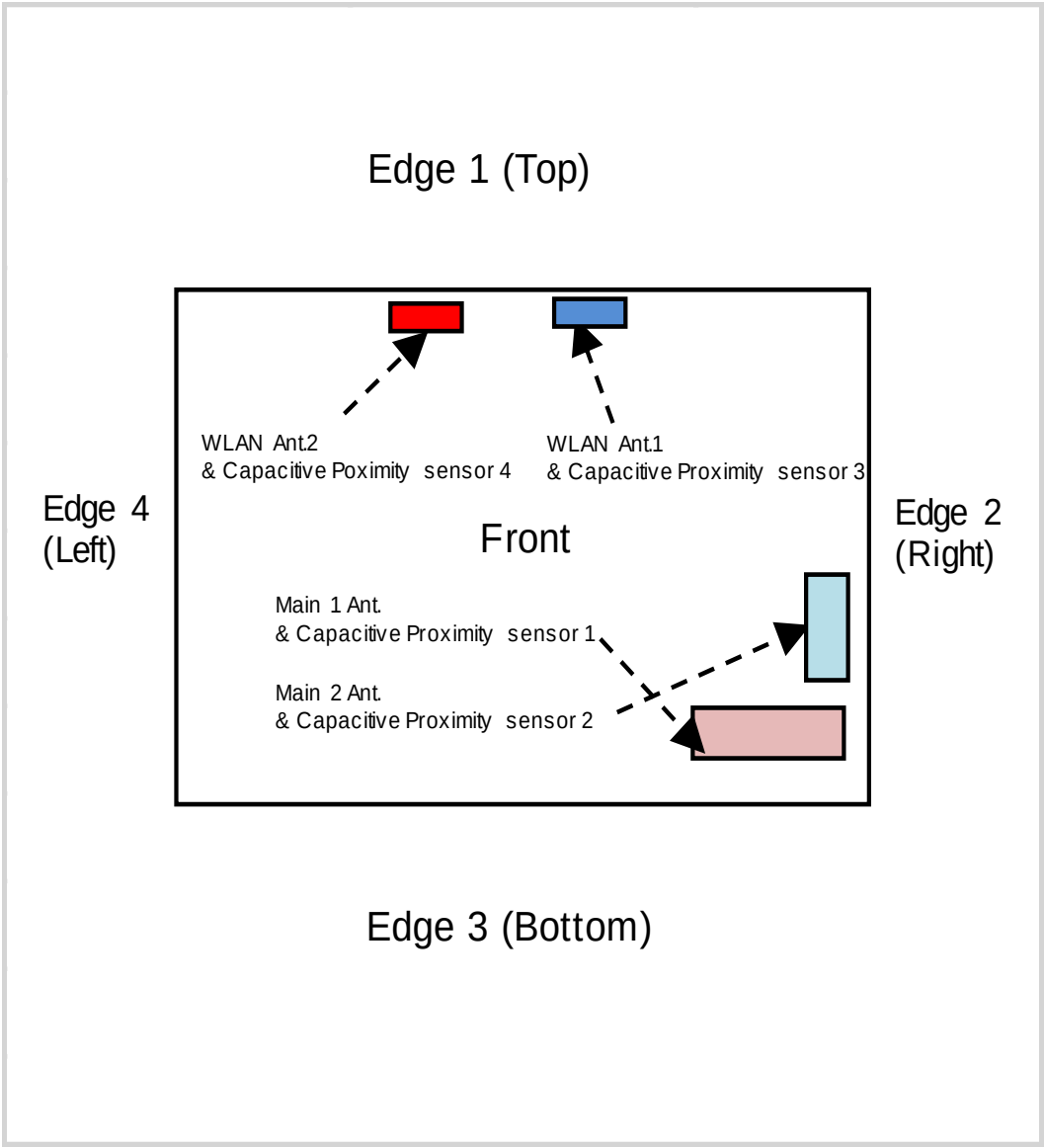
Appendix G. Proximity sensor feature

The DUT(only keyboard section) has proximity sensors to reduce the output power. The position of the sensors and antenna are as shown in the graphic.

