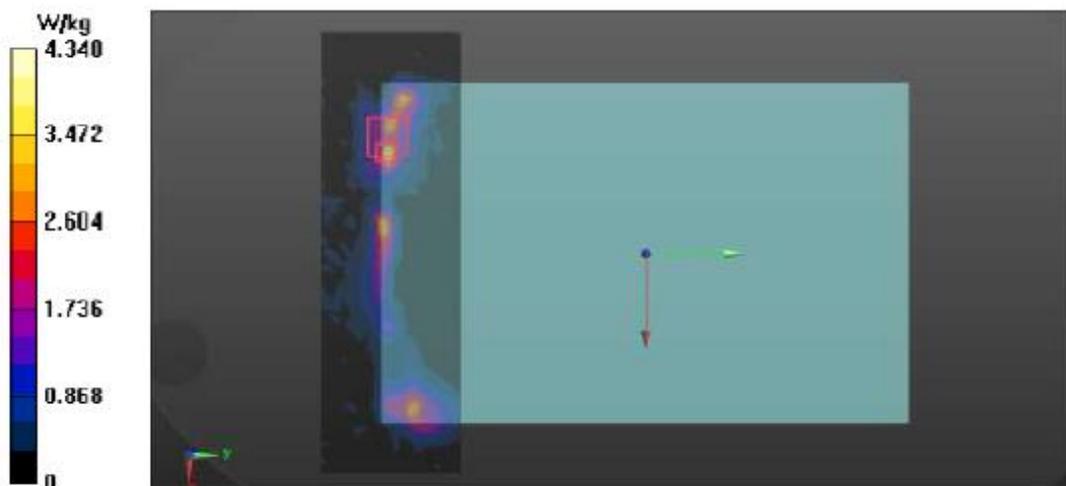


LTE Band 26 Volume Scan – Rear Position

Scenario No.9

Licensed Band + WLAN 2.4 GHz Ant.2 + WLAN 5 GHz MIMO + Bluetooth Ant 1
= 1.08 W/kg**Multi-Band Average SAR****Multi-Band Configurations:**DASY Configuration for Configuration/802.11 ac_VHT80_WLAN2_CH155_Rear_0
mm Sensor On/Volume Scan:DASY Configuration for Configuration/LTE Band 26_QPSK_15
MHz_1RB_0offset_CH26865_Top_0 mm Grip Sensor On_VS/Volume Scan:DASY Configuration for Configuration/802.11 b_WLAN2_CH1_Rear_0 mm Sensor
On VS/Volume Scan:DASY Configuration for Configuration/802.11 ac_VHT80_WLAN1_CH122_Rear_0
mm Sensor On/Volume Scan:DASY Configuration for Configuration/Bluetooth_GFSK_DH5_Ant.1_CH0_Rear_0
mm Sensor On/Volume Scan:**Multi Band Result:**SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.559 W/kg
Maximum value of SAR (interpolated) = 4.34 W/kg

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (298) of (638)



12.3.12 LTE Band 41 SPLSR and Volume Scan Analysis_Sensor On

LTE Band 41 Simultaneous										
Scenario	Scenario No.1	Scenario No.2	Scenario No.3	Scenario No.4	Scenario No.5	Scenario No.6	Scenario No.7	Scenario No.8	Scenario No.9	Scenario No.10
SUM	①②	①⑥	①⑦	①③	①④⑤	①②⑥	①④⑤⑥	①④⑤⑦	①②④⑤⑥	①③④⑤
Rear	1.541	1.432	1.492	1.611	2.121	2.109	2.689	2.749	3.366	2.868
Left	0.179	0.108	0.587	0.171	0.704	0.179	0.704	1.183	0.775	0.767
Left Corner	0.465	0.800	0.528	0.478	0.762	0.865	1.162	0.890	1.227	0.840
Right	0.046	0.620	0.034	0.491	0.702	0.632	1.288	0.702	1.300	1.159
Right Corner	0.538	0.448	0.538	0.382	0.668	0.848	0.978	1.068	1.378	0.912
Top	0.668	0.795	0.637	0.820	1.033	0.931	1.296	1.138	1.432	1.321

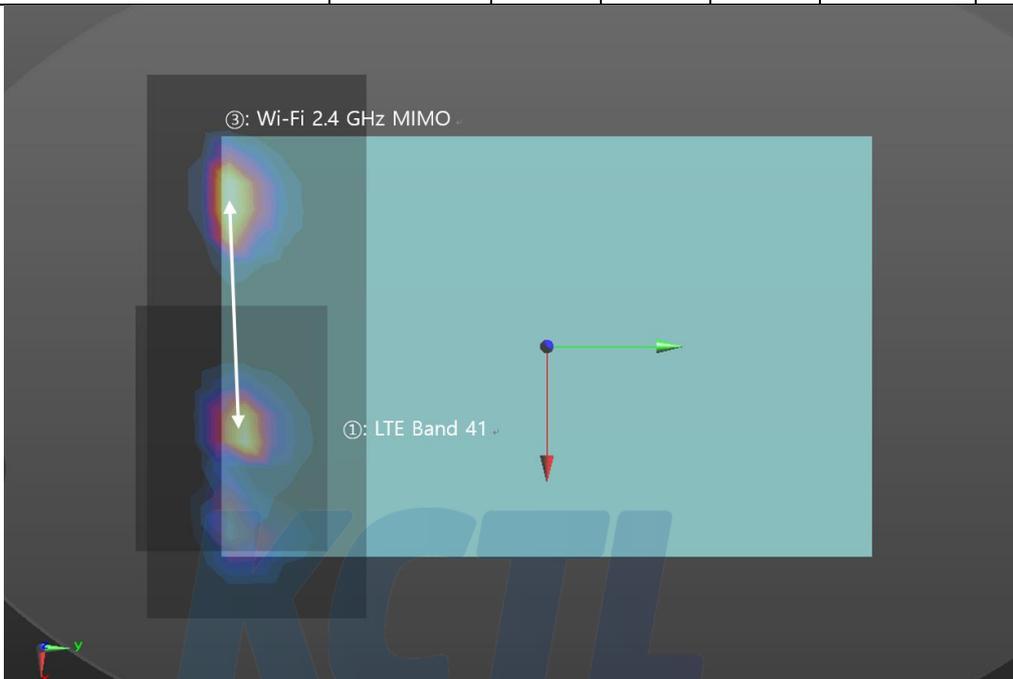
Note: Yellow highlight cells require SPLSR or Volume Scan analysis.

LTE Band 41 SPLSR – Rear Position														
Scenario	Scenario No.4		Scenario No.5		Scenario No.6		Scenario No.7		Scenario No.8		Scenario No.9		Scenario No.10	
Rear	1.611		2.121		2.109		2.689		2.749		3.366		2.868	
Distance [mm]	①-③	48.4	①-④	48.4	①-②	113.0	①-④⑥	47.5	①-⑤⑦	121.0	①-②⑤	89.4	①-③④	47.2
	N/A		①-⑤	121.0	①-⑥	57.4	①-⑤	121.0	①-④	48.4	①-④⑥	47.5	①-③⑤	121.0
	N/A		④-⑤	169.0	②-⑥	169.0	④⑥-⑤	167.0	④-⑤⑦	170.0	②⑤-④⑥	137.0	③④-③⑤	168.0
SPLSR ≤ 0.04 Limit	①-③	0.02	①-④	0.03	①-②	0.02	①-④⑥	0.05	①-⑤⑦	0.02	①-②⑤	0.03	①-③④	0.05
	N/A		①-⑤	0.02	①-⑥	0.03	①-⑤	0.02	①-④	0.03	①-④⑥	0.05	①-③⑤	0.03
	N/A		④-⑤	0.01	②-⑥	0.01	④⑥-⑤	0.01	④-⑤⑦	0.01	②⑤-④⑥	0.02	③④-③⑤	0.02
Volume scan	Not Required		Not Required		Not Required		Required		Not Required		Required		Required	

Note: Scenario No. 7 ~ 10 were analyzed according to the SPLSR hotspot combination procedure of the TCB Workshop Nov 2019.(Reference Section 12.5).

LTE Band 41 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.4	LTE Band 41 (①)	0.864	0.037	-0.134	-0.182	48.4	0.02
	Wi-Fi 2.4 GHz MIMO (③)	0.747	-0.076	-0.140	-0.178		



LTE Band 41 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.5	LTE Band 41 (①)	0.864	0.037	-0.134	-0.182	48.4	0.03
	Wi-Fi 5 GHz Ant.1 (④)	0.482	0.085	-0.138	-0.179		
	LTE Band 41 (①)	0.864	0.037	-0.134	-0.182	121.0	0.02
	Wi-Fi 5 GHz Ant.2 (⑤)	0.775	-0.083	-0.131	-0.179		
	Wi-Fi 5 GHz Ant.1 (④)	0.482	0.085	-0.138	-0.179	169.0	0.01
	Wi-Fi 5 GHz Ant.2 (⑤)	0.775	-0.083	-0.131	-0.179		



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (301) of (638)

KCTL**LTE Band 41 SPLSR – Rear Position**

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.6	LTE Band 41 (①)	0.864	0.037	-0.134	-0.182	113.0	0.02
	Wi-Fi 2.4 GHz Ant.2 (②)	0.677	-0.075	-0.140	-0.178		
	LTE Band 41 (①)	0.864	0.037	-0.134	-0.182	57.4	0.03
	Bluetooth Ant.1 (⑥)	0.568	0.093	-0.122	-0.178		
	Wi-Fi 2.4 GHz Ant.2 (②)	0.677	-0.075	-0.140	-0.178	169.0	0.01
	Bluetooth Ant.1 (⑥)	0.568	0.093	-0.122	-0.178		

KCTL Inc.

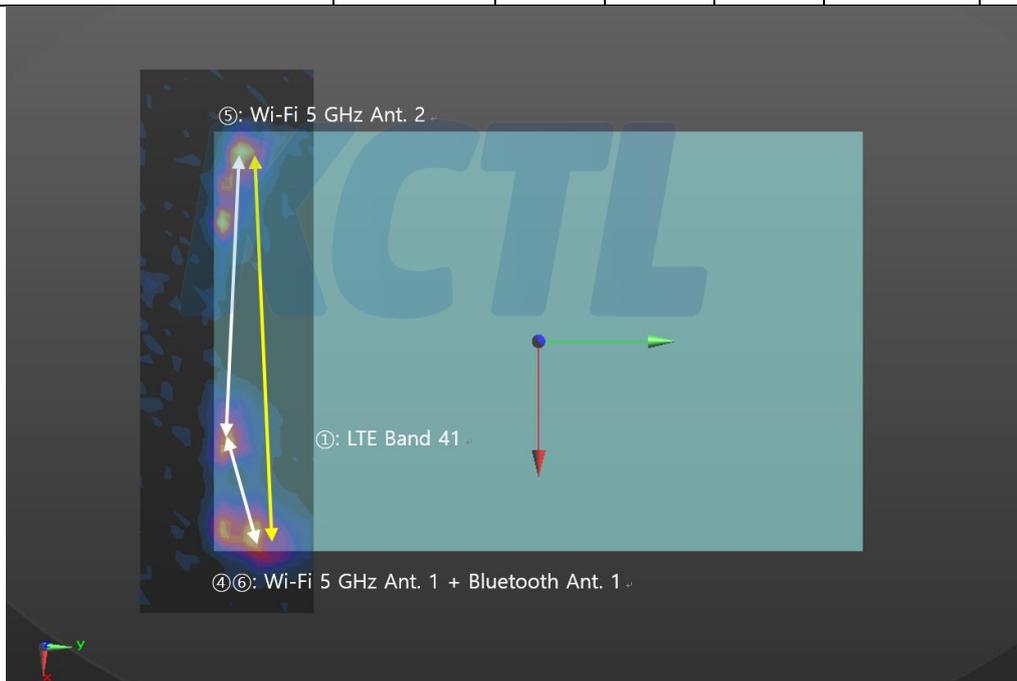
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (302) of (638)



LTE Band 41 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.7	LTE Band 41 (①)	0.864	0.037	-0.134	-0.182	47.5	0.05
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.886	0.084	-0.127	-0.178		
	LTE Band 41 (①)	0.864	0.037	-0.134	-0.182	121.0	0.02
	Wi-Fi 5 GHz Ant.2 (⑤)	0.775	-0.083	-0.131	-0.179		
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.886	0.084	-0.127	-0.178	167.0	0.01
	Wi-Fi 5 GHz Ant.2 (⑤)	0.775	-0.083	-0.131	-0.179		



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (303) of (638)



LTE Band 41 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.8	LTE Band 41 (①)	0.864	0.037	-0.134	-0.182	121.0	0.02
	Wi-Fi 5 GHz Ant.2 (⑤) + Bluetooth Ant.2 (⑦)	1.000	-0.084	-0.131	-0.178		
	LTE Band 41 (①)	0.864	0.037	-0.134	-0.182	48.4	0.03
	Wi-Fi 5 GHz Ant.1 (④)	0.482	0.085	-0.138	-0.179		
	Wi-Fi 5 GHz Ant.1 (④)	0.482	0.085	-0.138	-0.179	170.0	0.01
	Wi-Fi 5 GHz Ant.2 (⑤) + Bluetooth Ant.2 (⑦)	1.000	-0.084	-0.131	-0.178		

KCTL Inc.

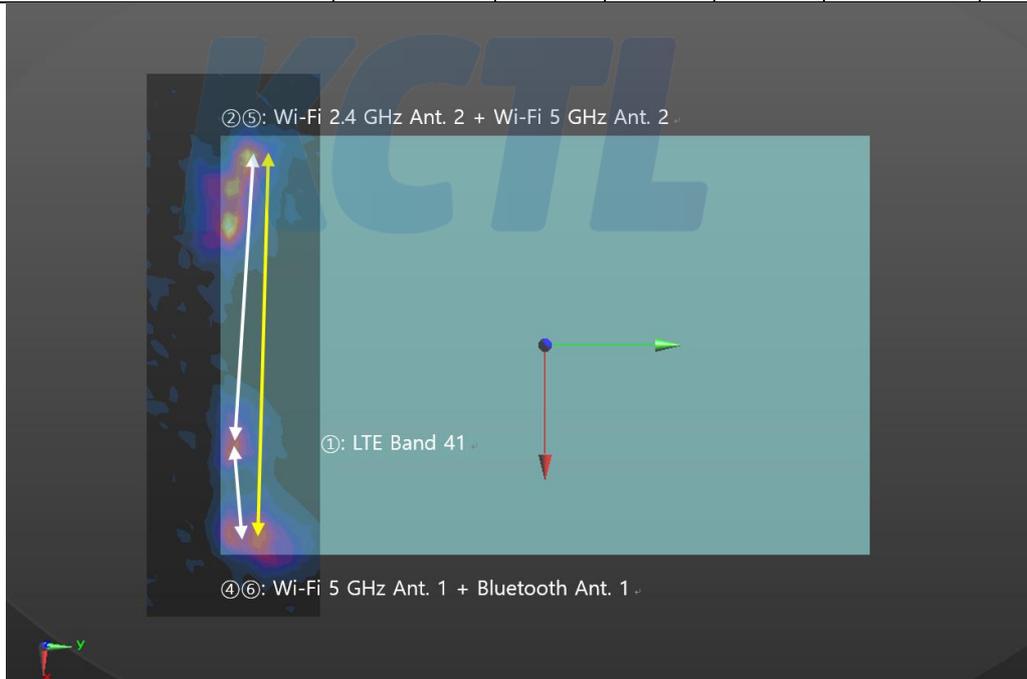
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (304) of (638)



LTE Band 41 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.9	LTE Band 41 (①)	0.864	0.037	-0.134	-0.182	89.4	0.03
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178		
	LTE Band 41 (①)	0.864	0.037	-0.134	-0.182	47.5	0.05
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.886	0.084	-0.127	-0.178		
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178	137.0	0.02
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.886	0.084	-0.127	-0.178		



KCTL Inc.

