**3GPP TSG-RAN WG4 Meeting #98-bis-e *R4-210xxxx***

**Electronic Meeting, 12th Apr. – 20th Apr. 2021**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.133** | **CR** |  | **rev** |  | **Current version:** | **16.7.0** |  |
|  | | | | | | | | |
| *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:*** | Draft CR to 38.133 correction on SRS carrier based switching test cases | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | vivo | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_RRM\_Enh-Perf | | | | |  | ***Date:*** | | | 2021-04-15 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | There are erros in the test cases to verify interruption requiremets for NR SRS carrier based switching.   * The SRS transmission should be aperiodic. * In test cases A.4.5.2.8, A.5.5.2.8, A.6.5.2.2 the tables for SRS reference signal configuration should be removed as it refers to A.3.24. * SRS configuration, BWP configuration are added in Table A.6.5.2.2.2-3 * Other corrections | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * Changed SRS transimission from periodic to aperiodic * Corrected SRS configurations * Added missing test parameters | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Test cases to verify interruption requirements for NR SRS carrier based switching are not designed correctly. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | A.4.5.2.8, A.4.5.2.9, A.5.5.2.7, A.5.5.2.8, A.6.5.2.2, A.7.5.2.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **x** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

*< Start of change #1 >*

#### A.4.5.2.8 E-UTRAN - NR FR1 interruptions at NR SRS carrier based switching in asynchronous EN-DC

##### A.4.5.2.8.1 Test Purpose and Environment

The purpose of this test is to verify that when a UE needs to transmit aperiodic SRS, the UE can perform carrier based switching to one carrier not configured for PUCCH/PUSCH transmission from a CC with PUCCH/PUSCH transmission. The test will verify the interruption requirements on E-UTRAN PCell and NR PSCell in clause 8.2.1.2.12. Supported test configurations are shown in table A.4.5.2.8.1-1.

The general test parameters and NR cell specific test parameters are given in Table A.4.5.2.8.1-2 and A 4.5.2.8.1-3 below. And the E-UTRAN cell specific test parameters can refer to Table A.3.7.2.1-1. In the test there are three cells: Cell1, Cell2 and Cell3. Cell1 is E-UTRAN PCell, Cell2 is NR PSCell in FR1 with PUCCH/PUSCH transmission, Cell3 is an activated NR SCell in FR1 which operates in downlink without PUCCH/PUSCH transmission. The UE is configured with the SRS carrier based switching between PSCell and SCell.

The test consists of two successive time periods, with duration of T1 and T2, respectively. Throughout the test the UE shall be continuously scheduled on PCell and PSCell. Immediately at the beginning of T2, a PDCCH with TPC-SRS-RNTI is sent to the UE to initiate NR SRS switching.

Table A.4.5.2.8.1-1: Interruptions at SRS carrier switching supported test configurations in FR1

|  |  |
| --- | --- |
| Config | Description |
| 1 | LTE FDD, NR 15 kHz SSB SCS, 10 MHz bandwidth, PSCell FDD duplex mode, SCell TDD duplex mode |
| 2 | LTE FDD, NR 15 kHz SSB SCS, 10 MHz bandwidth, PSCell TDD duplex mode, SCell TDD duplex mode |
| 3 | LTE FDD, NR 30 kHz SSB SCS, 40 MHz bandwidth, TDD duplex mode |
| 4 | LTE TDD, NR 15 kHz SSB SCS, 10 MHz bandwidth, PSCell FDD duplex mode, SCell TDD duplex mode |
| 5 | LTE TDD, NR 15 kHz SSB SCS, 10 MHz bandwidth, PSCell TDD duplex mode, SCell TDD duplex mode |
| 6 | LTE TDD, NR 30 kHz SSB SCS, 40 MHz bandwidth, TDD duplex mode |
| Note: The UE is only required to be tested in one of the supported test configurations | |

Table A.4.5.2.8.1-2: General test parameters for E-UTRAN – NR FR1 interruptions at SRS carrier based switching in asynchronous EN-DC

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | Unit | Value | Comment |
| RF Channel Number |  | 1, 2, 3 | One is E-UTRAN RF channel and the other two are NR RF channels |
| Active PCell |  | Cell1 | PCell on E-UTRAN RF channel number 1. |
| Configured PSCell |  | Cell2 | Configured PSCell on NR RF channel number 2. |
| Configured SCell |  | Cell3 | Configured activated secondary cell on NR RF channel number 3. |
| CP length |  | Normal | Applicable to Cell1, Cell2 and Cell3. |
| DRX |  | OFF | Continuous monitoring of primary cell |
| Filter coefficient |  | 0 | L3 filtering is not used |
| T1 | s | 5 |  |
| T2 | ms | 40 | UE shall perform SRS switching during T2 |

Table A.4.5.2.8.1-3: NR Cell specific test parameters for E-UTRAN – NR FR1 interruptions at SRS carrier based switching in asynchronous EN-DC

