3GPP TSG-RAN WG4 Meeting # 102-e R4-2207419 R4-22xxxxx

Electronic Meeting, February 21 – March 3, 2022

**Agenda item:** 4.1.5, 10.5.4

**Source:** Moderator (ZTE Corporation)

**Title:** Email discussion summary for [102-e][303] NR\_EMC

**Document for:** Information

# Introduction

For the RAN4 [102-e] [303] NR\_EMC, the main topics are about NR BS EMC and NR repeaters EMC. Therefore, the discussions will separate into four parts:

Topic #1: Agenda item 4.1.5: NR BS EMC

Topic #2: Agenda item 10.5.4: NR Repeaters EMC

In addition, R4-2205852 is removed from agenda item 5.1.5.1 to agenda item 4.1.5 although R4-2205852 is the CR for NR IAB EMC, this CR could be discussed together with other CRs for NR BS EMC.

# Topic #1: NR BS EMC (AI: 4.1.5)

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Companies’ contributions summary

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| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| **[R4-2204429](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2204429.zip)** | ZTE | **Observation 1:** For the test frequency of radiated spurious emission in BS TS 38.104, the highest test frequency corresponding band n46 and n96 is 26GHz.  **Observation 2:** The MU value of radiated emission for higher than 6GHz (up to 18GHz) would exceed 5dB.  **Observation 3:** The MU values in terms of the calculation model of ETSI TR 100 028-1 for radiated spurious emission considering the EUT size would exceed 5dB.  **Proposal 1:** To align with BS TS 38.104, the highest test frequency of radiated spurious emission for band n46 and n96 is proposed to be 26GHz.  **Proposal 2:** It is recommended that the maximum MU value of BS EMC specifications above 12.75GHz (up to 26GHz) should be 6dB. |
| **[R4-2204458](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2204458.zip)** | ZTE | Title: Draft CR to TS 38.113: Radiated emission measurement uncertainty (R15)  Draft CR based on 2204429.  ***Summary of change:***The highest test frequency of radiated spurious emission for band n46 and n96 is proposed to be 26GHz.The maximum MU value of BS EMC specifications above 12.75GHz (up to 26GHz) is proposed to be 6dB. |
| R4-2204459 | ZTE | Title: Draft CR to TS 38.113: Radiated emission measurement uncertainty (R16)  *Mirror CR to 2204458* |
| **[R4-2205852](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205852.zip)** | Ericsson | TS 38.175: Corrections in clause 1 Scope and clause 9 Immunity  ***Summary of change:***   * Added a statement in the scope to clarify that technical specifications related to the antenna port are not considered. * Add instead the level of 10 V/m and delete the references to EU EMC regulations. * Remove the note claiming that the EUT should be fully discharged between each ESD exposure. It is very difficult to ensure that EUT is “fully discharged”, especially if there are plastic parts on it. * Remove a statement on application of transients on an impedance that shall be 50 ohm * Remove a note about “intrusive method” as this term is not defined and in fact the IEC spec mention “clamp injection” instead. |
| **[R4-2205853](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205853.zip)** | Ericsson | Title:TS 25.113: Corrections in clause 9 Immunity |
| R4-2205854 | Ericsson | Title:TS 25.113: Correction in clause 9 Immunity |
| **[R4-2205855](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205855.zip)** | Ericsson | Title:TS 36.113: Corrections in clause 9 Immunity |
| R4-2205856 | Ericsson | Title:TS 36.113: Corrections in clause 9 Immunity |
| **[R4-2205857](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205857.zip)** | Ericsson | Title:TS 37.113: Corrections in clause 9 Immunity  ***Summary of change:***   * Remove the note claiming that the EUT should be fully discharged between each ESD exposure. It is very difficult to ensure that EUT is “fully discharged”, especially if there are plastic parts on it. * Remove a statement on application of transients on an impedance that shall be 50 ohm * Remove a note about “intrusive method” as this term is not defined and in fact the IEC spec mention “clamp injection” instead. |
| R4-2205858 | Ericsson | Title:TS 37.113: Corrections in clause 9 Immunity  *Mirror CR to 2205857* |
| **[R4-2205859](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205859.zip)** | Ericsson | Title:TS 37.114: Corrections in clause 1 Scope and clause 9 Immunity  ***Summary of change:***   * Added a statement in the scope to clarify that technical specifications related to the antenna port are not considered. * Remove a note about “intrusive method” as this term is not defined and in fact the IEC spec mention “clamp injection” instead. |
| R4-2205860 | Ericsson | Title:TS 37.114: Corrections in clause 1 Scope and clause 9 Immunity  *Mirror CR to 2205859* |
| **[R4-2205861](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205861.zip)** | Ericsson | Title:TS 38.113: Corrections in clause 1 Scope and clause 9 Immunity  ***Summary of change:***   * Added a statement in the scope to clarify that technical specifications related to the antenna port are not considered. * Add instead the level of 10 V/m and delete the references to EU EMC regulations. * Remove the note claiming that the EUT should be fully discharged between each ESD exposure. It is very difficult to ensure that EUT is “fully discharged”, especially if there are plastic parts on it. * Remove a statement on application of transients on an impedance that shall be 50 ohm * Remove a note about “intrusive method” as this term is not defined and in fact the IEC spec mention “clamp injection” instead. |
| R4-2205862 | Ericsson | Title:TS 38.113: Corrections in clause 1 Scope and clause 9 Immunity  *Mirror CR to 2205861* |

