**3GPP TSG-RAN WG4 Meeting # 104-bis-e R4-22XXXXX**

**Electronic Meeting, 10– 19 October 2022**

**Agenda item:** 4.2.3

**Source:** Moderator (Ericsson)

**Title:** Email discussion summary [104-bis-e][305] NTN\_Solutions\_RFConformance

**Document for:** Information

# Introduction

This agenda item will handle all contributions related to NTN WI RF Conformance aspects:

* NR\_NTN\_solutions-Perf

*List of candidate target of email discussion for 1st round and 2nd round*

* 1st round: TBA
* 2nd round: TBA

It is appreciated that the delegates for this topic put their contact information in the table below.

Contact information

|  |  |  |
| --- | --- | --- |
| **Company** | **Name** | **Email address** |
|  |  |  |

Note:

1. Please add your contact information in above table once you make comments on this email thread.
2. If multiple delegates from the same company make comments on single email thread, please add you name as suffix after company name when make comments i.e. Company A (XX, XX)

# Topic #1: Remaining issues

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2215338**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215338.zip) | Thales | **Proposal 1:** Given that extreme test conditions for satellites depends on the mission requirements which are specific to launcher, orbit, space craft design, life time, risk mitigation strategy…), they do not have to be defined for the SAN in 3GPP. |
| [**R4-2215411**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215411.zip) | CATT | **Proposal 1: One table covering all manufacturer declarations for conducted testing and radiated testing, using unified declaration identifier D.x for conducted testing and radiated testing is acceptable.**  **Proposal 2: Using NR-SAN-FR1-TM for NTN test model naming.**  **Proposal 3: *Beam direction pair* in TN is applicable for NTN**  **Proposal 4: The conformance test directions declaration including OTA peak directions set maximum steering direction(s), conformance test directions for OTA sensitivity, and OTA REFSENS conformance test directions from TN are applicable for NTN.**  **Proposal 5: “Requirements shall be met for any transmitter setting.” from TN can be reused for NTN.**  **Proposal 6: If -96dBm/100kHz can be tested by TRP, we support protection of the BS receiver of own or different BS requirement as TRP requirement.**  **Proposal 7: If keeping BS receiver of own or different BS requirement as co-location requirement. The following works are needed.**  **1) Add co-location requirement in clause 4.9 in TS 38.108.**  **2) In TS 38.108, the total power of any spurious emission from both polarizations of the *co-location reference antenna* connector output shall not exceed the *basic limits* in clause 6.6.5.2.2 + X dB, where X = -30 dB.**  **3) Co-location and CLTA related declaration, MU, and requirement need to be added in TS 38.181.**  **Proposal 8: OTA measurement setup for TN in annex of TS 38.141-2 can be reused for NTN, and NR BS in measurement setup figure should be replaced by NTN payload RF.**  **Proposal 9: Non-contiguous spectrum operation related is not needed in TS 38.181.**  **Proposal 10: Multi-band operation related is not needed in TS 38.181.** |
| [**R4-2216495**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216495.zip) | Ericsson | Proposal 1: Define two equipment classes to differentiate between NTN and non-NTN components of SAN  Proposal 2: Consider different enclosures for the two equipment classes:   * Thermally controlled vacuum chamber for SAN NTN equipment * Environmental enclosure for SAN non-NTN equipment   Proposal 3: Define testing under extreme test environment in a similar manner as for the NR BS, at the extreme points for power supply and temperatures supported by the equipment, as declared by manufacturer. |

## Open issues summary

### Sub-topic 1-1

*Sub-topic description: This extreme condition’s discussion is an open issue left from last RAN4#104-e meeting.*

**Issue 1-1-1: Extreme conditions**

* Proposals: Consider SAN testing under extreme conditions
  + No (Thales)
    - They are depending on the mission requirements which are specific to launcher, orbit, space craft design, life time, risk mitigation strategy…
  + Yes (Ericsson)
    - Similar to TN BS, at the extreme points for power supply and temperatures supported by the equipment, as declared by manufacturer.
* Recommended WF
  + TBA

