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. Steps1 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 TDD Band 41	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 n41	Yes	Yes	Yes	Yes	No
Main 1	NR Band n66	Yes	Yes	Yes	Yes	No
Main 2	NR Band n77/78 (PC3)	Yes	Yes	Yes	Yes	Yes
Main 2	NR Band n77/78 (PC2)	Yes	Yes	Yes	Yes	Yes
Sub 1	LTE FDD With FR1 ENDC (LTE Band 2)	Yes	No	Yes	Yes	Yes
Sub 1	LTE FDD With FR1 ENDC (LTE Band 4)	Yes	No	Yes	Yes	Yes
Sub 1	LTE FDD With FR1 ENDC (LTE Band 66)	Yes	No	Yes	Yes	Yes
WiFi 1	2.4 ㎓ WLAN / Bluetooth	Yes	Yes	No	Yes	No
WiFi 1	5 ㎓ WLAN	Yes	Yes	No	Yes	No
WiFi 2	2.4 ㎓ WLAN	Yes	Yes	Yes	No	No
WiFi 2	5 ㎓ 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:

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

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 hand 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	0	2		
Grip#2	Grip#1	Grip#3	LTE Band 66	0	2	1	3
Grip#2	Grip#1	Grip#3	NR Band n5	0	2	1	3
Grip#2			NR Band n41	0	2		
Grip#2	Grip#1	Grip#3	NR Band n66	0	2	1	3

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 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	20	25	20	25
800 MHz	20	25	20	25
1 750 MHz	20	25	20	25
1 900 MHz	20	25	20	25
2 600 MHz	20	25	20	25

Distance Measurement verification for Proximity sensor #2

Tissue simulating liquid	Trigger distance - Left side	
	Moving toward phantom [mm]	Moving away from phantom [mm]
700 MHz	11	17
800 MHz	11	17
1 750 MHz	11	17
1 900 MHz	11	17
2 600 MHz	11	17

Distance Measurement verification for Proximity sensor #1

Tissue simulating liquid	Trigger distance – Right side	
	Moving toward phantom [mm]	Moving away from phantom [mm]
700 MHz	11	17
800 MHz	11	17
1 750 MHz	11	17
1 900 MHz	11	17
2 600 MHz	11	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									
	25	24	23	22	21	20	19	18	17	16
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									
	21	22	23	24	25	26	27	28	29	30
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 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 Sensor #2

Distance	Distance to DUT Output power level									
	25	24	23	22	21	20	19	18	17	16
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									
	21	22	23	24	25	26	27	28	29	30
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 20mm, additional Body SAR measurements were required at 19mm 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 n66	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									
	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 n66	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	Distance to DUT Output power									
	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 n66	Max	Max	Max	Max	Max	Reduced	Reduced	Reduced	Reduced	Reduced

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

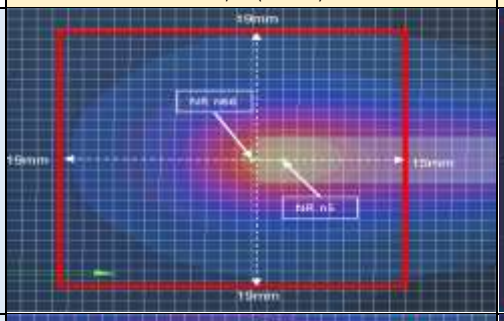
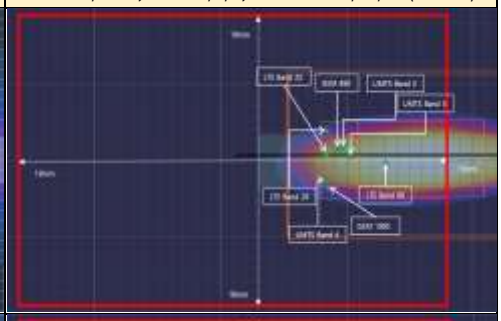
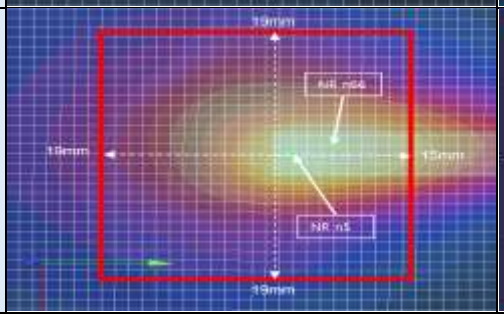
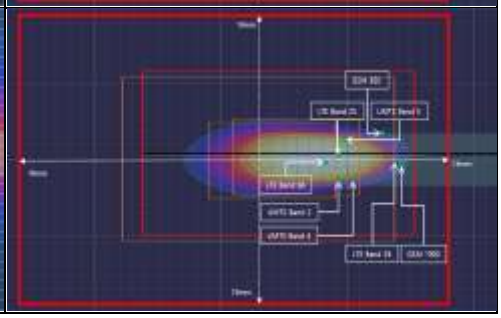
Distance[mm]	Distance to DUT Output power level									
	13	14	15	16	17	18	19	20	21	22
GSM Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
UMTS Band	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
LTE Band 5/26	Reduced	Reduced	Reduced	Reduced	Reduced	Max	Max	Max	Max	Max
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 n66	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.

