



RF EXPOSURE

VERIFICATION REPORT

FCC ID : A4RGX7AS
Equipment : Phone
Model Name : GX7AS, GB17L
Applicant : Google LLC
1600 Amphitheatre Parkway,
Mountain View, California, 94043 USA
Standard : FCC 47 CFR Part2 (2.1093)

We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample provide by manufacturer and the test data has been evaluated in accordance with the test procedures given in 47 CFR Part 2.1093 and FCC KDB and has been pass the FCC requirement.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Cona Huang / Deputy Manager



Sporton International Inc. EMC & Wireless Communications Laboratory
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HISTORY OF THIS TEST REPORT

Version	Description	Issued Date
01	Initial issue of report	Feb. 21, 2022



1. Introduction Section

FCC ID: A4RGB62Z (parent model) and FCC ID: A4RGX7AS (variant model) use the same printed circuit board. As such the layout is not changed and the position of components between reference model and variant model is identical.

The variant model depopulated the FR2 radio and FR2 antenna module and populated n41 (n38) PAMiD Module and its related components, which are used for the support of n41 and n38 and different tuner code at ant 1 < 1G band, details are available in the operational description. Due to the same design of the antenna 0/1/2/6, SAR data reuse is requested and spot check data in this report is used to justify the SAR data reuse.

The applicant should take full responsibility that the test data as referenced in this report represent compliance for this FCC ID: A4RGX7AS.



2. Model Difference Information

The difference between FCC ID: A4RGB62Z and FCC ID: A4RGX7AS is as below:

- Depopulated the FR2 radio and FR2 antenna module
- Different tuner code at ant 1 for LTE B5/B12/B13/B14/B17/B26/B71
- Populated n41 (n38) PAMiD Module and its related components, which are used for the support of n41 and n38

The details of similarity and difference can be found in the confidential documents.



3. Reference detail Section

Rule Part	Equipment Class	Wireless Technology	Frequency Band (MHz)	Reference FCC ID (Parent)	Type Grant/ Permissive Change	Reference Title	FCC ID Filling (Variant)	Full Test / Spot Check Required
Part 2.1093 SAR	DSS	Bluetooth	2400~2483.5	A4RGB62Z	Original Grant	FA161608-03C	A4RGX7AS	Full Test for ant 3 / 4
	DTS	BLE Wi-Fi	2400~2483.5	A4RGB62Z	Original Grant	FA161608-03C	A4RGX7AS	Full Test for ant 3 / 4
	DXX	NFC	13.56	A4RGB62Z	Original Grant	FA161608-03C	A4RGX7AS	Full Test
	NII	Wi-Fi	5150~5250 5250~5350 5470~5725 5725~5850 5845~5885	A4RGB62Z	Original Grant	FA161608-03C	A4RGX7AS	Full Test for ant 3 / 4
	6XD	Wi-Fi	5925 ~ 6425 6425 ~ 6525 6525 ~ 6875 6875 ~ 7125	A4RGB62Z	Original Grant	FA161608-03C	A4RGX7AS	Full Test for ant 3 / 4
	PCE CBE	GSM	GSM 850/1900	A4RGB62Z	Original Grant	FA161608-03C	A4RGX7AS	Spot Check Ant 0/1/2 for GSM 850/1900
		WCDMA	Band II, IV, V	A4RGB62Z	Original Grant	FA161608-03C	A4RGX7AS	Spot Check Ant 0/1/2 for UMTS B2/4/5
		LTE	B2/ 4/ 5/ 7/ 12/ 13/ 14/ 17/ 25/ 26/ 30/ 38/ 41/ 48/ 66/ 71	A4RGB62Z	Original Grant	FA161608-03C	A4RGX7AS	Full Test at Ant1 for LTE B5/12/13/14/17/26/71 Spot check at Ant 0/2/6 for LTE B2/4/5/7/12/13/14/17/25/26/30/38/41/48/66/71
		5G FR1	n2/ 5/ 7/ 12/ 25/ 30/ 38/ 41/ 66/ 71/ 77	A4RGB62Z	Original Grant	FA161608-03C	A4RGX7AS	Full test Ant 1/5 for NR n38/41 Spot check at Ant 0/1/2/6 for NR n2/5/7/12/25/30/66/71/77



4. Spot Check Verification Data Section

SAR spot check verification on the worst cases from the original model was performed to demonstrate the test data from original model remains representative for the variant model

1st as parent model

2nd as variant model

4.1 Head SAR

No.	Band	Mode	Test Position	Gap (mm)	Power Index	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Deviation %
1st	GSM850_Ant 0	GPRS (4 Tx slots)	Left Cheek	0mm	2/3	251	848.8	29.24	30.50	1.337	-0.11	0.481	0.643	-5.91%
2nd	GSM850_Ant 0	GPRS (4 Tx slots)	Left Cheek	0mm	2/3	251	848.8	29.29	30.50	1.321	-0.01	0.458	0.605	
1st	GSM850_Ant 1	GPRS (4 Tx slots)	Right Cheek	0mm	2	128	824.2	27.95	29.00	1.274	-0.17	0.921	1.173	-14.41%
2nd	GSM850_Ant 1	GPRS (4 Tx slots)	Right Cheek	0mm	2	128	824.2	28.19	29.00	1.205	-0.17	0.833	1.004	
1st	GSM850_Ant 1	GPRS (4 Tx slots)	Right Cheek	0mm	3	128	824.2	27.95	28.20	1.059	-0.17	0.921	0.976	-14.45%
2nd	GSM850_Ant 1	GPRS (4 Tx slots)	Right Cheek	0mm	3	128	824.2	28.19	28.20	1.002	-0.17	0.833	0.835	
1st	GSM1900_Ant 2	GPRS (4 Tx slots)	Right Cheek	0mm	2/3	810	1909.8	26.51	27.85	1.361	-0.09	0.178	0.242	-11.16%
2nd	GSM1900_Ant 2	GPRS (4 Tx slots)	Right Cheek	0mm	2/3	810	1909.8	26.51	27.85	1.361	0.1	0.158	0.215	
1st	GSM1900_Ant 0	GPRS (4 Tx slots)	Left Cheek	0mm	2/3	810	1909.8	26.26	28.00	1.493	-0.02	0.372	0.555	-4.15%
2nd	GSM1900_Ant 0	GPRS (4 Tx slots)	Left Cheek	0mm	2/3	810	1909.8	26.23	28.00	1.503	-0.09	0.354	0.532	
1st	WCDMA II_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	2/3	9262	1852.4	23.99	25.25	1.337	-0.17	0.264	0.353	-1.99%
2nd	WCDMA II_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	2/3	9262	1852.4	24.06	25.25	1.315	-0.13	0.263	0.346	
1st	WCDMA II_Ant 0	RMC 12.2Kbps	Left Cheek	0mm	2/3	9400	1880	24.20	25.70	1.413	0.06	0.686	0.969	-6.20%
2nd	WCDMA II_Ant 0	RMC 12.2Kbps	Left Cheek	0mm	2/3	9400	1880	24.42	25.70	1.343	0.15	0.677	0.909	
1st	WCDMA IV_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	2/3	1312	1712.4	23.81	25.25	1.393	-0.18	0.267	0.372	-9.95%
2nd	WCDMA IV_Ant 2	RMC 12.2Kbps	Right Cheek	0mm	2/3	1312	1712.4	23.71	25.25	1.426	-0.19	0.235	0.335	
1st	WCDMA IV_Ant 0	RMC 12.2Kbps	Left Cheek	0mm	2/3	1513	1752.6	23.98	25.70	1.486	0.15	0.485	0.721	-5.00%
2nd	WCDMA IV_Ant 0	RMC 12.2Kbps	Left Cheek	0mm	2/3	1513	1752.6	24.14	25.70	1.432	0.06	0.478	0.685	
1st	WCDMA V_Ant 0	RMC 12.2Kbps	Left Cheek	0mm	2/3	4233	846.6	24.18	25.30	1.294	-0.14	0.286	0.370	-1.09%
2nd	WCDMA V_Ant 0	RMC 12.2Kbps	Left Cheek	0mm	2/3	4233	846.6	24.07	25.30	1.327	-0.13	0.276	0.366	
1st	WCDMA V_Ant 1	RMC 12.2Kbps	Right Cheek	0mm	2	4132	826.4	24.17	25.70	1.422	-0.04	0.796	1.132	-5.39%
2nd	WCDMA V_Ant 1	RMC 12.2Kbps	Right Cheek	0mm	2	4132	826.4	24.10	25.70	1.445	-0.05	0.741	1.071	
1st	WCDMA V_Ant 1	RMC 12.2Kbps	Right Cheek	0mm	3	4132	826.4	24.17	25.10	1.239	-0.04	0.796	0.986	-5.38%
2nd	WCDMA V_Ant 1	RMC 12.2Kbps	Right Cheek	0mm	3	4132	826.4	24.10	25.10	1.259	-0.05	0.741	0.933	
1st	LTE Band 7_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2/3	21350	2560	24.34	25.20	1.219	0.05	0.813	0.991	-8.38%
2nd	LTE Band 7_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2/3	21350	2560	24.31	25.20	1.227	0.11	0.740	0.908	
1st	LTE Band 7C_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2/3	21100	2535	22.83	24.20	1.371	-0.14	0.493	0.676	-13.46%
2nd	LTE Band 7C_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2/3	21100	2535	22.67	24.20	1.422	-0.14	0.411	0.585	
1st	LTE Band 7_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	21350	2560	23.92	25.20	1.343	0.08	0.554	0.744	-4.03%
2nd	LTE Band 7_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	21350	2560	23.88	25.20	1.355	0.12	0.527	0.714	
1st	LTE Band 7C_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	21100	2535	22.42	24.20	1.507	-0.12	0.237	0.357	-14.29%
2nd	LTE Band 7C_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	21100	2535	22.37	24.20	1.524	-0.12	0.201	0.306	
1st	LTE Band 12_Ant 0	10M_QPSK_1_0	Left Cheek	0mm	2/3	23095	707.5	24.34	25.30	1.247	-0.19	0.240	0.299	-4.69%
2nd	LTE Band 12_Ant 0	10M_QPSK_1_0	Left Cheek	0mm	2/3	23095	707.5	24.51	25.30	1.199	-0.12	0.238	0.285	



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Report No.:FA161608-05E

No.	Band	Mode	Test Position	Gap (mm)	Power Index	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)	Deviation %
1st	LTE Band 13_Ant 0	10M_QPSK_1_0	Left Cheek	0mm	2/3	23230	782	24.26	25.30	1.271			-0.18	0.280	0.356	-5.34%
2nd	LTE Band 13_Ant 0	10M_QPSK_1_0	Left Cheek	0mm	2/3	23230	782	24.39	25.30	1.233			-0.06	0.273	0.337	
1st	LTE Band 14_Ant 0	10M_QPSK_1_0	Left Cheek	0mm	2/3	23330	793	24.44	25.50	1.276			0.02	0.287	0.366	-5.20%
2nd	LTE Band 14_Ant 0	10M_QPSK_1_0	Left Cheek	0mm	2/3	23330	793	24.57	25.50	1.239			-0.1	0.280	0.347	
1st	LTE Band 25_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2/3	26140	1860	24.05	25.50	1.396			-0.05	0.244	0.341	-4.11%
2nd	LTE Band 25_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2/3	26140	1860	23.99	25.50	1.416			-0.04	0.231	0.327	
1st	LTE Band 25_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	26340	1880	23.59	25.20	1.449			-0.06	0.508	0.736	-0.14%
2nd	LTE Band 25_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	26340	1880	23.52	25.20	1.472			0.08	0.499	0.735	
1st	LTE Band 26_Ant 0	15M_QPSK_1_0	Left Cheek	0mm	2/3	26865	831.5	24.62	25.50	1.225			-0.14	0.280	0.343	-5.54%
2nd	LTE Band 26_Ant 0	15M_QPSK_1_0	Left Cheek	0mm	2/3	26865	831.5	24.81	25.50	1.172			-0.05	0.276	0.324	
1st	LTE Band 5B_Ant 0	10M_QPSK_1_0	Left Cheek	0mm	2/3	20600	844	22.11	23.50	1.377			0.05	0.210	0.289	-4.84%
2nd	LTE Band 5B_Ant 0	10M_QPSK_1_0	Left Cheek	0mm	2/3	20600	844	22.08	23.50	1.387			0.06	0.198	0.275	
1st	LTE Band 30_Ant 2	10M_QPSK_1_0	Right Cheek	0mm	2/3	27710	2310	23.56	24.60	1.271			0.11	0.417	0.530	-13.96%
2nd	LTE Band 30_Ant 2	10M_QPSK_1_0	Right Cheek	0mm	2/3	27710	2310	23.66	24.60	1.242			-0.11	0.367	0.456	
1st	LTE Band 30_Ant 0	10M_QPSK_1_0	Left Cheek	0mm	2/3	27710	2310	23.66	25.00	1.361			0.1	0.579	0.788	-9.01%
2nd	LTE Band 30_Ant 0	10M_QPSK_1_0	Left Cheek	0mm	2/3	27710	2310	23.75	25.00	1.334			0.15	0.538	0.717	
1st	LTE Band 41_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2/3	41490	2680	24.18	25.40	1.324	62.9	1.006	-0.05	0.474	0.632	-1.59%
2nd	LTE Band 41_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2/3	41490	2680	24.29	25.40	1.291	62.9	1.006	-0.17	0.479	0.622	
1st	LTE Band 41_HPUE_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2/3	40185	2549.5	26.60	27.70	1.288	42.9	1.009	-0.05	0.531	0.690	-5.95%
2nd	LTE Band 41_HPUE_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2/3	40185	2549.5	26.48	27.70	1.324	42.9	1.009	-0.01	0.486	0.649	
1st	LTE Band 41C_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2/3	40620	2593	21.76	23.40	1.459	62.9	1.006	-0.05	0.289	0.424	-3.07%
2nd	LTE Band 41C_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2/3	40620	2593	21.68	23.40	1.486	62.9	1.006	-0.06	0.275	0.411	
1st	LTE Band 41_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	41055	2636.5	23.62	25.20	1.439	62.9	1.006	-0.03	0.365	0.528	-3.41%
2nd	LTE Band 41_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	41055	2636.5	23.45	25.20	1.496	62.9	1.006	0.18	0.339	0.510	
1st	LTE Band 41_HPUE_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	40620	2593	25.93	27.20	1.340	42.9	1.009	0.03	0.399	0.539	3.15%
2nd	LTE Band 41_HPUE_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	40620	2593	25.45	27.20	1.496	42.9	1.009	0.15	0.368	0.556	
1st	LTE Band 41C_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	40620	2593	20.92	22.20	1.343	62.9	1.006	-0.05	0.210	0.284	-8.10%
2nd	LTE Band 41C_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	40620	2593	20.69	22.20	1.416	62.9	1.006	0.05	0.183	0.261	
1st	LTE Band 48_Ant 6	20M_QPSK_1_0	Left Cheek	0mm	2/3	55830	3609	22.88	24.00	1.294	62.9	1.006	0.01	0.168	0.219	-15.99%
2nd	LTE Band 48_Ant 6	20M_QPSK_1_0	Left Cheek	0mm	2/3	55830	3609	23.10	24.00	1.230	62.9	1.006	0.17	0.149	0.184	
1st	LTE Band 48_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2/3	55340	3560	21.78	23.20	1.387	62.9	1.006	0.15	0.118	0.165	-9.70%
2nd	LTE Band 48_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2/3	55340	3560	21.74	23.20	1.400	62.9	1.006	-0.03	0.106	0.149	
1st	LTE Band 66_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2/3	132072	1720	23.92	25.25	1.358			0.15	0.219	0.297	-19.20%
2nd	LTE Band 66_Ant 2	20M_QPSK_1_0	Right Cheek	0mm	2/3	132072	1720	24.09	25.25	1.306			0.01	0.184	0.240	
1st	LTE Band 66B_Ant 2	15M_QPSK_1_74	Right Cheek	0mm	2/3	132047	1717.5	18.16	19.25	1.285			-0.13	0.064	0.082	-1.22%
2nd	LTE Band 66B_Ant 2	15M_QPSK_1_74	Right Cheek	0mm	2/3	132047	1717.5	18.16	19.25	1.285			-0.11	0.063	0.081	
1st	LTE Band 66C_Ant 2	20M_QPSK_1_99	Right Cheek	0mm	2/3	132072	1720	18.26	19.25	1.256			-0.04	0.062	0.078	-3.85%
2nd	LTE Band 66C_Ant 2	20M_QPSK_1_99	Right Cheek	0mm	2/3	132072	1720	18.23	19.25	1.265			0.02	0.059	0.075	
1st	LTE Band 66_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	132572	1770	23.63	25.20	1.435			0.01	0.471	0.676	-11.25%
2nd	LTE Band 66_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	132572	1770	23.80	25.20	1.380			0.11	0.435	0.600	
1st	LTE Band 66B_Ant 0	15M_QPSK_1_0	Left Cheek	0mm	2/3	132322	1745	17.50	18.75	1.334			-0.06	0.086	0.115	3.48%
2nd	LTE Band 66B_Ant 0	15M_QPSK_1_0	Left Cheek	0mm	2/3	132322	1745	17.69	18.75	1.276			-0.03	0.093	0.119	
1st	LTE Band 66C_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	132322	1745	17.56	18.75	1.315			-0.13	0.085	0.112	1.79%
2nd	LTE Band 66C_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	132322	1745	17.76	18.75	1.256			0.03	0.091	0.114	
1st	LTE Band 71_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	133322	683	24.50	25.30	1.202			-0.17	0.259	0.311	-12.55%
2nd	LTE Band 71_Ant 0	20M_QPSK_1_0	Left Cheek	0mm	2/3	133322	683	24.48	25.30	1.208			-0.13	0.225	0.272	