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | | Unit | Cell2 | Cell3 |
| Frequency Range | |  | FR1 | FR1 |
| Duplex mode | Config 1,4 |  | FDD | TDD |
| Config 2,3,5,6 |  | TDD | TDD |
| TDD configuration | Config 1,4 |  | Not Applicable | TDDConfig.1.1 |
| Config 2,5 | TDDConf.1.1 | TDDConfig.1.1 |
| Config 3,6 | TDDConf.2.1 | TDDConfig.2.1 |
| BWchannel | Config 1,2,4,5 | MHz | 10: NRB,c = 52 | 10: NRB,c = 52 |
| Config 3,6 | 40: NRB,c = 106 | 40: NRB,c = 106 |
| DL Initial BWP configuration | Config 1-6 |  | DLBWP.0.1 | DLBWP.0.1 |
| DL dedicated BWP configuration | Config 1-6 |  | DLBWP.1.1 | DLBWP.1.1 |
| UL Initial BWP configuration | Config 1-6 |  | ULBWP.0.1 | - |
| UL dedicated BWP configuration | Config 1-6 |  | ULBWP.1.1 | - |
| PDSCH Reference measurement channel | Config 1,4 |  | SR.1.1 FDD | SR.1.1 TDD |
| Config 2,5 | SR.1.1 TDD | SR.1.1 TDD |
| Config 3,6 | SR.2.1 TDD | SR.2.1 TDD |
| RMSI CORESET Reference Channel | Config 1,4 |  | CR.1.1 FDD | CR.1.1 TDD |
| Config 2,5 | CR.1.1 TDD | CR.1.1 TDD |
| Config 3,6 | CR.2.1 TDD | CR.2.1 TDD |
| RMC CORESET Reference Channel | Config 1,4 |  | CCR.1.1 FDD | CCR.1.1 TDD |
| Config 2,5 |  | CCR.1.1 TDD | CCR.1.1 TDD |
| Config 3,6 |  | CCR.2.1 TDD | CCR.2.1 TDD |
| OCNG Patterns | |  | OP.1 | OP.1 |
| TRS configuration | Config 1,4 |  | TRS.1.1 FDD | TRS.1.1 TDD |
| Config 2,5 |  | TRS.1.1 TDD | TRS.1.1 TDD |
| Config 3,6 |  | TRS.1.2 TDD | TRS.1.2 TDD |
| SMTC configuration | |  | SMTC.1 | SMTC.1 |
| SSB configuration | Config 1,2,4,5 |  | SSB.1 FR1 | SSB.1 FR1 |
| Config 3,6 |  | SSB.2 FR1 | SSB.2 FR1 |
| PDSCH/PDCCH subcarrier spacing | Config 1,2,4,5 | kHz | 15 kHz | 15 kHz |
| Config 3,6 | 30 kHz | 30 kHz |
| SRS Configuration | Config 1,2,4,5 | kHz | - | SRS.1 TDD |
| Config 3,6 | - | SRS.2 TDD |
|  |  |  |  |  |
| PUCCH/PUSCH subcarrier spacing | Config 1,2,4,5 | kHz | 15 kHz | - |
| Config 3,6 | 30 kHz | - |
| EPRE ratio of PSS to SSS | | dB | 0 | 0 |
| EPRE ratio of PBCH DMRS to SSS | |
| EPRE ratio of PBCH to PBCH DMRS | |
| EPRE ratio of PDCCH DMRS to SSS | |
| EPRE ratio of PDCCH to PDCCH DMRS | |
| EPRE ratio of PDSCH DMRS to SSS | |
| EPRE ratio of PDSCH to PDSCH | |
| EPRE ratio of OCNG DMRS to SSS (Note 1) | |
| EPRE ratio of OCNG to OCNG DMRS (Note 1) | |
| Note2 | | dBm/15kHz | -104 | -104 |
| Note2 | Config 1,2,4,5 | dBm/SCS | -104 | -104 |
| Config 3,6 | -101 | -101 |
| SS-RSRPNote3 | Config 1,2,4,5 | dBm/SCS | -87 | -87 |
| Config 3,6 | -84 | -84 |
|  | | dB | 17 | 17 |
|  | | dB | 17 | 17 |
| IoNote3 | Config 1,2,4,5 | dBm/  9.36MHz | -58.96 | -58.96 |
| Config 3,6 | dBm/  38.16MHz | -52.86 | -52.86 |
| Time offset to Cell1 Note 5 | | μs | - | 3 |
| Propagation condition | | - | AWGN | AWGN |
| Note 1: OCNG shall be used such that both 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 is assumed to be constant over subcarriers and time and shall be modelled as AWGN of appropriate power for  to be fulfilled.  Note 3: Io levels have been derived from other parameters for information purposes. They are not settable parameters themselves.  Note 5: Receive time difference between slot boundaries of signals received from the two cells at the UE antenna connector including time alignment error between the two cells. | | | | |



##### A.4.5.2.8.2 Test Requirements

During the time duration T2, the interruption on NR PSCell during the switching from NR PSCell to NR SCell shall not exceed the value as defined in Table A.4.5.2.8.2-1 dependent on the applied SRS carrier switching time.

Table A4.5.2.8.2-1: Interruption length on NR active serving cells at NR SRS carrier switching (slot)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | NR Slot length | SRS carrier | Interruption length X1 (slots) | |
|  | (ms) of victim cell | switching time (us)Note 1 | Sub carrier spacing for agressor cell (kHz) | |
|  |  |  | 15 | 30 |
| 0 | 1 | ≤ 200 | 2 | 2 |
|  |  | 300, 500 | 2 | 2 |
|  |  | 900 | 3 | 3 |
| 1 | 0.5 | ≤ 200 | 3 | 2 |
|  |  | 300, 500 | 3 | 3 |
|  |  | 900 | 4 | 4 |
| Note1: NR SRS carrier switching time is UE capability indicated by higher layer parameter *SRS-SwitchingTimeNR*. | | | | |

During the time duration T2, the interruption on E-UTRAN PCell during the switching from NR PSCell to NR SCell shall not exceed the value as defined in Table A.4.5.2.8.2-2 dependent on the applied SRS carrier switching time.

Table 4.5.2.8.2-2: Interruption length on E-UTRAN active serving cells at NR SRS carrier switching

|  |  |
| --- | --- |
| NR SRS carrier switching time (us)note1 | Interruption length X1 (subframes) |
|
| ≤500 | 2 |
| 900 | 3 |
| Note1: NR SRS carrier switching time is UE capability indicated by higher layer parameter *SRS-SwitchingTimeNR*. | |

The rate of correct events observed during repeated tests shall be at least 90%.

*< End of change #1 >*

*< Start of change #2 >*

#### A.4.5.2.9 E-UTRAN – NR interruptions at E-UTRA SRS carrier based switching

##### A.4.5.2.9.1 Test Purpose and Environment

The purpose of this test is to verify that when a UE needs to transmit aperiodic SRS on a PUSCH-less carrier of SCell, the UE can perform carrier based switching to one PUSCH-less SCCs from a CC with PUSCH. The test will verify the interruption requirements on active serving cell in SCG in clause 8.2.1.2.13. Supported test configurations are shown in table A.4.5.2. x2.1-1.

In the test there are three cells: cell1, cell2 and cell3. Cell1 is E-UTRAN PCell on the primary component carrier. Cell3 is E-UTRAN SCell on the TDD secondary component carrier which operates in downlink without PUCCH/PUSCH. Cell2 is NR FR1 PSCell. The UE is configured with the SRS switching between E-UTRAN PCell and E-UTRAN SCell. The general test parameters, NR cell specific test parameters and E-UTRA SRS configurations are given in Table A.4.5.2.9.1-2, A.4.5.2.9.1-3 and Table A.4.5.2.9.1-4 below. And the E-UTRAN cell specific test parameters (for cell1 and cell3) can refer to Table A.3.7.2.1-1. The test consists of two successive time periods, with duration of T1 and T2, respectively. During T1 LTE PCell and NR PSCell are continuously scheduled in DL. Immediately at the beginning of T2, a PDCCH with SRS-TPC-RNTI is sent to the UE to initiate SRS switching.

