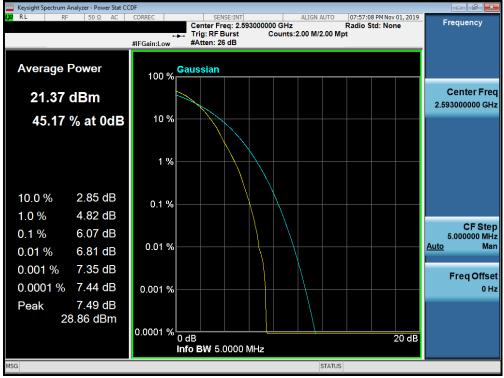
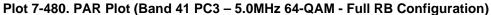


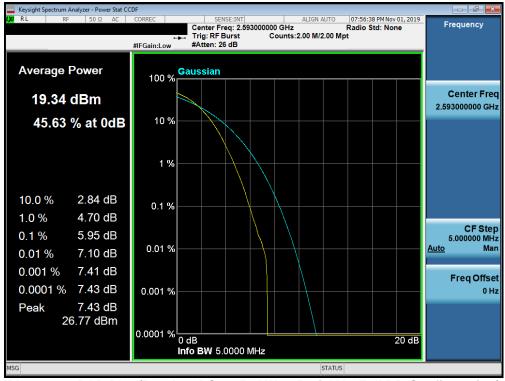
	FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
	Test Report S/N:	Test Dates:	EUT Type:	Dogo 205 of 424
	1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 265 of 434
(© 2020 PCTEST			V 9.0 02/01/2019

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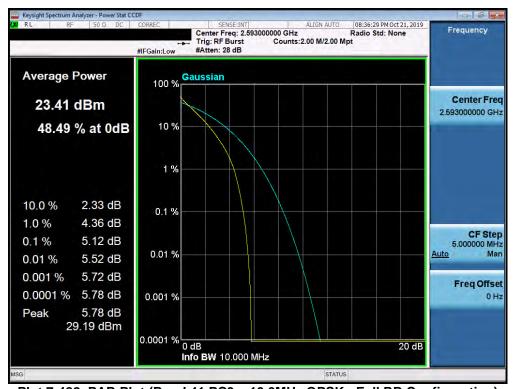




Plot 7-481. PAR Plot (Band 41 PC3 – 5.0MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 200 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 266 of 434
© 2020 PCTEST	·			V 9.0 02/01/2019







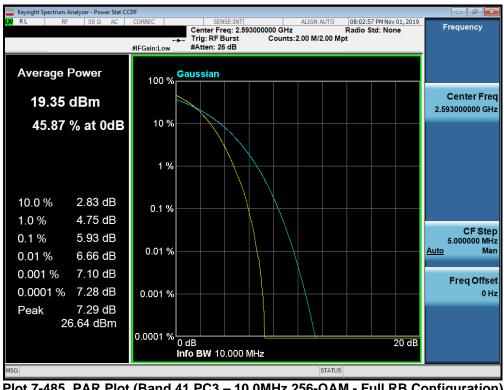


PCTEST MEASUREMENT REPORT Approved by: 6A SAMSUNG FCC ID: A3LSMG986W (CERTIFICATION) **Quality Manager** Test Report S/N: Test Dates: EUT Type: Page 267 of 434 1M1911010179-03.A3L 10/11/19 - 01/09/20 Portable Handset © 2020 PCTEST V 9.0 02/01/2019









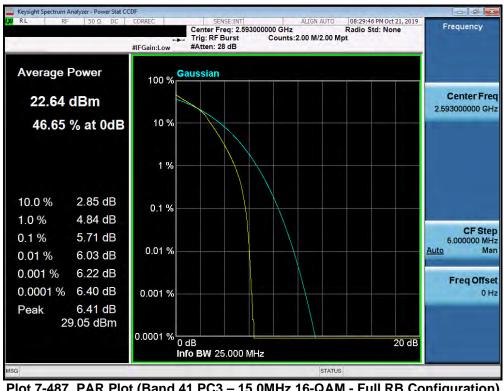
Plot 7-485. PAR Plot (Band 41 PC3 – 10.0MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 268 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 268 of 434
© 2020 PCTEST	•	•		V 9.0 02/01/2019





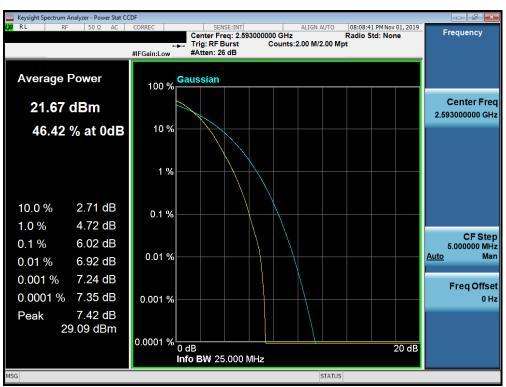


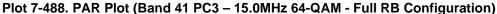


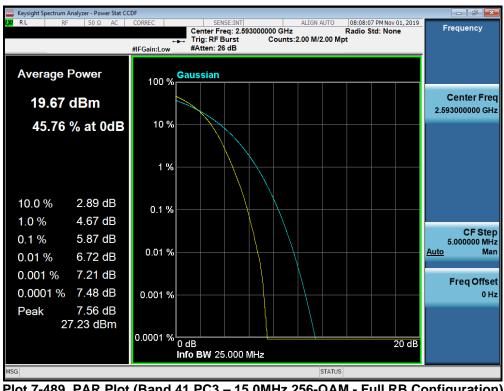
Plot 7-487. PAR Plot (Band 41 PC3 – 15.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 200 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 269 of 434
© 2020 PCTEST			V 9.0 02/01/2019





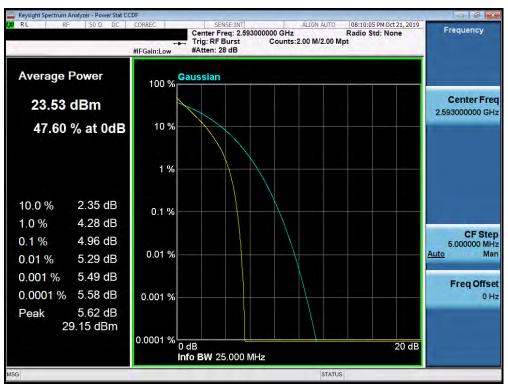


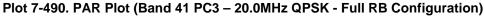


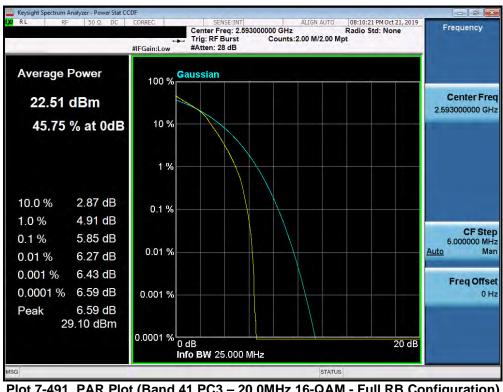
Plot 7-489. PAR Plot (Band 41 PC3 – 15.0MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 270 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 270 of 434
© 2020 PCTEST				V 9.0 02/01/2019





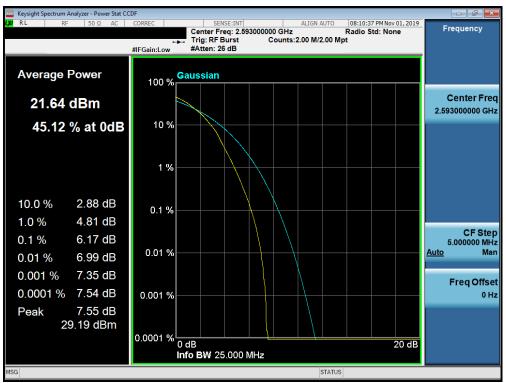




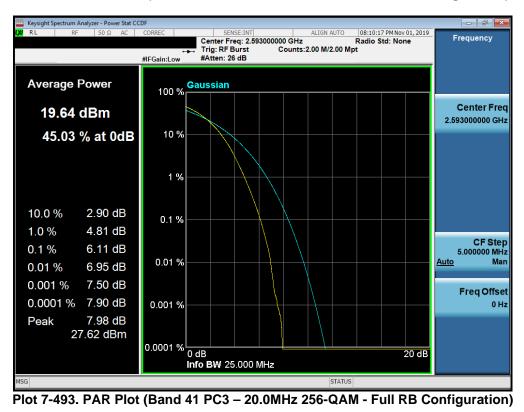
Plot 7-491. PAR Plot (Band 41 PC3 – 20.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 271 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 271 of 434
© 2020 PCTEST	•		V 9.0 02/01/2019









ID: A3LSMG986W MEASUREMENT REPORT Approved by:

FCC ID: A3LSMG986W		(CERTIFICATION)	SUNG	Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 272 of 434
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Fage 272 01 434
© 2020 PCTEST				V 9.0 02/01/2019



7.6 Radiated Power (ERP/EIRP)

Test Overview

Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized tuned broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v03r01 - Section 5.2.1

ANSI/TIA-603-E-2016 - Section 2.2.17

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 > 2 x span / 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

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Daga 070 of 404
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 273 of 434
© 2020 PCTEST	-		V 9.0 02/01/2019



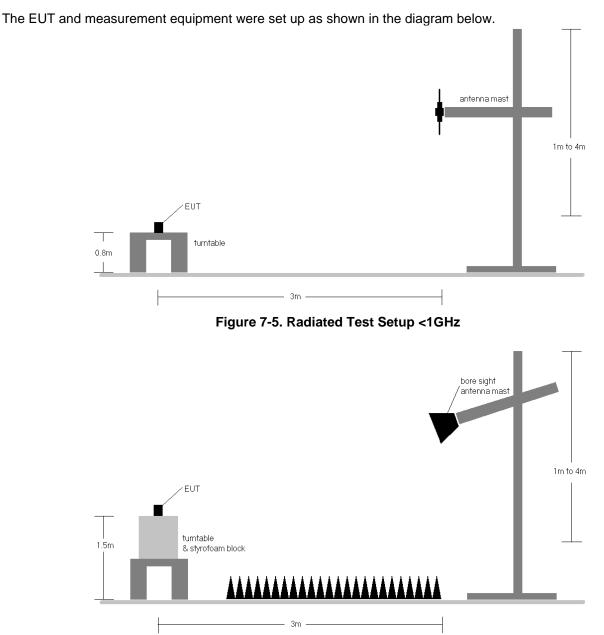


Figure 7-6. Radiated Test Setup >1GHz

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.

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	De 22 074 of 404
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 274 of 434
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Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
665.50	5	QPSK	Н	175	283	1 / 24	15.02	2.90	15.77	0.038	34.77	-19.00
680.50	5	QPSK	Н	175	280	1 / 24	16.11	3.20	17.16	0.052	34.77	-17.61
695.50	5	QPSK	Н	173	282	1 / 24	15.36	3.30	16.51	0.045	34.77	-18.26
680.50	5	16-QAM	Н	175	280	1 / 24	15.29	3.20	16.34	0.043	34.77	-18.43
680.50	5	64-QAM	Н	175	280	1 / 24	13.74	3.20	14.79	0.030	34.77	-19.98
680.50	5	256-QAM	Н	175	280	1 / 24	12.87	3.20	13.92	0.025	34.77	-20.85
668.00	10	QPSK	Н	171	282	1 / 49	15.34	2.90	16.09	0.041	34.77	-18.68
680.50	10	QPSK	Н	175	280	1 / 49	15.94	3.20	16.99	0.050	34.77	-17.78
693.00	10	QPSK	Н	173	281	1 / 49	15.91	3.30	17.06	0.051	34.77	-17.71
680.50	10	16-QAM	Н	175	280	1 / 49	15.60	3.20	16.65	0.046	34.77	-18.12
680.50	10	64-QAM	Н	175	280	1 / 49	14.34	3.20	15.39	0.035	34.77	-19.38
680.50	10	256-QAM	Н	175	280	1 / 49	11.72	3.20	12.77	0.019	34.77	-22.00
670.50	15	QPSK	Н	172	277	1 / 74	15.44	3.00	16.29	0.043	34.77	-18.48
680.50	15	QPSK	н	172	275	1 / 74	16.16	3.20	17.21	0.053	34.77	-17.56
690.50	15	QPSK	Н	172	278	1 / 74	15.79	3.30	16.94	0.049	34.77	-17.83
680.50	15	16-QAM	Н	172	275	1 / 74	15.43	3.20	16.48	0.044	34.77	-18.29
680.50	15	64-QAM	Н	172	275	1 / 74	14.20	3.20	15.25	0.033	34.77	-19.52
680.50	15	256-QAM	Н	172	275	1 / 74	11.33	3.20	12.38	0.017	34.77	-22.39
673.00	20	QPSK	Н	177	277	1 / 99	15.53	3.10	16.48	0.044	34.77	-18.29
680.50	20	QPSK	н	172	279	1 / 99	14.89	3.20	15.94	0.039	34.77	-18.83
688.00	20	QPSK	Н	174	279	1 / 99	15.62	3.30	16.77	0.048	34.77	-18.00
688.00	20	16-QAM	Н	174	279	1 / 99	14.84	3.30	15.99	0.040	34.77	-18.78
673.00	20	64-QAM	Н	177	277	1 / 99	13.76	3.10	14.71	0.030	34.77	-20.06
688.00	20	256-QAM	Н	174	279	1 / 99	10.74	3.30	11.89	0.015	34.77	-22.88
680.50	15	QPSK	V	155	155	1 / 74	12.55	3.20	13.60	0.023	34.77	-21.17
680.50	15 (WCP)	QPSK	Н	172	281	1 / 74	12.12	3.20	13.17	0.021	34.77	-21.60

