

Appendix I. Dynamic Antenna Testing

3G/4G Head test results

WCDMA Band V		LTE Band 12		LTE Band 5 (B26)		LTE Band 13	
Test position	Right Touch	Test position	Left Touch	Test position	Right Touch	Test position	Right Touch
Spacing	0mm	Spacing	0mm	Spacing	0mm	Spacing	0mm
Frequency(MHz)	836.6	Frequency(MHz)	707.5	Frequency(MHz)	836.5	Frequency(MHz)	782.0
Channel	4183	Channel	23095	Channel	20525	Channel	23230
Measured 1g SAR(W/kg)	0.256	Measured 1g SAR(W/kg)	0.238	Measured 1g SAR(W/kg)	0.269	Measured 1g SAR(W/kg)	0.212
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune code (State 1)	0.433	Auto-tune code (State 2)	0.260	Auto-tune code (State 2)	0.400	Auto-tune code (State 2)	0.354
State		State		State		State	
0	0.414	0	0.222	0	0.358	0	0.313
1	0.424	2	0.247	2	0.398	2	0.341
3	0.416	3	0.241	9	0.180	4	0.328
6	0.364	10	0.084	14	0.346	10	0.123
21	0.227	23	0.078	28	0.290	18	0.305
25	0.055	29	0.186	30	0.270	31	0.243
32	0.252	40	0.171	35	0.105	34	0.136
46	0.157	45	0.107	47	0.105	44	0.198
57	0.214	51	0.016	49	0.073	51	0.020
58	0.193	53	0.092	63	0.034	53	0.137
67	0.216	69	0.090	70	0.168	74	0.059
86	0.071	81	0.080	71	0.144	84	0.096
89	0.024	97	0.042	91	0.221	90	0.015
107	0.226	101	0.014	100	0.032	104	0.310
110	0.169	106	0.227	108	0.348	114	0.123
118	0.197	116	0.238	119	0.220	116	0.332

5G sub6 Head test results

NR Band n5		NR Band n12	
Test position	Right Touch	Test position	Left Touch
Spacing	0mm	Spacing	0mm
Frequency(MHz)	836.5	Frequency(MHz)	707.5
Channel	167300	Channel	141500
Measured 1g SAR(W/kg)	0.216	Measured 1g SAR(W/kg)	0.170
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune code (State 0)	0.372	Auto-tune code (State 0)	0.258
State		State	
0	0.371	0	0.247
1	0.328	1	0.231
4	0.280	5	0.228
11	0.050	13	0.226
13	0.332	22	0.097
23	0.063	28	0.187
30	0.236	33	0.117
35	0.065	52	0.055
43	0.190	55	0.081
48	0.051	62	0.022
56	0.231	66	0.074
77	0.006	82	0.063
81	0.219	88	0.014
90	0.011	96	0.047
105	0.322	105	0.219
113	0.281	119	0.092