Table A.4.5.2.9.1-1: E-UTRAN – NR interruptions at E-UTRA SRS carrier based switching supported test configurations

|  |  |
| --- | --- |
| Config | Description |
| 1 | LTE FDD(cell1), LTE TDD (cell3), NR 15 kHz SSB SCS, 10 MHz bandwidth, FDD duplex mode |
| 2 | LTE FDD(cell1), LTE TDD (cell3), NR 15 kHz SSB SCS, 10 MHz bandwidth, TDD duplex mode |
| 3 | LTE FDD(cell1), LTE TDD (cell3), NR 30 kHz SSB SCS, 40 MHz bandwidth, TDD duplex mode |
| 4 | LTE TDD(cell1), LTE TDD (cell3), NR 15 kHz SSB SCS, 10 MHz bandwidth, FDD duplex mode |
| 5 | LTE TDD(cell1), LTE TDD (cell3), NR 15 kHz SSB SCS, 10 MHz bandwidth, TDD duplex mode |
| 6 | LTE TDD(cell1), LTE TDD (cell3), NR 30 kHz SSB SCS, 40 MHz bandwidth, TDD duplex mode |
| Note: The UE is only required to be tested in one of the supported test configurations | |

Table A.4.5.2.9.1-2: General test parameters for E-UTRAN – NR interruptions at E-UTRA SRS carrier based switching

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | Unit | Value | Comment |
| RF Channel Number |  | 1, 2, 3 | One is NR RF channel and the other two are E-UTRAN RF channels |
| Active PCell |  | Cell1 | PCell on E-UTRAN RF channel number 1. |
| Active PSCell |  | Cell2 | PSCell on NR RF channel number 2. |
| Activated SCell |  | Cell3 | SCell on E-UTRAN RF channel number 3. |
| CP length |  | Normal | Applicable to Cell1, Cell2 and Cell3 |
| DRX |  | OFF |  |
| Measurement gap pattern Id |  | OFF |  |
| T1 | s | 0.2 |  |
| T2 | s | 0.2 | UE shall perform SRS switching during T2 |

Table A.4.5.2.9.1-3: NR cell specific test parameters for E-UTRAN – NR interruptions at E-UTRA SRS carrier based switching

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | | Unit | Cell2 |
| Frequency Range | |  | FR1 |
| Duplex mode | Config 1,4 |  | FDD |
|  | Config 2,3,5,6 |  | TDD |
| TDD configuration | Config 1,4 |  | Not Applicable |
|  | Config 2,5 |  | TDDConf.1.1 |
|  | Config 3,6 |  | TDDConf.2.1 |
| BWchannel | Config 1,4 | MHz | 10: NRB,c = 52 |
|  | Config 2,5 |  | 10: NRB,c = 52 |
|  | Config 3,6 |  | 40: NRB,c = 106 |
| Initial DL BWP | Config 1,4 |  | DLBWP.0.1 |
| Configuration | Config 2,5 |  | DLBWP.0.1 |
|  | Config 3,6 |  | DLBWP.0.1 |
| Dedicated DL BWP | Config 1,4 |  | DLBWP.1.1 |
| Configuration | Config 2,5 |  | DLBWP.1.1 |
|  | Config 3,6 |  | DLBWP.1.1 |
| Initial UL BWP | Config 1,4 |  | ULBWP.0.1 |
| Configuration | Config 2,5 |  | ULBWP.0.1 |
|  | Config 3,6 |  | ULBWP.0.1 |
| Dedicated UL BWP | Config 1,4 |  | ULBWP.1.1 |
| Configuration | Config 2,5 |  | ULBWP.1.1 |
|  | Config 3,6 |  | ULBWP.1.1 |
| PDSCH Reference | Config 1,4 |  | SR.1.1 FDD |
| measurement channel | Config 2,5 |  | SR.1.1 TDD |
|  | Config 3,6 |  | SR.2.1 TDD |
| RMSI CORESET | Config 1,4 |  | CR.1.1 FDD |
| parameters | Config 2,5 |  | CR.1.1 TDD |
|  | Config 3,6 |  | CR.2.1 TDD |
| PDCCH CORESET | Config 1,4 |  | CCR.1.1 FDD |
| parameters | Config 2,5 |  | CCR.1.1 TDD |
|  | Config 3,6 |  | CCR.2.1 TDD |
| TRS configuration | Config 1,4 |  | TRS.1.1 FDD |
|  | Config 2,5 |  | TRS.1.1 TDD |
|  | Config 3,6 |  | TRS.1.2 TDD |
| OCNG Patterns | |  | OP.1 |
| SMTC Configuration | |  | SMTC.1 |
| TCI state | |  | TCI.State.0 |
| SSB Configuration | Config 1,2,4,5 |  | SSB.1 FR1 |
|  | Config 3,6 |  | SSB.2 FR1 |
| Correlation Matrix and Antenna Configuration | |  | 1x2 Low |
| EPRE ratio of PSS to SSS | |  |  |
| EPRE ratio of PBCH DMRS to SSS | |  |  |
| EPRE ratio of PBCH to PBCH DMRS | |  |  |
| EPRE ratio of PDCCH DMRS to SSS | |  |  |
| EPRE ratio of PDCCH to PDCCH DMRS | | dB | 0 |
| EPRE ratio of PDSCH DMRS to SSS | |  |  |
| EPRE ratio of PDSCH to PDSCH | |  |  |
| EPRE ratio of OCNG DMRS to SSS(Note 1) | |  |  |
| EPRE ratio of OCNG to OCNG DMRS (Note 1) | |  |  |
| NocNote 2 | | dBm/15 kHz | -104 |
| SS-RSRP Note 3 | | dBm/15 kHz | -87 |
| Ês/Iot | | dB | 17 |
| Ês/Noc | | dB | 17 |
| IoNote3 | Config 1,2,4,5 | dBm/9.36MHz | -58.96 |
|  | Config 3,6 | dBm/38.16MHz | -52.86 |
| Time offset to Cell1 Note 4 | | μs | 33 |
| Propagation Condition | |  | AWGN |
| Note 1: OCNG shall be used such that both 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 is assumed to be constant over subcarriers and time and shall be modeled as AWGN of appropriate power for Noc to be fulfilled.  Note 3: SS-RSRP and Io levels have been derived from other parameters for information purposes. They are not settable parameters themselvess.  Note 4: Receive time difference of signals received between subframe timing boundary of E-UTRA PCell and slot timing boundary of PSCell at the UE antenna connector including time alignment error between the two cells | | | |

