

MIMO SAR verification results

FR1 n77 Part 270 UL-MIMO (Ant3+7) DSi4 Head			
SISO Ant3 Plimit (dBm)	19.0	SISO Ant3 Pmax (dBm)	22.5
SISO Ant7 Plimit (dBm)	17.0	SISO Ant7 Pmax (dBm)	23.5
Ptest (dBm)	17.0	Total uncertainty (dB)	1.5
SAR design target (W/kg)	0.71	Back off	0
Measured MIMO Ptest (dBm)	17.00	Measured MIMO SAR at meas. Ptest (W/kg)	0.089
Reported SAR _{MIMO}	0.126	Calc. SAR	1.636

FR1 n77 Part 270_PC2 UL-MIMO (Ant3+7) DSi4 Head			
SISO Ant3 Plimit (dBm)	22.0	SISO Ant3 Pmax (dBm)	21.5
SISO Ant7 Plimit (dBm)	20.0	SISO Ant7 Pmax (dBm)	22.5
Ptest (dBm)	20.0	Total uncertainty (dB)	1.5
SAR design target (W/kg)	0.71	Back off	0
Measured MIMO Ptest (dBm)	20.00	Measured MIMO SAR at meas. Ptest (W/kg)	0.099
Reported SAR _{MIMO}	0.140	Calc. SAR	1.636

FR1 n77 Part 27Q UL-MIMO (Ant3+7) DSi4 Head			
SISO Ant3 Plimit (dBm)	19.0	SISO Ant3 Pmax (dBm)	22.5
SISO Ant7 Plimit (dBm)	16.5	SISO Ant7 Pmax (dBm)	23.5
Ptest (dBm)	16.5	Total uncertainty (dB)	1.5
SAR design target (W/kg)	0.71	Back off	0
Measured MIMO Ptest (dBm)	16.50	Measured MIMO SAR at meas. Ptest (W/kg)	0.355
Reported SAR _{MIMO}	0.501	Calc. SAR	1.567

FR1 n77 Part 27Q_PC2 UL-MIMO (Ant3+7) DSi4 Head			
SISO Ant3 Plimit (dBm)	21.5	SISO Ant3 Pmax (dBm)	21.5
SISO Ant7 Plimit (dBm)	19.5	SISO Ant7 Pmax (dBm)	22.5
Ptest (dBm)	19.5	Total uncertainty (dB)	1.5
SAR design target (W/kg)	0.71	Back off	0
Measured MIMO Ptest (dBm)	19.50	Measured MIMO SAR at meas. Ptest (W/kg)	0.386
Reported SAR _{MIMO}	0.545	Calc. SAR	1.636

FR1 n77 Part 270 UL-MIMO (Ant3+7) DSi6 Bodyworn			
SISO Ant3 Plimit (dBm)	19.5	SISO Ant3 Pmax (dBm)	22.5
SISO Ant7 Plimit (dBm)	23.5	SISO Ant7 Pmax (dBm)	23.5
Ptest (dBm)	19.5	Total uncertainty (dB)	1.5
SAR design target (W/kg)	0.71	Back off	0
Measured MIMO Ptest (dBm)	19.50	Measured MIMO SAR at meas. Ptest (W/kg)	0.258
Reported SAR _{MIMO}	0.364	Calc. SAR	1.402

FR1 n77 Part 27Q_PC2 UL-MIMO (Ant3+7) DSi6 Bodyworn			
SISO Ant3 Plimit (dBm)	22.0	SISO Ant3 Pmax (dBm)	21.5
SISO Ant7 Plimit (dBm)	25.5	SISO Ant7 Pmax (dBm)	22.5
Ptest (dBm)	21.5	Total uncertainty (dB)	1.5
SAR design target (W/kg)	0.71	Back off	0
Measured MIMO Ptest (dBm)	21.50	Measured MIMO SAR at meas. Ptest (W/kg)	0.239
Reported SAR _{MIMO}	0.338	Calc. SAR	1.293