1.2 Proximity Sensor Coverage for SAR measurements

(KDB 616217 D04v01r02 § 6.3)

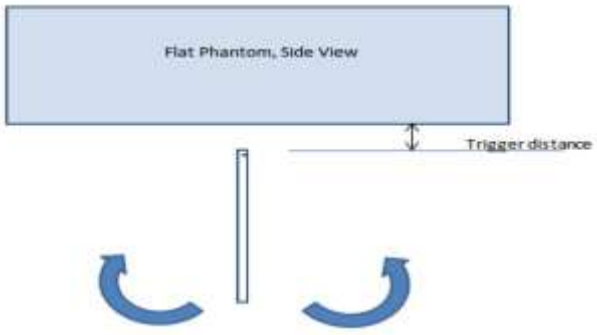
As there is spatial offset between the Main 1 antenna and the proximity sensor #1 and the proximity sensor #3 proximity sensor coverage need to be assessed. According to the FCC KDB 616217 D04v01r02 § 6.3, the coverage of the proximity sensor was evaluated as follows.
It was verified that the SAR Peak 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	
	NR n5/66 (DASY 5)	GSM850/1900, UMTS 2/4/5, LTE Band 25/26/66 (DASY 6)
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 ±45°. 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 f



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	20 mm	On	On	On	On	On	On	On	On	On	On	On
800 MHz	20 mm	On	On	On	On	On	On	On	On	On	On	On
1 750 MHz	20 mm	On	On	On	On	On	On	On	On	On	On	On
1 900 MHz	20 mm	On	On	On	On	On	On	On	On	On	On	On
2 600 MHz	20 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°
700 MHz	11 mm	On	On	On	On	On	On	On	On	On	On	On
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
2 600 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°
700 MHz	11 mm	On	On	On	On	On	On	On	On	On	On	On
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
2 600 MHz	11 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	20	N/A	N/A	19
	Top	20	N/A	N/A	19
	Left	11	N/A	N/A	10
	Right	11	N/A	N/A	10

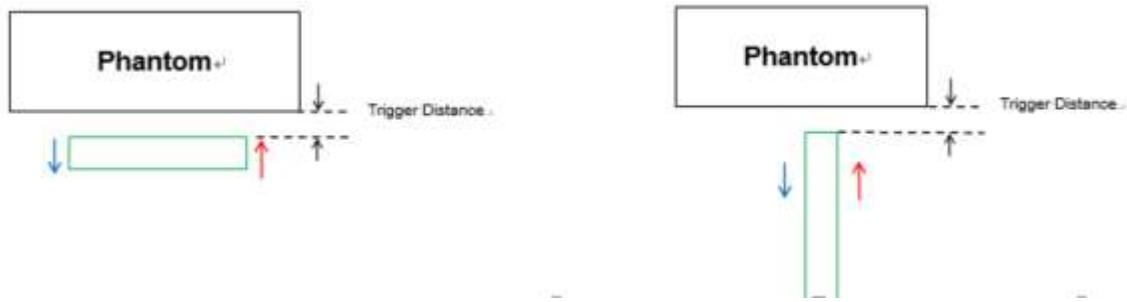
Note: FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device when being used in use conditions.

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]
3500MHz	19	25	19	25	11	17

Distance Measurement verification for Proximity sensor

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

Distance	Distance to DUT Output power (dBm)									
	24	23	22	21	20	19	18	17	16	15
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)									
	21	22	23	24	25	26	27	28	29	30
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 19mm, additional Body SAR measurements were required at 18mm from rear side for the above modes.

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

Distance	Distance to DUT Output power (dBm)									
	24	23	22	21	20	19	18	17	16	15
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)									
	21	22	23	24	25	26	27	28	29	30
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 19mm, additional Body SAR measurements were required at 18mm from bottom side for the above modes.