Table A.4.5.2.9.1-4: Sounding Reference Symbol Configuration for E-UTRAN – NR interruptions at E-UTRA SRS carrier based switching

|  |  |  |
| --- | --- | --- |
| Field | Value | Comment |
| srsBandwidthConfiguration | bw5 |  |
| srsSubframeConfiguration | Sc8 | Once every 5 subframes |
| ackNackSrsSimultaneousTransmission | FALSE |  |
| srsMaxUpPTS | N/A | Not applicable for E-UTRAN FDD |
| srsBandwidth | 0 | No hopping |
| srsHoppingBandwidth | hbw0 |
| frequencyDomainPosition | 0 |  |
| Duration | TRUE | Indefinite duration |
| Srs-ConfigurationIndex | 47 | SRS periodicity of 40ms. |
| transmissionComb | 0 |  |
| cyclicShift | cs0 | No cyclic shift |
| SRS-AntennaPort | an1 | Number of antenna ports used for SRS transmission |
| Note: For further information see clause 6.3.2 in TS 36.331. | | |

##### A.4.5.2.9.2 Test Requirements

The UE shall be continuously scheduled in NR PSCell throughout the test and during the time duration T2, Each interruption on NR PSCell shall not exceed X defined in Table A.4.5.2.9.2-1.

Table A.4.5.2.9.2-1: Interruption length X (slot) E-UTRAN – NR at E-UTRA SRS carrier based switching

|  |  |  |
| --- | --- | --- |
|  | NR Slot | Interruption length X3 |
|  | length (ms) | (slots) |
| 0 | 1 | 2 |
| 1 | 0.5 | 3 |

The rate of correct events observed during repeated tests shall be at least 90%.

*< End of change #2 >*

*< Start of change #3 >*

#### A.5.5.2.7 E-UTRAN – NR FR2 interruptions at E-UTRA SRS carrier based switching

##### A.5.5.2.7.1 Test Purpose and Environment

The purpose of this test is to verify that when a UE needs to transmit aperiodic SRS on a PUSCH-less carrier of SCell, the UE can perform carrier based switching to one PUSCH-less SCCs from a CC with PUSCH. The test will verify the interruption requirements on active serving cell in SCG in clause 8.2.1.2.13. Supported test configurations are shown in table A.5.5.2.7.1-1.

In the test there are three cells: cell1, cell2 and cell3. Cell1 is E-UTRAN PCell on the primary component carrier. Cell3 is E-UTRAN SCell on the TDD secondary component carrier which operates in downlink without PUCCH/PUSCH. Cell2 is NR FR2 PSCell. The UE is configured with the SRS switching between E-UTRAN PCell and E-UTRAN SCell. The general test parameters and NR cell specific test parameters are given in Table A.5.5.2.8.1-2, A.5.5.2.8.1-3. And the E-UTRAN cell specific test parameters (for cell1 and cell3) can refer to Table A.3.7.2.1-1. The test consists of two successive time periods, with duration of T1 and T2, respectively. During T1 LTE PCell and NR PSCell are continuously scheduled in DL. Immediately at the beginning of T2, a PDCCH with SRS-TPC-RNTI is sent to the UE to initiate SRS switching.

Table A.5.5.2.7.1-1: E-UTRAN – NR FR2 interruptions at E-UTRA SRS carrier based switching supported test configurations

|  |  |
| --- | --- |
| Config | Description |
| 1 | LTE FDD(cell1), LTE TDD (cell3), NR 120 kHz SSB SCS, 100 MHz bandwidth,TDD duplex mode |
| 2 | LTE TDD(cell1), LTE TDD (cell3), NR 120 kHz SSB SCS, 100 MHz bandwidth,TDD duplex mode |
| Note: The UE is only required to be tested in one of the supported test configurations | |

Table A.5.5.2.7.1-2: General test parameters for E-UTRAN – NR FR2 interruptions at E-UTRA SRS carrier based switching

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | Unit | Value | Comment |
| RF Channel Number |  | 1, 2, 3 | One is NR RF channel and the other two are E-UTRAN RF channels |
| Active PCell |  | Cell1 | PCell on E-UTRAN RF channel number 1. |
| Active PSCell |  | Cell2 | PSCell on NR RF channel number 2. |
| Activated SCell |  | Cell3 | SCell on E-UTRAN RF channel number 3. |
| CP length |  | Normal | Applicable to Cell1, Cell2 and Cell3 |
| DRX |  | OFF |  |
| Measurement gap pattern Id |  | OFF |  |
| T1 | s | 0.2 |  |
| T2 | s | 0.2 | UE shall perform SRS switching during T2 |

Table A.5.5.2.7.1-3: NR cell specific test parameters for E-UTRAN – NR FR2 interruptions at E-UTRA SRS carrier based switching

