



Plot 7-80. Lower ACP Plot (NR n41 PC3 - 100MHz QPSK - Full RB - Ant4)



Plot 7-81. Upper ACP Plot (NR n41 PC3 - 100MHz QPSK - Full RB - Ant4)

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7.6 Radiated Power (EIRP)

Test Overview

Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

Test Procedures Used

ANSI C63.26-2015 - Section 5.2.4.4

Test Settings

- Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation. For signals with burst transmission, the signal analyzer's "time domain power" measurement capability is used
- 2. RBW = 1 5% of the expected OBW, not to exceed 1MHz
- 3. VBW \geq 3 x RBW
- 4. Span = 1.5 times the OBW
- 5. No. of sweep points $\geq 2 \times \text{span} / \text{RBW}$
- 6. Detector = RMS
- 7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto". Trigger is set to enable triggering only on full power bursts with the sweep time set less than or equal to the transmission burst duration.
- 8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation. For signals with burst transmission, the "gating" function was enabled to ensure that measurements are performed during times in which the transmitter is operating at its maximum power.
- 9. Trace mode = trace averaging (RMS) over 100 sweeps
- 10. The trace was allowed to stabilize.

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Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



Figure 7-5. Radiated Test Setup >1GHz

Test Notes

- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst-case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.
- 3) For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst-case configuration. All modes of operation were investigated, and the worst-case configuration results are reported in this section.

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Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
	QPSK	2506.0	V	107	282	4.15	1/0	21.13	25.28	0.337	33.01	-7.73
N	QPSK	2593.0	V	108	283	4.14	1 / 99	21.03	25.17	0.329	33.01	-7.84
H	QPSK	2680.0	V	102	295	4.49	1 / 99	20.84	25.33	0.341	33.01	-7.68
0	16-QAM	2506.0	V	107	282	4.15	1/0	20.08	24.23	0.265	33.01	-8.78
8	16-QAM	2593.0	V	108	283	4.14	1 / 99	19.97	24.11	0.258	33.01	-8.90
	16-QAM	2680.0	V	102	295	4.49	1 / 50	19.82	24.31	0.270	33.01	-8.70
	QPSK	2503.5	V	107	282	4.15	1/0	20.61	24.76	0.299	33.01	-8.25
N	QPSK	2593.0	V	108	283	4.14	1/0	20.76	24.90	0.309	33.01	-8.11
H	QPSK	2682.5	V	102	295	4.50	1/0	20.66	25.15	0.327	33.01	-7.86
2	16-QAM	2503.5	V	107	282	4.15	1/0	20.51	24.66	0.292	33.01	-8.35
~	16-QAM	2593.0	V	108	283	4.14	1/0	20.11	24.25	0.266	33.01	-8.76
	16-QAM	2682.5	V	102	295	4.50	1/0	20.47	24.96	0.314	33.01	-8.05
	QPSK	2501.0	V	107	282	4.15	1 / 25	21.02	25.17	0.329	33.01	-7.84
N	QPSK	2593.0	V	108	283	4.14	1/0	20.97	25.12	0.325	33.01	-7.89
H	QPSK	2685.0	V	102	295	4.50	1 / 25	20.89	25.39	0.346	33.01	-7.62
0	16-QAM	2501.0	V	107	282	4.15	1 / 25	19.96	24.11	0.258	33.01	-8.90
, T	16-QAM	2593.0	V	108	283	4.14	1/0	20.41	24.56	0.286	33.01	-8.45
	16-QAM	2685.0	V	102	295	4.50	1 / 25	19.65	24.15	0.260	33.01	- <mark>8.86</mark>
	QPSK	2498.5	V	107	282	4.14	1 / 12	20.98	25.13	0.326	33.01	-7.88
N	QPSK	2593.0	V	108	283	4.14	1/0	20.25	24.39	0.275	33.01	-8.62
H	QPSK	2687.5	V	102	295	4.50	1 / 12	20.91	25.41	0.348	33.01	-7.60
2 4	16-QAM	2498.5	V	107	282	4.14	1 / 12	20.69	24.84	0.305	33.01	-8.17
	16-QAM	2593.0	V	108	283	4.14	1/0	20.24	24.39	0.275	33.01	-8.62
	16-QAM	2687.5	V	102	295	4.50	1 / 12	20.25	24.75	0.299	33.01	-8.26
20 MHz	WCP	2680.0	V	112	290	4.49	1/0	18.96	23.45	0.221	33.01	-9.56

