**3GPP TSG-RAN WG4 Meeting # 98-e R4-21xxxxx**

**Electronic Meeting, January 25th – February 5th, 2021**

**Agenda item:** 4.2.2

**Source:** Moderator (Apple)

**Title:** Email discussion summary for [98e][103] NR\_NewRAT\_UE\_RF\_Part\_2

**Document for:** Information

# Introduction

This document summarizes the email discussions for agenda item 4.2.2. The agenda item 4.2.2 is intended for FR2 UE RF requirements maintenance. Most of contributions in this agenda item are CRs where some of them are associated with a discussion paper to justify the CR contents. R4-2101722 which was originally submitted to agenda item 7.19.3 (email thread [113]) will be treated in this email thread.

The discussions of this email thread are divided into the following five topics, EESS protection requirements after WRC-19, NR SCC UL power drop behavior in FR2, beam correspondence requirement for all power classes, FR2 UE minimum output power requirement, and other CRs for 38.101-2.

# Topic #1: EESS protection requirements after WRC-19

## Companies’ contributions summary

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| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2100109**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100109.zip)  Type: Other  For: Approval | Nokia, Nokia Shanghai Bell | **Title:** On NS\_203/CA\_NS\_203 for n258  **Proposal 1:** Mandatory support of modifiedMPR-Behaviour as well as NS\_203/CA\_NS\_203 for n258 shall be clarified in TS38.101-2.  **Proposal 2:** The following note shall be included in relevant tables such as Table 6.2.3.1-1, Table 6.2.3.1-2, Table 6.2A.3.1-1 and Table 6.2A.3.1-2  **NOTE:** A UE supporting n258 shall support NS\_203 (CA\_NS\_203 for CA NS tables) by means of modifiedMPR-Behaviour specified in Annex H.1.  **Proposal 3:** Remove “15.11.0” for a row of NS\_203 for n258 from Annex H.1 and add a text to allow UEs referring to an older version to implement NS\_203/CA\_NS\_203. |
| [**R4-2100085**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100085.zip)  Type: CR  For: Agreement  CAT: F  Rel-15 | Nokia, Nokia Shanghai Bell | **Title:** Clarification on NS\_203 support by n258  **Reason for change:**  A way to mandatory support of NS\_203/CA\_NS\_203 by n258 is not clear.  **Summary of change:**  Add NOTEs to Tables related to NS\_203/CA\_NS\_203 to clarify that these NSs are mandatory support by n258 by means of modifiedMPR-Behaviour.  Remove spec version of 15.11.0 for a row of NS\_203 for n258 from Annex H.1. and add a text to allow UEs referring to older versions to implement NS\_203/CA\_NS\_203 by n258.  Make a section relevant to CA\_NS\_201 “void”. |
| R4-2100086  Type: CR  For: Agreement  CAT: A  Rel-16 | Nokia, Nokia Shanghai Bell | **Title:** Clarification on NS\_203 support by n258  **Note**: This is the mirror CR of R4-2100085. |
| R4-2100087  Type: CR  For: Agreement  CAT: A  Rel-17 | Nokia, Nokia Shanghai Bell | **Title:** Clarification on NS\_203 support by n258  **Note**: This is the mirror CR of R4-2100085. |
| [**R4-2101201**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101201.zip)  Type: Other  For: Approval | NTT DOCOMO, INC. | **Title:** Further discussion on EESS protection  **Observation 1:** EESS protection requirements for n257 was specified in Japanese regulation.  **Proposal 1:** Focus on options 2/3/4/5.  **•** Before agreeing option 2, an appropriate length of the period to make chipset, UE, NW, and TE compatible with new NS(s) should be investigated.  • If the appropriate length of the period cannot be determined, take option 3/4/5 focusing how to write a relevant NOTE. |
| [**R4-2101523**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101523.zip)  Type: Other  For: Approval | OPPO | **Title:** Discussion on WRC-19 remaining issues  **Observation 1**: Introducing now or in the future is the main difference for 2024/2027 requirements.  **Observation 2**: Introduction of NS\_203 has set a good example on how to introduce requirement for the near future.  **Observation 3**: Possibility of forgetting these 2024/2027 requirements in RAN4 is low.  **Observation 4**: Without being required by regulatory bodies, the meaning of introducing future requirements is low.  **Observation 5**: Comparing introducing now, postpone defining the 2024/2027 requirements will have less impact to RAN4/RAN5/GCF and also the industry.  **Proposal 1**: Postpone defining the 2024/2027 requirements, NS\_203 approach can be used as reference in future. |