Table 7-3. ERP Data (Band 71)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 075 of 404
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 275 of 434
© 2020 PCTEST	•	•		V 9.0 02/01/2019



Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
699.70	1.4	QPSK	V	166	329	1/5	15.19	4.50	17.54	0.057	34.77	-17.23	19.69	0.093	36.99	-17.30
707.50	1.4	QPSK	V	172	303	1 / 5	15.51	4.60	17.96	0.063	34.77	-16.81	20.11	0.103	36.99	-16.88
715.30	1.4	QPSK	V	101	211	1/0	14.45	4.63	16.93	0.049	34.77	-17.84	19.08	0.081	36.99	-17.91
707.50	1.4	16-QAM	V	172	303	1/5	14.72	4.60	17.17	0.052	34.77	-17.60	19.32	0.086	36.99	-17.67
707.50	1.4	64-QAM	V	172	303	1/0	13.56	4.60	16.01	0.040	34.77	-18.76	18.16	0.065	36.99	-18.83
707.50	1.4	256-QAM	V	172	303	1/0	10.59	4.60	13.04	0.020	34.77	-21.73	15.19	0.033	36.99	-21.80
700.50	3	QPSK	V	185	235	1/0	15.55	4.55	17.95	0.062	34.77	-16.82	20.10	0.102	36.99	-16.89
707.50	3	QPSK	V	195	248	1 / 14	15.49	4.60	17.94	0.062	34.77	-16.83	20.09	0.102	36.99	-16.90
714.50	3	QPSK	V	100	246	1/0	14.44	4.60	16.89	0.049	34.77	-17.88	19.04	0.080	36.99	-17.95
707.50	3	16-QAM	V	195	248	1/0	15.07	4.60	17.52	0.056	34.77	-17.25	19.67	0.093	36.99	-17.32
707.50	3	64-QAM	V	195	248	1/0	13.91	4.60	16.36	0.043	34.77	-18.41	18.51	0.071	36.99	-18.48
707.50	3	256-QAM	V	195	248	1/0	11.09	4.60	13.54	0.023	34.77	-21.23	15.69	0.037	36.99	-21.30
701.50	5	QPSK	V	179	254	1 / 24	15.53	4.60	17.98	0.063	34.77	-16.79	20.13	0.103	36.99	-16.86
707.50	5	QPSK	V	187	296	1/0	15.83	4.60	18.28	0.067	34.77	-16.49	20.43	0.110	36.99	-16.56
713.50	5	QPSK	V	183	249	1/0	14.78	4.60	17.23	0.053	34.77	-17.54	19.38	0.087	36.99	-17.61
707.50	5	16-QAM	V	187	296	1/0	15.15	4.60	17.60	0.058	34.77	-17.17	19.75	0.094	36.99	-17.24
707.50	5	64-QAM	V	187	296	1/0	14.26	4.60	16.71	0.047	34.77	-18.06	18.86	0.077	36.99	-18.13
707.50	5	256-QAM	V	187	296	1/0	11.20	4.60	13.65	0.023	34.77	-21.12	15.80	0.038	36.99	-21.19
704.00	10	QPSK	V	101	285	1 / 49	13.19	4.50	15.54	0.036	34.77	-19.23	17.69	0.059	36.99	-19.30
707.50	10	QPSK	V	100	286	1 / 49	14.39	4.60	16.84	0.048	34.77	-17.93	18.99	0.079	36.99	-18.00
711.00	10	QPSK	V	101	271	1 / 49	14.32	4.60	16.77	0.048	34.77	-18.00	18.92	0.078	36.99	-18.07
711.00	10	16-QAM	V	101	271	1 / 49	13.69	4.60	16.14	0.041	34.77	-18.63	18.29	0.067	36.99	-18.70
707.50	10	64-QAM	V	100	286	1 / 49	12.64	4.60	15.09	0.032	34.77	-19.68	17.24	0.053	36.99	-19.75
711.00	10	256-QAM	V	101	271	1 / 49	10.14	4.60	12.59	0.018	34.77	-22.18	14.74	0.030	36.99	-22.25
707.50	5	QPSK	н	137	331	1/0	14.36	3.65	15.86	0.039	34.77	-18.91	18.01	0.063	36.99	-18.98
707.50	5 (WCP)	QPSK	V	176	298	1/0	12.73	4.60	15.18	0.033	34.77	-19.59	17.33	0.054	36.99	-19.66

Table 7-4. ERP Data (Band 12)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 076 of 404
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 276 of 434
© 2020 PCTEST	•	•		V 9.0 02/01/2019



Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
779.50	5	QPSK	Н	102	290	1 / 24	14.34	5.80	17.99	0.063	34.77	-16.78	20.14	0.103	36.99	-16.85
782.00	5	QPSK	н	101	290	1 / 24	14.40	5.80	18.05	0.064	34.77	-16.72	20.20	0.105	36.99	-16.79
784.50	5	QPSK	н	101	290	1/0	14.20	5.90	17.95	0.062	34.77	-16.82	20.10	0.102	36.99	-16.89
782.00	5	16-QAM	Н	101	290	1 / 24	14.04	5.80	17.69	0.059	34.77	-17.08	19.84	0.096	36.99	-17.15
782.00	5	64-QAM	н	101	290	1 / 24	11.74	5.80	15.39	0.035	34.77	-19.38	17.54	0.057	36.99	-19.45
782.00	5	256-QAM	н	101	290	1 / 24	11.03	5.80	14.68	0.029	34.77	-20.09	16.83	0.048	36.99	-20.16
782.00	10	QPSK	н	100	290	1 / 49	15.11	5.80	18.76	0.075	34.77	-16.01	20.91	0.123	36.99	-16.08
782.00	10	16-QAM	н	100	290	1 / 49	14.24	5.80	17.89	0.062	34.77	-16.88	20.04	0.101	36.99	-16.95
782.00	10	64-QAM	н	100	290	1 / 49	13.51	5.80	17.16	0.052	34.77	-17.61	19.31	0.085	36.99	-17.68
782.00	10	256-QAM	н	100	290	1 / 49	11.37	5.80	15.02	0.032	34.77	-19.75	17.17	0.052	36.99	-19.82
782.00	10	QPSK	V	161	245	1 / 49	14.61	5.80	18.26	0.067	34.77	-16.51	20.41	0.110	36.99	-16.58
782.00	10 (WCP)	QPSK	Н	227	264	1 / 49	14.21	5.80	17.86	0.061	34.77	-16.91	20.01	0.100	36.99	-16.98

Table 7-5. ERP Data (Band 13)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 277 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 277 of 434
© 2020 PCTEST	-			V 9.0 02/01/2019



Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.70	1.4	QPSK	н	145	291	1/0	12.81	6.70	17.36	0.054	38.45	-21.09	19.51	0.089	40.61	-21.10
836.50	1.4	QPSK	н	145	291	1/0	13.57	6.70	18.12	0.065	38.45	-20.33	20.27	0.106	40.61	-20.34
848.30	1.4	QPSK	Н	141	290	1/5	13.38	6.70	17.93	0.062	38.45	-20.52	20.08	0.102	40.61	-20.53
848.30	1.4	16-QAM	н	141	290	1 / 5	13.06	6.70	17.61	0.058	38.45	-20.84	19.76	0.095	40.61	-20.85
848.30	1.4	64-QAM	н	141	290	1 / 5	12.29	6.70	16.84	0.048	38.45	-21.61	18.99	0.079	40.61	-21.62
848.30	1.4	256-QAM	Н	141	290	1/5	9.16	6.70	13.71	0.023	38.45	-24.74	15.86	0.039	40.61	-24.75
825.50	3	QPSK	Н	143	295	1/0	12.94	6.70	17.49	0.056	38.45	-20.96	19.64	0.092	40.61	-20.97
836.50	3	QPSK	Н	143	291	1/0	13.66	6.70	18.21	0.066	38.45	-20.24	20.36	0.109	40.61	-20.25
847.50	3	QPSK	Н	140	295	1 / 14	13.33	6.65	17.83	0.061	38.45	-20.62	19.98	0.100	40.61	-20.63
847.50	3	16-QAM	Н	140	295	1 / 14	12.92	6.65	17.42	0.055	38.45	-21.03	19.57	0.091	40.61	-21.04
847.50	3	64-QAM	н	140	295	1 / 14	11.97	6.65	16.47	0.044	38.45	-21.98	18.62	0.073	40.61	-21.99
825.50	3	256-QAM	н	143	295	1/0	9.71	6.70	14.26	0.027	38.45	-24.19	16.41	0.044	40.61	-24.20
826.50	5	QPSK	Н	140	292	1/0	13.05	6.70	17.60	0.058	38.45	-20.85	19.75	0.094	40.61	-20.86
836.50	5	QPSK	Н	141	291	1/0	13.78	6.70	18.33	0.068	38.45	-20.12	20.48	0.112	40.61	-20.13
846.50	5	QPSK	Н	136	291	1 / 24	13.37	6.60	17.82	0.061	38.45	-20.63	19.97	0.099	40.61	-20.64
836.50	5	16-QAM	н	141	291	1 / 24	12.78	6.70	17.33	0.054	38.45	-21.12	19.48	0.089	40.61	-21.13
846.50	5	64-QAM	н	136	291	1 / 24	11.84	6.60	16.29	0.043	38.45	-22.16	18.44	0.070	40.61	-22.17
826.50	5	256-QAM	н	140	292	1/0	10.31	6.70	14.86	0.031	38.45	-23.59	17.01	0.050	40.61	-23.60
829.00	10	QPSK	н	137	291	1/0	13.16	6.70	17.71	0.059	38.45	-20.74	19.86	0.097	40.61	-20.75
836.50	10	QPSK	н	142	286	1/0	13.83	6.70	18.38	0.069	38.45	-20.07	20.53	0.113	40.61	-20.08
844.00	10	QPSK	н	135	285	1 / 49	13.42	6.60	17.87	0.061	38.45	-20.58	20.02	0.100	40.61	-20.59
836.50	10	16-QAM	н	142	286	1/0	12.93	6.70	17.48	0.056	38.45	-20.97	19.63	0.092	40.61	-20.98
836.50	10	64-QAM	н	142	286	1/0	12.05	6.70	16.60	0.046	38.45	-21.85	18.75	0.075	40.61	-21.86
829.00	10	256-QAM	н	137	291	1/0	10.63	6.70	15.18	0.033	38.45	-23.27	17.33	0.054	40.61	-23.28
836.50	10	QPSK	V	326	185	1/0	11.65	6.70	16.20	0.042	38.45	-22.25	18.35	0.068	40.61	-22.26
836.50	10 (WCP)	QPSK	н	201	259	1/0	12.48	6.70	17.03	0.050	38.45	-21.42	19.18	0.083	40.61	-21.43

Table 7-6. ERP Data (Band 5)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 270 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 278 of 434
© 2020 PCTEST	-			V 9.0 02/01/2019



Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1710.70	1.4	QPSK	Н	154	210	1 / 0	9.41	9.44	18.85	0.077	30.00	-11.15
1745.00	1.4	QPSK	н	140	215	1 / 0	14.01	9.23	23.24	0.211	30.00	-6.76
1779.30	1.4	QPSK	Н	133	211	1/0	9.04	9.26	18.30	0.068	30.00	-11.70
1779.30	1.4	16-QAM	Н	133	211	1/0	12.69	9.26	21.95	0.157	30.00	-8.05
1779.30	1.4	64-QAM	Н	133	211	1 / 5	11.09	9.26	20.35	0.108	30.00	-9.65
1710.70	1.4	256-QAM	Н	154	210	1/0	9.13	9.44	18.57	0.072	30.00	-11.43
1711.50	3	QPSK	Н	155	208	1/0	11.71	9.44	21.15	0.130	30.00	-8.85
1745.00	3	QPSK	Н	140	215	1/0	13.93	9.23	23.16	0.207	30.00	-6.84
1778.50	3	QPSK	Н	133	208	1 / 0	11.12	9.26	20.37	0.109	30.00	-9.63
1745.00	3	16-QAM	Н	140	215	1 / 14	13.75	9.23	22.98	0.199	30.00	-7.02
1711.50	3	64-QAM	Н	155	208	1 / 0	8.55	9.44	17.99	0.063	30.00	-12.01
1711.50	3	256-QAM	Н	155	208	1 / 0	6.98	9.44	16.42	0.044	30.00	-13.58
1712.50	5	QPSK	н	155	210	1/0	12.86	9.43	22.29	0.170	30.00	-7.71
1745.00	5	QPSK	н	155	210	1 / 0	13.90	9.23	23.13	0.206	30.00	-6.87
1777.50	5	QPSK	Н	124	211	1/0	12.30	9.26	21.56	0.143	30.00	-8.44
1745.00	5	16-QAM	Н	155	210	1 / 24	13.29	9.23	22.52	0.179	30.00	-7.48
1712.50	5	64-QAM	н	155	210	1 / 0	10.16	9.43	19.59	0.091	30.00	-10.41
1712.50	5	256-QAM	н	155	210	1 / 0	8.48	9.43	17.91	0.062	30.00	-12.09
1715.00	10	QPSK	н	155	210	1/0	13.58	9.42	22.99	0.199	30.00	-7.01
1745.00	10	QPSK	Н	140	215	1 / 0	13.72	9.23	22.95	0.197	30.00	-7.05
1775.00	10	QPSK	н	124	211	1 / 0	12.87	9.25	22.12	0.163	30.00	-7.88
1745.00	10	16-QAM	н	140	215	1 / 49	12.70	9.23	21.93	0.156	30.00	-8.07
1715.00	10	64-QAM	н	155	210	1 / 0	11.00	9.42	20.41	0.110	30.00	-9.59
1715.00	10	256-QAM	н	155	210	1 / 0	8.85	9.42	18.26	0.067	30.00	-11.74
1717.50	15	QPSK	н	155	210	1/0	13.78	9.40	23.18	0.208	30.00	-6.82
1745.00	15	QPSK	н	138	208	1 / 0	13.65	9.23	22.88	0.194	30.00	-7.12
1772.50	15	QPSK	н	124	207	1 / 0	13.06	9.25	22.31	0.170	30.00	-7.69
1745.00	15	16-QAM	н	138	208	1 / 0	13.42	9.23	22.65	0.184	30.00	-7.35
1717.50	15	64-QAM	н	155	210	1 / 0	11.41	9.40	20.81	0.121	30.00	-9.19
1717.50	15	256-QAM	н	155	210	1 / 0	9.28	9.40	18.68	0.074	30.00	-11.32
1720.00	20	QPSK	н	150	208	1 / 0	14.09	9.38	23.47	0.223	30.00	-6.53
1745.00	20	QPSK	Н	138	208	1/0	13.82	9.23	23.05	0.202	30.00	-6.95
1770.00	20	QPSK	Н	124	206	1/0	13.42	9.24	22.66	0.185	30.00	-7.34
1745.00	20	16-QAM	Н	138	208	1/0	13.32	9.23	22.55	0.180	30.00	-7.45
1720.00	20	64-QAM	н	150	208	1/0	11.79	9.38	21.17	0.131	30.00	-8.83
1720.00	20	256-QAM	Н	150	208	1/0	9.58	9.38	18.96	0.079	30.00	-11.04
1720.00	20	QPSK	V	155	333	1/0	12.99	9.38	22.37	0.173	30.00	-7.63
1720.00	20 (WCP)	QPSK	н	176	308	1/0	13.53	9.38	22.91	0.196	30.00	-7.09

Table 7-7. EIRP Data (Band 66/4)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 270 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 279 of 434
© 2020 PCTEST				V 9 0 02/01/2019



Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.70	1.4	QPSK	Н	123	351	1 / 5	14.08	9.48	23.56	0.227	33.01	-9.45
1882.50	1.4	QPSK	Н	153	356	1 / 0	13.72	9.94	23.66	0.232	33.01	-9.36
1914.30	1.4	QPSK	Н	115	355	1 / 0	13.33	10.29	23.62	0.230	33.01	-9.39
1882.50	1.4	16-QAM	н	153	356	1 / 5	13.50	9.94	23.44	0.221	33.01	-9.58
1882.50	1.4	64-QAM	Н	153	356	1 / 5	12.53	9.94	22.47	0.176	33.01	-10.55
1914.30	1.4	256-QAM	Н	115	355	6/0	9.02	10.29	19.31	0.085	33.01	-13.70
1851.50	3	QPSK	Н	126	358	1 / 14	14.19	9.50	23.69	0.234	33.01	-9.32
1882.50	3	QPSK	Н	155	359	1 / 0	13.77	9.94	23.71	0.235	33.01	-9.31
1913.50	3	QPSK	Н	117	350	1 / 0	13.41	10.29	23.70	0.234	33.01	-9.32
1882.50	3	16-QAM	Н	155	359	1 / 14	13.46	9.94	23.40	0.219	33.01	-9.62
1882.50	3	64-QAM	н	155	359	1 / 0	12.06	9.94	22.00	0.158	33.01	-11.02
1882.50	3	256-QAM	Н	155	359	15 / 0	9.28	9.94	19.22	0.083	33.01	-13.80
1852.50	5	QPSK	н	127	358	1 / 0	13.57	9.51	23.08	0.203	33.01	-9.93
1882.50	5	QPSK	н	153	336	1 / 24	13.44	9.94	23.38	0.218	33.01	-9.64
1912.50	5	QPSK	н	115	172	1 / 0	12.37	10.28	22.65	0.184	33.01	-10.36
1882.50	5	16-QAM	Н	153	336	1 / 24	12.97	9.94	22.91	0.195	33.01	-10.11
1882.50	5	64-QAM	Н	153	336	1 / 24	11.92	9.94	21.86	0.153	33.01	-11.16
1882.50	5	256-QAM	Н	153	336	1 / 24	8.72	9.94	18.66	0.073	33.01	-14.36
1855.00	10	QPSK	н	216	354	1 / 0	13.75	9.55	23.30	0.214	33.01	-9.71
1882.50	10	QPSK	н	158	356	1/0	13.21	9.94	23.15	0.206	33.01	-9.87
1910.00	10	QPSK	н	189	354	1 / 49	12.59	10.26	22.85	0.193	33.01	-10.16
1882.50	10	16-QAM	Н	158	356	1/0	12.70	9.94	22.64	0.183	33.01	-10.38
1882.50	10	64-QAM	н	158	356	1/0	11.28	9.94	21.22	0.132	33.01	-11.80
1855.00	10	256-QAM	Н	216	354	1/0	9.19	9.55	18.74	0.075	33.01	-14.27
1857.50	15	QPSK	Н	124	356	1/0	14.19	9.58	23.77	0.238	33.01	-9.24
1882.50	15	QPSK	Н	150	356	1 / 74	13.78	9.94	23.72	0.235	33.01	-9.30
1907.50	15	QPSK	Н	293	353	1 / 74	12.64	10.24	22.88	0.194	33.01	-10.13
1857.50	15	16-QAM	Н	124	356	1/0	13.68	9.58	23.26	0.212	33.01	-9.75
1857.50	15	64-QAM	Н	124	356	1 / 74	12.40	9.58	21.98	0.158	33.01	-11.03
1857.50	15	256-QAM	Н	124	356	1 / 74	9.52	9.58	19.10	0.081	33.01	-13.91
1860.00	20	QPSK	Н	110	349	1 / 99	13.52	9.62	23.14	0.206	33.01	-9.87
1882.50	20	QPSK	Н	100	353	1/0	12.94	9.94	22.88	0.194	33.01	-10.14
1905.00	20	QPSK	Н	102	349	1/0	12.05	10.22	22.27	0.169	33.01	-10.74
1860.00	20	16-QAM	Н	110	349	1 / 99	13.36	9.62	22.98	0.198	33.01	-10.03
1860.00	20	64-QAM	Н	110	349	1 / 99	11.81	9.62	21.43	0.139	33.01	-11.58
1860.00	20	256-QAM	Н	110	349	1 / 99	9.69	9.62	19.31	0.085	33.01	-13.70
1857.50	15	QPSK	V	106	312	1/0	13.33	9.58	22.91	0.195	33.01	-10.10
1857.50	15 (WCP)	QPSK	Н	151	222	1 / 0	11.92	9.58	21.50	0.141	33.01	-11.51

Table 7-8. EIRP Data (Band 25/2)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 200 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 280 of 434
© 2020 PCTEST				V 9 0 02/01/2019



Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2307.50	5	QPSK	Н	152	194	1 / 24	12.70	10.31	23.01	0.200	23.98	-0.97
2312.50	5	QPSK	Н	147	191	1 / 24	12.81	10.31	23.12	0.205	23.98	-0.86
2312.50	5	16-QAM	Н	147	191	1 / 24	11.72	10.31	22.03	0.160	23.98	-1.95
2312.50	5	64-QAM	Н	147	191	1 / 24	10.63	10.31	20.94	0.124	23.98	-3.04
2312.50	5	256-QAM	Н	147	191	1 / 24	7.44	10.31	17.75	0.060	23.98	-6.23
2310.00	10	QPSK	Н	153	188	1 / 49	12.87	10.31	23.18	0.208	23.98	-0.80
2310.00	10	16-QAM	Н	153	188	1 / 49	11.70	10.31	22.01	0.159	23.98	-1.97
2310.00	10	64-QAM	Н	153	188	1 / 49	10.44	10.31	20.75	0.119	23.98	-3.23
2310.00	10	256-QAM	Н	153	188	1 / 49	7.16	10.31	17.47	0.056	23.98	-6.51
2310.00	10	QPSK	V	188	307	1 / 49	12.67	10.23	22.90	0.195	23.98	-1.08
2310.00	10 (WCP)	QPSK	Н	107	173	1 / 49	12.40	10.31	22.71	0.187	23.98	-1.27

Table 7-9. EIRP Data (Band 30)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 201 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 281 of 434
© 2020 PCTEST		·		V 9.0 02/01/2019



Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2502.50	5	QPSK	Н	112	215	1 / 0	12.36	9.43	21.79	0.151	33.01	-11.22
2535.00	5	QPSK	Н	151	211	1 / 24	12.46	9.39	21.85	0.153	33.01	-11.16
2567.50	5	QPSK	Н	120	215	1 / 24	11.99	9.45	21.44	0.139	33.01	-11.57
2535.00	5	16-QAM	Н	151	211	1 / 0	12.22	9.39	21.61	0.145	33.01	-11.40
2502.50	5	64-QAM	Н	112	215	1 / 24	10.44	9.43	19.87	0.097	33.01	-13.14
2567.50	5	256-QAM	Н	120	215	1 / 24	7.00	9.45	16.45	0.044	33.01	-16.56
2505.00	10	QPSK	Н	112	211	1 / 0	12.53	9.43	21.95	0.157	33.01	-11.06
2535.00	10	QPSK	Н	151	210	1 / 49	12.58	9.39	21.97	0.158	33.01	-11.04
2565.00	10	QPSK	Н	115	220	1 / 0	12.61	9.44	22.05	0.160	33.01	-10.96
2565.00	10	16-QAM	Н	115	220	1 / 0	12.10	9.44	21.54	0.143	33.01	-11.47
2535.00	10	64-QAM	Н	151	210	1 / 49	10.68	9.39	20.07	0.102	33.01	-12.94
2565.00	10	256-QAM	Н	115	220	1 / 49	7.79	9.44	17.23	0.053	33.01	-15.78
2507.50	15	QPSK	Н	119	211	1 / 0	12.47	9.42	21.89	0.155	33.01	-11.12
2535.00	15	QPSK	Н	151	202	1 / 74	12.59	9.39	21.98	0.158	33.01	-11.03
2562.50	15	QPSK	Н	120	220	1 / 0	12.63	9.43	22.06	0.161	33.01	-10.95
2535.00	15	16-QAM	Н	151	202	1 / 74	12.44	9.39	21.83	0.153	33.01	-11.18
2535.00	15	64-QAM	Н	151	202	1 / 74	10.92	9.39	20.31	0.108	33.01	-12.70
2535.00	15	256-QAM	Н	151	202	1 / 74	8.18	9.39	17.57	0.057	33.01	-15.44
2510.00	20	QPSK	Н	118	210	1 / 0	12.52	9.42	21.94	0.156	33.01	-11.07
2535.00	20	QPSK	Н	151	200	1 / 99	12.76	9.39	22.15	0.164	33.01	-10.86
2560.00	20	QPSK	Н	116	224	1 / 0	12.59	9.42	22.01	0.159	33.01	-11.00
2535.00	20	16-QAM	Н	151	200	1 / 99	12.23	9.39	21.62	0.145	33.01	-11.39
2535.00	20	64-QAM	Н	151	200	1 / 99	11.21	9.39	20.60	0.115	33.01	-12.41
2535.00	20	256-QAM	Н	151	200	1 / 99	8.62	9.39	18.01	0.063	33.01	-15.00
2535.00	20	QPSK	V	130	349	1 / 99	12.13	9.39	21.52	0.142	33.01	-11.49
2535.00	20 (WCP)	QPSK	Н	155	245	1 / 99	11.71	9.39	21.10	0.129	33.01	-11.91