FR1 n77 Part 27Q UL-MIMO (Ant3+7) DSi6 Bodyworn			
SISO Ant3 Plimit (dBm)	19.0	SISO Ant3 Pmax (dBm)	22.5
SISO Ant7 Plimit (dBm)	23.5	SISO Ant7 Pmax (dBm)	23.5
Ptest (dBm)	19.0	Total uncertainty (dB)	1.5
SAR design target (W/kg)	0.71	Back off	0
Measured MIMO Ptest (dBm)	19.00	Measured MIMO SAR at meas. Ptest (W/kg)	0.658
Reported SAR _{MIMO}	0.929	Calc. SAR	1.359

FR1 n77 Part 27Q_PC2 UL-MIMO (Ant3+7) DSi6 Bodyworn			
SISO Ant3 Plimit (dBm)	22.0	SISO Ant3 Pmax (dBm)	21.5
SISO Ant7 Plimit (dBm)	25.5	SISO Ant7 Pmax (dBm)	22.5
Ptest (dBm)	21.5	Total uncertainty (dB)	1.5
SAR design target (W/kg)	0.71	Back off	0
Measured MIMO Ptest (dBm)	21.50	Measured MIMO SAR at meas. Ptest (W/kg)	0.616
Reported SAR _{MIMO}	0.870	Calc. SAR	1.293

FR1 n77 Part 270 UL-MIMO (Ant3+7) DSi6 Hotspot			
SISO Ant3 Plimit (dBm)	19.5	SISO Ant3 Pmax (dBm)	22.5
SISO Ant7 Plimit (dBm)	23.5	SISO Ant7 Pmax (dBm)	23.5
Ptest (dBm)	19.5	Total uncertainty (dB)	1.5
SAR design target (W/kg)	0.71	Back off	0
Measured MIMO Ptest (dBm)	19.50	Measured MIMO SAR at meas. Ptest (W/kg)	0.258
Reported SAR _{MIMO}	0.364	Calc. SAR	1.402

FR1 n77 Part 270_PC2 UL-MIMO (Ant3+7) DSi6 Hotspot			
SISO Ant3 Plimit (dBm)	22.0	SISO Ant3 Pmax (dBm)	21.5
SISO Ant7 Plimit (dBm)	25.5	SISO Ant7 Pmax (dBm)	22.5
Ptest (dBm)	21.5	Total uncertainty (dB)	1.5
SAR design target (W/kg)	0.71	Back off	0
Measured MIMO Ptest (dBm)	21.50	Measured MIMO SAR at meas. Ptest (W/kg)	0.239
Reported SAR _{MIMO}	0.338	Calc. SAR	1.293

FR1 n77 Part 27Q UL-MIMO (Ant3+7) DSi6 Hotspot			
SISO Ant3 Plimit (dBm)	19.0	SISO Ant3 Pmax (dBm)	22.5
SISO Ant7 Plimit (dBm)	23.5	SISO Ant7 Pmax (dBm)	23.5
Ptest (dBm)	19.0	Total uncertainty (dB)	1.5
SAR design target (W/kg)	0.71	Back off	0
Measured MIMO Ptest (dBm)	19.00	Measured MIMO SAR at meas. Ptest (W/kg)	0.658
Reported SAR _{MIMO}	0.929	Calc. SAR	1.359

FR1 n77 Part 27Q_PC2 UL-MIMO (Ant3+7) DSi6 Hotspot			
SISO Ant3 Plimit (dBm)	22.0	SISO Ant3 Pmax (dBm)	21.5
SISO Ant7 Plimit (dBm)	25.5	SISO Ant7 Pmax (dBm)	22.5
Ptest (dBm)	21.5	Total uncertainty (dB)	1.5
SAR design target (W/kg)	0.71	Back off	0
Measured MIMO Ptest (dBm)	21.50	Measured MIMO SAR at meas. Ptest (W/kg)	0.616
Reported SAR _{MIMO}	0.870	Calc. SAR	1.293