### Sub-topic 1-2

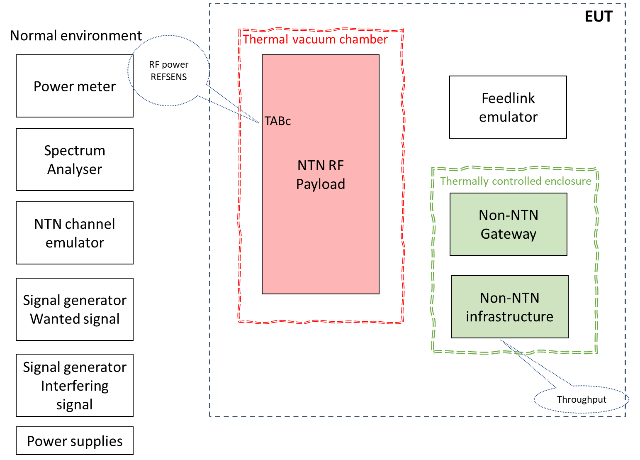
*Sub-topic description: This sub-topic is related to the test setup clarification.*

**Issue 1-2-1: Test setup – equipment classes**

* Proposals: Define two equipment classes to differentiate between SAN components deployed in space and SAN components deployed on the ground
  + Yes, as justified in R4-2216495 (Ericsson)
  + No, please elaborate why.
* Recommended WF
  + TBA

**Issue 1-2-2: Test setup – testing enclosures**

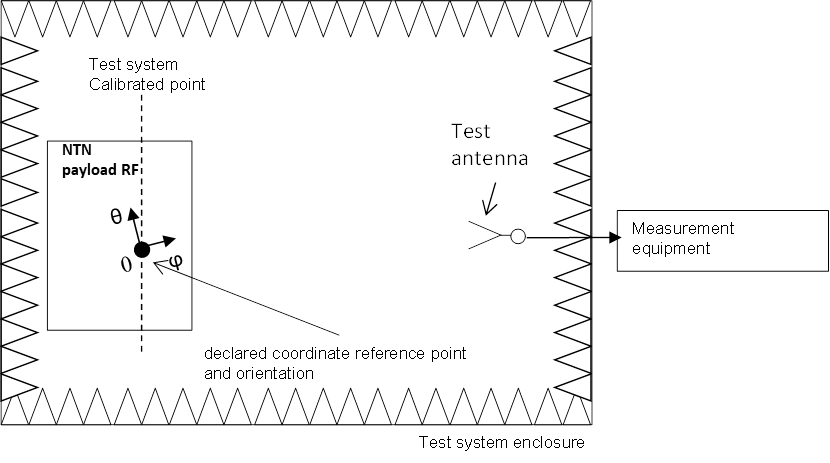
* Proposals: Consider different enclosures for the two equipment classes (as shown in following figure):
  + - Thermally controlled vacuum chamber for SAN NTN equipment
    - Environmental enclosure for SAN non-NTN equipment



* + Yes (Ericsson)
  + No, please elaborate why and/or propose other options.
* Recommended WF
  + TBA

**Issue 1-2-3: Measurement setup**

* Proposal: OTA measurement setup for TN in annex of TS 38.141-2 can be reused for NTN, and NR BS in measurement setup figure should be replaced by NTN payload RF



* + Yes (CATT)
  + No.
* Recommended WF
  + TBA

### Sub-topic 1-3

*Sub-topic description: This sub-topic is related to drafting and naming conventions to be used for TS 38.181.*

**Issue 1-3-1: Manufacturer declarations convention**

* Proposal: One table covering all manufacturer declarations for conducted testing and radiated testing, using unified declaration identifier D.x for conducted testing and radiated testing is acceptable.
  + Yes (CATT)
  + No, please elaborate why and make any other proposal.
* Recommended WF
  + TBA

**Issue 1-3-2: Test model naming**

* Proposal: Using NR-SAN-FR1-TM for NTN test model naming
  + Yes (CATT)
  + No, please elaborate why and make any other proposal.
* Recommended WF

Yes.

