3GPP TSG-RAN WG4 Meeting #98-e-Bis R4-2105726

Electronic Meeting, 12th April 2021 - 20th April 2021

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.133** | **CR** | draft | **rev** | **1** | **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:*** | Introduction of test cases for L1-RSRP measurement accuracy with CCA serving cell | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | MediaTek Inc. | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_newRAT-Perf | | | | |  | ***Date:*** | | | 2021-4-16 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***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:*** | | Introduction of test cases for L1-RSRP measurement accuracy with CCA serving cell | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Introduction of test cases for L1-RSRP measurement accuracy with CCA serving cell | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Test cases for L1-RSRP measurement accuracy is not covering cells operating with CCA. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS38.533 | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

<Start of Change 1>

### A.9.4.4 L1-RSRP measurement for beam reporting with CCA serving cell

#### A.9.4.4.1 SSB based L1-RSRP measurement

##### A.9.4.4.1.1 Test Purpose and Environment

The purpose of this test is to verify that the L1-RSRP measurement accuracy is within the specified limits. This test will verify the requirements in clause 10.1.33.1 for L1-RSRP measurements based on SSB with the testing configurations for NR cells in Table A.9.4.4.1.1-1.

Table A.9.4.4.1.1-1: Applicable NR configurations for FR1 SSB based L1-RSRP test

|  |  |
| --- | --- |
| Config | Description |
| 1 | Without CCA: 15 kHz SSB SCS, 10 MHz bandwidth, FDD duplex mode  With CCA: 30 kHz SSB SCS, 40 MHz bandwidth, TDD duplex mode |
| 2 | Without CCA: 15 kHz SSB SCS, 10 MHz bandwidth, TDD duplex mode  With CCA: 30 kHz SSB SCS, 40 MHz bandwidth, TDD duplex mode |
| 3 | Without CCA: 30 kHz SSB SCS, 40 MHz bandwidth, TDD duplex mode  With CCA: 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 | |

##### A.9.4.4.1.2 Test parameters

In this set of test cases there are two cells in the test, PCell (Cell 1) and a SCell under CCA (Cell2). Cell 2 operates on a carrier frequency with CCA and transmits SSBs in DBT window according to DL CCA model.

Two sub-tests (Test 1 and Test 2) are provided with different *Noc* on Cell 2. The test parameters for the Cell 1 and Cell 2 are given in Table A.9.4.4.1.2-1 below. The absolute and relative accuracy of L1-RSRP measurements are tested by using the parameters in Table A.9.4.4.1.2-1.

The same test is applicable for UE supporting any one or both semi-static channel access or dynamic channel access and for network configuring any of semi-static channel occupancy or dynamic channel occupancy.

There is no measurement gap configured in the test. Before the test, UE is configured one SSB resource set with two SSB resources. On Cell 2, UE is configured to perform L1-RSRP measurement based on the SSB resources 0 and 1.