FCC VERIFICATION REPORT

Report No.:FA161608-05E

No.	Band	Mode	Test Position	Gap (mm)	Power Index	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)	Deviation %
1st	FR1 n5_Ant 0	20M_BPSK_1_53	Left Cheek	0mm	2/3	167300	836.5	24.34	25.50	1.306			-0.08	0.282	0.368	-3.27%
2nd	FR1 n5_Ant 0	20M_BPSK_1_53	Left Cheek	0mm	2/3	167300	836.5	24.36	25.50	1.300			-0.16	0.274	0.356	
1st	FR1 n5_Ant 1	20M_BPSK_1_53	Right Cheek	0mm	2/3	167300	836.5	24.82	25.20	1.091			-0.11	0.882	0.963	-12.56%
2nd	FR1 n5_Ant 1	20M_BPSK_1_53	Right Cheek	0mm	2/3	167300	836.5	24.80	25.20	1.096			-0.16	0.768	0.842	
1st	FR1 n7_Ant 2	20M_BPSK_1_53	Right Cheek	0mm	2/3	507000	2535	24.51	25.20	1.172			0.12	0.771	0.904	-13.05%
2nd	FR1 n7_Ant 2	20M_BPSK_1_53	Right Cheek	0mm	2/3	507000	2535	24.58	25.20	1.153			0.09	0.681	0.786	
1st	FR1 n7_Ant 0	20M_BPSK_1_53	Left Cheek	0mm	2/3	512000	2560	24.09	25.20	1.291			0.12	0.584	0.754	-2.39%
2nd	FR1 n7_Ant 0	20M_BPSK_1_53	Left Cheek	0mm	2/3	512000	2560	23.95	25.20	1.334			0.18	0.552	0.736	
1st	FR1 n12_Ant 0	15M_BPSK_1_40	Left Cheek	0mm	2/3	141500	707.5	23.94	25.30	1.368			-0.15	0.222	0.304	-11.52%
2nd	FR1 n12_Ant 0	15M_BPSK_1_40	Left Cheek	0mm	2/3	141500	707.5	23.94	25.30	1.368			0.01	0.197	0.269	
1st	FR1 n12_Ant 1	15M_BPSK_36_22	Right Cheek	0mm	2/3	141500	707.5	24.32	25.20	1.225			-0.06	0.801	0.981	-0.31%
2nd	FR1 n12_Ant 1	15M_BPSK_36_22	Right Cheek	0mm	2/3	141500	707.5	24.32	25.20	1.225			-0.01	0.799	0.978	
1st	FR1 n25_Ant 2	20M_BPSK_1_53	Right Cheek	0mm	2/3	381000	1905	24.61	25.70	1.285			0.19	0.280	0.360	-3.06%
2nd	FR1 n25_Ant 2	20M_BPSK_1_53	Right Cheek	0mm	2/3	381000	1905	24.62	25.70	1.282			-0.14	0.272	0.349	
1st	FR1 n25_Ant 0	20M_BPSK_1_53	Left Cheek	0mm	2/3	381000	1905	24.24	25.70	1.400			0.1	0.592	0.829	-3.50%
2nd	FR1 n25_Ant 0	20M_BPSK_1_53	Left Cheek	0mm	2/3	381000	1905	24.21	25.70	1.409			0.18	0.568	0.800	
1st	FR1 n30_Ant 2	10M_BPSK_1_26	Right Cheek	0mm	2/3	462000	2310	23.10	24.60	1.413			0.16	0.369	0.521	-16.89%
2nd	FR1 n30_Ant 2	10M_BPSK_1_26	Right Cheek	0mm	2/3	462000	2310	23.09	24.60	1.416			0.15	0.306	0.433	
1st	FR1 n30_Ant 0	10M_BPSK_1_26	Left Cheek	0mm	2/3	462000	2310	24.27	25.00	1.183			0.06	0.576	0.681	-0.73%
2nd	FR1 n30_Ant 0	10M_BPSK_1_26	Left Cheek	0mm	2/3	462000	2310	24.25	25.00	1.189			0.1	0.569	0.676	
1st	FR1 n66_Ant 2	40M_BPSK_1_108	Right Cheek	0mm	2/3	349000	1745	24.65	25.25	1.148			-0.03	0.250	0.287	-14.98%
2nd	FR1 n66_Ant 2	40M_BPSK_1_108	Right Cheek	0mm	2/3	349000	1745	24.59	25.25	1.164			0.11	0.210	0.244	
1st	FR1 n66_Ant 0	40M_BPSK_108_54	Left Cheek	0mm	2/3	349000	1745	24.46	25.70	1.330			0.11	0.462	0.615	-6.83%
2nd	FR1 n66_Ant 0	40M_BPSK_108_54	Left Cheek	0mm	2/3	349000	1745	24.49	25.70	1.321			-0.05	0.434	0.573	
1st	FR1 n71_Ant 0	20M_BPSK_1_53	Left Cheek	0mm	2/3	136100	680.5	23.89	25.30	1.384			-0.01	0.199	0.275	-1.10%
2nd	FR1 n71_Ant 0	20M_BPSK_1_53	Left Cheek	0mm	2/3	136100	680.5	23.88	25.30	1.387			-0.07	0.196	0.272	
1st	FR1 n71_Ant 1	20M_BPSK_50_28	Right Cheek	0mm	2/3	136100	680.5	24.33	25.20	1.222			-0.06	0.575	0.703	-4.98%
2nd	FR1 n71_Ant 1	20M_BPSK_50_28	Right Cheek	0mm	2/3	136100	680.5	24.26	25.20	1.242			0.01	0.538	0.668	
1st	FR1 n77_Ant 6	100M_BPSK_1_271	Left Cheek	0mm	2/3	656000	3840	23.60	25.00	1.380	100	1.000	-0.01	0.546	0.754	-10.48%
2nd	FR1 n77_Ant 6	100M_BPSK_1_271	Left Cheek	0mm	2/3	656000	3840	23.69	25.00	1.352	100	1.000	0.02	0.499	0.675	
1st	FR1 n77_HPUE_Ant 6	100M_BPSK_1_271	Left Cheek	0mm	2/3	656000	3840	26.14	27.20	1.276	50	1.000	-0.06	0.534	0.682	-25.22%
2nd	FR1 n77_HPUE_Ant 6	100M_BPSK_1_271	Left Cheek	0mm	2/3	656000	3840	26.22	27.20	1.253	50	1.000	0.04	0.407	0.510	
1st	FR1 n77_Ant 6	100M_BPSK_135_69	Left Cheek	0mm	2/3	633332	3499.98	23.25	25.00	1.496	100	1.000	-0.06	0.447	0.669	-16.00%
2nd	FR1 n77_Ant 6	100M_BPSK_135_69	Left Cheek	0mm	2/3	633332	3499.98	23.39	25.00	1.449	100	1.000	0.01	0.388	0.562	
1st	FR1 n77_HPUE_Ant 6	100M_BPSK_1_271	Left Cheek	0mm	2/3	633332	3499.98	25.79	27.20	1.384	50	1.000	0.15	0.436	0.603	-9.46%
2nd	FR1 n77_HPUE_Ant 6	100M_BPSK_1_271	Left Cheek	0mm	2/3	633332	3499.98	25.75	27.20	1.396	50	1.000	0.19	0.391	0.546	
1st	FR1 n77_Ant 2	100M_BPSK_135_69	Right Cheek	0mm	2/3	656000	3840	22.07	23.75	1.472	100	1.000	-0.07	0.244	0.359	-22.01%
2nd	FR1 n77_Ant 2	100M_BPSK_135_69	Right Cheek	0mm	2/3	656000	3840	22.24	23.75	1.416	100	1.000	-0.06	0.198	0.280	
1st	FR1 n77_HPUE_Ant 2	100M_BPSK_1_271	Right Cheek	0mm	2/3	656000	3840	24.92	25.90	1.253	50	1.000	0.05	0.216	0.271	-42.44%
2nd	FR1 n77_HPUE_Ant 2	100M_BPSK_1_271	Right Cheek	0mm	2/3	656000	3840	24.80	25.90	1.288	50	1.000	-0.05	0.121	0.156	
1st	FR1 n77_Ant 2	100M_BPSK_135_69	Right Cheek	0mm	2/3	633332	3499.98	22.17	23.75	1.439	100	1.000	-0.09	0.428	0.616	-12.99%
2nd	FR1 n77_Ant 2	100M_BPSK_135_69	Right Cheek	0mm	2/3	633332	3499.98	22.35	23.75	1.380	100	1.000	0.03	0.388	0.536	
1st	FR1 n77_HPUE_Ant 2	100M_BPSK_1_271	Right Cheek	0mm	2/3	633332	3499.98	24.85	25.90	1.274	50	1.000	0.03	0.371	0.472	-14.41%
2nd	FR1 n77_HPUE_Ant 2	100M_BPSK_1_271	Right Cheek	0mm	2/3	633332	3499.98	24.72	25.90	1.312	50	1.000	-0.09	0.308	0.404	