Table 7-15. EIRP Data (LTE Band 41(PC2) – Ant1)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
	QPSK	2506.0	Н	119	324	4.17	1 / 99	21.15	25.32	0.341	33.01	-7.69
N	QPSK	2593.0	Н	108	329	4.00	1 / 50	19.76	23.76	0.238	33.01	-9.25
E E	QPSK	2680.0	Н	123	319	4.50	1/0	20.05	24.55	0.285	33.01	-8.46
0	16-QAM	2506.0	Н	119	324	4.17	1 / 99	20.23	24.40	0.276	33.01	-8.61
3	16-QAM	2593.0	Н	108	329	4.00	1 / 50	18.53	22.53	0.179	33.01	-10.48
	16-QAM	2680.0	Н	123	319	4.50	1/0	19.45	23.95	0.248	33.01	-9.06
	QPSK	2503.5	Н	119	324	4.17	1 / 74	21.00	25.18	0.329	33.01	-7.83
N	QPSK	2593.0	Н	108	329	4.00	1 / 74	19.97	23.97	0.249	33.01	-9.05
H	QPSK	2682.5	Н	123	319	4.51	1 / 74	19.89	24.40	0.276	33.01	-8.61
9	16-QAM	2503.5	Н	119	324	4.17	1 / 74	20.08	24.25	0.266	33.01	-8.76
~	16-QAM	2593.0	Н	108	329	4.00	1 / 74	18.72	22.71	0.187	33.01	-10.30
	16-QAM	2682.5	н	123	319	4.51	1 / 74	19.32	23.83	0.242	33.01	-9.18
	QPSK	2501.0	Н	119	324	4.17	1 / 49	21.34	25.51	0.355	33.01	-7.50
N	QPSK	2593.0	Н	108	329	4.00	1 / 49	20.15	24.15	0.260	33.01	-8.86
	QPSK	2685.0	н	123	319	4.52	1 / 49	19.93	24.45	0.279	33.01	-8.56
0	16-QAM	2501.0	Н	119	324	4.17	1 / 49	20.28	24.45	0.279	33.01	-8.56
	16-QAM	2593.0	н	108	329	4.00	1 / 49	18.64	22.64	0.184	33.01	-10.37
	16-QAM	2685.0	H	123	319	4.52	1 / 49	19.49	24.00	0.251	33.01	-9.01
	QPSK	2498.5	Н	119	324	4.16	1 / 24	20.69	24.85	0.305	33.01	-8.16
N	QPSK	2593.0	Н	108	329	4.00	1 / 24	19.95	23.95	0.248	33.01	-9.06
H	QPSK	2687.5	Н	123	319	4.53	1 / 24	19.16	23.69	0.234	33.01	-9.32
2 V	16-QAM	2498.5	Н	119	324	4.16	1 / 24	18.80	22.96	0.198	33.01	-10.05
	16-QAM	2593.0	Н	108	329	4.00	1 / 24	17.38	21.38	0.137	33.01	-11.63
	16-QAM	2687.5	Н	123	319	4.53	1 / 24	17.74	22.27	0.169	33.01	-10.74
20 MHz	WCP	2506.0	Н	117	320	4.17	1 / 99	20.83	25.00	0.317	33.01	-8.01

Table 7-16. EIRP Data (LTE Band 41(PC2) - Ant2)