Table 7-10. EIRP Data (Band 7)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 282 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 282 of 434
© 2020 PCTEST	•			V 9.0 02/01/2019



Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2498.50	5	QPSK	Н	158	200	1 / 0	11.61	9.43	21.04	0.127	33.01	-11.97
2593.00	5	QPSK	Н	155	230	1 / 0	13.46	9.55	23.01	0.200	33.01	-10.00
2687.50	5	QPSK	Н	112	230	1 / 0	8.21	9.82	18.03	0.063	33.01	-14.98
2498.50	5	16-QAM	Н	158	200	1 / 0	12.94	9.43	22.37	0.173	33.01	-10.64
2498.50	5	64-QAM	Н	158	200	1 / 0	9.93	9.43	19.36	0.086	33.01	-13.65
2498.50	5	256-QAM	Н	158	200	1 / 0	6.96	9.43	16.39	0.044	33.01	-16.62
2501.00	10	QPSK	Н	158	199	1 / 0	12.27	9.43	21.70	0.148	33.01	-11.31
2593.00	10	QPSK	Н	155	246	1 / 0	13.25	9.55	22.80	0.191	33.01	-10.21
2685.00	10	QPSK	Н	110	225	1 / 0	11.32	9.82	21.15	0.130	33.01	-11.86
2501.00	10	16-QAM	Н	158	199	1 / 0	12.34	9.43	21.77	0.150	33.01	-11.24
2501.00	10	64-QAM	Н	158	199	1 / 0	10.13	9.43	19.56	0.090	33.01	-13.45
2501.00	10	256-QAM	Н	158	199	1 / 0	8.05	9.43	17.48	0.056	33.01	-15.53
2503.50	15	QPSK	Н	158	198	1 / 0	12.63	9.43	22.06	0.161	33.01	-10.95
2593.00	15	QPSK	Н	152	246	1 / 0	12.63	9.55	22.18	0.165	33.01	-10.83
2682.50	15	QPSK	Н	108	222	1 / 0	13.22	9.83	23.05	0.202	33.01	-9.96
2503.50	15	16-QAM	Н	158	198	1 / 0	12.12	9.43	21.55	0.143	33.01	-11.46
2682.50	15	64-QAM	Н	108	222	1 / 0	10.69	9.83	20.52	0.113	33.01	-12.49
2503.50	15	256-QAM	Н	158	198	1 / 0	8.59	9.43	18.02	0.063	33.01	-14.99
2506.00	20	QPSK	Н	158	198	1 / 0	12.81	9.42	22.23	0.167	33.01	-10.78
2593.00	20	QPSK	Н	152	246	1 / 0	12.81	9.55	22.36	0.172	33.01	-10.65
2680.00	20	QPSK	Н	108	222	1 / 0	13.89	9.83	23.72	0.236	33.01	-9.29
2680.00	20	16-QAM	Н	108	222	1 / 0	13.09	9.83	22.92	0.196	33.01	-10.09
2680.00	20	64-QAM	Н	108	222	1 / 0	11.62	9.83	21.45	0.140	33.01	-11.56
2680.00	20	256-QAM	Н	108	222	100 / 0	8.96	9.83	18.79	0.076	33.01	-14.22
2680.00	20	QPSK	V	184	205	1 / 0	12.04	9.83	21.87	0.154	33.01	-11.14
2680.00	20 (WCP)	QPSK	Н	252	45	1 / 0	12.13	9.83	21.96	0.157	33.01	-11.05

Table 7-11. EIRP Data (Band 41 – PC3)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	MSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 202 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 283 of 434	
© 2020 PCTEST				V 9.0 02/01/2019



7.7 Radiated Spurious Emissions Measurements

Test Overview

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas.

Test Procedures Used

KDB 971168 D01 v03r01 - Section 5.8

ANSI/TIA-603-E-2016 - Section 2.2.12

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 > 2 x span / RBW
- 5. Detector = RMS
- 6. Trace mode = Average (Max Hold for pulsed emissions)
- 7. The trace was allowed to stabilize

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Daga 204 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 284 of 434
© 2020 PCTEST	-		V 9.0 02/01/2019



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

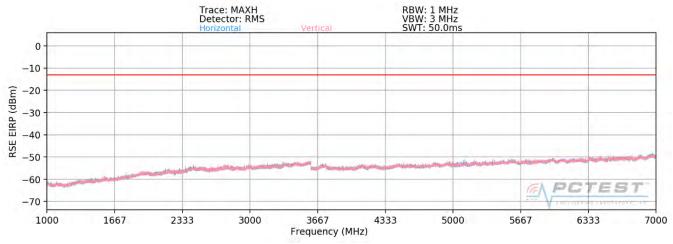
Figure 7-7. Test Instrument & Measurement Setup

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) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 4) 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.
- 5) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 205 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 285 of 434
© 2020 PCTEST	·			V 9.0 02/01/2019





Plot 7-494. Radiated Spurious Plot above 1GHz (Band 71)

OPERATING FREQUENCY:	670.50	MHz
MODULATION SIGNAL:	QPSK	_
BANDWIDTH:	15.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	_dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1341.00	V	169	351	-72.38	8.77	-63.62	-50.6
2011.50	V	177	179	-70.96	10.28	-60.68	-47.7
2682.00	V	385	310	-68.55	9.83	-58.72	-45.7
3352.50	V	-	-	-65.63	7.30	-58.33	-45.3
4023.00	V	-	-	-66.70	7.35	-59.35	-46.4

Table 7-12. Radiated Spurious Data (Band 71 – Low Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dama 200 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 286 of 434
© 2020 PCTEST	-		V 9.0 02/01/2019



OPERATING FREQUENCY:680.50MHzMODULATION SIGNAL:QPSKBANDWIDTH:15.0MHzDISTANCE:3metersLIMIT:-13dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1361.00	V	168	233	-70.83	8.61	-62.22	-49.2
2041.50	V	385	243	-67.18	10.04	-57.15	-44.1
2722.00	V	-	-	-69.61	9.58	-60.04	-47.0
3402.50	V	-	-	-66.24	7.33	-58.91	-45.9

Table 7-13. Radiated Spurious Data (Band 71 – Mid Channel)

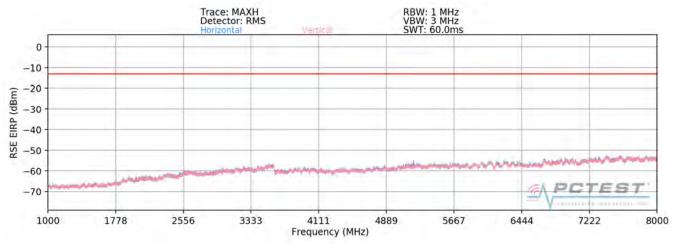
OPERATING FREQUENCY:	690	MHz	
MODULATION SIGNAL:	QPSK	_	
BANDWIDTH:	15.0	MHz	
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1381.00	V	207	123	-72.43	8.35	-64.08	-51.1
2071.50	V	280	187	-66.65	9.82	-56.83	-43.8
2762.00	V	-	-	-69.12	9.25	-59.87	-46.9
3452.50	V	-	-	-66.17	7.55	-58.62	-45.6

Table 7-14. Radiated Spurious Data (Band 71 – High Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 287 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 287 of 434
© 2020 PCTEST	-		V 9.0 02/01/2019





Plot 7-495. Radiated Spurious Plot above 1GHz (Band 12)

OPERATING FREQUENCY:	70	1.50 MH	z
MODULATION SIGNAL:	QPSK	_	
BANDWIDTH:	5.0	MHz	
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1403.00	V	161	282	-37.90	8.12	-29.77	-16.8
2104.50	V	133	249	-37.02	9.62	-27.40	-14.4
2806.00	V	-	-	-39.48	9.09	-30.39	-17.4
3507.50	V	-	-	-37.34	7.44	-29.90	-16.9

Table 7-15. Radiated Spurious Data (Band 12 – Low Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 200 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 288 of 434
© 2020 PCTEST		•		V 9.0 02/01/2019



OPERATING FREQUENCY:707.50MHzMODULATION SIGNAL:QPSKBANDWIDTH:5.0MHzDISTANCE:3metersLIMIT:-13dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1415.00	V	150	293	-38.89	8.22	-30.67	-17.7
2122.50	V	125	278	-37.38	9.59	-27.80	-14.8
2830.00	V	-	-	-39.42	9.10	-30.32	-17.3
3537.50	V	-	-	-37.24	7.26	-29.98	-17.0

Table 7-16. Radiated Spurious Data (Band 12 – Mid Channel)

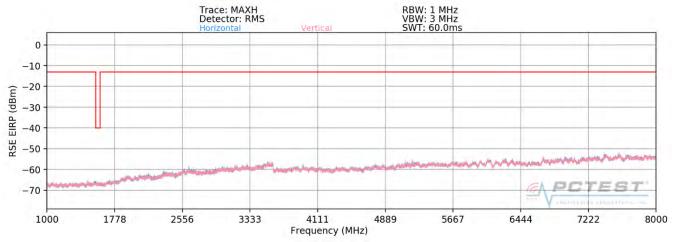
OPERATING FREQUENCY:	71:	3.50 MHz
MODULATION SIGNAL:	QPSK	_
BANDWIDTH:	5.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1427.00	V	398	282	-41.96	8.31	-33.65	-20.7
2140.50	V	183	279	-36.80	9.56	-27.25	-14.2
2854.00	V	-	-	-39.47	9.12	-30.35	-17.4
3567.50	V	-	-	-37.14	7.10	-30.04	-17.0

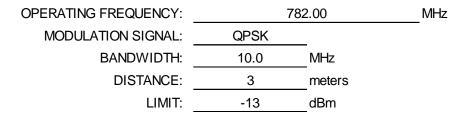
Table 7-17. Radiated Spurious Data (Band 12 – High Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 200 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 289 of 434
© 2020 PCTEST				V 9.0 02/01/2019





Plot 7-496. Radiated Spurious Plot above 1GHz (Band 13)



Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
2346.00	V	137	113	-69.09	9.43	-59.66	-46.7
3128.00	V	-	-	-74.60	9.34	-65.26	-52.3
3910.00	V	-	-	-73.62	9.37	-64.25	-51.2

Table 7-18. Radiated Spurious Data (Band 13 – Mid Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 200 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 290 of 434
© 2020 PCTEST	-		V 9.0 02/01/2019



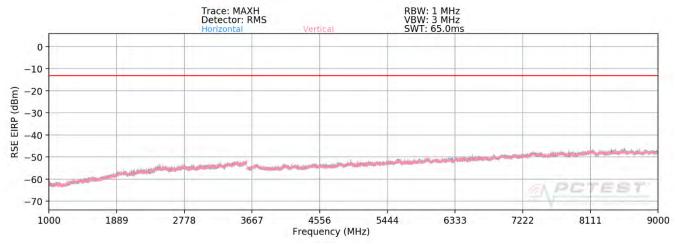
MODULATION SIGNAL:	QPSK	_
BANDWIDTH:	10.00	MHz
DISTANCE:	3	meters
NARROW BAND EMISSION LIMIT:	-50	dBm
WIDEBAND EMISSION LIMIT:	-40	dBm/MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1564.00	V	136	310	-78.29	8.53	-69.76	-29.8

Table 7-19. Radiated Spurious Data (Band 13 – 1559-1610MHz Band)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 201 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 291 of 434
© 2020 PCTEST	-		V 9.0 02/01/2019







MHz

OPERATING FREQUENCY:

PERATING FREQUENCY:	829.00		
MODULATION SIGNAL:	QPSK	_	
BANDWIDTH:	10.0	MHz	
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1658.00	V	368	176	-75.10	9.55	-65.54	-52.5
2487.00	V	114	92	-69.91	9.45	-60.46	-47.5
3316.00	V	-	-	-69.19	7.44	-61.75	-48.7
4145.00	V	-	-	-70.06	8.05	-62.01	-49.0

Table 7-20. Radiated Spurious Data (Band 5 – Low Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 202 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 292 of 434
© 2020 PCTEST		•	V 9.0 02/01/2019



OPERATING FREQUENCY:836.50MHzMODULATION SIGNAL:QPSKBANDWIDTH:10.0MHzDISTANCE:3metersLIMIT:-13dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.00	V	241	8	-74.39	9.54	-64.85	-51.9
2509.50	V	108	80	-69.85	9.42	-60.43	-47.4
3346.00	V	-	-	-68.08	7.32	-60.77	-47.8
4182.50	V	-	-	-69.30	8.16	-61.14	-48.1

Table 7-21. Radiated Spurious Data (Band 5 – Mid Channel)

