**3GPP TSG-RAN WG4 Meeting #101-bis-e R4-211xxxx**

**Electronic Meeting, January 17-25, 2022**

**Agenda item:** 5.30

**Source:** Moderator (China Telecom)

**Title:** Email discussion summary for [101-bis-e][112] NR\_PC2\_SUL\_CA\_lowMSD

**Document for:** Information

# Introduction

This discussion summary will cover two agendas:

5.30 High power UE (power class 2) for NR inter-band Carrier Aggregation with 2 bands downlink and 2 bands uplink

5.32 Power Class 2 UE for NR inter-band CA and SUL configurations with x (x>2) bands DL and y (y=1, 2) bands UL

According to the contributions submitted, this discussion summary will focus on the following topics:

* Topic#1: Discussion on general issues for HPUE CA
	+ Sub-topic 1-1: Power Class notation for BCSs
	+ Sub-topic 1-2: MSD update checking
* Topic#2: HPUE CA correction and introduction
	+ Sub-topic 2-1: Corrections
	+ Sub-topic 2-2: TPs/draft CRs to introduce UE requirements for combos

Note that the tables for collecting comments for sub-topic issues are arranged just below each issue...

# Topic #1: Discussion on general issues for HPUE CA

## Companies’ contributions summary

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| **T-doc number** | **Company** | **Proposals / Observations/Abstracts** |
| [R4-2202020](file:///E%3A%5C01%20%E6%A0%87%E5%87%86%5C14%20HPUE%5C02%20UL_interCA%5CRAN4_101b_e%5CDocs%5CR4-2202020.zip) | Skyworks Solutions Inc. | Proposal: Potential MSD increase or new MSD should be checked for the added HPUE UL configurations listed above before the end of Release 17 to maintain those cases in the specification. |
| [R4-2202041](file:///E%3A%5C01%20%E6%A0%87%E5%87%86%5C14%20HPUE%5C02%20UL_interCA%5CRAN4_101b_e%5CDocs%5CR4-2202041.zip) | T-Mobile USA | Proposal: Add superscripts to BCSs to indicate which BCSs have been analyzed for support of PC2 and PC1.5 |

## Open issues summary

### Sub-topic 1-1: Power Class notation for BCSs

**Proposal (R4-2202041):**

* Add superscripts to BCSs to indicate which BCSs have been analyzed for support of PC2 and PC1.5



**Recommended WF:**

* Collect views on this proposal

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| **Company** | **Comments on Sub-topic 1-1: Power Class notation for BCSs**  |
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### Sub-topic 1-2: MSD update checking

**Proposal (R4-2202020):**

* Potential MSD increase or new MSD should be checked for the added HPUE UL configurations listed below before the end of Release 17 to maintain those cases in the specification.
* CA\_n25A-n41C or CA\_ n25A-n41(2A) DL with PC2 or PC1.5 n41 UL or PC2 CA\_n25A-n41A UL
* CA\_n41(2A)-n66A DL with PC2 or PC1.5 n41 UL or PC2 CA\_ n41A-n66A UL
* CA\_n41C-n66A DL with PC2 or PC1.5 n41 UL or PC2 CA\_ n41A-n66A UL
* CA\_n41C-n71A DL with PC2 or PC1.5 n41 UL or PC2 CA\_ n41A-n71A UL
* CA\_n1A-n78A DL with PC2 n78 UL or PC2 CA\_ n1A-n78A UL
* CA\_n2A-n77/78A or CA\_n2A-n77(2A) DL with PC2 n77/n78 UL or PC2 CA\_n2A-n77A UL
* CA\_n3A-n41A DL with PC2 n41 UL or PC2 CA\_n3A-n41A UL
* CA\_n3A-n78A DL with PC2 n78 UL or PC2 CA\_n3A-n78A UL
* CA\_n5A-n77A or CA\_n5A-n77(2A) DL with PC2 n77 UL or PC2 CA\_n5A-n77A UL
* CA\_n12A-n77A or CA\_n12A-n77(2A) DL with PC2 n77 UL or PC2 CA\_n12A-n77A UL
* CA\_n14A-n77A or CA\_n14A-n77(2A) DL with PC2 n77 UL or PC2 CA\_n14A-n77A UL
* CA\_n25A-n77A DL with PC2 n77 UL
* CA\_n28A-n41A DL with PC2 n41 UL or PC2 CA\_n28A-n41A UL
* CA\_n28A-n79A DL with PC2 n79 UL or PC2 CA\_n28A-n79A UL
* CA\_n30A-n77A or CA\_n30A-n77(2A) DL with PC2 n77 UL or PC2 CA\_n30A-n77A UL
* CA\_n40A-n41A with PC2 n41 UL or PC2 CA\_n40A-n41A UL (MSD unless non-simultaneous Tx/Rx is granted, note is missing)
* CA\_n41A-n77A DL with PC2 or PC1.5 n41 UL or PC2 n77 UL or PC2 CA\_ n41A-n77A UL (unclear if both can be PC2 and simultaneously, MSD unless non-simultaneous Tx/Rx is granted, note is missing)
* CA\_n41A-n79A DL with PC2 n41 or n79 UL or PC2 CA\_ n41A-n79A UL (unclear if both can be PC2 and simultaneously, MSD unless non-simultaneous Tx/Rx is granted, note is missing)
* CA\_n66A-n77A or CA\_n66A-n77(2A) DL with PC2 n77 UL or PC2 CA\_ n66A-n77A UL
* CA\_n71A-n77A DL with PC2 n77 UL or PC2 CA\_ n71A-n77A UL

**Recommended WF:**

* Collect views for this proposal.
* Please contacts for the above CAs check if MSD values have been analyzed? Or if Skyworks could further clarify the proposal? As we have TR 38.841 that have captured the MSD analysis and also reflected the corresponding requirements into TS 38101-1.