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | | Unit | Cell 2 |
| Frequency Range | |  | FR2 |
| Duplex mode | Config 1,2 |  | TDD |
| TDD configuration | Config 1,2 |  | TDDConf.3.1 |
| BWchannel | Config 1,2 | MHz | 100: NRB,c = 66 |
| Downlink initial BWP Configuration | Config 1,2 |  | DLBWP.0.1 |
| Downlink dedicated BWP Configuration | Config 1,2 |  | DLBWP.1.1 |
| Uplink initial BWP configuration | Config 1,2 |  | ULBWP.0.1 |
| Uplink dedicated BWP configuration | Config 1,2 |  | ULBWP.1.1 |
| TRS configuration | Config 1,2 |  | TRS.2.1 TDD |
| TCI state | Config 1,2 |  | TCI.State.0 |
| PDSCH Reference measurement channel | Config 1,2 |  | SR.3.1 TDD |
| RMSI CORESET Reference Channel | Config 1,2 |  | CR.3.1 TDD |
| RMC CORESET Reference Channel | Config 1,2 |  | CCR.3.1 TDD |
| OCNG Patterns | |  | OP.1 |
| SSB Configuration | |  | SSB.1 FR2 |
| SMTC Configuration | Config 1,2 |  | SMTC.1 |
| EPRE ratio of PSS to SSS | | dB | 0 |
| EPRE ratio of PBCH DMRS to SSS | |  |  |
| EPRE ratio of PBCH to PBCH DMRS | |  |  |
| EPRE ratio of PDCCH DMRS to SSS | |  |  |
| EPRE ratio of PDCCH to PDCCH DMRS | |  |  |
| EPRE ratio of PDSCH DMRS to SSS | |  |  |
| EPRE ratio of PDSCH to PDSCH | |  |  |
| EPRE ratio of OCNG DMRS to SSS(Note 1) | |  |  |
| EPRE ratio of OCNG to OCNG DMRS (Note 1) | |  |  |
| Ês/Noc | | dB | 17 |
| Propagation Condition | |  | AWGN |
| Time offset to cell1 Note 2 | | ms | 3 |
| Note 1: OCNG shall be used such that both cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.  Note 2: Receive time difference of signals received between subframe timing boundary of E-UTRA PCell and slot timing boundary of PSCell including time alignment error between the two cells | | | |

Table A.5.5.2.7.1-4: NR cell specific OTA related test parameters for E-UTRAN – NR FR2 interruptions at transitions between active and non-active during DRX in asynchronous EN-DC

|  |  |  |
| --- | --- | --- |
| Parameter | Unit | Cell2 |
| Angle of arrival configuration |  | Setup 1 according to clause A.3.15.1 |
| Assumption for UE beamsNote 6 |  | Fine |
| Note1 | dBm/15kHzNote4 | -112 |
| Note1 | dBm/SCSNote3 | -102.97 |
|  | dB | 17 |
| SS-RSRPNote2 | dBm/SCS Note4 | -85.97 |
|  | dB | 17 |
| IoNote2 | dBm/95.04 MHz Note4 | -56.90 |
| Note 1: Interference from other cells and noise sources not specified in the test is assumed to be constant over subcarriers and time and shall be modelled as AWGN of appropriate power for  to be fulfilled.  Note 2: SS-RSRP and Io levels have been derived from other parameters for information purposes. They are not settable parameters themselves.  Note 3: SS-RSRP minimum requirements are specified assuming independent interference and noise at each receiver antenna port.  Note 4: Equivalent power received by an antenna with 0dBi gain at the centre of the quiet zone  Note 5: As observed with 0dBi gain antenna at the centre of the quiet zone  Note 6: Information about types of UE beam is given in B.2.1.3, and does not limit UE implementation or test system implementation | | |

Table A.5.5.2.7.1-5: Sounding Reference Symbol Configuration for E-UTRAN – NR FR2 interruptions at E-UTRA SRS carrier based switching

|  |  |  |
| --- | --- | --- |
| Field | Value | Comment |
| srsBandwidthConfiguration | bw5 |  |
| srsSubframeConfiguration | Sc8 | Once every 5 subframes |
| ackNackSrsSimultaneousTransmission | FALSE |  |
| srsMaxUpPTS | N/A | Not applicable for E-UTRAN FDD |
| srsBandwidth | 0 | No hopping |
| srsHoppingBandwidth | hbw0 |
| frequencyDomainPosition | 0 |  |
| Duration | TRUE | Indefinite duration |
| Srs-ConfigurationIndex | 47 | SRS periodicity of 40ms. |
| transmissionComb | 0 |  |
| cyclicShift | cs0 | No cyclic shift |
| SRS-AntennaPort | an1 | Number of antenna ports used for SRS transmission |
| Note: For further information see clause 6.3.2 in TS 36.331. | | |

##### A.5.5.2.7.2 Test Requirements

The UE shall be continuously scheduled in NR FR2 PSCell throughout the test. During T2 two interruption time periods are allowed on Cell2 and Cell1, each interruption due to SRS carrier based switching on Cell2 shall not exceed X defined in Table A.5.5.2.7.2-1.

Table A.5.5.2.7.2-1: Interruption length X (slot) E-UTRAN – NR at E-UTRA SRS carrier based switching

|  |  |  |
| --- | --- | --- |
|  | NR Slot | Interruption length X |
|  | length (ms) | (slots) |
| 2 | 0.25 | 5 |
| 3 | 0.125 | 9 |

The rate of correct events observed during repeated tests shall be at least 90%.

*< End of change #3 >*

*< Start of change #4 >*

#### A.5.5.2.8 E-UTRAN – NR FR2 interruptions at NR SRS carrier based switching

##### A.5.5.2.8.1 Test Purpose and Environment

The purpose of the test is to verify interruptions at NR SRS carrier based switching requirements defined in TS38.133 clause 8.2.1.2.12 and TS36.133 clause 7.32.2.13. The general test parameters are given in Table A.5.5.2.8.1-2, and NR cell specific test parameters are given in Table A.5.5.2.8.1-3. And the E-UTRAN cell specific test parameters can refer to Table A.3.7.2.2-1.

In the test there are three cells: Cell1, Cell2 and Cell3. Cell1 is LTE PCell, Cell2 is NR FR2 PSCell and Cell3 is NR FR2 SCell. Cell3 is not configured with PUCCH/PUSCH transmission. The test consists of two time periods, with duration of T1 and T2, respectively. During T1 and T2, Cell1, Cell2 and Cell3 are continuously scheduled in DL. Prior to the start of the time duration T1, Cell1 shall be configured as LTE PCell, Cell2 shall be configured as NR PSCell and Cell3 shall be configured as NR SCell.

At the beginning of T2, TE shall trigger aperiodic SRS transmission on Cell3.

