

Appendix H. – Power reduction verification

Per the May 2017 TCBC Workshop notes, demonstration of proper functioning of the power reduction mechanism is required to support the corresponding SAR Configurations.

Procedures for determining proximity sensor triggering distances

(KDB 616217 D04v01r02 § 6.2)

The distance verification procedure was performed according to the following procedure:

1. A base station simulator was used to establish an RF connection and to monitor the power levels. The device being tested was placed below the relevant section of the phantom with the relevant side or edge of the device facing toward the phantom. For Licensed modes, Radio SAR Index(RSI) on the device UI was monitored to determine the triggering state.
2. The device was moved toward and away from the phantom to determine the distance at which the mechanism triggers and the output power is reduced, per KDB Publication 616217 D04v01r02. Each applicable test position was evaluated. The distance was conformed to be the same or larger (more conservative) than the minimum distances provided by the manufacturer.
3. Step 1 and 2 were repeated for the relevant modes, as appropriate
4. Steps 1 through 3 were repeated for all distance-based power reduction mechanisms.

SAR Test Configuration

Since the Dedicated Host Approach is applied, the standalone SAR test exclusion procedure in KDB447498 4.3.1 is applied in conjunction with KDB 616217 4.3 to determine the minimum test separation distance:

When the separation distance from the antenna to an adjacent edge is ≤ 50 mm, a distance of 50 mm is applied to determine SAR test exclusion.

When the separation distance from the antenna to an adjacent edge is > 50 mm, the actual antenna-to-edge separation distance is applied to determine SAR test exclusion

Antenna	Band	Device Configurations for SAR Testing				
		Rear	Top	Left	Right	Bottom
Main 1	GSM 850	Yes	Yes	Yes	Yes	No
Main 1	GSM 1900	Yes	Yes	Yes	Yes	No
Main 1	UMTS Band 5	Yes	Yes	Yes	Yes	No
Main 1	UMTS Band 4	Yes	Yes	Yes	Yes	No
Main 1	UMTS Band 2	Yes	Yes	Yes	Yes	No
Main 1	LTE Band 2	Yes	Yes	Yes	Yes	No
Main 1	LTE Band 4	Yes	Yes	Yes	Yes	No
Main 1	LTE Band 5	Yes	Yes	Yes	Yes	No
Main 1	LTE Band 12	Yes	Yes	Yes	Yes	No
Main 1	LTE Band 13	Yes	Yes	Yes	Yes	No
Main 1	LTE Band 17	Yes	Yes	Yes	Yes	No
Main 1	LTE Band 25	Yes	Yes	Yes	Yes	No
Main 1	LTE Band 26	Yes	Yes	Yes	Yes	No
Main 1	LTE Band 41(PC3)	Yes	Yes	Yes	Yes	No
Main 1	LTE Band 66	Yes	Yes	Yes	Yes	No
Main 1	NR Band n5	Yes	Yes	Yes	Yes	No
Main 1	NR Band n26	Yes	Yes	Yes	Yes	No
Main 1	NR Band n41	Yes	Yes	Yes	Yes	No
Main 1	NR Band n66	Yes	Yes	Yes	Yes	No
Main 1	NR Band n71	Yes	Yes	Yes	Yes	No
Main 2	NR Band n77(PC3)	Yes	No	Yes	Yes	Yes
Main 2	NR Band n77(PC2)	Yes	No	Yes	Yes	Yes
Main 2	NR Band n78(PC3)	Yes	No	Yes	Yes	Yes
Main 2	NR Band n78(PC2)	Yes	No	Yes	Yes	Yes
Sub 2	LTE FDD With FR1 ENDC (LTE Band 2)	Yes	No	Yes	Yes	Yes
Sub 2	LTE FDD With FR1 ENDC (LTE Band 4)	Yes	No	Yes	Yes	Yes
Sub 2	LTE FDD With FR1 ENDC (LTE Band 66)	Yes	No	Yes	Yes	Yes
WiFi 1	2.4 GHz WLAN / Bluetooth	Yes	Yes	No	Yes	No
WiFi 1	5 GHz WLAN	Yes	Yes	No	Yes	No
WiFi 2	2.4 GHz WLAN	Yes	Yes	Yes	No	No
WiFi 2	5 GHz WLAN	Yes	Yes	Yes	No	No

- Note: All test configurations are based on front view.

Antennas <50mm to adjacent edges: According to KDB 447498 D01v06, if the calculated threshold value >3 then SAR test is required.

Antennas >50mm to adjacent edges: According to KDB 447498 D01v06, if the power threshold is less than the output power, SAR is required.

Per FCC KDB 447498 D01v06, The SAR exclusion threshold for distance < 50 mm is defined by the following equation:

$$\frac{\text{MaxPowerofChannel(mW)}}{\text{TestSeparationDistance(mm)}} * \sqrt{\text{Frequency(GHz)}} \leq 3.0(1\text{g SAR}), 7.5(10\text{g SAR})$$

Antennas >50mm to adjacent edges: According to KDB 447498 D01v06, if the power threshold is less than the output power, SAR is required.

Per KDB 447498 D01v06 Sec 4.3.1 b) For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following (also illustrated in Appendix B)

- 1) {[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm) · (f(MHz)/150)]} mW, for 100 MHz to 1500 MHz
- 2) {[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm) · 10]} mW, for > 1500 MHz and ≤ 6 GHz

Per FCC KDB Publication 616217 D04v01r02, the rear surface and edges of tablet should be tested for SAR compliance with the tablet touching the phantom. The SAR Exclusion Threshold in 447498 D04 v06 can be applied to determine SAR test exclusion for adjacent edge configurations. The closet distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom.