Table A.9.4.4.1.2-1: FR1 SSB based L1-RSRP test parameters

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | | Config | Unit | Test 1 | | | Test 2 | | |
| Cell 1 | Cell 2 | | Cell 1 | Cell 2 | |
| Active PCell/SCell Configuration | | 1~3 |  | PCell | SCell | | PCell | SCell | |
| SSB GSCN | | 1~3 |  | freq1 | freq2 | | freq1 | freq2 | |
| DL CCA model | | 1~3 |  | N/A | As specifieed in A.3.20.2.1 | | N/A | As specifieed in A.3.20.2.1 | |
| UL CCA model | | 1~3 |  | N/A | As specified in A.3.20.2.2 | | N/A | As specified in A.3.20.2.2 | |
| Duplex mode | | 1 |  | FDD | TDD | | FDD | TDD | |
| 2,3 |  | TDD | TDD |
| TDD configuration | | 1 |  | N/A | TDDConf.1.1 CCA | | N/A | TDDConf.1.1 CCA | |
| 2 |  | TDDConf.1.1 | TDDConf.1.1 |
| 3 |  | TDDConf.2.1 | TDDConf.2.1 |
| BWchannel | | 1 | MHz | 10: NRB,c = 52 | 40: NRB,c = 106 | | 10: NRB,c = 52 | 40: NRB,c = 106 | |
| 2 | 10: NRB,c = 52 | 10: NRB,c = 52 |
| 3 | 40: NRB,c = 106 | 40: NRB,c = 106 |
| PDSCH Reference measurement channel | | 1 |  | SR.1.1 FDD | SR.1.1 CCA | | SR.1.1 FDD | SR.1.1 CCA | |
| 2 |  | SR.1.1 TDD | SR.1.1 TDD |
| 3 |  | SR.2.1 TDD | SR.2.1 TDD |
| RMSI CORESET Reference Channel | | 1 |  | CR.1.1 FDD | CR.1.1 CCA | | CR.1.1 FDD | CR.1.1 CCA | |
| 2 |  | CR.1.1 TDD | CR.1.1 TDD |
| 3 |  | CR.2.1 TDD | CR.2.1 TDD |
| Dedicated CORESET Reference Channel | | 1 |  | CCR.1.1 FDD | CCR.1.1 CCA | | CCR.1.1 FDD | CCR.1.1 CCA | |
| 2 |  | CCR.1.1 TDD | CCR.1.1 TDD |
| 3 |  | CCR.2.1 TDD | CCR.2.1 TDD |
| SSB configuration for Semi-static channel access | | 1 |  | SSB.3 FR1 | SSB.3 CCA | | SSB.3 FR1 | SSB.3 CCA | |
| 2 |  | SSB.3 FR1 | SSB.3 FR1 |
| 3 |  | SSB.4 FR1 | SSB.4 FR1 |
| SSB configuration for Dynamic channel access | | 1 |  | SSB.3 FR1 | SSB.4 CCA | | SSB.3 FR1 | SSB.4 CCA | |
| 2 |  | SSB.3 FR1 | SSB.3 FR1 |
| 3 |  | SSB.4 FR1 | SSB.4 FR1 |
| TRS configuration | | 1 |  | TRS.1.1 FDD | TRS.1.2 TDD | | TRS.1.1 FDD | TRS.1.2 TDD | |
| 2 |  | TRS.1.1 TDD | TRS.1.1 TDD |
| 3 |  | TRS.1.2 TDD | TRS.1.2 TDD |
| OCNG Patterns | | 1~3 |  | OP.1 | | | OP.1 | | |
| Initial BWP Configuration | | 1~3 |  | DLBWP.0.1  ULBWP.0.1 | | | DLBWP.0.1  ULBWP.0.1 | | |
| Dedicated BWP configuration | | 1~3 |  | DLBWP.1.1  ULBWP.1.1 | | | DLBWP.1.1  ULBWP.1.1 | | |
| SMTC configuration | | 1~3 |  | SMTC.1 | | N/A | SMTC.1 | | N/A |
| DBT Window Configuration | | 1~3 |  | N/A | | DBT.1 | N/A | | DBT.1 |
| reportConfigType | | 1~3 |  | periodic | | | periodic | | |
| reportQuantity | | 1~3 |  | ssb-Index-RSRP | | | ssb-Index-RSRP | | |
| Number of reported RS | | 1~3 |  | 2 | | | 2 | | |
| L1-RSRP reporting period | | 1~3 |  | slot80 | | | slot80 | | |
| EPRE ratio of PSS to SSS | | 1~3 | 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 DMRS | |
| EPRE ratio of OCNG DMRS to SSSNote 1 | |
| EPRE ratio of OCNG to OCNG DMRS Note 1 | |
| Note2 | NR\_FDD\_FR1\_A, NR\_TDD\_FR1\_A NOTE 5 | 1~3 | dBm/15kHz | -94.65 | | | -94.65 | - | |
| NR\_FDD\_FR1\_B | - | |
| NR\_TDD\_FR1\_C | - | |
| NR\_FDD\_FR1\_D, NR\_TDD\_FR1\_D | - | |
| NR\_FDD\_FR1\_E, NR\_TDD\_FR1\_E | - | |
| NR\_FDD\_FR1\_F | - | |
| NR\_FDD\_FR1\_G | - | |
| NR\_FDD\_FR1\_H | - | |
| NR\_TDD\_FR1\_I | - | -113 | |
| Note2 | NR\_FDD\_FR1\_A, NR\_TDD\_FR1\_A NOTE 5 | 1~3 | dBm/SSB SCS | -91.65 | | | -91.65 | - | |
| NR\_FDD\_FR1\_B | - | |
| NR\_TDD\_FR1\_C | - | |
| NR\_FDD\_FR1\_D, NR\_TDD\_FR1\_D | - | |
| NR\_FDD\_FR1\_E, NR\_TDD\_FR1\_E | - | |
| NR\_FDD\_FR1\_F | - | |
| NR\_FDD\_FR1\_G | - | |
| NR\_FDD\_FR1\_H | - | |
| NR\_TDD\_FR1\_I | - | -110 | |
|  | | 1~3 | dB | 10 | | | 10 | -3 | |
| SS-RSRPNote3 | NR\_FDD\_FR1\_A, NR\_TDD\_FR1\_A NOTE 5 | 1~3 | dBm/SCS | -81.65 | | | -81.65 | - | |
| NR\_FDD\_FR1\_B | - | |
| NR\_TDD\_FR1\_C | - | |
| NR\_FDD\_FR1\_D, NR\_TDD\_FR1\_D | - | |
| NR\_FDD\_FR1\_E, NR\_TDD\_FR1\_E | - | |
| NR\_FDD\_FR1\_F | - | |
| NR\_FDD\_FR1\_G | - | |
| NR\_FDD\_FR1\_H | - | |
| NR\_TDD\_FR1\_I | - | -113 | |
| IoNote3 | NR\_FDD\_FR1\_A, NR\_TDD\_FR1\_A NOTE 5 | 1~3 | dBm/  38.16MHz | -50.19 | | | -50.19 | - | |
| NR\_FDD\_FR1\_B | - | |
| NR\_TDD\_FR1\_C | - | |
| NR\_FDD\_FR1\_D, NR\_TDD\_FR1\_D | - | |
| NR\_FDD\_FR1\_E, NR\_TDD\_FR1\_E | - | |
| NR\_FDD\_FR1\_F | - | |
| NR\_FDD\_FR1\_G | - | |
| NR\_FDD\_FR1\_H | - | |
| NR\_TDD\_FR1\_I | - | -77.19 | |
|  | | 1~3 | dB | 10 | | | 10 | -3 | |
| Propagation condition | | 1~3 |  | AWGN | | | AWGN | | |
| Antenna configuration | | 1~3 |  | 1x2 | | | 1x2 | | |
| 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: RSRP and Io levels have been derived from other parameters for information purposes. They are not settable parameters themselves.  Note 4: RSRP minimum requirements are specified assuming independent interference and noise at each receiver antenna port.  Note 5: The test configuration excludes support for band n51 and it is not required to run this test on band n51 in this release of the specification. | | | | | | | | | |