## Open issues summary

In the agreed WF R4-2108469 about EMC measurement uncertainty for effective radiated RF power between 12.75 GHz and 26 GHz were approved, in which:

* *Interested companies are encouraged to provide further analysis and motivation for the maximum measurement uncertainty for effective radiated RF power measurements between 12.75 GHz and 26 GHz, considering the following options:*
* *Option 1: 3dB*
* *Option 2: 6 dB*
* *Other options are not precluded. As this topic is related to Rel-15 specification, aim to conclude on this topic during RAN#100-e meeting.*
* *Additionally, applicability analyses of the above MU value for EMC specifications is welcome (initial CR was related to NB BS only).*

### Sub-topic 1: MU value for the effective radiated RF power measurements

**Issue 1-1: Does it need to extend the highest test frequency of NR BS EMC radiated spurious emission for band n46 and n96 to 26 GHz to align with TS38.104?**

* Proposals
  + Option 1: Yes ([R4-2204429](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112768.zip))
  + Option 2: No (Please provide some reasons)
* Recommended WF
  + TBA.

**Issue 1-2: If the answer for issue 2-1 is Yes, can we agree 6dB as the MU value between 12.75GHz and 26 GHz for BS EMC?**

* Proposals
  + Option 1: Yes ([R4-2204429](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2112768.zip))
  + Option 2: No (Please provide some reasons)
* Recommended WF
  + TBA.

## Companies views’ collection for 1st round

### Open issues

**Issue 1-1: Does it need to extend the highest test frequency of NR BS EMC radiated spurious emission for band n46 and n96 to 26 GHz to align with TS38.104?**

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| **Company** | **Comments** |
| Nokia | Option 1: Yes |
| ZTE | Option 1, this is our proposal to add a note in the specification with test frequency extension for band n46 and n96, the reason is specified in our discussion R4-2204429. |

**Issue 1-2: If the answer for issue 2-1 is Yes, can we agree 6dB as the MU value between 12.75GHz and 26 GHz for BS EMC?**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| Nokia | Further discussions on the MU analysis in R4-2204429 are needed. |
| ZTE | Option 1, the concrete calculation approaches of measurement uncertainty value are specified in our discussion taking into account of EUT size. |
| Huawei | Agree with Nokia that more analysis is needed on the MU (the proposal in the CR covers not only 6dBm but also 9dB reuse).  WF proposal to keep it open until next meeting, and in case of no further inputs, use those proposed values by default in May meeting. |
| ZTE | To Huawei, refer to our discussion R4-2204429, the max measurement uncertainty value is 5.53dB for EUT size=1.3m, the margin is very tight, so 9dB can be reserved in the specification. |

### CRs/TPs comments collection

*For close-to-finalize WIs and maintenance work, comments collections can be arranged for TPs and CRs. For ongoing WIs, suggest to focus on open issues discussion on 1st round.*