This device was tested considering the Rear/left/right/top/bottom side for simultaneous transmission analysis of multiple transmitter conditions. The bottom side of the upper antenna and the top surface of the lower antenna excluded according to FCC KDB 616217 D04v01r02.

1. Power Reduction Verification for Main 1 Ant

This device utilizes a power reduction mechanism for some wireless modes under some conditions when the device is being used in close proximity to the user's body for Main1 Ant

FCC KDB Publication 616217D04v01r02 section 6 was used as a guideline for selection SAR test distances for this device when being used in Proximity use conditions.

Mechanism			Mode/Band	Radio SAR Index			
Mechanism 1st	Mechanism 2nd	Mechanism 3rd		RSI=0 Free	RSI=2 1st	RSI=1 2nd	RSI=3 3rd
Grip#2	Grip#1	Grip#3	GSM 850	0	2	1	3
Grip#2	Grip#1	Grip#3	GSM 1900	0	2	1	3
Grip#2	Grip#1	Grip#3	UMTS Band 5	0	2	1	3
Grip#2	Grip#1	Grip#3	UMTS Band 4	0	2	1	3
Grip#2	Grip#1	Grip#3	UMTS Band 2	0	2	1	3
Grip#2	Grip#1	Grip#3	LTE Band 2	0	2	1	3
Grip#2	Grip#1	Grip#3	LTE Band 4	0	2	1	3
Grip#2	Grip#1	Grip#3	LTE Band 5	0	2	1	3
Grip#2			LTE Band 12	0	2		
Grip#2			LTE Band 13	0	2		
Grip#2			LTE Band 17	0	2		
Grip#2	Grip#1	Grip#3	LTE Band 25	0	2	1	3
Grip#2	Grip#1	Grip#3	LTE Band 26	0	2	1	3
Grip#2			LTE Band 41(PC3)	0	2		
Grip#2	Grip#1	Grip#3	LTE Band 66	0	2	1	3
Grip#2			NR Band n5	0	2		
Grip#2	Grip#1	Grip#3	NR Band n26	0	2	1	3
Grip#2			NR Band n41	0	2		
Grip#2	Grip#1	Grip#3	NR Band n66	0	2	1	3
Grip#2			NR Band n71	0	2		

Note: This device uses different Radio SAR Index(RSI) to configure different time averaged power level based on certain exposure scenarios. For this model, RSI=1,3 represents the case when the grip sensor #1,#3 is active, RSI=2 represents the case when the grip sensor #2 is active, and RSI=0 represents the case where the device cannot detect the use proximity condition.

1.1 Proximity sensor triggering Distance Verification.



Proximity Sensor Trigger Distance Assessment KDB 616217 D04 § 6.2 (Rear / Top / Left / Right side)

LEGEND

- Direction of DUT travel for determination of power reduction triggering point
- Direction of DUT travel for determination of full power resumption triggering point

Tissue simulating liquid	Trigger distance - Rear		Trigger distance - Top	
	Moving toward phantom [mm]	Moving away from phantom [mm]	Moving toward phantom [mm]	Moving away from phantom [mm]
700 MHz	22	27	27	32
800 MHz	22	27	27	32
1 800 MHz	22	27	27	32
1 900 MHz	22	27	27	32
2 600 MHz	22	27	27	32

Distance Measurement verification for Proximity sensor #2

Tissue simulating liquid	Trigger distance - Left side	
	Moving toward phantom [mm]	Moving away from phantom [mm]
800 MHz	11	16
1 750 MHz	11	16
1 900 MHz	11	16

Distance Measurement verification for Proximity sensor #1

Tissue simulating liquid	Trigger distance - Right side	
	Moving toward phantom [mm]	Moving away from phantom [mm]
800 MHz	12	17
1 750 MHz	12	17
1 900 MHz	12	17

Distance Measurement verification for Proximity sensor #3

Rear side – EUT Moving toward (trigger) to the Phantom Sensor #2

Distance [mm]	Distance to DUT Output power level									
	27	26	25	24	23	22	21	20	19	18
GSM Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
UMTS Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
LTE Low Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
LTE Mid Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
LTE High Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
NR Low Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
NR Mid Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
NR High Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced

Rear side – EUT Moving away (Release) from the Phantom Sensor #2

Distance[mm]	Distance to DUT Output power level									
	23	24	25	26	27	28	29	30	31	32
GSM Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
UMTS Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
LTE Low Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
LTE Mid Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
LTE High Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
NR Low Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
NR Mid Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
NR High Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max

Based on the most conservative measured triggering distance of 22mm, additional Body SAR measurements were required at 21mm from rear side for the above modes.

Top side – EUT Moving toward (trigger) to the Phantom Sensor #2

Distance[mm]	Distance to DUT Output power level									
	32	31	30	29	28	27	26	25	24	23
GSM Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
UMTS Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
LTE Low Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
LTE Mid Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
LTE High Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
NR Low Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
NR Mid Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
NR High Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced

Top side – EUT Moving away (Release) from the Phantom Sensor #2

Distance[mm]	Distance to DUT Output power									
	28	29	30	31	32	33	34	35	36	37
GSM Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
UMTS Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
LTE Low Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
LTE Mid Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
LTE High Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
NR Low Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
NR Mid Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
NR High Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max

Based on the most conservative measured triggering distance of 27mm, additional Body SAR measurements were required at 26mm from top side for the above modes.