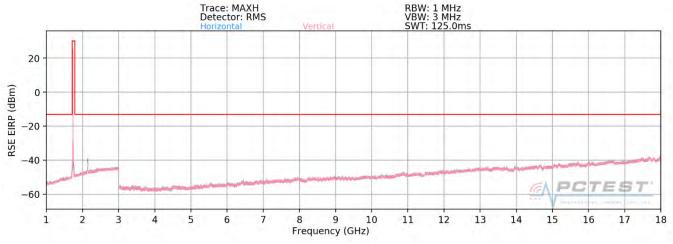
OPERATING FREQUENCY:	844	MHz	
MODULATION SIGNAL:	QPSK	_	
BANDWIDTH:	10.0	MHz	
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1688.00	V	185	155	-73.16	9.52	-63.64	-50.6
2532.00	V	138	113	-67.82	9.40	-58.42	-45.4
3376.00	V	-	-	-68.50	7.31	-61.19	-48.2
4220.00	V	-	-	-68.89	8.34	-60.56	-47.6

Table 7-22. Radiated Spurious Data (Band 5 – High Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 202 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 293 of 434
© 2020 PCTEST			V 9.0 02/01/2019





Plot 7-498. Radiated Spurious Plot above 1GHz (Band 66/4)

OPERATING FREQUENCY:	1720.00		
MODULATION SIGNAL:	QPSK		
BANDWIDTH:	20.0	MHz	
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3440.00	н	-	-	-66.60	7.51	-59.09	-46.1
5160.00	Н	-	-	-68.87	11.10	-57.77	-44.8

Table 7-23. Radiated Spurious Data (Band 66/4 – Low Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 204 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 294 of 434
© 2020 PCTEST	•			V 9.0 02/01/2019



OPERATING FREQUENCY:1745.00MHzMODULATION SIGNAL:QPSKBANDWIDTH:20.0MHzDISTANCE:3metersLIMIT:-13dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3490.00	Н	-	-	-66.49	7.50	-58.99	-46.0
5235.00	Н	-	-	-69.57	11.26	-58.31	-45.3

Table 7-24. Radiated Spurious Data (Band 66/4 - Mid Channel)

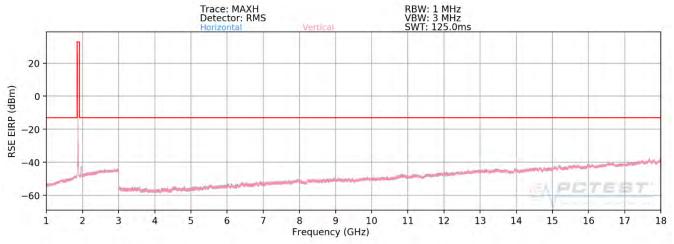
OPERATING FREQUENCY:	177	0.00 N	/Hz
MODULATION SIGNAL:	QPSK	_	
BANDWIDTH:	20.0	MHz	
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3540.00	Н	-	-	-66.32	7.24	-59.07	-46.1
5310.00	Н	-	-	-69.83	11.51	-58.32	-45.3

Table 7-25. Radiated Spurious Data (Band 66/4 – High Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 205 of 424	
1M1911010179-03.A3L 10/11/19 - 01/09/20		Portable Handset	Page 295 of 434	
© 2020 PCTEST			V 9.0 02/01/2019	





Plot 7-499. Radiated Spurious Plot above 1GHz (Band 25/2)

OPERATING FREQUENCY:		MHz	
MODULATION SIGNAL:	QPSK		
BANDWIDTH:	20.0	MHz	
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3720.00	H	-	-	-72.67	9.51	-63.17	-50.2
5580.00	Н	-	-	-72.48	10.99	-61.50	-48.5

Table 7-26. Radiated Spurious Data (Band 25/2 – Low Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 206 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 296 of 434
© 2020 PCTEST	•			V 9.0 02/01/2019



OPERATING FREQUENCY:1882.50MHzMODULATION SIGNAL:QPSKBANDWIDTH:20.0MHzDISTANCE:3metersLIMIT:-13dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3765.00	Н	-	-	-73.14	9.36	-63.78	-50.8
5647.50	Н	-	-	-71.91	11.19	-60.71	-47.7

Table 7-27. Radiated Spurious Data (Band 25/2 - Mid Channel)

OPERATING FREQUENCY:	190	05.00	MHz
MODULATION SIGNAL:	QPSK	_	
BANDWIDTH:	20.0	MHz	
DISTANCE:	3	meters	
LIMIT:	-13	dBm	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3810.00	Н	-	-	-72.74	9.29	-63.44	-50.4
5715.00	Н	-	-	-72.50	11.35	-61.15	-48.1

Table 7-28. Radiated Spurious Data (Band 25/2 – High Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 207 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 297 of 434
© 2020 PCTEST			V 9.0 02/01/2019

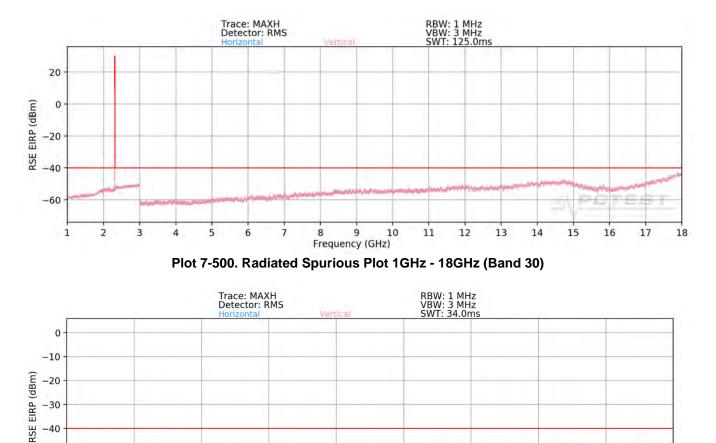


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Frequency (MHz) Plot 7-501. Radiated Spurious Plot 18GHz – 26.5GHz (Band 30)

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FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dama 000 of 404
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 298 of 434
© 2020 PCTEST		· · · · · · · · · · · · · · · · · · ·	V 9.0 02/01/2019



OPERATING FREQUENCY:	231	0.00	MHz
MODULATION SIGNAL:	QPSK	_	
BANDWIDTH:	10.0	MHz	
DISTANCE:	3	meters	
LIMIT:	-40	dBm	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
4620.00	Н	119	114	-73.46	10.92	-62.54	-22.5
6930.00	Н	-	-	-71.93	11.74	-60.19	-20.2
9240.00	Н	118	107	-68.24	11.62	-56.62	-16.6
11550.00	Н	250	281	-66.25	12.72	-53.53	-13.5
13860.00	Н	-	-	-62.78	11.99	-50.78	-10.8
16170.00	Н	-	-	-70.23	16.59	-53.63	-13.6

Table 7-29. Radiated Spurious Data (Band 30 – Mid Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 299 of 434
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		
© 2020 PCTEST	<u>.</u>			V 9.0 02/01/2019



RSE EIRP (dBm)

-20 -30 -40 -50

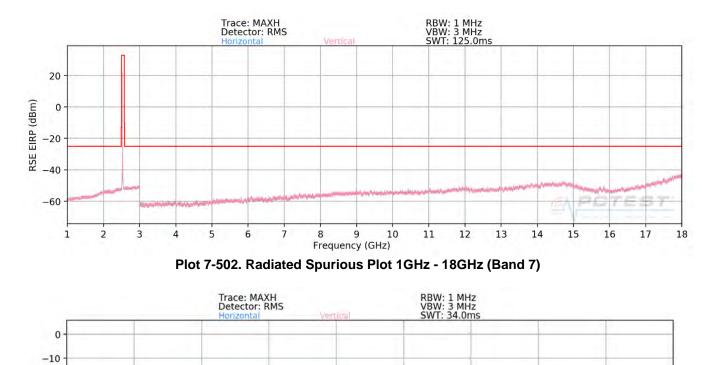
-60

18000

18933

19867

20800





22667

23600

24533

21733

Frequency (MHz)

PCTEST

26400

25467

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 200 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 300 of 434
© 2020 PCTEST			V 9.0 02/01/2019



OPERATING FREQUENCY:	251	MHz	
MODULATION SIGNAL:	QPSK	_	
BANDWIDTH:	20.0	MHz	
DISTANCE:	3	meters	
LIMIT:	-25	dBm	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5020.00	Н	108	188	-66.12	10.80	-55.32	-30.3
7530.00	Н	-	-	-65.87	12.56	-53.32	-28.3
10040.00	Н	-	-	-61.08	9.75	-51.33	-26.3

Table 7-30. Radiated Spurious Data (Band 7 – Low Channel)

2535.00

OPERATING FREQUENCY:

REQUENCY:

MHz

MODULATION SIGNAL: QPSK

BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters

LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5070.00	Н	124	194	-67.09	10.92	-56.17	-31.2
7605.00	H	-	-	-65.42	12.40	-53.02	-28.0
10140.00	H	-	-	-60.89	9.84	-51.05	-26.0

Table 7-31. Radiated Spurious Data (Band 7 – Mid Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 201 of 424
1M1911010179-03.A3L	10/11/19 – 01/09/20 Portable Handset		Page 301 of 434
© 2020 PCTEST			V 9.0 02/01/2019



OPERATING FREQUENCY:	256	MHz	
MODULATION SIGNAL:	QPSK	_	
BANDWIDTH:	20.0	MHz	
DISTANCE:	3	meters	
LIMIT:	-25	dBm	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5120.00	Н	128	185	-66.82	10.99	-55.83	-30.8
7680.00	Н	-	-	-65.85	12.35	-53.51	-28.5
10240.00	Н	-	-	-60.50	9.65	-50.84	-25.8

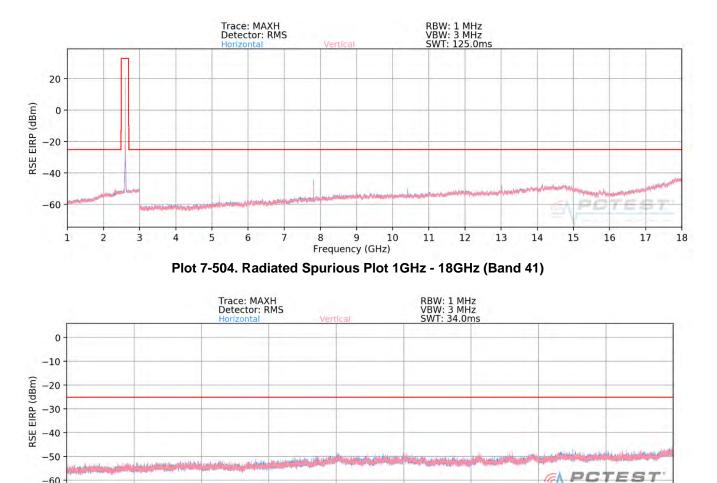
Table 7-32. Radiated Spurious Data (Band 7 – High Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Daga 202 of 424
1M1911010179-03.A3L	10/11/19 – 01/09/20 Portable Handset		Page 302 of 434
© 2020 PCTEST	-	·	V 9.0 02/01/2019



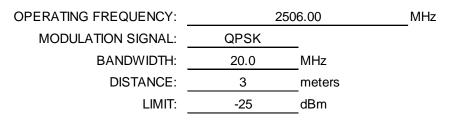
-60

Frequency (MHz) Plot 7-505. Radiated Spurious Plot 18GHz – 26.5GHz (Band 41)



FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 202 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	/11/19 – 01/09/20 Portable Handset		Page 303 of 434
© 2020 PCTEST	-			V 9.0 02/01/2019





Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5012.00	V	395	280	-62.31	8.56	-53.75	-28.8
7518.00	V	286	194	-51.67	8.49	-43.18	-18.2
10024.00	V	264	39	-59.76	9.85	-49.91	-24.9
12530.00	V	105	81	-55.97	9.07	-46.90	-21.9
15036.00	V	-	-	-54.57	8.77	-45.80	-20.8
17542.00	V	-	-	-49.66	7.64	-42.02	-17.0

Table 7-33. Radiated Spurious Data (Band 41 – Low Channel)

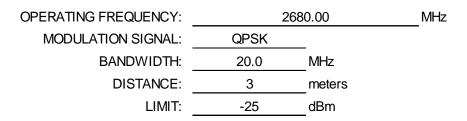
OPERATING FREQUENCY:	2593.00			
MODULATION SIGNAL:	QPSK	_		
BANDWIDTH:	20.0	MHz		
DISTANCE:	3	meters		
LIMIT:	-25	_dBm		

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5186.00	V	114	290	-61.00	11.14	-49.87	-24.9
7779.00	V	110	197	-48.17	12.33	-35.84	-10.8
10372.00	V	108	15	-52.33	9.62	-42.70	-17.7
12965.00	V	100	1	-48.36	8.99	-39.37	-14.4
15558.00	V	-	-	-53.42	8.32	-45.11	-20.1

