

Appendix E: Simultaneous Transmission Analysis

E.1. Introduction

According to FCC KDB Publication 447498 D04v01, transmitters are considered to be operating simultaneously when there is overlapping transmission, with the exception of transmissions during network hand-offs with maximum hand-off duration less than 30 seconds.

Table E-1 - Supported Simultaneous Transmission Scenarios

#	Scenario	Head	Body-worn	Hotspot	Phablet
1	WWAN + 2.4 GHz WIFI_SISO	Yes	Yes	Yes	Yes
2	WWAN + 2.4 GHz WIFI_MIMO	Yes	Yes	Yes	Yes
3	WWAN + 5 GHz WIFI_SISO	Yes	Yes	Yes	Yes
4	WWAN + 5 GHz WIFI_MIMO	Yes	Yes	Yes	Yes
5	WWAN + 6 GHz WIFI_SISO	Yes	Yes	Yes	Yes
6	WWAN + 6 GHz WIFI_MIMO	Yes	Yes	Yes	Yes
7	WWAN + 2.4 GHz Bluetooth_SISO	Yes	Yes	Yes	Yes
8	WWAN + 2.4 GHz Bluetooth_MIMO	Yes	Yes	N/A	Yes
9	WWAN + 2.4 GHz WIFI_SISO + 5 GHz WIFI_SISO	Yes	Yes	Yes	Yes
10	WWAN + 2.4 GHz WIFI_SISO + 6 GHz WIFI_SISO	Yes	Yes	Yes	Yes
11	WWAN + 2.4 GHz WIFI_SISO + 5 GHz WIFI_MIMO	Yes	Yes	Yes	Yes
12	WWAN + 2.4 GHz WIFI_SISO + 6 GHz WIFI_MIMO	Yes	Yes	Yes	Yes
13	WWAN + 2.4 GHz WIFI_MIMO + 5 GHz WIFI_SISO	Yes	Yes	Yes	Yes
14	WWAN + 2.4 GHz WIFI_MIMO + 6 GHz WIFI_SISO	Yes	Yes	Yes	Yes
15	WWAN + 5 GHz WIFI_SISO + 2.4 GHz Bluetooth_SISO	Yes	Yes	Yes	Yes
16	WWAN + 6 GHz WIFI_SISO + 2.4 GHz Bluetooth_SISO	Yes	Yes	Yes	Yes
17	WWAN + 5 GHz WIFI_SISO + 2.4 GHz Bluetooth_MIMO	Yes	Yes	N/A	Yes
18	WWAN + 6 GHz WIFI_SISO + 2.4 GHz Bluetooth_MIMO	Yes	Yes	N/A	Yes
19	WWAN + 2.4 GHz WIFI_H + 2.4 GHz Bluetooth_F	Yes	Yes	Yes	Yes
20	WWAN + 2.4 GHz WIFI_F + 2.4 GHz Bluetooth_H	Yes	Yes	Yes	Yes
21	WWAN + 5 GHz WIFI_MIMO + 2.4 GHz Bluetooth_SISO	Yes	Yes	Yes	Yes
22	WWAN + 6 GHz WIFI_MIMO + 2.4 GHz Bluetooth_SISO	Yes	Yes	Yes	Yes
23	WWAN + 5 GHz WIFI_MIMO + 2.4 GHz Bluetooth_MIMO	Yes	Yes	N/A	Yes
24	WWAN + 6 GHz WIFI_MIMO + 2.4 GHz Bluetooth_MIMO	Yes	Yes	N/A	Yes
25	WWAN + 5 GHz WIFI_SISO + 2.4 GHz WIFI_H + 2.4 GHz Bluetooth_F	Yes	Yes	Yes	Yes
26	WWAN + 5 GHz WIFI_SISO + 2.4 GHz WIFI_F + 2.4 GHz Bluetooth_H	Yes	Yes	Yes	Yes
27	WWAN + 6 GHz WIFI_SISO + 2.4 GHz WIFI_H + 2.4 GHz Bluetooth_F	Yes	Yes	Yes	Yes
28	WWAN + 6 GHz WIFI_SISO + 2.4 GHz WIFI_F + 2.4 GHz Bluetooth_H	Yes	Yes	Yes	Yes
29	WWAN + 2.4 GHz WIFI_MIMO + 5 GHz WIFI_MIMO	Yes	Yes	Yes	Yes
30	WWAN + 2.4 GHz WIFI_MIMO + 6 GHz WIFI_MIMO	Yes	Yes	Yes	Yes
31	WWAN + 5 GHz WIFI_MIMO + 2.4 GHz WIFI_H + 2.4 GHz Bluetooth_F	Yes	Yes	Yes	Yes
32	WWAN + 5 GHz WIFI_MIMO + 2.4 GHz WIFI_F + 2.4 GHz Bluetooth_H	Yes	Yes	Yes	Yes
33	WWAN + 6 GHz WIFI_MIMO + 2.4 GHz WIFI_H + 2.4 GHz Bluetooth_F	Yes	Yes	Yes	Yes
34	WWAN + 6 GHz WIFI_MIMO + 2.4 GHz WIFI_F + 2.4 GHz Bluetooth_H	Yes	Yes	Yes	Yes

Note:

- Bluetooth tethering is supported on either Ant H or Ant F
- NFC/UWB can simultaneously transmit with all the above combinations and was evaluated for phablet based on usage conditions
- NB NTN only transmits when the device is set to satellite mode and does not transmit with any other radios simultaneously.

E.2. Procedures

This device contains transmitters that may operate simultaneously. Therefore, simultaneous transmission analysis is required. Per FCC KDB Publication 447498 D04v01 and IEEE 1528-2013 Section 6.3.4.1.2, simultaneous transmission SAR test exclusion may be applied when the sum of SAR for all the simultaneous transmitting antennas in a specific physical test configuration is ≤ 1.6 W/kg for 1g and 4 W/kg for 10g. The different test positions in an exposure condition may be considered collectively to determine SAR test exclusion according to the sum of 1g or 10g SAR.

Per FCC KDB Publication 941225 D06v02r01, the devices edges with antennas more than 2.5 cm from edge are not required to be evaluated for SAR ("–").

This device is enabled with Qualcomm® Smart Transmit Gen2 with pre-defined sub6 antenna groups (AG0 and AG1) and 1 mmWave module group (MG). This device operates using GEN2_SUB6 (Sub6-favor mode) which assumes mmWave module (MG) is collocated with each sub6 AG0 and AG1 in this device.

Simultaneous transmission analysis is performed per antenna group. Below analysis demonstrates the mutually exclusive operation of AG0 and AG1 and the compliance between each antenna group with non-Smart Transmit Radios. For this model, WWAN/WLAN/BT/mmWave Radios are managed under Smart Transmit. Non-Smart Transmit Radios include NFC/UWB.

When operating in the same antenna group, simultaneous transmission compliance between radio operations within an antenna group is demonstrated in the Part 2 Report during algorithm validation. Therefore, no further simultaneous analysis is needed within an antenna group.

Since NTN is only available and the only radio in satellite mode hence no further simultaneous analysis is needed for this mode.

