**3GPP TSG-RAN WG4 Meeting #112 R4-2412824**

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

**Agenda item:** 8.3.4

**Source:** Moderator (LG Electronics)

**Title:** Topic summary for [112][122] NR\_SL\_ intraB\_CA\_ITS\_part2

**Document for:** Information

# Introduction

*This topic summary is for Rel-19 NR SL intra-band contiguous CA in ITS in Agenda 8.3.3 as follows.*

* *Topic#1: UE RF requirements for SL intra-band contiguous CA*

# Topic #1: Tx requirements for SL intra-band contiguous CA

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [R4-2411871](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_112/Docs/R4-2411871.zip) | LG Electronics | MPR for SLCA PSSCH/PSCCHProposal 1: Consider PC2 PSSCH MPR in Table 2-9 for SL contiguous CA of contiguous RB allocation with 1x26dBm PA + 1LO.Table 2-9: PSSCH/PSCCH MPR for contiguous RB allocations with 1x26dBm+1LO

|  |  |
| --- | --- |
| Modulation | MPR for bandwidth class B(dB) |
|  | inner | outer |
| CP-OFDM | QPSK | ≤ 2.5 | ≤ 5.0 |
|  | 16QAM | ≤ 3.0 | ≤ 5.0 |
|  | 64QAM | ≤ 4.5 | ≤ 5.0 |
|  | 256QAM | ≤ 7.0 | ≤ 7.0 |

Proposal 2: Consider PC2 PSSCH MPR in Table 2-10 for SL contiguous CA of contiguous RB allocation with 2x23dBm PA + 1LO.Table 2-10: PSSCH/PSCCH MPR for contiguous RB allocations with 2x23dBm+1LO

|  |  |
| --- | --- |
| Modulation | MPR for bandwidth class B(dB) |
|  | inner | outer |
| CP-OFDM | QPSK | ≤ 3.5 | ≤ 6.0 |
|  | 16QAM | ≤ 3.5 | ≤ 6.0 |
|  | 64QAM | ≤ 4.5 | ≤ 6.0 |
|  | 256QAM | ≤ 7.5 | ≤ 7.5 |

Proposal 3: Consider PC2 PSSCH MPR in Table 2-9 for SL contiguous CA of non-contiguous RB allocation with 1x26dBm PA + 1LO.Table 2-15: PSSCH/PSCCH MPR for Non-contiguous RB allocations with 1x26dBm+1LO

|  |  |
| --- | --- |
| Modulation | MPR for bandwidth class B(dB) |
|  | Inner | Outer1 | Outer2 |
| CP-OFDM | QPSK | ≤ 3.5 | ≤ 7.5 | ≤ 11.0 |
|  | 16QAM | ≤ 4.0 | ≤ 7.5 | ≤ 11.0 |
|  | 64QAM | ≤ 5.5 | ≤ 7.5 | ≤ 11.0 |
|  | 256QAM | ≤ 8.0 | ≤ 8.0 | ≤ 11.0 |

Proposal 4: Consider PC2 PSSCH MPR in Table 2-10 for SL contiguous CA of non-contiguous RB allocation with 2x23dBm PA + 1LO.Table 2-16: PSSCH/PSCCH MPR for Non-contiguous RB allocations with 2x23dBm+2LO

|  |  |
| --- | --- |
| Modulation | MPR for bandwidth class B(dB) |
|  | Inner | Outer1 | Outer2 |
| CP-OFDM | QPSK | ≤ 4.5 | ≤ 8.5 | ≤ 13.0 |
|  | 16QAM | ≤ 4.5 | ≤ 8.5 | ≤ 13.0 |
|  | 64QAM | ≤ 7.0 | ≤ 8.5 | ≤ 13.0 |
|  | 256QAM | ≤ 9.0 | ≤ 9.0 | ≤ 13.0 |

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| [R4-2412731](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_112/Docs/R4-2412731.zip) | OPPO | **Proposal: It is proposed the below table 1,2,3,4 for contiguous PC2 NR Sidelink CA:**Table 1: Contiguous RB allocation for Power Class 2

|  |  |
| --- | --- |
| Modulation | MPR for bandwidth class (dB) |
|  | inner | outer |
| CP-OFDM | QPSK | ≤ 1.5 | ≤ 6 |
|  | 16QAM | ≤ 2 | ≤ 6 |
|  | 64QAM | ≤ 4 | ≤ 6 |
|  | 256QAM | ≤ 7 | ≤7 |