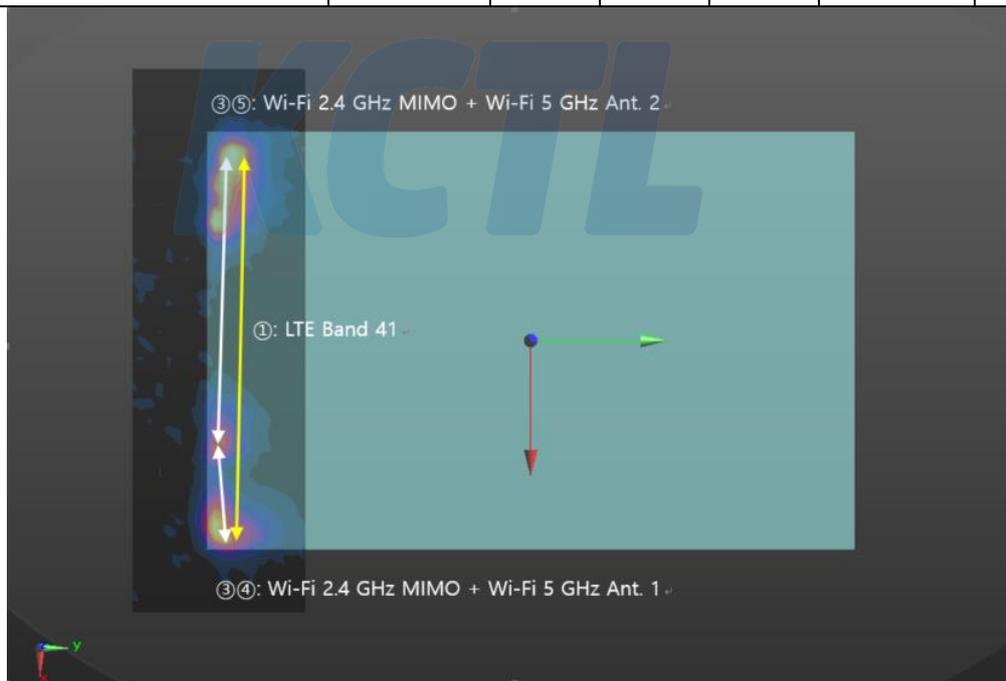
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (305) of (638)



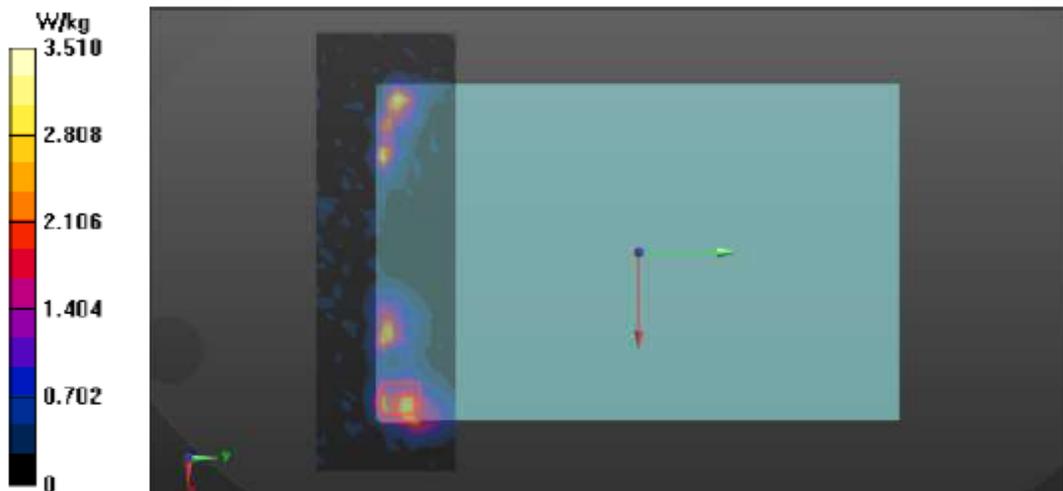
LTE Band 41 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.10	LTE Band 41 (①)	0.864	0.037	-0.134	-0.182	47.2	0.05
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178		
	LTE Band 41 (①)	0.864	0.037	-0.134	-0.182	121.0	0.03
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178	168.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		



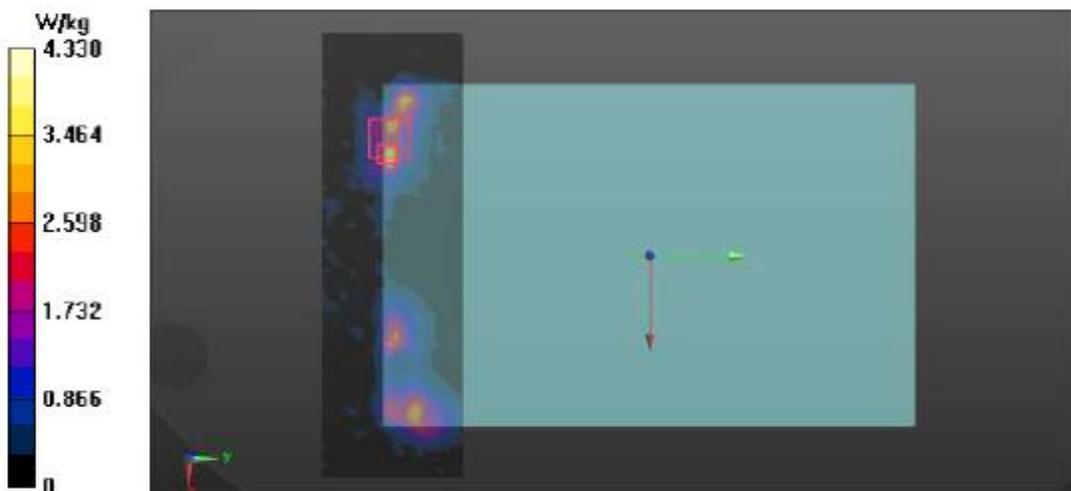
LTE Band 41 Volume Scan – Rear Position

Scenario No.7

Licensed Band + WLAN 5 GHz MIMO + Bluetooth Ant 1
= 0.950 W/kg**Multi-Band Average SAR****Multi-Band Configurations:**DASY Configuration for Configuration/802.11 ac_VHT80_WLAN2_CH155_Rear_0
mm Sensor On/Volume Scan:DASY Configuration for Configuration/LTE Band 41_QPSK_20
MHz_50RB_24offset_CH40620_Rear_0 mm Grip Sensor On VS/Volume Scan:DASY Configuration for Configuration/802.11 ac_VHT80_WLAN1_CH122_Rear_0
mm Sensor On/Volume Scan:DASY Configuration for Configuration/Bluetooth_GFSK_DH5_Ant.1_CH0_Rear_0
mm Sensor On/Volume Scan:**Multi Band Result:**SAR(1 g) = 0.950 W/kg; SAR(10 g) = 0.476 W/kg
Maximum value of SAR (interpolated) = 3.51 W/kg

LTE Band 41 Volume Scan – Rear Position

Scenario No.9

Licensed Band + WLAN 2.4 GHz Ant.2 + WLAN 5 GHz MIMO + Bluetooth Ant 1
= 1.07 W/kg**Multi-Band Average SAR****Multi-Band Configurations:**DASY Configuration for Configuration/802.11 ac_VHT80_WLAN2_CH155_Rear_0
mm Sensor On/Volume Scan:DASY Configuration for Configuration/LTE Band 41_QPSK_20
MHz_50RB_24offset_CH40620_Rear_0 mm Grip Sensor On VS/Volume Scan:DASY Configuration for Configuration/802.11 b_WLAN2_CH1_Rear_0 mm Sensor
On VS/Volume Scan:DASY Configuration for Configuration/802.11 ac_VHT80_WLAN1_CH122_Rear_0
mm Sensor On/Volume Scan:DASY Configuration for Configuration/Bluetooth_GFSK_DH5_Ant.1_CH0_Rear_0
mm Sensor On/Volume Scan:**Multi Band Result:**SAR(1 g) = 1.07 W/kg; SAR(10 g) = 0.553 W/kg
Maximum value of SAR (interpolated) = 4.33 W/kg

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (308) of (638)

KCTL

LTE Band 41 Volume Scan – Rear Position

Scenario No.10

Licensed Band + WLAN 2.4 GHz MIMO + WLAN 5 GHz MIMO
= 1.29 W/kg

Multi-Band Average SAR

Multi-Band Configurations:

DASY Configuration for Configuration/802.11 b_MIMO_CH11_Rear_0 mm Sensor On VS/Volume Scan:

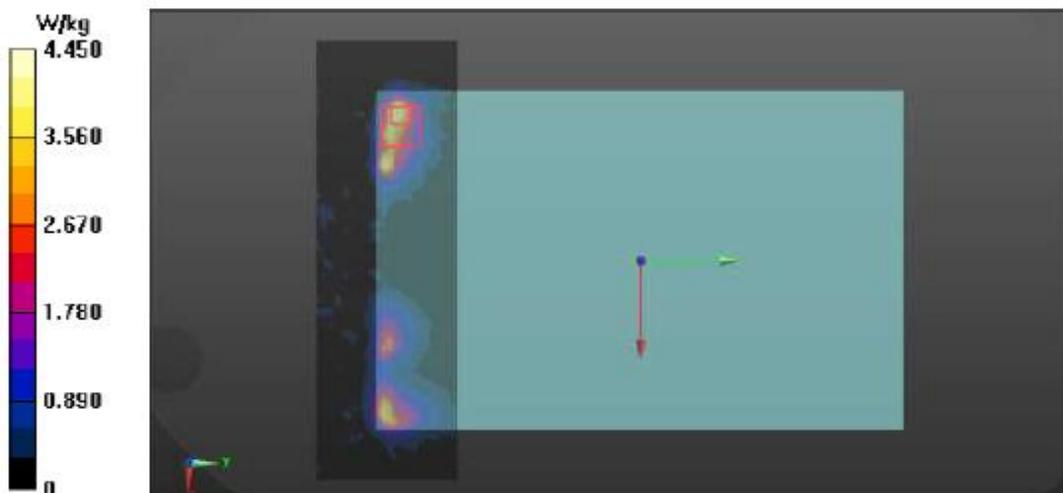
DASY Configuration for Configuration/802.11 ac_VHT80_WLAN2_CH155_Rear_0 mm Sensor On/Volume Scan:

DASY Configuration for Configuration/LTE Band 41_QPSK_20 MHz_50RB_24offset_CH40620_Rear_0 mm Grip Sensor On VS/Volume Scan:

DASY Configuration for Configuration/802.11 ac_VHT80_WLAN1_CH122_Rear_0 mm Sensor On/Volume Scan:

Multi Band Result:

SAR(1 g) = 1.29 W/kg; SAR(10 g) = 0.656 W/kg
Maximum value of SAR (interpolated) = 4.45 W/kg



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (309) of (638)



12.3.13 LTE Band 66 SPLSR and Volume Scan Analysis_Sensor On

LTE Band 66 Simultaneous										
Scenario	Scenario No.1	Scenario No.2	Scenario No.3	Scenario No.4	Scenario No.5	Scenario No.6	Scenario No.7	Scenario No.8	Scenario No.9	Scenario No.10
SUM	①②	①⑥	①⑦	①③	①④⑤	①②⑥	①④⑤⑥	①④⑤⑦	①②④⑤⑥	①③④⑤
Rear	1.528	1.419	1.479	1.598	2.108	2.096	2.676	2.736	3.353	2.855
Left	0.308	0.237	0.716	0.300	0.833	0.308	0.833	1.312	0.904	0.896
Left Corner	0.465	0.800	0.528	0.478	0.762	0.865	1.162	0.890	1.227	0.840
Right	0.074	0.648	0.062	0.519	0.730	0.660	1.316	0.730	1.328	1.187
Right Corner	0.470	0.380	0.470	0.314	0.600	0.780	0.910	1.000	1.310	0.844
Top	1.006	1.133	0.975	1.158	1.371	1.269	1.634	1.476	1.770	1.659

Note: Yellow highlight cells require SPLSR or Volume Scan analysis.

LTE Band 66 SPLSR – Rear Position												
Scenario	Scenario No.5		Scenario No.6		Scenario No.7		Scenario No.8		Scenario No.9		Scenario No.10	
Rear	2.108		2.096		2.676		2.736		3.353		2.855	
Distance [mm]	①-④	48.0	①-②	113.0	①-④⑥	48.4	①-⑤⑦	122.0	①-②⑤	89.6	①-③④	46.7
	①-⑤	121.0	①-⑥	58.6	①-⑤	121.0	①-④	48.0	①-④⑥	48.4	①-③⑤	122.0
	④-⑤	169.0	②-⑥	169.0	④⑥-⑤	167.0	④-⑤⑦	170.0	②⑤-④⑥	137.0	③④-③⑤	168.0
SPLSR ≤ 0.04 Limit	①-④	0.03	①-②	0.02	①-④⑥	0.05	①-⑤⑦	0.02	①-②⑤	0.03	①-③④	0.05
	①-⑤	0.02	①-⑥	0.03	①-⑤	0.02	①-④	0.03	①-④⑥	0.05	①-③⑤	0.02
	④-⑤	0.01	②-⑥	0.01	④⑥-⑤	0.01	④-⑤⑦	0.01	②⑤-④⑥	0.02	③④-③⑤	0.02
Volume scan	Not Required		Not Required		Required		Not Required		Required		Required	

LTE Band 66 SPLSR – Top Position						
Scenario	Scenario No.7		Scenario No.9		Scenario No.10	
Top	1.634		1.770		1.659	
Distance [mm]	①-④⑥	36.6	①-②⑤	99.6	①-③④	36.6
	①-⑤	87.2	①-④⑥	36.6	①-③⑤	87.6
	④⑥-⑤	124.0	②⑤-④⑥	136.0	③④-③⑤	124.0
SPLSR ≤ 0.04 Limit	①-④⑥	0.04	①-②⑤	0.01	①-③④	0.05
	①-⑤	0.01	①-④⑥	0.04	①-③⑤	0.01
	④⑥-⑤	0.00	②⑤-④⑥	0.00	③④-③⑤	0.01
Volume scan	Not Required		Not Required		Required	

Note: Scenario No. 7 ~ 10 were analyzed according to the SPLSR hotspot combination procedure of the TCB Workshop Nov 2019.(Reference Section 12.5).

LTE Band 66 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.5	LTE Band 66 (①)	0.851	0.038	-0.140	-0.182	48.0	0.03
	Wi-Fi 5 GHz Ant.1 (④)	0.482	0.085	-0.138	-0.179		
	LTE Band 66 (①)	0.851	0.038	-0.140	-0.182	121.0	0.02
	Wi-Fi 5 GHz Ant.2 (⑤)	0.775	-0.083	-0.131	-0.179		
	Wi-Fi 5 GHz Ant.1 (④)	0.482	0.085	-0.138	-0.179	169.0	0.01
	Wi-Fi 5 GHz Ant.2 (⑤)	0.775	-0.083	-0.131	-0.179		



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (311) of (638)



LTE Band 66 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.6	LTE Band 66 (①)	0.851	0.038	-0.140	-0.182	113.0	0.02
	Wi-Fi 2.4 GHz Ant.2 (②)	0.677	-0.075	-0.140	-0.178		
	LTE Band 66 (①)	0.851	0.038	-0.140	-0.182	58.6	0.03
	Bluetooth Ant.1 (⑥)	0.568	0.093	-0.122	-0.178		
	Wi-Fi 2.4 GHz Ant.2 (②)	0.677	-0.075	-0.140	-0.178	169.0	0.01
	Bluetooth Ant.1 (⑥)	0.568	0.093	-0.122	-0.178		



KCTL Inc.

