
1 Topic#1: Band n67

Table 1: Companies' contributions summary - band n67

T-doc number	Company	Proposals / Observations
R4-2106894	Ericsson	

All issues have been agreed in last RAN4#98-e meeting and captured in R4-2103218.

No discussion needed.

Comments from Qualcomm (1st Round), see below feedback form #5: I have a comment for Topic #1 (Band n67) re fsens, but since there is no form for Topic #1, I insert my comment here. According to WF from last meeting, all of the requirements are completed, but since Band n67 is an SDL band, in order to verify reference sensitivity there needs to be an uplink band that is aggregated with it. But there are no CA configurations defined (nor in the WID), so while the specification for re fsens may be agreed, it is not possible to test it.

2 Topic#2: Band n85

2.1 BS RF

Table 2: Companies' contributions summary - band n85 - BS RF

T-doc number	Company	Proposals / Observations
R4-2106895	Ericsson	Proposal: Agree with the changes listed in this contribution (on top of the agreed ones in [3]).

2.1.1 BS channel bandwidth per operating band

Proposal: On top of agreed changes in WF R4-2103219, Table 5.3.5-1 in TS 38.104 shall be further updated according to Table 3 (cells in bold)

Table 3: Proposed update to table 5.3.5-1 in TS 38.104

NR band / SCS / BS chan- nel band- width														
NR Band	SCS kHz	5 MHz	10 MHz	15 MHz	20 MHz	25 MHz	30 MHz	40 MHz	50 MHz	60 MHz	70 MHz	80 MHz	90 MHz	100 MHz
	15	Yes	Yes	Yes										
n85	30		Yes	Yes										
	60													

2.1.1.1 Companies views' collection for 1st round

Feedback Form 1: BS RF - 1st Round

Item	Com- pany	Comments
1	T-Mobile USA Inc.	T-Mobile USA: We support the addition of 15 MHz to align n85 with n12.

2.1.1.2 Summary for 1st round

Table 4: BS RF - 1st Round summary

	Status summary
Sub-topic#2-1	<p><i>Tentative agreements:</i> Proposed update to BS RF channel bandwidth per operating band table is agreed.</p> <p><i>Candidate options:</i> NA</p> <p><i>Recommendations for 2nd round:</i> Capture agreement in the WF.</p>

2.1.1.3 Discussion on 2nd round (if applicable)

Feedback Form 2: BS RF - 2nd Round

Item	Company	Comments
1	Huawei Technologies France	Huawei: the REFSENS values for a CBW=15MHZ @n85 based on our calculations should be -92.0dBm and -92.1dBm for SCS=15KHz and SCS= 30KHz respectively. We considered NF=12db

2.2 UE RF

Table 5: Companies' contributions summary - band n85 - UE RF

T-doc number	Company	Proposals / Observations
R4-2106896	Ericsson	Proposal: Agree with the changes listed in this contribution (on top of the already agreed ones in [3]).

2.2.1 Companies' contributions summary

2.2.2 UE channel bandwidth per operating band

Proposal: On top of agreed changes in WF R4-2103219, Table 5.3.5-1 in TS 38.101-1 shall be further updated according to Table 5 (cells in bold)

Table 6: Proposed update to table 5.3.5-1 in TS 38.101-1

NR band / SCS / BS channel bandwidth														
NR Band	SCS kHz	5 MHz	10 MHz	15 MHz	20 MHz	25 MHz	30 MHz	40 MHz	50 MHz	60 MHz	70 MHz	80 MHz	90 MHz	100 MHz
	15	Yes	Yes	Yes										
n85	30		Yes	Yes										

	60													
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2.2.2.1 Companies views' collection for 1st round

Feedback Form 3: 1st Round

Item	Com-pany	Comments
1	T-Mobile USA Inc.	T-Mobile USA: We support the addition of 15 MHz to align n85 with n12.

2.2.2.2 Summary for 1st round

Table 7: UE channel BW - 1st Round summary

	Status summary
Sub-topic#2-2	<i>Tentative agreements:</i> Proposed update to UE RF channel bandwidth per operating band table is agreed. <i>Candidate options:</i> NA <i>Recommendations for 2nd round:</i> Capture agreement in the WF.