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| **Company** | **Comments on Sub-topic 1-2: MSD update checking**  |
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# Topic #2: HPUE CA correction and introduction

## Companies’ contributions summary

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| **T-doc number** | **Company** | **Proposals / Observations/Abstracts** |
| R4-2201225 | Xiaomi | Draft CR to 38.101-1 corrections on Tx power configuration on IMD requirement for high power UE inter-band CA |
| [R4-2201680](file:///E%3A%5C01%20%E6%A0%87%E5%87%86%5C14%20HPUE%5C02%20UL_interCA%5CRAN4_101b_e%5CDocs%5CR4-2201680.zip) | AT&T | TP for TR 38.841 Addition of CA\_n29-n77 |
| [R4-2201717](file:///E%3A%5C01%20%E6%A0%87%E5%87%86%5C14%20HPUE%5C02%20UL_interCA%5CRAN4_101b_e%5CDocs%5CR4-2201717.zip) | Verizon, AT&T | DraftCR to 38.101-1 for HPUE CA with 2 bands downlink and x bands uplink (x =1,2) |
| [R4-2202042](file:///E%3A%5C01%20%E6%A0%87%E5%87%86%5C14%20HPUE%5C02%20UL_interCA%5CRAN4_101b_e%5CDocs%5CR4-2202042.zip) | T-Mobile USA | Draft CR for 38.101-1: Addition of PC2 and PC1.5 for DL CA\_n41(2A) UL n41 |
| [R4-2202043](file:///E%3A%5C01%20%E6%A0%87%E5%87%86%5C14%20HPUE%5C02%20UL_interCA%5CRAN4_101b_e%5CDocs%5CR4-2202043.zip) | T-Mobile USA | Draft CR for 38.101-1: Addition of PC2 and PC1.5 for combinations with n25 and n41 |
| [R4-2202044](file:///E%3A%5C01%20%E6%A0%87%E5%87%86%5C14%20HPUE%5C02%20UL_interCA%5CRAN4_101b_e%5CDocs%5CR4-2202044.zip) | T-Mobile USA | Draft CR for 38.101-1: Addition of PC2 and PC1.5 for combinations with n41 and n66 |
| [R4-2202045](file:///E%3A%5C01%20%E6%A0%87%E5%87%86%5C14%20HPUE%5C02%20UL_interCA%5CRAN4_101b_e%5CDocs%5CR4-2202045.zip) | T-Mobile USA | Draft CR for 38.101-1: Addition of PC2 and PC1.5 for combinations with n41 and n71 |

## Open issues summary

### Sub-topic 2-1: Corrections

**Proposed CR:**

* R4-2201225 Draft CR to 38.101-1 corrections on Tx power configuration on IMD requirement for high power UE inter-band CA

**Recommended WF:**

* Collect the comments for proposed draft CR.

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| **CR/TP number** | **Comments collection for Sub-topic 2-1: Corrections** |
| R4-2201225 |  |
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### Sub-topic 2-2: TPs/draft CRs to introduce UE requirements for combos

**Proposed CRs/TP:**

* [R4-2201680](file:///E%3A%5C01%20%E6%A0%87%E5%87%86%5C14%20HPUE%5C02%20UL_interCA%5CRAN4_101b_e%5CDocs%5CR4-2201680.zip) TP for TR 38.841 Addition of CA\_n29-n77
* R4-2201717 Draft CR to 38.101-1 for HPUE CA with 2 bands downlink and x bands uplink (x =1,2)
* R4-2202042 Draft CR for 38.101-1: Addition of PC2 and PC1.5 for DL CA\_n41(2A) UL n41
* R4-2202043 Draft CR for 38.101-1: Addition of PC2 and PC1.5 for combinations with n25 and n41
* R4-2202044 Draft CR for 38.101-1: Addition of PC2 and PC1.5 for combinations with n41 and n66
* R4-2202045 Draft CR for 38.101-1: Addition of PC2 and PC1.5 for combinations with n41 and n71

**Recommended WF:**

* Collect the comments for proposed TP and draft CRs. If no comments for certain of TP or draft CR, the TP or draft CR will be recommended as approved.

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| **CR/TP number** | **Comments collection for Sub-topic 2-2: TPs/draft CRs to introduce UE requirements for combos** |
| [R4-2201680](file:///E%3A%5C01%20%E6%A0%87%E5%87%86%5C14%20HPUE%5C02%20UL_interCA%5CRAN4_101b_e%5CDocs%5CR4-2201680.zip) |  |
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| [R4-2201717](file:///E%3A%5C01%20%E6%A0%87%E5%87%86%5C14%20HPUE%5C02%20UL_interCA%5CRAN4_101b_e%5CDocs%5CR4-2201717.zip) |  |
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| [R4-2202042](file:///E%3A%5C01%20%E6%A0%87%E5%87%86%5C14%20HPUE%5C02%20UL_interCA%5CRAN4_101b_e%5CDocs%5CR4-2202042.zip) |  |
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| [R4-2202044](file:///E%3A%5C01%20%E6%A0%87%E5%87%86%5C14%20HPUE%5C02%20UL_interCA%5CRAN4_101b_e%5CDocs%5CR4-2202044.zip) |  |
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| [R4-2202045](file:///E%3A%5C01%20%E6%A0%87%E5%87%86%5C14%20HPUE%5C02%20UL_interCA%5CRAN4_101b_e%5CDocs%5CR4-2202045.zip) |  |
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# Recommendations for Tdocs

## 1st round

## 2nd round