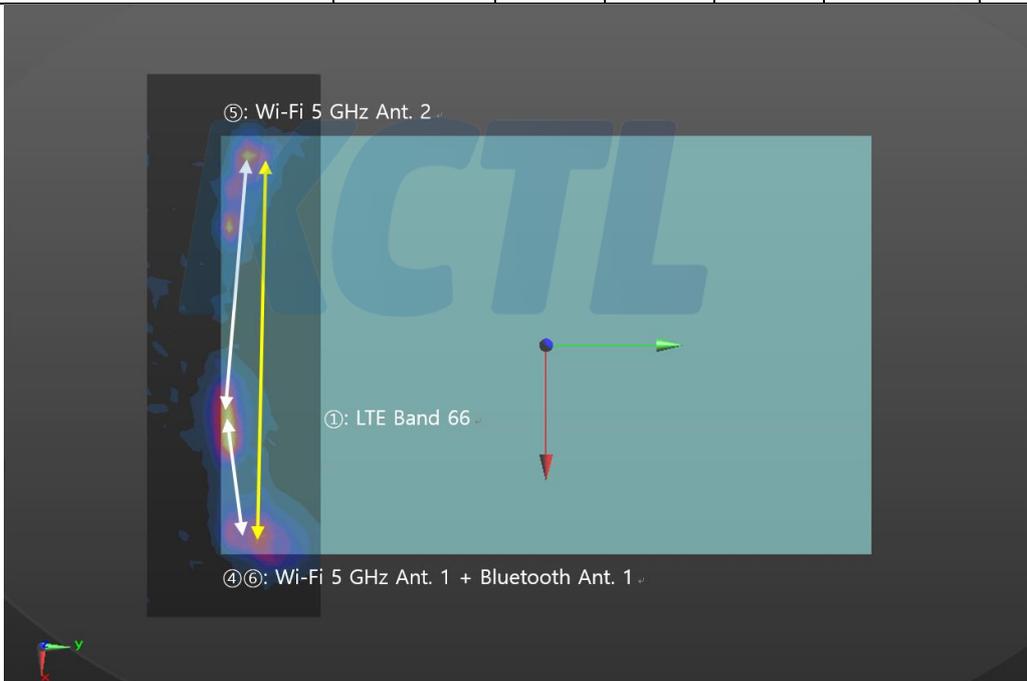
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (312) of (638)



LTE Band 66 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.7	LTE Band 66 (①)	0.851	0.038	-0.140	-0.182	48.4	0.05
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.886	0.084	-0.127	-0.178		
	LTE Band 66 (①)	0.851	0.038	-0.140	-0.182	121.0	0.02
	Wi-Fi 5 GHz Ant.2 (⑤)	0.775	-0.083	-0.131	-0.179		
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.886	0.084	-0.127	-0.178	167.0	0.01
	Wi-Fi 5 GHz Ant.2 (⑤)	0.775	-0.083	-0.131	-0.179		



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (313) of (638)



LTE Band 66 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.8	LTE Band 66 (①)	0.851	0.038	-0.140	-0.182	122.0	0.02
	Wi-Fi 5 GHz Ant.2 (⑤) + Bluetooth Ant.2 (⑦)	1.000	-0.084	-0.131	-0.178		
	LTE Band 66 (①)	0.851	0.038	-0.140	-0.182	48.0	0.03
	Wi-Fi 5 GHz Ant.1 (④)	0.482	0.085	-0.138	-0.179		
	Wi-Fi 5 GHz Ant.1 (④)	0.482	0.085	-0.138	-0.179	170.0	0.01
	Wi-Fi 5 GHz Ant.2 (⑤) + Bluetooth Ant.2 (⑦)	1.000	-0.084	-0.131	-0.178		

KCTL Inc.

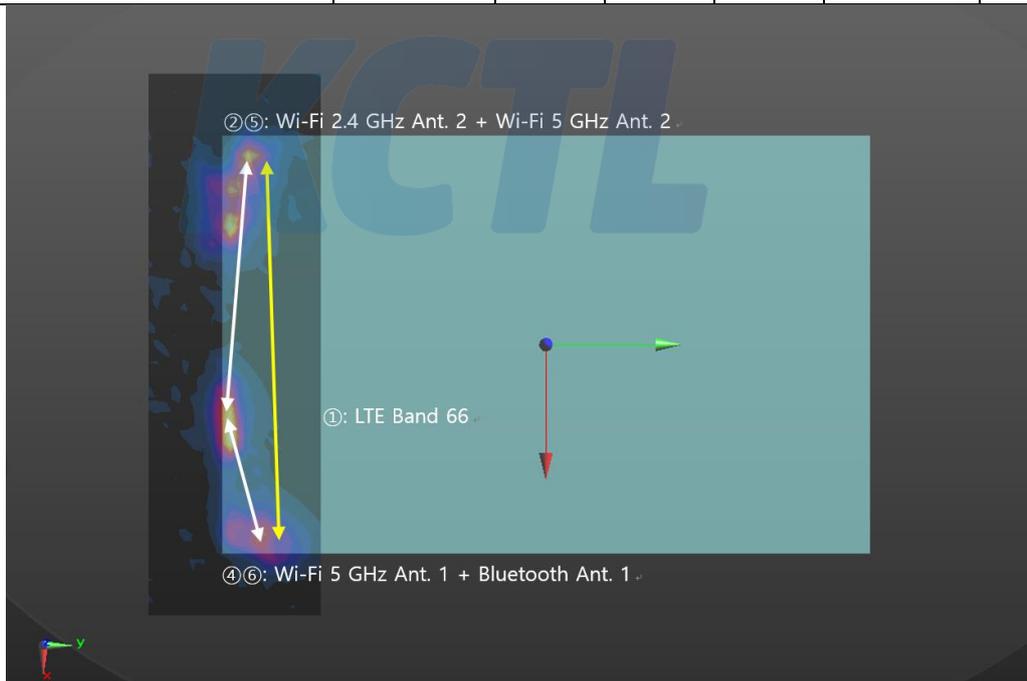
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (314) of (638)



LTE Band 66 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.9	LTE Band 66 (①)	0.851	0.038	-0.140	-0.182	89.6	0.03
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178		
	LTE Band 66 (①)	0.851	0.038	-0.140	-0.182	48.4	0.05
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.886	0.084	-0.127	-0.178		
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178	137.0	0.02
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.886	0.084	-0.127	-0.178		



KCTL Inc.

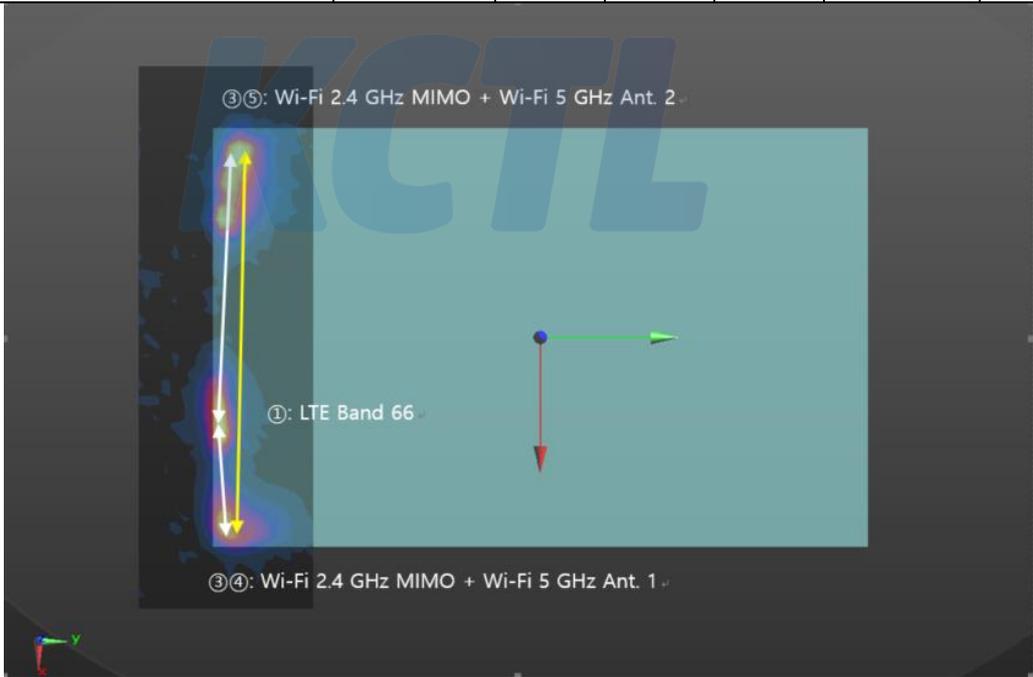
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (315) of (638)



LTE Band 66 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.10	LTE Band 66 (①)	0.851	0.038	-0.140	-0.182	46.7	0.05
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178		
	LTE Band 66 (①)	0.851	0.038	-0.140	-0.182	122.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178	168.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		



KCTL Inc.

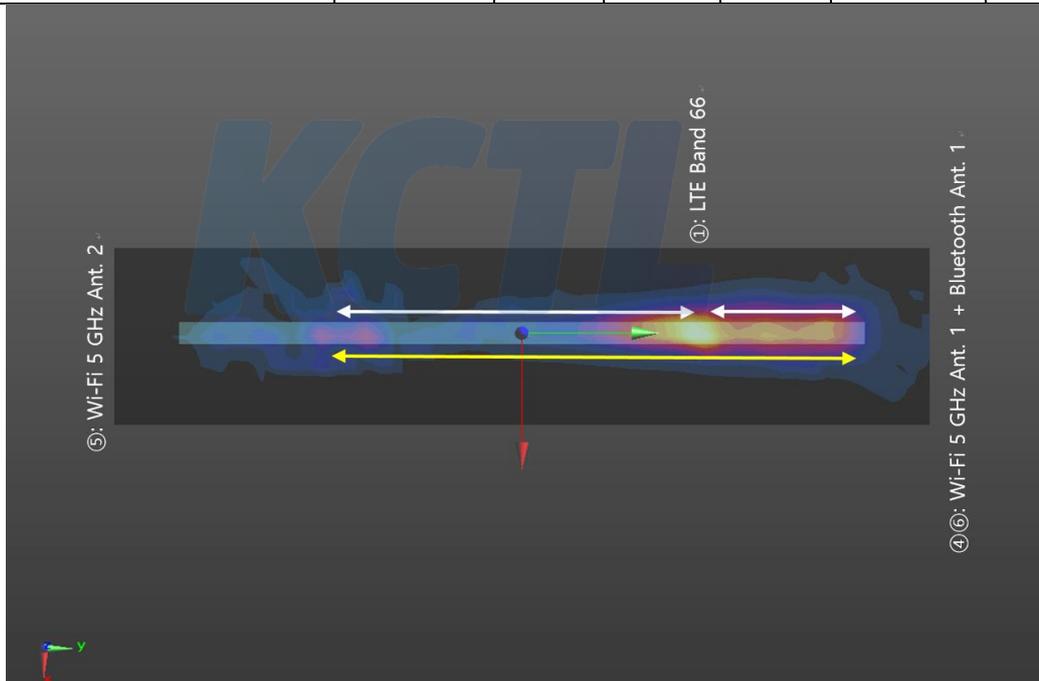
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (316) of (638)



LTE Band 66 SPLSR – Top Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.7	LTE Band 66 (①)	0.870	0.000	0.046	-0.184	36.6	0.04
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.486	0.001	0.082	-0.181		
	LTE Band 66 (①)	0.870	0.000	0.046	-0.184	87.2	0.01
	Wi-Fi 5 GHz Ant.2 (⑤)	0.204	0.000	-0.042	-0.180		
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.486	0.001	0.082	-0.181	124.0	0.00
	Wi-Fi 5 GHz Ant.2 (⑤)	0.204	0.000	-0.042	-0.180		



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (317) of (638)



LTE Band 66 SPLSR – Top Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.9	LTE Band 66 (①)	0.870	0.000	0.046	-0.184	99.6	0.01
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	0.283	0.001	-0.054	-0.181		
	LTE Band 66 (①)	0.870	0.000	0.046	-0.184	36.6	0.04
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.486	0.001	0.082	-0.181		
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	0.283	0.001	-0.054	-0.181	136.0	0.00
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.486	0.001	0.082	-0.181		

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (318) of (638)



LTE Band 66 SPLSR – Top Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.10	LTE Band 66 (①)	0.870	0.000	0.046	-0.184	36.6	0.05
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.546	0.001	0.082	-0.181		
	LTE Band 66 (①)	0.870	0.000	0.046	-0.184	87.6	0.01
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	0.279	0.001	-0.042	-0.181		
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.546	0.001	0.082	-0.181	124.0	0.01
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	0.279	0.001	-0.042	-0.181		

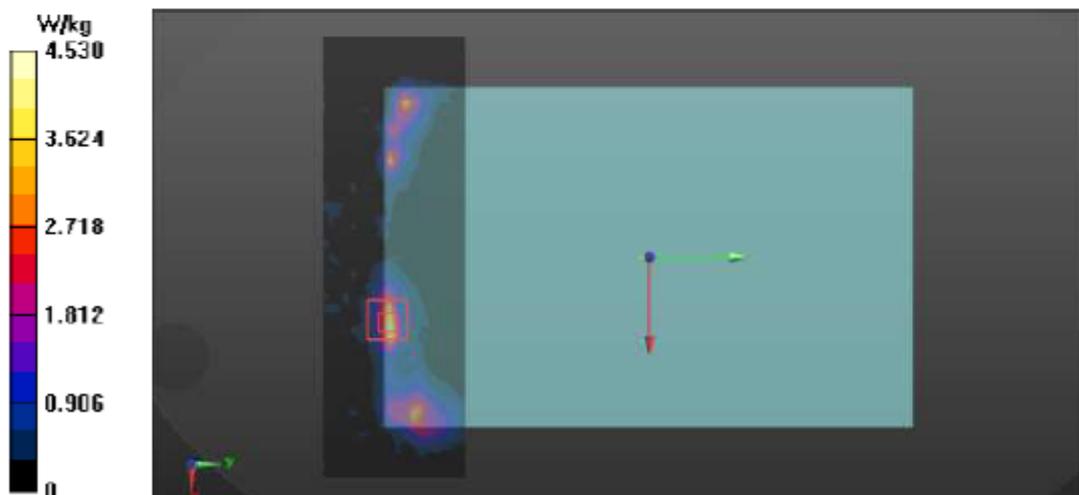
LTE Band 66 Volume Scan – Rear Position

Scenario No.7

Licensed Band + WLAN 5 GHz MIMO + Bluetooth Ant 1
= 1.08 W/kg**Multi-Band Average SAR****Multi-Band Configurations:**DASY Configuration for Configuration/LTE Band 66_QPSK_20
MHz_50RB_24offset_CH132572_Rear_0 mm Grip Sensor On_VS/Volume Scan:DASY Configuration for Configuration/802.11 ac_VHT80_WLAN2_CH155_Rear_0
mm Sensor On/Volume Scan:DASY Configuration for Configuration/802.11 ac_VHT80_WLAN1_CH122_Rear_0
mm Sensor On/Volume Scan:DASY Configuration for Configuration/Bluetooth_GFSK_DH5_Ant.1_CH0_Rear_0
mm Sensor On/Volume Scan:**Multi Band Result:**

SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.515 W/kg

Maximum value of SAR (interpolated) = 4.53 W/kg



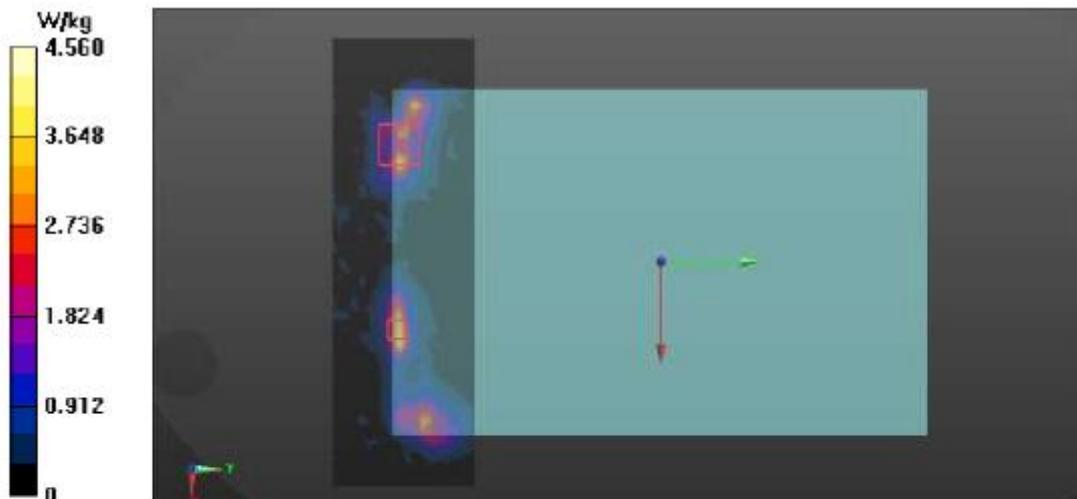
LTE Band 66 Volume Scan – Rear Position

Scenario No.9

Licensed Band + WLAN 2.4 GHz Ant.2 + WLAN 5 GHz MIMO + Bluetooth Ant 1
= 1.09 W/kg**Multi-Band Average SAR****Multi-Band Configurations:**DASY Configuration for Configuration/LTE Band 66_QPSK_20
MHz_50RB_24offset_CH132572_Rear_0 mm Grip Sensor On_VS/Volume Scan:DASY Configuration for Configuration/802.11 ac_VHT80_WLAN2_CH155_Rear_0
mm Sensor On/Volume Scan:DASY Configuration for Configuration/802.11 b_WLAN2_CH1_Rear_0 mm Sensor
On VS/Volume Scan:DASY Configuration for Configuration/802.11 ac_VHT80_WLAN1_CH122_Rear_0
mm Sensor On/Volume Scan:DASY Configuration for Configuration/Bluetooth_GFSK_DH5_Ant.1_CH0_Rear_0
mm Sensor On/Volume Scan:**Multi Band Result:**

SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.553 W/kg

Maximum value of SAR (interpolated) = 4.56 W/kg



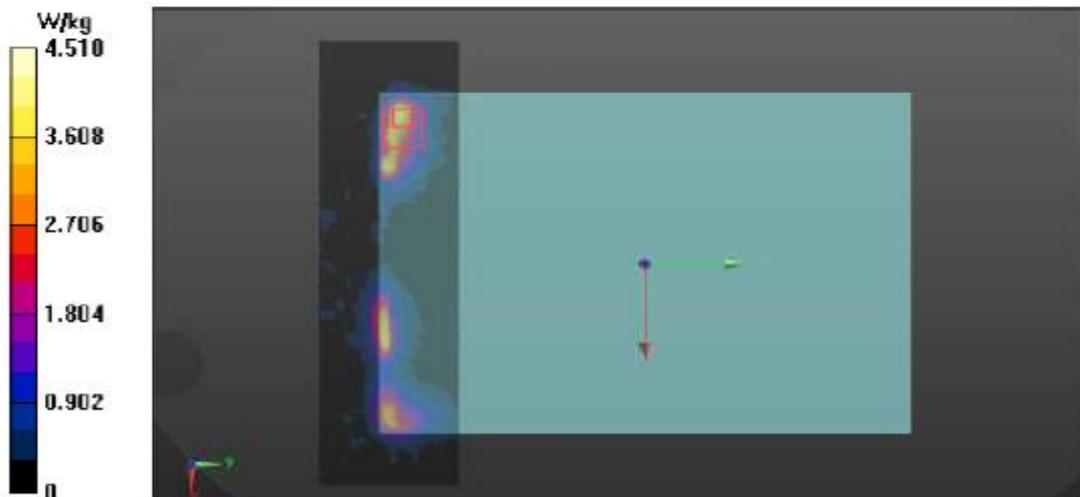
LTE Band 66 Volume Scan – Rear Position

Scenario No.10

Licensed Band + WLAN 2.4 GHz MIMO + WLAN 5 GHz MIMO
= 1.29 W/kg**Multi-Band Average SAR****Multi-Band Configurations:**DASY Configuration for Configuration/802.11 b_MIMO_CH11_Rear_0 mm Sensor
On VS/Volume Scan:DASY Configuration for Configuration/802.11 ac_VHT80_WLAN2_CH155_Rear_0
mm Sensor On/Volume Scan:DASY Configuration for Configuration/LTE Band 66_QPSK_20
MHz_50RB_24offset_CH132572_Rear_0 mm Grip Sensor On_VS/Volume Scan:DASY Configuration for Configuration/802.11 ac_VHT80_WLAN1_CH122_Rear_0
mm Sensor On/Volume Scan:**Multi Band Result:**

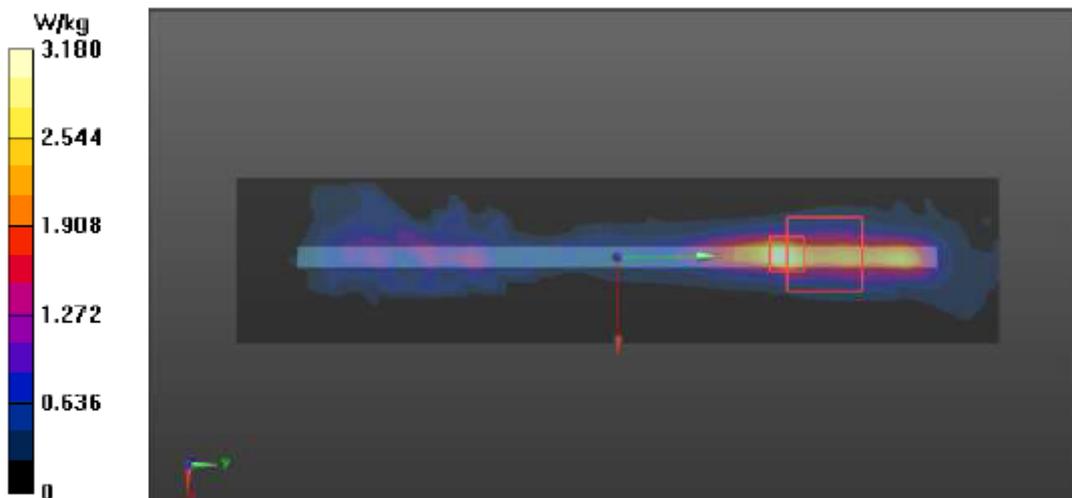
SAR(1 g) = 1.29 W/kg; SAR(10 g) = 0.656 W/kg

Maximum value of SAR (interpolated) = 4.51 W/kg



LTE Band 66 Volume Scan – Top Position

Scenario No.10

Licensed Band + WLAN 2.4 GHz MIMO + WLAN 5 GHz MIMO
= 0.904 W/kg**Multi-Band Average SAR****Multi-Band Configurations:**DASY Configuration for Configuration 3/LTE Band 66_QPSK_20
MHz_100RB_0offset_CH132572_Top_0 mm Grip Sensor On/Volume Scan:DASY Configuration for Configuration 5/802.11_b_MIMO_CH11_Top_0 mm
Sensor On VS/Volume Scan:DASY Configuration for Configuration 5/802.11 ac_VHT80_WLAN1_CH122_Top_0
mm Sensor On_VS/Volume Scan:DASY Configuration for Configuration 5/802.11 ac_VHT80_WLAN2_CH155_Top_0
mm Sensor On_VS 2/Volume Scan:**Multi Band Result:**SAR(1 g) = 0.904 W/kg; SAR(10 g) = 0.390 W/kg
Maximum value of SAR (interpolated) = 3.18 W/kg

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (323) of (638)



12.4.1 GSM850 SPLSR and Volume Scan Analysis_Sensor Off

GSM850 Simultaneous										
Scenario	Non-RSDB(Sensor Off)								RSDB	
	Scenario No.1	Scenario No.2	Scenario No.3	Scenario No.4	Scenario No.5	Scenario No.6	Scenario No.7	Scenario No.8	Scenario No.9	Scenario No.10
SUM	①②	①⑥	①⑦	①③	①④⑤	①②⑥	①④⑤⑥	①④⑤⑦	①②④⑤⑥	①③④⑤
Rear	1.260	0.683	0.703	0.817	0.966	1.329	1.035	1.055	2.617	2.618
Left	0.250	0.107	0.257	0.796	1.315	0.250	1.315	1.465	0.774	0.766
Left Corner	0.461	0.800	0.431	0.548	0.685	0.861	1.085	0.716	1.227	0.840
Right	0.193	0.353	0.181	0.770	1.240	0.365	1.412	1.240	1.033	1.306
Right Corner	0.495	0.140	0.495	0.249	0.510	0.540	0.555	0.910	1.070	0.869
Top	0.593	0.585	0.530	0.700	0.680	0.671	0.758	0.703	1.222	1.296

Note: 1) Yellow highlight cells require SPLSR or Volume Scan analysis.

2) Non-RSDB = Licensed Band(Full Power) + WLAN(Full Power) + Bluetooth(Full Power)

3) RSDB = Licensed Band(Full Power) + WLAN(Power Back-off) + Bluetooth(Full Power)

GSM850 SPLSR – Rear Position				
Scenario	Scenario No.9		Scenario No.10	
Rear	2.617		2.618	
Distance [mm]	①-②⑤		75.9	①-③④
	①-④⑥		62.1	①-③⑤
	②⑤-④⑥		136	③④-③⑤
SPLSR ≤ 0.04 Limit	①-②⑤		0.03	①-③④
	①-④⑥		0.02	①-③⑤
	②⑤-④⑥		0.01	③④-③⑤
Volume scan	Not Required		Not Required	

Note: Scenario No. 7 ~ 10 were analyzed according to the SPLSR hotspot combination procedure of the TCB Workshop Nov 2019.(Reference Section 12.5).

KCTL Inc.

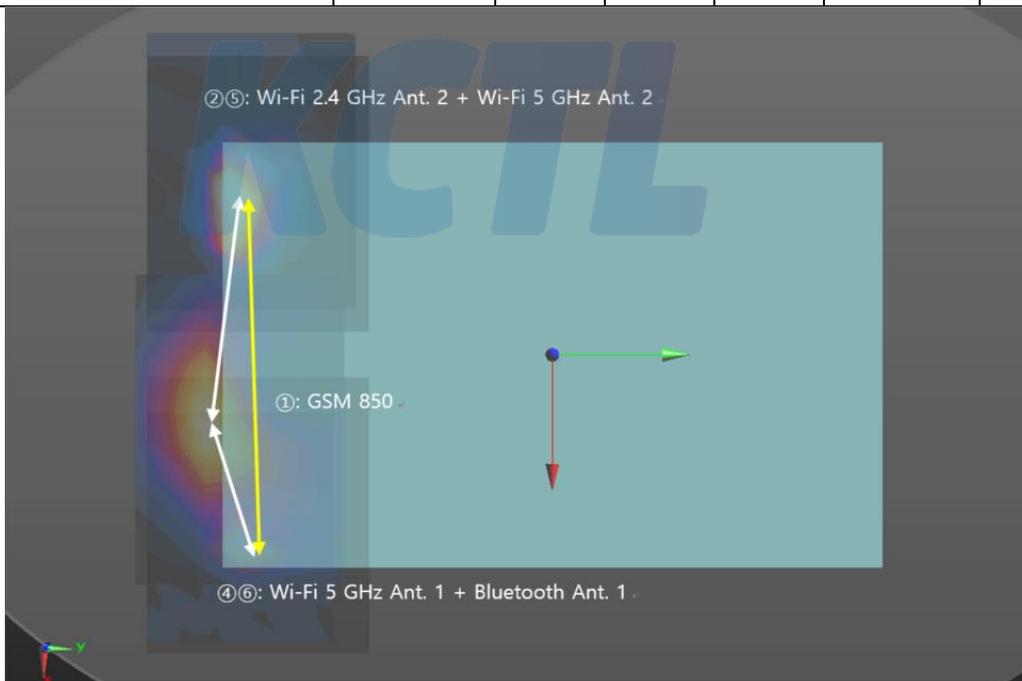
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (324) of (638)



GSM850 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.9	GSM850 (①)	0.614	0.023	-0.149	-0.184	75.9	0.03
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178		
	GSM850 (①)	0.614	0.023	-0.149	-0.184	62.1	0.02
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.512	0.084	-0.139	-0.178		
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178	136.0	0.01
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.512	0.084	-0.139	-0.178		



KCTL Inc.

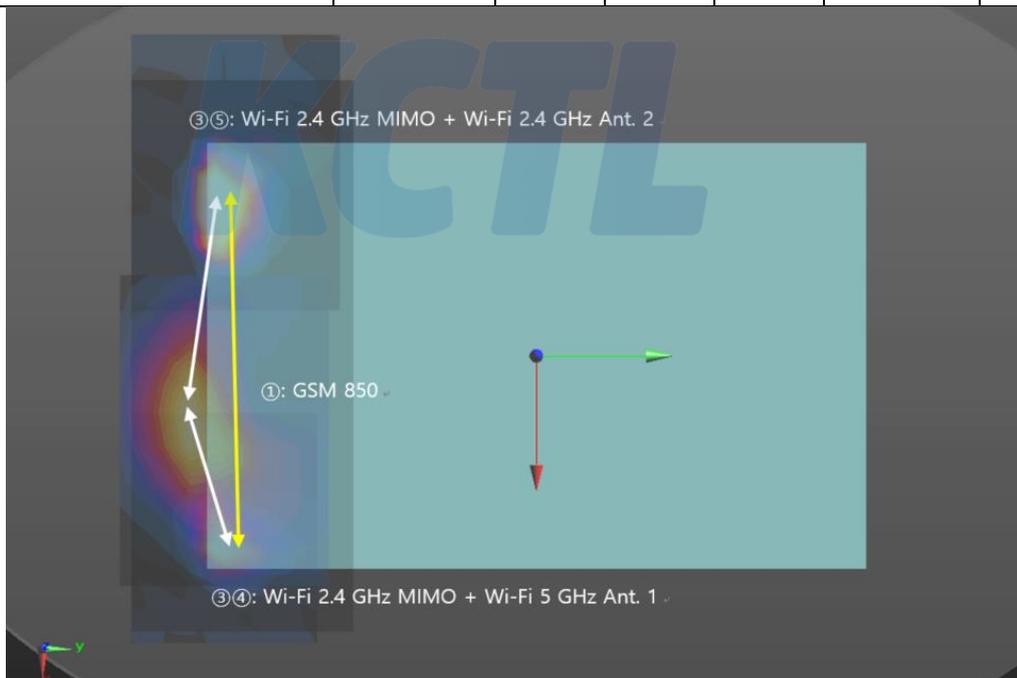
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (325) of (638)



GSM850 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.10	GSM850 (①)	0.614	0.023	-0.149	-0.184	62.1	0.03
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178		
	GSM850 (①)	0.614	0.023	-0.149	-0.184	109.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178	168.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (326) of (638)



12.4.2 GSM1900 SPLSR and Volume Scan Analysis_Sensor Off

GSM1900 Simultaneous										
Scenario	Non-RSDB(Sensor Off)								RSDB	
	Scenario No.1	Scenario No.2	Scenario No.3	Scenario No.4	Scenario No.5	Scenario No.6	Scenario No.7	Scenario No.8	Scenario No.9	Scenario No.10
SUM	①②	①⑥	①⑦	①③	①④⑤	①②⑥	①④⑤⑥	①④⑤⑦	①②④⑤⑥	①③④⑤
Rear	0.873	0.296	0.315	0.430	0.579	0.942	0.648	0.667	2.230	2.231
Left	0.238	0.095	0.245	0.784	1.303	0.238	1.303	1.453	0.762	0.754
Left Corner	0.461	0.800	0.431	0.548	0.685	0.861	1.085	0.716	1.227	0.840
Right	0.163	0.323	0.151	0.740	1.210	0.335	1.382	1.210	1.003	1.276
Right Corner	0.524	0.169	0.524	0.278	0.539	0.569	0.584	0.939	1.099	0.899
Top	0.328	0.319	0.264	0.435	0.415	0.405	0.492	0.437	0.956	1.031

Note: 1) Yellow highlight cells require SPLSR or Volume Scan analysis.