4.2 Hotspot SAR

No.	Band	Mode	Test Position	Gap (mm)	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Deviation %
1st	GSM850_Ant 0	GPRS (4 Tx slots)	Left Side	10mm	4	189	836.4	29.35	30.50	1.303	-0.09	0.664	0.865	-2.90%
2nd	GSM850_Ant 0	GPRS (4 Tx slots)	Left Side	10mm	4	189	836.4	29.38	30.50	1.294	-0.11	0.649	0.840	
1st	GSM850_Ant 1	GPRS (4 Tx slots)	Back	10mm	4	128	824.2	29.09	30.50	1.384	-0.03	0.392	0.542	-19.38%
2nd	GSM850_Ant 1	GPRS (4 Tx slots)	Back	10mm	4	128	824.2	29.32	30.50	1.312	-0.1	0.333	0.437	
1st	GSM1900_Ant 2	GPRS (4 Tx slots)	Bottom Side	10mm	4	810	1909.8	23.50	23.80	1.072	-0.16	0.889	0.953	-14.59%
2nd	GSM1900_Ant 2	GPRS (4 Tx slots)	Bottom Side	10mm	4	810	1909.8	23.74	23.80	1.014	-0.15	0.803	0.814	
1st	GSM1900_Ant 0	GPRS (4 Tx slots)	Back	10mm	4	661	1880	26.41	28.00	1.442	-0.12	0.689	0.994	-3.53%
2nd	GSM1900_Ant 0	GPRS (4 Tx slots)	Back	10mm	4	661	1880	26.37	28.00	1.455	-0.03	0.659	0.959	
1st	WCDMA II_Ant 2	RMC 12.2Kbps	Bottom Side	10mm	4	9538	1907.6	20.11	20.90	1.199	0.08	0.786	0.943	-5.41%
2nd	WCDMA II_Ant 2	RMC 12.2Kbps	Bottom Side	10mm	4	9538	1907.6	20.30	20.90	1.148	-0.14	0.777	0.892	
1st	WCDMA II_Ant 0	RMC 12.2Kbps	Left Side	10mm	4	9538	1907.6	22.48	23.10	1.153	-0.12	0.821	0.947	-19.01%
2nd	WCDMA II_Ant 0	RMC 12.2Kbps	Left Side	10mm	4	9538	1907.6	22.61	23.10	1.119	-0.15	0.685	0.767	
1st	WCDMA IV_Ant 2	RMC 12.2Kbps	Bottom Side	10mm	4	1413	1732.6	20.97	22.00	1.268	-0.14	0.751	0.952	-12.82%
2nd	WCDMA IV_Ant 2	RMC 12.2Kbps	Bottom Side	10mm	4	1413	1732.6	21.17	22.00	1.211	-0.03	0.686	0.830	
1st	WCDMA IV_Ant 0	RMC 12.2Kbps	Bottom Side	10mm	4	1513	1752.6	23.12	23.80	1.169	-0.15	0.848	0.992	-18.75%
2nd	WCDMA IV_Ant 0	RMC 12.2Kbps	Bottom Side	10mm	4	1513	1752.6	23.23	23.80	1.140	-0.02	0.707	0.806	
1st	WCDMA V_Ant 0	RMC 12.2Kbps	Left Side	10mm	4	4182	836.4	24.14	25.30	1.306	-0.08	0.398	0.520	-4.04%
2nd	WCDMA V_Ant 0	RMC 12.2Kbps	Left Side	10mm	4	4182	836.4	24.08	25.30	1.324	-0.04	0.377	0.499	
1st	WCDMA V_Ant 1	RMC 12.2Kbps	Back	10mm	4	4132	826.4	24.17	25.70	1.422	-0.01	0.278	0.395	-2.28%
2nd	WCDMA V_Ant 1	RMC 12.2Kbps	Back	10mm	4	4132	826.4	24.10	25.70	1.445	-0.04	0.267	0.386	
1st	LTE Band 7_Ant 2	20M_QPSK_1_0	Right Side	10mm	4	21350	2560	20.02	20.20	1.042	-0.12	0.789	0.822	-5.11%
2nd	LTE Band 7_Ant 2	20M_QPSK_1_0	Right Side	10mm	4	21350	2560	20.11	20.20	1.021	-0.14	0.764	0.780	
1st	LTE Band 7C_Ant 2	20M_QPSK_1_0	Right Side	10mm	4	21100	2535	18.63	19.20	1.140	-0.14	0.522	0.595	-0.34%
2nd	LTE Band 7C_Ant 2	20M_QPSK_1_0	Right Side	10mm	4	21100	2535	18.61	19.20	1.146	0.06	0.518	0.593	
1st	LTE Band 7_Ant 0	20M_QPSK_1_99	Left Side	10mm	4	21350	2560	23.49	24.10	1.151	-0.15	0.783	0.901	-4.88%
2nd	LTE Band 7_Ant 0	20M_QPSK_1_99	Left Side	10mm	4	21350	2560	23.50	24.10	1.148	-0.16	0.746	0.857	
1st	LTE Band 7C_Ant 0	20M_QPSK_1_0	Left Side	10mm	4	21100	2535	21.76	23.10	1.361	-0.13	0.581	0.791	-4.17%
2nd	LTE Band 7C_Ant 0	20M_QPSK_1_0	Left Side	10mm	4	21100	2535	21.57	23.10	1.422	0.01	0.533	0.758	
1st	LTE Band 12_Ant 0	10M_QPSK_1_0	Left Side	10mm	4	23095	707.5	24.34	25.30	1.247	-0.1	0.405	0.505	-9.51%
2nd	LTE Band 12_Ant 0	10M_QPSK_1_0	Left Side	10mm	4	23095	707.5	24.51	25.30	1.199	-0.06	0.381	0.457	
1st	LTE Band 13_Ant 0	10M_QPSK_1_0	Left Side	10mm	4	23230	782	24.26	25.30	1.271	-0.04	0.526	0.668	-15.27%
2nd	LTE Band 13_Ant 0	10M_QPSK_1_0	Left Side	10mm	4	23230	782	24.39	25.30	1.233	-0.11	0.459	0.566	
1st	LTE Band 14_Ant 0	10M_QPSK_1_0	Left Side	10mm	4	23330	793	24.44	25.50	1.276	-0.03	0.621	0.793	16.79%
2nd	LTE Band 14_Ant 0	10M_QPSK_1_0	Left Side	10mm	4	23330	793	24.57	25.50	1.239	0.01	0.548	0.679	
1st	LTE Band 25_Ant 2	20M_QPSK_50_24	Bottom Side	10mm	4	26590	1905	20.22	20.90	1.169	0.01	0.843	0.986	-1.62%
2nd	LTE Band 25_Ant 2	20M_QPSK_50_24	Bottom Side	10mm	4	26590	1905	20.07	20.90	1.211	-0.02	0.801	0.970	
1st	LTE Band 25_Ant 0	20M_QPSK_50_24	Left Side	10mm	4	26340	1880	22.21	22.60	1.094	-0.15	0.855	0.935	-5.45%
2nd	LTE Band 25_Ant 0	20M_QPSK_50_24	Left Side	10mm	4	26340	1880	22.41	22.60	1.045	-0.17	0.846	0.884	
1st	LTE Band 26_Ant 0	15M_QPSK_1_0	Left Side	10mm	4	26865	831.5	24.62	25.50	1.225	-0.05	0.489	0.599	-11.36%
2nd	LTE Band 26_Ant 0	15M_QPSK_1_0	Left Side	10mm	4	26865	831.5	24.81	25.50	1.172	-0.02	0.453	0.531	
1st	LTE Band 5B_Ant 0	10M_QPSK_1_0	Left Side	10mm	4	20600	844	22.11	23.50	1.377	0.11	0.201	0.277	-1.44%
2nd	LTE Band 5B_Ant 0	10M_QPSK_1_0	Left Side	10mm	4	20600	844	22.08	23.50	1.387	-0.05	0.197	0.273	



FCC VERIFICATION REPORT

Report No.:FA161608-05E

No.	Band	Mode	Test Position	Gap (mm)	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)	Deviation %
1st	LTE Band 30_Ant 2	10M_QPSK_1_0	Back	10mm	4	27710	2310	21.41	22.60	1.315			-0.14	0.712	0.936	-12.93%
2nd	LTE Band 30_Ant 2	10M_QPSK_1_0	Back	10mm	4	27710	2310	21.47	22.60	1.297			-0.03	0.628	0.815	
1st	LTE Band 30_Ant 0	10M_QPSK_1_0	Left Side	10mm	4	27710	2310	22.15	22.90	1.189			-0.18	0.734	0.872	-16.28%
2nd	LTE Band 30_Ant 0	10M_QPSK_1_0	Left Side	10mm	4	27710	2310	22.16	22.90	1.186			-0.05	0.616	0.730	
1st	LTE Band 41_Ant 2	20M_QPSK_1_0	Right Side	10mm	4	41490	2680	21.69	22.60	1.233	62.9	1.006	-0.14	0.799	0.991	-23.61%
2nd	LTE Band 41_Ant 2	20M_QPSK_1_0	Right Side	10mm	4	41490	2680	22.02	22.60	1.143	62.9	1.006	0.15	0.658	0.757	
1st	LTE Band 41_HPUE_Ant 2	20M_QPSK_1_0	Right Side	10mm	4	40620	2593	23.51	24.20	1.172	42.9	1.009	-0.17	0.751	0.888	-8.90%
2nd	LTE Band 41_HPUE_Ant 2	20M_QPSK_1_0	Right Side	10mm	4	40620	2593	23.52	24.20	1.169	42.9	1.009	-0.19	0.686	0.809	
1st	LTE Band 41C_Ant 2	20M_QPSK_1_0	Right Side	10mm	4	40620	2593	19.83	20.60	1.194	62.9	1.006	-0.18	0.597	0.717	-1.67%
2nd	LTE Band 41C_Ant 2	20M_QPSK_1_0	Right Side	10mm	4	40620	2593	19.84	20.60	1.191	62.9	1.006	-0.12	0.588	0.705	
1st	LTE Band 41_Ant 0	20M_QPSK_1_0	Back	10mm	4	41055	2636.5	23.62	25.20	1.439	62.9	1.006	0.01	0.471	0.682	-0.44%
2nd	LTE Band 41_Ant 0	20M_QPSK_1_0	Back	10mm	4	41055	2636.5	23.45	25.20	1.496	62.9	1.006	-0.01	0.451	0.679	
1st	LTE Band 41_HPUE_Ant 0	20M_QPSK_1_0	Back	10mm	4	40620	2593	25.93	27.20	1.340	42.9	1.009	-0.13	0.529	0.715	3.22%
2nd	LTE Band 41_HPUE_Ant 0	20M_QPSK_1_0	Back	10mm	4	41055	2636.5	25.45	27.20	1.496	42.9	1.009	-0.06	0.489	0.738	
1st	LTE Band 41C_Ant 0	20M_QPSK_1_0	Back	10mm	4	40620	2593	20.92	22.20	1.343	62.9	1.006	0.11	0.193	0.261	5.36%
2nd	LTE Band 41C_Ant 0	20M_QPSK_1_0	Back	10mm	4	40620	2593	20.69	22.20	1.416	62.9	1.006	-0.12	0.193	0.275	
1st	LTE Band 48_Ant 6	20M_QPSK_1_0	Front	10mm	4	55340	3560	22.69	24.00	1.352	62.9	1.006	-0.01	0.652	0.887	-22.89%
2nd	LTE Band 48_Ant 6	20M_QPSK_1_0	Front	10mm	4	55340	3560	23.12	24.00	1.225	62.9	1.006	-0.02	0.555	0.684	
1st	LTE Band 48_Ant 2	20M_QPSK_1_0	Bottom Side	10mm	4	55830	3609	21.82	23.20	1.374	62.9	1.006	0.14	0.338	0.467	-16.06%
2nd	LTE Band 48_Ant 2	20M_QPSK_1_0	Bottom Side	10mm	4	55830	3609	21.80	23.20	1.380	62.9	1.006	-0.04	0.282	0.392	
1st	LTE Band 66_Ant 2	20M_QPSK_50_24	Bottom Side	10mm	4	132072	1720	21.15	21.90	1.189			-0.18	0.794	0.944	-6.04%
2nd	LTE Band 66_Ant 2	20M_QPSK_50_24	Bottom Side	10mm	4	132072	1720	21.37	21.90	1.130			-0.14	0.785	0.887	
1st	LTE Band 66B_Ant 2	15M_QPSK_1_74	Bottom Side	10mm	4	132047	1717.5	18.16	19.25	1.285			-0.13	0.480	0.617	-11.67%
2nd	LTE Band 66B_Ant 2	15M_QPSK_1_74	Bottom Side	10mm	4	132047	1717.5	18.16	19.25	1.285			0.03	0.424	0.545	
1st	LTE Band 66C_Ant 2	20M_QPSK_1_99	Bottom Side	10mm	4	132072	1720	18.26	19.25	1.256			-0.11	0.438	0.550	-1.27%
2nd	LTE Band 66C_Ant 2	20M_QPSK_1_99	Bottom Side	10mm	4	132072	1720	18.23	19.25	1.265			0.03	0.429	0.543	
1st	LTE Band 66_Ant 0	20M_QPSK_1_0	Bottom Side	10mm	4	132072	1720	23.02	23.50	1.117			-0.14	0.813	0.908	-12.33%
2nd	LTE Band 66_Ant 0	20M_QPSK_1_0	Bottom Side	10mm	4	132072	1720	23.16	23.50	1.081			-0.12	0.736	0.796	
1st	LTE Band 66B_Ant 0	15M_QPSK_1_0	Bottom Side	10mm	4	132322	1745	17.50	18.75	1.334			-0.02	0.317	0.423	-6.15%
2nd	LTE Band 66B_Ant 0	15M_QPSK_1_0	Bottom Side	10mm	4	132322	1745	17.69	18.75	1.276			-0.18	0.311	0.397	
1st	LTE Band 66C_Ant 0	20M_QPSK_1_0	Bottom Side	10mm	4	132322	1745	17.56	18.75	1.315			0.06	0.267	0.351	1.71%
2nd	LTE Band 66C_Ant 0	20M_QPSK_1_0	Bottom Side	10mm	4	132322	1745	17.76	18.75	1.256			0.03	0.284	0.357	
1st	LTE Band 71_Ant 0	20M_QPSK_1_0	Back	10mm	4	133322	683	24.50	25.30	1.202			-0.13	0.402	0.483	-5.18%
2nd	LTE Band 71_Ant 0	20M_QPSK_1_0	Back	10mm	4	133322	683	24.48	25.30	1.208			-0.06	0.379	0.458	
1st	FR1 n5_Ant 0	20M_BPSK_1_53	Left Side	10mm	4	167300	836.5	24.34	25.50	1.306			-0.16	0.405	0.529	-8.32%
2nd	FR1 n5_Ant 0	20M_BPSK_1_53	Left Side	10mm	4	167300	836.5	24.36	25.50	1.300			-0.03	0.373	0.485	
1st	FR1 n5_Ant 1	20M_BPSK_1_53	Back	10mm	4	167300	836.5	24.82	25.20	1.091			-0.19	0.295	0.322	-16.46%
2nd	FR1 n5_Ant 1	20M_BPSK_1_53	Back	10mm	4	167300	836.5	24.80	25.20	1.096			-0.13	0.245	0.269	
1st	FR1 n7_Ant 2	20M_BPSK_1_53	Right Side	10mm	4	507000	2535	20.49	20.50	1.002			-0.17	0.851	0.853	-7.85%
2nd	FR1 n7_Ant 2	20M_BPSK_1_53	Right Side	10mm	4	507000	2535	20.42	20.50	1.019			-0.11	0.772	0.786	
1st	FR1 n7_Ant 0	20M_BPSK_100_0	Left Side	10mm	4	512000	2560	23.26	24.20	1.242			-0.13	0.751	0.932	-8.69%
2nd	FR1 n7_Ant 0	20M_BPSK_100_0	Left Side	10mm	4	512000	2560	23.25	24.20	1.245			-0.17	0.684	0.851	
1st	FR1 n12_Ant 0	15M_BPSK_1_40	Left Side	10mm	4	141500	707.5	23.94	25.30	1.368			-0.04	0.346	0.473	-7.83%
2nd	FR1 n12_Ant 0	15M_BPSK_1_40	Left Side	10mm	4	141500	707.5	23.94	25.30	1.368			-0.15	0.319	0.436	
1st	FR1 n12_Ant 1	15M_BPSK_1_40	Back	10mm	4	141500	707.5	24.33	25.20	1.222			-0.19	0.204	0.249	-0.40%
2nd	FR1 n12_Ant 1	15M_BPSK_1_40	Back	10mm	4	141500	707.5	24.26	25.20	1.242			-0.1	0.200	0.248	



