**3GPP TSG-RAN4 Meeting #112  *R4-2411989***

Maastricht, Netherlands, 19th – 23rd August, 2024

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.133** | **CR** | **4737** | **rev** | **1** | **Current version:** | **18.6.0** |  |
|  | | | | | | | | |
| *For* ***[HE](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_blank)******[LP](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_blank)*** *on using this form: comprehensive instructions can be found at  <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:*** | CR on L1-RSRP measurement for LTM | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | CMCC | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_Mob\_enh2-Perf | | | | |  | ***Date:*** | | | 2024-08-09 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In test requirements parts, which requirements that UEneed to meet are not clear. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | In test requirements parts, specify which requirements that UEneed to meet. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The spec are not completed. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | A.6.6.26, A.6.6.27, A.6.6.28 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS 38.533 | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

## << Start of 1st change >>

### A.6.6.26 LTM Intra-frequency L1-RSRP measurement

#### A.6.6.26.1 Intra-frequency SSB based L1-RSRP measurement in FR1

##### A.6.6.26.1.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of SSB based intra-frequency L1-RSRP measurement on neighbor cell in FR1. This test will partly verify the requirements for SSB based intra-frequency L1-RSRP measurement on neighbor cell specified in clause 9.14, with the testing configurations for NR cells in Table A.6.6.26.1.1-1.

Table A.6.6.26.1.1-1: Applicable NR configurations for SSB based intra-frequency L1-RSRP LTM measurement test in FR1

|  |  |
| --- | --- |
| Config | Description |
| 1 | NR 15 kHz SSB SCS, 10 MHz bandwidth, FDD duplex mode |
| 2 | NR 15 kHz SSB SCS, 10 MHz bandwidth, TDD duplex mode |
| 3 | 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 | |

##### A.6.6.26.1.2 Test Parameters

Two cells are deployed in the test, which are FR1 PCell (Cell 1) and a FR1 neighbour cell (Cell 2) on the same frequency as the PCell. Measurement period [and measurement accuracy] is tested by using the parameters in table A.6.6.26.1.2-1, and A.6.6.26.1.2-2.

There are two tests in the test case, test 1 and test 2:

In test 1, time offset between cells is within CP length.

In test 2, time offset between cells is larger than CP length.

If a UE does not support *[RTD>CP]*, it is only required to pass test 1. Otherwise, it is only required to pass test 2.

The test consists of two successive time periods, with time durations of T1 and T2 respectively. SSB\_RP of Cell 2 in T1 and T2 are different. No gap patterns are configured in the test case.

Prior to the start of the time duration T1,

- UE is connected to Cell 1 (PCell) on RF channel 1 (PCC).

- A measurement object is configured for the frequency of the PCell, and it is indicated to the UE that event-triggered reporting with Event A3 is used. Before the start of the T1, event is triggered, and UE has sent a measurement report for the Cell 2 with SSB Index.

- UE is provided with *LTM-Candidate-r18* for Cell 2*.*

- UE is configured with SSB-based L1-RSRP measurements and periodic L1-RSRP measurement reports on candidate cell (Cell 2) in PUCCH format 2.

At the beginning of T2, SSB\_RP of Cell 2 changes to a different value from T1. T2 starts at the beginning of a frame with an odd SFN.

Table A.6.6.26.1.2-1: General test parameters for SSB based intra-frequency L1-RSRP LTM measurement test in FR1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameter | | Unit | Value | | Comment |
| Test 1 | Test 2 |
| Active cell | |  | Cell 1 | |  |
| Neighbouring cell | |  | Cell 2 | | Cell 2 is the candidate cell |
| A3-Offset | | dB | -6 | |  |
| Hysteresis | | dB | 0 | |  |
| Time To Trigger | | ms | 0 | |  |
| Filter coefficient | |  | 0 | | L3 filtering is not used |
| DRX | |  | OFF | | DRX is not used |
| Time offset between cells | |  | 2 μs | 20μs | The timing of Cell 2 is later than the timing of Cell 1 |
| deriveSSB-IndexFromCell | |  | Enabled | |  |
| LTM-CSI-ReportConfig | L1-RSRP reporting period | slot | 80 | | Periodic L1-RSRP reporting configured |
| nrOfReportedCells |  | n1 | | Report candidate cell’s (Cell 2) L1-RSRP measurement results. |
| nrOfReportedRS-PerCell |  | n1 | |
|  | spCellInclusion |  | N/A | |
| ltm-ConfigComplete | |  | True | | Candidate cell’s configuration is complete configuration |
| T1 | | S | 0.3 | |  |
| T2 | | S | ≤ 0.5 | |  |