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Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin (dB)
	π/2 BPSK π/2 BPSK	2546.01	н	116	316	4.19	1/136	18.38	22.57	0.181	33.01 33.01	-10.44
	π/2 BPSK	2640.00	н	111	318	4.31	1 / 136	18.31	22.62	0.183	33.01	-10.39
THV	QPSK	2546.01	н	116	316	4.19	1 / 136	18.88	23.07	0.203	33.01	-9.94
V 00	QPSK OPSK	2592.99	н	115	323	4.00	1/1	18.82	22.82	0.191	33.01	-10.19
÷	16-QAM	2546.01	н	116	316	4.19	1 / 136	17.61	21.80	0.151	33.01	-11.21
	16-QAM	2592.99	н	115	323	4.00	1/1	17.62	21.62	0.145	33.01	-11.39
	16-QAM	2640.00	н	111	318	4.31	1 / 136	18.00	22.31	0.170	33.01	-10.70
	π/2 BPSK	2592.99	н	115	323	4.13	1/1	18.28	22.31	0.169	33.01	-10.73
	π/2 BPSK	2644.98	н	111	318	4.36	1 / 243	18.41	22.76	0.189	33.01	-10.25
THE	QPSK	2541.00	н	116	316	4.19	1 / 243	18.88	23.07	0.203	33.01	-9.94
V 06	QPSK	2592.99 2644.98	н	115	323	4.00	1 / 243	18.64	22.49	0.177	33.01	-10.52
	16-QAM	2541.00	н	116	316	4.19	1/1	16.42	20.61	0.115	33.01	-12.40
	16-QAM	2592.99	н	115	323	4.00	1/1	17.65	21.65	0.146	33.01	-11.36
	16-QAM π/2 BPSK	2536.02	н	111	318	4.36	1/1	16.90	21.25	0.133	33.01	-11.76
	π/2 BPSK	2592.99	н	115	323	4.00	1/1	18.32	22.32	0.171	33.01	-10.69
N	π/2 BPSK	2649.99	н	111	318	4.40	1/1	18.12	22.52	0.179	33.01	-10.49
MH	QPSK QPSK	2536.02	н	116	316	4.19	1/215	18.68	22.87	0.194	33.01	-10.14
80	QPSK	2649.99	н	111	318	4.40	1/1	18.39	22.79	0.190	33.01	-10.22
	16-QAM	2536.02	н	116	316	4.19	1/1	16.44	20.63	0.116	33.01	-12.38
	16-QAM 16-QAM	2592.99	н	115	323	4.00	1/1	17.45	21.45	0.140	33.01	-11.56
	π/2 BPSK	2531.01	н	116	316	4.18	1 / 94	18.07	22.25	0.168	33.01	-10.76
	π/2 BPSK	2592.99	н	115	323	4.00	1/1	18.19	22.19	0.166	33.01	-10.82
N	m/2 BPSK QPSK	2655.00	н	111	318	4.42	1/1	17.89	22.30	0.170	33.01 33.01	-10.71
МН	QPSK	2592.99	н	115	323	4.00	1 / 187	18.48	22.48	0.177	33.01	-10.53
20	QPSK	2655.00	н	111	318	4.42	1/1	18.19	22.60	0.182	33.01	-10.41
	16-QAM 16-QAM	2531.01	н	116	316	4.18	1/1	16.91	21.09	0.129	33.01	-11.92
	16-QAM	2655.00	н	111	318	4.42	1/1	17.60	22.01	0.159	33.01	-11.00
	π/2 BPSK	2526.00	н	116	316	4.18	1 / 160	17.69	21.87	0.154	33.01	-11.14
	π/2 BPSK π/2 BPSK	2592.99 2659.98	н	115	323	4.00	1 / 160	18.09	22.09	0.162	33.01 33.01	-10.92
¥	QPSK	2526.00	н	116	316	4.18	1 / 160	18.32	22.50	0.178	33.01	-10.51
IW C	QPSK	2592.99	н	115	323	4.00	1 / 160	18.42	22.42	0.175	33.01	-10.59
90	QPSK 16-OAM	2659.98	н	111	318	4.43	1/160	17.95	22.38	0.173	33.01	-10.63
	16-QAM	2592.99	н	115	323	4.00	1/1	16.34	20.34	0.108	33.01	-12.67
	16-QAM	2659.98	н	111	318	4.43	1/1	16.55	20.98	0.125	33.01	-12.03
	π/2 BPSK π/2 BPSK	2521.02	н	116	316	4.18	1 / 131	17.99	22.17	0.165	33.01	-10.84
	π/2 BPSK	2664.99	н	111	318	4.45	1/1	17.96	22.41	0.174	33.01	-10.60
μz	QPSK	2521.02	н	116	316	4.18	1 / 131	18.58	22.76	0.189	33.01	-10.25
20 N	QPSK QPSK	2592.99 2664.99	н	115	323	4.00	1/131	18.68	22.68	0.185	33.01 33.01	-10.33
	16-QAM	2521.02	н	116	316	4.18	1/1	16.34	20.52	0.113	33.01	-12.49
	16-QAM	2592.99	н	115	323	4.00	1/1	16.44	20.44	0.111	33.01	-12.57
	16-QAM π/2 BPSK	2664.99	н	111	318	4.45	1/1	17.47	21.92	0.156	33.01 33.01	-11.09
	π/2 BPSK	2592.99	н	115	323	4.00	1 / 53	18.44	22.44	0.175	33.01	-10.57
	π/2 BPSK	2670.00	Н	111	318	4.47	1/1	17.61	22.07	0.161	33.01	-10.94
MHa	QPSK QPSK	2516.01	н	116	316	4.18	1/53	18.67	22.85	0.193	33.01 33.01	-10.16
40	QPSK	2670.00	н	111	318	4.47	1/1	17.89	22.35	0.172	33.01	-10.66
	16-QAM	2516.01	н	116	316	4.18	1/1	16.95	21.13	0.130	33.01	-11.88
	16-QAM 16-QAM	2592.99	н	115	323	4.00	1/1	17.25	21.25	0.133	33.01	-11.76
	π/2 BPSK	2511.00	н	116	316	4.18	1 / 76	18.18	22.35	0.172	33.01	-10.66
	π/2 BPSK	2592.99	н	115	323	4.00	1 / 76	18.38	22.38	0.173	33.01	-10.63
<u>×</u>	QPSK	25/4.98	н	111	318	4.48	1/76	18.04	22.52	0.179	33.01	-10.49
MH	QPSK	2592.99	н	115	323	4.00	1 / 76	18.66	22.66	0.184	33.01	-10.35
30	QPSK 40.04M	2674.98	н	111	318	4.48	1/76	18.35	22.83	0.192	33.01	-10.18
	16-QAM	2592.99	н	115	323	4.10	1/1	16.89	21.52	0.142	33.01	-12.12
	16-QAM	2674.98	Н	111	318	4.48	1/1	17.49	21.97	0.157	33.01	-11.04
	π/2 BPSK π/2 PDSK	2506.02	Н	116	316	4.17	1/49	17.31	21.48	0.141	33.01	-11.53
	π/2 BPSK	2679.99	н	115	323	4.50	1/49	17.00	21.00	0.147	33.01	-11.16
Ηz	QPSK	2506.02	н	116	316	4.17	1 / 49	17.92	22.09	0.162	33.01	-10.92
W OZ	QPSK QPSK	2592.99	H	115	323	4.00	1/49	17.99	21.99	0.158	33.01 33.01	-11.02 -10.90
N N	16-QAM	2506.02	н	116	316	4.17	1/1	16.19	20.36	0.109	33.01	-12.65
	16-QAM	2592.99	н	115	323	4.00	1/1	16.25	20.25	0.106	33.01	-12.76
	16-QAM π/2 PPCK	2679.99	Н	111	318	4.50	1/1	16.89	21.39	0.138	33.01	-11.62
	π/2 BPSK	2592.99	н	115	323	4.00	1 / 49	17.84	21.84	0.153	33.01	-11.17
N	π/2 BPSK	2679.99	Н	111	318	4.50	1/49	17.35	21.85	0.153	33.01	-11.16
MH2	QPSK QPSK	2506.02	н	116	316	4.17	1/49	18.00	22.17	0.165	33.01 33.01	-10.84
151	QPSK	2679.99	н	111	318	4.50	1 / 49	17.60	22.10	0.162	33.01	-10.91
	16-QAM	2506.02	н	116	316	4.17	1/1	16.38	20.55	0.114	33.01	-12.46
	16-QAM 16-QAM	2592.99	н	115	323	4.00	1/1	16.45	20.45	0.111	33.01 33.01	-12.56
	π/2 BPSK	2506.02	н	116	316	4.17	1 / 49	18.20	22.37	0.173	33.01	-10.64
	π/2 BPSK	2592.99	н	115	323	4.00	1 / 49	18.54	22.54	0.179	33.01	-10.47
м	π/2 BPSK QPSK	2679.99 2506.02	н	111	318	4.50	1/1	17.23	21.73	0.149	33.01 33.01	-11.28
MH	QPSK	2592.99	н	115	323	4.00	1 / 49	18.84	22.84	0.192	33.01	-10.17
10	QPSK	2679.99	Н	111	318	4.50	1/1	17.53	22.03	0.160	33.01	-10.98
	16-QAM 16-QAM	2506.02	н	116	316	4.17	1/1	17.26	21.43	0.139	33.01	-11.58
	16-QAM	2679.99	н	111	318	4.50	1/1	16.80	21.30	0.135	33.01	-11.71
100 MHz	QPSK (CP-OFDM)	2546.01	н	116	314	4.19	1 / 136	17.96	22.15	0.164	33.01	-10.86
	QPSK (WCP)	2546.01		144	317	4.19	1 / 136	18.05	22.24	0.168	33.01	-10.77
	7	able 7	-17	⊢ікР [Jata (NK B	and n4′	1 PC3 -	- Ant1	1		