##### A.9.4.4.1.3 Test Requirements

In both Test 1 and Test 2, the L1-RSRP measurement accuracy for SSB#0 and SSB#1 of Cell 2 shall fulfil the requirements in clauses 10.1.33.1.

<End of Change 1>

<Start of Change 2>

### A.10.5.4 L1-RSRP measurement for beam reporting with CCA serving cell

#### A.10.5.4.1 SSB based L1-RSRP measurement

##### A.10.5.4.1.1 Test Purpose and Environment

The purpose of this test is to verify that the L1-RSRP measurement accuracy is within the specified limits. This test will verify the requirements in clause 10.1.33.1 for L1-RSRP measurements based on SSB with the testing configurations for NR cells in Table A.10.5.4.1.1-1.

Table A.10.5.4.1.1-1: Applicable NR configurations for FR1 SSB based L1-RSRP test

|  |  |
| --- | --- |
| Config | Description |
| 1 | LTE FDD,  NR 30kHz SSB SCS, 40 MHz bandwidth, TDD duplex mode |
| 2 | LTE TDD,  NR 30kHz SSB SCS, 40 MHz bandwidth, TDD duplex mode |
| Note: The UE is only required to pass in one of the supported test configurations | |

##### A.10.5.4.1.2 Test parameters

In this set of test cases there are two cells in the test, E-UTRAN PCell (Cell 1), FR1 PSCell under CCA (Cell 2). Cell 2 operates on a carrier frequency with CCA and transmits SSBs in DBT window according to DL CCA model.

Two sub-tests (Test 1 and Test 2) are provided with different *Noc* on Cell 2. The test parameters and applicability for Cell 1 are defined in A.3.7A.2. The test parameters for the Cell 2 are given in Table A.10.5.4.1.2-1 below. The absolute and relative accuracy of L1-RSRP measurements are tested by using the parameters in Table A.10.5.4.1.2-1.

The same test is applicable for UE supporting any one or both semi-static channel access or dynamic channel access and for network configuring any of semi-static channel occupancy or dynamic channel occupancy.

There is no measurement gap configured in the test. Before the test, UE is configured one SSB resource set with two SSB resources. UE is configured to perform RLM, BFD and L1-RSRP measurement based on the SSB resources 0 and 1.

