**3GPP TSG-RAN5 Meeting #97 R5-226273r1**

**Toulouse, France, 14th – 18th Nov 2022**

**3GPP TSG RAN Meeting #98e RP-22xxxx**

**12 Dec – 16 Dec 2022**

**Source: Qualcomm, China Telecom**

**Title: New WID on UE Conformance - Increasing UE power high limit for CA and DC**

**Document for: Endorsement**

**Agenda Item: 4.1**

3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

# Title: UE Conformance – Increasing UE power high limit for CA and DC

## Acronym: Power\_Limit\_CA\_DC-UEConTest

## Unique identifier:

|  |  |
| --- | --- |
| **This WID includes a Testing part** | **X** |
| **and it addresses the following 3GPP work area:** | **Radio Access** | **X** |
| **Core Network** |  |
| **Services** |  |

Potential target Release: Rel-17

## 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Affects:** | UICC apps | ME | AN | CN | Others (specify) |
| **Yes** |  |  |  |  |  |
| **No** | X | X | X | X |  |
| **Don't know** |  |  |  |  |  |

## 2 Classification of the Work Item and linked work items

### 2.1 Primary classification

This work item is a

|  |  |
| --- | --- |
|  | Feature |
| X | Building Block |
|  | *Work Task* |
|  | Study Item |

### 2.2 Parent Work Item

|  |
| --- |
| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| Power\_Limit\_CA\_DC-Core | RAN4 | 930056 | Core part: Increasing UE power high limit for CA and DC |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work/Study Items (if any) |
| **Acronym** | Unique ID | Title | Nature of relationship |
|  |  |  |  |

## 3 Justification

Coverage is one of the key factors that an operator considers when commercializing cellular communication networks due to its direct impact on service quality. Higher maximum UE transmit power is nearly universally accepted as a desirable feature for cellular radio systems to enable greater range, capacity, and cell edge user throughput. It is therefore beneficial to introduce methods to unlock the maximum transmit capability of multiple PA’s across different bands transmitting at the same time.

In RAN#93e meeting, RAN4 has introduced WI “Increasing UE power high limit for CA and DC” to enable the possibility for a UE supporting PC3 within an NR TDD or FDD band and supporting PC2 within a second NR TDD band to signal a [HigherPowerLimitCADC] capability whereby the maximum output power indicated by the power class of the CA or DC configuration can be exceeded.

The overall completion of this WI has achieved 100% at RAN #96 (RP-221588). It is justified to introduce this WI to enable the corresponding UE conformance test specifications in 3GPP RAN WG5 to meet the market requirements in time.

## 4 Objective

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

The objective of this WI is to specify UE RF conformance testing for the corresponding NR CA and NR DC combo impacted by this new feature listed in clause 2.2.

## 5 Expected Output and Time scale

|  |
| --- |
| **New specifications** *{One line per specification. Create/delete lines as needed}* |
| Type  | TS/TR number | Title | For info at TSG#  | For approval at TSG# | Remarks |
|  |  |  |  |  |  |

|  |
| --- |
| **Impacted existing TS/TR** *{One line per specification. Create/delete lines as needed}* |
| TS/TR No. | Description of change | Target completion plenary# | Remarks |
| TS 38.508-1 | Definition of common environment for Higher Power Limit CA and DC. | TSG RAN#101(Sept-23) |  |
| TS 38.508-2 | Introduction of physical implementation capabilities for Higher Power Limit CA and DC. | TSG RAN#101(Sept-23) |  |
| TS 38.521-1 | Introduction of RF testing for Higher Power Limit CA  | TSG RAN#101(Sept-23) |  |
| TS 38.521-3 | Introduction of RF requirements for Higher Power Limit DC | TSG RAN#101(Sept-23) |  |
| TS 38.522 | Introduction of test applicability for Higher Power Limit CA and DC. | TSG RAN#101(Sept-23) |  |
|  |  |  |  |

## 6 Work item Rapporteur(s)

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## 7 Work item leadership

RAN5

## 8 Aspects that involve other WGs

None

## 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| Qualcomm |
| China Telecom |
| AT &T |
| Verizon |
| NTT DOCOMO  |
|  |
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