Table A.5.5.2.8.1-1: Interruption at transitions between active and non-active during DRX supported test configurations

|  |  |
| --- | --- |
| Config | Description |
| 1 | LTE FDD, NR 120 kHz SSB SCS, 100 MHz bandwidth, TDD duplex mode |
| 2 | LTE TDD, NR 120 kHz SSB SCS, 100 MHz bandwidth, TDD duplex mode |
| Note: The UE is only required to be tested in one of the supported test configurations | |

Table A.5.5.2.8.1-2: General test parameters for E-UTRAN – NR FR2 interruptions at transitions between active and non-active during DRX in asynchronous EN-DC

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | Unit | Value | Comment |
| RF Channel Number |  | 1, 2 | One is E-UTRAN RF channel and the other is NR RF channel |
| Active PCell |  | Cell1 | PCell on E-UTRAN RF channel number 1. |
| Configured PSCell |  | Cell2 | PSCell on NR RF channel number 2. |
| Configured SCell |  | Cell3 | SCell on NR RF channel number 3. |
| CP length |  | Normal | Applicable to cell1 and cell 2 |
| DRX |  | OFF |  |
| Measurement gap pattern Id |  | OFF |  |
| T1 | s | 5 |  |
| T2 | s | 0.1 |  |

Table A.5.5.2.8.1-3: NR cell specific test parameters for E-UTRAN – NR FR2 interruptions at transitions between active and non-active during DRX in asynchronous EN-DC

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | | Unit | Cell 2 | Cell 3 |
| Frequency Range | |  | FR2 | |
| Duplex mode | Config 1,2 |  | TDD | |
| TDD configuration | Config 1,2 |  | TDDConf.3.1 | |
| BWchannel | Config 1,2 | MHz | 100: NRB,c = 66 | |
| Downlink initial BWP Configuration | Config 1,2 |  | DLBWP.0.1 | |
| Downlink dedicated BWP Configuration | Config 1,2 |  | DLBWP.1.1 | |
| Uplink initial BWP configuration | Config 1,2 |  | ULBWP.0.1 | |
| Uplink dedicated BWP configuration | Config 1,2 |  | ULBWP.1.1 | |
| TRS configuration | Config 1,2 |  | TRS.2.1 TDD | |
| SRS configuration | Config 1,2 |  | SRS.3 TDD | |
| TCI state | Config 1,2 |  | TCI.State.0 | |
| PDSCH Reference measurement channel | Config 1,2 |  | SR.3.1 TDD | |
| RMSI CORESET Reference Channel | Config 1,2 |  | CR.3.1 TDD | |
| RMC CORESET Reference Channel | Config 1,2 |  | CCR.3.1 TDD | |
| OCNG Patterns | |  | OP.1 | |
| SSB Configuration | |  | SSB.1 FR2 | |
| SMTC Configuration | Config 1,2 |  | SMTC.1 | |
| EPRE ratio of PSS to SSS | | dB | 0 | |
| EPRE ratio of PBCH DMRS to SSS | |  |  | |
| EPRE ratio of PBCH to PBCH DMRS | |  |  | |
| EPRE ratio of PDCCH DMRS to SSS | |  |  | |
| EPRE ratio of PDCCH to PDCCH DMRS | |  |  | |
| EPRE ratio of PDSCH DMRS to SSS | |  |  | |
| EPRE ratio of PDSCH to PDSCH | |  |  | |
| EPRE ratio of OCNG DMRS to SSS(Note 1) | |  |  | |
| EPRE ratio of OCNG to OCNG DMRS (Note 1) | |  |  | |
| Ês/Noc | | dB | 17 | |
| Propagation Condition | |  | AWGN | |
| Time offset to cell1 Note 2 | | μs | 33 | |
| Note 1: OCNG shall be used such that both cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.  Note 2: Receive time difference of signals received between subframe timing boundary of E-UTRA PCell and slot timing boundary of PSCell including time alignment error between the two cells | | | | |

Table A.5.5.2.8.1-3A: OTA related test parameters

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | Unit | Test 1 | |
|  |  | T1 | T2 |
| Angle of arrival configuration |  | Setup 1 according to clause A.3.15.1 | |
| Assumption for UE beamsNote 6 |  | Fine | |
| Note1 | dBm/15kHzNote4 | -112 | |
| Note1 | dBm/SCSNote3 | -103 | |
|  | dB | 4 | |
| SS-RSRPNote2 | dBm/SCS Note4 | -99 | |
|  | dB | 4 | |
| IoNote2 | dBm/95.04 MHz Note4 | -68.5 | |
| Note 1: Interference from other cells and noise sources not specified in the test is assumed to be constant over subcarriers and time and shall be modelled as AWGN of appropriate power for  to be fulfilled.  Note 2: SS-RSRP and Io levels have been derived from other parameters for information purposes. They are not settable parameters themselves.  Note 3: SS-RSRP minimum requirements are specified assuming independent interference and noise at each receiver antenna port.  Note 4: Equivalent power received by an antenna with 0dBi gain at the centre of the quiet zone  Note 5: As observed with 0dBi gain antenna at the centre of the quiet zone  Note 6: Information about types of UE beam is given in B.2.1.3, and does not limit UE implementation or test system implementation | | | |



##### A.5.5.2.8.3 Test Requirements

In T2 UE shall transmit SRS on Cell3 as requested. During T2 interruption on Cell2 due to SRS carrier based switching from Cell2 to Cell3 shall not exceed the requirements defined in TS38.133 clause 8.2.1.2.12. Interruption on Cell1 due to SRS carrier based switching from Cell2 to Cell3 shall not exceed the requirements defined in TS36.133 clause 7.32.2.13.

The rate of correct events observed during repeated tests shall be at least 90%.

*< End of change #4 >*

*< Start of change #5 >*

#### A.6.5.2.2 SA interruptions at NR SRS carrier based switching

##### A.6.5.2.2.1 Test Purpose and Environment

The purpose of this test is to verify that when a UE needs to transmit aperiodic SRS, the UE can perform carrier based switching to one carrier not configured for PUCCH/PUSCH transmission from a carrier with PUCCH/PUSCH transmission. The test will partly verify the interruption requirements on PCell in clause 8.2.2.2.9.

##### A.6.5.2.2.2 Test Parameters

In each test there are two cells: Cell 1 and Cell 2. Cell 1 is the FR1 PCell and Cell 2 is activated SCell on the TDD SCC which operats in downlink without PUCCH/PUSCH. The UE is configured with the SRS switching between PCell and SCell.The test parameters for PCell and SCell are given in Table A.6.5.2.2.2-2 and A.6.5.2.2.2-3 below. The test consists of two successive time periods, with duration of T1 and T2, respectively. Immediately at the beginning of T2, the UE is triggered for SRS switching.