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| **CR/TP number** | **Comments collection** |
| **[R4-2204458](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2204458.zip)**  Mirror CR  R4-2204459 | Nokia: Pending the outcome of Issue 1-2.  Ericsson: in our interpretation the new line and Note 6 do not exclude consideration of the 5th harmonic in the line above. We should also make clear that 5th harmonic do not apply for n46 and n96.  ZTE: To Ericsson, only for band n46 and n96, the fifth harmonic frequency of the upper frequency edge will exceed 26 GHz, and the note and description are aligned with BS RF specification TS 38.104. |
| **[R4-2205852](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205852.zip)** | *Moderator note: Some errors in CR cover, such as work item code, Release.*  ZTE: The chapters (i.e. References) without revision can be deleted in draft CR.  Huawei: we would have preference not to delete certain parts of the text:  - 9.2.2:  “~~For transmitters, receivers and transceivers~~” is there anything incorrect with keeping this text?  Spatial exclusion text: prefer not to delete informative reference to -50. On the 10V/m: the second bullet state 3V/m so we need to clarify this more. We need more time to check – preferably next meeting. There may be also need to align the AAS EMC spec for the spatial exclusion text.  9.3.2: this is informative note. Even if it may be “difficult to discharge”, the text may be adjusted accordingly, and not deleted. Deleting this text looks like changing the test procedure.  9.4.2: unclear why we need to delete this text. More clarification needed.  9.5: more time to check needed. |
| **[R4-2205853](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205853.zip)**  Mirror CR  R4-2205854 | *Moderator note: In terms of the agreements: there is no need to maintain 25- and 34- series specifications and thus not promote them to R17. Moderator recommend not to discuss the CRs for 25- series.* *Per chairman guidance, R4-2205853 is not handled, and R4-2205854 is withdrawn.*  Huawei: agree with Moderator |
| **[R4-2205855](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205855.zip)**  Mirror CR  R4-2205856 | *Moderator note: Although it should be draft CR, we can discuss and focus on the content as it is (i.e. CR.)*  ZTE: It seems ok.  Huawei: see comments to **[R4-2205852](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205852.zip)** |
| **[R4-2205857](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205857.zip)**  Mirror CR  R4-2205858 | *Moderator note:* *Although it should be draft CR**,* *we can* *discuss and focus on the content as it is (i.e. CR.)*  ZTE: It seems ok.  Huawei: see comments to **[R4-2205852](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205852.zip)** |
| **[R4-2205859](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205859.zip)**  Mirror CR  R4-2205860 | *Moderator note: Although it should be draft CR, we can discuss and focus on the content as it is (i.e. CR.)*  ZTE: The chapters without revision can be deleted in draft CR.  Huawei: 9.5: see comments to **[R4-2205852](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205852.zip)** |
| **[R4-2205861](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205861.zip)**  Mirror CR  R4-2205862 | *Moderator note: Although it should be draft CR, we can discuss and focus on the content as it is (i.e. CR.)*  ZTE: It seems ok.  Huawei: 9.5: see comments to **[R4-2205852](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205852.zip)** |

## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

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|  | **Status summary** |
| **Issue 1-1: Does it need to extend the highest test frequency of NR BS EMC radiated spurious emission for band n46 and n96 to 26 GHz to align with TS38.104?** | *No objections.*  *Tentative agreements:*  *-* Extend the highest test frequency of NR BS EMC radiated spurious emission for band n46 and n96 to 26 GHz to align with TS38.104  *Candidate options:*  *Recommendations for 2nd round:*  *- Include the above tentatinve agreements in the WF.* |
| **Issue 1-2: If the answer for issue 2-1 is Yes, can we agree 6dB as the MU value between 12.75GHz and 26 GHz for BS EMC?** | *Companies need more time to check, and one company propose to* *keep it open until next meeting and in case of no further inputs, use those proposed values by default in May meeting.*  *Since this issue have been discussed for several meeting, and it is for maintainance, moderator recommend companie can provide analysises in next meeting, and if there were no further analysises provided by other companies in next meeting, then the 6dB(EUT size*≤ *1m) and 9dB(EUT size > 1m) are recommended to be agreed as the MU value between 12.75GHz and 26 GHz for BS EMC*  *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:*  *- Focus on WF.* |

