|  |  |  |
| --- | --- | --- |
| **CR Number** | **Date** | **Specification Base Version** |
| *QCOM-20191028-01* | *11th November 2019* | GTI v2.5 |
| **Author** | | **Change type** |
| *Qualcomm* | | *2. Modification* |
| **CR Title,** | | |
| *Add CSI-RS/TRS config to default test configuration* | | |
| **Sections/Clauses affected** | | |
| *4.1.2.2* | | |
| *Fill in the following sections if the CR is proposing modifications. Otherwise, leave blank.* | | |
| **Summary of change** | | |
| *1. Add CSI-RS/TRS config to default test configuration in 4.1.2.2* | | |
| **Reason for change** | | |
| *Correct/optimize test cases* | | |
| **Consequence if the change is not agreed** | | |
| *The test cases will fail to reflect test requirement* | | |
| **Any other supporting information** | | |
| *Give any additional information not covered above* | | |

1. Test Environment
   * 1. Cell Configuration
        1. Test Frequencies

Table 4-1: Test Frequencies for NR TDD

|  |  |  |  |
| --- | --- | --- | --- |
| Operating Band | Frequency Configuration | Occupied Bandwidth | Range  (F\_low – F\_high) |
| n41 | f1 | 100 MHz | 2515M - 2615M |
| f2 | 80 MHz | 2515M - 2595M |
| f3 | 60 MHz | 2515M - 2575M |
| f4 | 100 MHz | 2575M - 2675M |
| n79 | f1 | 100 MHz | 4800M - 4900M |

Table 4-2: Test Frequencies for E-UTRA TDD

|  |  |  |  |
| --- | --- | --- | --- |
| Operating Band | Frequency Configuration | Occupied Bandwidth | Range  (F\_low – F\_high) |
| 34 | f1 | 15 MHz | 2010M – 2025M |
| 39 | f1 | 20 MHz | 1880M - 1900M |
| f2 | 10 MHz | 1900M - 1910M |
| f3 | 15 MHz | 1900M - 1915M |
| f4 | 10 MHz | 1905M - 1915M |
| 40 | f1 | 20 MHz | 2325M - 2345M |
| f2 | 20 MHz | 2345M - 2365M |
| 41 | f1 | 20 MHz | 2615M - 2635M |
| f2 | 20 MHz | 2635M - 2655M |
| f3 | 20 MHz | 2655M - 2675M |

Table 4-3: Test Frequencies for E-UTRA FDD

|  |  |  |  |
| --- | --- | --- | --- |
| Operating Band | Frequency Configuration | Occupied Bandwidth | Range  (F\_low – F\_high) |
| 3 | f1 | 10 MHz | UL: 1710M - 1720M  DL: 1805M - 1815M |
| f2 | 15 MHz | UL: 1720M - 1735M  DL: 1815M - 1830M |
| f3 | 20 MHz | UL: 1710M - 1730M  DL: 1805M - 1825M |

Table 4-4: Band combinations for NSA option3 (EN-DC, two bands)

| Band Combinations | E-UTRA Band | NR Band | Note |
| --- | --- | --- | --- |
| DC\_3A\_n41A | 3A | n41A | Inter-band EN-DC |
| DC\_39A\_n41A | 39A | n41A | Inter-band EN-DC |
| DC\_3A\_n79A | 3A | N79A | Inter-band EN-DC |
| DC\_39A\_n79A | 39A | N79A | Inter-band EN-DC |

Table 4-5: Test Frequencies for E-UTRA FDD

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| GSM Band | Bandwidth | f1(Mid) | f2(High) | f3(Low) |
| Band 8 (GSM 900) | 25MHz | 20  (UL:894MHz/ DL:939MHz) | 110  (UL:912MHz/ DL:957MHz) | 5  (UL:891MHz/ DL:936MHz) |
| Band 3 (DCS 1800) | 75MHz | 590  (UL:1725.8MHz/ DL:1820.8MHz) | 700  (UL:1747.8MHz/ DL:1842.8MHz) | 515  (UL:1710.8MHz/ DL:1805.8MHz) |