### Sub-topic 1-4

*Sub-topic description: This sub-topic is related to beams declaration.*

**Issue 1-4-1: Beam direction pair**

* Proposal: Beam direction pair in TN is applicable for NTN.
  + Yes (CATT)
  + No, please elaborate why and make any other proposal.
* Recommended WF
  + TBA

**Issue 1-4-2: Conformance tests direction declarations**

* Proposal: The conformance test directions declaration including OTA peak directions set maximum steering direction(s), conformance test directions for OTA sensitivity, and OTA REFSENS conformance test directions from TN are applicable for NTN.
  + Yes. (CATT)
  + No, please elaborate why and make any other proposal.
* Recommended WF
  + TBA

### Sub-topic 1-5

*Sub-topic description: This sub-topic is to SAN RF requirements.*

**Issue 1-5-1: Requirements’s applicability**

* Proposal: Similar to TN BS TS, requirements shall be met for any transmitter setting for NTN SAN TS as well.
  + Yes (CATT)
  + No, please elaborate why and make any other proposal.
* Recommended WF
  + Yes.

**Issue 1-5-2: Non-contiguous operations**

* Proposal: Non-contiguous spectrum operation related is not needed in TS 38.181.
  + Agree (CATT)
  + Disagree
* Recommended WF
  + Agree, this is not supported in TS 38.108 (see also agreed WF R4-2203124).

**Issue 1-5-3: Multi-band operations**

* Proposal:Multi-band operation related is not needed in TS 38.181.
  + Agree (CATT)
  + Disagree.
* Recommended WF
  + Agree, this is not supported in TS 38.108 (see also agreed WF R4-2203124).

**Issue 1-5-4: Co-location requirement**

* Proposal: If keeping BS receiver of own or different BS requirement as co-location requirement.
  + Yes (CATT), following work then be needed:
    - Add co-location requirement in clause 4.9 in TS 38.108.
    - In TS 38.108, the total power of any spurious emission from both polarizations of the co-location reference antenna connector output shall not exceed the basic limits in clause 6.6.5.2.2 + X dB, where X = -30 dB.
    - Co-location and CLTA related declaration, MU, and requirement need to be added in TS 38.181.
  + No.
* Recommended WF

Discuss how to handle the co-location requirements in TS 38.108 and TS 38.181..

## Companies views’ collection for 1st round

### Open issues

Sub topic 1-1

|  |  |
| --- | --- |
| **Company** | **Comments** |
| XXX |  |

Sub topic 1-2

|  |  |
| --- | --- |
| **Company** | **Comments** |
| XXX |  |

### CRs/TPs comments collection

NA

## 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** |
| **Sub-topic#1** | *Tentative agreements:*  *Candidate options:*  *Recommendations for 2nd round:* |

### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provided recommendation on CRs/TPs Status update suggestion*

|  |  |
| --- | --- |
| **CR/TP number** | **CRs/TPs Status update recommendation** |
| XXX | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