The test equipment verifies that potential interruption is carried out correctly by monitoring ACK/NACK sent in PCell.

Table A.6.5.2.2.2-1: Supported test configurations

|  |  |
| --- | --- |
| Configuration | Description |
| 1 | 15 kHz SSB SCS, 10 MHz bandwidth, FDD – TDD duplex mode |
| 2 | 15 kHz SSB SCS, 10 MHz bandwidth, TDD – TDD duplex mode |
| 3 | 30 kHz SSB SCS, 40 MHz bandwidth, TDD – TDD duplex mode |
| Note: The UE is only required to be tested in one of the supported test configurations. | |

Table A.6.5.2.2.2-2: General test parameters for SA interruptions at NR SRS carrier based switching

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | Unit | Value | Comment |
| RF Channel Number |  | 1,2 | Two NR radio channel (1, 2) are used for this test |
| Active PCell |  | Cell 1 | Primary cell on NR RF channel number 1 |
| Configured SCell |  | Cell 2 | Activated secondary cell on NR RF channel number 2 |
| CP length |  | Normal |  |
| DRX |  | OFF | Continuous monitoring of primary cell |
| Cell2 timing offset to cell1 | μs | 0 |  |
| Time alignment error between cell2 and cell1 | μs | ≤ Time alignment error as specified in TS 38.104 [13] clause 6.5.3.1. | The value of time alignment error depends upon the type of carrier aggregation. |
| T1 | s | 5 |  |
| T2 | ms | 40 | UE shall perform SRS switching during T2 |

Table A.6.5.2.2.2-3: Cell specific test parameters for SA interruptions at NR SRS carrier based switching

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | | | | Unit | T1 | | T2 | |
| Cell 1 | Cell 2 | Cell 1 | Cell 2 |
| Duplex mode | | Config 1 | |  | FDD | TDD | FDD | TDD |
| Config 2,3 | | TDD | | | |
| TDD configuration | | Config 1 | |  | N/A | TDDConf.1.1 | N/A | TDDConf.1.1 |
| Config 2 | | TDDConf.1.1 | | | |
| Config 3 | | TDDConf.2.1 | | | |
| BWchannel | | Config 1,2 | | MHz | 10: NRB,c = 52 | | | |
| Config 3 | | 40: NRB,c = 106 | | | |
| Downlink initial BWP Configuration | | | |  | DLBWP.0.1 | | | |
| Downlink dedicated BWP Configuration | | | |  | DLBWP.1.1 | | | |
| Uplink initial BWP configuration | | | |  | ULBWP.0.1 | | | |
| Uplink dedicated BWP configuration | | | |  | ULBWP.1.1 | | | |
| TCI state | | | |  | TCI.State.0 | | | |
| TRS Configuration | | | |  | TRS.1.1 TDD | | | |
| PDSCH Reference measurement channel | | Config 1 | |  | SR.1.1 FDD | SR.1.1 TDD | SR.1.1 FDD | SR.1.1 TDD |
| Config 2 | | SR.1.1 TDD | SR.1.1 TDD | SR.1.1 TDD | SR.1.1 TDD |
| Config 3 | | SR2.1 TDD | SR2.1 TDD | SR2.1 TDD | SR2.1 TDD |
| Dedicated CORESET parameters | | Config 1 | |  | CCR.1.1 FDD | CCR.1.1 TDD | CCR.1.1 FDD | CCR.1.1 TDD |
| Config 2 | | CCR.1.1 TDD | CCR.1.1 TDD | CCR.1.1 TDD | CCR.1.1 TDD |
| Config 3 | | CCR.2.1 TDD | CCR.2.1 TDD | CCR.2.1 TDD | CCR.2.1 TDD |
| RMSI CORESET parameters | | Config 1 | |  | CR.1.1 FDD | CR.1.1 TDD | CR.1.1 FDD | CR.1.1 TDD |
| Config 2 | | CR.1.1 TDD | CR.1.1 TDD | CR.1.1 TDD | CR.1.1 TDD |
| Config 3 | | CR2.1 TDD | CR2.1 TDD | CR2.1 TDD | CR2.1 TDD |
| OCNG Patterns | | | |  | OP.1 | | | |
| SRS Configuration | Config 1,2 | | |  | SRS.1 TDD | | | |
| Config 3 | | | SRS.2 TDD | | | |
| SSB Configuration | Config 1,2 | | |  | SSB.1 FR1 | | | |
| Config 3 | | | SSB.2 FR1 | | | |
| SMTC configuration | | | |  | SMTC.1 | | | |
| EPRE ratio of PSS to SSS | | | | dB | 0 | | | |
| EPRE ratio of PBCH DMRS to SSS | | | |
| EPRE ratio of PBCH to PBCH DMRS | | | |
| EPRE ratio of PDCCH DMRS to SSS | | | |
| EPRE ratio of PDCCH to PDCCH DMRS | | | |
| EPRE ratio of PDSCH DMRS to SSS | | | |
| EPRE ratio of PDSCH to PDSCH | | | |
| EPRE ratio of OCNG DMRS to SSS(Note 1) | | | |
| EPRE ratio of OCNG to OCNG DMRS (Note 1) | | | |
| Note2 | | | Config 1,2,4,5 | dBm/15kHz | -104 | | | |
| Config 3,6 | -101 | | | |
|  | | | | dB | 17 | | | |
|  | | | | dB | 17 | | | |
| SS-RSRPNote3 | | | Config 1,2,4,5 | dBm/SCS | -87 | | | |
| Config 3,6 | -84 | | | |
| SCH\_RP Note 3 | | | | dBm/15 kHz | -87 | | | |
| Propagation condition | | | | - | AWGN | | | |
| Note 1: OCNG shall be used such that both 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 is assumed to be constant over subcarriers and time and shall be modelled as AWGN of appropriate power for  to be fulfilled.  Note 3: SS-RSRP and SCH\_RP levels have been derived from other parameters for information purposes. They are not settable parameters themselves.  Note 4: The uplink resources for CSI reporting are assigned to the UE prior to the start of time period T2. | | | | | | | | |



##### A.6.5.2.2.3 Test Requirements

The UE shall be scheduled on PCell continuously throughout the test. During the time duration T2, the interruption on PCell shall not be more than the values specified for SA in clause 8.2.2.2.9.

