**3GPP TSG-RAN5 Meeting #95-e Draft\_R5-223200r3
Electronic Meeting,** **9th May – 20th May 2022**

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| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **38.508-1** | **CR** | **2402** | **rev** | **-** | **Current version:** | **17.4.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network |  |

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| --- |
|  |
| ***Title:***  | Corrections on mandatory channel bandwidths after Rel-15 |
|  |  |
| ***Source to WG:*** | Keysight Technologies UK Ltd |
| ***Source to TSG:*** | R5 |
|  |  |
| ***Work item code:*** | TEI15\_Test, 5GS\_NR\_LTE-UEConTest |  | ***Date:*** | 2022-04-25 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-17 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | There are notes indicating that a Rel-15 device is exempted to support all mandatory channel bandwidths defined in 38.101-1 and 38.101-3. This exemption does not apply to Rel-16 and forward devices. |
|  |  |
| ***Summary of change:*** | Clarify when the device is allowed not to support all mandatory channel bandwidths. This clarification takes into account that the maximum (non-optional) channel bandwidth specified in Table 5.3.5-1 of TS 38.101-1 & TS 38.101-2 is mandatory without IOT bit (i.e. purely mandatory) in a band combination with a single band entry and a single CC entry. |
|  |  |
| ***Consequences if not approved:*** | Test specifications will remain incorrect. |
|  |  |
| ***Clauses affected:*** | 4.3.1.0 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** | This CR depends on endorsement of proposal 1B, 2B in discussion R5-223199r2. |
|  |  |
| ***This CR's revision history:*** | Revision 1: WI code corrected in the coverpage |

## <<< START OF CHANGES 1>>>

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 36.508: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); Common test environments for User Equipment (UE) conformance testing".

[3] 3GPP TS 36.300: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access (E-UTRAN); Overall description; Stage 2".

[4] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification".

[5] 3GPP TS 38.300: "NR; Overall description; Stage 2".

[6] 3GPP TS 38.331: "NR; Radio Resource Control (RRC); Protocol specification".

[7] 3GPP TS 38.101-1: "NR; User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone".

[8] 3GPP TS 38.101-2: "NR; User Equipment (UE) radio transmission and reception; Part 2: Range 2 Standalone".

[9] 3GPP TS 38.101-3: "NR; User Equipment (UE) radio transmission and reception; Part 3: Range 1 and Range 2 Interworking operation with other radios".

[10] 3GPP TS 38.508-2: "5GS; User Equipment (UE) conformance specification; Part 2: Common Implementation Conformance Statement (ICS) proforma".

[11] 3GPP TS 38.509: "5GS; Special conformance testing functions for User Equipment (UE)".

[12] 3GPP TS 38.523-1: "5GS; User Equipment (UE) conformance specification; Part 1: Protocol".

[13] 3GPP TS 38.133: “NR; Requirements for support of radio resource management”.

[14] 3GPP TS 38.521-1: "NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 1: Range 1 Standalone".

[15] 3GPP TS 38.521-2: “NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 2: Range 2 Standalone”.

[16] 3GPP TS 38.521-3: “NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 3: Range 1 and Range 2 Interworking operation with other radios”.

[17] 3GPP TS 38.521-4: “NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 4: Performance”.

[18] 3GPP TS 38.533: “NR; User Equipment (UE) conformance specification; Radio resource management”.

[19] 3GPP TS 38.523-2: “5GS; User Equipment (UE) conformance specification; Part 2: Applicability of protocol test cases”.

[20] 3GPP TS 38.321: “NR; Medium Access Control (MAC) protocol specification”.

[21] 3GPP TS 38.214: “NR; Physical layer procedures for data”.

[22] 3GPP TS 38.213: “NR; Physical layer procedures for control”.

[23] 3GPP TS 38.523-3: "5GS; UE conformance specification; Part 3: Protocol Test Suites".