E.3. Smart Transmit Antenna Grouping

The 2nd generation of Smart Transmit (GEN2) operates based on pre-defined sub6 antenna groups (AG) and module group (MG). Sub6/ WLAN/BT/NTN Tx antennas and MG in the device are grouped based on spatial variation of RF exposure distributions, where the RF exposure of one AG is mutually exclusive from other AG. This is accomplished by demonstrating either of the conditions below for all exposure scenarios:

- a) Sum of SAR of each antenna from each of the sub6 AGs and the RF exposure from radios outside Smart Transmit is less than regulatory limits. This condition must be demonstrated for all antenna combinations of sub6 AGs. (Or)
- b) Every antenna from each sub6 AG meets SPLSR criteria (Section 4.3.2(c) in FCC KDB 447498 D04) with every antenna from another sub6 AG. This criterion must be demonstrated for all antenna combinations for each pair of AGs.

This device supports two AGs: AG0 and AG1, with AG0 having 4 antennas (A,B,D,C) and AG1 having 4 antennas (E,F,G,H), and mmWave module shared between AGs. The conditions are verified through the following criteria for a given exposure position:

- i) Summation criteria:

1. Obtain *adjusted SAR* at *reported P_{limit}* for all supported Sub6/WLAN/BT frequency bands from all antennas supported in each antenna group. Since $\text{multi_Tx_factor} = 1.27 > 1$ for this model, *reported P_{limit}* is $\min\{P_{\text{limit}} + \text{unc} + 10 \cdot \log(\text{multi_Tx_factor}), P_{\text{max}} + \text{unc}\}$. Hence:
 - If $\text{EFS } P_{\text{limit}} \leq P_{\text{max}}$, $\text{reported } P_{\text{limit}} = \text{EFS } P_{\text{limit}} + \text{unc} + 10 \cdot \log(\text{multi_Tx_factor})$;
 - Otherwise $\text{reported } P_{\text{limit}} = \max\{\text{EFS } P_{\text{limit}}, P_{\text{max}} + \text{unc}\}$.
2. Determine the overall maximum adjusted SAR from all Sub6/WLAN/BT radios for each antenna on each antenna group, denoted as *max.exp.ant_{AG0}(i)* and *max.exp.ant_{AG1}(j)*
3. Obtain reported SAR for each external radio, denoted as *reported.exp.NFC* and *reported.exp.UWB*
4. Demonstrate that the sum of these exposures meets: $\text{max.exp.ant}_{\text{AG0}}(i) + \text{max.exp.ant}_{\text{AG1}}(j) + \text{reported.exp.NFC} + \text{reported.exp.UWB} \leq 1.6 \text{ W/kg}$ for 1g and 4 W/kg for 10g
5. For shared antennas/module between the 2 antenna groups, demonstrate the following:
 - $\text{max.exp.ant}_{\text{AG0}}(i) + \text{max.exp.ant}_{\text{AG1}}(j) + \text{reported.exp.NFC} + \text{reported.exp.UWB} \leq 1.6 \text{ W/kg}$ for 1g and 4 W/kg for 10g where *ant_{AG0}(i)* and *ant_{AG1}(j)* are not shared antennas/module
 - $\text{max.exp.ant}_{\text{shared}}(k) + \text{reported.exp.NFC} + \text{reported.exp.UWB} \leq 1.6 \text{ W/kg}$ for 1g and 4 W/kg for 10g where *ant_{shared}(k)* is the shared antennas/module between the 2 antenna groups
 - Since *mmWave* MG is controlled by Smart Transmit, maximum mmWave exposure is given by maximum out of all mmWave modules.

ii) SPLSR or composite exposure distribution criteria: When TER of an antenna pair is over the limit for an exposure position, SPLSR or composite exposure distribution can be done to demonstrate simultaneous transmission compliance:

1. SPLSR analysis for Sub6/WLAN/BT Antenna pairs:

- On an exposure position for each antenna group, obtain the highest adjusted SAR from all supported frequency bands on all antennas irrespective of supported simultaneous transmission scenarios for each DSI, along with the peak SAR locations.
- Per Qualcomm guidance, only Y-axis coordinates are used in the analysis for calculation simplicity.
- For Antj in bottom Antenna group (AG0), Y_Antj_AG0 coordinate represents the worst-case hotspot location that is closest to the top antenna group. Similarly, for Antk in top antenna group (AG1), Y_Antk_AG1 coordinate represents the worst-case hotspot location that is closest to the bottom antenna group.
- Using the above values, demonstrate for a given DSI that every antenna from one AG meets SPLSR criteria with every antenna in another AG for all frequency bands. The following formula is used to calculate the SPLSR between Antj_AG0 and Antk_AG1 for each exposure configuration:

$$SPLSR = \frac{(\max \text{Antj_AG0} + \max \text{Antk_AG1})^{1.5}}{|Y_{\text{Antj_AG0}} - Y_{\text{Antk_AG1}}|}$$

- When $SPLSR \leq 0.04$ (rounded to 2 decimal places) for 1g SAR, or 0.1 for 10g SAR, the antenna pair qualifies for test exemption.

E.4. Simultaneous Transmission Analysis

Table E-2 –AGO Maximum Reported SAR Values

DUT Configuration	Exposure Condition	Position	AGO SAR (W/kg)							
			A+C	B	A	C	D	B in MIMO	C in MIMO	Maximum
Folder Closed	Head	Right Cheek	0.200	0.200	0.200	0.100	0.000	0.149	0.039	0.200
Folder Closed	Head	Right Tilt	0.140	0.200	0.076	0.200	0.000	0.127	0.169	0.200
Folder Closed	Head	Left Cheek	0.184	0.200	0.133	0.030	0.000	0.152	0.136	0.200
Folder Closed	Head	Left Tilt	0.131	0.200	0.056	0.200	0.000	0.187	0.189	0.200
Folder Closed	Body-worn	Back	1.281	1.039	0.585	0.998	0.075	0.956	0.481	1.281
Folder Closed	Body-worn	Front	0.330	0.589	0.103	0.113	0.000	0.194	0.107	0.589
Folder Closed	Hotspot	Back	1.281	1.039	0.585	0.998	0.075	0.956	0.481	1.281
Folder Closed	Hotspot	Front	0.330	0.572	0.103	0.113	0.000	0.194	0.107	0.572
Folder Closed	Hotspot	Top	-	-	-	-	-	-	-	-
Folder Closed	Hotspot	Bottom	0.267	0.577	0.113	0.263	-	0.306	0.179	0.577
Folder Closed	Hotspot	Right	0.521	-	0.262	0.070	0.017	-	0.046	0.521
Folder Closed	Hotspot	Left	0.188	0.097	-	0.024	-	0.048	0.019	0.188
Folder Open	Head	Right Cheek	0.139	0.200	0.085	0.125	0.000	0.338	0.014	0.338
Folder Open	Head	Right Tilt	0.200	0.085	0.055	0.046	0.000	0.323	0.000	0.323
Folder Open	Head	Left Cheek	0.200	0.200	0.200	0.200	0.022	0.086	0.042	0.200
Folder Open	Head	Left Tilt	0.189	0.167	0.141	0.112	0.000	0.091	0.019	0.189
Folder Open	Body-worn	Back	1.354	1.267	0.683	0.664	0.097	0.819	0.537	1.354
Folder Open	Body-worn	Front	0.880	0.892	0.516	0.352	0.081	0.599	0.260	0.892
Folder Open	Hotspot	Back	1.354	1.267	0.683	0.664	0.097	0.819	0.537	1.354
Folder Open	Hotspot	Front	0.880	0.892	0.516	0.352	0.081	0.599	0.260	0.892
Folder Open	Hotspot	Top	-	-	-	-	-	-	-	-
Folder Open	Hotspot	Bottom	0.387	0.814	0.185	0.230	-	0.292	0.137	0.814
Folder Open	Hotspot	Right	0.425	-	0.263	0.086	0.027	-	0.048	0.425