## Discussion on 2nd round (if applicable)

### CRs/TPs comments collection

*Moderator note: The following draft revison CRs are unavailabe before the deadline announced by Chairman, i.e. 28th Feb.*

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| --- | --- |
| **CR/TP number** | **Comments collection** |
| R4-2207182 | Ericsson: this document appears also in topic [301] and I submitted a revised version there. Shall we move it here?  *Moderator reply: overlappind discussion for R4-2205852/R4-22-7182 happened in both thread #301 and thread #303. Per Chairman gudance, further discussion would be needed until the deadline for the discussion is 17:00 UTC, 2nd Mar.*  Some answers to the questions were already given in the previous CR we approved for NR repeater in R4-2117585:  “~~For transmitters, receivers and transceivers~~” is there anything incorrect with keeping this text?”   * Nothing incorrect, but a bit confusing as the scope of the immunity test and the requirement is to expose the whole device, not different parts separately. What is tested depends on the device configuration, in some cases there can be only a transmitter or a receiver, for example.   Spatial exclusion text: prefer not to delete informative reference to -50. On the 10V/m: the second bullet state 3V/m so we need to clarify this more. We need more time to check – preferably next meeting. There may be also need to align the AAS EMC spec for the spatial exclusion text.  - we deleted the reference to part-50 as it does not consider spatial exclusion zone. However, the level of 10V/m is adopted in part-50 and we propose to align 3GPP with it. This bullet only applies to types 1-O, and 2-O when spatial exclusion zone is considered, only for frequencies above 690 MHz….so it does not interfere with first bullet mentioning 3V/m, which applies to the rest of the situations. In the future we should try to align more ETSI and 3GPP requirements.  9.3.2: this is informative note. Even if it may be “difficult to discharge”, the text may be adjusted accordingly, and not deleted. Deleting this text looks like changing the test procedure.  ­ - IEC 61000‑4‑2, which is referenced, contains more clear information about the test procedure and discharging between exposures. No need for this note.  9.4.2: unclear why we need to delete this text. More clarification needed.  ­ - more clear information is contained in IEC 61000‑4‑4 which is referenced many times. No need for the note.  9.5: more time to check needed.  ­ - The term “intrusive method” is not defined and in fact the IEC 61000‑4‑6 uses the term “clamp injection”. This note is confusing and unnecessary,  Huawei:  As indicated by the Moderator, there were multiple issues with not following the RAN4 procedures.  I will **try** to check those drafts, but I would already like to suggest that one way out (to reduce the workload to people during this meeting, as well as not to waste proponents effort) is to consider those drafts as Endorsed, and then let people further check details for May meeting. Delegates shall not be penalized due to unfortunate RAN4 guidelines violation – we are busy enough.  ZTE:  Basically, we agree most of the corrections, but there is just a little bit suggestion, the chapters (i.e. References) without revision can be deleted in draft CR |
| R4-2207183  Mirror CR R4-2205856 | *Moderator reply: Due to no draft revision available before deadline, companies furture check if the original one (R4-2205855) is ok according to proponent’s above feedback.*  Ericsson: See above |
| R4-2207184  Mirror CR R4-2205858 | *Moderator reply: Due to no draft revision available before deadline, companies furture check if the original one (R4-2205857) is ok according to proponent’s above feedback.*  Ericsson: See above |
| R4-2207185  Mirror CR R4-2205860 | *Moderator reply: Due to no draft revision available before deadline, companies furture check if the original one (R4-2205859) is ok according to proponent’s above feedback.*  Ericsson: See above |
| R4-2207186  Mirror CR R4-2205862 | *Moderator reply: Due to no draft revision available before deadline, companies furture check if the original one (R4-2205861) is ok according to proponent’s above feedback.*  Ericsson: See above |

WF on MU value for the radiated emission measurements (Source: ZTE)

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| **WF number** | **Comments collection** |
| R4-2207188 |  |