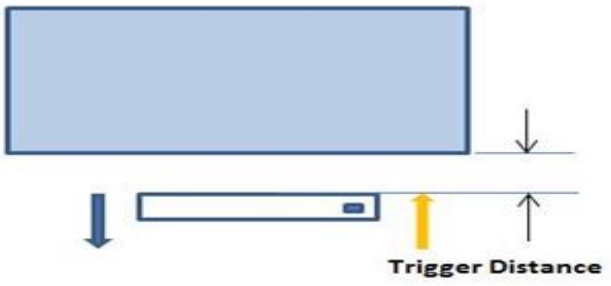


G.1 Proximity Sensor Triggering Distance (KDB 616217 §6.2)

Rear of the DUT was placed directly below the flat phantom. The DUT was moved toward the phantom in accordance with the steps outlined in KDB 616217 §6.2 to determine the trigger distance for enabling power reduction. The DUT was moved away from the phantom to determine the trigger distance for resuming full power.

The DUT featured a visual indicator on its display that showed the status of the proximity sensor (Triggered or not triggered). This was used to determine the status of the sensor during the proximity sensor assessment as monitoring the output power directly was not practical without affecting the measurement.

It was confirmed separately that the output power was altered according to the proximity sensor status indication. This was achieved by observing the proximity sensor status at the same time as monitoring the conducted power. Section 9 contains both the full and reduced conducted power measurements.



Proximity Sensor Trigger Distance Assessment
KDB 616217 §6.2, Rear

LEGEND

Direction of DUT travel for determination of power reduction triggering point

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

Summary of Trigger Distances

Antenna	Trigger distance - Rear	
	Moving toward phantom	Moving from phantom
Main 1 Ant.	15 mm	15 mm
Main 2 Ant.	12 mm	12 mm
WLAN Ant.1	4 mm	4 mm
WLAN Ant.2	4 mm	4 mm

Proximity Sensor Triggering Distance Measurement Results

Main 1 Ant.

Rear, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	11	12	13	14	15	16	17	18	19	20
WCDMA5	20.0	20.0	20.0	20.0	20.0	23.6	23.5	23.5	23.4	23.4
LTE B5	20.4	20.4	20.4	20.4	20.5	23.5	23.5	23.5	23.5	23.5
LTE B12	20.0	20.1	20.1	20.0	20.0	23.5	23.5	23.6	23.5	23.6
LTE B13	20.0	19.9	20.1	20.0	19.9	23.5	23.6	23.4	23.4	23.6
LTE B14	20.0	20.0	20.0	20.0	20.0	23.4	23.4	23.5	23.6	23.4
5G n5	20.5	20.4	20.4	20.5	20.5	23.5	23.5	23.6	23.6	23.5
5G n77	14.0	14.0	13.9	14.0	14.0	24.1	24.1	23.9	24.1	23.9
5G n78	13.9	13.9	13.9	14.0	14.1	23.9	24.0	24.0	24.0	24.0

Main 2 Ant.

Rear, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	8	9	10	11	12	13	14	17	20	23
WCDMA2	16.6	16.6	16.6	16.4	16.4	22.6	22.5	22.5	22.4	22.6
WCDMA4	16.1	15.9	15.9	16.0	16.1	22.4	22.6	22.5	22.6	22.6
LTE B2	16.4	16.5	16.5	16.6	16.4	23.5	23.5	23.5	23.4	23.5
LTE B4	16.6	16.5	16.5	16.6	16.5	23.4	23.5	23.4	23.6	23.6
LTE B7	16.6	16.6	16.5	16.4	16.5	22.9	23.1	22.9	23.0	23.1
LTE B66	16.4	16.6	16.6	16.5	16.6	23.6	23.6	23.4	23.5	23.5
5G n2	15.5	15.5	15.5	15.6	15.6	23.5	23.4	23.4	23.4	23.4
5G n66	16.4	16.6	16.4	16.5	16.5	23.4	23.5	23.4	23.5	23.5