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Report No.:FA161608-05E

No.	Band	Mode	Test Position	Gap (mm)	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)	Deviation %
1st	FR1 n25_Ant 2	20M_BPSK_1_53	Bottom Side	10mm	4	376500	1882.5	20.72	21.20	1.117			-0.04	0.879	0.982	-7.74%
2nd	FR1 n25_Ant 2	20M_BPSK_1_53	Bottom Side	10mm	4	376500	1882.5	20.89	21.20	1.074			0.05	0.844	0.906	
1st	FR1 n25_Ant 0	20M_BPSK_50_28	Left Side	10mm	4	381000	1905	23.05	23.20	1.035			-0.17	0.943	0.976	-17.83%
2nd	FR1 n25_Ant 0	20M_BPSK_50_28	Left Side	10mm	4	381000	1905	23.20	23.20	1.000			-0.1	0.802	0.802	
1st	FR1 n30_Ant 2	10M_BPSK_50_0	Back	10mm	4	462000	2310	22.01	23.10	1.285			-0.17	0.771	0.991	-2.78%
2nd	FR1 n30_Ant 2	10M_BPSK_50_0	Back	10mm	4	462000	2310	21.95	23.10	1.303			-0.12	0.697	0.908	
1st	FR1 n30_Ant 0	10M_BPSK_25_14	Left Side	10mm	4	462000	2310	23.15	23.50	1.084			-0.12	0.822	0.891	-16.86%
2nd	FR1 n30_Ant 0	10M_BPSK_25_14	Left Side	10mm	4	462000	2310	23.01	23.50	1.119			-0.17	0.639	0.715	
1st	FR1 n66_Ant 2	40M_BPSK_108_54	Bottom Side	10mm	4	349000	1745	21.75	22.70	1.245			-0.14	0.801	0.997	-1.71%
2nd	FR1 n66_Ant 2	40M_BPSK_108_54	Bottom Side	10mm	4	349000	1745	21.79	22.70	1.233			-0.09	0.795	0.980	
1st	FR1 n66_Ant 0	40M_BPSK_1_108	Bottom Side	10mm	4	349000	1745	23.56	23.90	1.081			-0.08	0.915	0.990	-20.51%
2nd	FR1 n66_Ant 0	40M_BPSK_1_108	Bottom Side	10mm	4	349000	1745	23.65	23.90	1.059			-0.19	0.743	0.787	
1st	FR1 n71_Ant 0	20M_BPSK_1_53	Left Side	10mm	4	136100	680.5	23.89	25.30	1.384			-0.07	0.360	0.498	-7.03%
2nd	FR1 n71_Ant 0	20M_BPSK_1_53	Left Side	10mm	4	136100	680.5	23.88	25.30	1.387			-0.11	0.334	0.463	
1st	FR1 n71_Ant 1	20M_BPSK_1_53	Left Side	10mm	4	136100	680.5	24.45	25.20	1.189			-0.17	0.196	0.233	-6.44%
2nd	FR1 n71_Ant 1	20M_BPSK_1_53	Left Side	10mm	4	136100	680.5	24.40	25.20	1.202			-0.18	0.181	0.218	
1st	FR1 n77_Ant 6	100M_BPSK_135_69	Left Side	10mm	4	656000	3840	21.36	21.60	1.057	100	1.000	-0.16	0.782	0.826	-8.60%
2nd	FR1 n77_Ant 6	100M_BPSK_135_69	Left Side	10mm	4	656000	3840	21.59	21.60	1.002	100	1.000	-0.18	0.753	0.755	
1st	FR1 n77_HPUE_Ant 6	100M_BPSK_135_69	Left Side	10mm	4	656000	3840	23.89	24.60	1.178	50	1.000	0.01	0.703	0.828	-13.41%
2nd	FR1 n77_HPUE_Ant 6	100M_BPSK_135_69	Left Side	10mm	4	656000	3840	24.05	24.60	1.135	50	1.000	-0.17	0.632	0.717	
1st	FR1 n77_Ant 6	100M_BPSK_135_69	Front	10mm	4	633332	3499.98	21.22	21.60	1.091	100	1.000	0.02	0.910	0.993	-14.40%
2nd	FR1 n77_Ant 6	100M_BPSK_135_69	Front	10mm	4	633332	3499.98	21.59	21.60	1.002	100	1.000	-0.06	0.848	0.850	
1st	FR1 n77_HPUE_Ant 6	100M_BPSK_135_69	Front	10mm	4	633332	3499.98	23.76	24.60	1.213	50	1.000	-0.01	0.796	0.966	-17.18%
2nd	FR1 n77_HPUE_Ant 6	100M_BPSK_135_69	Front	10mm	4	633332	3499.98	24.19	24.60	1.099	50	1.000	-0.1	0.728	0.800	
1st	FR1 n77_Ant 2	100M_BPSK_135_69	Back	10mm	4	656000	3840	22.07	22.80	1.183	100	1.000	-0.18	0.828	0.980	-6.02%
2nd	FR1 n77_Ant 2	100M_BPSK_135_69	Back	10mm	4	656000	3840	22.24	22.80	1.138	100	1.000	0.09	0.810	0.921	
1st	FR1 n77_HPUE_Ant 2	100M_BPSK_135_69	Back	10mm	4	656000	3840	24.62	25.80	1.312	50	1.000	-0.16	0.706	0.926	-10.04%
2nd	FR1 n77_HPUE_Ant 2	100M_BPSK_135_69	Back	10mm	4	656000	3840	24.80	25.80	1.259	50	1.000	-0.11	0.662	0.833	
1st	FR1 n77_Ant 2	100M_BPSK_135_69	Bottom Side	10mm	4	633332	3499.98	22.17	22.80	1.156	100	1.000	-0.14	0.813	0.940	-28.19%
2nd	FR1 n77_Ant 2	100M_BPSK_135_69	Bottom Side	10mm	4	633332	3499.98	22.35	22.80	1.109	100	1.000	-0.04	0.609	0.675	
1st	FR1 n77_HPUE_Ant 2	100M_BPSK_135_69	Bottom Side	10mm	4	633332	3499.98	24.66	25.80	1.300	50	1.000	-0.06	0.753	0.979	-23.08%
2nd	FR1 n77_HPUE_Ant 2	100M_BPSK_135_69	Bottom Side	10mm	4	633332	3499.98	24.72	25.80	1.282	50	1.000	-0.1	0.587	0.753	



4.3 Body-Worn SAR

Plot No.	Band	Mode	Test Position	Gap (mm)	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Deviation %
1st	GSM850_Ant 0	GPRS (4 Tx slots)	Back	10mm	5/6	189	836.4	29.35	30.50	1.303	0	0.545	0.710	-6.91%
2nd	GSM850_Ant 0	GPRS (4 Tx slots)	Back	10mm	5/6	189	836.4	29.38	30.50	1.294	-0.01	0.511	0.661	
1st	GSM850_Ant 1	GPRS (4 Tx slots)	Back	10mm	5/6	128	824.2	29.09	30.50	1.384	-0.03	0.392	0.542	-19.38%
2nd	GSM850_Ant 1	GPRS (4 Tx slots)	Back	10mm	5/6	128	824.2	29.32	30.50	1.312	-0.1	0.333	0.437	
1st	GSM1900_Ant 2	GPRS (4 Tx slots)	Back	10mm	5	810	1909.8	24.78	25.50	1.180	-0.1	0.980	1.157	-7.78%
2nd	GSM1900_Ant 2	GPRS (4 Tx slots)	Back	10mm	5	810	1909.8	24.95	25.50	1.135	-0.17	0.940	1.067	
1st	GSM1900_Ant 2	GPRS (4 Tx slots)	Back	10mm	6	810	1909.8	23.50	24.70	1.318	-0.16	0.730	0.962	-13.10%
2nd	GSM1900_Ant 2	GPRS (4 Tx slots)	Back	10mm	6	810	1909.8	23.78	24.70	1.236	-0.11	0.676	0.836	
1st	GSM1900_Ant 0	GPRS (4 Tx slots)	Back	10mm	5/6	661	1880	26.41	28.00	1.442	-0.12	0.689	0.994	
2nd	GSM1900_Ant 0	GPRS (4 Tx slots)	Back	10mm	5/6	661	1880	26.37	28.00	1.455	-0.03	0.659	0.959	-3.53%
1st	WCDMA II_Ant 2	RMC 12.2Kbps	Back	10mm	5	9538	1907.6	20.11	22.10	1.581	-0.16	0.692	1.094	-4.84%
2nd	WCDMA II_Ant 2	RMC 12.2Kbps	Back	10mm	5	9538	1907.6	20.30	22.10	1.514	-0.12	0.688	1.041	
1st	WCDMA II_Ant 2	RMC 12.2Kbps	Back	10mm	6	9538	1907.6	20.11	21.30	1.315	-0.16	0.692	0.910	-4.84%
2nd	WCDMA II_Ant 2	RMC 12.2Kbps	Back	10mm	6	9538	1907.6	20.30	21.30	1.259	-0.12	0.688	0.866	
1st	WCDMA II_Ant 0	RMC 12.2Kbps	Back	10mm	5	9262	1852.4	23.79	23.90	1.026	-0.12	0.879	0.902	-9.09%
2nd	WCDMA II_Ant 0	RMC 12.2Kbps	Back	10mm	5	9262	1852.4	23.74	23.90	1.038	-0.18	0.790	0.820	
1st	WCDMA II_Ant 0	RMC 12.2Kbps	Back	10mm	6	9262	1852.4	23.79	23.90	1.026	-0.12	0.879	0.902	-9.09%
2nd	WCDMA II_Ant 0	RMC 12.2Kbps	Back	10mm	6	9262	1852.4	23.74	23.90	1.038	-0.18	0.790	0.820	
1st	WCDMA IV_Ant 2	RMC 12.2Kbps	Back	10mm	5	1312	1712.4	21.57	23.30	1.489	-0.16	0.791	1.178	-10.53%
2nd	WCDMA IV_Ant 2	RMC 12.2Kbps	Back	10mm	5	1312	1712.4	21.65	23.30	1.462	-0.18	0.721	1.054	
1st	WCDMA IV_Ant 2	RMC 12.2Kbps	Back	10mm	6	1312	1712.4	21.57	22.50	1.239	-0.16	0.791	0.980	-10.51%
2nd	WCDMA IV_Ant 2	RMC 12.2Kbps	Back	10mm	6	1312	1712.4	21.65	22.50	1.216	-0.18	0.721	0.877	
1st	WCDMA IV_Ant 0	RMC 12.2Kbps	Back	10mm	5	1413	1732.6	23.21	24.70	1.409	-0.19	0.720	1.015	-5.32%
2nd	WCDMA IV_Ant 0	RMC 12.2Kbps	Back	10mm	5	1413	1732.6	23.42	24.70	1.343	-0.11	0.716	0.961	
1st	WCDMA IV_Ant 0	RMC 12.2Kbps	Back	10mm	6	1413	1732.6	23.21	23.90	1.172	-0.19	0.720	0.844	-5.21%
2nd	WCDMA IV_Ant 0	RMC 12.2Kbps	Back	10mm	6	1413	1732.6	23.42	23.90	1.117	-0.11	0.716	0.800	
1st	WCDMA V_Ant 0	RMC 12.2Kbps	Back	10mm	5/6	4182	836.4	24.14	25.30	1.306	-0.05	0.326	0.426	-3.53%
2nd	WCDMA V_Ant 0	RMC 12.2Kbps	Back	10mm	5/6	4182	836.4	24.08	25.30	1.324	-0.17	0.310	0.411	
1st	WCDMA V_Ant 1	RMC 12.2Kbps	Back	10mm	5/6	4132	826.4	24.17	25.70	1.422	-0.01	0.278	0.395	-2.28%
2nd	WCDMA V_Ant 1	RMC 12.2Kbps	Back	10mm	5/6	4132	826.4	24.10	25.70	1.445	-0.04	0.267	0.386	
1st	LTE Band 7_Ant 2	20M_QPSK_1_0	Back	10mm	5	21350	2560	20.02	21.00	1.253	-0.14	0.582	0.729	-8.37%
2nd	LTE Band 7_Ant 2	20M_QPSK_1_0	Back	10mm	5	21350	2560	20.11	21.00	1.227	-0.19	0.544	0.668	
1st	LTE Band 7C_Ant 2	20M_QPSK_1_0	Back	10mm	5	21350	2560	18.63	20.00	1.371	0.08	0.420	0.576	-0.69%
2nd	LTE Band 7C_Ant 2	20M_QPSK_1_0	Back	10mm	5	21350	2560	18.61	20.00	1.377	0.06	0.415	0.572	
1st	LTE Band 7_Ant 2	20M_QPSK_1_0	Back	10mm	6	21350	2560	20.02	21.00	1.253	-0.14	0.582	0.729	-8.37%
2nd	LTE Band 7_Ant 2	20M_QPSK_1_0	Back	10mm	6	21350	2560	20.11	21.00	1.227	-0.19	0.544	0.668	
1st	LTE Band 7C_Ant 2	20M_QPSK_1_0	Back	10mm	6	21350	2560	18.63	20.00	1.371	0.08	0.420	0.576	-0.69%
2nd	LTE Band 7C_Ant 2	20M_QPSK_1_0	Back	10mm	6	21350	2560	18.61	20.00	1.377	0.06	0.415	0.572	
1st	LTE Band 7_Ant 0	20M_QPSK_1_99	Back	10mm	5	21350	2560	23.49	24.90	1.384	-0.1	0.487	0.674	-0.74%
2nd	LTE Band 7_Ant 0	20M_QPSK_1_99	Back	10mm	5	21350	2560	23.50	24.90	1.380	-0.15	0.485	0.669	
1st	LTE Band 7C_Ant 0	20M_QPSK_1_0	Back	10mm	5	21100	2535	21.76	23.30	1.426	-0.12	0.369	0.526	-2.09%
2nd	LTE Band 7C_Ant 0	20M_QPSK_1_0	Back	10mm	5	21100	2535	21.57	23.30	1.489	0.09	0.346	0.515	
1st	LTE Band 7_Ant 0	20M_QPSK_1_99	Back	10mm	6	21350	2560	23.49	24.90	1.384	-0.1	0.487	0.674	-0.74%
2nd	LTE Band 7_Ant 0	20M_QPSK_1_99	Back	10mm	6	21350	2560	23.50	24.90	1.380	-0.15	0.485	0.669	
1st	LTE Band 7C_Ant 0	20M_QPSK_1_0	Back	10mm	6	21100	2535	21.76	23.30	1.426	-0.12	0.369	0.526	-2.09%
2nd	LTE Band 7C_Ant 0	20M_QPSK_1_0	Back	10mm	6	21100	2535	21.57	23.30	1.489	0.09	0.346	0.515	