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Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
	π/2 BPSK	2546.01	Н	131	333	4.19	1 / 136	17.57	21.76	0.150	33.01	-11.25
	π/2 BPSK	2592.99	Н	152	331	4.00	1/1	17.76	21.76	0.150	33.01	-11.25
	π/2 BPSK	2640.00	Н	143	318	4.31	1/1	17.23	21.54	0.143	33.01	-11.47
Hz	QPSK	2546.01	Н	131	333	4.19	1 / 136	16.68	20.87	0.122	33.01	-12.14
Z	QPSK	2592.99	Н	152	331	4.00	1/1	16.65	20.65	0.116	33.01	-12.36
100	QPSK	2640.00	Н	143	318	4.31	1/1	16.26	20.57	0.114	33.01	-12.44
	16-QAM	2546.01	н	131	333	4.19	1 / 136	15.85	20.04	0.101	33.01	-12.97
	16-QAM	2592.99	Н	152	331	4.00	1/1	15.76	19.76	0.095	33.01	-13.25
	16-QAM	2640.00	Н	143	318	4.31	1 / 1	15.41	19.72	0.094	33.01	-13.29
100 MHz	QPSK (CP-OFDM)	2546.0	Н	131	333	4.19	1 / 136	15.14	19.33	0.086	33.01	-13.68

Table 7-18. EIRP Data (NR Band n41 PC3 - Ant2)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
	π/2 BPSK	2546.01	Н	136	222	4.19	1 / 271	14.27	18.46	0.070	33.01	-14.55
	π/2 BPSK	2592.99	Н	142	220	4.00	1 / 136	14.30	18.30	0.068	33.01	-14.71
	π/2 BPSK	2640.00	Н	143	218	4.31	1/1	14.87	19.18	0.083	33.01	-13.83
E E	QPSK	2546.01	Н	136	222	4.19	1 / 271	14.26	18.45	0.070	33.01	-14.56
2	QPSK	2592.99	Н	142	220	4.00	1 / 136	13.94	17.94	0.062	33.01	-15.07
10	QPSK	2640.00	Н	143	218	4.31	1/1	14.88	19.19	0.083	33.01	-13.82
	16-QAM	2546.01	Н	136	222	4.19	1 / 271	13.32	17.51	0.056	33.01	-15.50
	16-QAM	2592.99	Н	142	220	4.00	1 / 136	13.08	17.08	0.051	33.01	-15.93
	16-QAM	2640.00	Н	143	218	4.31	1/1	13.79	18.10	0.065	33.01	-14.91
100 MHz	QPSK (CP-OFDM)	2640.0	Н	143	220	4.31	1/1	13.36	17.67	0.059	33.01	-15.34

Table 7-19. EIRP Data (NR Band n41 PC3 – Ant3)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
	π/2 BPSK	2546.01	Н	133	38	4.19	1 / 271	14.77	18.96	0.079	33.01	-14.05
	π/2 BPSK	2592.99	Н	139	40	4.00	1 / 271	15.54	19.54	0.090	33.01	-13.47
	π/2 BPSK	2640.00	Н	134	42	4.31	1 / 136	15.47	19.78	0.095	33.01	-13.23
Hz	QPSK	2546.01	Н	133	38	4.19	1 / 271	13.87	18.06	0.064	33.01	-14.95
N	QPSK	2592.99	Н	139	40	4.00	1 / 271	14.75	18.75	0.075	33.01	-14.26
100	QPSK	2640.00	Н	134	42	4.31	1 / 136	14.72	19.03	0.080	33.01	-13.98
	16-QAM	2546.01	Н	133	38	4.19	1 / 271	12.97	17.16	0.052	33.01	-15.85
	16-QAM	2592.99	Н	139	40	4.00	1 / 271	13.72	17.72	0.059	33.01	-15.29
	16-QAM	2640.00	H	134	42	4.31	1 / 136	14.04	18.35	0.068	33.01	-14.66
100 MHz	QPSK (CP-OFDM)	2592.99	Н	134	42	4.13	1 / 136	13.23	17.36	0.055	33.01	-15.65