Table E-3 –AG1 Maximum Reported SAR Values

DUT Configuration	Exposure Condition	Position	AG1 (W/kg)								Maximum
			E	G	F	H	G in MIMO	F in MIMO	MIMO (H&F)	MIMO (F&E)	
Folder Closed	Head	Right Cheek	0.852	1.031	0.919	0.525	0.149	0.480	0.787	0.842	1.031
Folder Closed	Head	Right Tilt	0.936	1.259	0.999	0.548	0.127	0.951	0.876	0.884	1.259
Folder Closed	Head	Left Cheek	0.999	1.116	0.975	0.998	0.152	0.286	0.962	0.872	1.116
Folder Closed	Head	Left Tilt	0.999	1.396	0.998	0.787	0.187	0.437	0.999	1.003	1.396
Folder Closed	Body-worn	Back	1.590	1.580	1.187	0.998	1.093	1.314	0.999	1.207	1.590
Folder Closed	Body-worn	Front	0.469	0.480	0.406	0.288	0.525	0.156	0.372	0.366	0.525
Folder Closed	Hotspot	Back	1.590	1.580	1.187	0.998	1.093	1.314	0.999	1.121	1.590
Folder Closed	Hotspot	Front	0.469	0.480	0.406	0.288	0.525	0.156	0.300	0.352	0.525
Folder Closed	Hotspot	Top	0.413	0.853	0.539	-	0.687	0.478	0.420	0.500	0.853
Folder Closed	Hotspot	Bottom	-	-	-	-	-	-	-	-	-
Folder Closed	Hotspot	Right	0.442	0.164	-	0.311	0.098	-	0.055	0.146	0.442
Folder Closed	Hotspot	Left	-	-	0.127	-	-	0.137	0.041	0.060	0.137
Folder Closed	Phablet	Back	1.114	-	2.058	1.541	-	-	2.344	1.213	2.344
Folder Closed	Phablet	Front	0.297	-	0.472	0.152	-	-	0.532	0.408	0.532
Folder Closed	Phablet	Top	1.175	-	2.495	-	-	-	2.475	1.379	2.495
Folder Closed	Phablet	Bottom	-	-	-	-	-	-	-	-	-
Folder Closed	Phablet	Right	0.251	-	-	1.389	-	-	0.215	0.344	1.389
Folder Closed	Phablet	Left	-	-	0.182	-	-	-	0.179	0.061	0.182
Folder Open	Head	Right Cheek	1.000	0.986	1.000	0.098	0.338	1.019	0.998	0.849	1.019
Folder Open	Head	Right Tilt	0.998	0.977	0.959	0.076	0.323	1.046	0.985	1.000	1.046
Folder Open	Head	Left Cheek	1.000	0.267	0.312	1.000	0.086	0.173	0.216	0.951	1.000
Folder Open	Head	Left Tilt	0.707	0.434	0.386	0.173	0.091	0.215	0.195	0.361	0.707
Folder Open	Body-worn	Back	1.557	1.360	0.999	0.998	1.162	1.309	0.999	1.267	1.557
Folder Open	Body-worn	Front	1.168	0.979	0.668	0.947	0.695	0.841	0.664	1.261	1.261
Folder Open	Hotspot	Back	1.557	1.360	0.999	0.998	1.162	1.309	0.999	1.251	1.557
Folder Open	Hotspot	Front	1.168	0.979	0.668	0.947	0.695	0.841	0.653	1.261	1.261
Folder Open	Hotspot	Top	0.398	0.622	0.439	-	0.523	0.569	0.404	0.451	0.622
Folder Open	Hotspot	Bottom	-	-	-	-	-	-	-	-	-
Folder Open	Hotspot	Right	0.387	0.151	-	0.273	0.104	-	0.133	0.089	0.387
Folder Open	Phablet	Back	1.043	-	1.921	1.520	-	-	1.822	1.737	1.921
Folder Open	Phablet	Front	1.435	-	0.857	0.880	-	-	0.853	2.228	2.228
Folder Open	Phablet	Top	0.980	-	2.343	-	-	-	2.312	1.529	2.343
Folder Open	Phablet	Bottom	-	-	-	-	-	-	-	-	-
Folder Open	Phablet	Right	0.133	-	-	0.786	-	-	0.217	0.259	0.786

Table E-4 –AG0+AG1 + NFC + UWB

DUT Configuration	Exposure Condition	Position	SAR (W/kg)				
			AG0	AG1	NFC	UWB	Sum
Folder Closed	Head	Right Cheek	0.200	1.031	-	-	1.231
Folder Closed	Head	Right Tilt	0.200	1.259	-	-	1.459
Folder Closed	Head	Left Cheek	0.200	1.116	-	-	1.316
Folder Closed	Head	Left Tilt	0.200	1.396	-	-	1.596
Folder Closed	Body-worn	Back	1.281	1.590	-	-	See Table E-5
Folder Closed	Body-worn	Front	0.589	0.525	-	-	1.114
Folder Closed	Hotspot	Back	1.281	1.590	-	-	See Table E-5
Folder Closed	Hotspot	Front	0.572	0.525	-	-	1.097
Folder Closed	Hotspot	Top	-	0.853	-	-	0.853
Folder Closed	Hotspot	Bottom	0.577	-	-	-	0.577
Folder Closed	Hotspot	Right	0.521	0.442	-	-	0.963
Folder Closed	Hotspot	Left	0.188	0.137	-	-	0.325
Folder Closed	Phablet	Back	-	2.344	0.006	0.007	2.357
Folder Closed	Phablet	Front	-	0.532	0.000	0.000	0.532
Folder Closed	Phablet	Top	-	2.495	0.000	0.006	2.501
Folder Closed	Phablet	Bottom	-	-	-	-	-
Folder Closed	Phablet	Right	-	1.389	-	-	1.389
Folder Closed	Phablet	Left	-	0.182	0.000	0.015	0.197
Folder Open	Head	Right Cheek	0.338	1.019	-	-	1.357
Folder Open	Head	Right Tilt	0.323	1.046	-	-	1.369
Folder Open	Head	Left Cheek	0.200	1.000	-	-	1.200
Folder Open	Head	Left Tilt	0.189	0.707	-	-	0.896
Folder Open	Body-worn	Back	1.354	1.557	-	-	See Table E-6
Folder Open	Body-worn	Front	0.892	1.261	-	-	See Table E-6
Folder Open	Hotspot	Back	1.354	1.557	-	-	See Table E-6
Folder Open	Hotspot	Front	0.892	1.261	-	-	See Table E-6
Folder Open	Hotspot	Top	-	0.622	-	-	0.622
Folder Open	Hotspot	Bottom	0.814	-	-	-	0.814
Folder Open	Hotspot	Right	0.425	0.387	-	-	0.812
Folder Open	Phablet	Back	-	1.921	0.005	0.047	1.973
Folder Open	Phablet	Front	-	2.228	0.000	0.002	2.230
Folder Open	Phablet	Top	-	2.343	0.000	0.000	2.343
Folder Open	Phablet	Bottom	-	-	-	-	-
Folder Open	Phablet	Right	-	0.786	-	-	0.786