[24] 3GPP TR 38.810: “NR; Study on test methods”

[25] 3GPP TS 23.041: “Technical realization of Cell Broadcast Service (CBS)”

[26] 3GPP TS 23.003: “Numbering, addressing and identification”

[27] 3GPP TS 38.212: "NR; Multiplexing and channel coding"

[28] 3GPP TS 24.501: “Non-Access-Stratum (NAS) protocol for 5G System (5GS);Stage 3”

[29] 3GPP TS 38.211: "NR; Physical channels and modulation".

[30] IETF RFC 4187: " Extensible Authentication Protocol Method for 3rd Generation Authentication and Key Agreement (EAP-AKA) ".

[31] IETF RFC 5448: "Improved Extensible Authentication Protocol Method for 3rd Generation Authentication and Key Agreement (EAP-AKA)".

[32] IETF RFC 3748: "Extensible Authentication Protocol (EAP)".

[33] 3GPP TS 23.502: "Procedures for the 5G System (5GS); Stage 2".

[34] IETF RFC 7296: "Internet Key Exchange Protocol Version 2 (IKEv2)".

[35] 3GPP TS 24.502: “Access to the 3GPP 5G Core Network (5GCN) via Non-3GPP Access Networks (N3AN); Stage 3”

[36] 3GPP TS 34.123-2: "User Equipment (UE) conformance specification; Part 2: Implementation Conformance Statement (ICS) proforma specification ".

[37] 3GPP TS 36.523-2: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification; Part 2: Implementation Conformance Statement (ICS) proforma specification".

[38] 3GPP TR 38.903: “NR; Derivation of test tolerances and measurement uncertainty for User Equipment (UE) conformance test cases”

[39] 3GPP TS 37.571-1: "Universal Terrestrial Radio Access (UTRA) and Evolved UTRA (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification for UE positioning; Part 1: Conformance test specification".

[40] 3GPP TS 37.571-2: "Universal Terrestrial Radio Access (UTRA) and Evolved UTRA (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification for UE positioning; Part 2: Protocol conformance".

[41] 3GPP TS 36.523-3: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification; Part 3: Test Suites".

[42] 3GPP TS 36.523-1: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification".

[43] 3GPP TS 33.501: "Security architecture and procedures for 5G system".

[44] 3GPP TS 34.229-1: "Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification".

[45] 3GPP TS 26.114: "IP Multimedia Subsystem (IMS);Multimedia Telephony;Media handling and interaction".

[46] IETF RFC 4566: "SDP: Session Description Protocol".

[47] 3GPP TS 34.229-5: "Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); User Equipment (UE) conformance specification; Part 5: Protocol conformance specification using 5G System (5GS)".

[48] 3GPP TS 36.101: "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) radio transmission and reception".

[49] 3GPP TS 37.571-5: "User Equipment (UE) conformance specification for UE positioning; Part 5: Test scenarios and assistance data".

[50] STANAG 4294: "NATO STANAG 4294. Navstar Global Positioning System (GPS) System Characteristics".

[51] 3GPP TS 34.229-2: "Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP);User Equipment (UE) conformance specification;Part 2: Implementation Conformance Statement (ICS) specification".

[52] 3GPP TS 34.108: "Common Test Environments for User Equipment (UE); Conformance testing".

[53] 3GPP TS 23.287: "Architecture enhancements for 5G System (5GS) to support Vehicle-to-Everything (V2X) services".

[54] 3GPP TS 24.587: "Vehicle-to-Everything (V2X) services in 5G System (5GS)".

[55] 3GPP TS 38.306: “User equipment (UE) radio access capabilities”.

## <<< END OF CHANGES 1>>>

## <<< START OF CHANGES 2>>>

#### 4.3.1.0 General

The test frequencies are based on operating bands defined in TS 38.101-1 [7], TS 38.101-2 [8] and TS 38.101-3 [9].