Table A.6.6.26.1.2-2: Cell specific test parameters for SSB based intra-frequency L1-RSRP LTM measurement test in FR1

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | | | Unit | Cell 1 | | | Cell 2 | |
|  | | |  | T1 | T2 | | T1 | T2 |
| NR RF Channel Number | | |  | 1 | | | | |
| SSB GSCN | | |  | freq1 | | | | |
| Duplex mode | | Config 1 |  | FDD | | | | |
|  | | Config 2,3 |  | TDD | | | | |
| TDD configuration | | Config 1 |  | Not Applicable | | | | |
|  | | Config 2 |  | TDDConf.1.1 | | | | |
|  | | Config 3 |  | TDDConf.2.1 | | | | |
| BWchannel | | Config 1 | MHz | 10: NRB,c = 52 | | | | |
|  | | Config 2 |  | 10: NRB,c = 52 | | | | |
|  | | Config 3 |  | 40: NRB,c = 106 | | | | |
| BWP BW | | Config 1 | MHz | 10: NRB,c = 52 | | | | |
|  | | Config 2 |  | 10: NRB,c = 52 | | | | |
|  | | Config 3 |  | 40: NRB,c = 106 | | | | |
| PDSCH Reference | | Config 1 |  | SR.1.1 FDD | | N/A | | |
| measurement channel | | Config 2 |  | SR.1.1 TDD | | N/A | | |
|  | | Config 3 |  | SR.2.1 TDD | | N/A | | |
| CORESET Reference Channel | | Config 1 |  | CR.1.1 FDD | | N/A | | |
|  | | Config 2 | CR.1.1 TDD | | N/A | | |
|  | | Config 3 | CR.2.1 TDD | | N/A | | |
| CP length | |  |  | Normal | | | | |
| TRS configuration | | Config 1 |  | TRS.1.1 FDD | | | | |
|  | | Config 2 |  | TRS.1.1 TDD | | | | |
|  | | Config 3 |  | TRS.1.2 TDD | | | | |
| OCNG Patterns | | |  | OP.1 | | | | |
| SMTC Configuration | | |  | SMTC.1 | | | | |
| SSB Configuration | | Config 1,2 |  | SSB.1 FR1 | | | | |
|  | | Config 3 |  | SSB.2 FR1 | | | | |
| PDSCH/PDCCH subcarrier spacing | | Config 1,2 | KHz | 15 | | | | |
|  | | Config 3 |  | 30 | | | | |
| PUCCH/PUSCH subcarrier spacing | | Config 1,2 | KHz | 15 | | | | |
|  | | Config 3 |  | 30 | | | | |
| BWP configuration | | Initial DL BWP |  | DLBWP.0.1 | | | | |
|  | | Dedicated DL BWP |  | DLBWP.1.1 | | | | |
|  | | Initial UL BWP |  | ULBWP.0.1 | | | | |
|  | | Dedicated UL BWP |  | ULBWP.1.1 | | | | |
| 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 | | | dBm/15kHz | -101 | | | | |
| Note2 | Config 1,2 | | dBm/SCS | -101 | | | | |
|  | Config 3 | |  | -98 | | | | |
|  | | | dB | -1.76 | -0.19 | | -1.76 | -0.19 |
|  | | | dB | 3 | 14.5 | | 3 | 14.5 |
| SSB\_RP | Config 1,2 | | dBm/SCS | -98 | -87.5 | | -98 | -87.5 |
|  | Config 3 | | dBm/SCS | -95 | -84.5 | | -95 | -84.5 |
| IoNote3 | Config 1,2 | | dBm/  9.36MHz | -66.07 | -56.44 | | -66.07 | -56.44 |
|  | Config 3 | | dBm/  38.16MHz | -59.96 | -50.34 | | -59.96 | -50.34 |
| 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. | | | | | | | | |

##### A.6.6.26.1.3 Test Requirements

The UE shall send L1-RSRP report every 80 slots. The UE shall start to report a larger L1-RSRP value of Cell 2 in no later than 20 ms plus 80 slots from the beginning of time period T2. UE shall send L1-RSRP report including results of Cell 2 while meeting the L1-RSRP absolute accuracy requirement in clause 10.1.19D.