# Topic #2: NR Repeaters EMC (AI: 10.5.4)

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Companies’ contributions summary

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| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| **[R4-2204358](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2204358.zip)** | ZTE Corporation | TP to TS38.114 for the Definitions, symbols and abbreviations |
| R4-2204494 | ZTE Corporation | Updating TS38.114 to capture RAN4#102e agreements  *Moderator note: For email approval, pending on the status of R4-2204358* |
| **[R4-2205451](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205451.zip)** | Nokia, Nokia Shanghai Bell | **Proposal 1:** **For TDD NR repeaters, communication link configuration should be set up to support UL and DL switching during testing.**  **Proposal 2:** **Performance assessment parameters should be the same for NR repeater type 1-C and type 1-O/2-O and the parameters are FFS.** |

## Open issues summary

The core parts for TS38.114 have already completed.

In last meeting, contributions related to test/performance for NR repeaters were submitted. However, some other companies commented the test/performance should be started and discussed from Q2.

In this meeting, there was a contribution R4-2205451 from a company to discuss the test/performance. For sake of the progress, moderator suggest to discuss it to see if RAN4 can achieve some agreements.

### Sub-topic 2

**Issue 2-1** **Whether or not adopting the same performance assessment parameters for performance assessment for NR type 1-C and type 2-O Repeater EMC (only focus on type 1-C and type 2-O in terms of WF** **R4-2120654)**

* Proposal:
  + Option 1: Yes (Proposed in **[R4-2205451](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205451.zip)**)
  + Option 2: No
* Recommended WF
  + TBA

**Issue 2-2: For the communication link configuration of TDD NR Repeater, whether or not UL and DL are tested together?**

* Proposal:
  + Option 1: Yes, UL and DL are tested together
  + Option 2: No, UL and DL are not tested together
* Recommended WF
  + TBA

**Issue 2-3: If the answer for issue 2-2 is Yes, then whether or not switching should be considered?**

* Proposal:
  + Option 1: Yes, switching should be considered
  + Option 2: No, switching should not be considered
* Recommended WF
  + TBA

**Issue 2-4: If the answer for issue 2-2 is No, then whether or not switching should be considered?**

* Proposal:
  + Option 1: Yes, switching should be considered
  + Option 2: No, switching should not be considered
* Recommended WF
  + TBA

## Companies views’ collection for 1st round

### Open issues

**Issue 2-1: Whether or not adopting the same performance assessment parameters for performance assessment for NR type 1-C and type 2-O Repeater EMC (only focus on type 1-C and type 2-O in terms of WF R4-2120654)**

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| --- | --- |
| **Company** | **Comments** |
| Nokia | Option 1: Yes. |
| ZTE | Option 1.  In order to keep standard equalization, the performance assessment parameters for type 1-C and 2-O should be the same. |
| Huawei | The proposal in related paper say “Proposal 2: Performance assessment parameters should be the same for NR repeater type 1-C and type 1-O/2-O and the parameters are FFS.”  It is not agreeable to decide on the same perf assessment if we do not know what it is. It is better to postpone this and have agreement as package, including parameter details. |

**Issue 2-2: For the communication link configuration of TDD NR Repeater, whether or not UL and DL are tested together?**

|  |  |
| --- | --- |
| **Company** | **Comments** |
| Nokia | Option 1: Yes. We are open to discuss and understand what the challenges are in testing UL and DL together. |
| ZTE | Option 1. The principle of test configuration shall simulate actual or typical operating condition. From our site, TDD Repeater’s UL and DL are working together. |
| Huawei | Ok as baseline, but we need to add some disclaimer that the testability issues may need to be further studied. |

**Issue 2-3: If the answer for issue 2-2 is Yes, then whether or not switching should be considered?**

|  |  |
| --- | --- |
| **Company** | **Comments** |
|  | Nokia: Option 1: Yes, to reflect the actual behavior of TDD repeaters. |
| ZTE | Option 1. But the final decision should wait for the discussion result about RF transmitter and receiver test |
| Huawei | Same as 2-2: ok as baseline, but testing aspects were not well analyzed. |