#### 4.3.1.0A Mid test channel bandwidth

The Mid test channel bandwidth definition for RF is given in Table 4.3.1.0A-1 and Table 4.3.1.0A-2 for FR1 and FR2 respectively.

Table 4.3.1.0A-1: Mid Test Channel bandwidths for each NR band, FR1

|  |  |
| --- | --- |
| NR Band | UE Mid Test Channel bandwidth[MHz]1, 1a, 1b |
| n1 | 25 |
| n2 | 25 |
| n3 | 30 |
| n5 | 15 |
| n7 | 25 |
| n8 | 15 |
| n12 | 10 |
| n14 | 10 |
| n20 | 15 |
| n24 | 10 |
| n25 | 25 |
| n26 | 15 |
| n28 | 15 |
| n29 | 102 |
| n30 | 10 |
| n34 | 15 |
| n38 | 25 |
| n39 | 25 |
| n40 | 50 |
| n41 | 50 |
| n48 | 204, 505 |
| n50 | 40 |
| n51 | 5 |
| n53 | 10 |
| n65 | 15 |
| n66 | 25 |
| n70 | 15 |
| n71 | 20 |
| n74 | 15 |
| n75 | 252 |
| n76 | 52 |
| n77 | 50 |
| n78 | 50 |
| n79 | 60 |
| n80 | 203 |
| n81 | 153 |
| n82 | 153 |
| n83 | 153 |
| n84 | 25 |
| n86 | 153 |
| n95 | 153 |
| n97 | 503 |
| n99 | 103 |
| Note 1: Median values among all the possible channel BW combinations per band in Table 5.3.5-1 of TS 38.521-1 [14] assuming SCS=15kHz for FR1 FDD band and SCS=30kHz for FR1 TDD band are listed. If there are two channel bandwidths that have same distance to the median, the higher one is selected.In case such bandwidth is not applicable for a given subcarrier spacing, the closer bandwidth to the value in this table applicable for such subcarrier spacing shall be tested.In case such bandwidth is not defined in the UE release specification, the closer bandwidth to the value in this table defined for that band in the UE release specification shall be tested.Note 1a: Values listed in this table assume that the (non-optional) channel bandwidths specified in Table 5.3.5-1 of TS 38.101-1 [7] lower than the maximum are supported. However, these channel bandwidths are mandatory with capability parameter as defined in [55] TS 38.306 clause 4.2.1 for *channelBWs-DL/channelBWs-UL* parameters. Hence the UE might indicate them as not supported. In such case, select the closest channel bandwidth in both DL and UL. Note 1b: For CA, DC and SUL, the mid-test channel bandwidth per component carrier is chosen to test the closest aggregated bandwidth to the mathematical center between minimum and maximum aggregated bandwidth defined for and within a given bandwidth combination set. In case no set of channel bandwidths per component carrier supported by the UE can achieve such aggregated bandwidth, select one combination of bandwidths per component carrier within the bandwidth combination set that minimizes the difference to the target aggregated bandwidth. Note 2: This UE channel bandwidth is applicable only to downlink.Note 3: This UE channel bandwidth is applicable only to uplink.Note 4: Applicable when for use as single carrier, PCell in CA or PCell in DC configuration.Note 5: Applicable for use as SCell in CA or SCell in DC configuration.Note 6: VoidNote 7: Void.Note 8: VoidNote 9: Void |

