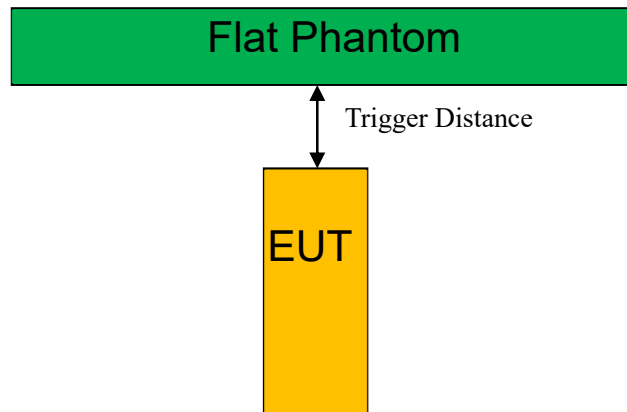


1 Proximity Sensor Triggering Test

1.1 Proximity Sensor Triggering Distance (KDB 616217 D04 section 6.2)

Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed. The details are illustrated in the exhibit “P-Sensor operational description”, and the shortest triggering distances were reported and used for SAR assessment.

In the preliminary triggering distance testing, the tissue-equivalent medium for different frequency bands were used for verification; the 750MHz tissue-equivalent medium for LTE band 17/13, the 900MHz tissue-equivalent medium for GSM850, WCDMA V, CDMA BC0, LTE band 5, the 1750MHz tissue-equivalent medium for WCDMA IV, LTE band 4, the 1900MHz tissue-equivalent medium for GSM1900, WCDMA II, CDMA BC1, LTE band 2/25, was used for formal proximity sensor triggering testing.



Proximity Sensor Trigger Distance (mm)			
Position	Bottom Face	Edge 3	Edge 4
Minimum	17	13	8

Bottom Face	Measured Power(dBm)							
Distance(mm)	25	22	20	19	18	17	16	15
GSM850(GPRS 2 TX slots)	33.03	33.08	33.05	33.10	33.13	30.07	30.05	30.03
GSM1900(GPRS 2 TX slots)	29.56	29.53	29.54	29.55	29.58	26.45	26.46	26.4
WCDMA V(RMC 12.2K)	23.50	23.52	23.49	23.50	23.46	20.51	20.46	20.49
WCDMA IV(RMC 12.2K)	22.54	22.54	22.59	22.58	22.53	19.48	19.54	19.53
WCDMA II(RMC 12.2K)	22.63	22.62	22.60	22.59	22.63	19.66	19.59	19.61
CDMA BC0(RTAP 153.6Kbps)	24.18	24.17	24.19	24.14	24.18	22.17	22.16	22.18
CDMA BC1(RTAP 153.6Kbps)	24.24	24.26	24.25	24.25	24.22	22.29	22.25	22.25
LTE Band17(10M QPSK 1Rb0 offset)	22.87	22.84	22.86	22.93	22.86	20.82	20.87	20.84
LTE Band13(10M QPSK 1Rb49 offset)	22.70	22.70	22.69	22.75	22.74	20.75	20.72	20.73
LTE Band5(10M QPSK 1Rb49 offset)	22.87	22.89	22.94	22.94	22.88	20.87	20.89	20.86
LTE Band4(20M QPSK 1Rb99 offset)	23.28	23.27	23.29	23.21	23.28	21.34	21.34	21.39
LTE Band2(20M QPSK 1Rb99 offset)	23.71	23.68	23.68	23.69	23.72	21.68	21.67	21.65
LTE Band25(20M QPSK 1Rb0 offset)	23.35	23.38	23.40	23.38	23.35	21.33	21.32	21.34

Bottom Face	Measured Power(dBm)							
Distance(mm)	14	13	12	9	6	3	1	0
GSM850(GPRS 2 TX slots)	30.05	30.12	30.03	30.08	30	30.05	30.04	30.06
GSM1900(GPRS 2 TX slots)	26.45	26.54	26.46	26.48	26.42	26.46	26.48	26.45
WCDMA V(RMC 12.2K)	20.47	20.48	20.41	20.42	20.46	20.44	20.47	20.47
WCDMA IV(RMC 12.2K)	19.55	19.5	19.56	19.55	19.56	19.55	19.52	19.54
WCDMA II(RMC 12.2K)	19.56	19.59	19.62	19.6	19.64	19.65	19.61	19.6
CDMA BC0(RTAP 153.6Kbps)	22.21	22.17	22.16	22.12	22.1	22.16	22.18	22.15
CDMA BC1(RTAP 153.6Kbps)	22.27	22.24	22.21	22.26	22.23	22.25	22.23	22.26