Table E-5 Folder Closed SPLSR

DUT Configuration	Exposure Condition	Position	AG0			AG1			Sum SAR (W/kg)	SPLSR
			Antenna	SAR (W/kg)	Y coordinate	Antenna	SAR (W/kg)	Y coordinate		
Folder Closed	Body-worn	Back	A+C	1.281	-61.7	E	1.590	59.4	2.871	0.04
Folder Closed	Body-worn	Back	A+C	1.281	-61.7	G	1.580	74.1	2.861	0.04
Folder Closed	Body-worn	Back	A+C	1.281	-61.7	F	1.187	68.8	2.468	0.03
Folder Closed	Body-worn	Back	A+C	1.281	-61.7	H	0.998	24.0	2.279	0.04
Folder Closed	Body-worn	Back	A+C	1.281	-61.7	G in MIMO	1.093	80.0	2.374	0.03
Folder Closed	Body-worn	Back	A+C	1.281	-61.7	F in MIMO	1.314	81.5	2.595	0.03
Folder Closed	Body-worn	Back	A+C	1.281	-61.7	MIMO (H&F)	0.999	74.5	2.280	0.03
Folder Closed	Body-worn	Back	A+C	1.281	-61.7	MIMO (F&E)	1.207	75.4	2.488	0.03
Folder Closed	Body-worn	Back	B	1.039	-77.7	E	1.590	59.4	2.629	0.03
Folder Closed	Body-worn	Back	B	1.039	-77.7	G	1.580	74.1	2.619	0.03
Folder Closed	Body-worn	Back	B	1.039	-77.7	F	1.187	68.8	2.226	0.02
Folder Closed	Body-worn	Back	B	1.039	-77.7	H	0.998	24.0	2.037	0.03
Folder Closed	Body-worn	Back	B	1.039	-77.7	G in MIMO	1.093	80.0	2.132	0.02
Folder Closed	Body-worn	Back	B	1.039	-77.7	F in MIMO	1.314	81.5	2.353	0.02
Folder Closed	Body-worn	Back	B	1.039	-77.7	MIMO (H&F)	0.999	74.5	2.038	0.02
Folder Closed	Body-worn	Back	B	1.039	-77.7	MIMO (F&E)	1.207	75.4	2.246	0.02
Folder Closed	Body-worn	Back	A	0.585	-80	E	1.590	59.4	2.175	0.02
Folder Closed	Body-worn	Back	A	0.585	-80	G	1.580	74.1	2.165	0.02
Folder Closed	Body-worn	Back	A	0.585	-80	F	1.187	68.8	1.772	0.02
Folder Closed	Body-worn	Back	A	0.585	-80	H	0.998	24.0	1.583	0.02
Folder Closed	Body-worn	Back	A	0.585	-80	G in MIMO	1.093	80.0	1.678	0.01
Folder Closed	Body-worn	Back	A	0.585	-80	F in MIMO	1.314	81.5	1.899	0.02
Folder Closed	Body-worn	Back	A	0.585	-80	MIMO (H&F)	0.999	74.5	1.584	0.01
Folder Closed	Body-worn	Back	A	0.585	-80	MIMO (F&E)	1.207	75.4	1.792	0.02
Folder Closed	Body-worn	Back	C	0.998	-79.5	E	1.590	59.4	2.588	0.03
Folder Closed	Body-worn	Back	C	0.998	-79.5	G	1.580	74.1	2.578	0.03
Folder Closed	Body-worn	Back	C	0.998	-79.5	F	1.187	68.8	2.185	0.02
Folder Closed	Body-worn	Back	C	0.998	-79.5	H	0.998	24.0	1.996	0.03
Folder Closed	Body-worn	Back	C	0.998	-79.5	G in MIMO	1.093	80.0	2.091	0.02
Folder Closed	Body-worn	Back	C	0.998	-79.5	F in MIMO	1.314	81.5	2.312	0.02
Folder Closed	Body-worn	Back	C	0.998	-79.5	MIMO (H&F)	0.999	74.5	1.997	0.02
Folder Closed	Body-worn	Back	C	0.998	-79.5	MIMO (F&E)	1.207	75.4	2.205	0.02
Folder Closed	Body-worn	Back	D	0.075	-24	E	1.590	59.4	1.665	0.03
Folder Closed	Body-worn	Back	D	0.075	-24	G	1.580	74.1	1.655	0.02
Folder Closed	Body-worn	Back	D	0.075	-24	F	1.187	68.8	1.262	0.02
Folder Closed	Body-worn	Back	D	0.075	-24	H	0.998	24.0	1.073	0.02
Folder Closed	Body-worn	Back	D	0.075	-24	G in MIMO	1.093	80.0	1.168	0.01
Folder Closed	Body-worn	Back	D	0.075	-24	F in MIMO	1.314	81.5	1.389	0.02
Folder Closed	Body-worn	Back	D	0.075	-24	MIMO (H&F)	0.999	74.5	1.074	0.01
Folder Closed	Body-worn	Back	D	0.075	-24	MIMO (F&E)	1.207	75.4	1.282	0.01
Folder Closed	Body-worn	Back	B in MIMO	0.956	-80	E	1.590	59.4	2.546	0.03
Folder Closed	Body-worn	Back	B in MIMO	0.956	-80	G	1.580	74.1	2.536	0.03
Folder Closed	Body-worn	Back	B in MIMO	0.956	-80	F	1.187	68.8	2.143	0.02
Folder Closed	Body-worn	Back	B in MIMO	0.956	-80	H	0.998	24.0	1.954	0.03
Folder Closed	Body-worn	Back	B in MIMO	0.956	-80	G in MIMO	1.093	80.0	2.049	0.02
Folder Closed	Body-worn	Back	B in MIMO	0.956	-80	F in MIMO	1.314	81.5	2.270	0.02
Folder Closed	Body-worn	Back	B in MIMO	0.956	-80	MIMO (H&F)	0.999	74.5	1.955	0.02
Folder Closed	Body-worn	Back	B in MIMO	0.956	-80	MIMO (F&E)	1.207	75.4	2.163	0.02
Folder Closed	Body-worn	Back	C in MIMO	0.481	-55	E	1.590	59.4	2.071	0.03
Folder Closed	Body-worn	Back	C in MIMO	0.481	-55	G	1.580	74.1	2.061	0.02
Folder Closed	Body-worn	Back	C in MIMO	0.481	-55	F	1.187	68.8	1.668	0.02
Folder Closed	Body-worn	Back	C in MIMO	0.481	-55	H	0.998	24.0	1.479	0.02
Folder Closed	Body-worn	Back	C in MIMO	0.481	-55	G in MIMO	1.093	80.0	1.574	0.01
Folder Closed	Body-worn	Back	C in MIMO	0.481	-55	F in MIMO	1.314	81.5	1.795	0.02