Table 7-20. EIRP Data (NR Band n41 PC3 – Ant4)

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7.7 Radiated Spurious Emissions Measurements

Test Overview

Radiated spurious emissions measurements are performed using the field strength conversion method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using hybrid (biconical/log) antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

Test Procedures Used

ANSI C63.26-2015 - Section 5.5.4

Test Settings

- 1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
- 2. VBW \ge 3 x RBW
- 3. Span = 1.5 times the OBW
- 4. No. of sweep points \geq 2 x span / RBW
- 5. Detector = RMS
- 6. Trace mode = Average (Max Hold for pulsed emissions)
- 7. The trace was allowed to stabilize

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The EUT and measurement equipment were set up as shown in the diagram below.



Figure 7-7. Test Instrument & Measurement Setup >1 GHz

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Test Notes

- 1) Field strengths are calculated using the Measurement quantity conversions in ANSI C63.26-2015 Section 5.2.7:
 - a) $E(dB\mu V/m) = Measured amplitude level (dBm) + 107 + Cable Loss (dB) + Antenna Factor (dB/m) b) EIRP (dBm) = E(dB\mu V/m) + 20logD 104.8; where D is the measurement distance in meters.$
- 2) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst-case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 3) This unit was tested with its standard battery.
- 4) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 5) Emissions below 18GHz were measured at a 3-meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 6) The "-" shown in the following RSE tables are used to denote a noise floor measurement.
- 7) For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.
- 8) Spurious emission in EN-DC Operating mode with Sub 6GHz NR carrier as well as an LTE carrier (anchor) has been checked and was found to not to be the worst case. Spurious emissions from the NR carrier device are subject to the rules under which the NR carrier operates. Spurious emissions caused by the LTE carrier must meet the requirements of the rules under which the LTE carrier operates.

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LTE Band 41 PC2 – Ant1













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Bandwidth (MHz):	20
Frequency (MHz):	2593.0
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
865.80	V	-	-	-67.61	1.61	41.00	-56.41	-25.00	-31.41

Plot 7-85. Radiated Spurious Data Below 1GHz (LTE Band 41(PC2) - Ant1)

Frequency [MHz]	Ant. Pol. [H/V]	Antenna	Turntable Azimuth					
RB / Offset:	1/50							
Frequency (MHz):	2506.0							
Bandwidth (MHz):	20							

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5012.00	V	-	-	-71.24	6.31	42.07	-53.18	-25.00	-28.18
7518.00	V	102	334	-70.63	10.65	47.02	-48.24	-25.00	-23.24
10024.00	V	102	188	-71.73	12.74	48.01	-47.25	-25.00	-22.25
12530.00	V	105	202	-74.07	17.04	49.97	-45.29	-25.00	-20.29
15036.00	V	-	-	-75.11	20.21	52.10	-43.16	-25.00	-18.16
17542.00	V	-	-	-75.96	21.65	52.69	-42.57	-25.00	-17.57
20048.00	V	-	-	-56.86	3.00	53.14	-51.66	-25.00	-26.66

Table 7-21. Radiated Spurious Data Above 1GHz (LTE Band 41(PC2) - Low Channel - Ant1)

Bandwidth (MHz):	20
Frequency (MHz):	2593.0
RB / Offset:	1/50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5186.00	V	-	-	-72.12	6.73	41.61	-53.65	-25.00	-28.65
7779.00	V	108	348	-70.44	10.24	46.80	-48.45	-25.00	-23.45
10372.00	V	103	288	-73.56	13.73	47.17	-48.09	-25.00	-23.09
12965.00	V	-	-	-75.32	17.81	49.49	-45.77	-25.00	-20.77
15558.00	V	-	-	-75.71	20.49	51.78	-43.48	-25.00	-18.48
18151.00	V	150	17	-54.12	1.51	54.39	-50.41	-25.00	-25.41
20744.00	V	-	-	-57.72	3.53	52.81	-51.99	-25.00	-26.99
23337.00	V	-	-	-57.68	4.00	53.31	-51.49	-25.00	-26.49

Table 7-22. Radiated Spurious Data Above 1GHz (LTE Band 41(PC2) – Mid Channel – Ant1)

Τ

Bandwidth (MHz):		20							
Frequency (MHz):		2680.0							
RB / Offset:		1/50							
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB
5360.00	V	102	170	-71.02	6.57	42.55	-52.71	-25.00	-27.71
8040.00	V	103	92	-70.33	10.77	47.44	-47.82	-25.00	-22.82
10720.00	V	-	-	-74.33	14.30	46.97	-48.29	-25.00	-23.29
13400.00	V	102	260	-75.09	18.34	50.25	-45.01	-25.00	-20.01
16080.00	V	-	-	-76.12	21.15	52.03	-43.23	-25.00	-18.23
18760.00	V	150	16	-54.41	1.79	54.38	-50.42	-25.00	-25.42
21440.00	V	-	-	-57.12	4.00	53.88	-50.92	-25.00	-25.92
24120.00	V	-	-	-57.12	4.14	54.01	-50.79	-25.00	-25.79