Left side – EUT Moving toward (trigger) to the Phantom Sensor #1

Distance	Distance to DUT Output power level									
	16	15	14	13	12	11	10	9	8	7
GSM Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
UMTS Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
LTE Band 5/26	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
LTE Band 2/4/25/66	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
NR Band n5	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
NR Band n26/66	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced

Left side – EUT Moving away (Release) from the Phantom Sensor #1

Distance[mm]	Distance to DUT Output power level									
	12	13	14	15	16	17	18	19	20	21
GSM Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
UMTS Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
LTE Band 5/26	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
LTE Band 2/4/25/66	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
NR Band n5	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
NR Band n26/66	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max

Based on the most conservative measured triggering distance of 11mm, additional Body SAR measurement were required at 10mm from Left side for the above modes.

Right side – EUT Moving toward (trigger) to the Phantom Sensor #3

Distance[mm]	Distance to DUT Output power									
	17	16	15	14	13	12	11	10	9	8
GSM Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
UMTS Band	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
LTE Band 5/26	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
LTE Band 2/4/25/66	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
NR Band n5	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
NR Band n26/66	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced

Right side – EUT Moving away (Release) from the Phantom Sensor #3

Distance[mm]	Distance to DUT Output power level									
	13	14	15	16	17	18	19	20	21	22
GSM Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
UMTS Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
LTE Band 5/26	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
LTE Band 2/4/25/66	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
NR Band n5	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
NR Band n26/66	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max

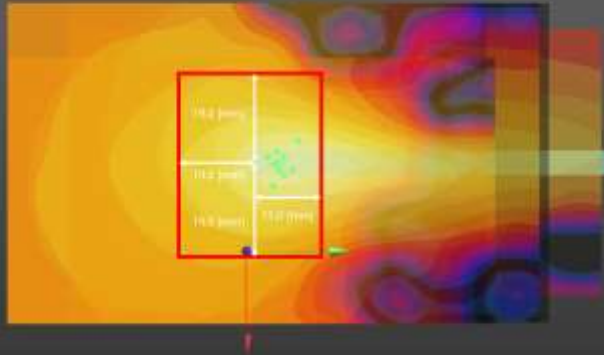
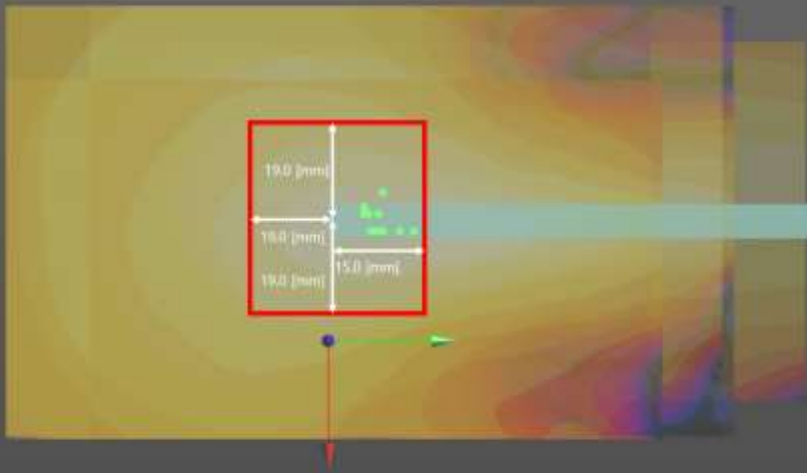
Based on the most conservative measured triggering distance of 12mm, additional Body SAR measurements were required at 11mm from Right side for the above modes.

1.2 Proximity Sensor Coverage for SAR measurements

(KDB 616217 D04v01r02 § 6.3)

As there is spatial offset between the Main 1 antenna and the proximity sensor #1 and the proximity sensor #3 proximity sensor coverage need to be assessed. According to the FCC KDB 616217 D04v01r02 § 6.3, the coverage of the proximity sensor was evaluated as follows.

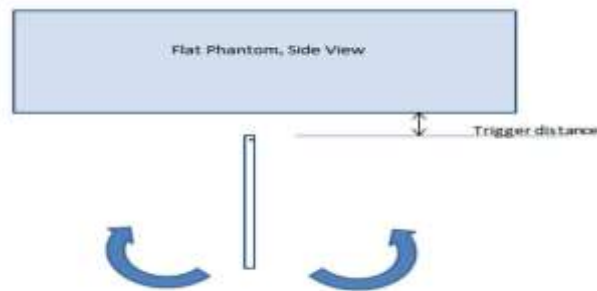
It was verified that the SAR Peak measurement results of LTE/UMTS/NR bands on Main 1 antenna whose output Power was reduced by the DUT's proximity sensors #1 and #3 were measured within the coverage of grip sensors #1 and #3.

Proximity Sensor	proximity sensor coverage evaluation	
	GSM Band 850/1900, UMTS Band 5/4/2, LTE Band 2/4/5/25/26/66, NR band 26/66	
Grip #1(RSI=1) Left side of DUT		
Grip #3 (RSI=3) Right side of DUT		

1.3 Proximity Sensor Tilt Angle Assessment

(KDB 616217 D04v01r02 § 6.4)

The DUT was positioned directly below the flat phantom at the minimum measured trigger distance with Bottom side parallel to the base of the flat phantom for each band. The EUT was rotated about Bottom side for angles up to $\pm 45^\circ$. If the output power increased during the rotation the DUT was moved 1mm toward the phantom and the rotation repeated. This procedure was repeated until the power remained reduced for all angles up to $\pm 45^\circ$.