Folder Closed	Body-worn	Back	C in MIMO	0.481	-55	MIMO (H&F)	0.999	74.5	1.480	0.01
Folder Closed	Body-worn	Back	C in MIMO	0.481	-55	MIMO (F&E)	1.207	75.4	1.688	0.02
Folder Closed	Hotspot	Back	A+C	1.281	-61.7	E	1.590	59.4	2.871	0.04
Folder Closed	Hotspot	Back	A+C	1.281	-61.7	G	1.580	74.1	2.861	0.04
Folder Closed	Hotspot	Back	A+C	1.281	-61.7	F	1.187	69.2	2.468	0.03
Folder Closed	Hotspot	Back	A+C	1.281	-61.7	H	0.998	24.0	2.279	0.04
Folder Closed	Hotspot	Back	A+C	1.281	-61.7	G in MIMO	1.093	80.0	2.374	0.03
Folder Closed	Hotspot	Back	A+C	1.281	-61.7	F in MIMO	1.314	81.5	2.595	0.03
Folder Closed	Hotspot	Back	A+C	1.281	-61.7	MIMO (H&F)	0.999	74.5	2.280	0.03
Folder Closed	Hotspot	Back	A+C	1.281	-61.7	MIMO (F&E)	1.121	75.4	2.402	0.03
Folder Closed	Hotspot	Back	B	1.039	-77.7	E	1.590	59.4	2.629	0.03
Folder Closed	Hotspot	Back	B	1.039	-77.7	G	1.580	74.1	2.619	0.03
Folder Closed	Hotspot	Back	B	1.039	-77.7	F	1.187	69.2	2.226	0.02
Folder Closed	Hotspot	Back	B	1.039	-77.7	H	0.998	24.0	2.037	0.03
Folder Closed	Hotspot	Back	B	1.039	-77.7	G in MIMO	1.093	80.0	2.132	0.02
Folder Closed	Hotspot	Back	B	1.039	-77.7	F in MIMO	1.314	81.5	2.353	0.02
Folder Closed	Hotspot	Back	B	1.039	-77.7	MIMO (H&F)	0.999	74.5	2.038	0.02
Folder Closed	Hotspot	Back	B	1.039	-77.7	MIMO (F&E)	1.121	75.4	2.160	0.02
Folder Closed	Hotspot	Back	A	0.585	-80	E	1.590	59.4	2.175	0.02
Folder Closed	Hotspot	Back	A	0.585	-80	G	1.580	74.1	2.165	0.02
Folder Closed	Hotspot	Back	A	0.585	-80	F	1.187	69.2	1.772	0.02
Folder Closed	Hotspot	Back	A	0.585	-80	H	0.998	24.0	1.583	0.02
Folder Closed	Hotspot	Back	A	0.585	-80	G in MIMO	1.093	80.0	1.678	0.01
Folder Closed	Hotspot	Back	A	0.585	-80	F in MIMO	1.314	81.5	1.899	0.02
Folder Closed	Hotspot	Back	A	0.585	-80	MIMO (H&F)	0.999	74.5	1.584	0.01
Folder Closed	Hotspot	Back	A	0.585	-80	MIMO (F&E)	1.121	75.4	1.706	0.01
Folder Closed	Hotspot	Back	C	0.998	-79.5	E	1.590	59.4	2.588	0.03
Folder Closed	Hotspot	Back	C	0.998	-79.5	G	1.580	74.1	2.578	0.03
Folder Closed	Hotspot	Back	C	0.998	-79.5	F	1.187	69.2	2.185	0.02
Folder Closed	Hotspot	Back	C	0.998	-79.5	H	0.998	24.0	1.996	0.03
Folder Closed	Hotspot	Back	C	0.998	-79.5	G in MIMO	1.093	80.0	2.091	0.02
Folder Closed	Hotspot	Back	C	0.998	-79.5	F in MIMO	1.314	81.5	2.312	0.02
Folder Closed	Hotspot	Back	C	0.998	-79.5	MIMO (H&F)	0.999	74.5	1.997	0.02
Folder Closed	Hotspot	Back	C	0.998	-79.5	MIMO (F&E)	1.121	75.4	2.119	0.02
Folder Closed	Hotspot	Back	D	0.075	-24	E	1.590	59.4	1.665	0.03
Folder Closed	Hotspot	Back	D	0.075	-24	G	1.580	74.1	1.655	0.02
Folder Closed	Hotspot	Back	D	0.075	-24	F	1.187	69.2	1.262	0.02
Folder Closed	Hotspot	Back	D	0.075	-24	H	0.998	24.0	1.073	0.02
Folder Closed	Hotspot	Back	D	0.075	-24	G in MIMO	1.093	80.0	1.168	0.01
Folder Closed	Hotspot	Back	D	0.075	-24	F in MIMO	1.314	81.5	1.389	0.02
Folder Closed	Hotspot	Back	D	0.075	-24	MIMO (H&F)	0.999	74.5	1.074	0.01
Folder Closed	Hotspot	Back	D	0.075	-24	MIMO (F&E)	1.121	75.4	1.196	0.01
Folder Closed	Hotspot	Back	B in MIMO	0.956	-80	E	1.590	59.4	2.546	0.03
Folder Closed	Hotspot	Back	B in MIMO	0.956	-80	G	1.580	74.1	2.536	0.03
Folder Closed	Hotspot	Back	B in MIMO	0.956	-80	F	1.187	69.2	2.143	0.02
Folder Closed	Hotspot	Back	B in MIMO	0.956	-80	H	0.998	24.0	1.954	0.03
Folder Closed	Hotspot	Back	B in MIMO	0.956	-80	G in MIMO	1.093	80.0	2.049	0.02
Folder Closed	Hotspot	Back	B in MIMO	0.956	-80	F in MIMO	1.314	81.5	2.270	0.02
Folder Closed	Hotspot	Back	B in MIMO	0.956	-80	MIMO (H&F)	0.999	74.5	1.955	0.02
Folder Closed	Hotspot	Back	B in MIMO	0.956	-80	MIMO (F&E)	1.121	75.4	2.077	0.02
Folder Closed	Hotspot	Back	C in MIMO	0.481	-55	E	1.590	59.4	2.071	0.03
Folder Closed	Hotspot	Back	C in MIMO	0.481	-55	G	1.580	74.1	2.061	0.02
Folder Closed	Hotspot	Back	C in MIMO	0.481	-55	F	1.187	69.2	1.668	0.02
Folder Closed	Hotspot	Back	C in MIMO	0.481	-55	H	0.998	24.0	1.479	0.02
Folder Closed	Hotspot	Back	C in MIMO	0.481	-55	G in MIMO	1.093	80.0	1.574	0.01
Folder Closed	Hotspot	Back	C in MIMO	0.481	-55	F in MIMO	1.314	81.5	1.795	0.02
Folder Closed	Hotspot	Back	C in MIMO	0.481	-55	MIMO (H&F)	0.999	74.5	1.480	0.01
Folder Closed	Hotspot	Back	C in MIMO	0.481	-55	MIMO (F&E)	1.121	75.4	1.602	0.02