## Open issues summary

**Issue 1.2-1: How to handle EESS protection requirements with changeover dates in 2024/2027?**

### Option 1: Postpone defining the requirements till close to changeover dates. NS\_203 approach can be used as reference in future.

### Option 2: Introduce all foreseen NS into standard now and use normative or informative notes like ‘applicable from <calendar date>’ to indicate the changeover dates.

## Companies views’ collection for 1st round

### Open issues

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| **Company** | **Comments** |
|  | Issue 1.2-1: |
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### Comment collection for discussion papers

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| **Tdoc number** | **Comments** |
| [**R4-2100109**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100109.zip) | **Title**: On NS\_203/CA\_NS\_203 for n258  **Comments**: |
| [**R4-2101201**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101201.zip) | **Title:** Further discussion on EESS protection  **Comments:** |
| [**R4-2101523**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101523.zip) | **Title:** Discussion on WRC-19 remaining issues  **Comments:** |

### CRs/TPs/LSs comments collection

*Major close-to-finalize WIs and Rel-15 maintenance, comments collections can be arranged for TPs and CRs. For Rel-16 on-going WIs, suggest to focus on open issues discussion on 1st round.*

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| **CR/TP number** | **Comments collection** |
| [**R4-2100085**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100085.zip) | **Title:** Clarification on NS\_203 support by n258 |
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## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

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|  | **Status summary** |
| **Sub-topic#1** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |

*Recommendations on WF/LS assignment*

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|  | **WF/LS t-doc Title** | **Assigned Company,**  **WF or LS lead** |
| #1 |  |  |

### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provides recommendation on CRs/TPs Status update*

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| **CR/TP number** | **CRs/TPs Status update recommendation** |
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## Discussion on 2nd round (if applicable)

The following CRs are returned to 2nd round to see if agreement can be reached with further clarifications or revisions.

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|  | **Title:** |
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## Summary on 2nd round (if applicable)

*Moderator tries to summarize discussion status for 2nd round and provided recommendation on CRs/TPs/WFs/LSs Status update suggestion*

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| **CR/TP number** | **CRs/TPs Status update recommendation** |
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# Topic #2: NR SCC UL power drop behavior in FR2