Proximity sensor tilt angle assessment (Top side) KDB 616217 § 6.4

Summary of Tablet Tilt Angle influence to Proximity Sensor Triggering (Top side) Sensor #2

Tissue Simulating Liquid	Minimum distance at which power reduction was maintained over-45°	Power reduction status										
		-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°
700 MHz	27 mm	On	On	On	On	On	On	On	On	On	On	On
800 MHz	27 mm	On	On	On	On	On	On	On	On	On	On	On
1 750 MHz	27 mm	On	On	On	On	On	On	On	On	On	On	On
1 900 MHz	27 mm	On	On	On	On	On	On	On	On	On	On	On
2 600 MHz	27 mm	On	On	On	On	On	On	On	On	On	On	On

Summary of Tablet Tilt Angle influence to Proximity Sensor Triggering (Left side) Sensor #1

Tissue Simulating Liquid	Minimum distance at which power reduction was maintained over-45°	Power reduction status										
		-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°
800 MHz	11 mm	On	On	On	On	On	On	On	On	On	On	On
1 750 MHz	11 mm	On	On	On	On	On	On	On	On	On	On	On
1 900 MHz	11 mm	On	On	On	On	On	On	On	On	On	On	On

Summary of Tablet Tilt Angle influence to Proximity Sensor Triggering (Right side) Sensor #3

Tissue Simulating Liquid	Minimum distance at which power reduction was maintained over-45°	Power reduction status										
		-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°
800 MHz	12 mm	On	On	On	On	On	On	On	On	On	On	On
1 750 MHz	12 mm	On	On	On	On	On	On	On	On	On	On	On
1 900 MHz	12 mm	On	On	On	On	On	On	On	On	On	On	On

1.4 Resulting test positions for Body SAR measurements

Wireless technologies	Position	§ 6.2 Triggering Distance [mm]	§ 6.3 Coverage	§ 6.4 Tilt Angle	Worst case distance for Body SAR [mm]
Main 1 Ant	Rear	22	N/A	N/A	21
	Top	27	N/A	N/A	26
	Right	11	N/A	N/A	10
	Left	12	N/A	N/A	11

Note: FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device when being used in use conditions.

2. Power Reduction Verification for Main 2 Ant

Mechanism	Mode/Band	Radio SAR Index	
Mechanism 1st		RSI=0 Free	RSI=4 1st
Grip #4	NR Band n77 PC3	0	4
Grip #4	NR Band n77 PC2	0	4
Grip #4	NR Band n78 PC3	0	4
Grip #4	NR Band n78 PC2	0	4

Note: This device uses different Radio SAR Index(RSI) to configure different time averaged power level based on certain exposure scenarios. For this model, RSI=4 represents the case when the grip sensor #4 is active, and RSI=0 represents the case where the device cannot detect the use condition.

2.1 Proximity sensor triggering Distance Verification.



Proximity Sensor Trigger Distance Assessment KDB 616217 D04 § 6.2 (Rear / Bottom/ Right side)

LEGEND

- Direction of DUT travel for determination of power reduction triggering point
- Direction of DUT travel for determination of full power resumption triggering point

Tissue simulating liquid	Trigger distance Rear		Trigger distance -Bottom		Trigger distance -Right	
	Moving toward phantom [mm]	Moving away from phantom [mm]	Moving toward phantom [mm]	Moving away from phantom [mm]	Moving toward phantom [mm]	Moving away from phantom [mm]
3500 MHz	21	26	26	31	11	16

Distance Measurement verification for Proximity sensor

Rear side – EUT Moving toward (trigger) to the Phantom

Distance[mm]	Distance to DUT Output power (dBm)									
	26	25	24	23	22	21	20	19	18	17
NR Band n77 PC3	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
NR Band n77 PC2	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
NR Band n78 PC3	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
NR Band n78 PC2	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced

Rear side – EUT Moving away (Release) from the Phantom

Distance[mm]	Distance to DUT Output power (dBm)									
	22	23	24	25	26	27	28	29	30	31
NR Band n77 PC3	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
NR Band n77 PC2	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
NR Band n78 PC3	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
NR Band n78 PC2	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max

Based on the most conservative measured triggering distance of 21mm, additional Body SAR measurements were required at 20mm from rear side for the above modes.

Bottom side – EUT Moving toward (trigger) to the Phantom

Distance[mm]	Distance to DUT Output power (dBm)									
	31	30	29	28	27	26	25	24	23	22
NR Band n77 PC3	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
NR Band n77 PC2	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
NR Band n78 PC3	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
NR Band n78 PC2	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced

Bottom side – EUT Moving away (Release) from the Phantom

Distance[mm]	Distance to DUT Output power (dBm)									
	27	28	29	30	31	32	33	34	35	36
NR Band n77 PC3	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
NR Band n77 PC2	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
NR Band n78 PC3	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
NR Band n78 PC2	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max

Based on the most conservative measured triggering distance of 26mm, additional Body SAR measurements were required at 25mm from bottom side for the above modes.

Right side – EUT Moving toward (trigger) to the Phantom

Distance[mm]	Distance to DUT Output power (dBm)									
	16	15	14	13	12	11	10	9	8	7
NR Band n77 PC3	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
NR Band n77 PC2	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
NR Band n78 PC3	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
NR Band n78 PC2	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced

Right side – EUT Moving away (Release) from the Phantom

Distance[mm]	Distance to DUT Output power (dBm)									
	12	13	14	15	16	17	18	19	20	21
NR Band n77 PC3	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
NR Band n77 PC2	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
NR Band n78 PC3	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
NR Band n78 PC2	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max

Based on the most conservative measured triggering distance of 11mm, additional Body SAR measurements were required at 10mm from Right side for the above modes.