[illegible]

Table E-7 Worst case PD Theoretical Exposure

Bands	PD Design Target (W/m ²)	PD Uncertainty (dB)	Permanent Back-off (dB)	PD Limit (W/m ²)	Ratio to Limit
n258/n260/n261	7.24	1.4	0.5	10	0.891

Table E-8 PD + NFC + UWB

DUT Configuration	Exposure Condition	Position	Ratio to Limit			
			mmWave	NFC	UWB	Sum
Folder Closed	Phablet	Back	0.891	0.002	0.002	0.894
Folder Closed	Phablet	Front	0.891	0.000	0.000	0.891
Folder Closed	Phablet	Top	0.891	0.000	0.002	0.893
Folder Closed	Phablet	Left	0.891	0.000	0.004	0.895
Folder Open	Phablet	Back	0.891	0.001	0.012	0.904
Folder Open	Phablet	Front	0.891	0.000	0.001	0.892
Folder Open	Phablet	Top	0.891	0.000	0.000	0.891

Notes:

1. For all combinations where the SAR sum of AG0+AG1 +NFC+ UWB or TER of mmWave+NFC+UWB is not greater than regulatory limits or SPLRS is under the limit, there's no further analysis required for compliance demonstration
2. See section E.5 for coordinates details for all bands/modes.

E.5. Y-coordinates

Table E-9

AG0 Y coordinates [mm]														
Exposure condition	Folder Closed Body-worn							Folder Closed Hotspot						
Position	Back							Back						
Band	Antenna							Antenna						
	A+C	B	A	C	D	B in MIMO	C in MIMO	A+C	B	A	C	D	B in MIMO	C in MIMO
GSM 850	-67	-	-	-	-	-	-	-67	-	-	-	-	-	-
GSM 1900	-	-77.7	-	-	-	-	-	-	-77.7	-	-	-	-	-
UMTS Band 5	-67.5	-	-	-	-	-	-	-67.5	-	-	-	-	-	-
LTE Band 71	-70.2	-	-81.7	-	-	-	-	-70.2	-	-81.7	-	-	-	-
LTE Band 12	-66.9	-	-	-	-	-	-	-66.9	-	-	-	-	-	-
LTE Band 13	-67.5	-	-	-	-	-	-	-67.5	-	-	-	-	-	-
LTE Band 14	-61.7	-	-	-	-	-	-	-61.7	-	-	-	-	-	-
LTE Band 26	-65.4	-	-	-	-	-	-	-65.4	-	-	-	-	-	-
LTE Band 66	-	-83.1	-	-	-	-	-	-	-83.1	-	-	-	-	-
LTE Band 25	-	-85.1	-	-	-	-	-	-	-85.1	-	-	-	-	-
LTE Band 30	-	-86.5	-	-	-	-	-	-	-86.5	-	-	-	-	-
LTE Band 7	-	-85	-	-	-	-	-	-	-85	-	-	-	-	-
LTE Band 41	-	-80	-	-	-	-	-	-	-80	-	-	-	-	-
LTE Band 48	-	-	-	-84	-	-	-	-	-	-	-84	-	-	-
NR Band n71	-72	-	-84.3	-	-	-	-	-72	-	-84.3	-	-	-	-
NR Band n12	-72	-	-	-	-	-	-	-72	-	-	-	-	-	-
NR Band n14	-73.1	-	-	-	-	-	-	-73.1	-	-	-	-	-	-
NR Band n26	-68.3	-	-	-	-	-	-	-68.3	-	-	-	-	-	-
NR Band n70	-	-85.1	-	-	-	-	-	-	-85.1	-	-	-	-	-
NR Band n66	-	-87.4	-	-	-	-	-	-	-87.4	-	-	-	-	-
NR Band n25	-	-80	-	-	-	-	-	-	-80	-	-	-	-	-
NR Band n30	-	-88.8	-	-	-	-	-	-	-88.8	-	-	-	-	-
NR Band n7	-	-85.5	-	-	-	-	-	-	-85.5	-	-	-	-	-
NR Band n41	-	-81	-	-	-24	-80	-	-	-81	-	-	-24	-80	-
NR Band n48	-	-	-81	-81	-	-	-	-	-	-81	-81	-	-	-
NR Band n77	-	-	-80	-79.5	-	-	-55	-	-	-80	-79.5	-	-	-55
Overall Coordinate	-61.7	-77.7	-80.0	-79.5	-24.0	-80.0	-55.0	-61.7	-77.7	-80.0	-79.5	-24.0	-80.0	-55.0

Table E-10

AG1 Y Coordinates [mm]																
Exposure condition	Folder Closed Body-worn								Folder Closed Hotspot							
Position	Back								Back							
Band	Antenna								Antenna							
	E	G	F	H	G in MIMO	F in MIMO	MIMO (H&F)	MIMO (F&E)	E	G	F	H	G in MIMO	F in MIMO	MIMO (H&F)	MIMO (F&E)
GSM 850	79.5	-	-	-	-	-	-	-	79.8	-	-	-	-	-	-	-
UMTS Band 5	76	-	-	-	-	-	-	-	76	-	-	-	-	-	-	-
UMTS Band 4	-	79	-	-	-	-	-	-	-	79	-	-	-	-	-	-
UMTS Band 2	-	80	-	-	-	-	-	-	-	80	-	-	-	-	-	-
LTE Band 71	76.8	-	-	-	-	-	-	-	76.8	-	-	-	-	-	-	-
LTE Band 12	76	-	-	-	-	-	-	-	76	-	-	-	-	-	-	-
LTE Band 13	74.7	-	-	-	-	-	-	-	74.7	-	-	-	-	-	-	-
LTE Band 14	76.3	-	-	-	-	-	-	-	76.3	-	-	-	-	-	-	-
LTE Band 26	72	-	-	-	-	-	-	-	72	-	-	-	-	-	-	-
LTE Band 66	-	77.5	-	-	-	-	-	-	-	77.5	-	-	-	-	-	-
LTE Band 25	-	74.4	-	-	-	-	-	-	-	74.4	-	-	-	-	-	-
LTE Band 30	-	79	-	-	-	-	-	-	-	79	-	-	-	-	-	-
LTE Band 7	-	77.5	-	-	-	-	-	-	-	77.5	-	-	-	-	-	-
LTE Band 41	-	77.5	-	-	-	-	-	-	-	77.5	-	-	-	-	-	-
LTE Band 48	-	-	75.4	-	-	-	-	-	-	-	75.4	-	-	-	-	-
NR Band n71	68.7	-	-	-	-	-	-	-	68.7	-	-	-	-	-	-	-
NR Band n12	72.8	-	-	-	-	-	-	-	72.8	-	-	-	-	-	-	-
NR Band n14	71.2	-	-	-	-	-	-	-	71.2	-	-	-	-	-	-	-
NR Band n26	69.8	-	-	-	-	-	-	-	69.8	-	-	-	-	-	-	-
NR Band n70	-	81.9	-	-	-	-	-	-	-	81.9	-	-	-	-	-	-
NR Band n66	-	74.1	-	-	-	-	-	-	-	74.1	-	-	-	-	-	-
NR Band n25	-	82.8	-	-	-	-	-	-	-	82.8	-	-	-	-	-	-
NR Band n30	-	78.5	-	-	-	-	-	-	-	78.5	-	-	-	-	-	-
NR Band n7	-	78.5	-	-	-	-	-	-	-	78.5	-	-	-	-	-	-
NR Band n41	-	81.5	-	32.5	80	-	-	-	-	81.5	-	32.5	80	-	-	-
NR Band n48	-	76.8	74.3	-	-	-	-	-	-	76.8	74.3	-	-	-	-	-
NR Band n77	-	80	78.5	-	-	81.5	-	-	-	80	78.5	-	-	81.5	-	-
2.4 GHz WIFI	-	-	79	24	-	-	74.5	-	-	-	79	24	-	-	74.5	-
5 GHz WIFI	74.9	-	68.8	-	-	-	-	75.4	74.9	-	69.2	-	-	-	-	75.4
6 GHz WIFI	59.4	-	70	-	-	-	-	78.4	59.4	-	70	-	-	-	-	78.4
2.4 GHz Bluetooth LE	-	-	81.5	30	-	-	76.5	-	-	-	81.5	30	-	-	N/A	-
Overall Coordinate	59.4	74.1	68.8	24	80	81.5	74.5	75.4	59.4	74.1	69.2	24	80	81.5	74.5	75.4