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Plot No.	Band	Mode	Test Position	Gap (mm)	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)	Deviation %
1st	LTE Band 12_Ant 0	10M_QPSK_1_0	Back	10mm	5/6	23095	707.5	24.34	25.30	1.247			-0.12	0.341	0.425	-6.83%
2nd	LTE Band 12_Ant 0	10M_QPSK_1_0	Back	10mm	5/6	23095	707.5	24.51	25.30	1.199			-0.17	0.330	0.396	
1st	LTE Band 13_Ant 0	10M_QPSK_1_0	Back	10mm	5/6	23230	782	24.26	25.30	1.271			-0.01	0.380	0.483	-3.32%
2nd	LTE Band 13_Ant 0	10M_QPSK_1_0	Back	10mm	5/6	23230	782	24.39	25.30	1.233			-0.16	0.379	0.467	
1st	LTE Band 14_Ant 0	10M_QPSK_1_0	Back	10mm	5/6	23330	793	24.44	25.50	1.276			-0.1	0.450	0.574	-14.12%
2nd	LTE Band 14_Ant 0	10M_QPSK_1_0	Back	10mm	5/6	23330	793	24.57	25.50	1.239			-0.09	0.398	0.493	
1st	LTE Band 25_Ant 2	20M_QPSK_1_0	Back	10mm	5	26590	1905	21.13	22.10	1.250			-0.14	0.939	1.174	-4.77%
2nd	LTE Band 25_Ant 2	20M_QPSK_1_0	Back	10mm	5	26590	1905	21.30	22.10	1.202			-0.12	0.930	1.118	
1st	LTE Band 25_Ant 2	20M_QPSK_50_24	Back	10mm	6	26340	1880	20.34	21.30	1.247			-0.09	0.699	0.872	-0.23%
2nd	LTE Band 25_Ant 2	20M_QPSK_50_24	Back	10mm	6	26340	1880	20.33	21.30	1.250			-0.13	0.696	0.870	
1st	LTE Band 25_Ant 0	20M_QPSK_1_0	Back	10mm	5	26140	1860	22.02	23.40	1.374			-0.16	0.681	0.936	-14.21%
2nd	LTE Band 25_Ant 0	20M_QPSK_1_0	Back	10mm	5	26140	1860	22.25	23.40	1.303			-0.19	0.616	0.803	
1st	LTE Band 25_Ant 0	20M_QPSK_1_0	Back	10mm	6	26140	1860	22.02	23.40	1.374			-0.16	0.681	0.936	-14.21%
2nd	LTE Band 25_Ant 0	20M_QPSK_1_0	Back	10mm	6	26140	1860	22.25	23.40	1.303			-0.19	0.616	0.803	
1st	LTE Band 26_Ant 0	15M_QPSK_1_0	Back	10mm	5/6	26865	831.5	24.62	25.50	1.225			-0.07	0.358	0.438	-9.37%
2nd	LTE Band 26_Ant 0	15M_QPSK_1_0	Back	10mm	5/6	26865	831.5	24.81	25.50	1.172			-0.09	0.339	0.397	
1st	LTE Band 5B_Ant 0	10M_QPSK_1_0	Back	10mm	5/6	20600	844	22.11	23.50	1.377			0.06	0.189	0.260	3.08%
2nd	LTE Band 5B_Ant 0	10M_QPSK_1_0	Back	10mm	5/6	20600	844	22.08	23.50	1.387			-0.1	0.193	0.268	
1st	LTE Band 30_Ant 2	10M_QPSK_1_0	Back	10mm	5	27710	2310	21.41	23.40	1.581			-0.14	0.712	1.126	-13.06%
2nd	LTE Band 30_Ant 2	10M_QPSK_1_0	Back	10mm	5	27710	2310	21.47	23.40	1.560			-0.03	0.628	0.979	
1st	LTE Band 30_Ant 2	10M_QPSK_1_0	Back	10mm	6	27710	2310	21.41	22.60	1.315			-0.14	0.712	0.936	-12.93%
2nd	LTE Band 30_Ant 2	10M_QPSK_1_0	Back	10mm	6	27710	2310	21.47	22.60	1.297			-0.03	0.628	0.815	
1st	LTE Band 30_Ant 0	10M_QPSK_1_0	Back	10mm	5	27710	2310	22.15	23.70	1.429			-0.13	0.495	0.707	-6.65%
2nd	LTE Band 30_Ant 0	10M_QPSK_1_0	Back	10mm	5	27710	2310	22.16	23.70	1.426			-0.15	0.463	0.660	
1st	LTE Band 30_Ant 0	10M_QPSK_1_0	Back	10mm	6	27710	2310	22.15	23.70	1.429			-0.13	0.495	0.707	-6.65%
2nd	LTE Band 30_Ant 0	10M_QPSK_1_0	Back	10mm	6	27710	2310	22.16	23.70	1.426			-0.15	0.463	0.660	
1st	LTE Band 41_Ant 2	20M_QPSK_1_0	Back	10mm	5	41490	2680	21.69	23.40	1.483	62.9	1.006	-0.11	0.527	0.786	-8.78%
2nd	LTE Band 41_Ant 2	20M_QPSK_1_0	Back	10mm	5	41490	2680	22.02	23.40	1.374	62.9	1.006	-0.13	0.519	0.717	
1st	LTE Band 41_HPUE_Ant 2	20M_QPSK_1_0	Back	10mm	5	40620	2593	23.51	25.00	1.409	42.9	1.009	-0.14	0.495	0.704	-4.26%
2nd	LTE Band 41_HPUE_Ant 2	20M_QPSK_1_0	Back	10mm	5	40620	2593	23.52	25.00	1.406	42.9	1.009	-0.11	0.475	0.674	
1st	LTE Band 41C_Ant 2	20M_QPSK_1_0	Back	10mm	5	40620	2593	19.83	21.40	1.435	62.9	1.006	0.12	0.413	0.596	-20.64%
2nd	LTE Band 41C_Ant 2	20M_QPSK_1_0	Back	10mm	5	40620	2593	19.84	21.40	1.432	62.9	1.006	-0.06	0.328	0.473	
1st	LTE Band 41_Ant 2	20M_QPSK_1_0	Back	10mm	6	41490	2680	21.69	23.40	1.483	62.9	1.006	-0.11	0.527	0.786	-8.78%
2nd	LTE Band 41_Ant 2	20M_QPSK_1_0	Back	10mm	6	41490	2680	22.02	23.40	1.374	62.9	1.006	-0.13	0.519	0.717	
1st	LTE Band 41_HPUE_Ant 2	20M_QPSK_1_0	Back	10mm	6	40620	2593	23.51	25.00	1.409	42.9	1.009	-0.14	0.495	0.704	-4.26%
2nd	LTE Band 41_HPUE_Ant 2	20M_QPSK_1_0	Back	10mm	6	40620	2593	23.52	25.00	1.406	42.9	1.009	-0.11	0.475	0.674	
1st	LTE Band 41C_Ant 2	20M_QPSK_1_0	Back	10mm	6	40620	2593	19.83	21.40	1.435	62.9	1.006	0.12	0.413	0.596	-20.64%
2nd	LTE Band 41C_Ant 2	20M_QPSK_1_0	Back	10mm	6	40620	2593	19.84	21.40	1.432	62.9	1.006	-0.06	0.328	0.473	
1st	LTE Band 41_Ant 0	20M_QPSK_1_0	Back	10mm	5/6	41055	2636.5	23.62	25.20	1.439	62.9	1.006	0.01	0.471	0.682	-0.44%
2nd	LTE Band 41_Ant 0	20M_QPSK_1_0	Back	10mm	5/6	41055	2636.5	23.45	25.20	1.496	62.9	1.006	-0.01	0.451	0.679	
1st	LTE Band 41_HPUE_Ant 0	20M_QPSK_1_0	Back	10mm	5/6	40620	2593	25.93	27.20	1.340	42.9	1.009	-0.13	0.529	0.715	3.22%
2nd	LTE Band 41_HPUE_Ant 0	20M_QPSK_1_0	Back	10mm	5/6	41055	2636.5	25.45	27.20	1.496	42.9	1.009	-0.06	0.489	0.738	
1st	LTE Band 41C_Ant 0	20M_QPSK_1_0	Back	10mm	5/6	40620	2593	20.92	22.20	1.343	62.9	1.006	0.11	0.193	0.261	5.36%
2nd	LTE Band 41C_Ant 0	20M_QPSK_1_0	Back	10mm	5/6	40620	2593	20.69	22.20	1.416	62.9	1.006	-0.12	0.193	0.275	
1st	LTE Band 48_Ant 6	20M_QPSK_1_0	Front	10mm	5/6	55340	3560	22.69	24.00	1.352	62.9	1.006	-0.01	0.652	0.887	-22.89%
2nd	LTE Band 48_Ant 6	20M_QPSK_1_0	Front	10mm	5/6	55340	3560	23.12	24.00	1.225	62.9	1.006	-0.02	0.555	0.684	
1st	LTE Band 48_Ant 2	20M_QPSK_1_0	Back	10mm	5/6	56640	3690	21.72	23.20	1.406	62.9	1.006	-0.05	0.290	0.410	-13.66%
2nd	LTE Band 48_Ant 2	20M_QPSK_1_0	Back	10mm	5/6	56640	3690	21.73	23.20	1.403	62.9	1.006	-0.05	0.251	0.354	



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Report No.:FA161608-05E

Plot No.	Band	Mode	Test Position	Gap (mm)	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Deviation %
1st	LTE Band 66_Ant 2	20M_QPSK_50_24	Back	10mm	5	132072	1720	22.14	23.20	1.276	-0.19	0.890	1.136	-15.14%
2nd	LTE Band 66_Ant 2	20M_QPSK_50_24	Back	10mm	5	132072	1720	22.41	23.20	1.199	-0.1	0.804	0.964	
1st	LTE Band 66B_Ant 2	15M_QPSK_1_74	Back	10mm	5	132047	1717.5	18.16	19.25	1.285	-0.13	0.416	0.535	-12.52%
2nd	LTE Band 66B_Ant 2	15M_QPSK_1_74	Back	10mm	5	132047	1717.5	18.16	19.25	1.285	0.09	0.364	0.468	
1st	LTE Band 66C_Ant 2	20M_QPSK_1_99	Back	10mm	5	132072	1720	18.26	19.25	1.256	-0.15	0.402	0.505	-9.31%
2nd	LTE Band 66C_Ant 2	20M_QPSK_1_99	Back	10mm	5	132072	1720	18.23	19.25	1.265	0.06	0.362	0.458	
1st	LTE Band 66_Ant 2	20M_QPSK_1_0	Back	10mm	6	132072	1720	21.04	22.40	1.368	-0.14	0.682	0.933	-11.04%
2nd	LTE Band 66_Ant 2	20M_QPSK_1_0	Back	10mm	6	132072	1720	21.27	22.40	1.297	-0.1	0.640	0.830	
1st	LTE Band 66B_Ant 2	15M_QPSK_1_74	Back	10mm	6	132047	1717.5	18.16	19.25	1.285	-0.13	0.345	0.443	3.84%
2nd	LTE Band 66B_Ant 2	15M_QPSK_1_74	Back	10mm	6	132047	1717.5	18.16	19.25	1.285	0.09	0.358	0.460	
1st	LTE Band 66C_Ant 2	20M_QPSK_1_99	Back	10mm	6	132072	1720	18.26	19.25	1.256	-0.13	0.355	0.446	2.69%
2nd	LTE Band 66C_Ant 2	20M_QPSK_1_99	Back	10mm	6	132072	1720	18.23	19.25	1.265	-0.11	0.362	0.458	
1st	LTE Band 66_Ant 0	20M_QPSK_1_0	Back	10mm	5	132572	1770	23.63	24.70	1.279	-0.13	0.885	1.132	-13.16%
2nd	LTE Band 66_Ant 0	20M_QPSK_1_0	Back	10mm	5	132572	1770	23.80	24.70	1.230	-0.13	0.799	0.983	
1st	LTE Band 66B_Ant 0	15M_QPSK_1_0	Back	10mm	5	132322	1745	17.50	18.75	1.334	0.11	0.263	0.351	-2.85%
2nd	LTE Band 66B_Ant 0	15M_QPSK_1_0	Back	10mm	5	132322	1745	17.69	18.75	1.276	0.04	0.267	0.341	
1st	LTE Band 66C_Ant 0	20M_QPSK_1_0	Back	10mm	5	132322	1745	17.56	18.75	1.315	0.13	0.277	0.364	-20.88%
2nd	LTE Band 66C_Ant 0	20M_QPSK_1_0	Back	10mm	5	132322	1745	17.76	18.75	1.256	0.16	0.229	0.288	
1st	LTE Band 66_Ant 0	20M_QPSK_1_0	Back	10mm	6	132572	1770	23.63	23.90	1.064	-0.13	0.885	0.942	-13.16%
2nd	LTE Band 66_Ant 0	20M_QPSK_1_0	Back	10mm	6	132572	1770	23.80	23.90	1.023	-0.13	0.799	0.818	
1st	LTE Band 66B_Ant 0	15M_QPSK_1_0	Back	10mm	6	132322	1745	17.50	18.75	1.334	0.11	0.263	0.351	-2.85%
2nd	LTE Band 66B_Ant 0	15M_QPSK_1_0	Back	10mm	6	132322	1745	17.69	18.75	1.276	0.04	0.267	0.341	
1st	LTE Band 66C_Ant 0	20M_QPSK_1_0	Back	10mm	6	132322	1745	17.56	18.75	1.315	0.13	0.268	0.352	-15.91%
2nd	LTE Band 66C_Ant 0	20M_QPSK_1_0	Back	10mm	6	132322	1745	17.76	18.75	1.256	0.16	0.236	0.296	
1st	LTE Band 71_Ant 0	20M_QPSK_1_0	Back	10mm	5/6	133322	683	24.50	25.30	1.202	-0.13	0.402	0.483	-5.18%
2nd	LTE Band 71_Ant 0	20M_QPSK_1_0	Back	10mm	5/6	133322	683	24.48	25.30	1.208	-0.06	0.379	0.458	
1st	FR1 n5_Ant 0	20M_BPSK_1_53	Back	10mm	5/6	167300	836.5	24.34	25.50	1.306	-0.12	0.328	0.428	-13.79%
2nd	FR1 n5_Ant 0	20M_BPSK_1_53	Back	10mm	5/6	167300	836.5	24.36	25.50	1.300	-0.03	0.284	0.369	
1st	FR1 n5_Ant 1	20M_BPSK_1_53	Back	10mm	5/6	167300	836.5	24.82	25.20	1.091	-0.19	0.295	0.322	-16.46%
2nd	FR1 n5_Ant 1	20M_BPSK_1_53	Back	10mm	5/6	167300	836.5	24.80	25.20	1.096	-0.13	0.245	0.269	
1st	FR1 n7_Ant 2	20M_BPSK_1_53	Back	10mm	5	512000	2560	20.48	21.30	1.208	-0.19	0.627	0.757	-6.87%
2nd	FR1 n7_Ant 2	20M_BPSK_1_53	Back	10mm	5	512000	2560	20.42	21.30	1.225	-0.15	0.576	0.705	
1st	FR1 n7_Ant 2	20M_BPSK_1_53	Back	10mm	6	512000	2560	20.48	21.30	1.208	-0.19	0.627	0.757	-6.87%
2nd	FR1 n7_Ant 2	20M_BPSK_1_53	Back	10mm	6	512000	2560	20.42	21.30	1.225	-0.15	0.576	0.705	
1st	FR1 n7_Ant 0	20M_BPSK_50_28	Back	10mm	5	512000	2560	23.30	25.00	1.479	-0.18	0.497	0.735	-1.63%
2nd	FR1 n7_Ant 0	20M_BPSK_50_28	Back	10mm	5	512000	2560	23.25	25.00	1.496	-0.1	0.483	0.723	
1st	FR1 n7_Ant 0	20M_BPSK_50_28	Back	10mm	6	512000	2560	23.30	25.00	1.479	-0.18	0.497	0.735	-1.63%
2nd	FR1 n7_Ant 0	20M_BPSK_50_28	Back	10mm	6	512000	2560	23.25	25.00	1.496	-0.1	0.483	0.723	
1st	FR1 n12_Ant 0	15M_BPSK_1_40	Back	10mm	5/6	141500	707.5	23.94	25.30	1.368	-0.04	0.338	0.462	-10.61%
2nd	FR1 n12_Ant 0	15M_BPSK_1_40	Back	10mm	5/6	141500	707.5	23.94	25.30	1.368	-0.09	0.302	0.413	
1st	FR1 n12_Ant 1	15M_BPSK_1_40	Back	10mm	5/6	141500	707.5	24.33	25.20	1.222	-0.19	0.204	0.249	-0.41%
2nd	FR1 n12_Ant 1	15M_BPSK_1_40	Back	10mm	5/6	141500	707.5	24.26	25.20	1.242	-0.1	0.200	0.248	