2.2 Proximity Sensor Coverage for SAR measurements

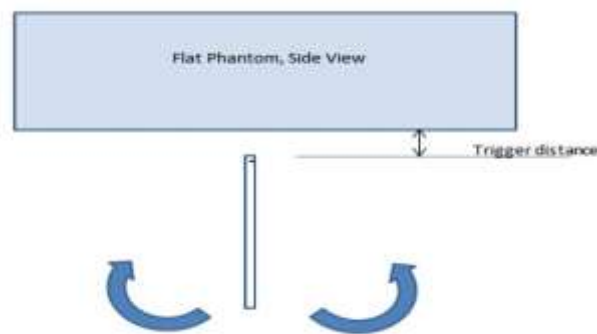
(KDB 616217 D04v01r02 § 6.3)

As there is no spatial offset between the antenna and the proximity sensor element, proximity sensor coverage did not need to be assessed.

2.3 Proximity Sensor Tilt Angle Assessment

(KDB 616217 D04v01r02 § 6.4)

The DUT was positioned directly below the flat phantom at the minimum measured trigger distance with Bottom side parallel to the base of the flat phantom for each band. The EUT was rotated about Bottom side for angles up to $\pm 45^\circ$. If the output power increased during the rotation the DUT was moved 1mm toward the phantom and the rotation repeated. This procedure was repeated until the power remained reduced for all angles up $\pm 45^\circ$.



Proximity sensor tilt angle assessment (Bottom/Right side) KDB 616217 § 6.4

Summary of Tablet Tilt Angle influence to Proximity Sensor Triggering (Bottom side)

Tissue simulating liquid	Minimum distance at which power reduction was maintained over-45°	Power reduction status										
		-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°
3500 MHz	29 mm	On	On	On	On	On	On	On	On	On	On	On

Summary of Tablet Tilt Angle influence to Proximity Sensor Triggering (Right side)

Tissue simulating liquid	Minimum distance at which power reduction was maintained over-45°	Power reduction status										
		-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°
3500 MHz	11 mm	On	On	On	On	On	On	On	On	On	On	On

2.4 Resulting test positions for Body SAR measurements

Wireless technologies	Position	§ 6.2 Triggering Distance [mm]	§ 6.3 Coverage	§ 6.4 Tilt Angle	Worst case distance for Body SAR [mm]
Main 2 Ant	Rear	21	N/A	N/A	20
	Bottom	26	N/A	N/A	25
	Right	11	N/A	N/A	10

Note: FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device when being used in use conditions.

3. Power Reduction Verification for Sub 2 Ant

Mechanism	Mode/Band	Radio SAR Index	
Mechanism 1st		RSI=0 Free	RSI=5 1st
Grip #5	LTE Band 2	0	5
Grip #5	LTE Band 4	0	5
Grip #5	LTE Band 66	0	5

Note: This device uses different Radio SAR Index(RSI) to configure different time averaged power level based on certain exposure scenarios. For this model, RSI=5 represents the case when the grip sensor #5 is active, and RSI=0 represents the case where the device cannot detect the use condition.

3.1 Proximity sensor triggering Distance Verification.



Proximity Sensor Trigger Distance Assessment KDB 616217 D04 § 6.2 (Rear / Bottom/ Left side)

LEGEND

- Direction of DUT travel for determination of power reduction triggering point
- Direction of DUT travel for determination of full power resumption triggering point

Tissue simulating liquid	Trigger distance -Rear		Trigger distance -Bottom	
	Moving toward phantom [mm]	Moving away from phantom [mm]	Moving toward phantom [mm]	Moving away from phantom [mm]
1 750 MHz	12	17	15	20
1 900 MHz	12	17	15	20

Distance Measurement verification for Proximity sensor

Rear side – EUT Moving toward (trigger) to the Phantom

Distance[mm]	Distance to DUT Output power (dBm)									
	17	16	15	14	13	12	11	10	9	8
LTE Band 2	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
LTE Band 4	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
LTE Band 66	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced

Rear side – EUT Moving away (Release) from the Phantom

Distance[mm]	Distance to DUT Output power (dBm)									
	13	14	15	16	17	18	19	20	21	22
LTE Band 2	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
LTE Band 4	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
LTE Band 66	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max

Based on the most conservative measured triggering distance of 21mm, additional Body SAR measurements were required at 20mm from rear side for the above modes.

Bottom side – EUT Moving toward (trigger) to the Phantom

Distance[mm]	Distance to DUT Output power (dBm)									
	20	19	18	17	16	15	14	13	12	11
LTE Band 2	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
LTE Band 4	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
LTE Band 66	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced

Bottom side – EUT Moving away (Release) from the Phantom

Distance[mm]	Distance to DUT Output power (dBm)									
	16	17	18	19	20	21	22	23	24	25
LTE Band 2	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
LTE Band 4	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
LTE Band 66	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max

Based on the most conservative measured triggering distance of 28mm, additional Body SAR measurements were required at 27mm from bottom side for the above modes.

3.2 Proximity Sensor Coverage for SAR measurements

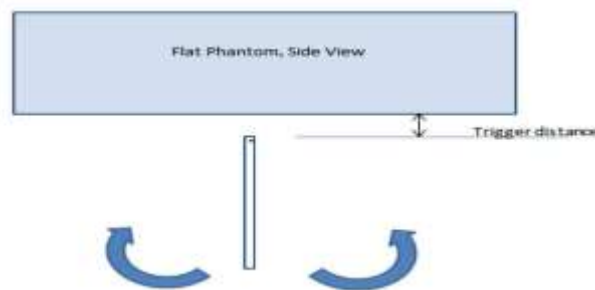
(KDB 616217 D04v01r02 § 6.3)

As there is no spatial offset between the antenna and the proximity sensor element, proximity sensor coverage did not need to be assessed.

3.3 Proximity Sensor Tilt Angle Assessment

(KDB 616217 D04v01r02 § 6.4)

The DUT was positioned directly below the flat phantom at the minimum measured trigger distance with Bottom side parallel to the base of the flat phantom for each band. The EUT was rotated about Bottom side for angles up to $\pm 45^\circ$. If the output power increased during the rotation the DUT was moved 1mm toward the phantom and the rotation repeated. This procedure was repeated until the power remained reduced for all angles up $\pm 45^\circ$.