3G/4G/5G sub6 Body test results

WCDMA Band V		LTE Band 12		LTE Band 5(B26)		LTE Band 13		NR Band n5		NR Band n12	
Test position	Rear	Test position	Rear	Test position	Rear	Test position	Rear	Test position	Rear	Test position	Rear
Spacing	5mm	Spacing	5mm	Spacing	5mm	Spacing	5mm	Spacing	5mm	Spacing	5mm
Frequency(MHz)	846.6	Frequency(MHz)	707.5	Frequency(MHz)	836.5	Frequency(MHz)	782.0	Frequency(MHz)	836.5	Frequency(MHz)	707.5
Channel	4233	Channel	23095	Channel	20525	Channel	23230	Channel	167300	Channel	141500
Measured 1g SAR(W/kg)	0.686	Measured 1g SAR(W/kg)	0.641	Measured 1g SAR(W/kg)	0.856	Measured 1g SAR(W/kg)	0.780	Measured 1g SAR(W/kg)	0.855	Measured 1g SAR(W/kg)	0.619
Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)		Average Value of Time Sweep (W/kg)	
Auto-tune code (State 1)	1.188	Auto-tune code (State 2)	0.985	Auto-tune code (State 2)	1.406	Auto-tune code (State 2)	1.178	Auto-tune code (State 0)	1.362	Auto-tune code (State 0)	1.019
State		State		State		State		State		State	
0	1.160	0	0.660	0	1.381	0	1.162	0	1.361	0	0.982
1	1.185	2	0.982	1	1.398	2	1.174	1	1.305	5	0.730
3	1.182	10	0.193	2	1.406	3	1.172	2	1.334	13	0.965
6	0.930	23	0.201	3	1.378	4	1.122	3	1.184	22	0.191
21	0.137	29	0.899	4	1.308	10	0.319	4	1.130	28	0.765
25	0.062	40	0.889	5	1.257	18	1.026	5	1.056	33	0.366
42	0.475	45	0.556	6	1.076	31	0.915	6	0.896	52	0.519
46	0.241	51	0.069	7	0.882	34	0.493	7	0.722	55	0.595
57	0.375	53	0.646	8	0.703	44	0.787	8	0.729	62	0.054
58	0.235	69	0.568	9	0.492	51	0.082	9	0.377	66	0.621
67	0.290	81	0.566	10	0.372	53	0.604	10	0.378	82	0.438
86	0.064	97	0.301	11	0.261	74	0.138	11	0.193	88	0.050
89	0.015	101	0.076	12	0.155	84	0.360	12	0.110	96	0.261
107	0.200	106	0.412	13	1.384	90	0.045	13	1.183	105	0.919
110	0.149	116	0.825	14	1.299	104	1.102	14	1.172	119	0.654
118	0.147			15	1.297	114	0.495	15	1.145		
				16	1.264	116	1.156	16	1.123		
				17	1.201	117	1.083	17	1.047		
				18	1.131			18	0.994		
				19	0.919			19	0.823		
				20	0.760			20	0.660		
				21	0.599			21	0.513		
				22	0.413			22	0.340		
				23	0.312			23	0.253		
				24	0.217			24	0.172		
				25	0.131			25	0.102		
				26	1.303			26	1.144		
				27	1.190			27	1.099		
				28	1.169			28	1.081		
				29	1.130			29	1.035		
				30	1.054			30	0.985		
				31	0.870			31	0.920		
				32	0.876			32	0.749		
				33	0.572			33	0.598		
				34	0.449			34	0.472		
				35	0.311			35	0.332		
				36	0.232			36	0.244		
				37	0.161			37	0.166		
				38	0.097			38	0.094		
				39	1.073			39	1.094		
				40	0.967			40	1.009		
				41	0.974			41	0.997		
				42	0.913			42	0.970		
				43	0.829			43	0.898		
				44	0.776			44	0.837		
				45	0.777			45	0.658		
				46	0.489			46	0.528		
				47	0.375			47	0.405		
				48	0.251			48	0.263		
				49	0.186			49	0.195		
				50	0.127			50	0.142		
				51	0.077			51	0.092		
				52	0.738			52	0.884		
				53	0.925			53	1.161		
				54	0.918			54	1.142		
				55	0.899			55	1.101		
				56	0.856			56	1.042		
				57	0.783			57	0.961		
				58	0.579			58	0.684		
				59	0.413			59	0.462		
				60	0.288			60	0.314		
				61	0.166			61	0.179		
				62	0.121			62	0.124		
				63	0.079			63	0.081		
				64	0.079			64	0.044		
				65	0.818			65	0.914		
				66	0.917			66	1.069		
				67	0.893			67	1.041		
				68	0.876			68	1.022		
				69	0.803			69	0.944		
				70	0.726			70	0.837		
				71	0.444			71	0.586		
				72	0.322			72	0.396		
				73	0.229			73	0.271		
				74	0.137			74	0.159		
				75	0.100			75	0.113		
				76	0.067			76	0.076		
				77	0.041			77	0.045		
				78	0.827			78	0.956		
				79	0.846			79	1.093		
				80	0.815			80	1.047		
				81	0.786			81	1.034		

3G/4G/5G sub6 Body test results

WCDMA Band V	LTE Band 12	LTE Band 5(B26)		LTE Band 13	NR Band n5		NR Band n12
		82	0.681		82	0.916	
		83	0.581		83	0.769	
		84	0.403		84	0.516	
		85	0.285		85	0.352	
		86	0.200		86	0.240	
		87	0.123		87	0.145	
		88	0.091		88	0.105	
		89	0.063		89	0.106	
		90	0.040		90	0.044	
		91	0.776		91	1.030	
		92	0.740		92	1.068	
		93	0.714		93	1.005	
		94	0.667		94	0.950	
		95	0.572		95	0.814	
		96	0.493		96	0.669	
		97	0.323		97	0.433	
		98	0.221		98	0.292	
		99	0.155		99	0.197	
		100	0.097		100	0.120	
		101	0.072		101	0.090	
		102	0.051		102	0.062	
		103	0.034		103	0.040	
		104	1.145		104	1.318	
		105	1.028		105	1.249	
		106	0.611		106	0.769	
		107	0.725		107	0.899	
		108	1.074		108	1.281	
		109	0.959		109	1.219	
		110	0.601		110	0.728	
		111	0.728		111	0.933	
		112	1.058		112	1.305	
		113	0.878		113	1.150	
		114	0.674		114	0.872	
		115	0.781		115	0.969	
		116	1.079		116	1.353	
		117	0.893		117	1.068	
		118	0.698		118	1.067	
		119	0.785		119	0.873	

Note(s):

Find the NR auto tune code by LTE mode at the NR frequency with auto-tuning active according to TCB workshop note (Oct.2020).

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