Table E-11

AG0 Y coordinates [mm]																																	
Exposure condition	Folder Open Body-worn														Folder Open' Hotspot																		
Position	Back							Front							Antenna							Back						Front					
Band	A+C	B	A	C	D	B in MIMO	C in MIMO	A+C	B	A	C	D	B in MIMO	C in MIMO	A+C	B	A	C	D	B in MIMO	C in MIMO	A+C	B	A	C	D	B in MIMO	C in MIMO					
GSM 850	54.1	-	-	-	-	-	-	-65.9	-	-	-	-	-	-	54.1	-	-	-	-	-	-	-66.5	-	-	-	-	-	-					
GSM 1900	-	75	-	-	-	-	-	-	-83.9	-	-	-	-	-	-	75	-	-	-	-	-	-	-81.9	-	-	-	-	-					
UMTS Band 5	71.7	-	-	-	-	-	-	-76.8	-	-	-	-	-	-	71.7	-	-	-	-	-	-	-76.8	-	-	-	-	-	-					
LTE Band 71	N/A	-	76.8	-	-	-	-	N/A	-	-78.8	-	-	-	-	N/A	-	76.8	-	-	-	-	N/A	-	-78.8	-	-	-	-					
LTE Band 12	67.9	-	-	-	-	-	-	-80.5	-	-	-	-	-	-	67.9	-	-	-	-	-	-	-80.5	-	-	-	-	-	-					
LTE Band 13	66.7	-	-	-	-	-	-	-76.9	-	-	-	-	-	-	66.7	-	-	-	-	-	-	-76.9	-	-	-	-	-	-					
LTE Band 14	69.8	-	-	-	-	-	-	-77	-	-	-	-	-	-	69.8	-	-	-	-	-	-	-77.0	-	-	-	-	-	-					
LTE Band 26	66.7	-	-	-	-	-	-	-78	-	-	-	-	-	-	66.7	-	-	-	-	-	-	-78.0	-	-	-	-	-	-					
LTE Band 66	-	76.8	-	-	-	-	-	-	-84.3	-	-	-	-	-	-	76.8	-	-	-	-	-	-	-84.3	-	-	-	-	-					
LTE Band 25	-	76.8	-	-	-	-	-	-	-84.3	-	-	-	-	-	-	76.8	-	-	-	-	-	-	-84.3	-	-	-	-	-					
LTE Band 30	-	77.5	-	-	-	-	-	-	-87.5	-	-	-	-	-	-	77.5	-	-	-	-	-	-	-87.5	-	-	-	-	-					
LTE Band 7	-	77	-	-	-	-	-	-	-83.5	-	-	-	-	-	-	77	-	-	-	-	-	-	-83.5	-	-	-	-	-					
LTE Band 41	-	67	-	-	-	-	-	-	-90	-	-	-	-	-	-	67	-	-	-	-	-	-	-90.0	-	-	-	-	-					
LTE Band 48	-	-	-	-	74	-	-	-	-	-	-	-82	-	-	-	-	-	-	74	-	-	-	-	-	-	-82.0	-	-					
NR band n71	N/A	-	74.3	-	-	-	-	N/A	-	-79.1	-	-	-	-	N/A	-	74.3	-	-	-	-	N/A	-	-79.1	-	-	-	-					
NR Band n12	73	-	-	-	-	-	-	-	-78	-	-	-	-	-	73	-	-	-	-	-	-	-78.0	-	-	-	-	-	-					
NR Band n14	77	-	-	-	-	-	-	-	-78	-	-	-	-	-	77	-	-	-	-	-	-	-78.0	-	-	-	-	-	-					
NR Band n26	76	-	-	-	-	-	-	-	-76.8	-	-	-	-	-	76	-	-	-	-	-	-	-76.8	-	-	-	-	-	-					
NR Band n70	-	75.8	-	-	-	-	-	-	-81.7	-	-	-	-	-	-	75.8	-	-	-	-	-	-	-81.7	-	-	-	-	-					
NR Band n66	-	81.7	-	-	-	-	-	-	-84.6	-	-	-	-	-	-	81.7	-	-	-	-	-	-	-84.6	-	-	-	-	-					
NR Band n25	-	80.3	-	-	-	-	-	-	-81	-	-	-	-	-	-	80.3	-	-	-	-	-	-	-81.0	-	-	-	-	-					
NR Band n30	-	80	-	-	-	-	-	-	-87.5	-	-	-	-	-	-	80	-	-	-	-	-	-	-87.5	-	-	-	-	-					
NR Band n7	-	70	-	-	-	-	-	-	-80	-	-	-	-	-	-	70	-	-	-	-	-	-	-80.0	-	-	-	-	-					
NR Band n41	-	75	-	-	-	22	77.5	-	-	-85	-	-	-20	-82	-	75	-	-	-	22	77.5	-	-	-85.0	-	-	-20.0	-82.0					
NR Band n48	-	-	75	75	-	-	-	-	-	-75	-84.5	-	-	-	-	-	75	75	-	-	-	-	-	-75.0	-84.5	-	-	-					
NR Band n77	-	-	47	75	-	-	77	-	-	-50.5	-84	-	-	-81	-	-	47	75	-	-	77	-	-	-50.5	-84.0	-	-	-81.0					
Overall Coordinate	54.1	67	47	74	22	77.5	77	-65.9	-80	-50.5	-82	-20	-82	-81	54.1	67	47	74	22	77.5	77	-66.5	-80	-50.5	-82	-20	-82	-81					