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

NOTE: The actual overall delays measured in the test may be up to 2xTTIDCCH higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in DCCH.

### A.6.6.27 LTM Inter-frequency L1-RSRP measurement with measurement gap

#### A.6.6.27.1 Inter-frequency SSB based L1-RSRP measurement with measurement gap

##### A.6.6.27.1.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of inter-frequency L1-RSRP measurement with measurement gap on candidate neighbour cell. This test will partly verify the L1-RSRP measurement requirements in clause 9.15.5, with the testing configurations for NR cells in Table A.6.6.27.1.1-1.

Table A.6.6.27.1.1-1: Applicable NR configurations for SSB based inter-frequency L1-RSRP LTM measurement with MG test in FR1

|  |  |
| --- | --- |
| Config | Description |
| 1 | NR 15 kHz SSB SCS, 10 MHz bandwidth, FDD duplex mode |
| 2 | NR 15 kHz SSB SCS, 10 MHz bandwidth, TDD duplex mode |
| 3 | NR 30 kHz SSB SCS, 40 MHz bandwidth, TDD duplex mode |
| Note 1: The UE is only required to be tested in one of the supported test configurations  Note 2: Target NR cell has the same SCS, BW and duplex mode as NR serving cell | |

##### A.6.6.27.1.2 Test parameters

There are two carriers and one cell on each carrier in the test, NR Cell 1 as PCell in FR1 on NR RF channel 1 and NR Cell 2 as neighbour cell in FR1 on NR RF channel 2. The test parameters for the Cell 1 and Cell 2 are given in Table A.6.6.27.1.2-1 and Table A.6.6.27.1.2-2 below.

In CSI measurement configuration, UE is indicated to perform inter-frequency L1-RSRP measurement on the SSBs and report periodically. The test consists of two successive time periods, with time duration of T1 and T2 respectively.

Measurement gap pattern configuration defined in Table A.6.6.27.1.2-1 is provided.

Prior to the start of the time duration T1,

- UE is connected to Cell 1 (PCell) on RF channel 1 (PCC).

- A measurement object is configured for the RF channel 2, and it is indicated to the UE that event-triggered reporting with Event A3 is used. Before the start of the T1, event is triggered, and UE has sent a measurement report for the Cell 2 with SSB Index.

- UE is provided with *LTM-Candidate-r18* for Cell 2*.*

- UE is configured with SSB-based L1-RSRP measurements and periodic L1-RSRP measurement reports on candidate cell (Cell 2) in PUCCH format 2.

At the beginning of T2, SSB\_RP of Cell 2 changes to a different value from T1.

Table A.6.6.27.1.2-1: General test parameters for SSB based inter-frequency L1-RSRP LTM measurement with MG test in FR1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | | Unit | Value | Comment |
| Active cell | |  | Cell 1 |  |
| Neighbouring cell | |  | Cell 2 | Cell 2 is the candidate cell |
| A3-Offset | | dB | -6 |  |
| Hysteresis | | dB | 0 |  |
| Time To Trigger | | ms | 160 |  |
| Filter coefficient | |  | 0 | L3 filtering is not used |
| reportQuantityRS-Indexes | |  | rsrp |  |
| maxNrofRS-IndexesToReport | |  | 1 |  |
| includeBeamMeasurements | |  | True |  |
| DRX | |  | OFF | DRX is not used |
| Time offset between cells | |  | 3 μs | The timing of Cell 2 is later than the timing of Cell 1 |
| deriveSSB-IndexFromCell | |  | Enabled | Not relevant to this test case |
| Gap Pattern Id | |  | 0 |  |
| Measurement gap offset | | ms | 39 |  |
| LTM-CSI-ReportConfig | L1-RSRP reporting period | slot | 80 | Periodic L1-RSRP reporting configured |
| nrOfReportedCells |  | n1 | Report candidate cell’s (Cell 2) L1-RSRP measurement results. |
| nrOfReportedRS-PerCell |  | n1 |
|  | spCellInclusion |  | N/A |
| ltm-ConfigComplete | |  | True | Candidate cell’s configuration is complete configuration |
| T1 | | s | 0.3 |  |
| T2 | | s | ≤ 0.5 |  |