Proximity sensor tilt angle assessment (Bottom side) KDB 616217 § 6.4

Summary of Tablet Tilt Angle influence to Proximity Sensor Triggering (Bottom side)

Tissue simulating liquid	Minimum distance at which power reduction was maintained over-45°	Power reduction status										
		-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°
1 750 MHz	15 mm	On	On	On	On	On	On	On	On	On	On	On
1 900 MHz	15 mm	On	On	On	On	On	On	On	On	On	On	On

3.4 Resulting test positions for Body SAR measurements

Wireless technologies	Position	§ 6.2 Triggering Distance [mm]	§ 6.3 Coverage	§ 6.4 Tilt Angle	Worst case distance for Body SAR [mm]
Sub 2 Ant	Rear	12	N/A	N/A	11
	Bottom	15	N/A	N/A	14

Note: FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device when being used in use conditions.

4. Power Reduction Verification for WIFI 1 Ant

Mechanism	Mode/Band	Machanism	
Mechanism 1st		Untriggered	1st Triggered
Grip#3	2.4 GHz 802.11b	Max	Reduced
Grip#3	2.4 GHz 802.11g	Max	Reduced
Grip#3	2.4 GHz 802.11n	Max	Reduced
Grip#3	2.4 GHz 802.11ax	Max	Reduced
Grip#3	2.4 GHz Bluetooth	Max	Reduced
Grip#3	2.4 GHz Bluetooth LE	Max	Reduced
Grip#3	5 GHz 802.11a	Max	Reduced
Grip#3	5 GHz 802.11n 20 MHz	Max	Reduced
Grip#3	5 GHz 802.11ac 20 MHz	Max	Reduced
Grip#3	5 GHz 802.11ax 20 MHz	Max	Reduced
Grip#3	5 GHz 802.11n 40 MHz	Max	Reduced
Grip#3	5 GHz 802.11ac 40 MHz	Max	Reduced
Grip#3	5 GHz 802.11ax 40 MHz	Max	Reduced
Grip#3	5 GHz 802.11ac 80 MHz	Max	Reduced
Grip#3	5 GHz 802.11ax 80 MHz	Max	Reduced

4.1 Proximity sensor triggering Distance Verification.



Proximity Sensor Trigger Distance Assessment KDB 616217 D04 § 6.2 (Rear / Top / Right side)

LEGEND

- Direction of DUT travel for determination of power reduction triggering point
- Direction of DUT travel for determination of full power resumption triggering point

Tissue simulating liquid	Trigger distance Rear		Trigger distance -Top		Trigger distance -Right	
	Moving toward phantom [mm]	Moving away from phantom [mm]	Moving toward phantom [mm]	Moving away from phantom [mm]	Moving toward phantom [mm]	Moving away from phantom [mm]
2 450 MHz	20	25	23	28	12	17
5 000 MHz	20	25	23	28	12	17

Distance Measurement verification for Proximity sensor

Rear side – EUT Moving toward (trigger) to the Phantom

Distance[mm]	Distance to DUT Output power (dBm)									
	25	24	23	22	21	20	19	18	17	16
2.4GHz 802.11b	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4GHz 802.11g	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4GHz 802.11n	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4GHz 802.11ax	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4GHz Bluetooth	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4GHz Bluetooth LE	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11a	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11n 20MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11ac 20MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11ax 20MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11n 40MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11ac 40MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11ax 40MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11ac 80MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11ax 80MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced

Rear side – EUT Moving away (Release) from the Phantom

Distance[mm]	Distance to DUT Output power (dBm)									
	21	22	23	24	25	26	27	28	29	30
2.4GHz 802.11b	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4GHz 802.11g	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4GHz 802.11n	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4GHz 802.11ax	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4GHz Bluetooth	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4GHz Bluetooth LE	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11a	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11n 20MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11ac 20MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11ax 20MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11n 40MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11ac 40MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11ax 40MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11ac 80MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11ax 80MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max

Based on the most conservative measured triggering distance of 20mm, additional Body SAR measurements were required at 19mm from rear side for the above modes.

Top side – EUT Moving toward (trigger) to the Phantom

Distance	Distance to DUT Output power (dBm)									
	28	27	26	25	24	23	22	21	20	19
2.4GHz 802.11b	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4GHz 802.11g	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4GHz 802.11n	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4GHz 802.11ax	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4GHz Bluetooth	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4GHz Bluetooth LE	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11a	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11n 20MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11ac 20MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11ax 20MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11n 40MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11ac 40MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11ax 40MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11ac 80MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11ax 80MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced

Top side – EUT Moving away (Release) from the Phantom

Distance[mm]	Distance to DUT Output power (dBm)									
	24	25	26	27	28	29	30	31	32	33
2.4GHz 802.11b	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4GHz 802.11g	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4GHz 802.11n	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4GHz 802.11ax	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4GHz Bluetooth	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4GHz Bluetooth LE	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11a	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11n 20MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11ac 20MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11ax 20MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11n 40MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11ac 40MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11ax 40MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11ac 80MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11ax 80MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max

Based on the most conservative measured triggering distance of 23mm, additional Body SAR measurements were required at 22mm from bottom side for the above modes.