Table A.10.5.4.1.2-1: FR1 SSB based L1-RSRP test parameters

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | | **Config** | **Unit** | **Test 1** | **Test 2** |
| SSB GSCN | | 1,2 |  | freq1 | freq1 |
| DL CCA model | | 1,2 |  | As specifieed in A.3.20.2.1 | As specifieed in A.3.20.2.1 |
| UL CCA model | | 1,2 |  | As specified in A.3.20.2.2 | As specified in A.3.20.2.2 |
| Duplex mode | | 1,2 |  | TDD | TDD |
| TDD Configuration | | 1,2 |  | TDDConf.1.1 CCA | TDDConf.1.1 CCA |
| BWchannel | | 1,2 | MHz | 40: NRB,c = 106 | 40: NRB,c = 106 |
| Duplex mode | | 1,2 |  | TDD | TDD |
| TDD configuration | | 1,2 |  | TDDConf.1.1 CCA | TDDConf.1.1 CCA |
| PDSCH Reference measurement channel | | 1,2 |  | SR.1.1 CCA | SR.1.1 CCA |
| RMSI CORESET Reference Channel | | 1,2 |  | CR.1.1 CCA | CR.1.1 CCA |
| Dedicated CORESET Reference Channel | | 1,2 |  | CCR.1.1 CCA | CCR.1.1 CCA |
| SSB configuration for Semi-static channel access | | 1,2 |  | SSB.3 CCA | SSB.3 CCA |
| SSB configuration for Dynamic channel access | | 1,2 |  | SSB.4 CCA | SSB.4 CCA |
| OCNG Patterns | | 1,2 |  | OP.1 | OP.1 |
| TRS configuration | | 1,2 |  | TRS.1.2 TDD | TRS.1.2 TDD |
| Initial BWP Configuration | | 1,2 |  | DLBWP.0.1  ULBWP.0.1 | DLBWP.0.1  ULBWP.0.1 |
| Dedicated BWP configuration | | 1,2 |  | DLBWP.1.1  ULBWP.1.1 | DLBWP.1.1  ULBWP.1.1 |
| DBT Window Configuration | | 1,2 |  | DBT.1 | DBT.1 |
| reportConfigType | | 1,2 |  | periodic | periodic |
| reportQuantity | | 1,2 |  | ssb-Index-RSRP | ssb-Index-RSRP |
| Number of reported RS | | 1,2 |  | 2 | 2 |
| L1-RSRP reporting period | | 1,2 |  | slot80 | slot80 |
| EPRE ratio of PSS to SSS | | 1,2 | dB | 0 | 0 |
| EPRE ratio of PBCH DMRS to SSS | | 1,2 |  |  |  |
| 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 DMRS | |  |  |  |  |
| EPRE ratio of OCNG DMRS to SSSNote 1 | |  |  |  |  |
| EPRE ratio of OCNG to OCNG DMRS Note 1 | |  |  |  |  |
| Note2 | NR\_TDD\_FR1\_I | 1,2 | dBm/15kHz | -94.65 | [-113] |
| Note2 | NR\_TDD\_FR1\_I | 1,2 | dBm/SCS | -91.65 | [-110] |
|  | | 1,2 | dB | 10 | -3 |
| SS-RSRPNote3 | NR\_TDD\_FR1\_I | 1,2 | dBm/SCS | -81.65 | [-113] |
| IoNote3 | NR\_TDD\_FR1\_I | 1,2 | dBm/  38.16MHz | -50.19 | [-77.19] |
|  | | 1,2 | dB | 10 | -3 |
| Propagation condition | | 1,2 |  | AWGN | AWGN |
| Antenna configuration | | 1,2 |  | 1x2 | 1x2 |
| 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: RSRP and Io levels have been derived from other parameters for information purposes. They are not settable parameters themselves.  Note 4: RSRP minimum requirements are specified assuming independent interference and noise at each receiver antenna port.  Note 5: The test configuration excludes support for band n51 and it is not required to run this test on band n51 in this release of the specification | | | | | |

##### A.10.5.4.1.3 Test Requirements

In both Test 1 and Test 2, the L1-RSRP measurement accuracy for SSB#0 and SSB#1 of Cell 2 shall fulfil the requirements in clauses 10.1.33.1.

<End of Change 2>

<Start of Change 3>

### A.11.5.4 L1-RSRP measurement for beam reporting with CCA serving cell

#### A.11.5.4.1 SSB based L1-RSRP measurement

##### A.11.5.4.1.1 Test Purpose and Environment

The purpose of this test is to verify that the L1-RSRP measurement accuracy is within the specified limits. This test will verify the requirements in clause 10.1.33.1 for L1-RSRP measurements based on SSB with the testing configurations for NR cells in Table A.11.5.4.1.1-1.

Table A.11.5.4.1.1-1: Applicable NR configurations for FR1 SSB based L1-RSRP test

|  |  |
| --- | --- |
| Config | Description |
| 1 | NR 30kHz SSB SCS, 40 MHz bandwidth, TDD duplex mode |
| Note: The UE is only required to be tested in one of the supported test configurations in each supported band | |

##### A.11.5.4.1.2 Test parameters

In this set of test cases there one cell in the test, PCell under CCA (Cell 1). Cell 1 operates on a carrier frequency with CCA and transmits SSBs in DBT window according to DL CCA model.