Table 7-23. Radiated Spurious Data Above 1GHz (LTE Band 41(PC2) – High Channel – Ant1)

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LTE Band 41 PC2 – Ant2













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Bandwidth (MHz):	20
Frequency (MHz):	2593.0
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
174.00	V	-	-	-79.93	-13.22	13.85	-83.55	-25.00	-58.55
225.00	V	-	-	-79.96	-10.33	16.71	-80.70	-25.00	-55.70
476.00	V	-	-	-78.71	-4.80	23.49	-73.92	-25.00	-48.92

Plot 7-89. Radiated Spurious Data Below 1GHz (LTE Band 41(PC2) – Ant2)

Bandwidth (MHz):	20
Frequency (MHz):	2510.0
RB / Offset:	1/50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5020.00	V	250	220	-71.11	9.79	45.68	-49.58	-25.00	-24.58
7530.00	V	303	202	-64.35	15.68	58.33	-36.93	-25.00	-11.93
10040.00	V	-	-	-75.82	19.32	50.50	-44.75	-25.00	-19.75
12550.00	V	-	-	-75.91	23.80	54.89	-40.37	-25.00	-15.37
15060.00	V	-	-	-76.03	27.93	58.90	-36.36	-25.00	-11.36

Table 7-24. Radiated Spurious Data Above 1GHz (LTE Band 41(PC2) – Low Channel – Ant2)

Bandwidth (MHz):						
Frequency (MHz):		2593.0				
RB / Offset:						
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]		

Frequency [MHz]	Ant. Pol. [H/V]	Height [cm]	Azimuth [degree]	Level [dBm]	[dB/m]	Strength [dBµV/m]	Emission Level [dBm]	Limit [dBm]	Margin [dB]
5186.00	V	156	265	-70.96	10.16	46.20	-49.05	-25.00	-24.05
7779.00	V	105	259	-64.16	15.88	58.72	-36.54	-25.00	-11.54
10372.00	V	-	-	-74.33	20.07	52.74	-42.52	-25.00	-17.52
12965.00	V	-	-	-75.64	24.76	56.12	-39.14	-25.00	-14.14
15558.00	V	-	-	-76.65	29.36	59.71	-35.54	-25.00	-10.54
			D (A)	4011 / TE			o l l l (o	•	

Field

EIRP Spurious

Table 7-25. Radiated Spurious Data Above 1GHz (LTE Band 41(PC2) – Mid Channel – Ant2)

Bandwidth (MHz):		20							
Frequency (MHz):	Frequency (MHz): 2680.0								
RB / Offset:	RB / Offset: 1 / 50								
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5360.00	V	130	220	-71.78	10.44	45.66	-49.60	-25.00	-24.60
8040.00	V	125	191	-65.65	16.42	57.77	-37.48	-25.00	-12.48
10720.00	V	-	-	-75.17	20.71	52.54	-42.72	-25.00	-17.72
13400.00	V	-	-	-76.39	25.40	56.01	-39.24	-25.00	-14.24
16080.00	V	-	-	-77.73	29.09	58.36	-36.90	-25.00	-11.90

Table 7-26. Radiated Spurious Data Above 1GHz (LTE Band 41(PC2) – High Channel – Ant2)

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Bandwidth (MHz):	100
Frequency (MHz):	2592.99
RB / Offset:	1 / 136

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
132.00	V	-	-	-80.58	20.36	46.78	-50.63	-25.00	-25.63
242.00	V	-	-	-80.69	18.84	45.15	-52.26	-25.00	-27.26
491.00	V	-	-	-80.53	25.77	52.24	-45.17	-25.00	-20.17

Plot 7-93. Radiated Spurious Data Below 1GHz (NR Band n41 PC3 - Ant1)

100
2546.01
1 / 136

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5092.02	V	133	240	-74.10	3.29	36.19	-59.06	-25.00	-34.06
7638.03	V	289	224	-71.91	9.13	44.22	-51.04	-25.00	-26.04
10184.04	V	-	-	-78.08	11.61	40.53	-54.73	-25.00	-29.73
12730.05	V	-	-	-78.39	13.49	42.10	-53.16	-25.00	-28.16
15276.06	V	-	-	-78.53	14.34	42.81	-52.44	-25.00	-27.44

Table 7-27. Radiated Spurious Data Above 1GHz (NR Band n41 PC3 – Low Channel – Ant1)

100
2592.99
1 / 136

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5185.98	V	-	-	-76.48	3.49	34.01	-61.24	-25.00	-36.24
7778.97	V	360	228	-68.33	8.22	46.89	-48.37	-25.00	-23.37
10371.96	V	-	-	-77.96	11.63	40.67	-54.59	-25.00	-29.59
12964.95	V	-	-	-78.72	14.13	42.41	-52.85	-25.00	-27.85
15557.94	V	-	-	-78.09	13.98	42.89	-52.37	-25.00	-27.37

Table 7-28. Radiated Spurious Data Above 1GHz (NR Band n41 PC3 - Mid Channel - Ant1)

Field

Strength

[dBµV/m]

35.25

42.75

40.51

43.12

AFCL

[dB/m]

3.34

9.19

12.23

14.71

EIRP Spurious

Emission Level

[dBm]

-60.01

-52.51

-54.75

-52.13

Limit [dBm] Margin [dB]

-35.01

-27.51

-29.75

-27.13

-27.44

-25.00

-25.00

-25.00

-25.00

-25.00

Bandwidth (MHz): Frequency (MHz) RB / Offset:				
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]
5280.00	V	150	231	-75.09
7920.00	V	288	226	-73.44
10560.00	V	-	-	-78.72

V

13200.00

15840.00

V -79.12 14.94 42.82 -52.44 Table 7-29. Radiated Spurious Data Above 1GHz (NR Band n41 PC3 – High Channel – Ant1)

-

.