Table E-12

Exposure condition Position		AG1 Y Coordinates (mm)																																					
		Folder Open Body-worn																Folder Open Hotspot																					
		Back								Front								Antenna								Back								Front					
Band	E	G	F	H	G in MIMO	F in MIMO	MIMO (H&F)	MIMO (F&E)	E	G	F	H	G in MIMO	F in MIMO	MIMO (H&F)	MIMO (F&E)	E	G	F	H	G in MIMO	F in MIMO	MIMO (H&F)	MIMO (F&E)	E	G	F	H	G in MIMO	F in MIMO	MIMO (H&F)	MIMO (F&E)							
GSM 850	-70.2	-	-	-	-	-	-	-	75.5	-	-	-	-	-	-	-	-70.2	-	-	-	-	-	-	-	75.5	-	-	-	-	-	-	-							
UMTS Band 5	-74.5	-	-	-	-	-	-	-	70.5	-	-	-	-	-	-	-	-74.5	-	-	-	-	-	-	-	70.5	-	-	-	-	-	-	-							
UMTS Band 4	-	-80.5	-	-	-	-	-	-	-	82	-	-	-	-	-	-	-	-80.5	-	-	-	-	-	-	-	82	-	-	-	-	-	-	-						
UMTS Band 2	-	-80.7	-	-	-	-	-	-	-	-81.8	-	-	-	-	-	-	-	-	-80.7	-	-	-	-	-	-	-	-81.8	-	-	-	-	-	-	-					
LTE Band 71	-70.5	-	-	-	-	-	-	-	76.4	-	-	-	-	-	-	-	-70.5	-	-	-	-	-	-	-	76.4	-	-	-	-	-	-	-							
LTE Band 12	-73.1	-	-	-	-	-	-	-	76.5	-	-	-	-	-	-	-	-73.1	-	-	-	-	-	-	-	76.5	-	-	-	-	-	-	-							
LTE Band 13	-74	-	-	-	-	-	-	-	78	-	-	-	-	-	-	-	-74	-	-	-	-	-	-	-	78	-	-	-	-	-	-	-							
LTE Band 14	-73.2	-	-	-	-	-	-	-	78	-	-	-	-	-	-	-	-73.2	-	-	-	-	-	-	-	78	-	-	-	-	-	-	-							
LTE Band 26	-75.6	-	-	-	-	-	-	-	74.2	-	-	-	-	-	-	-	-75.6	-	-	-	-	-	-	-	74.2	-	-	-	-	-	-	-							
LTE Band 66	-	-84	-	-	-	-	-	-	-	81.9	-	-	-	-	-	-	-	-84	-	-	-	-	-	-	-	81.9	-	-	-	-	-	-	-						
LTE Band 25	-	-82.2	-	-	-	-	-	-	-	81.9	-	-	-	-	-	-	-	-82.2	-	-	-	-	-	-	-	81.9	-	-	-	-	-	-	-						
LTE Band 30	-	-93	-	-	-	-	-	-	-	77.5	-	-	-	-	-	-	-	-93	-	-	-	-	-	-	-	77.5	-	-	-	-	-	-	-						
LTE Band 7	-	77.5	-	-	-	-	-	-	-	75	-	-	-	-	-	-	-	77.5	-	-	-	-	-	-	-	75	-	-	-	-	-	-	-						
LTE Band 41	-	-81	-	-	-	-	-	-	-	84.5	-	-	-	-	-	-	-	-81	-	-	-	-	-	-	-	84.5	-	-	-	-	-	-	-						
LTE Band 48	-	-	-81	-	-	-	-	-	-	-	80	-	-	-	-	-	-	-	-81	-	-	-	-	-	-	-	80	-	-	-	-	-	-	-					
NR Band n71	-70.5	-	-	-	-	-	-	-	87	-	-	-	-	-	-	-	-70.5	-	-	-	-	-	-	-	87	-	-	-	-	-	-	-	-						
NR Band n12	-70.5	-	-	-	-	-	-	-	85.3	-	-	-	-	-	-	-	-70.5	-	-	-	-	-	-	-	85.3	-	-	-	-	-	-	-	-						
NR Band n14	-70.5	-	-	-	-	-	-	-	84.4	-	-	-	-	-	-	-	-70.5	-	-	-	-	-	-	-	84.4	-	-	-	-	-	-	-	-						
NR Band n26	-69.5	-	-	-	-	-	-	-	74.7	-	-	-	-	-	-	-	-69.5	-	-	-	-	-	-	-	74.7	-	-	-	-	-	-	-	-						
NR Band n70	-	-85.5	-	-	-	-	-	-	-	83.8	-	-	-	-	-	-	-	-85.5	-	-	-	-	-	-	-	83.8	-	-	-	-	-	-	-	-					
NR Band n66	-	-83.9	-	-	-	-	-	-	-	83.2	-	-	-	-	-	-	-	-83.9	-	-	-	-	-	-	-	83.2	-	-	-	-	-	-	-	-					
NR Band n25	-	-84.4	-	-	-	-	-	-	-	82.5	-	-	-	-	-	-	-	-84.4	-	-	-	-	-	-	-	82.5	-	-	-	-	-	-	-	-					
NR Band n30	-	-82	-	-	-	-	-	-	-	79	-	-	-	-	-	-	-	-82	-	-	-	-	-	-	-	79	-	-	-	-	-	-	-	-					
NR Band n7	-	-80.5	-	-	-	-	-	-	-	77	-	-	-	-	-	-	-	-80.5	-	-	-	-	-	-	-	77	-	-	-	-	-	-	-	-					
NR Band n41	-	-83.5	-	-35	-85	-	-	-	82	-	7.5	81	-	-	-	-	-	-83.5	-	-	-35	-85	-	-	82	-	7.5	81	-	-	-	-	-	-					
NR Band n48	-	-83.5	-81.5	-	-	-	-	-	N/A	80.5	-	-	-	-	-	-	-	-83.5	-81.5	-	-	-	-	83	80.5	-	-	-	-	-	-	-	-	-					
NR Band n77	-	-81.4	-82.5	-78	-	-84.5	-	-	-	78	-	-	-	77.5	-	-	-	-81.4	-82.5	-	-	-	-84.5	-	78	-	-	-	-	-	77.5	-	-	-					
2.4 GHz WiFi	-	-	-71	-33	-	-	-80.5	-	-	-84.5	34.1	-	-	-	-	82.5	-	-	-	-	-71	-33	-	-	-80.5	-	-	-84.5	34.1	-	-	-	82.5	-					
5 GHz WiFi	-72.5	-	-78.7	-	-	-	-	-78.4	70.8	-	-	-	-	-	-	-	75	-72.5	-	-78.7	-	-	-	-	-79.2	70.8	-	-	-	-	-	-	75.8						
6 GHz WiFi	-78.4	-	-63.6	-	-	-	-	-80.5	65.5	-	-	-	-	-	-	-	71.6	-78.4	-	-63.6	-	-	-	-	-80.5	65.5	-	-	-	-	-	-	71.6						
2.4 GHz Bluetooth LE	-	-	-63	-29.5	-	-	-72.5	-	-	78.5	31	-	-	-	-	76	-	-	-63	-29.5	-	-	-	-	-	78.5	31	-	-	-	-	-	N/A						
Overall Character	-69.5	-77.5	-63	-29.5	-85	-84.5	-72.8	65.5	75	69.5	7.5	81	77.5	76	71.6	-69.5	-77.5	-63	-29.5	-85	-84.5	-80.5	-79.2	65.5	75	69.5	7.5	81	77.5	82.5	71.6								