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

Distance	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)									
	13	14	15	16	17	18	19	20	21	22
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

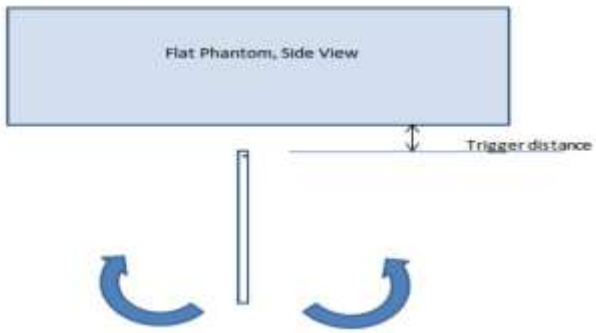
(KDB 616217 D04v01r02 § 6.3)

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 ±45°. 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 ±45°.



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

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

Band (MHz)	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	19 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	19	N/A	N/A	18
	Bottom	19	N/A	N/A	18
	Right	11	N/A	N/A	10

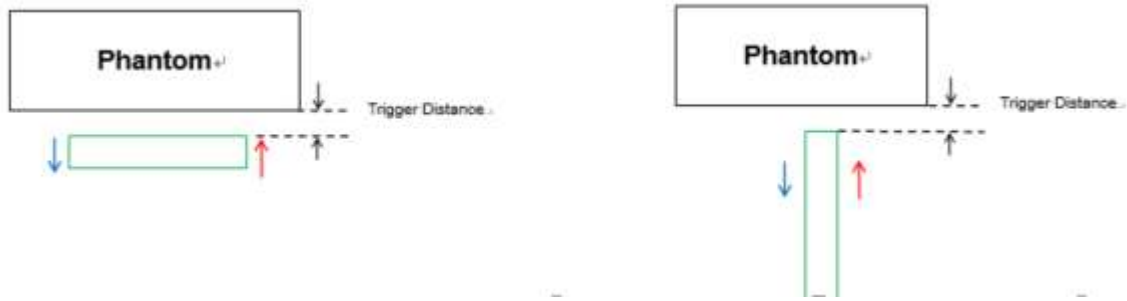
Note: FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device when being used in use conditions.

3. Power Reduction Verification for Sub 1 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		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]
1750MHz	19	25	19	25	11	17
1900MHz	19	25	19	25	11	17

Distance Measurement verification for Proximity sensor

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

Distance	Distance to DUT Output power (dBm)									
	24	23	22	21	20	19	18	17	16	15
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)									
	21	22	23	24	25	26	27	28	29	30
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 19mm, additional Body SAR measurements were required at 18mm from rear side for the above modes.

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

Distance	Distance to DUT Output power (dBm)									
	24	23	22	21	20	19	18	17	16	15
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)									
	21	22	23	24	25	26	27	28	29	30
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 19mm, additional Body SAR measurements were required at 18mm from bottom side for the above modes.

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

Distance	Distance to DUT Output power (dBm)									
	16	15	14	13	12	11	10	9	8	7
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

Left 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 11mm, additional Body SAR measurements were required at 10mm from Left/Right side for the above modes.

3.2 Proximity Sensor Coverage for SAR measurements

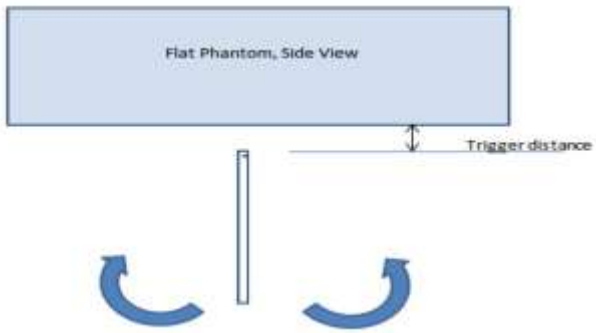
(KDB 616217 D04v01r02 § 6.3)

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 ±45°. 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 ±45°.