## 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”.*

# Topic #2: pCRs to TS 38.181

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| General, MUs, Declarations, Test models, Test configurations | | |
| [**R4-2215397**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215397.zip) | CATT | TP for TS 38.181 – Clause 1 Scope, Clause 2 References and Clause 3 Definition of terms, symbols and abbreviations |
| [**R4-2215398**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215398.zip) | CATT | TP for TS 38.181 – Clause 4.1 Measurement uncertainties and test requirements |
| [**R4-2215399**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215399.zip) | CATT | TP for TS 38.181 – Clause 4.6 Manufacturer declarations |
| [**R4-2215400**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215400.zip) | CATT | TP for TS 38.181 – Clause 4.7 Test configurations and Clause 4.8 Applicability of requirements |
| [**R4-2215401**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215401.zip) | CATT | TP for TS 38.181 – Clause 4.9 RF channels and test models |
| [**R4-2216195**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216195.zip) | Nokia, Nokia Shanghai Bell | TP to TS 38.181 – Clauses 4.10 and 4.11 |
| [**R4-2216489**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216489.zip) | Ericsson | TS 38.181: TP on clause 5 |
| [**R4-2216847**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216847.zip) | Huawei, HiSilicon | TP to TS 38.181: General test conditions and declarations (4.2 - 4.5) |
| Conductive conformance testing | | |
| Tx requirements | | |
| [**R4-2215339**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215339.zip) | THALES, CATT | TP for TS 38.181 - Clause 6.5.3 EVM |
| [**R4-2215340**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215340.zip) | THALES | TP for TS 38.181 - Clause 6.6.4 OBUE |
| [**R4-2215341**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215341.zip) | THALES | TP for TS 38.181 - Clause 6.6.5 Spurious Emissions |
| [**R4-2215349**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215349.zip) | THALES | TP for TS 38.181 - Occupied BandWidth Clauses 6.6.1 and 6.6.2 |
| [**R4-2215402**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215402.zip) | CATT, THALES | TP for TS 38.181 – Clause 6.1 General and Clause 6.2 Satellite Access Node output power |
| [**R4-2216561**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216561.zip) | ZTE Corporation | TP for TS 38.181: Section 6.3 Output power dynamics |
| [**R4-2216848**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216848.zip) | Huawei, HiSilicon | TP to TS 38.181: occupied bandwidth (6.6.1, 6.6.2) |
| [**R4-2216849**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216849.zip) | Huawei, HiSilicon | TP to TS 38.181: OBUE (6.6.4) |
| Rx requirements | | |
| [**R4-2215403**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215403.zip) | CATT | TP for TS 38.181 – Clause 7.1 General and Clause 7.2 Reference sensitivity level |
| [**R4-2216196**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216196.zip) | Nokia, Nokia Shanghai Bell | TP to TS 38.181 – Clause 7.4 In-band selectivity and blocking |
| [**R4-2216562**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216562.zip) | ZTE Corporation | TP for TS 38.181: Section 7.3 Dynamic range |
| [**R4-2216563**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216563.zip) | ZTE Corporation | TP for TS 38.181: Section 7.6~7.8 |
| [**R4-2216850**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216850.zip) | Huawei, HiSilicon | TP to TS 38.181: Out-of-band blocking (7.5) |
| Radiative conformance testing | | |
| Tx requirements | | |
| [**R4-2215404**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215404.zip) | CATT | TP for TS 38.181 – Clause 9.1 General |
| [**R4-2216564**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216564.zip) | ZTE Corporation | TP for TS 38.181: Section 9.4 OTA output power dynamics |
| [**R4-2216851**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216851.zip) | Huawei, HiSilicon | TP to TS 38.181: OTA occupied bandwidth (9.7.1, 9.7.2) |
| [**R4-2216852**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216852.zip) | Huawei, HiSilicon | TP to TS 38.181: OTA ACLR (9.7.3) |
| [**R4-2216853**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216853.zip) | Huawei, HiSilicon | TP to TS 38.181: OTA OBUE (9.7.4) |
| Rx requirements | | |
| [**R4-2215405**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215405.zip) | CATT | TP for TS 38.181 – Clause 10.1 General and Clause 10.2 OTA sensitivity |
| [**R4-2216197**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216197.zip) | Nokia, Nokia Shanghai Bell | TP to TS 38.181 – Clause 10.5 In-band selectivity and blocking |
| [**R4-2216490**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216490.zip) | Ericsson | TS 38.181: TP on clause 10.3 OTA refsens |
| [**R4-2216565**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216565.zip) | ZTE Corporation | TP for TS 38.181: Section 10.4 OTA dynamic range |
| [**R4-2216566**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216566.zip) | ZTE Corporation | TP for TS 38.181: Section 10.7~10.9 |
| [**R4-2216854**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216854.zip) | Huawei, HiSilicon | TP to TS 38.181: OTA out-of-band blocking (10.6) |
| Annexes | | |
| [**R4-2215350**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215350.zip) | Thales | TP for TS 38.181 - Annex D |
| [**R4-2215406**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215406.zip) | CATT | TP for TS 38.181 – A.1 FRCs for RF Rx requriement(QPSK, R=1/3) and A.2 FRCs for dynamic range (16QAM, R=2/3) |
| [**R4-2215407**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215407.zip) | CATT | TP for TS 38.181 – Annex F Calibration |
| [**R4-2215408**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215408.zip) | CATT | TP for TS 38.181 – Annex H In-channel Tx test |
| [**R4-2215409**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215409.zip) | CATT | TP for TS 38.181 – Annex I Transmitter spatial emissions declaration |
| [**R4-2215410**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215410.zip) | CATT | TP for TS 38.181 – Annex K Measuring noise close to the noise-floor |
| [**R4-2216491**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216491.zip) | Ericsson | TS 38.181: TP on Annex B |
| [**R4-2216492**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216492.zip) | Ericsson | TS 38.181: TP on Annex C |
| [**R4-2216493**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216493.zip) | Ericsson | TS 38.181: TP on Annex E |
| [**R4-2216494**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216494.zip) | Ericsson | TS 38.181: TP on Annex J |