WLAN Ant.1

Rear, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm											
Antenna	Distance	1	2	3	4	5	6	7	8	9	10
Ant 1	2.4G Wi-Fi 11b Tx	12.0	12.0	12.0	12.1	16.0	16.1	16.0	15.9	16.0	15.9
	2.4G Wi-Fi 11g Tx	12.0	11.9	12.0	12.1	15.0	15.0	15.0	15.0	15.0	15.0
	2.4G Wi-Fi 11n Tx	12.1	12.0	12.0	12.0	15.0	15.0	15.0	15.1	14.9	15.0
	5GHz Wi-Fi(20MHz BW) 11a	10.0	10.1	10.0	10.0	13.9	14.0	13.9	13.9	14.0	14.0
	5GHz Wi-Fi(20MHz BW) 11n	9.9	10.0	10.1	10.0	14.1	14.0	14.1	14.1	14.0	13.9
	5GHz Wi-Fi(40MHz BW) 11n	10.0	10.1	10.0	10.0	13.1	13.0	13.0	12.9	13.1	13.0
	5GHz Wi-Fi(20MHz BW) 11ac	10.1	10.1	10.0	9.9	13.0	12.9	12.9	13.0	13.1	12.9
	5GHz Wi-Fi(40MHz BW) 11ac	10.0	10.1	9.9	9.9	13.0	13.0	12.9	13.1	13.0	13.1
	5GHz Wi-Fi(80MHz BW) 11ac	10.0	9.9	9.9	9.9	13.0	13.0	13.1	12.9	13.0	13.0

WLAN Ant.2

Rear, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm											
Antenna	Distance (mm)	1	2	3	4	5	6	7	8	9	10
Ant 2	2.4G Wi-Fi 11b Tx	12.1	12.0	12.0	12.0	15.9	16.0	15.9	16.0	16.0	16.0
	2.4G Wi-Fi 11g Tx	12.0	12.0	12.1	12.1	14.9	15.1	15.0	15.0	15.0	15.0
	2.4G Wi-Fi 11n Tx	12.0	12.1	11.9	12.0	14.9	15.0	14.9	15.1	15.1	15.1
	5GHz Wi-Fi(20MHz BW) 11a	10.0	10.1	9.9	9.9	13.9	14.0	14.0	14.1	14.0	14.0
	5GHz Wi-Fi(20MHz BW) 11n	9.9	10.1	10.0	10.0	14.0	14.1	14.0	14.0	14.0	14.1
	5GHz Wi-Fi(40MHz BW) 11n	10.0	9.9	9.9	10.0	13.1	13.0	13.1	12.9	13.0	13.0
	5GHz Wi-Fi(20MHz BW) 11ac	10.0	10.1	10.0	10.1	12.9	13.0	13.0	13.0	13.1	13.1
	5GHz Wi-Fi(40MHz BW) 11ac	10.0	10.1	10.1	10.0	13.0	13.0	13.0	13.0	12.9	13.0
	5GHz Wi-Fi(80MHz BW) 11ac	10.0	10.0	9.9	10.0	13.1	13.0	13.0	13.1	13.1	13.1

G.2 Proximity Sensor Coverage (KDB 616217 §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.

G.3 Proximity Sensor Tilt Angle Assessment (KDB 616217 §6.4)

Proximity Sensor Tilt Angle Assessment is not required because laptop's edge is not implement proximity sensor back-off.

G.4 Resulting test positions for SAR measurements

Wireless technologies	Position	§6.2 Triggering Distance	§6.3 Coverage	§6.4 Tilt Angle	Worst case distance for SAR
Main 1 Ant.	Rear	15 mm	N/A	N/A	14 mm
Main 2 Ant.	Rear	12 mm	N/A	N/A	11 mm
WLAN Ant.1	Rear	4 mm	N/A	N/A	3 mm
WLAN Ant.2	Rear	4 mm	N/A	N/A	3 mm

-End-