## Companies’ contributions summary

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| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2101738**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101738.zip)  Type: Discussion and LS out  For: Approval | OPPO | **Title:** Discussion on FR2 equal PSD in CA and draft LS  **Observation 1:** Equal PSD restriction was introduced into spec without much explanation why this is needed for Pcmax.  **Observation 2:** No such equal PSD restriction for Pcmax exists in other RAN4 specs like 36.101, 38.101-1 and 38.101-3.  **Proposal 1:** It is proposed to remove the equal PSD restriction from Pcmax section.  **Observation 3:** Usually MPR are derived based on some precondition (the worst case), however, it applies to all the scenarios and there is no need to mention about the precondition in spec.  **Observation 4:** No such equal PSD restriction for MPR exists in other RAN4 specs like 36.101, 38.101-1 and 38.101-3.  **Proposal 2:** It is proposed to not specify the equal PSD restriction in MPR section.  **Proposal 3:** It is proposed to inform RAN5 about the updates and backgrounds in RAN4 specs to facilitate test case design. |
| [**R4-2101739**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101739.zip)  Type: CR  For: Agreement  CAT: F  Rel-15 | OPPO | **Title:** CR on FR2 equal PSD in UL CA  **Reason for change:**  As discussed in R4-2101738, the equal PSD restriction in Pcmax is not needed and it has caused confusions in interpretation of requirements.  **Summary of change:**  Remove the equal PSD restriction from CA Pcmax. |
| R4-2101740  Type: CR  For: Agreement  CAT: A  Rel-16 | OPPO | **Title:** CR on FR2 equal PSD in UL CA (R16 mirror CR)  **Note**: The is the mirror CR of R4-2101739. |
| R4-2101741  Type: CR  For: Agreement  CAT: A  Rel-17 | OPPO | **Title:** CR on FR2 equal PSD in UL CA (R17 mirror CR)  **Note**: The is the mirror CR of R4-2101739. |
| [**R4-2101722**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101722.zip)  Type: Discussion and LS out  For: Approval | Ericsson | **Title:** LS to RAN5 on SCell dropping behavior and verification thereof  **Proposal 1:** verification should be based on “Option 2: Measure the UE as is even SCC output may be scaled down under CA mode” relevant for UE operations in the field. This should be liaised with RAN5.  Another issue is testability:  **Observation 1:** The problem of verifying maximum output power with SCell power reduction is exacerbated by the allowed MPR values and the large tolerances for the configured maximum output power.  **Observation 2:** given anticipated TE measurement performance, verification of the maximum output power for UL CA appears viable only for BPSK and QPSK using the TRP metric  **Observation 3:** for CABW ≤ 400 MHz, the output power requirement for aggregated CCs of the same order the case of a single CC, of about 2 dB smaller for the non-CA except for DFT-s-OFDM pi/2-BPSK and QPSK, whereas for CABW > 400 MHz there is a larger difference. Hence dropping the SCells would only slightly change the PASS/FAIL limits should the remaining PCell be subject to non-CA requirements.  and we make the following  **Proposal 2:** for a UE significantly reducing (by at least [6] dB) the total SCell power or dropping the SCell(s) at maximum output power, the requirements for the total output power should be in accordance with that for a single carrier (in non-CA operation) of the same bandwidth as the PCell.  Another remedy for Rel-17 could be  **Proposal 3:** to prevent SCell dropping or a large power reduction, consider for Rel-17 UE-specific absolute and/or relative power limits (P-Max) modifying the configured maximum output power per serving cell for specific transmissions.  **Proposal 4:** the absolute/relative power limits are set up during the RRC reconfiguration (or modification) of the band combination. The limit to be used by the UE could be determined by a MAC-CE or a PDCCH message based on a DCI format, allowing fast adaptation to changing radio conditions by temporarily enabling/disabling limits. |

## Open issues summary

**Issue 2.2-1: Is it agreeable to remove equal PSD restriction from Pcmax section?**

### Option 1: Yes

### Option 2: No

**Issue 2.2-2: Is it agreeable to not specify the equal PSD restriction in MPR section?**

### Option 1: Yes

### Option 2: No

**Issue 2.2-3: Which of the following options should be used by RAN5 for verification of the intra-band UL CA test cases?**

### Option 1: Equal PSD between CCs

### Option 2: Measure the UE as is even SCC output may be scaled down under CA mode

**Issue 2.2-4: Is it agreeable that for a UE significantly reducing (by at least [6] dB) the total SCell power or dropping the SCell(s) at maximum output power, the requirements for the total output power should be in accordance with that for a single carrier (in non-CA operation) of the same bandwidth as the PCell?**

### Option 1: Yes

### Option 2: No

**Issue 2.2-5: Is it necessary to modify UL CA PCMAX definition in Rel-17 to prevent dropping of SCell transmissions?**

### Option 1: Yes

### Option 2: No

**Issue 2.2-6: Is it agreeable to inform RAN5 about the updates and backgrounds in RAN4 specs to facilitate test case design?**

### Option 1: Yes

### Option 2: No

## Companies views’ collection for 1st round

### Open issues

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| **Company** | **Comments** |
|  | Issue 2.2-1:  Issue 2.2-2:  …. |
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### Comment collection for discussion papers