2) Non-RSDB = Licensed Band(Full Power) + WLAN(Full Power) + Bluetooth(Full Power)

3) RSDB = Licensed Band(Full Power) + WLAN(Power Back-off) + Bluetooth(Full Power)

GSM1900 SPLSR – Rear Position				
Scenario	Scenario No.9		Scenario No.10	
Rear	2.230		2.231	
Distance [mm]	①-②⑤	79.7	①-③④	56.8
	①-④⑥	56.8	①-③⑤	112.0
	②⑤-④⑥	136.0	③④-③⑤	168.0
SPLSR ≤ 0.04 Limit	①-②⑤	0.02	①-③④	0.02
	①-④⑥	0.01	①-③⑤	0.02
	②⑤-④⑥	0.01	③④-③⑤	0.02
Volume scan	Not Required		Not Required	

Note: Scenario No. 7 ~ 10 were analyzed according to the SPLSR hotspot combination procedure of the TCB Workshop Nov 2019.(Reference Section 12.5).

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (327) of (638)



GSM1900 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.9	GSM1900 (①)	0.227	0.028	-0.140	-0.184	79.7	0.02
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178		
	GSM1900 (①)	0.227	0.028	-0.14	-0.184	56.8	0.01
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant. 1 (⑥)	0.512	0.084	-0.139	-0.178		
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178	136.0	0.01
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant. 1 (⑥)	0.512	0.084	-0.139	-0.178		

KCTL Inc.

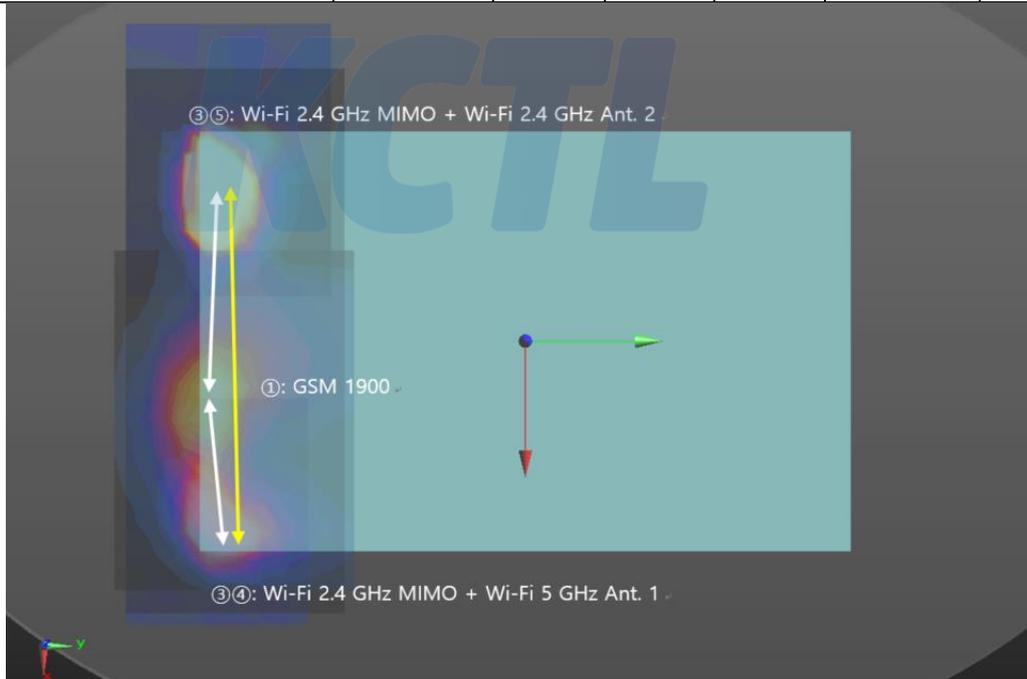
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (328) of (638)



GSM1900 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.10	GSM1900 (①)	0.227	0.028	-0.140	-0.184	56.8	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178		
	GSM1900 (①)	0.227	0.028	-0.140	-0.184	112.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178	168.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (329) of (638)



12.4.3 WCDMA II SPLSR and Volume Scan Analysis_Sensor Off

WCDMA II Simultaneous										
Scenario	Non-RSDB(Sensor Off)								RSDB	
	Scenario No.1	Scenario No.2	Scenario No.3	Scenario No.4	Scenario No.5	Scenario No.6	Scenario No.7	Scenario No.8	Scenario No.9	Scenario No.10
SUM	①②	①⑥	①⑦	①③	①④⑤	①②⑥	①④⑤⑥	①④⑤⑦	①②④⑤⑥	①③④⑤
Rear	1.033	0.456	0.475	0.590	0.739	1.102	0.808	0.827	2.390	2.391
Left	0.284	0.141	0.291	0.830	1.349	0.284	1.349	1.499	0.808	0.800
Left Corner	0.461	0.800	0.431	0.548	0.685	0.861	1.085	0.716	1.227	0.840
Right	0.198	0.358	0.186	0.775	1.245	0.370	1.417	1.245	1.038	1.311
Right Corner	0.602	0.247	0.602	0.356	0.617	0.647	0.662	1.017	1.177	0.976
Top	0.465	0.457	0.402	0.572	0.552	0.543	0.630	0.575	1.094	1.168

Note: 1) Yellow highlight cells require SPLSR or Volume Scan analysis.

2) Non-RSDB = Licensed Band(Full Power) + WLAN(Full Power) + Bluetooth(Full Power)

3) RSDB = Licensed Band(Full Power) + WLAN(Power Back-off) + Bluetooth(Full Power)

WCDMA II SPLSR – Rear Position					
Scenario	Scenario No.9		Scenario No.10		
Rear	2.390		2.391		
Distance [mm]	①-②⑤		76.8	①-③④	59.8
	①-④⑥		59.8	①-③⑤	109.0
	②⑤-④⑥		136.0	③④-③⑤	168.0
SPLSR ≤ 0.04 Limit	①-②⑤		0.02	①-③④	0.03
	①-④⑥		0.01	①-③⑤	0.02
	②⑤-④⑥		0.01	③④-③⑤	0.02
Volume scan	Not Required		Not Required		

Note: Scenario No. 7 ~ 10 were analyzed according to the SPLSR hotspot combination procedure of the TCB Workshop Nov 2019.(Reference Section 12.5).

KCTL Inc.

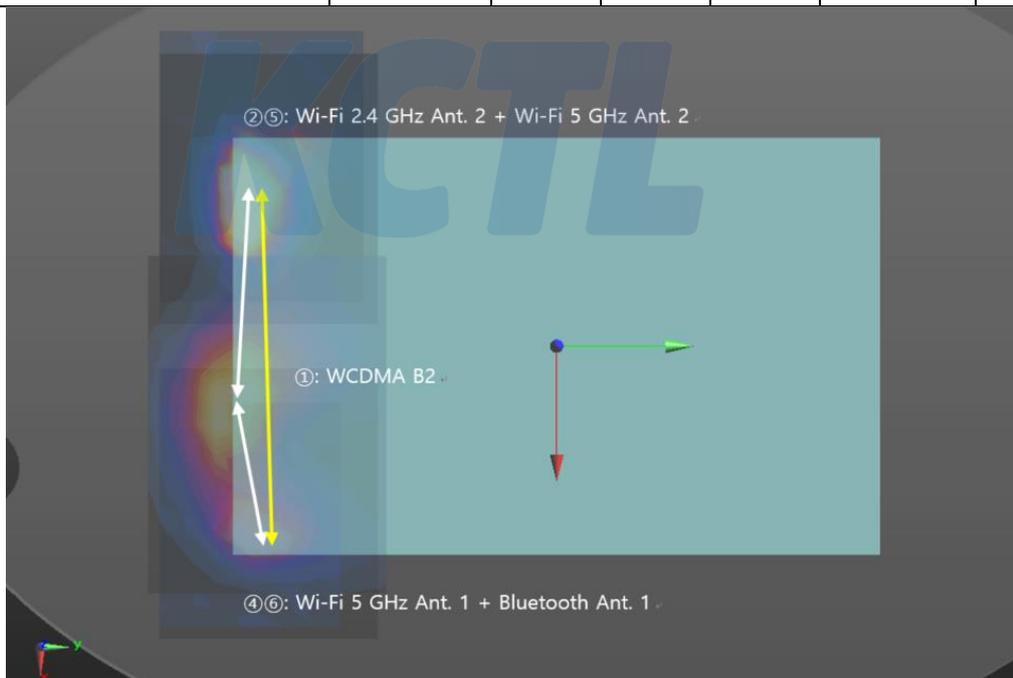
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (330) of (638)



WCDMA II SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.9	WCDMA II (①)	0.387	0.025	-0.143	-0.183	76.8	0.02
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178		
	WCDMA II (①)	0.387	0.025	-0.143	-0.183	59.8	0.01
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.512	0.084	-0.139	-0.178		
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178	136.0	0.01
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.512	0.084	-0.139	-0.178		



KCTL Inc.

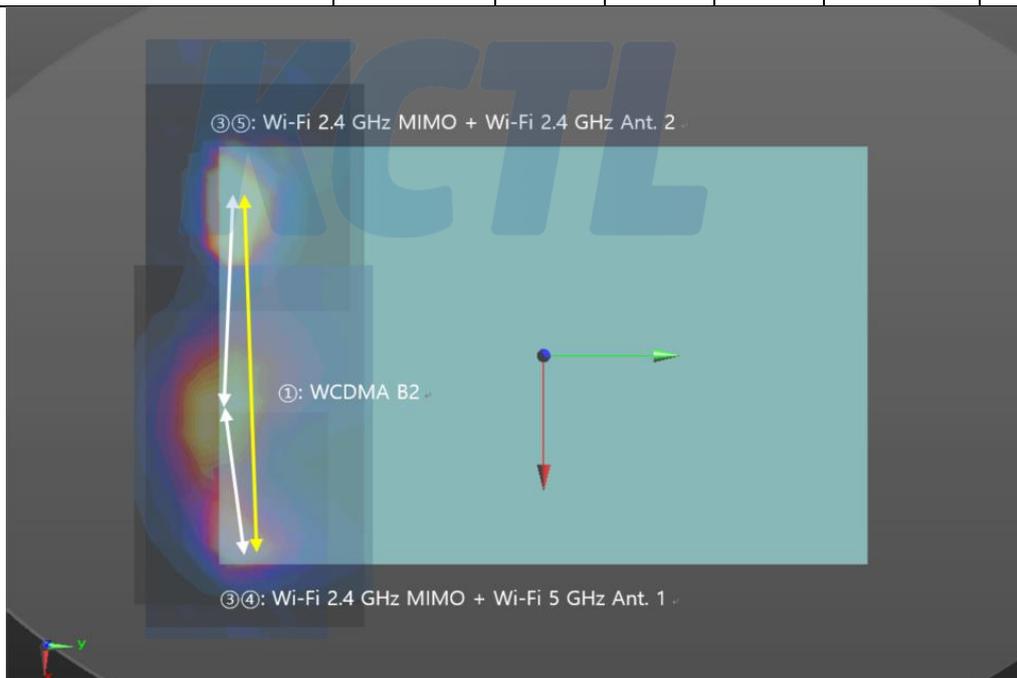
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (331) of (638)



WCDMA II SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.10	WCDMA II (①)	0.387	0.025	-0.143	-0.183	59.8	0.03
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178		
	WCDMA II (①)	0.387	0.025	-0.143	-0.183	109.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178	168.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (332) of (638)



12.4.4 WCDMA IV SPLSR and Volume Scan Analysis_Sensor Off

WCDMA IV Simultaneous										
Scenario	Non-RSDB(Sensor Off)								RSDB	
	Scenario No.1	Scenario No.2	Scenario No.3	Scenario No.4	Scenario No.5	Scenario No.6	Scenario No.7	Scenario No.8	Scenario No.9	Scenario No.10
SUM	①②	①⑥	①⑦	①③	①④⑤	①②⑥	①④⑤⑥	①④⑤⑦	①②④⑤⑥	①③④⑤
Rear	0.911	0.334	0.354	0.468	0.617	0.980	0.686	0.706	2.268	2.269
Left	0.218	0.075	0.225	0.764	1.283	0.218	1.283	1.433	0.742	0.734
Left Corner	0.461	0.800	0.431	0.548	0.685	0.861	1.085	0.716	1.227	0.840
Right	0.186	0.346	0.174	0.763	1.233	0.358	1.405	1.233	1.026	1.299
Right Corner	0.524	0.169	0.524	0.278	0.539	0.569	0.584	0.939	1.099	0.898
Top	0.375	0.367	0.312	0.482	0.462	0.453	0.540	0.485	1.004	1.078

Note: 1) Yellow highlight cells require SPLSR or Volume Scan analysis.

2) Non-RSDB = Licensed Band(Full Power) + WLAN(Full Power) + Bluetooth(Full Power)

3) RSDB = Licensed Band(Full Power) + WLAN(Power Back-off) + Bluetooth(Full Power)

WCDMA IV SPLSR – Rear Position				
Scenario	Scenario No.9		Scenario No.10	
Rear	2.268		2.269	
Distance [mm]	①-②⑤	74.0	①-③④	63.1
	①-④⑥	63.1	①-③⑤	107.0
	②⑤-④⑥	136.0	③④-③⑤	168.0
SPLSR ≤ 0.04 Limit	①-②⑤	0.02	①-③④	0.02
	①-④⑥	0.01	①-③⑤	0.02
	②⑤-④⑥	0.01	③④-③⑤	0.02
Volume scan	Not Required		Not Required	

Note: Scenario No. 7 ~ 10 were analyzed according to the SPLSR hotspot combination procedure of the TCB Workshop Nov 2019.(Reference Section 12.5).

KCTL Inc.

