3GPP TSG-RAN WG4 Meeting #110bis draft R4-2406586

Changsha, China, April 15th – 19th, 2024

**Title:** WF on legacy power class related issues

**Agenda Item:** 11.2

**Source:** Qualcomm Inc.

**Document for:** Approval

## Sub-topic 1-1: DL CA configured with single carrier UL

**Agreements**: To reduce or remove cases where UE de-rates its output power in DL CA compared to single carrier operation resulting in reduced cell coverage and increased CA configuration time for HPUE:

* Specification is updated from rel-17
* the relation to the table notes in clause 5.5A is also considered.

## Sub-topic 1-2: Interband UL CA with single carrier UL transmission

**Agreements**: To increase UE output power and improve performance with one cell scheduled/activated:

* Allow UE to transmit higher power than specified power classes for the CA configuration up to highest specified single carrier power class (*ue-powerClass*) of the UL band subject to UE capability.
* Specification is updated from rel-17

## Sub-topic 1-3: Updates in 38.101-1

**Agreements**:

1. Update the Pcmax,f,c for serving cells *c* of UL CA configurations to cover the cases in which
* the NR band power class *ue-PowerClass/ue-PowerClass-v1610* is modified by the per-band-per-BC power class *ue-PowerClassPerBandPerBC-r17*; or
* the power class of the band combination (per-BC) or the UE-specific P-Max is lower than the NR band power class; or
* UE-specific cell-group P-Max indications are present (can be lower than the per-BC power class)

such that the UL output power per serving cell *c* and the PHR become correct also for these cases.

1. Add a general clause to beginning of 6.2A in TS 38.101-1 describing the power class capabilities and their relationship, if necessary, noting that power-class capabilities are specified in 38.306.

## Sub-topic 1-4: Online agreements

**Agreements**: For the scenarios in the table below excluding scenarios in sub-topic 1-1 and 1-2 power class (*powerClass*) shall limit the configured maximum output power (Pcmax,f,c) when higherPowerLimit-r17 is not indicated:

|  |  |
| --- | --- |
|  | **Scenarios**  |
| ***#1*** | **Intra-band DLCA with intra-band ULCA** |
| ***#2*** | **Inter-band 2CC ULCA** |
| ***#3*** | **Inter+intra 3CC ULCA** |
| ***#4*** | **Inter+intra DLCA with intra-band ULCA** |