Head SAR Test																				
Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
3500MHz																				
ULMIMO	FR1 n77 Part 270	100M	BPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 3+7(7)	DSI 4	656000	3840	16.53	18.00	1.403		1.000	0.08	0.089	0.125
ULMIMO	FR1 n77 Part 270	100M	BPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 3+7(7)	DSI 4	656000	3840	16.44	18.00	1.432		1.000	0.01	0.068	0.097
ULMIMO	FR1 n77 Part 270	100M	BPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 3+7(7)	DSI 4	656000	3840	16.53	18.00	1.403		1.000	0.03	0.087	0.122
ULMIMO	FR1 n77 Part 270	100M	BPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 3+7(7)	DSI 4	656000	3840	16.44	18.00	1.432		1.000	-0.08	0.074	0.106
ULMIMO	FR1 n77 Part 270	100M	BPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 3+7(7)	DSI 4	656000	3840	16.53	18.00	1.403		1.000	-0.08	0.058	0.081
ULMIMO	FR1 n77 Part 270	100M	BPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 3+7(7)	DSI 4	656000	3840	16.44	18.00	1.432		1.000	0.1	0.040	0.057
ULMIMO	FR1 n77 Part 270	100M	BPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 3+7(7)	DSI 4	656000	3840	16.53	18.00	1.403		1.000	-0.18	0.057	0.080
ULMIMO	FR1 n77 Part 270	100M	BPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 3+7(7)	DSI 4	656000	3840	16.44	18.00	1.432		1.000	0.1	0.054	0.077
PC2	FR1 n77 Part 270 HPUE	100M	BPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 3+7(7)	DSI 4	656000	3840	19.70	21.00	1.349	50	1.000	0.12	0.099	0.134
ULMIMO	FR1 n77 Part 270	100M	BPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 3+7(7)	DSI 4	633332	3499.98	16.49	18.00	1.416		1.000	0.08	0.327	0.463
ULMIMO	FR1 n77 Part 270	100M	BPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 3+7(7)	DSI 4	633332	3499.98	16.36	18.00	1.459		1.000	-0.17	0.355	0.518
ULMIMO	FR1 n77 Part 270	100M	BPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 3+7(7)	DSI 4	633332	3499.98	16.49	18.00	1.416		1.000	-0.03	0.136	0.193
ULMIMO	FR1 n77 Part 270	100M	BPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 3+7(7)	DSI 4	633332	3499.98	16.36	18.00	1.459		1.000	0.14	0.212	0.309
ULMIMO	FR1 n77 Part 270	100M	BPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 3+7(7)	DSI 4	633332	3499.98	16.49	18.00	1.416		1.000	0.11	0.172	0.244
ULMIMO	FR1 n77 Part 270	100M	BPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 3+7(7)	DSI 4	633332	3499.98	16.36	18.00	1.459		1.000	-0.05	0.236	0.344
ULMIMO	FR1 n77 Part 270	100M	BPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 3+7(7)	DSI 4	633332	3499.98	16.49	18.00	1.416		1.000	0.18	0.213	0.302
ULMIMO	FR1 n77 Part 270	100M	BPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 3+7(7)	DSI 4	633332	3499.98	16.36	18.00	1.459		1.000	0.14	0.247	0.360
PC2	FR1 n77 Part 270 HPUE	100M	BPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 3+7(7)	DSI 4	633332	3499.98	19.32	21.00	1.472	50	1.000	-0.17	0.386	0.568