LTE Band17(10M QPSK 1Rb0 offset)	20.89	20.92	20.88	20.95	20.84	20.93	20.89	20.87
LTE Band13(10M QPSK 1Rb49 offset)	20.74	20.77	20.73	20.75	20.73	20.78	20.73	20.69
LTE Band5(10M QPSK 1Rb49 offset)	20.87	20.83	20.93	20.83	20.82	20.89	20.84	20.89
LTE Band4(20M QPSK 1Rb99 offset)	21.38	21.33	21.34	21.34	21.4	21.34	21.35	21.42
LTE Band2(20M QPSK 1Rb99 offset)	21.64	21.68	21.63	21.73	21.72	21.62	21.68	21.75
LTE Band25(20M QPSK 1Rb0 offset)	21.29	21.33	21.27	21.27	21.37	21.35	21.36	21.35

Edge 3	Measured Power(dBm)							
Distance(mm)	25	22	19	16	15	14	13	12
GSM850(GPRS 2 TX slots)	33.09	33.16	33.05	33.14	33.10	33.09	30.05	30.05
GSM1900(GPRS 2 TX slots)	29.54	29.56	29.54	29.59	29.54	29.54	26.47	26.54
WCDMA V(RMC 12.2K)	23.56	23.46	23.45	23.52	23.47	23.56	20.46	20.52
WCDMA IV(RMC 12.2K)	22.54	22.54	22.60	22.54	22.55	22.54	19.59	19.59
WCDMA II(RMC 12.2K)	22.58	22.68	22.67	22.57	22.61	22.58	19.62	19.54
CDMA BC0(RTAP 153.6Kbps)	24.12	24.12	24.22	24.20	24.19	24.12	22.15	22.16
CDMA BC1(RTAP 153.6Kbps)	24.26	24.22	24.27	24.24	24.25	24.26	22.28	22.26
LTE Band17(10M QPSK 1Rb0 offset)	22.87	22.86	22.93	22.82	22.82	22.87	20.85	20.84
LTE Band13(10M QPSK 1Rb49 offset)	22.69	22.70	22.71	22.74	22.71	22.69	20.75	20.78
LTE Band5(10M QPSK 1Rb49 offset)	22.88	22.87	22.88	22.84	22.92	22.88	20.88	20.91
LTE Band4(20M QPSK 1Rb99 offset)	23.35	23.32	23.31	23.26	23.27	23.35	21.34	21.3
LTE Band2(20M QPSK 1Rb99 offset)	23.71	23.77	23.66	23.69	23.70	23.71	21.71	21.66
LTE Band25(20M QPSK 1Rb0 offset)	23.32	23.32	23.41	23.35	23.39	23.32	21.3	21.34

Edge 3	Measured Power(dBm)							
Distance(mm)	11	10	9	6	3	2	1	0
GSM850(GPRS 2 TX slots)	30.02	30.06	30.02	30.07	30.04	30.05	30.1	30.05
GSM1900(GPRS 2 TX slots)	26.47	26.48	26.47	26.54	26.43	26.41	26.48	26.43
WCDMA V(RMC 12.2K)	20.51	20.46	20.47	20.48	20.51	20.53	20.47	20.48
WCDMA IV(RMC 12.2K)	19.53	19.53	19.52	19.53	19.49	19.58	19.48	19.54
WCDMA II(RMC 12.2K)	19.61	19.68	19.65	19.64	19.59	19.64	19.62	19.63
CDMA BC0(RTAP 153.6Kbps)	22.19	22.18	22.24	22.13	22.16	22.13	22.16	22.16
CDMA BC1(RTAP 153.6Kbps)	22.23	22.2	22.2	22.29	22.23	22.26	22.23	22.25
LTE Band17(10M QPSK 1Rb0 offset)	20.95	20.84	20.81	20.82	20.92	20.92	20.88	20.87
LTE Band13(10M QPSK 1Rb49 offset)	20.74	20.81	20.7	20.75	20.7	20.73	20.75	20.72
LTE Band5(10M QPSK 1Rb49 offset)	20.87	20.89	20.87	20.86	20.88	20.88	20.86	20.89
LTE Band4(20M QPSK 1Rb99 offset)	21.4	21.3	21.29	21.31	21.4	21.33	21.36	21.34
LTE Band2(20M QPSK 1Rb99 offset)	21.67	21.67	21.73	21.67	21.72	21.68	21.67	21.63
LTE Band25(20M QPSK 1Rb0 offset)	21.29	21.39	21.38	21.34	21.34	21.33	21.3	21.35