Table 2: Contiguous RB allocation for Power Class 2 with dual Tx

|  |  |
| --- | --- |
| Modulation | MPR for bandwidth class (dB) |
|  | inner | outer |
| CP-OFDM | QPSK | ≤ 2.0 | ≤ 6.0 |
|  | 16QAM | ≤ 3.0 | ≤ 6.0 |
|  | 64QAM | ≤ 4.5 | ≤ 6.0 |
|  | 256QAM | ≤ 6.5 | ≤ 7.5 |

Table 3: non-contiguous RB allocation for Power Class 2

|  |  |
| --- | --- |
| Modulation | MPR for bandwidth class (dB) |
|  | inner | Outer1 | Outer2 |
| CP-OFDM | QPSK | ≤ 1.5 | ≤ 5.0 | ≤ 7.0 |
|  | 16QAM | ≤ 2.5 | ≤ 5.0 | ≤ 7.0 |
|  | 64QAM | ≤ 4 | ≤ 5.0 | ≤ 7.0 |
|  | 256QAM | ≤ 6.5 | ≤7.0 | ≤ 7.0 |

Table 4: non-contiguous RB allocation for Power Class 2 with dual Tx

|  |  |
| --- | --- |
| Modulation | MPR for bandwidth class (dB) |
|  | inner | Outer1 | Outer2 |
| CP-OFDM | QPSK | ≤ 2 | ≤ 5.0 | ≤ 7.0 |
|  | 16QAM | ≤ 3.0 | ≤ 5.0 | ≤ 7.0 |
|  | 64QAM | ≤ 4.5 | ≤ 5.0 | ≤ 7.0 |
|  | 256QAM | ≤ 6.5 | ≤ 7.0 | ≤ 7.0 |

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## Open issues summary

*Before Meeting, moderators shall summarize list of open issues, candidate options and possible WF (if applicable) based on companies’ contributions.*

### Sub-topic 1-1 : Tx UE RF requirements for PC2 SL intra-band contiguous CA

*Sub-topic description*

*Open issues and candidate options before meeting:*

**Issue 1-1: PSSCH MPR**

* Proposals
	+ Option 1: R4-2411871 (LG Electronics)
	+ Option 2: R4-2412731 (OPPO)
* Recommended WF
	+ Further discussion

# Topic #2: TP

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [R4-2411652](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_112/Docs/R4-2411652.zip) | Meta | TP on TR38.787: Operating bands and UE RF requirements for intra-band contiguous SL CA UE |
| [R4-2412736](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_112/Docs/R4-2412736.zip) | OPPO | TP on TR38.787 on system parameter for intra-band contiguous SL CA |
| [R4-2412738](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_112/Docs/R4-2412738.zip) | OPPO | TP on TR38.787 to capture the intra-band contiguous SL CA simulation result |
| [R4-2412734](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_112/Docs/R4-2412734.zip) | OPPO | TP on TR38.787 on RX requirement for intra-band contiguous SL CA |

**Issue 2-1: TP on TR38.787 on intra-band contiguous SL CA**

* Proposals
	+ R4-2411652 (Meta)
	+ R4-2412736 (OPPO)
	+ R4-2412738 (OPPO)
	+ R4-2412736 (OPPO)
* Moderator’s view
	+ All TPs seems be acceptable. However, following revisions are necessary.
	+ Revision of Meta’s TP(R4-2411652) to avoid overlapped contents from OPPO’s TP (R4-2412736, R4-2412736)
	+ Revision of OPPO’s TP(R4-2412738) to add LGE’s MPR simulation result (R4-2411871)
* Recommended WF

|  |  |  |
| --- | --- | --- |
| R4-2411652 | To be revised | Only cover chap 6 (remove chap 5 & chap 7 in R4-2411652) |
| R4-2413736 | To be approved | chap 5 |
| R4-12738 | To be revised | chap 6 – MPR simulation results- To add MPR simulation results (R4-2411871) |
| R4-2412734 | To be approved | chap 7 |