### CRs/TPs comments collection

*Major close to finalize WIs and Rel-15 maintenance, comments collections can be arranged for TPs and CRs. For Rel-16 on-going WIs, suggest to focus on open issues discussion on 1st round.*

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| **CR/TP number** | **Comments collection** |
| **[R4-2204358](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2204358.zip)** | Nokia: The TP is Ok. |

## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

|  |  |
| --- | --- |
|  | **Status summary** |
| **Issue 2-1: Whether or not adopting the same performance assessment parameters for performance assessment for NR type 1-C and type 2-O Repeater EMC (only focus on type 1-C and type 2-O in terms of WF R4-2120654)** | *Two companies are ok to adopt the same performance assessment parameters for performance assessment for NR type 1-C and type 2-O Repeater EMC, but 1 company think it is unclear on the parameter details, and it should be discussed as package.*  *Considering there were no further discuss on the parameters in 1st round, moderator recommend to further check whether it is ok for this tentative agreement ‘ same performance assessment parameters for performance assessment for NR type 1-C and type 2-O Repeater EMC, FFS on the parameters.”*  *Tentative agreements:*  *- Same performance assessment parameters for performance assessment for NR type 1-C and type 2-O Repeater EMC, FFS on the parameters.*  *Candidate options:*  *Recommendations for 2nd round:*  *- Include the above tentative agreements in the WF and check if it is ok.* |
| **Issue 2-2: For the communication link configuration of TDD NR Repeater, whether or not UL and DL are tested together?** | *All companies agree UL and DL are tested together for the communication link configuration of TDD NR Repeater. Meanwhile, 1 company suggest to add some disclaimer that the testability issues may need to be further studied.*  *Tentative agreements:*  *- UL and DL are tested together for the communication link configuration of TDD NR Repeater.*  *Candidate options:*  *Recommendations for 2nd round:*  *- Include the above tentative agreements in the WF and check if it is ok.* |
| **Issue 2-3: If the answer for issue 2-2 is Yes, then whether or not switching should be considered?** | *All companies agree to consider switching as baseline, meanwhile two companies think it may be updated pending on the RF testing discussion.*  *Tentative agreements:*  *- ‘switching should be consider’ as baseline*  *Candidate options:*  *Recommendations for 2nd round:*  *- Include the above tentative agreements in the WF and check if it is ok.* |
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## Discussion on 2nd round (if applicable)

*Moderator can provide summary of 2nd round here. Note that recommended decisions on tdocs should be provided in the section titled ”Recommendations for Tdocs”.*

WF on NR repeater EMC testing (Source: Nokia)

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| --- | --- |
| **WF number** | **Comments collection** |
| R4-2207187 | ZTE:We recommend Issue 2-2 to be likeUL and DL are worked together for the communication link configuration of TDD NR Repeater. But whether or not monitoring their performance together should wait for RF discussion results. |

# Recommendations for Tdocs

## 1st round

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Comments** |
| <....> | <....> |  |
| WF on MU value for the radiated emission measurements | ZTE |  |
| WF on NR repeater EMC testing | Nokia |  |