Table A.6.6.27.1.2-2: Cell specific test parameters for SSB based inter-frequency L1-RSRP LTM measurement with MG test in FR1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Parameter | Config | Unit | Cell 1 | | Cell 2 | |
| T1 | T2 | T1 | T2 |
| SSB GSCN | 1~3 |  | freq1 | | freq2 | |
| Duplex mode | 1 |  | FDD | | | |
|  | 2 |  | TDD | | | |
|  | 3 |  | TDD | | | |
| TDD Configuration | 1 |  | N/A | | | |
|  | 2 |  | TDDConf.1.1 | | | |
|  | 3 |  | TDDConf.2.1 | | | |
| BWchannel | 1 | MHz | 10: NRB,c = 52 | | | |
|  | 2 |  | 10: NRB,c = 52 | | | |
|  | 3 |  | 40: NRB,c = 106 | | | |
| PDSCH Reference measurement channel | 1 |  | SR.1.1 FDD | | N/A | |
|  | 2 |  | SR.1.1 TDD | | N/A | |
|  | 3 |  | SR.2.1 TDD | | N/A | |
| RMSI CORESET Reference Channel | 1 |  | CR.1.1 FDD | | N/A | |
|  | 2 |  | CR.1.1 TDD | | N/A | |
|  | 3 |  | CR.2.1 TDD | | N/A | |
| Dedicated CORESET Reference Channel | 1 |  | CCR.1.1 FDD | | N/A | |
|  | 2 |  | CCR.1.1 TDD | | N/A | |
|  | 3 |  | CCR.2.1 TDD | | N/A | |
| SSB configuration | 1 |  | SSB.1 FR1 | | | |
|  | 2 |  | SSB.1 FR1 | | | |
|  | 3 |  | SSB.2 FR1 | | | |
| OCNG Patterns | 1~3 |  | OP.1 | | OP.1 | |
| Initial BWP Configuration | 1~3 |  | DLBWP.0.1  ULBWP.0.1 | | | |
| Dedicated BWP configuration | 1~3 |  | DLBWP.1.1  ULBWP.1.1 | | | |
| SMTC configuration | 1~3 |  | SMTC.1 | | | |
| TRS Configuration | 1 |  | TRS.1.1 FDD | | N/A | |
|  | 2 |  | TRS.1.1 TDD | | N/A | |
|  | 3 |  | TRS.1.2 TDD | | N/A | |
| EPRE ratio of PSS to SSS | 1~3 | 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 DMRS |  |  |
| EPRE ratio of OCNG DMRS to SSSNote 1 |  |  |
| EPRE ratio of OCNG to OCNG DMRS Note 1 |  |  |
| Note2 | 1~3 | dBm/15kHz | -94.65 | | | |
| Note2 | 1,2 | dBm/SCS | -94.65 | | | |
|  | 3 |  | -91.65 | | | |
|  | 1~3 | dB | 0 | 0 | 0 | 8 |
|  | 1~3 | dB | 0 | 0 | 0 | 8 |
| SSB RSRP Note3 | 1,2 | dBm/SSB SCS | -94.65 | -94.65 | -94.65 | -86.65 |
|  | 3 |  | -91.65 | -91.65 | -91.65 | -83.65 |
| Io Note3 | 1,2 | dBm/9.36 MHz | -63.69 | -63.69 | -63.69 | -58.06 |
|  | 3 | dBm/38.16 MHz | -57.59 | -57.59 | -57.59 | -51.97 |
| Propagation condition | 1~3 |  | 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: The resources for uplink transmission are assigned to the UE prior to the start of time period T2.  Note 3: 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 4: SS-RSRP and Io levels have been derived from other parameters for information purposes. They are not settable parameters themselves.. | | | | | | |

##### A.6.6.27.1.3 Test Requirements

During T1 The UE shall send inter-frequency L1-RSRP report every 80 slots. No later than 80 ms plus 80 slots from the beginning of time period T2, UE shall send L1-RSRP report of Cell 2. The RSRP report during T2 shall be larger than that during T1. These reported measurement report shall meet the absolute accuracy requirement in clause 10.1.19E. The rate of correct events observed during repeated tests shall be at least 90%.