Right side – EUT Moving toward (trigger) to the Phantom

Distance	Distance to DUT Output power (dBm)									
	17	16	15	14	13	12	11	10	9	8
2.4GHz 802.11b	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4GHz 802.11g	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4GHz 802.11n	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4GHz 802.11ax	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4GHz Bluetooth	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4GHz Bluetooth LE	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11a	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11n 20MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11ac 20MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11ax 20MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11n 40MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11ac 40MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11ax 40MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11ac 80MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5GHz 802.11ax 80MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced

Right side – EUT Moving away (Release) from the Phantom

Distance[mm]	Distance to DUT Output power (dBm)									
	13	14	15	16	17	18	19	20	21	22
2.4GHz 802.11b	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4GHz 802.11g	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4GHz 802.11n	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4GHz 802.11ax	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4GHz Bluetooth	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4GHz Bluetooth LE	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11a	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11n 20MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11ac 20MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11ax 20MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11n 40MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11ac 40MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11ax 40MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11ac 80MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5GHz 802.11ax 80MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max

Based on the most conservative measured triggering distance of 12mm, additional Body SAR measurements were required at 11mm from Right side for the above modes.

4.2 Proximity Sensor Coverage for SAR measurements

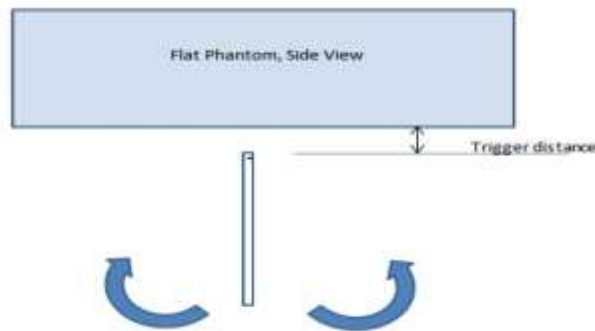
(KDB 616217 D04v01r02 § 6.3)

As there is no spatial offset between the antenna and the proximity sensor element, proximity sensor coverage did not need to be assessed.

4.3 Proximity Sensor Tilt Angle Assessment

(KDB 616217 D04v01r02 § 6.4)

The DUT was positioned directly below the flat phantom at the minimum measured trigger distance with Bottom side parallel to the base of the flat phantom for each band. The EUT was rotated about Bottom side for angles up to $\pm 45^\circ$. If the output power increased during the rotation the DUT was moved 1mm toward the phantom and the rotation repeated. This procedure was repeated until the power remained reduced for all angles up $\pm 45^\circ$.



Proximity sensor tilt angle assessment (Top/Right side) KDB 616217 § 6.4

Summary of Tablet Tilt Angle influence to Proximity Sensor Triggering (Top side)

Tissue simulating liquid	Minimum distance at which power reduction was maintained over-45°	Power reduction status											
		-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°	
2 450 MHz	23 mm	On	On	On	On	On	On	On	On	On	On	On	On
5 000 MHz	23 mm	On	On	On	On	On	On	On	On	On	On	On	On

Summary of Tablet Tilt Angle influence to Proximity Sensor Triggering (Right side)

Tissue simulating liquid	Minimum distance at which power reduction was maintained over-45°	Power reduction status											
		-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°	
2 450 MHz	12 mm	On	On	On	On	On	On	On	On	On	On	On	On
5 000 MHz	12 mm	On	On	On	On	On	On	On	On	On	On	On	On

4.4 Resulting test positions for Body SAR measurements

Wireless technologies	Position	§ 6.2 Triggering Distance [mm]	§ 6.3 Coverage	§ 6.4 Tilt Angle	Worst case distance for Body SAR [mm]
WIFI An1	Rear	20	N/A	N/A	19
	Top	23	N/A	N/A	22
	Right	12	N/A	N/A	11

Note: FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device when being used in use conditions.

5. Power Reduction Verification for WIFI 2 Ant

Mechanism	Mode/Band	Mechanism	
Mechanism 1st		Untriggered	1st Triggered
Grip #1	2.4 GHz 802.11b	Max	Reduced
Grip #1	2.4 GHz 802.11g	Max	Reduced
Grip #1	2.4 GHz 802.11n	Max	Reduced
Grip #1	2.4 GHz 802.11ax	Max	Reduced
Grip #1	5 GHz 802.11a	Max	Reduced
Grip #1	5 GHz 802.11n 20 MHz	Max	Reduced
Grip #1	5 GHz 802.11ac 20 MHz	Max	Reduced
Grip #1	5 GHz 802.11ax 20 MHz	Max	Reduced
Grip #1	5 GHz 802.11n 40 MHz	Max	Reduced
Grip #1	5 GHz 802.11ac 40 MHz	Max	Reduced
Grip #1	5 GHz 802.11ax 40 MHz	Max	Reduced
Grip #1	5 GHz 802.11ac 80 MHz	Max	Reduced
Grip #1	5 GHz 802.11ax 80 MHz	Max	Reduced

5.1 Proximity sensor triggering Distance Verification.



Proximity Sensor Trigger Distance Assessment KDB 616217 D04 § 6.2 (Rear / Top / Left side)

LEGEND

- Direction of DUT travel for determination of power reduction triggering point
- Direction of DUT travel for determination of full power resumption triggering point

Tissue simulating liquid	Trigger distance Rear		Trigger distance -Top		Trigger distance -Left	
	Moving toward phantom [mm]	Moving away from phantom [mm]	Moving toward phantom [mm]	Moving away from phantom [mm]	Moving toward phantom [mm]	Moving away from phantom [mm]
2 450 MHz	20	25	26	31	11	16
5 000 MHz	20	25	26	31	11	16

Distance Measurement verification for Proximity sensor

Rear side – EUT Moving toward (trigger) to the Phantom

Distance	Distance to DUT Output power (dBm)									
	25	24	23	22	21	20	19	18	17	16
2.4 GHz 802.11b	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4 GHz 802.11g	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4 GHz 802.11n	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4 GHz 802.11ax	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11a	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11n 20 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11ac 20 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11ax 20 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11n 40 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11ac 40 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11ax 40 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11ac 80 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11ax 80 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced

Rear side – EUT Moving away (Release) from the Phantom

Distance[mm]	Distance to DUT Output power (dBm)									
	21	22	23	24	25	26	27	28	29	30
2.4 GHz 802.11b	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4 GHz 802.11g	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4 GHz 802.11n	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4 GHz 802.11ax	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11a	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11n 20 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11ac 20 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11ax 20 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11n 40 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11ac 40 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11ax 40 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11ac 80 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11ax 80 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max

Based on the most conservative measured triggering distance of 20mm, additional Body SAR measurements were required at 19mm from rear side for the above modes.