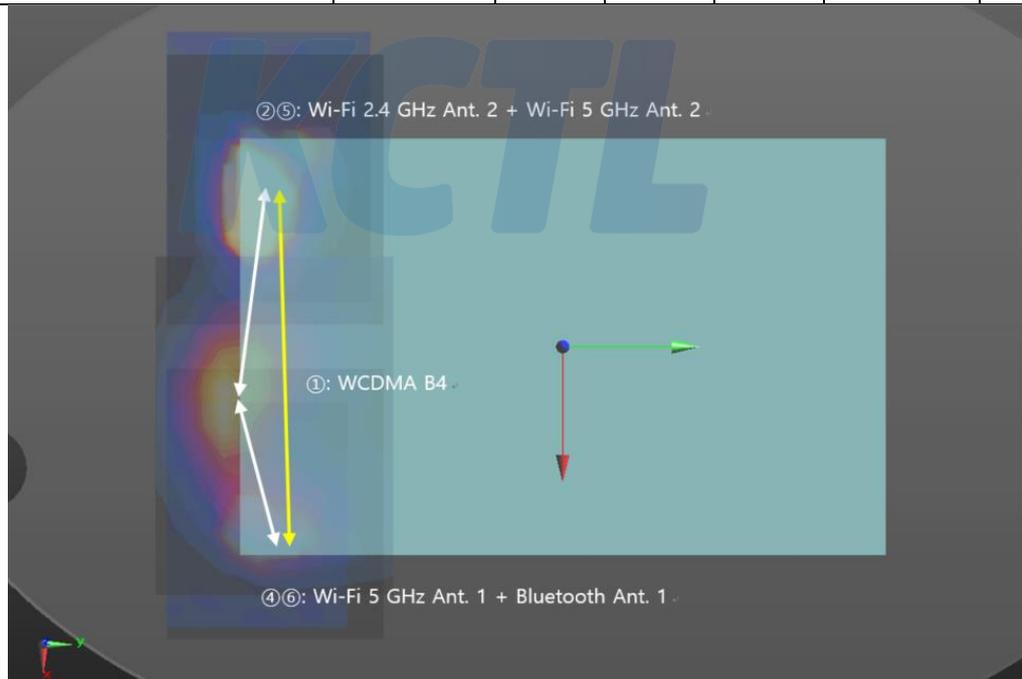
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (333) of (638)



WCDMA IV SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.9	WCDMA IV (①)	0.265	0.022	-0.146	-0.183	74.0	0.02
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178		
	WCDMA IV (①)	0.265	0.022	-0.146	-0.183	63.1	0.01
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant. 1 (⑥)	0.512	0.084	-0.139	-0.178		
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178	136.0	0.01
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant. 1 (⑥)	0.512	0.084	-0.139	-0.178		



KCTL Inc.

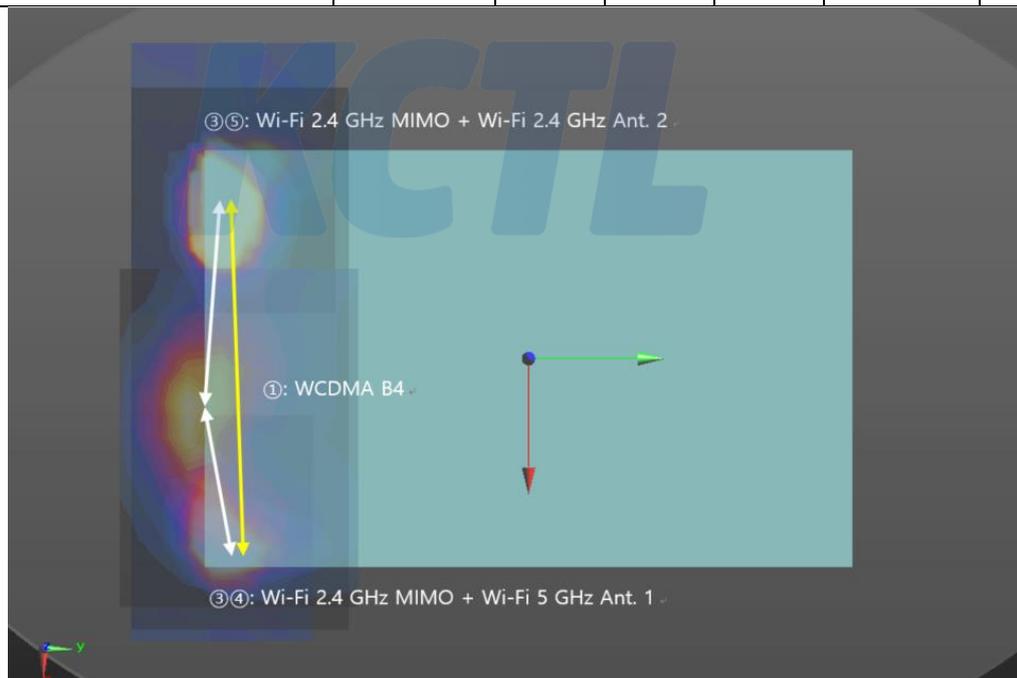
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (334) of (638)



WCDMA IV SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.10	WCDMA IV (①)	0.265	0.022	-0.146	-0.183	63.1	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178		
	WCDMA IV (①)	0.265	0.022	-0.146	-0.183	107.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178	168.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (335) of (638)



12.4.5 WCDMA V SPLSR and Volume Scan Analysis_Sensor Off

WCDMA V Simultaneous										
Scenario	Non-RSDB(Sensor Off)								RSDB	
	Scenario No.1	Scenario No.2	Scenario No.3	Scenario No.4	Scenario No.5	Scenario No.6	Scenario No.7	Scenario No.8	Scenario No.9	Scenario No.10
SUM	①②	①⑥	①⑦	①③	①④⑤	①②⑥	①④⑤⑥	①④⑤⑦	①②④⑤⑥	①③④⑤
Rear	1.177	0.600	0.620	0.734	0.883	1.246	0.952	0.972	2.534	2.535
Left	0.228	0.085	0.235	0.774	1.293	0.228	1.293	1.443	0.752	0.744
Left Corner	0.461	0.800	0.431	0.548	0.685	0.861	1.085	0.716	1.227	0.840
Right	0.160	0.320	0.148	0.737	1.207	0.332	1.379	1.207	1.000	1.273
Right Corner	0.487	0.132	0.487	0.241	0.502	0.532	0.547	0.902	1.062	0.861
Top	0.603	0.595	0.540	0.710	0.690	0.681	0.768	0.713	1.232	1.306

Note: 1) Yellow highlight cells require SPLSR or Volume Scan analysis.

2) Non-RSDB = Licensed Band(Full Power) + WLAN(Full Power) + Bluetooth(Full Power)

3) RSDB = Licensed Band(Full Power) + WLAN(Power Back-off) + Bluetooth(Full Power)

WCDMA V SPLSR – Rear Position				
Scenario	Scenario No.9		Scenario No.10	
Rear	2.534		2.535	
Distance [mm]	①-②⑤	79.5	①-③④	58.8
	①-④⑥	58.8	①-③⑤	112.0
	②⑤-④⑥	136.0	③④-③⑤	168.0
SPLSR ≤ 0.04 Limit	①-②⑤	0.02	①-③④	0.03
	①-④⑥	0.02	①-③⑤	0.02
	②⑤-④⑥	0.01	③④-③⑤	0.02
Volume scan	Not Required		Not Required	

Note: Scenario No. 7 ~ 10 were analyzed according to the SPLSR hotspot combination procedure of the TCB Workshop Nov 2019.(Reference Section 12.5).

KCTL Inc.

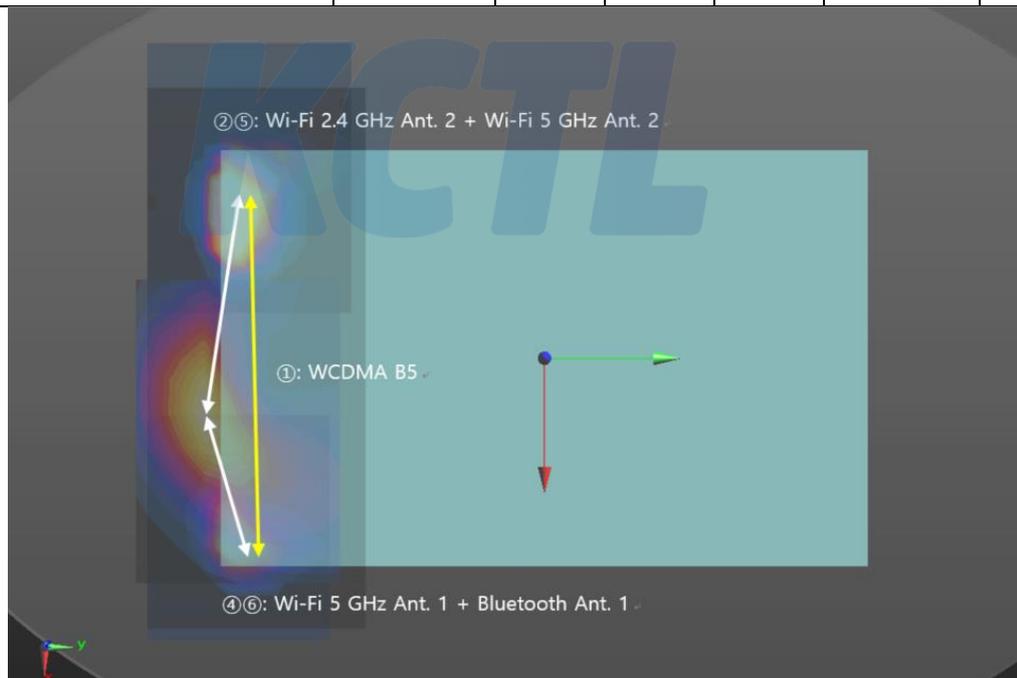
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (336) of (638)



WCDMA V SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.9	WCDMA V (①)	0.531	0.027	-0.150	-0.184	79.5	0.02
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178		
	WCDMA V (①)	0.531	0.027	-0.150	-0.184	58.8	0.02
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.512	0.084	-0.139	-0.178		
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178	136.0	0.01
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.512	0.084	-0.139	-0.178		



KCTL Inc.

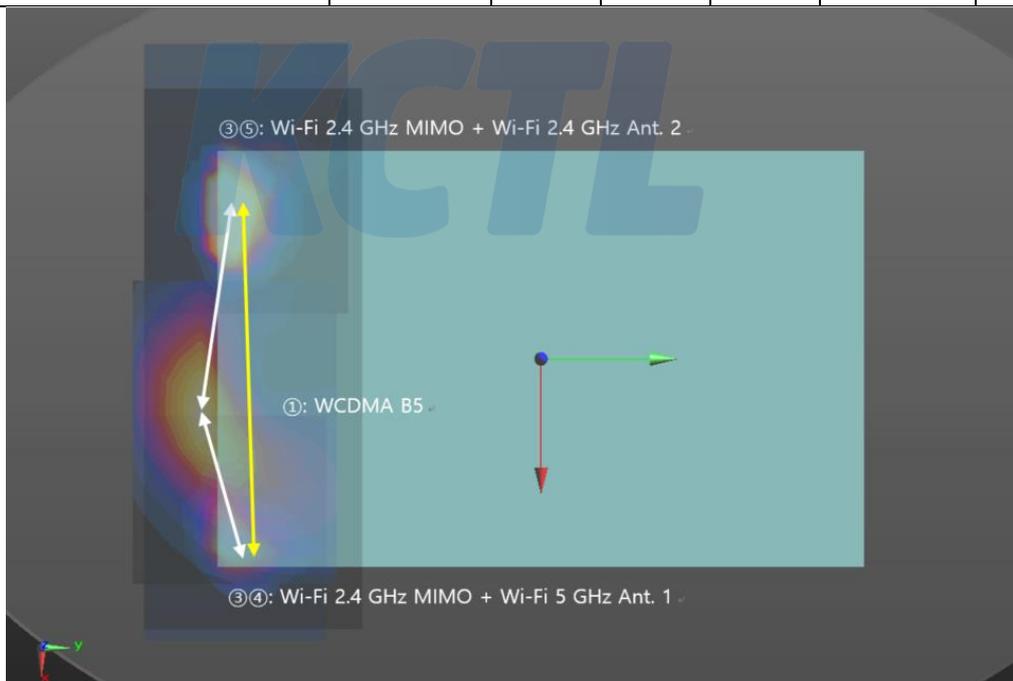
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (337) of (638)



WCDMA V SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.10	WCDMA V (①)	0.531	0.027	-0.150	-0.184	58.8	0.03
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178		
	WCDMA V (①)	0.531	0.027	-0.150	-0.184	112.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178	168.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (338) of (638)



12.4.6 LTE Band 2 SPLSR and Volume Scan Analysis_Sensor Off

LTE Band 2 Simultaneous										
Scenario	Non-RSDB(Sensor Off)								RSDB	
	Scenario No.1	Scenario No.2	Scenario No.3	Scenario No.4	Scenario No.5	Scenario No.6	Scenario No.7	Scenario No.8	Scenario No.9	Scenario No.10
SUM	①②	①⑥	①⑦	①③	①④⑤	①②⑥	①④⑤⑥	①④⑤⑦	①②④⑤⑥	①③④⑤
Rear	1.103	0.526	0.545	0.660	0.809	1.172	0.878	0.897	2.460	2.461
Left	0.286	0.143	0.293	0.832	1.351	0.286	1.351	1.501	0.810	0.802
Left Corner	0.461	0.800	0.431	0.548	0.685	0.861	1.085	0.716	1.227	0.840
Right	0.241	0.402	0.229	0.818	1.288	0.414	1.461	1.288	1.082	1.354
Right Corner	0.616	0.261	0.616	0.370	0.631	0.661	0.676	1.031	1.191	0.990
Top	0.537	0.528	0.473	0.644	0.624	0.614	0.701	0.646	1.165	1.240

Note: 1) Yellow highlight cells require SPLSR or Volume Scan analysis.

2) Non-RSDB = Licensed Band(Full Power) + WLAN(Full Power) + Bluetooth(Full Power)

3) RSDB = Licensed Band(Full Power) + WLAN(Power Back-off) + Bluetooth(Full Power)

LTE Band 2 SPLSR – Rear Position				
Scenario	Scenario No.9		Scenario No.10	
Rear	2.460		2.461	
Distance [mm]	①-②⑤		73.8	①-③④
	①-④⑥		62.9	①-③⑤
	②⑤-④⑥		136.0	③④-③⑤
SPLSR ≤ 0.04 Limit	①-②⑤		0.02	①-③④
	①-④⑥		0.02	①-③⑤
	②⑤-④⑥		0.01	③④-③⑤
Volume scan	Not Required		Not Required	

Note: Scenario No. 7 ~ 10 were analyzed according to the SPLSR hotspot combination procedure of the TCB Workshop Nov 2019.(Reference Section 12.5).

KCTL Inc.