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| **Tdoc number** | **Comments** |
| [**R4-2101738**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101738.zip) | **Title:** Discussion on FR2 equal PSD in CA and draft LS  **Comments**: |
| [**R4-2101722**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101722.zip) | **Title:** LS to RAN5 on SCell dropping behavior and verification thereof  **Comments**: |

### CRs/TPs comments collection

*Major close to finalize WIs and Rel-15 maintenance, comments collections can be arranged for TPs and CRs. For Rel-16 on-going WIs, suggest to focus on open issues discussion on 1st round.*

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| **CR/TP number** | **Comments collection** |
| [**R4-2101739**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2101739.zip) | **Title:** CR on FR2 equal PSD in UL CA |
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## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

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|  | **Status summary** |
| **Sub-topic#1** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |

*Suggestion on WF/LS assignment*

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|  | **WF/LS t-doc Title** | **Assigned Company,**  **WF or LS lead** |
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### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provided recommendation on CRs/TPs Status update suggestion*

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| **CR/TP number** | **CRs/TPs Status update recommendation** |
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## Discussion on 2nd round (if applicable)

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## Summary on 2nd round (if applicable)

*Moderator tries to summarize discussion status for 2nd round and provided recommendation on CRs/TPs/WFs/LSs Status update suggestion*

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| **CR/TP/WF number** | **CRs/TPs/WFs Status update recommendation** |
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# Topic #3: Beam correspondence requirement for all power classes

## Companies’ contributions summary

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| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2102663**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102663.zip)  Type: Discussion  For: Approval | Qualcomm Finland RFFE Oy | **Title:** Completion of beam correspondence requirements for all power classes  **Observation1:** Bit 0 UEs were introduced to help early PC3 UE implementations become functional in a nascent network environment.  **Observation2:** All power classes must be treated in the beam correspondence requirement, like any other requirement.  **Proposal:** Complete the beam correspondence requirement for FR2 UEs by including power classes other than PC3.  **Moderator’s note:** The Tdoc number in the document content is incorrectly written as R4-2102664. |
| [**R4-2102664**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102664.zip)  Type: CR  For: Agreement  CAT: F  Rel-15 | Qualcomm, Nokia, Nokia Shanghai Bell, Samsung, Verizon, NTT Docomo, Sony, Ericsson | **Title:** CR to 38.101-2 on beam correspondence  **Reason for change:**  The beam correspondence requirement is incomplete without explicit treatment of all UE power classes.  **Summary of change:**  Add default condition to cover power classes not explicitly treated. |
| R4-2102665  Type: CR  For: Agreement  CAT: A  Rel-16 | Qualcomm, Nokia, Nokia Shanghai Bell, Samsung, Verizon, NTT Docomo, Sony, Ericsson | **Title:** CR to 38.101-2 on beam correspondence  **Note:** The is the mirror CR of R4-2102664. |
| R4-2102666  Type: CR  For: Agreement  CAT: A  Rel-17 | Qualcomm, Nokia, Nokia Shanghai Bell, Samsung, Verizon, NTT Docomo, Sony, Ericsson | **Title:** CR to 38.101-2 on beam correspondence  **Note:** The is the mirror CR of R4-2102664. |
| [**R4-2102925**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102925.zip)  Type: Discussion  For: Approval | Qualcomm Incorporated | **Title:** Completion of beam correspondence requirements for all power classes  **Observation1:** Bit 0 UEs were introduced to help early PC3 UE implementations become functional in a nascent network environment.  **Observation2:** All power classes must be treated in the beam correspondence requirement, like any other requirement.  **Proposal:** Complete the beam correspondence requirement for FR2 UEs by including power classes other than PC3.  **Moderator’s note:** This document is identical to R4-2102663 and looks to be a double-submission. |
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## Open issues summary

**Issue 3.2-1: Is it agreeable to complete the beam correspondence requirement for FR2 UEs by including power classes other than PC3?**

### Option 1: Yes

### Option 2: No

## Companies views’ collection for 1st round

### Open issues

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| **Company** | **Comments** |
|  | Issue 3.2-1: |
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### Comment collection for discussion papers

