**3GPP TSG RAN#90e RP-20xxxx**

**e-Meeting, December 7th – 11th, 2020**

**Agenda item:** 9.1.4

**Source:** Moderator(Qualcomm Incorporated)

**Title:** Email Summary on Introduction of high-power devices operation use cases over Band n77

**Document for:** Discussion/Decision

# Introduction

In this document, the summary of the e-mail discussion on the proposal to introduce power classes with higher output power (PC1 and PC1.5) for band n77. The proposal is in the following contribution:

* RP-202280 New WID on high-power devices operation use cases over Band n77 Verizon

# Proposals

RP-202280 is a new work item proposal with the following objectives:

### 4.1 Objective of SI or Core part WI or Testing part WI

The objective of this work is to develop RF requirements that are applicable for HPUE and FWA operations over the NR band n77, including

1. Define new feature to enable single component carrier UL operation and dual-PA equipped devices
	1. enable NR band n77 Power Class 1.5 (29dBm) for both high power mobile and FWA devices, and
	2. enable NR band n77 Power Class 1 (31dBm) for FWA devices

to be utilized for standalone NR 2x2 UL MIMO and antenna diversity

1. Define requirements, including Tx power tolerance, MPR, A-MPR, IBE and ACLR for both Power Class 1.5 an Power Class 1. Improve A-MPR/MPR for both 29dBm and 31dBm band n77 in scope.
2. Ensue Tx duty cycle requirements sufficient to meet FCC SAR limit for UE and FWA devices and meet all of the regulatory requirements
	1. Solve the issues related to HPUE and FWA in use of 29dBm and 31dBm power classes if there are impacts
3. Assess the impact on eNB requirements required to support a 29dBm and 31dBm UE power class
4. Enhance the hardware requirements for high power devices
	1. improve the antenna isolation for FWA devices, and
	2. allow the PC2 UE device to deliver 28dBm power based on already present in the UE in carry 23 dBm and 26 dBm capable transmitters that can operate concurrently (R4-2016439)

### 4.2 Objective of Performance part WI

NOTE: Leave empty if the WI proposal does not contain a RAN performance part.

## Initial Email Discussion

### Companies comments

Questions to be handled in the initial phase of the e-mail discussion:

1. Do you agree with the approval of the WID on adding PC1 and PC1.5 support for band n77? If no, elaborate why. If yes but with changes in the objective, please also included comments on the next questions.

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| --- | --- |
| **Company** | **Views** |
| Bell Mobility | Yes and also for n78 as per the revised RP-202808  |
| Ericsson | Support |

1. Do you have any comments on the proposed objectives?

|  |  |
| --- | --- |
| **Company** | **Views** |
| Bell Mobility | Please capture objectives as in the revised tdoc RP-202808 |
| Ericsson | Regardnig the objective:* Assess the impact on eNB requirements required to support a 29dBm and 31dBm UE power class

Our understanding is that the new UE power class should not necessitate any network upgrades by any involved operators and thus it would help to clarify the objective as follows:Assess any impact at the gNB of a 29dBm and 31dBm UE power class. The existing gNB requirements shall be applied |
| Qualcomm Incorporated | For objective 2,Define requirements, including Tx power tolerance, MPR, A-MPR, IBE and ACLR for both Power Class 1.5 an Power Class 1. Improve A-MPR/MPR for both 29dBm and 31dBm band n77 in scope.If there is improvement found for MPR, it would not be restricted to Band n77 but could apply generally.For objective 5,Enhance the hardware requirements for high power devices* 1. improve the antenna isolation for FWA devices, and

the improvement should not be limited to FWA device but also to mobile devices that are capable. Suggest to include an objective* 1. introduce new signaling or existing signaling to enable the UE to indicate to the network whether it supports improved A-MPR and MPR
 |

1. Any other comments?

|  |  |
| --- | --- |
| **Company** | **Views** |
| T\_Mobile | This would be an NR WID. Shouldn’t the impacted specification be TS 38.101-1 and not TS 36.101? Also, RAN#93 is not June 2021.  |

### Summary of the initial email discussion

## Intermediate Email Discussions

# Conclusion

# References

RP-202280 New WID on high-power devices operation use cases over Band n77 Verizon