* + - 1. Default Configuration

If not explicitly specified in the test case prose, the following Cell Configuration parameters shall be used for NR cells in the test cases

Table 4-4: Default Parameters

|  |  |  |
| --- | --- | --- |
| Parameters | Value | Note |
| MCC | 460 |  |
| MNC | 00 |  |
| NR Frame Structure for n41 | Uplink-Downlink Switch Period: 5ms | DD DD DD DS UU |
| Uplink-Downlink Switch Period: 3ms+2ms | DD DS UU DD DD |
| NR Frame Structure for n79 | Uplink-Downlink Switch Period: 2.5 ms | DSUUU DSUUU |
| Special Frame for n41 | DL : GP : UL = 6 : 4 : 4 | DDDDDDGGGGUUUU |
| Special Frame for n79 | DL : GP : UL = 10 : 2 : 2 | DDDDDDDDDDGGUU |
| CP Length | Normal CP |  |
| PRACH Format | Format 0 |  |
| PRACH Period | 10ms |  |
| PUCCH Format | Format 0 / Format 1 |  |
| Format 2 / Format 3 |  |
| PBCH SCS | 30kHz |  |
| PBCH Period | 20ms |  |
| PDCCH Symbols | 1 symbol |  |
| PDCCH Format | Format 0\_1/Format 1\_1 |  |
| PDSCH DMRS | Mapping type A & Type1 |  |
| PUSCH DMRS | Mapping type A & Type1 |  |
| PUSCH Transmission | The codebook-based transmission mode |  |
| UL Power Control | ON |  |
| HARQ | ON |  |
| SRS | NR SRS Switching |  |
| MIMO | NSA: NR 1T4R, LTE 1T4R or 1T2R |  |
| SA: 2T4R |  |
| UE Maximum TX Power | NSA: 26 dBm |  |
| SA: 26 dBm |  |
| Waveform | Uplink : CP-OFDM |  |
| Downlink: CP-OFDM |  |
|  | Subcarrier indexes in the PRB used for CSI-RS | k0 = 3 for CSI-RS resource 1,2,3,4 |
|  | OFDM symbols in the PRB used for CSI-RS | l0 = 6 for CSI-RS resource 1 and 3  l0 = 10 for CSI-RS resource 2 and 4 |
|  | Number of CSI-RS ports (X) | 1 for CSI-RS resource 1,2,3,4 |
|  | CDM Type | ‘No CDM’ for CSI-RS resource 1,2,3,4 |
|  | Density (ρ) | 3 for CSI-RS resource 1,2,3,4 |
| CSI-RS for tracking | CSI-RS periodicity | 15 kHz SCS: 20 for CSI-RS resource 1,2,3,4  30 kHz SCS: 40 for CSI-RS resource 1,2,3,4 |
|  | CSI-RS offset | 15 kHz SCS:  10 for CSI-RS resource 1 and 2  11 for CSI-RS resource 3 and 4    30 kHz SCS:  20 for CSI-RS resource 1 and 2  21 for CSI-RS resource 3 and 4 |
|  | Frequency Occupation | Start PRB 0  Number of PRB = BWP size |
|  | QCL info | TCI state #0 |
|  | Subcarrier indexes in the PRB used for CSI-RS | k0 = 4 |
|  | OFDM symbols in the PRB used for CSI-RS | l0 = 12 |
|  | Number of CSI-RS ports (X) | Same as number of transmit antenna |
|  | CDM Type | ‘FD-CDM2’ |
| NZP CSI-RS for CSI acquisition | Density (ρ) | 1 |
|  | CSI-RS periodicity | 15 kHz SCS: 20  30 kHz SCS: 40 |
|  | CSI-RS offset | 0 |
|  | Frequency Occupation | Start PRB 0  Number of PRB = BWP size |
|  | QCL info | TCI state #1 |