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Report No.:FA161608-05E

Plot No.	Band	Mode	Test Position	Gap (mm)	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Deviation %
1st	FR1 n25_Ant 2	20M_BPSK_1_53	Back	10mm	5	376500	1882.5	21.67	22.50	1.211	-0.13	0.983	1.190	-0.42%
2nd	FR1 n25_Ant 2	20M_BPSK_1_53	Back	10mm	5	376500	1882.5	21.69	22.50	1.205	-0.19	0.983	1.185	
1st	FR1 n25_Ant 2	20M_BPSK_1_53	Back	10mm	6	376500	1882.5	21.67	21.70	1.007	-0.13	0.983	0.990	-0.51%
2nd	FR1 n25_Ant 2	20M_BPSK_1_53	Back	10mm	6	376500	1882.5	21.69	21.70	1.002	-0.19	0.983	0.985	
1st	FR1 n25_Ant 0	20M_BPSK_50_28	Back	10mm	5	372000	1860	22.95	24.00	1.274	-0.18	0.763	0.972	-4.73%
2nd	FR1 n25_Ant 0	20M_BPSK_50_28	Back	10mm	5	372000	1860	23.13	24.00	1.222	-0.12	0.758	0.926	
1st	FR1 n25_Ant 0	20M_BPSK_50_28	Back	10mm	6	372000	1860	22.95	24.00	1.274	-0.18	0.763	0.972	-4.73%
2nd	FR1 n25_Ant 0	20M_BPSK_50_28	Back	10mm	6	372000	1860	23.13	24.00	1.222	-0.12	0.758	0.926	
1st	FR1 n30_Ant 2	10M_BPSK_50_0	Back	10mm	5	462000	2310	22.01	23.90	1.545	-0.17	0.771	1.191	-8.31%
2nd	FR1 n30_Ant 2	10M_BPSK_50_0	Back	10mm	5	462000	2310	21.95	23.90	1.567	-0.12	0.697	1.092	
1st	FR1 n30_Ant 2	10M_BPSK_50_0	Back	10mm	6	462000	2310	22.01	23.10	1.285	-0.17	0.771	0.991	-8.38%
2nd	FR1 n30_Ant 2	10M_BPSK_50_0	Back	10mm	6	462000	2310	21.95	23.10	1.303	-0.12	0.697	0.908	
1st	FR1 n30_Ant 0	10M_BPSK_1_50	Back	10mm	5	462000	2310	23.22	24.30	1.282	-0.15	0.597	0.766	-11.10%
2nd	FR1 n30_Ant 0	10M_BPSK_1_50	Back	10mm	5	462000	2310	23.13	24.30	1.309	-0.12	0.520	0.681	
1st	FR1 n30_Ant 0	10M_BPSK_1_50	Back	10mm	6	462000	2310	23.22	24.30	1.282	-0.15	0.597	0.766	-11.10%
2nd	FR1 n30_Ant 0	10M_BPSK_1_50	Back	10mm	6	462000	2310	23.13	24.30	1.309	-0.12	0.520	0.681	
1st	FR1 n66_Ant 2	40M_BPSK_216_0	Back	10mm	5	349000	1745	22.60	23.70	1.288	-0.12	0.877	1.130	-4.69%
2nd	FR1 n66_Ant 2	40M_BPSK_216_0	Back	10mm	5	349000	1745	22.63	23.70	1.279	-0.13	0.842	1.077	
1st	FR1 n66_Ant 2	40M_BPSK_108_54	Back	10mm	6	349000	1745	21.75	22.90	1.303	-0.09	0.724	0.943	-6.04%
2nd	FR1 n66_Ant 2	40M_BPSK_108_54	Back	10mm	6	349000	1745	21.79	22.90	1.291	-0.13	0.686	0.886	
1st	FR1 n66_Ant 0	40M_BPSK_1_108	Back	10mm	5	349000	1745	23.56	25.00	1.393	-0.12	0.765	1.066	-5.63%
2nd	FR1 n66_Ant 0	40M_BPSK_1_108	Back	10mm	5	349000	1745	23.65	25.00	1.365	-0.16	0.737	1.006	
1st	FR1 n66_Ant 0	40M_BPSK_1_108	Back	10mm	6	349000	1745	23.56	24.20	1.159	-0.12	0.765	0.886	-5.53%
2nd	FR1 n66_Ant 0	40M_BPSK_1_108	Back	10mm	6	349000	1745	23.65	24.20	1.135	-0.16	0.737	0.837	
1st	FR1 n71_Ant 0	20M_BPSK_1_53	Back	10mm	5/6	136100	680.5	23.89	25.30	1.384	-0.09	0.323	0.447	-2.24%
2nd	FR1 n71_Ant 0	20M_BPSK_1_53	Back	10mm	5/6	136100	680.5	23.88	25.30	1.387	-0.13	0.315	0.437	
1st	FR1 n71_Ant 1	20M_BPSK_1_53	Back	10mm	5/6	136100	680.5	24.45	25.20	1.189	-0.02	0.162	0.193	-1.56%
2nd	FR1 n71_Ant 1	20M_BPSK_1_53	Back	10mm	5/6	136100	680.5	24.40	25.20	1.202	-0.13	0.158	0.190	



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Report No.:FA161608-05E

Plot No.	Band	Mode	Test Position	Gap (mm)	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)	Deviation %
1st	FR1 n77_Ant 6	100M_BPSK_135_69	Front	10mm	5	656000	3840	21.36	22.40	1.271	100	1.000	-0.05	0.656	0.833	-13.93%
2nd	FR1 n77_Ant 6	100M_BPSK_135_69	Front	10mm	5	656000	3840	21.59	22.40	1.205	100	1.000	-0.06	0.595	0.717	
1st	FR1 n77_HPUE_Ant 6	100M_BPSK_135_69	Front	10mm	5	656000	3840	23.89	25.40	1.416	50	1.000	-0.11	0.604	0.855	-14.50%
2nd	FR1 n77_HPUE_Ant 6	100M_BPSK_135_69	Front	10mm	5	656000	3840	24.05	25.40	1.365	50	1.000	-0.17	0.536	0.731	
1st	FR1 n77_Ant 6	100M_BPSK_135_69	Front	10mm	6	656000	3840	21.36	21.60	1.057	100	1.000	-0.05	0.656	0.693	-14.00%
2nd	FR1 n77_Ant 6	100M_BPSK_135_69	Front	10mm	6	656000	3840	21.59	21.60	1.002	100	1.000	-0.06	0.595	0.596	
1st	FR1 n77_HPUE_Ant 6	100M_BPSK_135_69	Front	10mm	6	656000	3840	23.89	24.60	1.178	50	1.000	-0.11	0.604	0.711	-14.49%
2nd	FR1 n77_HPUE_Ant 6	100M_BPSK_135_69	Front	10mm	6	656000	3840	24.05	24.60	1.135	50	1.000	-0.17	0.536	0.608	
1st	FR1 n77_Ant 6	100M_BPSK_135_69	Front	10mm	5	633332	3499.98	21.22	22.40	1.312	100	1.000	0.02	0.910	1.194	-14.41%
2nd	FR1 n77_Ant 6	100M_BPSK_135_69	Front	10mm	5	633332	3499.98	21.59	22.40	1.205	100	1.000	-0.06	0.848	1.022	
1st	FR1 n77_HPUE_Ant 6	100M_BPSK_135_69	Front	10mm	5	633332	3499.98	23.76	25.40	1.459	50	1.000	-0.01	0.796	1.161	-17.14%
2nd	FR1 n77_HPUE_Ant 6	100M_BPSK_135_69	Front	10mm	5	633332	3499.98	24.19	25.40	1.321	50	1.000	-0.1	0.728	0.962	
1st	FR1 n77_Ant 6	100M_BPSK_135_69	Front	10mm	6	633332	3499.98	21.22	21.60	1.091	100	1.000	0.02	0.910	0.993	-14.40%
2nd	FR1 n77_Ant 6	100M_BPSK_135_69	Front	10mm	6	633332	3499.98	21.59	21.60	1.002	100	1.000	-0.06	0.848	0.850	
1st	FR1 n77_HPUE_Ant 6	100M_BPSK_135_69	Front	10mm	6	633332	3499.98	23.76	24.60	1.213	50	1.000	-0.01	0.796	0.966	-17.18%
2nd	FR1 n77_HPUE_Ant 6	100M_BPSK_135_69	Front	10mm	6	633332	3499.98	24.19	24.60	1.099	50	1.000	-0.1	0.728	0.800	
1st	FR1 n77_Ant 2	100M_BPSK_135_69	Back	10mm	5	656000	3840	22.07	23.60	1.422	100	1.000	-0.18	0.828	1.178	-5.94%
2nd	FR1 n77_Ant 2	100M_BPSK_135_69	Back	10mm	5	656000	3840	22.24	23.60	1.368	100	1.000	0.09	0.810	1.108	
1st	FR1 n77_HPUE_Ant 2	100M_BPSK_135_69	Back	10mm	5	656000	3840	24.62	25.90	1.343	50	1.000	-0.16	0.706	0.948	-10.02%
2nd	FR1 n77_HPUE_Ant 2	100M_BPSK_135_69	Back	10mm	5	656000	3840	24.80	25.90	1.288	50	1.000	-0.11	0.662	0.853	
1st	FR1 n77_Ant 2	100M_BPSK_135_69	Back	10mm	6	656000	3840	22.07	22.80	1.183	100	1.000	-0.18	0.828	0.980	-6.02%
2nd	FR1 n77_Ant 2	100M_BPSK_135_69	Back	10mm	6	656000	3840	22.24	22.80	1.138	100	1.000	0.09	0.810	0.921	
1st	FR1 n77_HPUE_Ant 2	100M_BPSK_135_69	Back	10mm	6	656000	3840	24.62	25.80	1.312	50	1.000	-0.16	0.706	0.926	-10.04%
2nd	FR1 n77_HPUE_Ant 2	100M_BPSK_135_69	Back	10mm	6	656000	3840	24.80	25.80	1.259	50	1.000	-0.11	0.662	0.833	
1st	FR1 n77_Ant 2	100M_BPSK_135_69	Front	10mm	5	633332	3499.98	22.17	23.60	1.390	100	1.000	-0.12	0.652	0.906	-30.35%
2nd	FR1 n77_Ant 2	100M_BPSK_135_69	Front	10mm	5	633332	3499.98	22.35	23.60	1.334	100	1.000	-0.18	0.473	0.631	
1st	FR1 n77_HPUE_Ant 2	100M_BPSK_135_69	Front	10mm	5	633332	3499.98	24.66	25.90	1.330	50	1.000	-0.14	0.581	0.773	-17.98%
2nd	FR1 n77_HPUE_Ant 2	100M_BPSK_135_69	Front	10mm	5	633332	3499.98	24.72	25.90	1.312	50	1.000	-0.13	0.483	0.634	
1st	FR1 n77_Ant 2	100M_BPSK_135_69	Front	10mm	6	633332	3499.98	22.17	22.80	1.156	100	1.000	-0.12	0.652	0.754	-30.37%
2nd	FR1 n77_Ant 2	100M_BPSK_135_69	Front	10mm	6	633332	3499.98	22.35	22.80	1.109	100	1.000	-0.18	0.473	0.525	
1st	FR1 n77_HPUE_Ant 2	100M_BPSK_135_69	Front	10mm	6	633332	3499.98	24.66	25.80	1.300	50	1.000	-0.14	0.581	0.755	-18.01%
2nd	FR1 n77_HPUE_Ant 2	100M_BPSK_135_69	Front	10mm	6	633332	3499.98	24.72	25.80	1.282	50	1.000	-0.13	0.483	0.619	

4.4 Product Specific SAR

No.	Band	Mode	Test Position	Gap (mm)	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)	Deviation %
1st	GSM1900_Ant 2	GPRS (4 Tx slots)	Bottom Side	0mm	5	810	1909.8	24.78	25.50	1.180	0.14	1.650	1.948	-12.58%
2nd	GSM1900_Ant 2	GPRS (4 Tx slots)	Bottom Side	0mm	5	810	1909.8	24.95	25.50	1.135	0.09	1.500	1.703	
1st	WCDMA II_Ant 2	RMC 12.2Kbps	Bottom Side	0mm	5	9538	1907.6	20.11	22.10	1.581	0.14	1.040	1.644	-8.52%
2nd	WCDMA II_Ant 2	RMC 12.2Kbps	Bottom Side	0mm	5	9538	1907.6	20.30	22.10	1.514	0.17	0.994	1.504	
1st	WCDMA IV_Ant 2	RMC 12.2Kbps	Bottom Side	0mm	5	1312	1712.4	21.57	23.30	1.489	0.11	1.970	2.934	-3.31%
2nd	WCDMA IV_Ant 2	RMC 12.2Kbps	Bottom Side	0mm	5	1312	1712.4	21.65	23.30	1.462	-0.06	1.940	2.837	
1st	WCDMA IV_Ant 0	RMC 12.2Kbps	Bottom Side	0mm	5	1513	1752.6	23.12	24.70	1.439	0.09	1.450	2.086	-5.18%
2nd	WCDMA IV_Ant 0	RMC 12.2Kbps	Bottom Side	0mm	5	1513	1752.6	23.23	24.70	1.403	-0.17	1.410	1.978	
1st	LTE Band 25_Ant 2	20M_QPSK_50_24	Bottom Side	0mm	5	26590	1905	21.14	22.10	1.247	0.16	1.670	2.083	-19.20%
2nd	LTE Band 25_Ant 2	20M_QPSK_50_24	Bottom Side	0mm	5	26590	1905	21.60	22.10	1.122	0.06	1.500	1.683	
1st	LTE Band 66_Ant 2	20M_QPSK_50_24	Bottom Side	0mm	5	132072	1720	22.14	23.20	1.276	-0.1	2.280	2.910	-10.55%
2nd	LTE Band 66_Ant 2	20M_QPSK_50_24	Bottom Side	0mm	5	132072	1720	22.41	23.20	1.199	-0.06	2.170	2.603	
1st	LTE Band 66B_Ant 2	15M_QPSK_1_74	Bottom Side	0mm	5	132047	1717.5	18.16	19.25	1.285	0.06	0.936	1.203	-11.22%
2nd	LTE Band 66B_Ant 2	15M_QPSK_1_74	Bottom Side	0mm	5	132047	1717.5	18.16	19.25	1.285	0.03	0.831	1.068	
1st	LTE Band 66C_Ant 2	20M_QPSK_1_99	Bottom Side	0mm	5	132072	1720	18.26	19.25	1.256	-0.06	0.913	1.147	-6.19%
2nd	LTE Band 66C_Ant 2	20M_QPSK_1_99	Bottom Side	0mm	5	132072	1720	18.23	19.25	1.265	0.07	0.851	1.076	
1st	FR1 n25_Ant 2	20M_BPSK_1_53	Bottom Side	0mm	5	376500	1882.5	21.67	22.50	1.211	0.1	1.550	1.876	-7.90%
2nd	FR1 n25_Ant 2	20M_BPSK_1_53	Bottom Side	0mm	5	376500	1882.5	21.69	22.50	1.205	0.13	1.440	1.735	
1st	FR1 n66_Ant 2	40M_BPSK_108_54	Bottom Side	0mm	5	349000	1745	22.74	23.70	1.247	0.1	2.390	2.981	-4.63%
2nd	FR1 n66_Ant 2	40M_BPSK_108_54	Bottom Side	0mm	5	349000	1745	22.76	23.70	1.242	-0.08	2.290	2.843	
1st	FR1 n66_Ant 0	40M_BPSK_1_108	Bottom Side	0mm	5	349000	1745	23.56	25.00	1.393	0.18	1.550	2.159	-20.38%
2nd	FR1 n66_Ant 0	40M_BPSK_1_108	Bottom Side	0mm	5	349000	1745	23.65	25.00	1.365	-0.07	1.260	1.719	

Conclusion:

The spot check results don't show the SAR increase more than 30%, and all below 1.2W/kg for 1-g SAR, below 3W/kg for 10-g SAR. Referring to the guidance in the KDB inquiry, SAR data reuse is justified.