2.2.2.3 Discussion on 2nd round (if applicable)

Feedback Form 4: UE channel BW - 2nd round

Item	Com-pany	Comments

2.2.3 REFSSENS

Proposal: On top of agreed changes in WF R4-2103219, REFSSENS shall be updated according to Table 6 and Table 7 (cells in bold).

Table 8: REFSSENS values

Operating band / SCS / Channel bandwidth / Duplex-mode															
Operating Band	668 kHz	5 MHz	10 MHz	15 MHz	20 MHz	25 MHz	30 MHz	40 MHz	50 MHz	60 MHz	70 MHz	80 MHz	90 MHz	100 MHz	Duplex Mode
		(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	
n85	15	-97.0	-93.8	-84.0											FDD
	30		-94.1	-84.1											
	60														

Table 9: RB allocation for REFSENS

Operating band / SCS / Channel bandwidth / Duplex-mode															
Operating Band	668 kHz	5 MHz	10 MHz	15 MHz	20 MHz	25 MHz	30 MHz	40 MHz	50 MHz	60 MHz	70 MHz	80 MHz	90 MHz	100 MHz	Duplex Mode
n85	15	20	20	20											FDD
	30		10	10											
	60														

2.2.3.1 Companies views' collection for 1st round

Feedback Form 5: 1st Round

Item	Company	Comments
1	Qualcomm Korea	I have a comment for Topic #1 (Band n67) refsens, but since there is no form for Topic #1, I insert my comment here. According to WF from last meeting, all of the requirements are completed, but since Band n67 is an SDL band, in order to verify reference sensitivity there needs to be an uplink band that is aggregated with it. But there are no CA configurations defined (nor in the WID), so while the specification for refsens may be agreed, it is not possible to test it.
2	Nokia Corporation	Proposal in R4-2106896 is agreeable
3	T-Mobile USA Inc.	REFSENS is in line with n12

2.2.3.2 Summary for the 1st round

Table 10: UE REFSENS - 1st round summary

	Status summary
Sub-topic#2-3	<p><i>Tentative agreements:</i> Proposed updates to REFSENS and RB allocation tables are agreed.</p> <p><i>Candidate options:</i></p> <p><i>Recommendations for 2nd round:</i> Capture agreement in the WF.</p>

2.2.3.3 Discussion on 2nd round (if applicable)

Feedback Form 6: UE REFSENS - 2nd round

Item	Company	Comments
1	Huawei Technologies France	Huawei: the REFSENS values for a CBW=15MHZ @n85 based on our calculations should be -92.0dBm and -92.1dBm for SCS=15KHz and SCS= 30KHz respectively. We considered NF=12db. PS. The comment on section 2.1.1.3 was put by error.

Item	Company	Comments
2	Ericsson Limited	To Huawei: The proposed REFSENS values are aligned with those for n12, band which is almost the same frequency range then n85 (1MHz difference). It's true n12 was first specified by BW conversion calculation from 10MHz (it seems Huawei got their values using this method as well). But there was further discussion later on IM5 impact for 15MHz channel BW (which was initially not considered), and CR R4-1813811 was agreed. We haven't done the all analysis again for n85 but, as this band is very similar to n12, we would also expect very similar impact on REFSENS values for 15MHz channel BW.
3	Huawei Technologies France	To Ericsson: Thanks for the clarification. We agree to use the similar values as n12.
4	Skyworks Solutions Inc.	To Huawei: n85 REFSENS can not be lower than n12 REFSENS. n12 REFSENS has been long discussed, and the agreed value for 15MHz takes into account the impact interference due to counter-IM3 and IM5 between the modulated RB and its image. So the n85 REFSENS proposal is correct.

3 Recommendations for Tdocs

3.1 1st round

New tdocs

Table 11: New tdocs

Title	Source	Comments
WF on band n85	Ericsson	

Existing tdocs

Table 12: Existing tdocs

Tdoc number	Title	Source	Recommendation	Comments
R4-2106894	New NR band n67 - update	Ericsson	Noted	
R4-2106895	New NR band n85 - BS RF additional impacts	Ericsson	Noted	

R4-2106896	New NR band n85 - UE RF additional impacts	Ericsson	Noted	
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3.2 2nd round

Based on 2nd round discussion:

Table 13: Status of submitted tdocs for the 2nd round

Tdoc number	Title	Source	Recommendation	Comments
R4-2105372	Way forward on band n85	<i>Ericsson</i>	Agreeable	