-78.59

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Plot 7-96. Radiated Spurious Plot Above 18GHz (NR Band n41 PC3 – Ant2)

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Bandwidth (MHz):	100
Frequency (MHz):	2592.99
RB / Offset:	1 / 136

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
114.00	Н	-	-	-79.13	-10.81	17.06	-80.35	-25.00	-55.35
208.00	н	-	-	-79.89	-11.32	15.79	-81.61	-25.00	-56.61
296.00	Н	-	-	-80.10	-7.82	19.08	-78.33	-25.00	-53.33

Plot 7-97. Radiated Spurious Data Below 1GHz (NR Band n41 PC3 – Ant2)

Bandwidth (MHz):	100
Frequency (MHz):	2546.01
RB / Offset:	1 / 136

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5092.02	Н	-	-	-72.59	9.98	44.39	-50.87	-25.00	-25.87
7638.03	Н	-	-	-74.77	15.65	47.88	-47.37	-25.00	-22.37
10184.04	Н	-	-	-74.49	19.48	51.99	-43.27	-25.00	-18.27

Table 7-30. Radiated Spurious Data Above 1GHz (NR Band n41 PC3 – Low Channel – Ant2)

Bandwidth (MHz):	100	
Frequency (MHz):	2592.99	
RB / Offset:	1 / 136	
		Turntable

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5185.98	Н	-	-	-73.03	10.31	44.28	-50.98	-25.00	-25.98
7778.97	Н	-	-	-73.08	15.45	49.37	-45.88	-25.00	-20.88
10371.96	Н	-	-	-73.84	19.59	52.75	-42.51	-25.00	-17.51

Table 7-31. Radiated Spurious Data Above 1GHz (NR Band n41 PC3 – Mid Channel – Ant2)

Bandwidth (MHz):		100							
Frequency (MHz):		2640.00							
RB / Offset:		1/136							
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5280.00	Н	-	-	-73.07	10.15	44.08	-51.18	-25.00	-26.18
7920.00	Н	-	-	-74.58	15.54	47.96	-47.30	-25.00	-22.30
10560.00	Н	-	-	-74.60	19.87	52.27	-42.99	-25.00	-17.99

Table 7-32. Radiated Spurious Data Above 1GHz (NR Band n41 PC3 - High Channel - Ant2)

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Bandwidth (MHz):	100
Frequency (MHz):	2592.99
RB / Offset:	1/136

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
100.00	н	-	-	-80.14	-10.81	16.05	-81.36	-25.00	-56.36
211.00	н	-	-	-80.18	-11.32	15.50	-81.90	-25.00	-56.90
323.00	Н	-	-	-80.07	-7.82	19.11	-78.30	-25.00	-53.30

Plot 7-101. Radiated Spurious Data Below 1GHz (NR Band n41 PC3 – Ant3)

Bandwidth (MHz):	100
Frequency (MHz):	2546.01
RB / Offset:	1 / 136

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5092.02	Н	135	57	-60.41	9.98	56.57	-38.69	-25.00	-13.69
7638.03	Н	103	83	-69.64	15.65	53.01	-42.24	-25.00	-17.24
10184.04	Н	-	-	-75.50	19.48	50.98	-44.28	-25.00	-19.28
12730.05	Н	-	-	-76.48	23.25	53.77	-41.48	-25.00	-16.48
15276.06	Н	-	-	-77.98	27.26	56.28	-38.98	-25.00	-13.98

Table 7-33. Radiated Spurious Data Above 1GHz (NR Band n41 PC3 – Low Channel – Ant3)

Bandwidth (MHz):	100
Frequency (MHz):	2592.99
RB / Offset:	1 / 136

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5185.98	Н	213	33	-64.21	10.31	53.10	-42.16	-25.00	-17.16
7778.97	Н	137	318	-72.20	15.45	50.25	-45.00	-25.00	-20.00
10371.96	Н	-	-	-74.96	19.59	51.63	-43.63	-25.00	-18.63
12964.95	Н	-	-	-76.02	24.06	55.04	-40.22	-25.00	-15.22
15557.94	Н	-	-	-77.33	28.21	57.88	-37.38	-25.00	-12.38

Table 7-34. Radiated Spurious Data Above 1GHz (NR Band n41 PC3 - Mid Channel - Ant3)

Bandwidth (MHz):	100
Frequency (MHz):	2640.00
RB / Offset:	1/136

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5280.00	Н	143	53	-67.87	10.15	49.28	-45.98	-25.00	-20.98
7920.00	Н	151	290	-72.44	15.54	50.10	-45.16	-25.00	-20.16
10560.00	Н	-	-	-75.26	19.87	51.61	-43.65	-25.00	-18.65
13200.00	Н	-	-	-76.89	24.40	54.51	-40.75	-25.00	-15.75
15840.00	Н	-	-	-76.55	27.42	57.87	-37.39	-25.00	-12.39