END of this report



5. System Verification

5.1 Tissue Verification

The tissue dielectric parameters of tissue-equivalent media used for SAR measurements must be characterized within a temperature range of 18°C to 25°C, measured with calibrated instruments and apparatuses, such as network analyzers and temperature probes. The temperature of the tissue-equivalent medium during SAR measurement must also be within 18°C to 25°C and within $\pm 2^\circ\text{C}$ of the temperature when the tissue parameters are characterized. The tissue dielectric measurement system must be calibrated before use. The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements.

The liquid tissue depth was at least 15cm in the phantom for all SAR testing.

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Liquid Temp. (°C)	Conductivity (σ)	Permittivity (ϵ_r)	Conductivity Target (σ)	Permittivity Target (ϵ_r)	Delta (σ) (%)	Delta (ϵ_r) (%)	Limit (%)	Date
750	22.7	0.895	41.333	0.89	41.90	0.56	-1.35	± 5	2021/11/30
750	22.5	0.925	42.005	0.89	41.90	3.93	0.25	± 5	2021/12/1
750	22.1	0.887	42.666	0.89	41.90	-0.34	1.83	± 5	2021/12/3
750	22.6	0.887	40.871	0.89	41.90	-0.34	-2.46	± 5	2021/12/6
750	22.4	0.864	42.940	0.89	41.90	-2.92	2.48	± 5	2021/12/8
750	22.8	0.904	41.609	0.89	41.90	1.57	-0.69	± 5	2021/12/11
750	22.9	0.912	41.734	0.89	41.90	2.47	-0.40	± 5	2021/12/12
750	22.3	0.883	42.065	0.89	41.90	-0.79	0.39	± 5	2021/12/25
750	22.5	0.895	43.476	0.89	41.90	0.56	3.76	± 5	2021/12/27
750	22.2	0.888	41.263	0.89	41.90	-0.22	-1.52	± 5	2022/1/20
835	22.6	0.921	41.099	0.90	41.50	2.33	-0.97	± 5	2021/11/28
835	22.5	0.889	41.320	0.90	41.50	-1.22	-0.43	± 5	2021/11/29
835	22.3	0.885	42.574	0.90	41.50	-1.67	2.59	± 5	2021/12/4
835	22.3	0.885	42.574	0.90	41.50	-1.67	2.59	± 5	2021/12/4
835	22.7	0.880	42.371	0.90	41.50	-2.22	2.10	± 5	2021/12/10
835	22.8	0.891	41.316	0.90	41.50	-1.00	-0.44	± 5	2021/12/11
835	22.9	0.896	41.426	0.90	41.50	-0.44	-0.18	± 5	2021/12/12
835	22.3	0.878	42.341	0.90	41.50	-2.44	2.03	± 5	2021/12/25
1750	22.5	1.353	39.487	1.37	40.10	-1.24	-1.53	± 5	2021/12/5
1750	22.2	1.388	39.865	1.37	40.10	1.31	-0.59	± 5	2021/12/7
1750	22.2	1.352	38.895	1.37	40.10	-1.31	-3.00	± 5	2021/12/7
1750	22.4	1.334	39.866	1.37	40.10	-2.63	-0.58	± 5	2021/12/12
1750	22.2	1.363	40.166	1.37	40.10	-0.51	0.16	± 5	2021/12/13
1750	22.1	1.359	40.126	1.37	40.10	-0.80	0.06	± 5	2021/12/15
1750	22.3	1.397	40.610	1.37	40.10	1.97	1.27	± 5	2021/12/16
1900	22.4	1.398	40.312	1.40	40.00	-0.14	0.78	± 5	2021/12/2
1900	22.5	1.401	39.827	1.40	40.00	0.07	-0.43	± 5	2021/12/5
1900	22.5	1.411	39.262	1.40	40.00	0.79	-1.85	± 5	2021/12/5
1900	22.1	1.416	39.472	1.40	40.00	1.14	-1.32	± 5	2021/12/6
1900	22.7	1.399	40.561	1.40	40.00	-0.07	1.40	± 5	2021/12/9
1900	22.7	1.420	39.030	1.40	40.00	1.43	-2.43	± 5	2021/12/10
1900	22.2	1.427	40.812	1.40	40.00	1.93	2.03	± 5	2021/12/11
1900	22.5	1.390	40.144	1.40	40.00	-0.71	0.36	± 5	2021/12/14
1900	22.1	1.400	39.596	1.40	40.00	0.00	-1.01	± 5	2021/12/15
2300	22.2	1.669	39.438	1.67	39.50	-0.06	-0.16	± 5	2021/11/28
2300	22.5	1.672	39.888	1.67	39.50	0.12	0.98	± 5	2021/11/29
2300	22.4	1.599	38.960	1.67	39.50	-4.25	-1.37	± 5	2021/12/8
2300	22.1	1.612	39.887	1.67	39.50	-3.47	0.98	± 5	2021/12/13
2300	22.3	1.597	38.895	1.67	39.50	-4.37	-1.53	± 5	2021/12/16
2300	22.6	1.684	39.336	1.67	39.50	0.84	-0.42	± 5	2021/12/24
2300	22.5	1.647	40.181	1.67	39.50	-1.38	1.72	± 5	2021/12/27
2600	22.2	1.895	38.224	1.96	39.00	-3.32	-1.99	± 5	2021/11/28
2600	22.5	1.899	38.674	1.96	39.00	-3.11	-0.84	± 5	2021/11/29
2600	22.4	1.993	38.368	1.96	39.00	1.68	-1.62	± 5	2021/12/2
2600	22.7	1.920	37.866	1.96	39.00	-2.04	-2.91	± 5	2021/12/9



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2600	22.5	1.979	39.366	1.96	39.00	0.97	0.94	±5	2021/12/17
2600	22.2	1.985	39.040	1.96	39.00	1.28	0.10	±5	2021/12/18
2600	22.5	1.978	38.963	1.96	39.00	0.92	-0.09	±5	2021/12/27
3500	22.1	2.930	37.497	2.91	37.90	0.69	-1.06	±5	2021/12/2
3500	22.6	2.925	37.467	2.91	37.90	0.52	-1.14	±5	2021/12/3
3500	22.6	3.011	38.533	2.91	37.90	3.47	1.67	±5	2021/12/4
3500	22.4	2.964	37.921	2.91	37.90	1.86	0.06	±5	2021/12/6
3500	22.7	2.994	38.236	2.91	37.90	2.89	0.89	±5	2021/12/7
3500	22.8	2.919	37.437	2.91	37.90	0.31	-1.22	±5	2021/12/12
3500	22.6	2.901	37.347	2.91	37.90	-0.31	-1.46	±5	2021/12/26
3700	22.6	3.170	38.295	3.12	37.70	1.60	1.58	±5	2021/12/4
3700	22.4	3.124	37.351	3.12	37.70	0.13	-0.93	±5	2021/12/6
3700	22.7	3.155	37.666	3.12	37.70	1.12	-0.09	±5	2021/12/7
3700	22.8	3.103	37.138	3.12	37.70	-0.54	-1.49	±5	2021/12/12
3700	22.5	3.095	37.098	3.12	37.70	-0.80	-1.60	±5	2021/12/14
3700	22.6	3.084	37.048	3.12	37.70	-1.15	-1.73	±5	2021/12/26
3900	22.1	3.316	36.920	3.33	37.51	-0.42	-1.57	±5	2021/12/2
3900	22.6	3.310	36.890	3.33	37.51	-0.60	-1.65	±5	2021/12/3
3900	22.4	3.389	37.053	3.33	37.51	1.77	-1.22	±5	2021/12/6



5.2 System Performance Check Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion.

Test Site	Date	Frequency (MHz)	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
SAR09	2021/11/30	750	50	D750V3-1012	EX3DV4 - SN3728	DAE4 Sn1424	0.399	8.56	7.98	-6.78	0.262	5.56	5.24	-5.76
SAR09	2021/12/1	750	50	D750V3-1012	EX3DV4 - SN3728	DAE4 Sn1424	0.413	8.56	8.26	-3.50	0.271	5.56	5.42	-2.52
SAR09	2021/12/3	750	250	D750V3-1012	EX3DV4 - SN3728	DAE4 Sn1424	2.11	8.56	8.44	-1.40	1.43	5.56	5.72	2.88
SAR09	2021/12/6	750	250	D750V3-1012	ES3DV3 - SN3184	DAE4 Sn1424	2.07	8.56	8.28	-3.27	1.38	5.56	5.52	-0.72
SAR09	2021/12/8	750	250	D750V3-1012	ES3DV3 - SN3184	DAE4 Sn1424	2.19	8.56	8.76	2.34	1.45	5.56	5.8	4.32
SAR09	2021/12/11	750	250	D750V3-1107	ES3DV3 - SN3184	DAE4 Sn1424	1.93	8.32	7.72	-7.21	1.33	5.61	5.32	-5.17
SAR09	2021/12/12	750	250	D750V3-1107	ES3DV3 - SN3184	DAE4 Sn1424	2.09	8.32	8.36	0.48	1.42	5.61	5.68	1.25
SAR08	2021/12/25	750	50	D750V3-1012	EX3DV4 - SN7625	DAE4 Sn1512	0.433	8.56	8.66	1.17	0.285	5.56	5.7	2.52
SAR08	2021/12/27	750	50	D750V3-1012	EX3DV4 - SN7625	DAE4 Sn1512	0.439	8.56	8.78	2.57	0.289	5.56	5.78	3.96
SAR12	2022/1/20	750	250	D750V3-1107	ES3DV3 - SN3184	DAE4 Sn699	2.18	8.32	8.72	4.81	1.49	5.61	5.96	6.24
SAR09	2021/11/28	835	50	D835V2-499	EX3DV4 - SN3728	DAE4 Sn1424	0.461	9.68	9.22	-4.75	0.299	6.28	5.98	-4.78
SAR09	2021/11/29	835	250	D835V2-499	EX3DV4 - SN3728	DAE4 Sn1424	2.35	9.68	9.4	-2.89	1.55	6.28	6.2	-1.27
SAR09	2021/12/4	835	250	D835V2-499	EX3DV4 - SN3728	DAE4 Sn1424	2.36	9.68	9.44	-2.48	1.56	6.28	6.24	-0.64
SAR09	2021/12/4	835	250	D835V2-499	ES3DV3 - SN3184	DAE4 Sn1424	2.21	9.68	8.84	-8.68	1.49	6.28	5.96	-5.10
SAR08	2021/12/10	835	250	D835V2-499	EX3DV4 - SN7625	DAE4 Sn1512	2.31	9.68	9.24	-4.55	1.49	6.28	5.96	-5.10
SAR09	2021/12/11	835	250	D835V2-499	ES3DV3 - SN3184	DAE4 Sn1424	2.38	9.68	9.52	-1.65	1.56	6.28	6.24	-0.64
SAR09	2021/12/12	835	250	D835V2-499	ES3DV3 - SN3184	DAE4 Sn1424	2.40	9.68	9.6	-0.83	1.57	6.28	6.28	0.00
SAR08	2021/12/25	835	250	D835V2-499	EX3DV4 - SN7625	DAE4 Sn1512	2.30	9.68	9.2	-4.96	1.49	6.28	5.96	-5.10
SAR09	2021/12/5	1750	250	D1750V2-1112	ES3DV3 - SN3184	DAE4 Sn1424	8.29	36.70	33.16	-9.65	4.60	19.40	18.4	-5.15
SAR09	2021/12/7	1750	250	D1750V2-1112	ES3DV3 - SN3184	DAE4 Sn1424	9.17	36.70	36.68	-0.05	4.95	19.40	19.8	2.06
SAR08	2021/12/7	1750	50	D1750V2-1112	EX3DV4 - SN7625	DAE4 Sn1512	1.94	36.70	38.8	5.72	1.01	19.40	20.2	4.12
SAR08	2021/12/12	1750	50	D1750V2-1112	EX3DV4 - SN7625	DAE4 Sn1512	1.70	36.70	34	-7.36	0.913	19.40	18.26	-5.88
SAR08	2021/12/13	1750	250	D1750V2-1112	EX3DV4 - SN7625	DAE4 Sn1512	8.76	36.70	35.04	-4.52	4.63	19.40	18.52	-4.54
SAR08	2021/12/15	1750	250	D1750V2-1112	EX3DV4 - SN7625	DAE4 Sn1512	8.74	36.70	34.96	-4.74	4.61	19.40	18.44	-4.95
SAR08	2021/12/16	1750	250	D1750V2-1112	EX3DV4 - SN7625	DAE4 Sn1512	9.56	36.70	38.24	4.20	5.02	19.40	20.08	3.51
SAR09	2021/12/2	1900	50	D1900V2-5d185	EX3DV4 - SN3728	DAE4 Sn1424	1.93	39.40	38.6	-2.03	0.998	20.50	19.96	-2.63
SAR09	2021/12/5	1900	250	D1900V2-5d185	ES3DV3 - SN3184	DAE4 Sn1424	9.54	39.40	38.16	-3.15	5.07	20.50	20.28	-1.07
SAR08	2021/12/5	1900	250	D1900V2-5d185	EX3DV4 - SN7625	DAE4 Sn1512	9.99	39.40	39.96	1.42	5.14	20.50	20.56	0.29
SAR08	2021/12/6	1900	250	D1900V2-5d185	EX3DV4 - SN7625	DAE4 Sn1512	10.00	39.40	40	1.52	5.16	20.50	20.64	0.68
SAR09	2021/12/9	1900	250	D1900V2-5d185	ES3DV3 - SN3184	DAE4 Sn1424	9.54	39.40	38.16	-3.15	5.07	20.50	20.28	-1.07
SAR08	2021/12/10	1900	250	D1900V2-5d185	EX3DV4 - SN7625	DAE4 Sn1512	10.10	39.40	40.4	2.54	5.18	20.50	20.72	1.07
SAR08	2021/12/11	1900	250	D1900V2-5d185	EX3DV4 - SN7625	DAE4 Sn1512	10.40	39.40	41.6	5.58	5.34	20.50	21.36	4.20
SAR08	2021/12/14	1900	50	D1900V2-5d185	EX3DV4 - SN7625	DAE4 Sn1512	2.13	39.40	42.6	8.12	1.09	20.50	21.8	6.34
SAR08	2021/12/15	1900	50	D1900V2-5d185	EX3DV4 - SN7625	DAE4 Sn1512	1.80	39.40	36	-8.63	0.939	20.50	18.78	-8.39
SAR11	2021/11/28	2300	250	D2300V2-1006	ES3DV3 - SN3270	DAE4 Sn316	11.70	48.70	46.8	-3.90	5.61	23.20	22.44	-3.28
SAR11	2021/11/29	2300	50	D2300V2-1006	ES3DV3 - SN3270	DAE4 Sn316	2.59	48.70	51.8	6.37	1.21	23.20	24.2	4.31
SAR08	2021/12/8	2300	250	D2300V2-1006	EX3DV4 - SN7625	DAE4 Sn1512	11.70	48.70	46.8	-3.90	5.58	23.20	22.32	-3.79
SAR09	2021/12/13	2300	250	D2300V2-1006	ES3DV3 - SN3184	DAE4 Sn1424	11.50	48.70	46	-5.54	5.64	23.20	22.56	-2.76
SAR08	2021/12/16	2300	250	D2300V2-1006	EX3DV4 - SN7625	DAE4 Sn1512	11.60	48.70	46.4	-4.72	5.57	23.20	22.28	-3.97
SAR08	2021/12/24	2300	50	D2300V2-1006	EX3DV4 - SN7625	DAE4 Sn1512	2.55	48.70	51	4.72	1.24	23.20	24.8	6.90
SAR08	2021/12/27	2300	250	D2300V2-1006	EX3DV4 - SN7625	DAE4 Sn1512	12.00	48.70	48	-1.44	5.75	23.20	23	-0.86
SAR11	2021/11/28	2600	250	D2600V2-1078	ES3DV3 - SN3270	DAE4 Sn316	13.40	57.60	53.6	-6.94	6.01	25.50	24.04	-5.73
SAR11	2021/11/29	2600	50	D2600V2-1078	ES3DV3 - SN3270	DAE4 Sn316	3.05	57.60	61	5.90	1.38	25.50	27.6	8.24
SAR09	2021/12/2	2600	50	D2600V2-1078	EX3DV4 - SN3728	DAE4 Sn1424	2.78	57.60	55.6	-3.47	1.26	25.50	25.2	-1.18
SAR08	2021/12/9	2600	250	D2600V2-1078	EX3DV4 - SN7625	DAE4 Sn1512	14.50	57.60	58	0.69	6.60	25.50	26.4	3.53
SAR08	2021/12/17	2600	50	D2600V2-1008	EX3DV4 - SN7625	DAE4 Sn1512	3.12	58.00	62.4	7.59	1.39	25.80	27.8	7.75
SAR08	2021/12/18	2600	50	D2600V2-1008	EX3DV4 - SN7625	DAE4 Sn1512	3.13	58.00	62.6	7.93	1.41	25.80	28.2	9.30