Table 4.3.1.0A-2: Mid Test Channel bandwidths for each NR band, FR2

|  |  |
| --- | --- |
| NR Band | UE Mid Test Channel bandwidth[MHz]1, 2, 3 |
| n257 | 200 |
| n258 | 200 |
| n260 | 200 |
| n261 | 200 |
| Note 1: Median values among all the possible channel BW combinations per band in Table 5.3.5-1 of TS 38.521-2 [15] assuming SCS=120kHz for FR2 TDD band are listed. If there are two channel bandwidths that have same distance to the median, the higher one is selected.In case such bandwidth is not applicable for a given subcarrier spacing, the closer bandwidth to the value in this table applicable for such subcarrier spacing shall be tested.In case such bandwidth is not defined in the UE release specification, the closer bandwidth to the value in this table defined for that band in the UE release specification shall be tested.Note 2: Values listed in this table assume that the (non-optional) channel bandwidths specified in Table 5.3.5-1 of TS 38.101-2 [8] lower than the maximum are supported. However, these channel bandwidths are mandatory with capability parameter as defined in [55] TS 38.306 clause 4.2.1 for *channelBWs-DL/channelBWs-UL* parameters. Hence the UE might indicate them as not supported. In such case, select the closest channel bandwidth in both DL and UL. Note 3: For CA, DC and SUL, the mid-test channel bandwidth per component carrier is chosen to test the closest aggregated bandwidth to the mathematical center between minimum and maximum aggregated bandwidth defined for and within a given bandwidth combination set. In case no set of channel bandwidths per component carrier supported by the UE can achieve such aggregated bandwidth, select one combination of bandwidths per component carrier within the bandwidth combination set that minimizes the difference to the target aggregated bandwidth.  |

#### 4.3.1.0B Low test channel bandwidth

The low test channel bandwidth definition for RF is given in Table 4.3.1.0B-1 and Table 4.3.1.0B-2 for FR1 and FR2 respectively.

Table 4.3.1.0B-1: Low Test Channel bandwidths for each NR band, FR1

|  |  |
| --- | --- |
| NR Band | UE Low Test Channel bandwidth[MHz]1, 1a, 1b |
| n1 | 5 |
| n2 | 5 |
| n3 | 5 |
| n5 | 5 |
| n7 | 5 |
| n8 | 5 |
| n12 | 5 |
| n14 | 5 |
| n20 | 5 |
| n24 | 5 |
| n25 | 5 |
| n26 | 5 |
| n28 | 5 |
| n29 | 52 |
| n30 | 5 |
| n34 | 5 |
| n38 | 5 |
| n39 | 5 |
| n40 | 54,105 |
| n41 | 10 |
| n48 | 54, 105 |
| n50 | 54,105 |
| n51 | 5 |
| n53 | 5 |
| n65 | 5 |
| n66 | 5 |
| n70 | 5 |
| n71 | 5 |
| n74 | 5 |
| n75 | 52 |
| n76 | 52 |
| n77 | 10 |
| n78 | 10 |
| n79 | 10 |
| n80 | 53 |
| n81 | 53 |
| n82 | 53 |
| n83 | 53 |
| n84 | 53 |
| n86 | 53 |
| n95 | 53 |
| n97 | 53 |
| n99 | 53 |
| Note 1: Minimum values among all the possible channel BW combinations per band in Table 5.3.5-1 of TS 38.521-2 [15] are listed. In case such bandwidth is not applicable for a given subcarrier spacing, the minimum bandwidth applicable for such subcarrier spacing shall be tested.In case such bandwidth is not defined in the UE release specification, the minimum bandwidth defined for that band in the UE release specification shall be tested. Note 1a: Values listed in this table assume that the (non-optional) channel bandwidths specified in Table 5.3.5-1 of TS 38.101-1 lower than the maximum are supported. However, these channel bandwidths are mandatory with capability parameter as defined in [55] TS 38.306 clause 4.2.1 for *channelBWs-DL/channelBWs-UL* parameters. Hence the UE might indicate them as not supported. In such case, select the closest channel bandwidth in both DL and UL.Note 1b: For CA, DC and SUL, the low-test channel bandwidth per component carrier is chosen to allow minimum aggregated bandwidth defined for a given bandwidth combination set. In case no set of channel bandwidths per component carrier supported by the UE can achieve minimum aggregated bandwidth, select one combination of bandwidths per component carrier within the bandwidth combination set that minimizes the aggregated bandwidth. Note 2: This UE channel bandwidth is applicable only to downlink.Note 3: This UE channel bandwidth is applicable only to uplink.Note 4: Applicable for use as SCell in CA or SCell in DC configuration.Note 5: Applicable for use as single carrier, PCell in CA or PCell in DC configuration. |