Edge 4	Measured Power(dBm)							
Distance(mm)	22	20	17	14	11	10	9	8
GSM850(GPRS 2 TX slots)	33.08	33.06	33.05	33.16	33.05	33.02	33.08	30.01
GSM1900(GPRS 2 TX slots)	29.50	29.56	29.53	29.55	29.58	29.55	29.53	26.48
WCDMA V(RMC 12.2K)	23.52	23.49	23.47	23.58	23.50	23.48	23.51	20.55
WCDMA IV(RMC 12.2K)	22.62	22.55	22.55	22.50	22.51	22.56	22.53	19.61
WCDMA II(RMC 12.2K)	22.62	22.62	22.68	22.62	22.61	22.58	22.62	19.62
CDMA BC0(RTAP 153.6Kbps)	24.14	24.24	24.23	24.13	24.26	24.15	24.19	22.15
CDMA BC1(RTAP 153.6Kbps)	24.19	24.19	24.29	24.27	24.26	24.29	24.25	22.3
LTE Band17(10M QPSK 1Rb0 offset)	22.86	22.82	22.87	22.84	22.83	22.88	22.84	20.89
LTE Band13(10M QPSK 1Rb49 offset)	22.72	22.71	22.78	22.67	22.70	22.72	22.72	20.72
LTE Band5(10M QPSK 1Rb49 offset)	22.87	22.88	22.89	22.92	22.82	22.83	22.88	20.91
LTE Band4(20M QPSK 1Rb99 offset)	23.27	23.26	23.27	23.23	23.30	23.29	23.27	21.39
LTE Band2(20M QPSK 1Rb99 offset)	23.77	23.74	23.73	23.68	23.71	23.69	23.68	21.64
LTE Band25(20M QPSK 1Rb0 offset)	23.38	23.44	23.33	23.36	23.36	23.32	23.37	21.37

Edge 4	Measured Power(dBm)							
Distance(mm)	7	6	5	4	3	2	1	0
GSM850(GPRS 2 TX slots)	30.06	30.13	30.06	30.04	30.05	30.08	30.05	30.07
GSM1900(GPRS 2 TX slots)	26.45	26.51	26.5	26.5	26.48	26.45	26.43	26.46
WCDMA V(RMC 12.2K)	20.53	20.53	20.47	20.45	20.44	20.55	20.49	20.46
WCDMA IV(RMC 12.2K)	19.54	19.57	19.59	19.55	19.58	19.54	19.58	19.54
WCDMA II(RMC 12.2K)	19.6	19.56	19.65	19.61	19.64	19.6	19.6	19.62
CDMA BC0(RTAP 153.6Kbps)	22.2	22.15	22.2	22.19	22.18	22.15	22.17	22.15
CDMA BC1(RTAP 153.6Kbps)	22.3	22.29	22.26	22.28	22.29	22.25	22.3	22.26
LTE Band17(10M QPSK 1Rb0 offset)	20.81	20.84	20.87	20.81	20.87	20.89	20.86	20.89
LTE Band13(10M QPSK 1Rb49 offset)	20.73	20.74	20.7	20.72	20.74	20.72	20.75	20.72
LTE Band5(10M QPSK 1Rb49 offset)	20.89	20.91	20.92	20.84	20.93	20.89	20.87	20.91
LTE Band4(20M QPSK 1Rb99 offset)	21.35	21.28	21.34	21.34	21.39	21.34	21.3	21.36
LTE Band2(20M QPSK 1Rb99 offset)	21.63	21.66	21.68	21.62	21.69	21.64	21.69	21.67
LTE Band25(20M QPSK 1Rb0 offset)	21.32	21.3	21.39	21.39	21.33	21.34	21.41	21.34

1.2 Proximity Sensor Triggering Coverage (KDB 616217 D04 section 6.3)

If a sensor is spatially offset from the antenna(s), it is necessary to verify sensor triggering for conditions where the antenna is next to the user but the sensor is laterally further away to ensure sensor coverage is sufficient for reducing the power to maintain compliance. For p-sensor coverage testing, the device is moved and “along the direction of maximum antenna and sensor offset”.