SAR08	2021/12/27	2600	50	D2600V2-1078	EX3DV4 - SN7625	DAE4 Sn1512	2.64	57.60	52.8	-8.33	1.19	25.50	23.8	-6.67
SAR08	2021/12/2	3500	100	D3500V2-1014	EX3DV4 - SN7625	DAE4 Sn1512	6.33	67.90	63.3	-6.77	2.36	25.60	23.6	-7.81
SAR08	2021/12/3	3500	100	D3500V2-1014	EX3DV4 - SN7625	DAE4 Sn1512	6.58	67.90	65.8	-3.09	2.45	25.60	24.5	-4.30
SAR12	2021/12/4	3500	50	D3500V2-1014	EX3DV4 - SN3976	DAE3 Sn577	3.38	67.90	67.6	-0.44	1.28	25.60	25.6	0.00
SAR15	2021/12/6	3500	100	D3500V2-1014	EX3DV4 - SN3931	DAE4 Sn699	6.96	67.90	69.6	2.50	2.59	25.60	25.9	1.17
SAR15	2021/12/7	3500	50	D3500V2-1014	EX3DV4 - SN3931	DAE4 Sn699	3.60	67.90	72	6.04	1.36	25.60	27.2	6.25
SAR08	2021/12/12	3500	100	D3500V2-1014	EX3DV4 - SN7625	DAE4 Sn1512	6.57	67.90	65.7	-3.24	2.45	25.60	24.5	-4.30
SAR08	2021/12/26	3500	100	D3500V2-1014	EX3DV4 - SN7625	DAE4 Sn1512	6.53	67.90	65.3	-3.83	2.43	25.60	24.3	-5.08
SAR12	2021/12/4	3700	50	D3700V2-1006	EX3DV4 - SN3976	DAE3 Sn577	3.36	67.30	67.2	-0.15	1.24	24.50	24.8	1.22
SAR15	2021/12/6	3700	50	D3700V2-1006	EX3DV4 - SN3931	DAE4 Sn699	3.33	67.30	66.6	-1.04	1.22	24.50	24.4	-0.41
SAR15	2021/12/7	3700	50	D3700V2-1006	EX3DV4 - SN3931	DAE4 Sn699	3.36	67.30	67.2	-0.15	1.24	24.50	24.8	1.22
SAR08	2021/12/12	3700	100	D3700V2-1006	EX3DV4 - SN7625	DAE4 Sn1512	6.84	67.30	68.4	1.63	2.45	24.50	24.5	0.00
SAR08	2021/12/14	3700	100	D3700V2-1006	EX3DV4 - SN7625	DAE4 Sn1512	6.82	67.30	68.2	1.34	2.45	24.50	24.5	0.00
SAR08	2021/12/26	3700	100	D3700V2-1006	EX3DV4 - SN7625	DAE4 Sn1512	6.80	67.30	68	1.04	2.44	24.50	24.4	-0.41
SAR08	2021/12/2	3900	100	D3900V2-1017-3900	EX3DV4 - SN7625	DAE4 Sn1512	7.09	69.50	70.9	2.01	2.45	24.20	24.5	1.24
SAR08	2021/12/3	3900	100	D3900V2-1017-3900	EX3DV4 - SN7625	DAE4 Sn1512	7.07	69.50	70.7	1.73	2.44	24.20	24.4	0.83
SAR15	2021/12/6	3900	100	D3900V2-1017-3900	EX3DV4 - SN3931	DAE4 Sn699	7.11	69.50	71.1	2.30	2.57	24.20	25.7	6.20

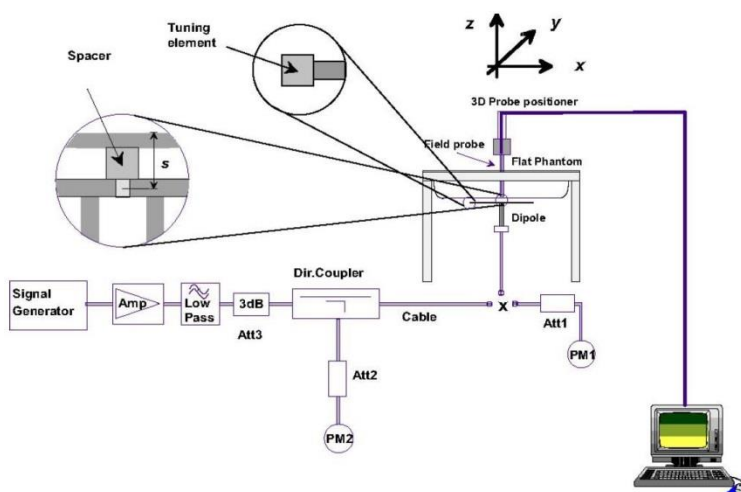


Fig 8.3.1 System Performance Check Setup



Fig 8.3.2 Setup Photo



6. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1012	Aug. 18, 2021	Aug. 17, 2022
SPEAG	750MHz System Validation Kit ⁽²⁾	D750V3	1107	Mar. 08, 2019	Mar. 05, 2022
SPEAG	835MHz System Validation Kit	D835V2	499	Aug. 18, 2021	Aug. 17, 2022
SPEAG	1750MHz System Validation Kit ⁽²⁾	D1750V2	1112	Mar. 07, 2019	Mar. 04, 2022
SPEAG	1900MHz System Validation Kit ⁽²⁾	D1900V2	5d185	Mar. 07, 2019	Mar. 04, 2022
SPEAG	2300MHz System Validation Kit ⁽²⁾	D2300V2	1006	Jan. 28, 2019	Jan. 25, 2022
SPEAG	2600MHz System Validation Kit	D2600V2	1008	Aug. 17, 2021	Aug. 16, 2022
SPEAG	2600MHz System Validation Kit ⁽²⁾	D2600V2	1078	Mar. 06, 2019	Mar. 03, 2022
SPEAG	3500MHz System Validation Kit ⁽²⁾	D3500V2	1014	Jan. 29, 2019	Jan. 26, 2022
SPEAG	3700MHz System Validation Kit ⁽²⁾	D3700V2	1006	Mar. 05, 2019	Mar. 02, 2022
SPEAG	3900MHz System Validation Kit ⁽²⁾	D3900V2	1017	Apr. 29, 2019	Apr. 26, 2022
SPEAG	Data Acquisition Electronics	DAE3	577	Sep. 15, 2021	Sep. 14, 2022
SPEAG	Data Acquisition Electronics	DAE4	316	Jan. 19, 2021	Jan. 18, 2022
SPEAG	Data Acquisition Electronics	DAE4	656	Jan. 22, 2021	Jan. 21, 2022
SPEAG	Data Acquisition Electronics	DAE4	699	Feb. 16, 2021	Feb. 15, 2022
SPEAG	Data Acquisition Electronics	DAE4	1399	Feb. 16, 2021	Feb. 15, 2022
SPEAG	Data Acquisition Electronics	DAE4	1424	Jan. 19, 2021	Jan. 18, 2022
SPEAG	Data Acquisition Electronics	DAE4	1512	Feb. 11, 2021	Feb. 10, 2022
SPEAG	Dosimetric E-Field Probe	ES3DV3	3184	Sep. 23, 2021	Sep. 22, 2022
SPEAG	Dosimetric E-Field Probe	ES3DV3	3270	Sep. 21, 2021	Sep. 20, 2022
SPEAG	Dosimetric E-Field Probe	EX3DV4	3642	Apr. 26, 2021	Apr. 25, 2022
SPEAG	Dosimetric E-Field Probe	EX3DV4	3728	Feb. 23, 2021	Feb. 22, 2022
SPEAG	Dosimetric E-Field Probe	EX3DV4	3931	Oct. 21, 2021	Oct. 20, 2022
SPEAG	Dosimetric E-Field Probe	EX3DV4	3976	Jan. 27, 2021	Jan. 26, 2022
SPEAG	Dosimetric E-Field Probe	EX3DV4	7306	Jul. 26, 2021	Jul. 25, 2022
SPEAG	Dosimetric E-Field Probe	EX3DV4	7346	Jun. 25, 2021	Jun. 24, 2022
SPEAG	Dosimetric E-Field Probe	EX3DV4	7625	Jan. 19, 2021	Jan. 18, 2022
Testo	Hygro meter	608-H1	45196600	Oct. 22, 2021	Oct. 21, 2022
Testo	Hygro meter	608-H1	45207528	Oct. 22, 2021	Oct. 21, 2022
RCPTWN	Thermometer	HTC-1	TM685-1	Oct. 28, 2021	Oct. 27, 2022
RCPTWN	Thermometer	HTC-1	TM560-2	Oct. 28, 2021	Oct. 27, 2022
Anritsu	Radio Communication Analyzer	MT8821C	6201074414	Jul. 21, 2021	Jul. 20, 2022
Anritsu	Radio Communication Analyzer	MT8820C	6201381766	Jul. 21, 2021	Jul. 20, 2022
Anritsu	Radio Communication Analyzer	MT8821C	6201341950	Oct. 21, 2021	Oct. 20, 2022
Keysight	Wireless Communication Test Set	E5515C	MY50266977	May. 12, 2021	May. 11, 2022
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3710A	6201502524	Oct. 24, 2021	Oct. 23, 2022
Keysight	ENA Network Analyzer	E5071C	MY46104758	Sep. 07, 2021	Sep. 06, 2022
SPEAG	Dielectric Probe Kit	DAK-3.5	1126	Sep. 24, 2021	Sep. 23, 2022
LINE SEIKI	Digital Thermometer	DTM3000-spezial	2942	Oct. 26, 2021	Oct. 25, 2022
Anritsu	Power Meter	ML2495A	1419002	Aug. 18, 2021	Aug. 17, 2022
Anritsu	Power Sensor	MA2411B	1911176	Aug. 18, 2021	Aug. 17, 2022
Anritsu	Power Meter	ML2495A	1804003	Oct. 09, 2021	Oct. 08, 2022
Anritsu	Power Sensor	MA2411B	1726150	Oct. 09, 2021	Oct. 08, 2022



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Anritsu	Spectrum Analyzer	MS2830A	6201396378	Jul. 16, 2021	Jul. 15, 2022
Agilent	Spectrum Analyzer	E4408B	MY44211028	Aug. 19, 2021	Aug. 18, 2022
Mini-Circuits	Power Amplifier	ZVE-8G+	6418	Oct. 12, 2021	Oct. 11, 2022
Mini-Circuits	Power Amplifier	ZVE-8G+	479102029	Sep. 06, 2021	Sep. 05, 2022
Custom Microwave	Standard Horn antenna	M15RH	V91113-A	NCR	NCR
ATM	Dual Directional Coupler	C122H-10	P610410z-02	Note 1	
Warison	Directional Coupler	WCOU-10-50S-10	WR889BMC4B1	Note 1	
Woken	Attenuator 1	WK0602-XX	N/A	Note 1	
PE	Attenuator 2	PE7005-10	N/A	Note 1	
PE	Attenuator 3	PE7005- 3	N/A	Note 1	

General Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.
2. The dipole calibration interval can be extended to 3 years with justification according to KDB 865664 D01. The dipoles are also not physically damaged, or repaired during the interval. The justification data in appendix C can be found which the return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration for each dipole.