## Open issues summary

NA

## Companies views’ collection for 1st round

### Open issues

NA

### CRs/TPs comments collection

#### General

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| [**R4-2215397**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215397.zip) | *TP for TS 38.181 – Clause 1 Scope, Clause 2 References and Clause 3 Definition of terms, symbols and abbreviations* |
| Company B |
|  |
| [**R4-2215398**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215398.zip) | *TP for TS 38.181 – Clause 4.1 Measurement uncertainties and test requirements* |
| Company B |
|  |
| [**R4-2215399**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215399.zip) | *TP for TS 38.181 – Clause 4.6 Manufacturer declarations* |
| Company B |
|  |
| [**R4-2215400**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215400.zip) | *TP for TS 38.181 – Clause 4.7 Test configurations and Clause 4.8 Applicability of requirements* |
| Company B |
|  |
| [**R4-2215401**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215401.zip) | *TP for TS 38.181 – Clause 4.9 RF channels and test models* |
| Company B |
|  |
| [**R4-2216195**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216195.zip) | *TP to TS 38.181 – Clauses 4.10 and 4.11* |
| Company B |
|  |
| [**R4-2216489**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216489.zip) | *TS 38.181: TP on clause 5* |
| Company B |
|  |
| [**R4-2216847**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216847.zip) | *TP to TS 38.181: General test conditions and declarations (4.2 - 4.5)* |
| Company B |
|  |

#### Conductive conformance testing

Moderator’s comment: According to the work split, clauses 6.6 should be drafted by Huawei. To avoid wasting time, R4-2215340 and R4-2215349 are not proposed for comments and will be noted.

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| **Tx requirements** | |
| [**R4-2215339**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215339.zip) | *TP for TS 38.181 - Clause 6.5.3 EVM* |
| Company A |
|  |
| [**R4-2215341**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215341.zip) | *TP for TS 38.181 - Clause 6.6.5 Spurious Emissions* |
| Company A |
|  |
| [**R4-2215402**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215402.zip) | *TP for TS 38.181 – Clause 6.1 General and Clause 6.2 Satellite Access Node output power* |
| Company A |
|  |
| [**R4-2216561**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216561.zip) | *TP for TS 38.181: Section 6.3 Output power dynamics* |
| Company A |
|  |
| [**R4-2216848**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216848.zip) | *TP to TS 38.181: occupied bandwidth (6.6.1, 6.6.2)* |
| Company A |
|  |
| [**R4-2216849**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216849.zip) | *TP to TS 38.181: OBUE (6.6.4)* |
| Company A |
|  |
| **Rx requirements** | |
| [**R4-2215403**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215403.zip) | *TP for TS 38.181 – Clause 7.1 General and Clause 7.2 Reference sensitivity level* |
| Company A |
|  |
| [**R4-2216196**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216196.zip) | *TP to TS 38.181 – Clause 7.4 In-band selectivity and blocking* |
| Company A |
|  |
| [**R4-2216562**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216562.zip) | *TP for TS 38.181: Section 7.3 Dynamic range* |
| Company A |
|  |
| [**R4-2216563**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216563.zip) | *TP for TS 38.181: Section 7.6~7.8* |
| Company A |
|  |
| [**R4-2216850**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216850.zip) | *TP to TS 38.181: Out-of-band blocking (7.5)* |
| Company A |
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#### Radiative conformance testing

Moderator’s comment: No TP has been provided for clauses 9.2, 9.3, 9.5 and 9.6.