Hotspot&Extremity SAR Test																					
System & Position										DUT & Accessory				Power						SAR	
Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
3500MHz																					
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 3+7(T)	DSI 6	656000	3840	23.47	25.00	1.422		1.000	0.12	0.064	0.091	
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 3+7(T)	DSI 6	656000	3840	23.31	25.00	1.476		1.000	0.08	0.033	0.049	
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 3+7(T)	DSI 6	656000	3840	23.47	25.00	1.422		1.000	-0.17	0.258	0.367	
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 3+7(T)	DSI 6	656000	3840	23.31	25.00	1.476		1.000	-0.03	0.223	0.329	
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	1	1	DFT-SCS-30KHz	Left Side	10mm	Ant 3+7(T)	DSI 6	656000	3840	23.47	25.00	1.422		1.000	0.14	0.115	0.164	
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	135	69	DFT-SCS-30KHz	Left Side	10mm	Ant 3+7(T)	DSI 6	656000	3840	23.31	25.00	1.476		1.000	-0.08	0.095	0.140	
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 3+7(T)	DSI 6	656000	3840	23.47	25.00	1.422		1.000	0.17	0.057	0.081	
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 3+7(T)	DSI 6	656000	3840	23.31	25.00	1.476		1.000	0.18	0.059	0.087	
PC2	FR1 n77 Part 27Q HPUE	100M	BPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 3+7(T)	DSI 6	656000	3840	25.69	27.00	1.352	50	1.000	0.14	0.239	0.323	
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 3+7(T)	DSI 6	633332	3499.98	23.40	25.00	1.445		1.000	0.11	0.224	0.324	
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 3+7(T)	DSI 6	633332	3499.98	23.28	25.00	1.486		1.000	-0.05	0.232	0.345	
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 3+7(T)	DSI 6	633332	3499.98	23.40	25.00	1.445		1.000	0.18	0.658	0.951	
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 3+7(T)	DSI 6	633332	3499.98	23.28	25.00	1.486		1.000	0.14	0.611	0.908	
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	270	0	DFT-SCS-30KHz	Back	10mm	Ant 3+7(T)	DSI 6	633332	3499.98	22.80	24.50	1.479		1.000	-0.17	0.627	0.927	
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	1	1	DFT-SCS-30KHz	Left Side	10mm	Ant 3+7(T)	DSI 6	633332	3499.98	23.40	25.00	1.445		1.000	-0.08	0.489	0.707	
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	135	69	DFT-SCS-30KHz	Left Side	10mm	Ant 3+7(T)	DSI 6	633332	3499.98	23.28	25.00	1.486		1.000	-0.17	0.539	0.801	
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	1	1	DFT-SCS-30KHz	Top Side	10mm	Ant 3+7(T)	DSI 6	633332	3499.98	23.40	25.00	1.445		1.000	-0.08	0.176	0.254	
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	135	69	DFT-SCS-30KHz	Top Side	10mm	Ant 3+7(T)	DSI 6	633332	3499.98	23.28	25.00	1.486		1.000	-0.04	0.145	0.215	
PC2	FR1 n77 Part 27Q HPUE	100M	BPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 3+7(T)	DSI 6	633332	3499.98	25.33	27.00	1.469	50	1.000	0.17	0.616	0.905	



Body-worn SAR Test																				
Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
3500MHz																				
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 3+7(7)	DSI 6	656000	3840	23.47	25.00	1.422		1.000	0.12	0.064	0.091
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 3+7(7)	DSI 6	656000	3840	23.31	25.00	1.476		1.000	0.08	0.033	0.049
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 3+7(7)	DSI 6	656000	3840	23.47	25.00	1.422		1.000	-0.17	0.258	0.367
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 3+7(7)	DSI 6	656000	3840	23.31	25.00	1.476		1.000	-0.03	0.223	0.329
PC2	FR1 n77 Part 27Q HPUE	100M	BPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 3+7(7)	DSI 6	656000	3840	25.69	27.00	1.352	50	1.000	0.14	0.239	0.323
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	1	1	DFT-SCS-30KHz	Front	10mm	Ant 3+7(7)	DSI 6	633332	3499.98	23.40	25.00	1.445		1.000	0.11	0.224	0.324
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	135	69	DFT-SCS-30KHz	Front	10mm	Ant 3+7(7)	DSI 6	633332	3499.98	23.28	25.00	1.486		1.000	-0.05	0.232	0.345
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 3+7(7)	DSI 6	633332	3499.98	23.40	25.00	1.445		1.000	0.18	0.658	0.951
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	135	69	DFT-SCS-30KHz	Back	10mm	Ant 3+7(7)	DSI 6	633332	3499.98	23.28	25.00	1.486		1.000	0.14	0.611	0.908
ULMIMO	FR1 n77 Part 27Q	100M	BPSK	270	0	DFT-SCS-30KHz	Back	10mm	Ant 3+7(7)	DSI 6	633332	3499.98	22.80	24.50	1.479		1.000	-0.17	0.627	0.927
PC2	FR1 n77 Part 27Q HPUE	100M	BPSK	1	1	DFT-SCS-30KHz	Back	10mm	Ant 3+7(7)	DSI 6	633332	3499.98	25.33	27.00	1.469	50	1.000	0.17	0.616	0.905