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| **Tdoc number** | **Comments** |
| [**R4-2102663**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102663.zip) | **Title:** Completion of beam correspondence requirements for all power classes  **Comments**: |

### CRs/TPs comments collection

*Major close to finalize WIs and Rel-15 maintenance, comments collections can be arranged for TPs and CRs. For Rel-16 on-going WIs, suggest to focus on open issues discussion on 1st round.*

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| **CR/TP number** | **Comments collection** |
| [**R4-2102664**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102664.zip) | **Title:** CR to 38.101-2 on beam correspondence |
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## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

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|  | **Status summary** |
| **Sub-topic#1** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |

*Suggestion on WF/LS assignment*

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|  | **WF/LS t-doc Title** | **Assigned Company,**  **WF or LS lead** |
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### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provided recommendation on CRs/TPs Status update suggestion*

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| **CR/TP number** | **CRs/TPs Status update recommendation** |
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## Discussion on 2nd round (if applicable)

The following CRs are returned to 2nd round to see if agreement can be reached with further clarifications or revisions.

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| **CR/TP number** | **Comments collection** |
|  | **Title:** |
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## Summary on 2nd round (if applicable)

*Moderator tries to summarize discussion status for 2nd round and provided recommendation on CRs/TPs/WFs/LSs Status update suggestion*

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| **CR/TP number** | **CRs/TPs Status update recommendation** |
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# Topic #4: FR2 UE minimum output power requirement

## Companies’ contributions summary

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| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2102662**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102662.zip)  Type: Discussion  For: Approval | Qualcomm Finland RFFE Oy | **Title:** Discussion on FR2 UE Min. Output Power Requirement  **Observation 1:** The Pmin requirement represents inconsistent Tx SNR outcomes across CC bandwidths  **Observation 2:** The Pmin requirement for the entire UL is different depending on whether a single CC or multiple narrower CCs make up a given UL signal bandwidth  **Observation 3:** The per CC Pmin requirement is inconsistent between single layer and 2 layer UL.  **Proposal 1:** For PC3, adopt a Pmin per CC limit as -13 + 10\*log(BWchannel /100 MHz) dBm.  **Proposal 2:** For PC3, make the UL MIMO Pmin requirement (6.3D.1) consistent with the UL CA Pmin requirement by scaling it with baseband BW: ‘The minimum output power shall not exceed -13 + 10\*log(Number of UL layers \* BWchannel /100 MHz) dBm.’ |
| [**R4-2100586**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100586.zip)  Type: CR  For: Agreement  CAT: F  Rel-15 | Qualcomm Incorporated | **Title:** P\_min correction and P\_cmax CA correction to apply from all cells  **Reason for change:**  Consolidated CR addresses several topics that require some modification  1. Pcmax CA correction: In previous meeting changes were done to the same section but what remains incorrect is that sentence: “The UE maximum configured power PCMAX in a transmission occasion is determined by the UL grants for carrier f(c) of each serving cell c”. It is confusing since it implies there are many grants but only one cell to look at for determining Pcmax. Pcmax for UE is defined above “total configured maximum output power PCMAX”. Pcmax for CA is determined by looking at all grants for all cells with simultaneous transmission occasion since MPR also is defined for CA so that allocation on all CC’s is used to determine the MPR.  2. The Pmin requirement is not consistent with either network requirement or UE physical ability. See R4-2102662. Consistency can be achieved by scaling Pmin requirement with baseband BW  3. Include necessary wording changes missed in agreed R4-2011920, which clarified UE configuration for UL MIMO requirements.  4. When UE switches transmission to the DL only (or PUSCH-less) carrier for SRS carrier switching, it is unable to maintain coherence on two antenna ports. This must be added to the list of exceptions of when UE is assumed to maintain coherence  **Summary of change:**  1. Pcmax: “each” is replaced by “all” and cell is changed to its plural cells  2. Pmin:  a. Single CC Pmin scales by BW  b. ULMIMO Pmin scales by BW  3. Missing ULMIMO wording clarification: Extend clarifications to UE configurations made in R4-2011920 to Pmin requirement also. Referenced CR only addressed peak EIRP and MPR requirements, but neglected to address Pmin, Tx modulation quality or Emissions  4. Add SRS carrier switching to the list when UE is not required to maintain coherence |
| R4-2100587  Type: CR  For: Agreement  CAT: A  Rel-16 | Qualcomm Incorporated | **Title:** P\_min correction and P\_cmax CA correction to apply from all cells  **Note:** The is the mirror CR of R4-2100586 |
| R4-2100588  Type: CR  For: Agreement  CAT: A  Rel-17 | Qualcomm Incorporated | **Title:** P\_min correction and P\_cmax CA correction to apply from all cells  **Note:** The is the mirror CR of R4-2100586 |
| [**R4-2102924**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102924.zip)  Type: Discussion  For: Approval | Qualcomm Incorporated | **Title:** Discussion on FR2 UE Min. Output Power Requirement  **Observation 1:** The Pmin requirement represents inconsistent Tx SNR outcomes across CC bandwidths  **Observation 2:** The Pmin requirement for the entire UL is different depending on whether a single CC or multiple narrower CCs make up a given UL signal bandwidth  **Observation 3:** The per CC Pmin requirement is inconsistent between single layer and 2 layer UL.  **Proposal 1:** For PC3, adopt a Pmin per CC limit as -13 + 10\*log(BWchannel /100 MHz) dBm.  **Proposal 2:** For PC3, make the UL MIMO Pmin requirement (6.3D.1) consistent with the UL CA Pmin requirement by scaling it with baseband BW: ‘The minimum output power shall not exceed -13 + 10\*log(Number of UL layers \* BWchannel /100 MHz) dBm.’  **Moderator’s note:** This document is identical to R4-2102662 and looks to be a double-submission. |