Table 7-34. Radiated Spurious Data (Band 41 – Mid Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 204 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 304 of 434
© 2020 PCTEST	-			V 9.0 02/01/2019





Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5360.00	V	261	284	-67.99	11.49	-56.50	-31.5
8040.00	V	130	209	-51.64	12.03	-39.61	-14.6
10720.00	V	108	12	-49.70	9.32	-40.38	-15.4
13400.00	V	166	284	-53.73	8.77	-44.96	-20.0
16080.00	V	-	-	-52.82	8.00	-44.82	-19.8

Table 7-35. Radiated Spurious Data (Band 41 – High Channel)

OPERATING FREQUENCY: 2680.00 MHz MODULATION SIGNAL: QPSK BANDWIDTH: 20.0 MHz DISTANCE: 3 meters LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5360.00	V	152	63	-59.48	8.99	-50.48	-25.5
8040.00	V	-	-	-57.13	9.35	-47.77	-22.8
10720.00	V	-	-	-54.25	9.39	-44.85	-19.9

Table 7-36. Radiated Spurious Data with WCP (Band 41 – PC2 High Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 205 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 305 of 434
© 2020 PCTEST	-			V 9.0 02/01/2019



7.8 Frequency Stability / Temperature Variation

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-E-2016. 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 22, the frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ (± 2.5 ppm) of the center frequency. For Part 24, Part 27, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Procedure Used

ANSI/TIA-603-E-2016

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

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 206 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 306 of 434
© 2020 PCTEST	-			V 9.0 02/01/2019



Band 71 Frequency Stability Measurements

OPERATING FREQUENCY:	680,500,000	Hz
REFERENCE VOLTAGE:	4.19	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.19	- 30	680,499,802	-198	-0.0000291
100 %		- 20	680,500,061	61	0.0000090
100 %		- 10	680,500,205	205	0.0000301
100 %		0	680,499,976	-24	-0.0000035
100 %		+ 10	680,500,098	98	0.0000144
100 %		+ 20	680,499,751	-249	-0.0000366
100 %		+ 30	680,500,383	383	0.0000563
100 %		+ 40	680,500,327	327	0.0000481
100 %		+ 50	680,499,881	-119	-0.0000175
BATT. ENDPOINT	3.79	+ 20	680,499,803	-197	-0.0000289

Table 7-37. Frequency Stability Data (Band 71)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 307 of 434
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 30	
© 2020 PCTEST				V 9.0 02/01/2019





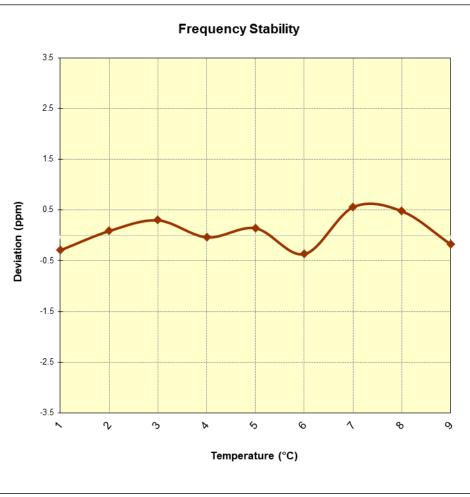


Figure 7-8. Frequency Stability Graph (Band 71)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 200 of 404
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 308 of 434
© 2020 PCTEST	•	•		V 9.0 02/01/2019



Band 12 Frequency Stability Measurements

OPERATING FREQUENCY:	707,500,000	Hz
REFERENCE VOLTAGE:	4.19	VDC

VOLTAGE (%)	POWER (VDC)	ТЕМР (°С)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.19	- 30	707,499,838	-162	-0.0000229
100 %		- 20	707,500,253	253	0.0000358
100 %		- 10	707,499,929	-71	-0.0000100
100 %		0	707,499,756	-244	-0.0000345
100 %		+ 10	707,499,988	-12	-0.0000017
100 %		+ 20	707,499,886	-114	-0.0000161
100 %		+ 30	707,500,237	237	0.0000335
100 %		+ 40	707,500,029	29	0.0000041
100 %		+ 50	707,500,079	79	0.0000112
BATT. ENDPOINT	3.79	+ 20	707,500,076	76	0.0000107

Table 7-38. Frequency Stability Data (Band 12)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 200 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 309 of 434
© 2020 PCTEST				V 9.0 02/01/2019





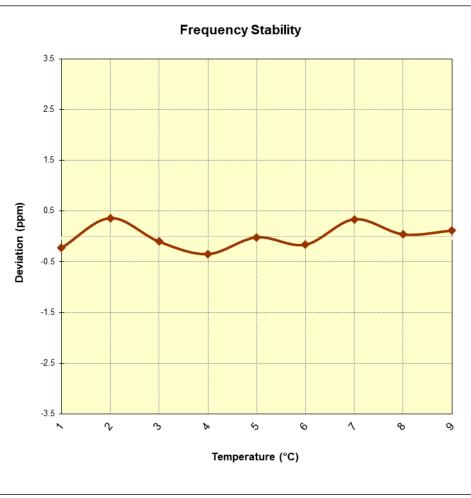


Figure 7-9. Frequency Stability Graph (Band 12)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 210 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 310 of 434
© 2020 PCTEST		·		V 9.0 02/01/2019



Band 13 Frequency Stability Measurements

OPERATING FREQUENCY:	782,000,000	_Hz
REFERENCE VOLTAGE:	4.19	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.19	- 30	782,000,117	117	0.0000150
100 %		- 20	781,999,879	-121	-0.0000155
100 %		- 10	782,000,260	260	0.0000332
100 %		0	782,000,066	66	0.0000084
100 %		+ 10	781,999,933	-67	-0.000086
100 %		+ 20	781,999,891	-109	-0.0000139
100 %		+ 30	782,000,186	186	0.0000238
100 %		+ 40	782,000,194	194	0.0000248
100 %		+ 50	782,000,221	221	0.0000283
BATT. ENDPOINT	3.79	+ 20	781,999,844	-156	-0.0000199

Table 7-39. Frequency Stability Data (Band 13)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 211 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 311 of 434
© 2020 PCTEST				V 9.0 02/01/2019





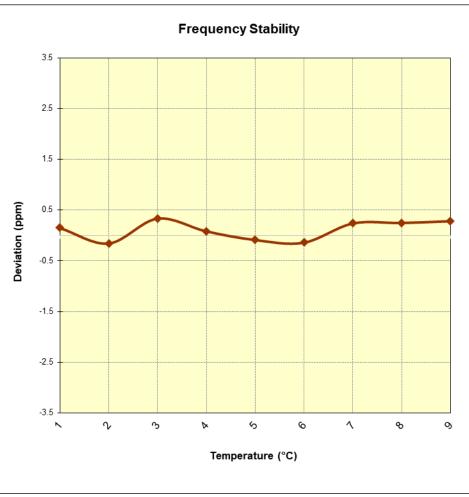


Figure 7-10. Frequency Stability Graph (Band 13)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 212 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 312 of 434
© 2020 PCTEST				V 9.0 02/01/2019



Band 5 Frequency Stability Measurements

OPERATING FREQUENCY:	831,500,000	_Hz
REFERENCE VOLTAGE:	4.19	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.19	- 30	831,499,835	-165	-0.0000198
100 %		- 20	831,499,589	-411	-0.0000494
100 %		- 10	831,499,919	-81	-0.0000097
100 %		0	831,499,997	-3	-0.0000004
100 %		+ 10	831,500,237	237	0.0000285
100 %		+ 20	831,500,168	168	0.0000202
100 %		+ 30	831,500,013	13	0.0000016
100 %		+ 40	831,499,727	-273	-0.0000328
100 %		+ 50	831,500,012	12	0.0000014
BATT. ENDPOINT	3.79	+ 20	831,499,915	-85	-0.0000102

Table 7-40. Frequency Stability Data (Band 5)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 212 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 313 of 434
© 2020 PCTEST				V 9.0 02/01/2019





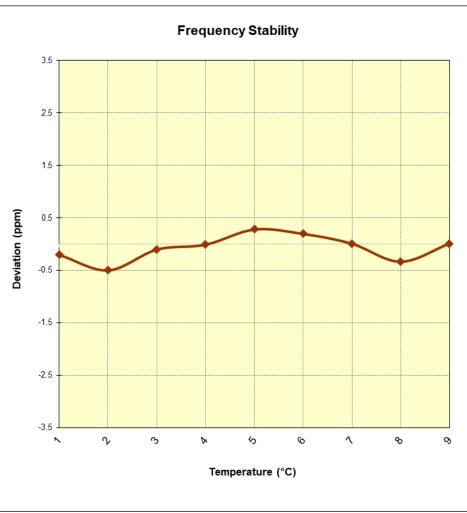


Figure 7-11. Frequency Stability Graph (Band 5)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	UNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 214 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 314 of 434
© 2020 PCTEST				V 9.0 02/01/2019



Band 66/4 Frequency Stability Measurements

OPERATING FRE	QUENCY:	1,7	45,000,000	Hz	
REFERENCE V	REFERENCE VOLTAGE:		4.19		
VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.19	- 30	1,745,000,285	285	0.0000163
100 %		- 20	1,745,000,085	85	0.0000049
100 %		- 10	1,744,999,829	-171	-0.0000098
100 %		0	1,745,000,156	156	0.000089
100 %		+ 10	1,745,000,121	121	0.0000069
100 %		+ 20	1,744,999,903	-97	-0.0000056
100 %		+ 30	1,745,000,023	23	0.0000013
100 %		+ 40	1,744,999,855	-145	-0.0000083
100 %		+ 50	1,744,999,934	-66	-0.000038
BATT. ENDPOINT	3.79	+ 20	1,745,000,001	1	0.0000001

Table 7-41. Frequency Stability Data (Band 66/4)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 215 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 315 of 434
© 2020 PCTEST			V 9.0 02/01/2019





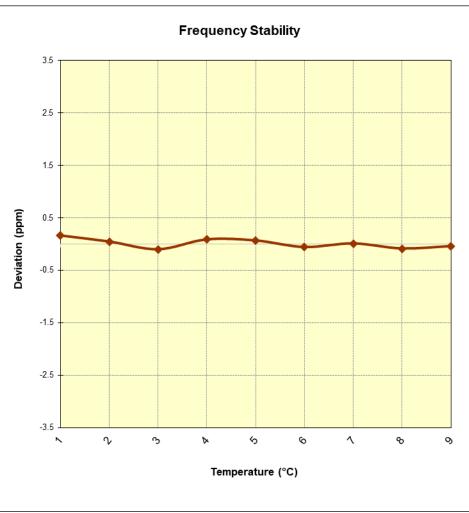


Figure 7-12. Frequency Stability Graph (Band 66/4)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 216 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 316 of 434
© 2020 PCTEST				V 9.0 02/01/2019



Band 25/2 Frequency Stability Measurements

OPERATING FREQUENCY:	1,882,500,000	Hz
REFERENCE VOLTAGE:	4.19	VDC

VOLTAGE (%)	POWER (VDC)	ТЕМР ([°] С)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.19	- 30	1,882,500,224	224	0.0000119
100 %		- 20	1,882,499,985	-15	-0.0000008
100 %		- 10	1,882,500,121	121	0.0000064
100 %		0	1,882,500,214	214	0.0000114
100 %		+ 10	1,882,499,914	-86	-0.0000046
100 %		+ 20	1,882,500,029	29	0.0000015
100 %		+ 30	1,882,500,011	11	0.000006
100 %		+ 40	1,882,500,299	299	0.0000159
100 %		+ 50	1,882,499,827	-173	-0.0000092
BATT. ENDPOINT	3.79	+ 20	1,882,500,183	183	0.0000097

Table 7-42. Frequency Stability Data (Band 25/2)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 217 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 317 of 434
© 2020 PCTEST	•			V 9.0 02/01/2019





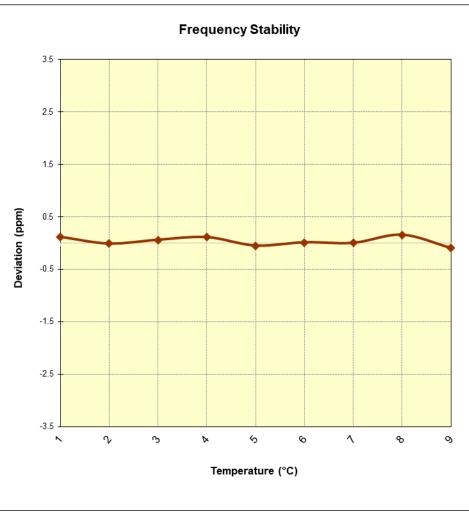


Figure 7-13. Frequency Stability Graph (Band 25/2)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 219 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 318 of 434
© 2020 PCTEST				V 9.0 02/01/2019