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| **Tx requirements** | |
| [**R4-2215404**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215404.zip) | *TP for TS 38.181 – Clause 9.1 General* |
| Company A |
|  |
| [**R4-2216564**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216564.zip) | *TP for TS 38.181: Section 9.4 OTA output power dynamics* |
| Company A |
|  |
| [**R4-2216851**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216851.zip) | *TP to TS 38.181: OTA occupied bandwidth (9.7.1, 9.7.2)* |
| Company A |
|  |
| [**R4-2216852**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216852.zip) | *TP to TS 38.181: OTA ACLR (9.7.3)* |
| Company A |
|  |
| [**R4-2216853**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216853.zip) | *TP to TS 38.181: OTA OBUE (9.7.4)* |
| Company A |
|  |
| **Tx requirements** | |
| [**R4-2215405**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215405.zip) | *TP for TS 38.181 – Clause 10.1 General and Clause 10.2 OTA sensitivity* |
| Company A |
|  |
| [**R4-2216197**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216197.zip) | *TP to TS 38.181 – Clause 10.5 In-band selectivity and blocking* |
| Company A |
|  |
| [**R4-2216490**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216490.zip) | *TS 38.181: TP on clause 10.3 OTA refsens* |
| Company A |
|  |
| [**R4-2216565**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216565.zip) | *TP for TS 38.181: Section 10.4 OTA dynamic range* |
| Company A |
|  |
| [**R4-2216566**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216566.zip) | *TP for TS 38.181: Section 10.7~10.9* |
| Company A |
|  |
| [**R4-2216854**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216854.zip) | *TP to TS 38.181: OTA out-of-band blocking (10.6)* |
| Company A |
|  |

#### Annexes

|  |  |
| --- | --- |
| **CR/TP number** | **Comments collection** |
| [**R4-2215350**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215350.zip) | *TP for TS 38.181 - Annex D* |
| Company A |
|  |
| [**R4-2215406**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215406.zip) | *TP for TS 38.181 – A.1 FRCs for RF Rx requriement(QPSK, R=1/3) and A.2 FRCs for dynamic range (16QAM, R=2/3)* |
| Company A |
|  |
| [**R4-2215407**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215407.zip) | *TP for TS 38.181 – Annex F Calibration* |
| Company A |
|  |
| [**R4-2215408**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215408.zip) | *TP for TS 38.181 – Annex H In-channel Tx test* |
| Company A |
|  |
| [**R4-2215409**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215409.zip) | *TP for TS 38.181 – Annex I Transmitter spatial emissions declaration* |
| Company A |
|  |
| [**R4-2215410**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2215410.zip) | *TP for TS 38.181 – Annex K Measuring noise close to the noise-floor* |
| Company A |
|  |
| [**R4-2216491**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216491.zip) | *TS 38.181: TP on Annex B* |
| Company A |
|  |
| [**R4-2216492**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216492.zip) | *TS 38.181: TP on Annex C* |
| Company A |
|  |
| [**R4-2216493**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216493.zip) | *TS 38.181: TP on Annex E* |
| Company A |
|  |
| [**R4-2216494**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_104bis-e/Docs/R4-2216494.zip) | *TS 38.181: TP on Annex J* |
| Company A |
|  |

## Summary for 1st round

### Open issues

NA

### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provided recommendation on CRs/TPs Status update suggestion*

|  |  |
| --- | --- |
| **CR/TP number** | **CRs/TPs Status update recommendation** |
| XXX | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

## 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”.*

# Recommendations for Tdocs

## 1st round

**New tdocs**

|  |  |  |  |
| --- | --- | --- | --- |
| **New Tdoc number** | **Title** | **Source** | **Comments** |
|  | WF on … | YYY |  |
|  | LS on … | ZZZ | To: RAN\_X; Cc: RAN\_Y |
|  |  |  |  |

**Existing tdocs**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tdoc number** | **Revised to** | **Title** | **Source** | **Recommendation** | **Comments** |
| R4-22xxxxx |  | CR on … | XXX | Agreeable, Revised, Merged, Postponed, Not Pursued |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

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** | **Revised to** | **Title** | **Source** | **Recommendation** | **Comments** |
| R4-22xxxxx |  | CR on … | XXX | Agreeable, Revised, Merged, Postponed, Not Pursued |  |
| R4-22xxxxx |  | WF on … | YYY | Agreeable, Revised, Noted |  |
| R4-22xxxxx |  | LS on … | ZZZ | Agreeable, Revised, Noted |  |
|  |  |  |  |  |  |

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