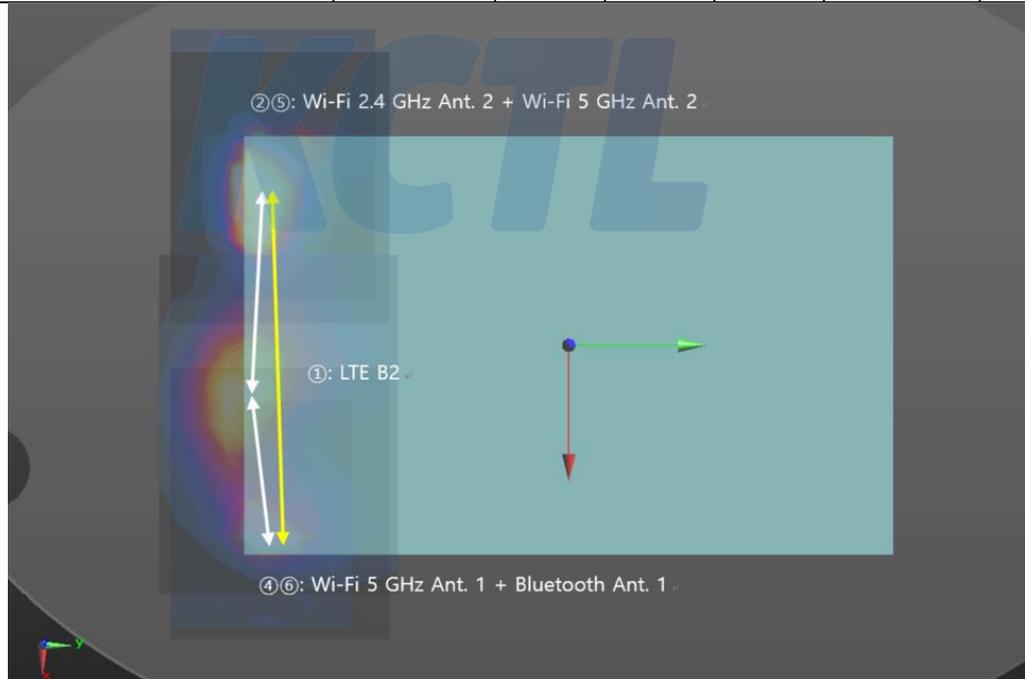
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (339) of (638)



LTE Band 2 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.9	LTE Band 2 (①)	0.457	0.022	-0.144	-0.183	73.8	0.02
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178		
	LTE Band 2 (①)	0.457	0.022	-0.144	-0.183	62.9	0.02
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.512	0.084	-0.139	-0.178		
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178	136.0	0.01
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.512	0.084	-0.139	-0.178		



KCTL Inc.

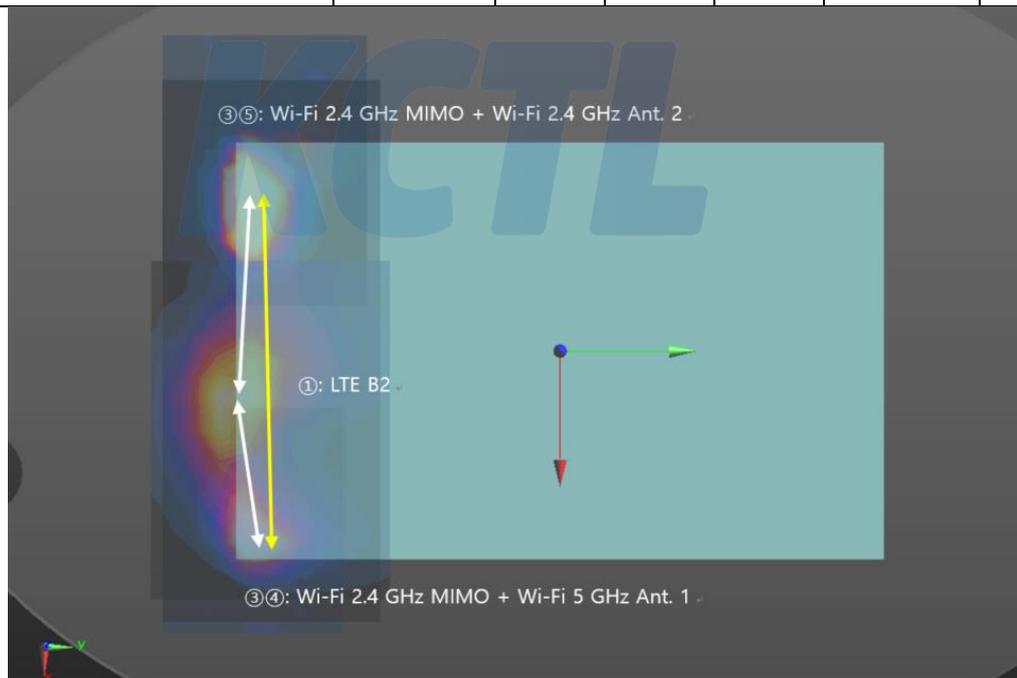
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (340) of (638)



LTE Band 2 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.10	LTE Band 2 (①)	0.457	0.022	-0.144	-0.183	62.9	0.03
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178		
	LTE Band 2 (①)	0.457	0.022	-0.144	-0.183	106.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178	168.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (341) of (638)



12.4.7 LTE Band 5 SPLSR and Volume Scan Analysis_Sensor Off

LTE Band 5 Simultaneous										
Scenario	Non-RSDB(Sensor Off)								RSDB	
	Scenario No.1	Scenario No.2	Scenario No.3	Scenario No.4	Scenario No.5	Scenario No.6	Scenario No.7	Scenario No.8	Scenario No.9	Scenario No.10
SUM	①②	①⑥	①⑦	①③	①④⑤	①②⑥	①④⑤⑥	①④⑤⑦	①②④⑤⑥	①③④⑤
Rear	1.172	0.595	0.614	0.729	0.878	1.241	0.947	0.966	2.529	2.530
Left	0.253	0.110	0.260	0.799	1.318	0.253	1.318	1.468	0.777	0.769
Left Corner	0.461	0.800	0.431	0.548	0.685	0.861	1.085	0.716	1.227	0.840
Right	0.196	0.356	0.184	0.773	1.243	0.368	1.415	1.243	1.036	1.309
Right Corner	0.485	0.130	0.485	0.239	0.500	0.530	0.545	0.900	1.060	0.859
Top	0.565	0.557	0.502	0.672	0.652	0.643	0.730	0.675	1.194	1.268

Note: 1) Yellow highlight cells require SPLSR or Volume Scan analysis.

2) Non-RSDB = Licensed Band(Full Power) + WLAN(Full Power) + Bluetooth(Full Power)

3) RSDB = Licensed Band(Full Power) + WLAN(Power Back-off) + Bluetooth(Full Power)

LTE Band 5 SPLSR – Rear Position				
Scenario	Scenario No.9		Scenario No.10	
Rear	2.529		2.530	
Distance [mm]	①-②⑤		77.6	①-③④
	①-④⑥		59.8	①-③⑤
	②⑤-④⑥		136.0	③④-③⑤
SPLSR ≤ 0.04 Limit	①-②⑤		0.02	①-③④
	①-④⑥		0.02	①-③⑤
	②⑤-④⑥		0.01	③④-③⑤
Volume scan	Not Required		Not Required	

Note: Scenario No. 7 ~ 10 were analyzed according to the SPLSR hotspot combination procedure of the TCB Workshop Nov 2019.(Reference Section 12.5).

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (342) of (638)



LTE Band 5 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.9	LTE Band 5 (①)	0.526	0.025	-0.147	-0.184	77.6	0.02
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178		
	LTE Band 5 (①)	0.526	0.025	-0.147	-0.184	59.8	0.02
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant. 1 (⑥)	0.512	0.084	-0.139	-0.178		
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178	136.0	0.01
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant. 1 (⑥)	0.512	0.084	-0.139	-0.178		



KCTL Inc.

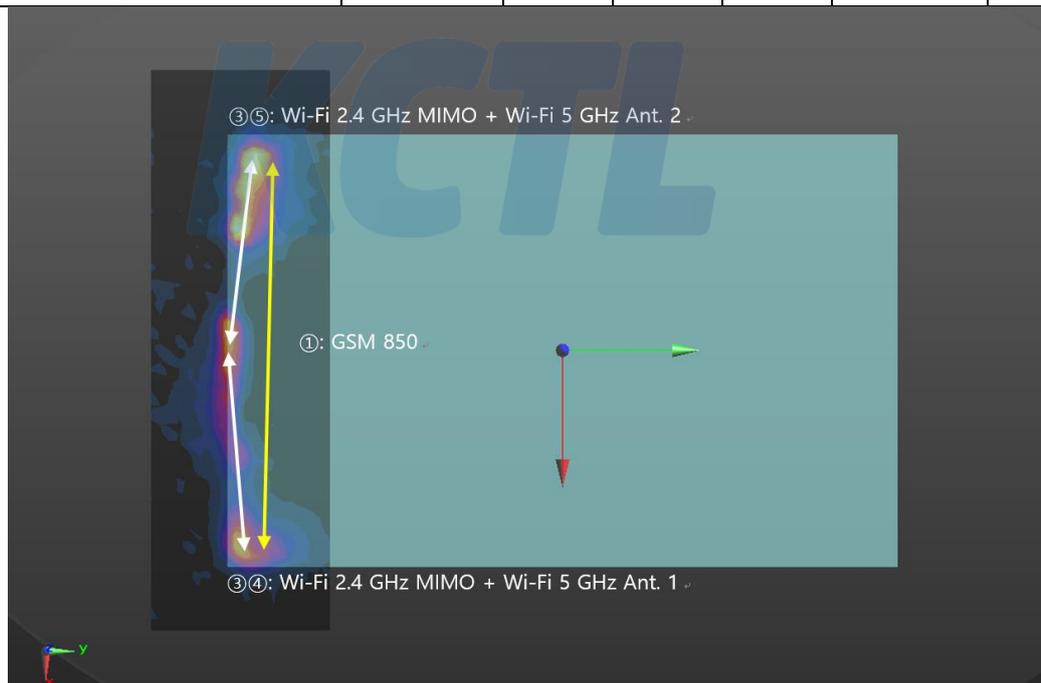
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (343) of (638)



LTE Band 5 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.10	LTE Band 5 (①)	0.526	0.025	-0.147	-0.184	59.8	0.03
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178		
	LTE Band 5 (①)	0.526	0.025	-0.147	-0.184	110.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178	168.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (344) of (638)



12.4.8 LTE Band 12 SPLSR and Volume Scan Analysis_Sensor Off

LTE Band 12 Simultaneous										
Scenario	Non-RSDB(Sensor Off)								RSDB	
	Scenario No.1	Scenario No.2	Scenario No.3	Scenario No.4	Scenario No.5	Scenario No.6	Scenario No.7	Scenario No.8	Scenario No.9	Scenario No.10
SUM	①②	①⑥	①⑦	①③	①④⑤	①②⑥	①④⑤⑥	①④⑤⑦	①②④⑤⑥	①③④⑤
Rear	0.972	0.395	0.415	0.529	0.678	1.041	0.747	0.767	2.329	2.330
Left	0.191	0.048	0.198	0.737	1.256	0.191	1.256	1.406	0.715	0.707
Left Corner	0.461	0.800	0.431	0.548	0.685	0.861	1.085	0.716	1.227	0.840
Right	0.077	0.237	0.065	0.654	1.124	0.249	1.296	1.124	0.917	1.190
Right Corner	0.426	0.071	0.426	0.180	0.441	0.471	0.486	0.841	1.001	0.800
Top	0.164	0.156	0.100	0.271	0.251	0.242	0.329	0.273	0.793	0.867

Note: 1) Yellow highlight cells require SPLSR or Volume Scan analysis.

2) Non-RSDB = Licensed Band(Full Power) + WLAN(Full Power) + Bluetooth(Full Power)

3) RSDB = Licensed Band(Full Power) + WLAN(Power Back-off) + Bluetooth(Full Power)

LTE Band 12 SPLSR – Rear Position				
Scenario	Scenario No.9		Scenario No.10	
Rear	2.329		2.330	
Distance [mm]	①-②⑤	80.6	①-③④	56.9
	①-④⑥	56.9	①-③⑤	113.0
	②⑤-④⑥	136.0	③④-③⑤	168.0
SPLSR ≤ 0.04 Limit	①-②⑤	0.02	①-③④	0.02
	①-④⑥	0.01	①-③⑤	0.02
	②⑤-④⑥	0.01	③④-③⑤	0.02
Volume scan	Not Required		Not Required	

Note: Scenario No. 7 ~ 10 were analyzed according to the SPLSR hotspot combination procedure of the TCB Workshop Nov 2019.(Reference Section 12.5).

KCTL Inc.

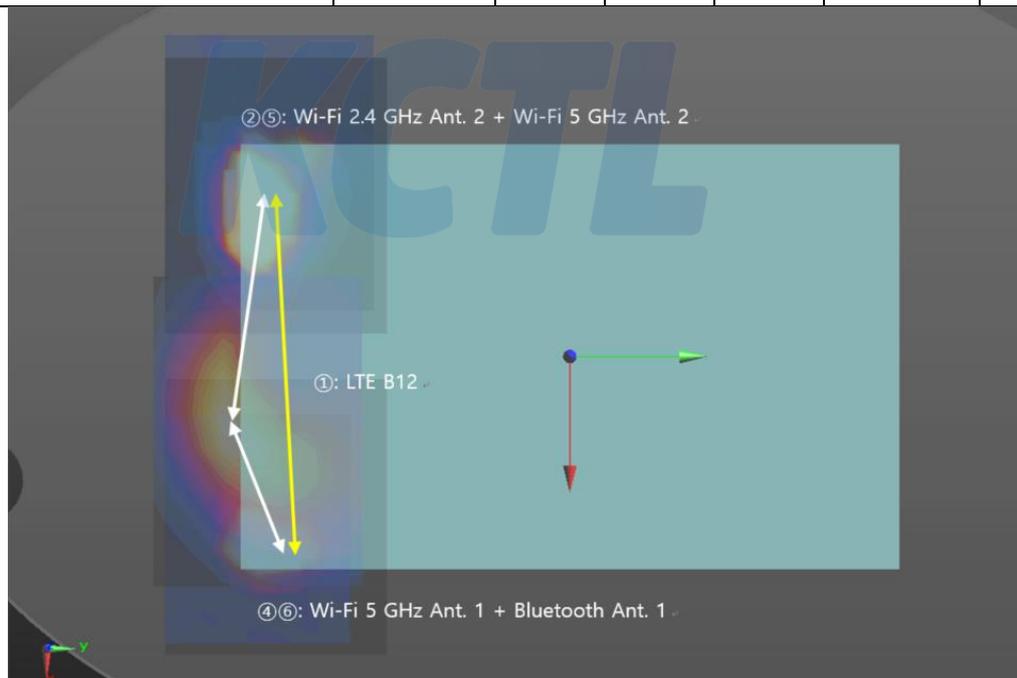
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (345) of (638)



LTE Band 12 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.9	LTE Band 12 (①)	0.326	0.028	-0.147	-0.184	80.6	0.02
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178		
	LTE Band 12 (①)	0.326	0.028	-0.147	-0.184	56.9	0.01
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.512	0.084	-0.139	-0.178		
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178	136.0	0.01
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.512	0.084	-0.139	-0.178		



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (346) of (638)



LTE Band 12 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.10	LTE Band 12 (①)	0.326	0.028	-0.147	-0.184	56.9	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178		
	LTE Band 12 (①)	0.326	0.028	-0.147	-0.184	113.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178	168.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (347) of (638)



12.4.9 LTE Band 13 SPLSR and Volume Scan Analysis_Sensor Off

LTE Band 13 Simultaneous										
Scenario	Non-RSDB(Sensor Off)								RSDB	
	Scenario No.1	Scenario No.2	Scenario No.3	Scenario No.4	Scenario No.5	Scenario No.6	Scenario No.7	Scenario No.8	Scenario No.9	Scenario No.10
SUM	①②	①⑥	①⑦	①③	①④⑤	①②⑥	①④⑤⑥	①④⑤⑦	①②④⑤⑥	①③④⑤
Rear	1.178	0.601	0.620	0.735	0.884	1.247	0.953	0.972	2.535	2.536
Left	0.199	0.056	0.206	0.745	1.264	0.199	1.264	1.414	0.723	0.715
Left Corner	0.461	0.800	0.431	0.548	0.685	0.861	1.085	0.716	1.227	0.840
Right	0.107	0.268	0.095	0.684	1.154	0.280	1.327	1.154	0.948	1.220
Right Corner	0.453	0.098	0.453	0.207	0.468	0.498	0.513	0.868	1.028	0.827
Top	0.477	0.469	0.414	0.584	0.564	0.555	0.642	0.587	1.106	1.180

Note: 1) Yellow highlight cells require SPLSR or Volume Scan analysis.