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

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

Band (MHz)	Minimum distance at which power reduction was maintained over-45°	Power reduction status										
		-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°
1750 MHz	19 mm	On	On	On	On	On	On	On	On	On	On	On
1900 MHz	19 mm	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°
1 750 ㎒	11 mm	On	On	On	On	On	On	On	On	On	On	On
1 900 ㎒	11 mm	On	On	On	On	On	On	On	On	On	On	On

3.4 Resulting test positions for Body SAR measurements

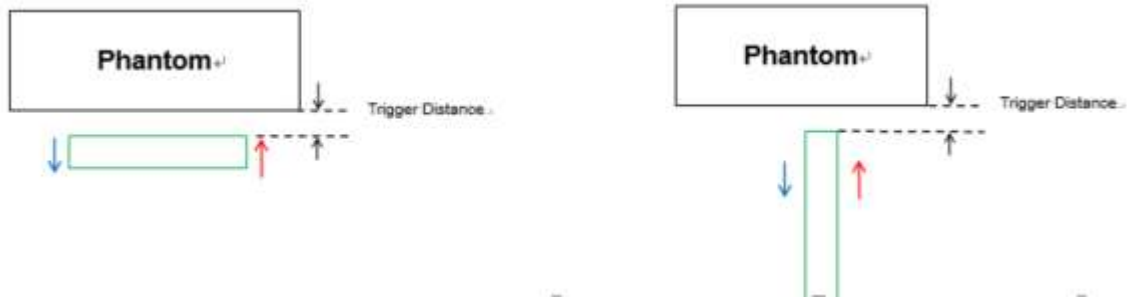
Wireless technologies	Position	§ 6.2 Triggering Distance [mm]	§ 6.3 Coverage	§ 6.4 Tilt Angle	Worst case distance for Body SAR [mm]
Sub 1 Ant	Rear	19	N/A	N/A	18
	Bottom	19	N/A	N/A	18
	Left	11	N/A	N/A	10

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.

4. Power Reduction Verification for WIFI 1 Ant

Mechanism	Mode/Band	Radio SAR Index	
Mechanism 1st		Untriggered	1st Triggered
Grip#3	2.4GHz 802.11b	Max	Reduced
Grip#3	2.4GHz 802.11g	Max	Reduced
Grip#3	2.4GHz 802.11n	Max	Reduced
Grip#3	2.4GHz 802.11ax	Max	Reduced
Grip#3	2.4GHz Bluetooth	Max	Reduced
Grip#3	2.4GHz Bluetooth LE	Max	Reduced
Grip#3	5GHz 802.11a	Max	Reduced
Grip#3	5GHz 802.11n 20MHz	Max	Reduced
Grip#3	5GHz 802.11ac 20MHz	Max	Reduced
Grip#3	5GHz 802.11ax 20MHz	Max	Reduced
Grip#3	5GHz 802.11n 40MHz	Max	Reduced
Grip#3	5GHz 802.11ac 40MHz	Max	Reduced
Grip#3	5GHz 802.11ax 40MHz	Max	Reduced
Grip#3	5GHz 802.11ac 80MHz	Max	Reduced
Grip#3	5GHz 802.11ax 80MHz	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 -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]
2450MHz	19	25	19	25	11	17
5000MHz	19	25	19	25	11	17

Distance Measurement verification for Proximity sensor

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

Distance	Distance to DUT Output power (dBm)									
	24	23	22	21	20	19	18	17	16	15
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 19mm, additional Body SAR measurements were required at 18mm from rear side for the above modes.

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

Distance	Distance to DUT Output power (dBm)									
	24	23	22	21	20	19	18	17	16	15
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)									
	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 19mm, additional Body SAR measurements were required at 18mm from bottom side for the above modes.

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

Distance	Distance to DUT Output power (dBm)									
	16	15	14	13	12	11	10	9	8	7
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 11mm, additional Body SAR measurements were required at 10mm from Right side for the above modes.

4.2 Proximity Sensor Coverage for SAR measurements

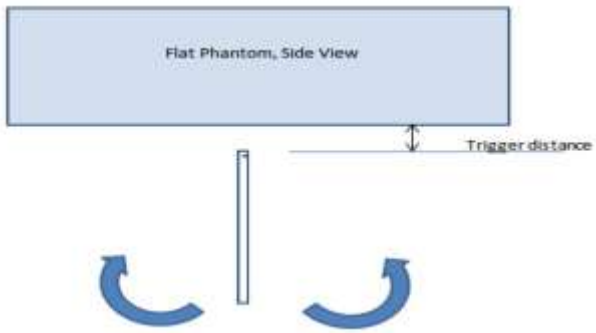
(KDB 616217 D04v01r02 § 6.3)

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 ±45°. 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 ±45°.