Table 7-35. Radiated Spurious Data Above 1GHz (NR Band n41 PC3 – High Channel – Ant3)

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Bandwidth (MHz):	100
Frequency (MHz):	2592.99
RB / Offset:	1 / 136

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
53.64	н	-	-	-80.60	14.17	40.57	-56.84	-25.00	-31.84
99.00	н	-	-	-80.84	16.76	42.92	-54.49	-25.00	-29.49
187.00	Н	-	-	-80.94	18.53	44.59	-52.82	-25.00	-27.82

Plot 7-105. Radiated Spurious Data Below 1GHz (NR Band n41 PC3 – Ant4)

Bandwidth (MHz):	100
Frequency (MHz):	2546.01
RB / Offset:	1 / 136

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5092.02	Н	337	70	-73.03	3.29	37.26	-57.99	-25.00	-32.99
7638.03	Н	-	-	-77.34	9.13	38.79	-56.47	-25.00	-31.47
10184.04	Н	198	288	-77.30	11.61	41.31	-53.95	-25.00	-28.95
12730.05	Н	-	-	-78.35	13.49	42.14	-53.12	-25.00	-28.12
15276.06	Н	-	-	-78.56	14.34	42.78	-52.47	-25.00	-27.47
17822.07	Н	-	-	-79.11	18.27	46.16	-49.10	-25.00	-24.10

Table 7-36. Radiated Spurious Data Above 1GHz (NR Band n41 PC3 – Low Channel – Ant4)

Bandwidth (MHz):	100
Frequency (MHz):	2592.99
RB / Offset:	1 / 136

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5185.98	Н	-	-	-76.81	3.49	33.68	-61.57	-25.00	-36.57
7778.97	Н	258	78	-74.20	8.22	41.02	-54.24	-25.00	-29.24
10371.96	Н	226	296	-75.21	11.63	43.42	-51.84	-25.00	-26.84
12964.95	Н	-	-	-78.96	14.13	42.17	-53.09	-25.00	-28.09
15557.94	Н	-	-	-78.85	13.98	42.13	-53.13	-25.00	-28.13
18150.93	Н	-	-	-58.62	1.51	49.89	-54.91	-25.00	-29.91

Table 7-37. Radiated Spurious Data Above 1GHz (NR Band n41 PC3 – Mid Channel – Ant4)

Bandwidth (MHz):		100							
Frequency (MHz):		2640.00							
RB / Offset:		1 / 136							
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB
5280.00	Н	-	-	-78.67	3.34	31.67	-63.59	-25.00	-38.59
7920.00	Н	392	97	-74.63	9.19	41.56	-53.70	-25.00	-28.70
10560.00	Н	232	293	-74.99	12.23	44.24	-51.02	-25.00	-26.02
13200.00	Н	-	-	-78.65	14.71	43.06	-52.19	-25.00	-27.19
15840.00	Н	-	-	-78.99	14.94	42.95	-52.31	-25.00	-27.31
18480.00	Н	-	-	-57.63	1.82	51.19	-53.61	-25.00	-28.61

Table 7-38. Radiated Spurious Data Above 1GHz (NR Band n41 PC3 - High Channel - Ant4)

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7.8 Frequency Stability / Temperature Variation

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015. The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Part 27, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Procedure Used

ANSI C63.26-2015 – Section 5.6

Test Settings

- 1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
- 2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
- 3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

Test Setup

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

Test Notes

None.

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LTE Band 41									
	Operating	Frequency (Hz):	2,593,0	00,000					
	Ref	Voltage (VDC):	4.4	31					
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)				
		- 30	2,592,997,618	-1,521	-0.0000587				
		- 20	2,592,999,321	182	0.0000070				
		- 10	2,593,001,337	2,198	0.0000848				
		0	2,593,000,613	1,474	0.0000568				
100 %	4.431	+ 10	2,592,999,218	78	0.0000030				
		+ 20 (Ref)	2,592,999,139	0	0.0000000				
		+ 30	2,592,997,616	-1,523	-0.0000587				
		+ 40	2,592,997,555	-1,584	-0.0000611				
		+ 50	2,592,999,891	752	0.0000290				
Battery Endpoint	3.278	+ 20	2,592,998,960	-179	-0.0000069				

Table 7-39. LTE Band 41 Frequency Stability Data





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NR Band n41						
	Operating	Operating Frequency (Hz):		2,593,000,000		
	Ref	Ref. Voltage (VDC):		4.431		
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)	
		- 30	2,593,155,476	-114	-0.0000044	
		- 20	2,593,155,441	-149	-0.0000058	
		- 10	2,593,154,361	-1,230	-0.0000474	
		0	2,593,156,011	420	0.0000162	
100 %	4.431	+ 10	2,593,157,585	1,994	0.0000769	
		+ 20 (Ref)	2,593,155,590	0	0.0000000	
		+ 30	2,593,154,991	-600	-0.0000231	
		+ 40	2,593,154,461	-1,129	-0.0000436	
		+ 50	2,593,154,291	-1,299	-0.0000501	
Battery Endpoint	3.278	+ 20	2,593,155,722	132	0.0000051	

Table 7-40.	NR Band n4	41 PC3 Fre	equency	Stability	Data



Plot 7-107. NR Band n41 PC3 Frequency Stability Chart

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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMS928B** complies with all the requirements of Part 27 of the FCC rules.

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