Top side – EUT Moving toward (trigger) to the Phantom

Distance[mm]	Distance to DUT Output power (dBm)									
	31	30	29	28	27	26	25	24	23	22
2.4 GHz 802.11b	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4 GHz 802.11g	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4 GHz 802.11n	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4 GHz 802.11ax	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11a	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11n 20 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11ac 20 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11ax 20 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11n 40 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11ac 40 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11ax 40 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11ac 80 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11ax 80 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced

Top side – EUT Moving away (Release) from the Phantom

Distance[mm]	Distance to DUT Output power (dBm)									
	27	28	29	30	31	32	33	34	35	36
2.4 GHz 802.11b	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4 GHz 802.11g	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4 GHz 802.11n	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4 GHz 802.11ax	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11a	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11n 20 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11ac 20 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11ax 20 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11n 40 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11ac 40 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11ax 40 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11ac 80 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11ax 80 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max

Based on the most conservative measured triggering distance of 26mm, additional Body SAR measurements were required at 25mm from bottom side for the above modes.

Left side – EUT Moving toward (trigger) to the Phantom

Distance[mm]	Distance to DUT Output power (dBm)									
	16	15	14	13	12	11	10	9	8	7
2.4 GHz 802.11b	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4 GHz 802.11g	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4 GHz 802.11n	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
2.4 GHz 802.11ax	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11a	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11n 20 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11ac 20 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11ax 20 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11n 40 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11ac 40 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11ax 40 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11ac 80 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced
5 GHz 802.11ax 80 MHz	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced

Left side – EUT Moving away (Release) from the Phantom

Distance[mm]	Distance to DUT Output power (dBm)									
	12	13	14	15	16	17	18	19	20	21
2.4 GHz 802.11b	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4 GHz 802.11g	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4 GHz 802.11n	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
2.4 GHz 802.11ax	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11a	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11n 20 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11ac 20 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11ax 20 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11n 40 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11ac 40 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11ax 40 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11ac 80 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
5 GHz 802.11ax 80 MHz	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max

Based on the most conservative measured triggering distance of 11mm, additional Body SAR measurements were required at 10mm from Left side for the above modes.

5.2 Proximity Sensor Coverage for SAR measurements

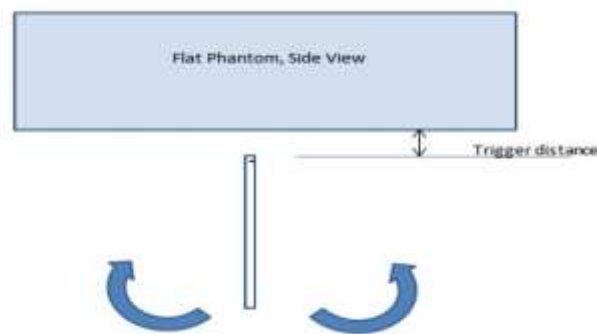
(KDB 616217 D04v01r02 § 6.3)

As there is no spatial offset between the antenna and the proximity sensor element, proximity sensor coverage did not need to be assessed.

5.3 Proximity Sensor Tilt Angle Assessment

(KDB 616217 D04v01r02 § 6.4)

The DUT was positioned directly below the flat phantom at the minimum measured trigger distance with Bottom side parallel to the base of the flat phantom for each band. The EUT was rotated about Bottom side for angles up to $\pm 45^\circ$. If the output power increased during the rotation the DUT was moved 1mm toward the phantom and the rotation repeated. This procedure was repeated until the power remained reduced for all angles up $\pm 45^\circ$.



Proximity sensor tilt angle assessment (Top/Left side) KDB 616217 § 6.4

Summary of Tablet Tilt Angle influence to Proximity Sensor Triggering (Top side)

Tissue simulating liquid	Minimum distance at which power reduction was maintained over-45°	Power reduction status											
		-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°	
2 450 MHz	26 mm	On	On	On	On	On	On	On	On	On	On	On	On
5 000 MHz	26 mm	On	On	On	On	On	On	On	On	On	On	On	On

Summary of Tablet Tilt Angle influence to Proximity Sensor Triggering (Left side)

Tissue simulating liquid	Minimum distance at which power reduction was maintained over-45°	Power reduction status											
		-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°	
2 450 MHz	11 mm	On	On	On	On	On	On	On	On	On	On	On	On
5 000 MHz	11 mm	On	On	On	On	On	On	On	On	On	On	On	On

5.4 Resulting test positions for Body SAR measurements

Wireless technologies	Position	§ 6.2 Triggering Distance [mm]	§ 6.3 Coverage	§ 6.4 Tilt Angle	Worst case distance for Body SAR [mm]
WIFI Ant2	Rear	20	N/A	N/A	19
	Top	26	N/A	N/A	25
	Left	11	N/A	N/A	10

Note: FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device when being used in use conditions.