Table 4.3.1.0B-2: Low Test Channel bandwidths for each NR band, FR2

|  |  |
| --- | --- |
| NR Band | UE Low Test Channel bandwidth[MHz]1, 2, 3 |
| n257 | 50 |
| n258 | 50 |
| n260 | 50 |
| n261 | 50 |
| Note 1: Minimum values among all the possible channel BW combinations per band in Table 5.3.5-1 of TS 38.521-2 [15] are listed. In case such bandwidth is not applicable for a given subcarrier spacing, the minimum bandwidth applicable for such subcarrier spacing shall be tested.In case such bandwidth is not defined in the UE release specification, the minimum bandwidth defined for that band in the UE release specification shall be tested. Note 2: Values listed in this table assume that the (non-optional) channel bandwidths specified in Table 5.3.5-1 of TS 38.101-2 [8] lower than the maximum are supported. However, these channel bandwidths are mandatory with capability parameter as defined in [55] TS 38.306 clause 4.2.1 for *channelBWs-DL/channelBWs-UL* parameters. Hence the UE might indicate them as not supported. In such case, select the closest channel bandwidth in both DL and UL.Note 3: For CA, DC and SUL, the low-test channel bandwidth per component carrier is chosen to allow minimum aggregated bandwidth defined for a given bandwidth combination set. In case no set of channel bandwidths per component carrier supported by the UE can achieve minimum aggregated bandwidth, select one combination of bandwidths per component carrier within the bandwidth combination set that minimizes the aggregated bandwidth.  |

#### 4.3.1.0C High test channel bandwidth

The high test channel bandwidth definition for RF is given in Table 4.3.1.0C-1 and Table 4.3.1.0C-2 for FR1 and FR2 respectively.

Table 4.3.1.0C-1: High Test Channel bandwidths for each NR band, FR1

|  |  |
| --- | --- |
| NR Band | UE High Test Channel bandwidth[MHz]10, 11, 12 |
| n1 | , 50 |
| n2 | 40 |
| n3 | 50 |
| n5 | 201, 252 |
| n7 | 50 |
| n8 | 201, 352,10 |
| n12 | 15 |
| n14 | 10 |
| n20 | 20 |
| n24 | 10 |
| n25 | , 401., 452 |
| n26 | 20 |
| n28 | 30 |
| n29 | 102 |
| n30 | 10 |
| n34 | 15 |
| n38 | 25,4013 |
| n39 | 40 |
| n40 | 100 |
| n41 | 100 |
| n48 | 401,3, 1004 |
| n50 | 601, 802 |
| n51 | 5 |
| n53 | 10 |
| n65 | 50 |
| n66 | 45 |
| n70 | 151,252 |
| n71 | 201, 352 |
| n74 | 20 |
| n75 | 50 |
| n76 | 52 |
| n77 | 100 |
| n78 | 100 |
| n79 | 100 |
| n80 | 40 |
| n81 | 201 |
| n82 | 201 |
| n83 | 301 |
| n84 | 501 |
| n86 | 401 |
| n95 | 151 |
| n97 | 1001 |
| n99 | 101 |
| Note 1: This UE channel bandwidth is applicable only to uplink.Note 2: This UE channel bandwidth is applicable only to downlink.Note 3: Applicable for use as single carrier, PCell in CA or PCell in DC configuration.Note 4: Applicable for use as DL SCell in CA or DL SCell in DC configuration.Note 5: Void. Note 6: Void.Note 7: Void. Note 8: Void.Note 9: Void.Note 10: Maximum values among all the possible channel BW combinations per band in Table 5.3.5-1 of TS 38.521-1 [14] are listed. In case such bandwidth is not applicable for a given subcarrier spacing, the maximum bandwidth applicable for such subcarrier spacing shall be tested. In case such bandwidth is not defined in the UE release specification, the maximum bandwidth defined for that band in the UE release specification shall be tested. In case such bandwidth is optional in the UE release specification and not supported by the UE, the maximum non-optional bandwidth for the UE release specification shall be tested.Note 11: Values listed in this table assume that the maximum (non-optional) channel bandwidth specified in Table 5.3.5-1 of TS 38.101-1 [7]is mandatory without capability parameter (i.e., purely mandatory) as defined in [55] TS 38.306 clause 4,2,1 for *supportedBandwidthDL/* *supportedBandwidthUL* parameters in a band combination with a single band entry and a single CC entry (i.e., non-CA band combination).Note 12: For CA, DC and SUL, the High-test channel bandwidth per component carrier is chosen to allow maximum aggregated bandwidth defined for a given bandwidth combination set. Note 13: These UE channel bandwidths are applicable to sidelink operation |