Proximity sensor tilt angle assessment (Top 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	19 mm	On	On	On	On	On	On	On	On	On	On	On
5 000 MHz	19 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°
2 450 MHz	11 mm	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

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 1 Ant	Rear	19	N/A	N/A	18
	Top	19	N/A	N/A	18
	Right	11	N/A	N/A	10

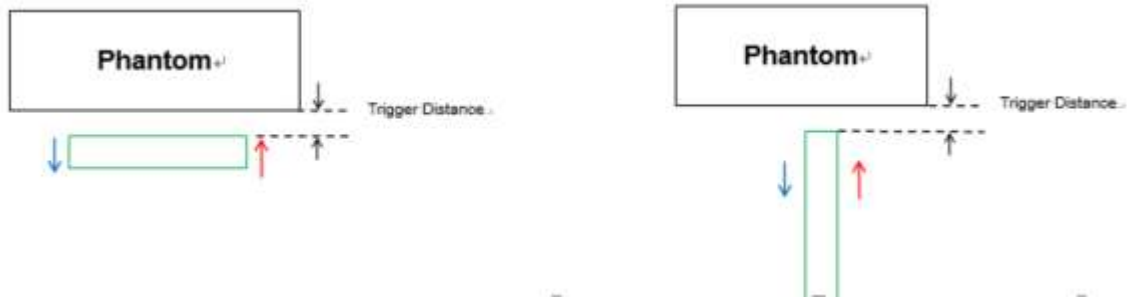
Note: FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device when being used in use conditions.

5. Power Reduction Verification for WIFI 2 Ant

Mechanism	Mode/Band	Radio SAR Index	
Mechanism 1st		Untriggered	1st Triggered
Grip #1	2.4GHz 802.11b	Max	Reduced
Grip #1	2.4GHz 802.11g	Max	Reduced
Grip #1	2.4GHz 802.11n	Max	Reduced
Grip #1	2.4GHz 802.11ax	Max	Reduced
Grip #1	5GHz 802.11a	Max	Reduced
Grip #1	5GHz 802.11n 20MHz	Max	Reduced
Grip #1	5GHz 802.11ac 20MHz	Max	Reduced
Grip #1	5GHz 802.11ax 20MHz	Max	Reduced
Grip #1	5GHz 802.11n 40MHz	Max	Reduced
Grip #1	5GHz 802.11ac 40MHz	Max	Reduced
Grip #1	5GHz 802.11ax 40MHz	Max	Reduced
Grip #1	5GHz 802.11ac 80MHz	Max	Reduced
Grip #1	5GHz 802.11ax 80MHz	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 -Bottom		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]
2450MHz	19	25	19	25	11	17
5000MHz	19	25	19	25	11	17

Distance Measurement verification for Proximity sensor

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

Distance	Distance to DUT Output power (dBm)									
	24	23	22	21	20	19	18	17	16	15
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
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
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 19mm, additional Body SAR measurements were required at 18mm from rear side for the above modes.

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

Distance	Distance to DUT Output power (dBm)									
	24	23	22	21	20	19	18	17	16	15
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
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)									
	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
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 19mm, additional Body SAR measurements were required at 18mm from bottom side for the above modes.

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

Distance	Distance to DUT Output power (dBm)									
	16	15	14	13	12	11	10	9	8	7
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
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

Left 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
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 11mm, additional Body SAR measurements were required at 10mm from Left side for the above modes.

5.2 Proximity Sensor Coverage for SAR measurements

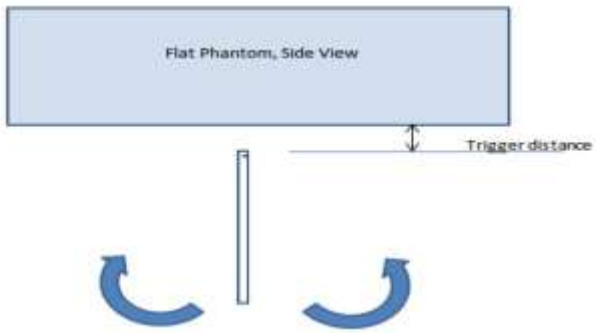
(KDB 616217 D04v01r02 § 6.3)

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 ±45°. 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 ±45°.



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

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

Band (MHz)	Minimum distance at which power reduction was maintained over-45°	Power reduction status										
		-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°
2450 MHz	19 mm	On	On	On	On	On	On	On	On	On	On	On
5000 MHz	19 mm	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
5 000 MHz	11 mm	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 2 Ant	Rear	19	N/A	N/A	18
	Top	19	N/A	N/A	18
	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.