Two sub-tests (Test 1 and Test 2) are provided with different *Noc* on Cell 1. The test parameters for the Cell 1 are given in Table A.11.5.4.1.2-1 below. The absolute and relative accuracy of L1-RSRP measurements are tested by using the parameters in Table A.11.5.4.1.2-1.

The same test is applicable for UE supporting any one or both semi-static channel access or dynamic channel access and for network configuring any of semi-static channel occupancy or dynamic channel occupancy.

There is no measurement gap configured in the test. Before the test, UE is configured one SSB resource set with two SSB resources. UE is configured to perform RLM, BFD and L1-RSRP measurement based on the SSB resources 0 and 1.

Table A.11.5.4.1.2-1: FR1 SSB based L1-RSRP test parameters

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameter | | Config | Unit | Test 1 | Test 2 |
| SSB GSCN | | 1 |  | freq1 | freq1 |
| DL CCA model | | 1 |  | As specifieed in A.3.20.2.1 | As specifieed in A.3.20.2.1 |
| UL CCA model | | 1 |  | As specified in A.3.20.2.2 | As specified in A.3.20.2.2 |
| Duplex mode | | 1 |  | TDD | TDD |
| TDD configuration | | 1 |  | TDDConf.1.1 CCA | TDDConf.1.1 CCA |
| BWchannel | | 1 | MHz | 40: NRB,c = 106 | 40: NRB,c = 106 |
| PDSCH Reference measurement channel | | 1 |  | SR.1.1 CCA | SR.1.1 CCA |
| RMSI CORESET Reference Channel | | 1 |  | CR.1.1 CCA | CR.1.1 CCA |
| Dedicated CORESET Reference Channel | | 1 |  | CCR.1.1 CCA | CCR.1.1 CCA |
| SSB configuration Semi-static channel access | | 1 |  | SSB.3 CCA | SSB.3 CCA |
| SSB configuration for Dynamic channel access | | 1 |  | SSB.4 CCA | SSB.4 CCA |
| OCNG Patterns | | 1 |  | OP.1 | OP.1 |
| Initial BWP Configuration | | 1 |  | DLBWP.0.1  ULBWP.0.1 | DLBWP.0.1  ULBWP.0.1 |
| TRS configuration | | 1 |  | TRS.1.2 TDD | TRS.1.2 TDD |
| Dedicated BWP configuration | | 1 |  | DLBWP.1.1  ULBWP.1.1 | DLBWP.1.1  ULBWP.1.1 |
| DBT Window Configuration | | 1 |  | DBT.1 | DBT.1 |
| reportConfigType | | 1 |  | periodic | periodic |
| reportQuantity | | 1 |  | ssb-Index-RSRP | ssb-Index-RSRP |
| Number of reported RS | | 1 |  | 2 | 2 |
| L1-RSRP reporting period | | 1 |  | slot80 | slot80 |
| EPRE ratio of PSS to SSS | | 1 | 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 DMRS | |
| EPRE ratio of OCNG DMRS to SSSNote 1 | |
| EPRE ratio of OCNG to OCNG DMRS Note 1 | |
| Note2 | NR\_TDD\_FR1\_I | 1 | dBm/15kHz | -94.65 | [-113] |
| Note2 | NR\_TDD\_FR1\_I | 1 | dBm/SCS | -91.65 | [-110] |
|  | | 1 | dB | 10 | -3 |
| SS-RSRPNote3 | NR\_TDD\_FR1\_I | 1 | dBm/SCS | -81.65 | [-113] |
| IoNote3 | NR\_TDD\_FR1\_I | 1 | dBm/  38.16MHz | -50.19 | [-77.19] |
|  | | 1 | dB | 10 | -3 |
| Propagation condition | | 1 |  | AWGN | AWGN |
| Antenna configuration | | 1 |  | 1x2 | 1x2 |
| 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: RSRP and Io levels have been derived from other parameters for information purposes. They are not settable parameters themselves.  Note 4: RSRP minimum requirements are specified assuming independent interference and noise at each receiver antenna port.  Note 5: The test configuration excludes support for band n51 and it is not required to run this test on band n51 in this release of the specification. | | | | | |

##### A.11.5.4.1.3 Test Requirements

In both Test 1 and Test 2, the L1-RSRP measurement accuracy for SSB#0 and SSB#1 of Cell 1 shall fulfil the requirements in clauses 10.1.33.1.

<End of Change 3>