(Informative) NOTE 1: In case values listed in table above are higher than those signalled by the UE in *supportedBandwidthDL/supportedBandwidthUL*, some flexibility could be provided to the ecosystem for Rel-15 and Rel-16 so the value signalled by the UE in *supportedBandwidthDL/supportedBandwidthUL* is used in single carrier operation instead values described in Table 4.3.1.0C-1.

(Informative) NOTE 2: In case no set of channel bandwidths per component carrier supported by the UE can achieve maximum aggregated bandwidths in CA, DC, SDL or SUL, some flexibility could be provided to the ecosystem for Rel-15 and Rel-16 so one combination of bandwidth per component carrier within the bandwidth combination set that maximizes the aggregated bandwidth is tested instead values described in Note 12 in Table 4.3.1.0C-1.

Table 4.3.1.0C-2: High Test Channel bandwidths for each NR band, FR2

|  |  |
| --- | --- |
| NR Band | UE High Test Channel bandwidth[MHz]1, 2, 3 |
| n257 | 400 |
| n258 | 400 |
| n260 | 400 |
| n261 | 400 |
| Note 1: Maximum values among all the possible channel BW combinations per band in Table 5.3.5-1 of TS 38.521-2 [15] are listed. In case such bandwidth is not applicable for a given subcarrier spacing, the maximum bandwidth applicable for such subcarrier spacing shall be tested. In case such bandwidth is not defined in the UE release specification, the maximum bandwidth defined for that band in the UE release specification shall be tested. In case such bandwidth is optional in the UE release specification and not supported by the UE, the maximum non-optional bandwidth for the UE release specification shall be tested.Note 2: Values listed in this table assume that the maximum (non-optional) channel bandwidth specified in Table 5.3.5-1 of TS 38.101-2 [8] is mandatory without capability parameter (i.e., purely mandatory) as defined in [55] TS 38.306 clause 4.2.1 for *supportedBandwidthDL/* *supportedBandwidthUL* parameters in a band combination with a single band entry and a single CC entry (i.e., non-CA band combination).Note 3: For CA, DC and SUL, the High-test channel bandwidth per component carrier is chosen to allow maximum aggregated bandwidth defined for a given bandwidth combination set. |

(Informative) NOTE 1: In case values listed in table above are higher than those signalled by the UE in *supportedBandwidthDL/supportedBandwidthUL*, some flexibility could be provided to the ecosystem for Rel-15 and Rel-16 so the value signalled by the UE is used in single carrier operation instead values described in Table 4.3.1.0C-2.

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(Informative) NOTE 2: In case no set of channel bandwidths per component carrier supported by the UE can achieve maximum aggregated bandwidths in CA, DC, SDL or SUL, some flexibility could be provided to the ecosystem for Rel-15 and Rel-16 so one combination of bandwidth per component carrier within the bandwidth combination set that maximizes the aggregated bandwidth is tested instead values described in Note 3 in Table 4.3.1.0C-2.

## <<< END OF CHANGES 2>>>