3GPP TSG-RAN WG4 Meeting #107 R4-230xxxx

Incheon, KR, May 22 – May 26, 2023

**Source:** Huawei, HiSilicon, []

**Title:** WF on FR2-2 BS conformance testing open issues

**Agenda Item:** x.x.x.x

**Document for:** Approval

# Way forward

The following agreements were reached:

1. Values for the following MU contributors were confirmed:
	1. C1-3       Uncertainty of the network analyzer
	2. C1-9       RF power measurement equipment standard uncertainty σ (dB) of the absolute level for a time domain wideband measurement for FR2
	3. A2-4a    QZ ripple experienced by BS (CATR)
	4. A2-11    Switching uncertainty (CATR)
	5. A2-1a    Misalignment and pointing error of BS (for EIRP) (TX OFF)
	6. C1-9       RF power measurement equipment standard uncertainty σ (dB) of the absolute level for a time domain wideband measurement for FR2 (TX OFF)
	7. A2-11    Switching uncertainty (ACLR)
	8. C1-3       Uncertainty of the network analyzer
	9. MUIpa  Uncertainty due to use of PA: no need for this contributor
	10. C1-11 (Uncertainty of the RF signal generator with power monitoring and controling by power sensor) value use instead of C1-2 value (Uncertainty of the RF signal generator)
	11. B2-5       Mismatch of transmit chain (i.e. between transmitting measurement antenna and BS)
2. Values for the following MU contributors were agreed:
	1. C1-1: Uncertainty of the RF power measurement equipment for EIRP and In-band TRP was modified from 2dB to 0.98 dB for 52.6-71GHz, to be captured as separate entry, i.e. “C1-10” (Uncertainty of the RF power measurement equipment (power meter, power sensor) - high power (EIRP))
	2. C1-2: Uncertainty of the RF signal generator for agreed as 0.98dB for 52.6-71GHz, to be captured as separate entry C1-11 (Uncertainty of the RF signal generator with power monitoring and controling by power sensor)
	3. C1-7 for in-band:
		1. FFS on merging ‘C1-7’ and ‘C1-7\_mixer’ rows for in-band measurement
		2. FFS on value for C1-7 and C1-7\_mixer for in-band measurement of 52.6 < f < 71G [2.0 – 2.36]
		3. FFS on missing MU value for the range ‘60 < f ≤ 71 GHz’ in the ‘C1-7’ row for spurious emission measurements
	4. C1-7 for OOB
		1. 2dB for 71-110GHz,
		2. 2.3dB for 110-142GHz
	5. A2-5a: 0.4dB was agreed for 71-142GHz range.
	6. A2-5b: 0.51dB was agreed for 71-142GHz range.
3. CATR MU contributors
	1. keep LNA and mixer entries as separate contributors in the MU budget
4. LNA MU
	1. The need for LNA was summarized as follows:
		1. Inband: not needed
		2. ACLR/OBUE: FFS
5. TX OFF requirement
	1. the need for LNA can be discussed next meeting
6. EVM requirement
	1. FFS on the MU number (i.e. 1% vs 1.1%)
7. ACLR requirement
	1. FFS if the C1-7 and C1-8 for ACLR (and OBUE) requirements can be reduced based on calibration done separately for the wanted, and for the adjacent signals, to address the dynamic range issue.
8. Out of band emissions requirement
	1. The need to add CATR for OOB EM if FFS
	2. Possibility to reduce LNA and mixer MU contributors based on reduced temperature variation offset can be further discussed next meeting
9. Inband TRP requirement
	1. MU for Switching uncertainty agreed as [0.25] dB (Standard uncertainty)

# Conclusions

The following proposal was formulated:

**Proposal 1**: Approve the above Way Forward.