The rate of correct events observed during repeated tests shall be at least 90%.

*< End of change #5 >*

*< Start of change #6 >*

#### A.7.5.2.2 SA interruptions at NR SRS carrier-based switching

##### A.7.5.2.2.1 Test Purpose and Environment

The purpose of this test is to verify that when a UE needs to transmit aperiodic SRS, the UE can perform SRS carrier-based switching to a carrier not configured for PUCCH/PUSCH transmission from a carrier with PUCCH/PUSCH transmission. The test will partly verify the interruption requirements on PCell in clause 8.2.2.2.9.

##### A.7.5.2.2.2 Test Parameters

In each test there are two cells: Cell 1 and Cell 2. Cell 1 is the FR2 PCell. Cell 2 is an activated FR2 SCell on the TDD SCC which operats in downlink without PUCCH/PUSCH. The UE is configured with the SRS switching between PCell and SCell.The test parameters for PCell and SCell are given in Tables A.7.5.2.2.2-2, A.7.5.2.2.2-3, and A.7.5.2.2.2-4 below. The test consists of two successive time periods, with duration of T1 and T2, respectively. Immediately at the beginning of T2, the UE is triggered for SRS switching. The UE shall be scheduled on PCell continuously throughout the test.

The test equipment verifies that potential interruption is carried out correctly by monitoring ACK/NACK sent in PCell.

Table A.7.5.2.2.2-1: Supported test configurations

|  |  |
| --- | --- |
| Configuration | Description |
| 1 | 120 kHz SSB SCS, 100 MHz bandwidth, TDD duplex mode |
| NOTE: The UE is only required to be tested in one of the supported test configurations. | |

Table A.7.5.2.2.2-2: General test parameters for SA interruptions at NR SRS carrier-based switching

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | Unit | Value | Comment |
| RF Channel Number |  | 1, 2 | Two NR radio channel (1, 2) are used for this test |
| Active PCell |  | Cell 1 | Primary cell on NR RF channel number 1 |
| Configured SCell |  | Cell 2 | Activated secondary cell on NR RF channel number 2 |
| CP length |  | Normal |  |
| DRX |  | OFF | Continuous monitoring of PCell |
| T1 | s | 5 |  |
| T2 | ms | 100 | UE shall perform SRS switching during T2 |

Table A.7.5.2.2.2-3: Cell-specific test parameters for SA interruptions at NR SRS carrier-based switching

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | | Unit | Cell 1 | Cell 2 |
| Frequency Range | |  | FR2 | |
| Duplex mode | Config 1 |  | TDD | |
| TDD configuration | Config 1 |  | TDDConf.3.1 | |
| BWchannel | Config 1 | MHz | 100: NRB,c = 66 | |
| Downlink initial BWP Configuration | Config 1 |  | DLBWP.0.1 | |
| Downlink dedicated BWP Configuration | Config 1 |  | DLBWP.1.1 | |
| Uplink initial BWP configuration | Config 1 |  | ULBWP.0.1 | |
| Uplink dedicated BWP configuration | Config 1 |  | ULBWP.1.1 | |
| SRS configuration | Config 1 |  | SRS.3 TDD | |
| TRS configuration | Config 1 |  | TRS.2.1 TDD | |
| TCI state | Config 1 |  | TCI.State.0 | |
| PDSCH Reference measurement channel | Config 1 |  | SR.3.1 TDD | |
| RMSI CORESET Reference Channel | Config 1 |  | CR.3.1 TDD | |
| RMC CORESET Reference Channel | Config 1 |  | CCR.3.1 TDD | |
| OCNG Patterns | |  | OP.1 | |
| SSB Configuration | |  | SSB.1 FR2 | |
| SMTC Configuration | Config 1 |  | SMTC.1 | |
| EPRE ratio of PSS to SSS | | dB | 0 | |
| EPRE ratio of PBCH DMRS to SSS | |  |  | |
| EPRE ratio of PBCH to PBCH DMRS | |  |  | |
| EPRE ratio of PDCCH DMRS to SSS | |  |  | |
| EPRE ratio of PDCCH to PDCCH DMRS | |  |  | |
| EPRE ratio of PDSCH DMRS to SSS | |  |  | |
| EPRE ratio of PDSCH to PDSCH | |  |  | |
| EPRE ratio of OCNG DMRS to SSS Note 1 | |  |  | |
| EPRE ratio of OCNG to OCNG DMRS Note 1 | |  |  | |
| Ês/Noc | | dB | 17 | |
| Propagation Condition | |  | AWGN | |
| NOTE 1: OCNG shall be used such that both cells are fully allocated, and a constant total transmitted power spectral density is achieved for all OFDM symbols. | | | | |

Table A.7.5.2.2.2-4: OTA related test parameters

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | Unit | Test 1 | |
| T1 | T2 |
| Angle of arrival configuration |  | Setup 1 according to clause A.3.15.1 | |
| Assumption for UE beams Note 6 |  | Fine | |
| Note 1 | dBm/15kHzNote 4 | -112 | |
| Note 1 | dBm/SCSNote 3 | -103 | |
|  | dB | 4 | |
| SS-RSRP Note 2 | dBm/SCS Note 4 | -99 | |
|  | dB | 4 | |
| IoNote2 | dBm/95.04 MHz Note 4 | -68.5 | |
| NOTE 1: Interference from other cells and noise sources not specified in the test is assumed to be constant over subcarriers and time and shall be modelled as AWGN of appropriate power for  to be fulfilled.  NOTE 2: SS-RSRP and Io levels have been derived from other parameters for information purposes. They are not settable parameters themselves.  NOTE 3: SS-RSRP minimum requirements are specified assuming independent interference and noise at each receiver antenna port.  NOTE 4: Equivalent power received by an antenna with 0 dBi gain at the centre of the quiet zone.  NOTE 5: As observed with 0 dBi gain antenna at the centre of the quiet zone.  NOTE 6: Information about types of UE beam is given in B.2.1.3 and does not limit UE implementation or test system implementation. | | | |

##### A.7.5.2.2.3 Test Requirements

During T2, interruption on PCell due to SRS carrier-based switching between Cell 1 and Cell 2 shall not exceed the required values specified in clause 8.2.2.2.9.

The rate of correct events observed during repeated tests shall be at least 90%.

*< End of change #6 >*