## Open issues summary

**Issue 4.2-1: Is it agreeable to adopt a Pmin per CC limit as -13 + 10\*log(BWchannel /100 MHz) dBm?**

### Option 1: Yes

### Option 2: No

**Issue 4.2-2: Is it agreeable to scale Pmin for UL MIMO by -13 + 10\*log(Number of UL layers \* BWchannel /100 MHz) dBm**

### Option 1: Yes

### Option 2: No

## Companies views’ collection for 1st round

### Open issues

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| **Company** | **Comments** |
|  | Issue 4.2-1:  Issue 4.2-2: |
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### Comment collection for discussion papers

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| **Tdoc number** | **Comments** |
| [**R4-2102662**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102662.zip) | **Title:** Discussion on FR2 UE Min. Output Power Requirement  **Comments**: |

### CRs/TPs/LSs comments collection

*Major close to finalize WIs and Rel-15 maintenance, comments collections can be arranged for TPs and CRs. For Rel-16 on-going WIs, suggest to focus on open issues discussion on 1st round.*

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| **CR/TP number** | **Comments collection** |
| [**R4-2100586**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2100586.zip) | **Title:** P\_min correction and P\_cmax CA correction to apply from all cells |
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## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

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|  | **Status summary** |
| **Sub-topic#1** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |

*Suggestion on WF/LS assignment*

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| --- | --- | --- |
|  | **WF/LS t-doc Title** | **Assigned Company,**  **WF or LS lead** |
| #1 |  |  |

### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provided recommendation on CRs/TPs Status update suggestion*

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| **CR/TP number** | **CRs/TPs Status update recommendation** |
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## Discussion on 2nd round (if applicable)

The following CRs are returned to 2nd round to see if agreement can be reached with further clarifications or revisions.