2) Non-RSDB = Licensed Band(Full Power) + WLAN(Full Power) + Bluetooth(Full Power)

3) RSDB = Licensed Band(Full Power) + WLAN(Power Back-off) + Bluetooth(Full Power)

LTE Band 13 SPLSR – Rear Position				
Scenario	Scenario No.9		Scenario No.10	
Rear	2.535		2.536	
Distance [mm]	①-②⑤		76.4	①-③④
	①-④⑥		61.6	①-③⑤
	②⑤-④⑥		136.0	③④-③⑤
SPLSR ≤ 0.04 Limit	①-②⑤		0.03	①-③④
	①-④⑥		0.02	①-③⑤
	②⑤-④⑥		0.01	③④-③⑤
Volume scan	Not Required		Not Required	

Note: Scenario No. 7 ~ 10 were analyzed according to the SPLSR hotspot combination procedure of the TCB Workshop Nov 2019.(Reference Section 12.5).

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (348) of (638)



LTE Band 13 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.9	LTE Band 13 (①)	0.532	0.024	-0.149	-0.184	76.4	0.03
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178		
	LTE Band 13 (①)	0.532	0.024	-0.149	-0.184	61.6	0.02
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.512	0.084	-0.139	-0.178		
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178	136.0	0.01
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.512	0.084	-0.139	-0.178		

KCTL Inc.

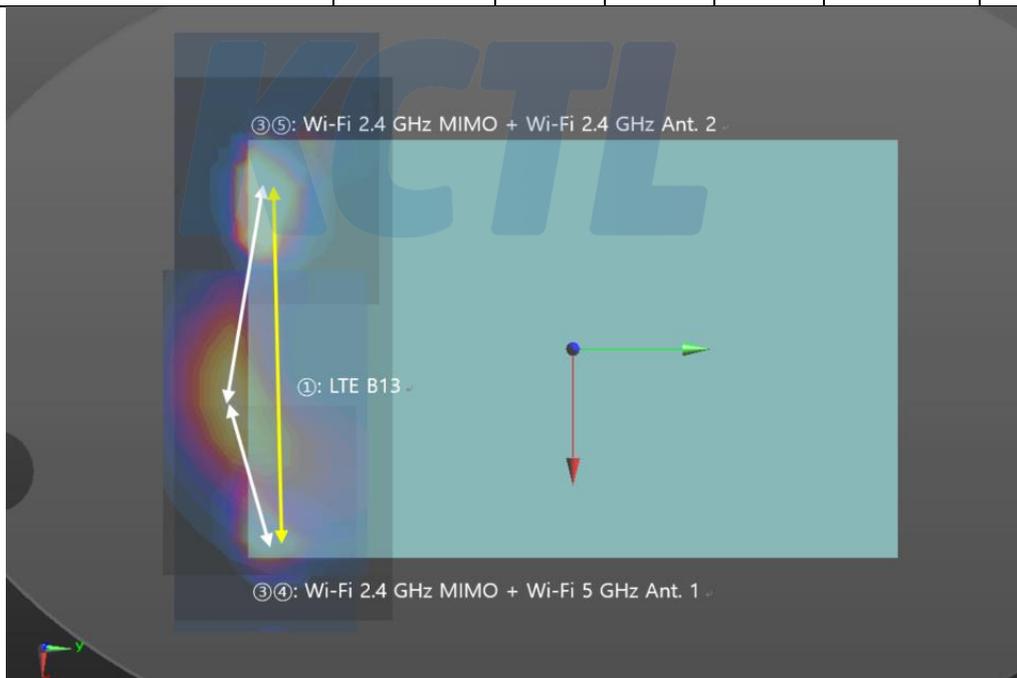
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (349) of (638)



LTE Band 13 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.10	LTE Band 13 (①)	0.532	0.024	-0.149	-0.184	61.6	0.03
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178		
	LTE Band 13 (①)	0.532	0.024	-0.149	-0.184	109.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178	168.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (350) of (638)



12.4.10 LTE Band 25 SPLSR and Volume Scan Analysis_Sensor Off

LTE Band 25 Simultaneous										
Scenario	Non-RSDB(Sensor Off)								RSDB	
	Scenario No.1	Scenario No.2	Scenario No.3	Scenario No.4	Scenario No.5	Scenario No.6	Scenario No.7	Scenario No.8	Scenario No.9	Scenario No.10
SUM	①②	①⑥	①⑦	①③	①④⑤	①②⑥	①④⑤⑥	①④⑤⑦	①②④⑤⑥	①③④⑤
Rear	1.065	0.488	0.508	0.622	0.771	1.134	0.840	0.860	2.422	2.423
Left	0.311	0.168	0.318	0.857	1.376	0.311	1.376	1.526	0.835	0.827
Left Corner	0.461	0.800	0.431	0.548	0.685	0.861	1.085	0.716	1.227	0.840
Right	0.236	0.396	0.224	0.813	1.283	0.408	1.455	1.283	1.076	1.349
Right Corner	0.614	0.259	0.614	0.368	0.629	0.659	0.674	1.029	1.189	0.989
Top	0.515	0.506	0.451	0.622	0.602	0.592	0.679	0.624	1.143	1.218

Note: 1) Yellow highlight cells require SPLSR or Volume Scan analysis.

2) Non-RSDB = Licensed Band(Full Power) + WLAN(Full Power) + Bluetooth(Full Power)

3) RSDB = Licensed Band(Full Power) + WLAN(Power Back-off) + Bluetooth(Full Power)

LTE Band 25 SPLSR – Rear Position				
Scenario	Scenario No.9		Scenario No.10	
Rear	2.422		2.423	
Distance [mm]	①-②⑤		78.3	①-③④
	①-④⑥		58.4	①-③⑤
	②⑤-④⑥		136.0	③④-③⑤
SPLSR ≤ 0.04 Limit	①-②⑤		0.02	①-③④
	①-④⑥		0.02	①-③⑤
	②⑤-④⑥		0.01	③④-③⑤
Volume scan	Not Required		Not Required	

Note: Scenario No. 7 ~ 10 were analyzed according to the SPLSR hotspot combination procedure of the TCB Workshop Nov 2019.(Reference Section 12.5).

KCTL Inc.

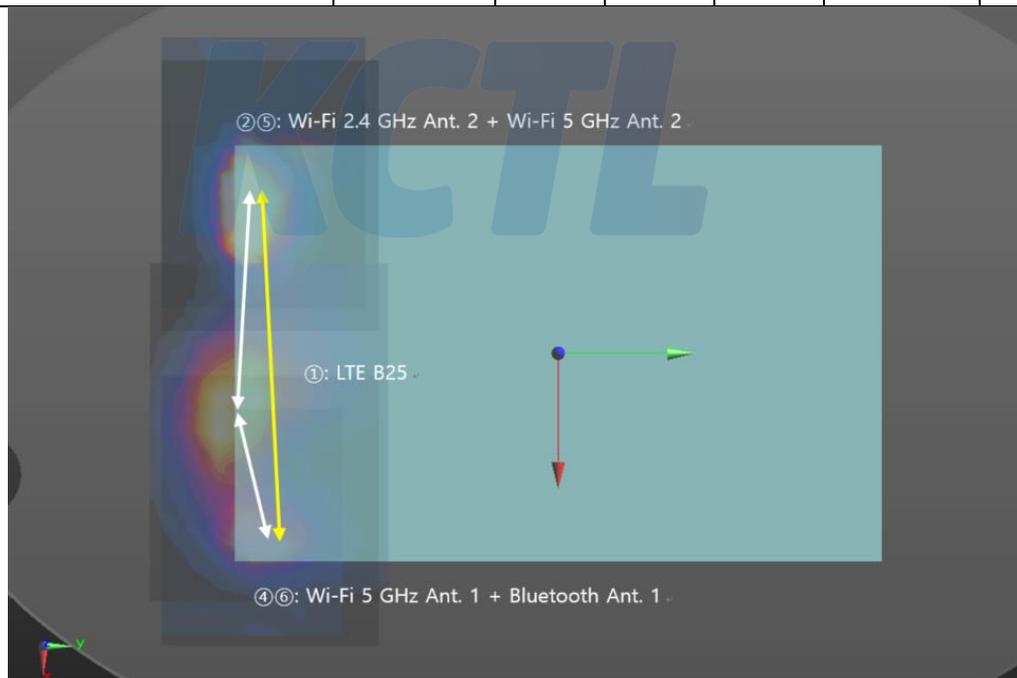
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (351) of (638)



LTE Band 25 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.9	LTE Band 25 (①)	0.419	0.026	-0.144	-0.183	78.3	0.02
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178		
	LTE Band 25 (①)	0.419	0.026	-0.144	-0.183	58.4	0.02
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.512	0.084	-0.139	-0.178		
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178	136.0	0.01
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant.1 (⑥)	0.512	0.084	-0.139	-0.178		



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (352) of (638)



LTE Band 25 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.10	LTE Band 25 (①)	0.419	0.026	-0.144	-0.183	58.4	0.03
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178		
	LTE Band 25 (①)	0.419	0.026	-0.144	-0.183	111.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178	168.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (353) of (638)



12.4.11 LTE Band 26 SPLSR and Volume Scan Analysis_Sensor Off

LTE Band 26 Simultaneous										
Scenario	Non-RSDB(Sensor Off)								RSDB	
	Scenario No.1	Scenario No.2	Scenario No.3	Scenario No.4	Scenario No.5	Scenario No.6	Scenario No.7	Scenario No.8	Scenario No.9	Scenario No.10
SUM	①②	①⑥	①⑦	①③	①④⑤	①②⑥	①④⑤⑥	①④⑤⑦	①②④⑤⑥	①③④⑤
Rear	1.348	0.771	0.791	0.905	1.054	1.417	1.123	1.143	2.705	2.706
Left	0.252	0.109	0.259	0.798	1.317	0.252	1.317	1.467	0.776	0.768
Left Corner	0.461	0.800	0.431	0.548	0.685	0.861	1.085	0.716	1.227	0.840
Right	0.199	0.360	0.187	0.776	1.246	0.372	1.419	1.246	1.040	1.312
Right Corner	0.500	0.145	0.500	0.254	0.515	0.545	0.560	0.915	1.075	0.874
Top	0.625	0.617	0.562	0.732	0.712	0.703	0.790	0.735	1.254	1.328

Note: 1) Yellow highlight cells require SPLSR or Volume Scan analysis.

2) Non-RSDB = Licensed Band(Full Power) + WLAN(Full Power) + Bluetooth(Full Power)

3) RSDB = Licensed Band(Full Power) + WLAN(Power Back-off) + Bluetooth(Full Power)

LTE Band 26 SPLSR – Rear Position				
Scenario	Scenario No.9		Scenario No.10	
Rear	2.705		2.706	
Distance [mm]	①-②⑤	71.6	①-③④	65.7
	①-④⑥	65.7	①-③⑤	104.0
	②⑤-④⑥	136.0	③④-③⑤	168.0
SPLSR ≤ 0.04 Limit	①-②⑤	0.03	①-③④	0.03
	①-④⑥	0.02	①-③⑤	0.03
	②⑤-④⑥	0.01	③④-③⑤	0.02
Volume scan	Not Required		Not Required	

Note: Scenario No. 7 ~ 10 were analyzed according to the SPLSR hotspot combination procedure of the TCB Workshop Nov 2019.(Reference Section 12.5).

KCTL Inc.

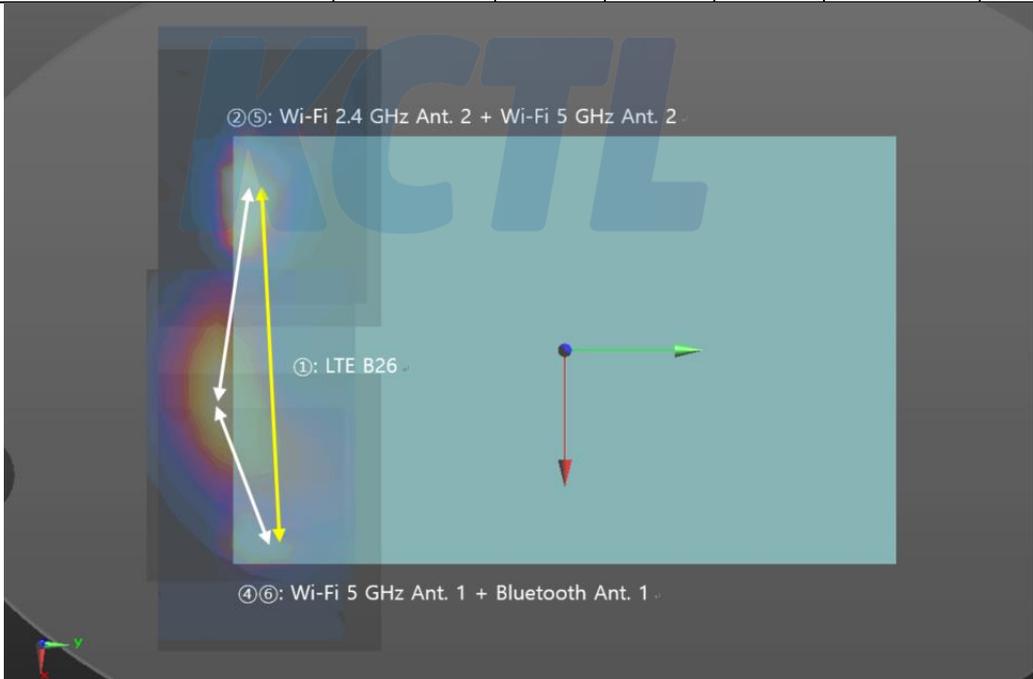
65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (354) of (638)



LTE Band 26 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.9	LTE Band 26 (①)	0.702	0.019	-0.146	-0.184	71.6	0.03
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178		
	LTE Band 26 (①)	0.702	0.019	-0.146	-0.184	65.7	0.02
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant. 1 (⑥)	0.512	0.084	-0.139	-0.178		
	Wi-Fi 2.4 GHz Ant.2 (②) + Wi-Fi 5 GHz Ant.2 (⑤)	1.010	-0.052	-0.139	-0.178	136.0	0.01
	Wi-Fi 5 GHz Ant.1 (④) + Bluetooth Ant. 1 (⑥)	0.512	0.084	-0.139	-0.178		



KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR20-SPF0026-B
Page (355) of (638)



LTE Band 26 SPLSR – Rear Position

Scenario	Mode (Numbering)	SAR W/kg	Coordinates			Distance (mm)	SPLSR
			X	Y	Z		
Scenario No.10	LTE Band 26 (①)	0.702	0.019	-0.146	-0.184	65.7	0.03
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178		
	LTE Band 26 (①)	0.702	0.019	-0.146	-0.184	104.0	0.03
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.1 (④)	0.926	0.084	-0.139	-0.178	168.0	0.02
	Wi-Fi 2.4 GHz MIMO (③) + Wi-Fi 5 GHz Ant.2 (⑤)	1.240	-0.084	-0.131	-0.178		