### A.6.6.28 LTM Inter-frequency L1-RSRP measurement without measurement gap

#### A.6.6.28.1 Inter-frequency SSB based L1-RSRP measurement without measurement gap

##### A.6.6.28.1.1 Test Purpose and Environment

The purpose of this test is to verify that the UE supporting inter-frequency L1-RSRP measurements without gap makes correct reporting of inter-frequency L1-RSRP measurement. This test will partly verify the L1-RSRP measurement requirements in clause 9.15.6, with the testing configurations for NR serving cells in Table A.6.6.28.1.1-1.

Table A.6.6.28.1.1-1: Applicable NR configurations for SSB based inter-frequency L1-RSRP measurement without measurement gap in test

|  |  |
| --- | --- |
| Config | Description |
| 1 | NR 15 kHz SSB SCS, 10 MHz bandwidth, FDD duplex mode |
| 2 | NR 15 kHz SSB SCS, 10 MHz bandwidth, TDD duplex mode |
| 3 | NR 30 kHz SSB SCS, 40 MHz bandwidth, TDD duplex mode |
| Note 1: The UE is only required to be tested in one of the supported test configurations  Note 2: Target NR cell has the same SCS, BW and duplex mode as NR serving cell | |

##### A.6.6.28.1.2 Test parameters

There are two cells in the test, the FR1 PCell (Cell 1) on NR RF channel 1 and Cell 2 as neighbour cell in FR1 on NR RF channel 2. The SSB of Cell 2 is completely within UE’s active BWP BW. The RBs containing SSB from Cell 1 and Cell 2 should be different in frequency location within the cell bandwidth. The test parameters are given in Table A.6.6.28.1.2-1 and Table A.6.6.28.1.2-2 below.

There are two tests in the test case, test 1 and test 2:

In test 1, time offset between cells is within CP length.

In test 2, time offset between cells is larger than CP length.

UE not capable of [RTD>CP] is only required to pass test 1. Otherwise, it is only required to pass test 2.

The test consists of two successive time periods, with time duration of T1 and T2 respectively. There is no measurement gap configured in the test.

Prior to the start of the time duration T1,

- UE is connected to Cell 1 (PCell) on RF channel 1 (PCC).

- A measurement object is configured for RF channel 2, and it is indicated to the UE that event-triggered reporting with Event A3 is used. Before the start of the T1, event is triggered, and UE has sent a measurement report for the Cell 2 with SSB Index.

- UE is provided with *LTM-Candidate-r18* for Cell 2*.*

- UE is configured with SSB-based L1-RSRP measurements and periodic L1-RSRP measurement reports on candidate cell (Cell 2) in PUCCH format 2.

At the beginning of T2, SSB\_RP of Cell 2 changes to a different value from T1. T2 starts at the beginning of a frame with an even SFN.

**Table A.6.6.28.1.2-1: General test parameters for SSB based inter-frequency L1-RSRP measurement without measurement gap in test**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | | **Unit** | **Value** | | **Comment** |
| Test 1 | Test 2 |  |
| Active cell | |  | Cell 1 | |  |
| Neighbour cell | |  | Cell 2 | | Cell 2 is candidate cell |
| RF Channel Number | |  | 1: Cell 1  2: Cell 2 | |  |
| A3-Offset | | dB | -6 | |  |
| Hysteresis | | dB | 0 | |  |
| Time To Trigger | | s | 0 | |  |
| Filter coefficient | |  | 0 | | L3 filtering is not used |
| maxNrofRS-IndexesToReport | |  | 1 | |  |
| includeBeamMeasurements | |  | True | |  |
| Time offset between cells | | μs | 2 | 20 |  |
| DRX | |  | OFF | |  |
| LTM-CSI-ReportConfig | L1-RSRP reporting period | slot | 80 | | Periodic L1-RSRP reporting configured |
| nrOfReportedCells |  | n1 | | Report candidate cell’s (Cell 2) L1-RSRP measurement results |
| nrOfReportedRS-PerCell |  | n1 | |
| spCellInclusion |  | N/A | |
| ltm-ConfigComplete | |  | True | | Candidate cell’s configuration is complete configuration |
| T1 | | s | 0.3 | |  |
| T2 | | s | 0.5 | |  |