Band 30 Frequency Stability Measurements

OPERATING FREQUENCY:		2,310,000,000		Hz	
REFERENCE VOLTAGE:		4.19		VDC	
VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.19	- 30	2,310,000,028	28	0.0000012
100 %		- 20	2,310,000,005	5	0.0000002
100 %		- 10	2,310,000,011	11	0.0000005
100 %		0	2,309,999,894	-106	-0.0000046
100 %		+ 10	2,309,999,603	-397	-0.0000172
100 %		+ 20	2,309,999,942	-58	-0.0000025
100 %		+ 30	2,309,999,930	-70	-0.000030
100 %		+ 40	2,309,999,800	-200	-0.0000087
100 %		+ 50	2,309,999,685	-315	-0.0000136
BATT. ENDPOINT	3.79	+ 20	2,309,999,669	-331	-0.0000143

Table 7-43. Frequency Stability Data (Band 30)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 210 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 319 of 434
© 2020 PCTEST			V 9.0 02/01/2019





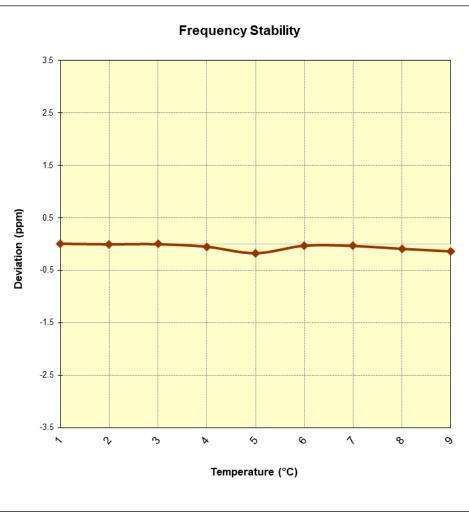


Figure 7-14. Frequency Stability Graph (Band 30)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	MSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 220 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 320 of 434
© 2020 PCTEST	•			V 9.0 02/01/2019



Band 7 Frequency Stability Measurements

OPERATING FREQUENCY:	2,535,000,000	Hz
REFERENCE VOLTAGE:	4.19	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.19	- 30	2,535,000,305	305	0.0000120
100 %		- 20	2,535,000,032	32	0.0000013
100 %		- 10	2,534,999,691	-309	-0.0000122
100 %		0	2,535,000,315	315	0.0000124
100 %		+ 10	2,535,000,008	8	0.0000003
100 %		+ 20	2,534,999,846	-154	-0.0000061
100 %		+ 30	2,534,999,923	-77	-0.0000030
100 %		+ 40	2,535,000,042	42	0.0000017
100 %		+ 50	2,534,999,896	-104	-0.0000041
BATT. ENDPOINT	3.79	+ 20	2,534,999,957	-43	-0.0000017

Table 7-44. Frequency Stability Data (Band 7)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 221 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 321 of 434
© 2020 PCTEST				V 9.0 02/01/2019





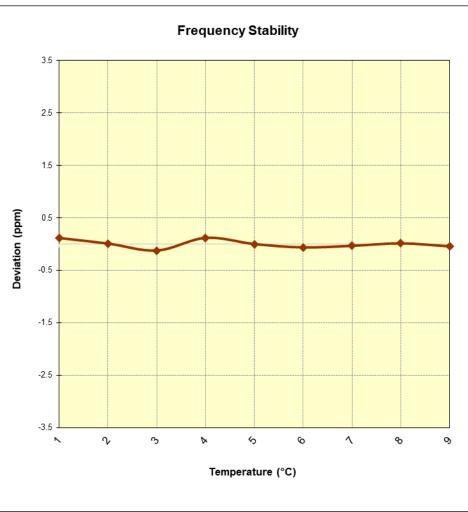


Figure 7-15. Frequency Stability Graph (Band 7)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	ASUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 200 of 404
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 322 of 434
© 2020 PCTEST				V 9.0 02/01/2019



Band 41 Frequency Stability Measurements

OPERATING FREQUENCY:		2,593,000,000		Hz	
REFERENCE VOLTAGE:		4.19		VDC	
VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.19	- 30	2,593,000,112	112	0.0000043
100 %		- 20	2,592,999,885	-115	-0.0000044
100 %		- 10	2,592,999,832	-168	-0.0000065
100 %		0	2,593,000,031	31	0.0000012
100 %		+ 10	2,592,999,792	-208	-0.0000080
100 %		+ 20	2,592,999,944	-56	-0.0000022
100 %		+ 30	2,592,999,872	-128	-0.0000049
100 %		+ 40	2,592,999,830	-170	-0.0000066
100 %		+ 50	2,592,999,882	-118	-0.0000046
BATT. ENDPOINT	3.79	+ 20	2,593,000,236	236	0.0000091

Table 7-45. Frequency Stability Data (Band 41)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 222 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 323 of 434
© 2020 PCTEST			V 9.0 02/01/2019





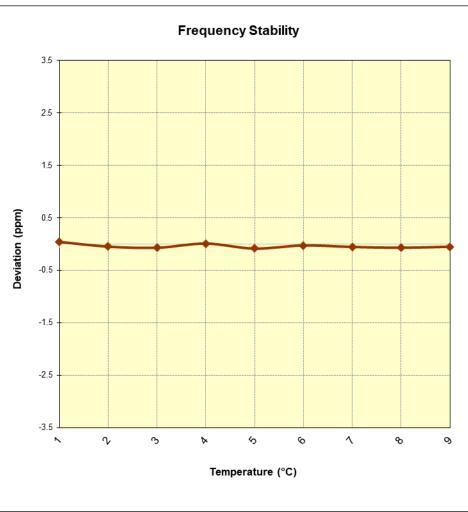


Figure 7-16. Frequency Stability Graph (Band 41)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	ASUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dega 224 of 424	
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 324 of 434	
© 2020 PCTEST				V 9.0 02/01/2019	



7.9 Sub 6GHz NR / EN-DC Test Results

Occupied Bandwidth

All SCS's and Waveforms (CP-OFDM vs 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.

NR Band n71

🦲 Keysight Spectrum A	nalyzer - Occ	cupied BW											
L <mark>XI</mark> RL RF	50 Ω	AC	CORREC			NSE:INT reg: 680.50				11:53:35 P	MNov 19, 2019	Trac	e/Detector
					Trig: Free	e Run	Avg Ho	ld:>1	100/100	Raulo Stu.	None		
			#IFGain	:Low	#Atten: 3	6 dB				Radio Dev	ice: BTS		
	ef 40.0	0 dBm											
Log 30.0													
20.0													Clear Write
10.0													
0.00			1					\mathbf{N}					
-10.0			7					X					Average
		A							10mm				Average
-20.0 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~ W~~~~~~							- 0.1 pq - 0	Jun Marine Contraction	mon		
-30.0													
-40.0													Max Hold
-50.0												_	
Center 680.5 M	٧Hz									Span	12.5 MHz		
Res BW 120 k	Hz				#VE	3W 390	kHz				ep 1 ms		Min Hold
	_					T - 4 - 1 F			24.2	-ID			
Occupied	Band					Total F	ower		34.3	dBm			
		4.4	1992	2 MH	Ζ								Detector
Transmit F	rea Err	or	4	.549 kł	7	% of O	BW Pov	Vor	00	.00 %		Auto	Peak▶ Man
		UI					BWFOV	VCI				Auto	man
x dB Bandy	vidth		5.	137 MH	IZ	x dB			-26.0	00 dB			
MSG									STATUS				

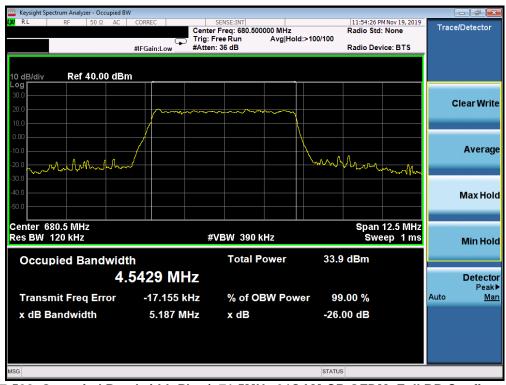
Plot 7-506. Occupied Bandwidth Plot (n71 5MHz QPSK-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Page 325 of 434	
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset			
© 2020 PCTEST				V 9.0 02/01/2019	



Keysight Spectrum Analyzer - Occupied BW							- 🗗 🗙
LX/ RL RF 50Ω AC		SENSE:INT		11:54:11 PM Radio Std:	Nov 19, 2019 None	Trace	/Detector
		Free Run Avg Hold n: 36 dB	d:>100/100	Radio Devi	ce: BTS		
10 dB/div Ref 40.00 dBm							
Log 30.0							
20.0						c	lear Write
10.0	harren						
0.00			ι				
			1				Average
-10.0	/						Average
-20.0 alverton m			mound	www.	Alm		
-30.0					~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
-40.0							Max Hold
-50.0							
Center 680.5 MHz				Span	12.5 MHz		
Res BW 120 kHz	#	VBW 390 kHz			ep 1ms		Min Hold
							Millinoid
Occupied Bandwidth)	Total Power	34.5	dBm			
4.4	903 MHz						Detector
				0.04		Auto	Peak►
Transmit Freq Error	-7.331 kHz	% of OBW Pow		00 %		Auto	<u>Man</u>
x dB Bandwidth	5.091 MHz	x dB	-26.0	0 dB			
MSG			STATUS				

Plot 7-507. Occupied Bandwidth Plot (n71 5MHz 16QAM-CP-OFDM - Full RB Configuration)



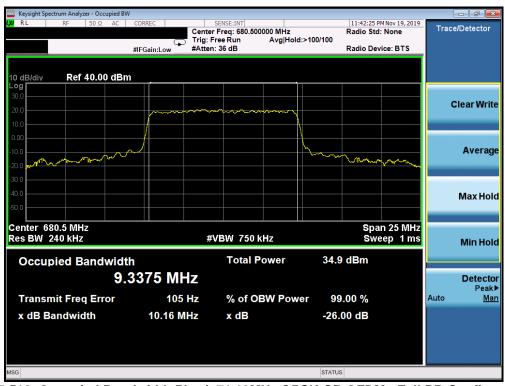
Plot 7-508. Occupied Bandwidth Plot (n71 5MHz 64QAM-CP-OFDM- Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Page 326 of 434	
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset			
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Keysight Spectrum Analyzer - Occupied BW						
LXX RL RF 50Ω AC		SENSE:INT Freq: 680.500000 MHz	11:54:45 F Radio Std	MNov 19, 2019	Trace/I	Detector
	Trig: F	ree Run Avg Hold:	>100/100			
	#IFGain:Low #Atten	:: 36 dB	Radio Dev	vice: BTS		
10 dB/div Ref 40.00 dBm	1					
Log 30.0						
					CI	ear Write
20.0	mm	man				
10.0						
0.00						
-10.0	-/					Average
-20.0			\			
-30.0	4		Martin Ma	marine		
-40.0						Aax Hold
-50.0					ľ	νιαχ ποια
-30.0						
Center 680.5 MHz				12.5 MHz		
Res BW 120 kHz	#	VBW 390 kHz	Sw	eep 1 ms		Min Hold
	-	Total Power	31.0 dBm			
Occupied Bandwidt		Total Power	31.0 dBm			
4.	5164 MHz					Detector
Transmit Frag Frag		% of OBW Bowe	~ 00 00 W		Auto	Peak▶ Man
Transmit Freq Error	-5.089 kHz	% of OBW Powe			Auto	ivian
x dB Bandwidth	5.153 MHz	x dB	-26.00 dB			
MSG			STATUS			
			514100			

Plot 7-509. Occupied Bandwidth Plot (n71 5MHz 256QAM-CP-OFDM - Full RB Configuration)



Plot 7-510. Occupied Bandwidth Plot (n71 10MHz QPSK-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Page 327 of 434	
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset			
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Keysight Spectrum Analyzer - Occupied BW	CORREC	SENSE:INT	11:42:41 P	4 Nov 19, 2019	
10 0012 110	Cente	r Freq: 680.500000 MHz	Radio Std:		Trace/Detector
		FreeRun Avg Hold: n:36 dB	>100/100 Radio Dev	ice: BTS	
	an ouncou				
I0 dB/div Ref 40.00 dBm					
og					
30.0					Clear Writ
20.0		mar and a second			Cical Min
10.0					
0.00					
10.0			have what have a start of the s		Averag
20.0 monoral the wood allow of the				- my	
30.0					
40.0					Max Ho
50.0					
Center 680.5 MHz			Spa	n 25 MHz	
Res BW 240 kHz	#	VBW 750 kHz		ep 1 ms	Min Ho
Occupied Bandwidth	n	Total Power	34.7 dBm		
	3543 MHz				Detect
0.0					Peal
Transmit Freq Error	-7.866 kHz	% of OBW Powe	r 99.00 %	A	uto <u>M</u>
x dB Bandwidth	10.20 MHz	x dB	-26.00 dB		
SG			STATUS		

Plot 7-511. Occupied Bandwidth Plot (n71 10MHz 16QAM-CP-OFDM - Full RB Configuration)