**Existing tdocs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Recommendation** | **Comments** |
| R4-210xxxx | CR on … | XXX | Agreeable, Revised, Merged, Postponed, Not Pursued |  |
| **[R4-2204429](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2204429.zip)** | Further discussion on highest frequency and measurement uncertainty for NR BS radiated emission test | ZTE | To be noted |  |
| **[R4-2204458](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2204458.zip)** | Draft CR to TS 38.113: Radiated emission measurement uncertainty (R15) | ZTE | To be noted |  |
| R4-2204459 | Draft CR to TS 38.113: Radiated emission measurement uncertainty (R16) | ZTE | Withdrawn | Mirror CR |
| **[R4-2205852](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205852.zip)** | TS 38.175: Corrections in clause 1 Scope and clause 9 Immunity | Ericsson | To be revised |  |
| **[R4-2205853](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205853.zip)** | TS 25.113: Corrections in clause 9 Immunity | Ericsson | not handled |  |
| R4-2205854 | TS 25.113: Correction in clause 9 Immunity | Ericsson | Withdrawn | Mirror CR |
| **[R4-2205855](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205855.zip)** | TS 36.113: Corrections in clause 9 Immunity | Ericsson | To be revised-->Agreeable |  |
| R4-2205856 | TS 36.113: Corrections in clause 9 Immunity | Ericsson | Agreeable | Mirror CR |
| **[R4-2205857](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205857.zip)** | TS 37.113: Corrections in clause 9 Immunity | Ericsson | To be revised-->Agreeable |  |
| R4-2205858 | TS 37.113: Corrections in clause 9 Immunity | Ericsson | Agreeable | Mirror CR |
| **[R4-2205859](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205859.zip)** | TS 37.114: Corrections in clause 1 Scope and clause 9 Immunity | Ericsson | To be revised-->Agreeable |  |
| R4-2205860 | TS 37.114: Corrections in clause 1 Scope and clause 9 Immunity | Ericsson | Agreeable | Mirror CR |
| **[R4-2205861](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205861.zip)** | TS 38.113: Corrections in clause 1 Scope and clause 9 Immunity | Ericsson | To be revised-->Agreeable |  |
| R4-2205862 | TS 38.113: Corrections in clause 1 Scope and clause 9 Immunity | Ericsson | Agreeable | Mirror CR |
| **[R4-2204358](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2204358.zip)** | TP to TS38.114:Definitions, symbols and abbreviations | ZTE Corporation | Approved |  |
| R4-2204494 | TS38.114V0.3.0 to capture RAN4#102-e agreements | ZTE Corporation | *For email approval* |  |
| **[R4-2205451](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205451.zip)** | Discussion on TDD NR repeater | Nokia, Nokia Shanghai Bell | To be noted |  |

Notes:

1. Please include the summary of recommendations for all tdocs across all sub-topics incl. existing and new tdocs.
2. For the Recommendation column please include one of the following:
   1. CRs/TPs: Agreeable, Revised, Merged, Postponed, Not Pursued
   2. Other documents: Agreeable, Revised, Noted
3. For new LS documents, please include information on To/Cc WGs in the comments column
4. Do not include hyper-links in the documents

## 2nd round

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Recommendation** | **Comments** |
| R4-2207182 | TS 38.175: Corrections in clause 1 Scope and clause 9 Immunity | Ericsson | Postponed | Company still share comments but proponent didn’t feedback but the deadline was passed. |
| R4-2207183  Mirror CR R4-2205856 | TS 36.113: Corrections in clause 9 Immunity | Ericsson | The original one [R4-2205855](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205855.zip) is agreeable.  (See 1st round table) | Company who commented in 1st round is ok consider those drafts as Endorsed. i.e. the original one is fine |
| R4-2207184  Mirror CR R4-2205858 | TS 37.113: Corrections in clause 9 Immunity | Ericsson | The original one [R4-2205857](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205855.zip) is agreeable.  (See 1st round table) | Company who commented in 1st round is ok consider those drafts as Endorsed. i.e. the original one is fine |
| R4-2207185  Mirror CR R4-2205860 | TS 37.114: Corrections in clause 1 Scope and clause 9 Immunity | Ericsson | The original one [R4-2205859](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205855.zip) is agreeable.  (See 1st round table) | Company who commented in 1st round is ok consider those drafts as Endorsed. i.e. the original one is fine |
| R4-2207186  Mirror CR R4-2205862 | TS 38.113: Corrections in clause 1 Scope and clause 9 Immunity | Ericsson | The original one [R4-220586](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205855.zip)1 is agreeable.  (See 1st round table) | Company who commented in 1st round is ok consider those drafts as Endorsed. i.e. the original one is fine |
| R4-2207187 | WF on NR repeater EMC testing | Nokia | Agreeable |  |
| R4-2207188 | WF on MU value for the radiated emission measurements | ZTE | Agreeable |  |

Notes:

1. Please include the summary of recommendations for all tdocs across all sub-topics.
2. For the Recommendation column please include one of the following:
   1. CRs/TPs: Agreeable, Revised, Merged, Postponed, Not Pursued
   2. Other documents: Agreeable, Revised, Noted
3. Do not include hyper-links in the documents