**Table A.6.6.28.1.2-2: Cell specific test parameters for SSB based inter-frequency L1-RSRP measurement without measurement gap in test**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | | | Unit | Cell 1 | | | Cell 2 | |
|  | | |  | T1 | T2 | | T1 | T2 |
| NR RF Channel Number | | |  | 1 | | 2 | | |
| SSB GSCN | | |  | freq1 | | freq2 | | |
| Duplex mode | | Config 1 |  | FDD | | | | |
|  | | Config 2,3 |  | TDD | | | | |
| TDD configuration | | Config 1 |  | Not Applicable | | | | |
|  | | Config 2 |  | TDDConf.1.1 | | | | |
|  | | Config 3 |  | TDDConf.2.1 | | | | |
| BWchannel | | Config 1 | MHz | 10: NRB,c = 52 | | | | |
|  | | Config 2 |  | 10: NRB,c = 52 | | | | |
|  | | Config 3 |  | 40: NRB,c = 106 | | | | |
| BWP BW | | Config 1 | MHz | 10: NRB,c = 52 | | | | |
|  | | Config 2 |  | 10: NRB,c = 52 | | | | |
|  | | Config 3 |  | 40: NRB,c = 106 | | | | |
| PDSCH Reference | | Config 1 |  | SR.1.1 FDD | | N/A | | |
| measurement channel | | Config 2 |  | SR.1.1 TDD | | N/A | | |
|  | | Config 3 |  | SR.2.1 TDD | | N/A | | |
| CORESET Reference Channel | | Config 1 |  | CR.1.1 FDD | | N/A | | |
|  | | Config 2 | CR.1.1 TDD | | N/A | | |
|  | | Config 3 | CR.2.1 TDD | | N/A | | |
| CP length | |  |  | Normal | | | | |
| TRS configuration | | Config 1 |  | TRS.1.1 FDD | | | | |
|  | | Config 2 |  | TRS.1.1 TDD | | | | |
|  | | Config 3 |  | TRS.1.2 TDD | | | | |
| OCNG Patterns | | |  | OP.1 | | | | |
| SMTC Configuration | | Config 1 |  | SMTC.2 | | SMTC.5 | | |
| Config 2,3 |  | SMTC.1 | | SMTC.4 | | |
| SSB Configuration | | Config 1,2 |  | SSB.1 FR1 | | SSB.5 FR1 | | |
|  | | Config 3 |  | SSB.2 FR1 | | SSB.6 FR1 | | |
| PDSCH/PDCCH subcarrier spacing | | Config 1,2 | kHz | 15 | | | | |
|  | | Config 3 |  | 30 | | | | |
| PUCCH/PUSCH subcarrier spacing | | Config 1,2 | kHz | 15 | | | | |
|  | | Config 3 |  | 30 | | | | |
| BWP configuration | | Initial DL BWP |  | DLBWP.0.1 | | NA | | |
|  | | Dedicated DL BWP |  | DLBWP.1.1 | | NA | | |
|  | | Initial UL BWP |  | ULBWP.0.1 | | NA | | |
|  | | Dedicated UL BWP |  | ULBWP.1.1 | | NA | | |
| 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 | | | dBm/15kHz | -101 | | | | |
| Note2 | Config 1,2 | | dBm/SCS | -101 | | | | |
|  | Config 3 | |  | -98 | | | | |
|  | | | dB | -1.76 | -0.19 | | -1.76 | -0.19 |
|  | | | dB | 3 | 14.5 | | 3 | 14.5 |
| SSB\_RP | Config 1,2 | | dBm/SCS | -98 | -87.5 | | -98 | -87.5 |
|  | Config 3 | | dBm/SCS | -95 | -84.5 | | -95 | -84.5 |
| IoNote3 | Config 1,2 | | dBm/  9.36MHz | -66.07 | -56.44 | | -66.07 | -56.44 |
|  | Config 3 | | dBm/  38.16MHz | -59.96 | -50.34 | | -59.96 | -50.34 |
| 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. | | | | | | | | |

##### A.6.6.28.1.3 Test Requirements

The UE shall send L1-RSRP report every 80 slots. No later than 20 ms plus 80 slots from the beginning of time period T2, UE shall send L1-RSRP report of Cell 2 while meeting the absolute accuracy requirement in clause 10.1.19E.

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

NOTE: The actual overall delays measured in the test may be up to 2xTTIDCCH higher than the measurement reporting delays above because of TTI insertion uncertainty of the measurement report in DCCH.

<< End of 1st change >>