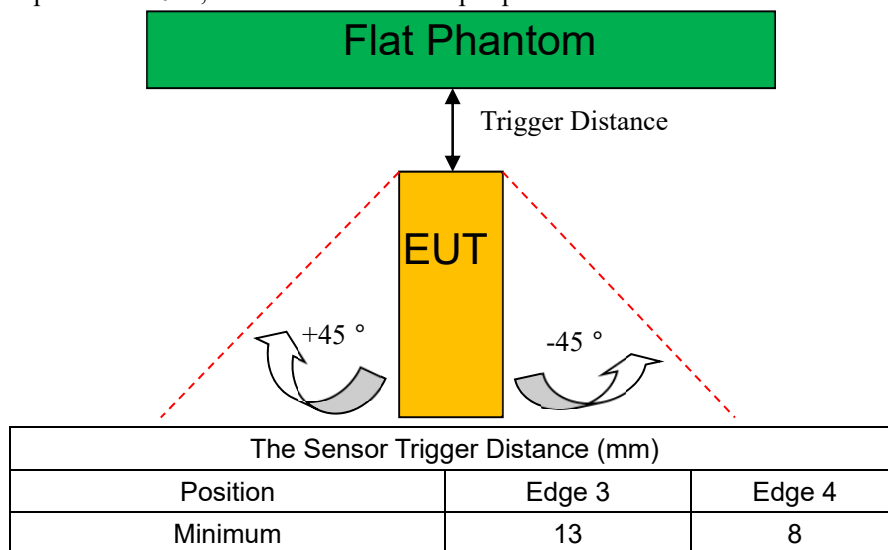
Illustrated in the internal photo exhibit, although the sensor is spatially offset, there is no trigger condition where the antenna is next to the user but the sensor is laterally further away, therefore proximity sensor coverage testing is not required.

This procedure is not required because antenna and sensor are collocated and the peak SAR location is overlapping with the sensor.

1.3 Tablet Tilt angle influences to proximity sensor triggering (KDB 616217 D04 section 6.4)

The influence of table tilt angles to proximity sensor triggering was determined by positioning each tablet edge that contains a transmitting antenna, perpendicular to the flat phantom, at 4 mm separation.

Rotating the tablet around the edge next to the phantom in $\leq 10^\circ$ increments until the tablet is $\pm 45^\circ$ from the vertical position at 0° , and the maximum output power remains in the reduced mode.



1.4 Proximity sensor power reduction

Exposure Position / wireless mode	Bottom Face	Edge 1	Edge 2	Edge 3	Edge 4
GSM850(GPRS 2 TX slots)	3dBm	0dBm	0dBm	3dBm	3dBm
GSM1900(GPRS 2 TX slots)	3dBm	0dBm	0dBm	3dBm	3dBm
WCDMA V(RMC 12.2K)	3dBm	0dBm	0dBm	3dBm	3dBm
WCDMA IV(RMC 12.2K)	3dBm	0dBm	0dBm	3dBm	3dBm
WCDMA II(RMC 12.2K)	3dBm	0dBm	0dBm	3dBm	3dBm
CDMA BC0(RTAP 153.6Kbps)	2dBm	0dBm	0dBm	2dBm	2dBm
CDMA BC1(RTAP 153.6Kbps)	2dBm	0dBm	0dBm	2dBm	2dBm
LTE Band17(10M QPSK 1Rb0 offset)	2dBm	0dBm	0dBm	2dBm	2dBm
LTE Band13(10M QPSK 1Rb49 offset)	2dBm	0dBm	0dBm	2dBm	2dBm
LTE Band5(10M QPSK 1Rb49 offset)	2dBm	0dBm	0dBm	2dBm	2dBm
LTE Band4(20M QPSK 1Rb99 offset)	2dBm	0dBm	0dBm	2dBm	2dBm
LTE Band2(20M QPSK 1Rb99 offset)	2dBm	0dBm	0dBm	2dBm	2dBm
LTE Band25(20M QPSK 1Rb0 offset)	2dBm	0dBm	0dBm	2dBm	2dBm

Remark:

1. Reduced maximum limit applied by activation of proximity sensor.
2. Power reduction is not applicable for WLAN and Bluetooth.
3. Tests were performed in accordance with KDB 616217 D04 section 6.1, 6.2, 6.3, 6.4 and 6.5 and compliant results are shown and described in exhibit "P-Sensor operational description".
4. For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance was performed:
Bottom Face: 16 mm
Edge3: 12 mm
Edge4: 7 mm