-2 [x], clause 7.5.1.4.

For *NCR type 2-O* of LA class, the test description for OTA ACS requirement is defined in TS 38.521-2 [x], clause 7.5.4.

This test procedure applies at MT RIB only.

### 6.14.5 Test requirements

For *NCR type 2-O* of WA class, the test requirement for OTA ACS is defined in TS 38.176-2 [x], clause 7.5.1.5.3.

For *NCR type 2-O* of LA class, the test requirement for OTA ACS is defined in TS 38.521-2 [x], clause 7.5.5.

This test requirement applies at MT RIB only.

## 6.15 OTA blocking characteristics

### 6.15.1 Definition and applicability

The blocking characteristic is a measure of the receiver's ability to receive a wanted signal at its assigned channel frequency in the presence of an unwanted interferer on frequencies other than those of the spurious response or the adjacent channels, without this unwanted input signal causing a degradation of the performance of the receiver beyond a specified limit. The blocking performance shall apply at all frequencies except those at which a spurious response occurs.

This requirement applies at MT RIB only.

### 6.15.2 Minimum requirement

For WA class *NCR type 2-O*, the OTA blocking requirement is specified in TS 38.174 [x], clause 10.5.2.4.

For LA class *NCR type 2-O*, the OTA blocking requirement is specified in TS 38.101-2 [x], clause 7.6.

### 6.15.3 Test purpose

In-band blocking is defined for an unwanted interfering signal falling into the receive band or into the spectrum equivalent to twice the channel bandwidth below or above the receive band at which the relative throughput shall meet or exceed the minimum requirement for the specified measurement channels.

### 6.15.4 Method of test

For *NCR type 2-O* of WA class, the test description for OTA blocking is defined in TS 38.176-2 [x], clause 7.5.2.4.

For *NCR type 2-O* of LA class, the test description for OTA blocking is defined in TS 38.521-2 [x], clause 7.6.2.4.

This test procedure applies at MT RIB only.

### 6.15.5 Test requirements

For *NCR type 2-O* of WA class, the test requirement for OTA blocking is defined in TS 38.176-2 [x], clause 7.5.2.5.3.

For *NCR type 2-O* of LA class, the test requirement for OTA blocking is defined in TS 38.521-2 [x], clause 7.6.2.5.

This test requirement applies at MT RIB only.

## 6.16 OTA spurious emissions

### 6.16.1 Definition and applicability

The spurious emissions power is the power of emissions generated or amplified in a receiver. The spurious emissions power level is measured as TRP.

This requirement applies at MT RIB only.

### 6.16.2 Minimum requirement

For *NCR type 2-O* of WA class, the OTA spurious emission requirement is specified in TS 38.174 [x], clause 10.7.3.2.

For *NCR type 2-O* of LA class, the OTA spurious emission requirement is specified in TS 38.101-2 [xx], clause 7.9.

### 6.16.3 Test purpose

Test verifies whether spurious emissions meet the requirements described in clause 6.16.5. Excess spurious emissions increase the interference to other systems.

### 6.16.4 Method of test

For *NCR type 2-O* of WA class, the test description for OTA spurious emission is defined in TS 38.176-2 [x], clause 7.7.4.

For *NCR type 2-O* of LA class, the test description for OTA spurious emission is defined in TS 38.521-2 [x], clause 7.9.4.

This test procedure applies at MT RIB only.

### 6.16.5 Test requirements

For *NCR type 2-O* of WA class, the test requirement for OTA spurious emission is defined in TS 38.176-2 [x], clause 7.7.5.

For *NCR type 2-O* of LA class, the test requirement for OTA spurious emission is defined in TS 38.521-2 [x], clause 7.9.5.

This test requirement applies at MT RIB only.