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| **CR/TP number** | **Comments collection** |
|  | **Title:** |
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## Summary on 2nd round (if applicable)

*Moderator tries to summarize discussion status for 2nd round and provided recommendation on CRs/TPs/WFs/LSs Status update suggestion*

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| **CR/TP number** | **CRs/TPs Status update recommendation** |
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# Topic #5: Other CRs

## Companies’ contributions summary

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| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2102677**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102677.zip)  Type: CR  For: Agreement  CAT: F  Rel-16 | Ericsson | **Title:** Frequency separation class clarification  **Reason for change:**  Clarification of Frequency Separation classes to TS38.331.  At RAN2#111-e (August 2020) two Rel-16 CRs to TS38.331 (R2-2008463) and TS38.306 (R2-2008462) where agreed.  Those CRs makes a clarifying update to the specifications according to an RAN4 agreement stated in an LS to RAN2 in (R2-2006174 (R4-2009294)) Titled “LS on Frequency separation class for DL-only spectrum for FR2”  In TS38.331 previously stated:  -----------------------------  FreqSeparationClass ::= ENUMERATED {c1, c2, c3, ...}  Where the values c1, c2, c3 correspond to the values defined in TS38.101-2, Table 5.3A.4-2.  -----------------------------  After the change the I.E now indicates explicit values:  FreqSeparationClass ::= ENUMERATED { mhz800, mhz1200, mhz1400, ...}  And the new I.E for Frequency separation Class DL is added as:  FreqSeparationClassDL-Only-r16 ::= ENUMERATED {mhz200, mhz400, mhz600, mhz800, mhz1000, mhz1200}  ----------------------------  In this paper 38.101-2 is aligned with the updated signaling by adding a note in tables 5.3A.4-2 and 5.3A.4-3 that clarifies the new signaling.  **Summary of change:**  A clarifying note is added to tables 5.3A.4-2 and 5.3A.4-3 |
| R4-2102678  Type: CR  For: Agreement  CAT: A  Rel-17 | Ericsson | **Title:** Frequency separation class clarification  **Note:** The is the mirror CR of R4-2102677 |
| [**R4-2102716**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102716.zip)  Type: CR  For: Agreement  CAT: F  Rel-16 | Huawei, HiSilicon | **Title:** CR for intra-band UL CA MPR  **Reason for change:**  CA MPR is lack of definition for PUCCH/SRS, and there is wording error for CA RBstart definition.  **Summary of change:**  1. Add CA MPR for PUCCH/PRACH/SRS  2. Correct definition for CA RBstart |
| R4-2102815 Type: CR  For: Agreement  CAT: A  Rel-17 | Huawei, HiSilicon | **Title:** CR for intra-band UL CA MPR  **Note:** The is the mirror CR of R4-2102716 |

## Open issues summary

## Companies views’ collection for 1st round

### Open issues

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| **Company** | **Comments** |
| XXX |  |

### Comment collection for discussion papers

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| **Tdoc number** | **Comments** |
|  | **Title:**  **Comments**: |

### CRs/TPs/LSs comments collection

*Major close to finalize WIs and Rel-15 maintenance, comments collections can be arranged for TPs and CRs. For Rel-16 on-going WIs, suggest to focus on open issues discussion on 1st round.*

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| **CR/TP number** | **Comments collection** |
| [**R4-2102677**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102677.zip) | **Title:** Frequency separation class clarification |
|  |
| [**R4-2102716**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_98_e/Docs/R4-2102716.zip) | **Title:** CR for intra-band UL CA MPR |
|  |

## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

|  |  |
| --- | --- |
|  | **Status summary** |
| **Sub-topic#1** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |

*Suggestion on WF/LS assignment*

|  |  |  |
| --- | --- | --- |
|  | **WF/LS t-doc Title** | **Assigned Company,**  **WF or LS lead** |
| #1 |  |  |

### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provided recommendation on CRs/TPs Status update suggestion*

|  |  |
| --- | --- |
| **CR/TP number** | **CRs/TPs Status update recommendation** |
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## Discussion on 2nd round (if applicable)

The following CRs are returned to 2nd round to see if agreement can be reached with further clarifications or revisions.

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
|  | **Title:** |
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## Summary on 2nd round (if applicable)

*Moderator tries to summarize discussion status for 2nd round and provided recommendation on CRs/TPs/WFs/LSs Status update suggestion*

|  |  |
| --- | --- |
| **CR/TP number** | **CRs/TPs Status update recommendation** |
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