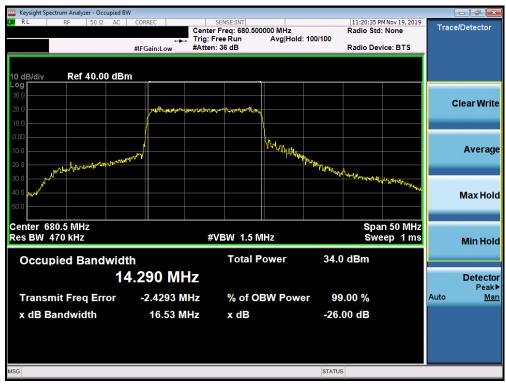
Plot 7-512. Occupied Bandwidth Plot (n71 10MHz 64QAM-CP-OFDM- Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Page 328 of 434	
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset			
© 2020 PCTEST	•	·		V 9.0 02/01/2019	



Keysight Spectrum Analyzer - Occupied		SENSE:INT	11:43:04 PM	Nov 19, 2019	
	Cente	r Freq: 680.500000 MHz	Radio Std:		ace/Detector
		FreeRun Avg Hold:> n:36 dB	100/100 Radio Devid	e: BTS	
	an ounicon				
I0 dB/div Ref 40.00 dB	3m				
-og					
30.0					Clear Writ
20.0		mont			
10.0		(
0.00					
10.0			man and a second		Avera
20.0				mon	
30.0					
40.0					Max Ho
50.0					
enter 680.5 MHz			Span	25 MHz	
Res BW 240 kHz	#	VBW 750 kHz	Swee	ep 1 ms	Min Ho
Occupied Bandwig	lth	Total Power	34.3 dBm		
	.3104 MHz				Detect Peal
Transmit Freq Error	-10.527 kHz	% of OBW Powe	r 99.00 %	Auto	
x dB Bandwidth	10.08 MHz	x dB	-26.00 dB		
G			STATUS		

Plot 7-513. Occupied Bandwidth Plot (n71 10MHz 256QAM-CP-OFDM - Full RB Configuration)



Plot 7-514. Occupied Bandwidth Plot (n71 15MHz QPSK-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		B 000 (404	
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 329 of 434	
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Plot 7-515. Occupied Bandwidth Plot (n71 15MHz 16QAM-CP-OFDM - Full RB Configuration)



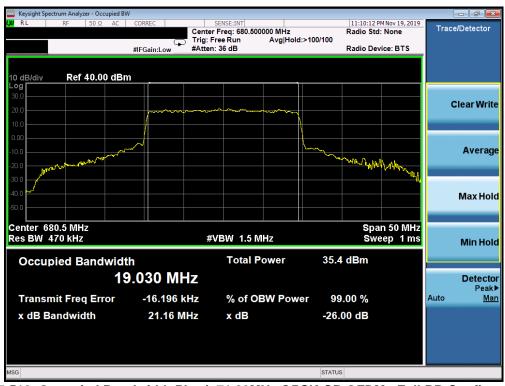
Plot 7-516. Occupied Bandwidth Plot (n71 15MHz 64QAM-CP-OFDM- Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dawa 000 cf 404	
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 330 of 434	
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🔤 Keysight Spectrum Analyzer - Occupied B	w						
LX/RL RF 50Ω AC	CORREC	SENSE:INT Center Freg: 680.500	000 MHz	11:21:13 P Radio Std	MNov 19, 2019	Trace	/Detector
	•••	Trig: Free Run	Avg Hold: 1	00/100			
	#IFGain:Low	#Atten: 36 dB		Radio Dev	ice: BTS		
10 dB/div Ref 40.00 dB	m						
30.0	بصطالكم						
20.0	ر جب الم					C	lear Write
10.0	monor	www.www.www.					
0.00							
-10.0	يحصوا إكم						Average
			Sheeth at h				
-20.0			"Munday Ay handay	h had a particular and the second			
-40.0	الكالك			A CONTRACT OF A CONTRACT	Merthall While when		
-40.0	ر حص الک						Max Hold
-50.0	رحصارک						
Center 680.5 MHz					n 50 MHz		
Res BW 470 kHz		#VBW 1.5 M	Hz	Swe	ep 1 ms		Min Hold
Occupied Bandwid	th	Total P	ower	30.5 dBm			
14	4.268 MH	Z					Detector Peak▶
Transmit Freq Error	-2.4295 MI	Hz % of O	3W Power	99.00 %		Auto	Man
x dB Bandwidth	15.31 MI	Hz x dB		-26.00 dB			
	13.31-1			-20.00 (18			
MSG				STATUS			

Plot 7-517. Occupied Bandwidth Plot (n71 15MHz 256QAM-CP-OFDM - Full RB Configuration)



Plot 7-518. Occupied Bandwidth Plot (n71 20MHz QPSK-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dama 004 of 404	
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 331 of 434	
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🚾 Keysight Spectrum Analyzer - Occupied BV 🗶 RL RF 50 Ω AC	CORREC	SENSE:INT	11:10:	35 PM Nov 19, 2019	
		r Freq: 680.500000 MHz Free Run Avg Hold		Std: None	Trace/Detector
		n: 36 dB		Device: BTS	
0 dB/div Ref 40.00 dBn	n				
.og 30.0					
20.0	- month	man and the second			Clear Wri
0.0	/				
0.0	~~		homphy la		Avera
20.0			Mar Marine	malilla	
30.0					
40.0 m					Max Ho
50.0					
enter 680.5 MHz				pan 50 MHz	
es BW 470 kHz	#	VBW 1.5 MHz	9	weep 1 ms	Min Ho
Occupied Bandwidt	h	Total Power	35.2 dBm		
	 0.015 MHz				Detect
					Peal
Transmit Freq Error	-22.728 kHz	% of OBW Powe	er 99.00 %		Auto <u>M</u>
x dB Bandwidth	20.88 MHz	x dB	-26.00 dB		
G			STATUS		

Plot 7-519. Occupied Bandwidth Plot (n71 20MHz 16QAM-CP-OFDM - Full RB Configuration)



Plot 7-520. Occupied Bandwidth Plot (n71 20MHz 64QAM-CP-OFDM- Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dama 000 at 404	
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 332 of 434	
0 2020 PCTEST V 9.0 02/01/2019					



🚾 Keysight Spectrum Analyzer - Occupied BV	1				
LXI RE 50Ω AC	CORREC	SENSE:INT r Freg: 680.500000 MHz		3 PM Nov 19, 2019 td: None	Trace/Detector
	Trig:		l:>100/100 Radio D	evice: BTS	
10 dB/div Ref 40.00 dBn	<u> </u>				
Log 30.0					
20.0					Clear Write
10.0		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			
0.00			l		
-10.0	and				Averag
-20.0			hall about and		
-30.0				- Charleson -	
-40.0					Max Hol
-50.0					
Center 680.5 MHz Res BW 470 kHz	#	VBW 1.5 MHz	Sp	an 50 MHz veep 1 ms	
					Min Hol
Occupied Bandwidt		Total Power	31.9 dBm		
19	.005 MHz				Detecto Peak
Transmit Freq Error	16.749 kHz	% of OBW Pow	er 99.00 %	,	Auto <u>Ma</u>
x dB Bandwidth	20.26 MHz	x dB	-26.00 dB		
ISG			STATUS		

Plot 7-521. Occupied Bandwidth Plot (n71 20MHz 256QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 222 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 333 of 434
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Plot 7-522. Occupied Bandwidth Plot (n66 5MHz QPSK-CP-OFDM - Full RB Configuration)



Plot 7-523. Occupied Bandwidth Plot (n66 5MHz 16QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 204 of 404
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 334 of 434
© 2020 PCTEST	•			V 9.0 02/01/2019





Plot 7-524. Occupied Bandwidth Plot (n66 5MHz 64QAM-CP-OFDM- Full RB Configuration)



Plot 7-525. Occupied Bandwidth Plot (n66 5MHz 256QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager		
Test Report S/N:	Test Dates:	EUT Type:	Dage 225 of 424		
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 335 of 434		
© 2020 PCTEST V 9.0 02/01/2019					



Keysight Spectrum Analyzer - Occupied BW						- • •
LXI RF 50Ω AC		SENSE:INT Freg: 1.745000000 GHz		0 PM Nov 16, 2019 td: None	Trace	/Detector
			d: 100/100	ta: None		
		: 36 dB		evice: BTS		
10 dB/div Ref 30.00 dBm						
Log						
20.0						lear Write
10.0	Man Man North Martin	worket all the Arman weller	· · · · · · · · · · · · · · · · · · ·		, c	lear write
0.00				_		
-10.0						
-20.0 -30.0 www.mm/mm/mm/mm/mm/mm/mm/mm/mm/mm/mm/mm/mm/	N/IN		hour and a gal a g			Average
-30.0 Wardowly Wetwert Wetwert			A the Alward	Know Myby		
-40.0						
-50.0						Max Hold
-60.0						
Center 1.745 GHz				OF MUL		
Res BW 240 kHz	#	VBW 750 kHz		oan 25 MHz weep 1 ms		
Res BW 240 KH2	#			weep rms		Min Hold
Occupied Bandwidt	h	Total Power	29.1 dBm			
9.,	3297 MHz					Detector Peak▶
Transmit Freq Error	128.24 kHz	% of OBW Pow	ver 99.00 %		Auto	Man
x dB Bandwidth	10.09 MHz	x dB	-26.00 dB			
			20100 41			
			· · ·			
MSG			STATUS			

Plot 7-526. Occupied Bandwidth Plot (n66 10MHz QPSK-CP-OFDM - Full RB Configuration)



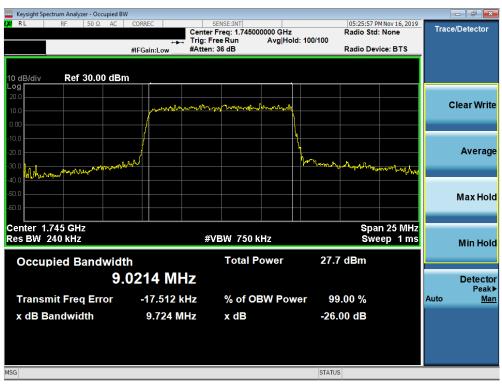
Plot 7-527. Occupied Bandwidth Plot (n66 10MHz 16QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	MEASUREMENT REPORT (CERTIFICATION)		SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		D 000 -f 404	
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 336 of 434	
0 2020 PCTEST V 9.0 02/01/2019					



🚾 Keysight Spectrum Analyzer - Occupied E	W				- đ	×
XV RL RF 50Ω AC	CORREC	SENSE:INT r Freq: 1.745000000 GHz	05:25:42 F Radio Sto	PM Nov 16, 2019 1: None	Trace/Detect	tor
		Free Run Avg Holo 1:36 dB	d: 100/100 Radio Dev	vice: BTS		
	#IFGain:Low #Atter	1. 36 dB	Radio De	VICE. BTS		
10 dB/div Ref 30.00 dB	m					
Log						
20.0	a the property of the second o	Entraction and May and my			ClearV	Vrite
10.0					olcul I	
0.00			\ \			
-10.0					Ave	r.200
-20.0	mr		War war and the second wind	M	AVE	raye
-30.0						
-50.0						
-60.0					Maxi	Hold
Center 1.745 GHz Res BW 240 kHz		VBW 750 kHz		an 25 MHz eep 1 ms		
	<i>"</i>		500	eep mis	Min I	Hold
Occupied Bandwid	th	Total Power	29.4 dBm			
8	.9617 MHz				Dete	ector
			00.00.00			eak
Transmit Freq Error	-37.210 kHz	% of OBW Pow			Auto	Mar
x dB Bandwidth	9.607 MHz	x dB	-26.00 dB			
MSG			STATUS			

Plot 7-528. Occupied Bandwidth Plot (n66 10MHz 64QAM-CP-OFDM- Full RB Configuration)



Plot 7-529. Occupied Bandwidth Plot (n66 10MHz 256QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 007 of 404
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 337 of 434
© 2020 PCTEST				V 9.0 02/01/2019



Keysight Spectrum Analyzer - Occupied BV	V					ð 💌
LX RL RF 50 Ω AC		ENSE:INT Freg: 1.745000000 GHz	04:51:52	PM Nov 16, 2019 1: None	Trace/Dete	ector
	HFGain:Low #Atten:		d: 100/100 Radio De	vice: BTS		
	#IFGain:Low #Atten.	60 GB	Radio De	vice. D13		
10 dB/div Ref 30.00 dBn	n					
Log						
20.0	www.marin	warrander darmar was			Clear	Write
10.0						
0.00						
-10.0	Lalin		White Ale		٨٧	erage
-20.0 -30.0			- washing the provortation of	Mr. Long .	AV	eraye
-30.0						
-50.0						
-60.0					Маз	x Hold
Center 1.745 GHz Res BW 360 kHz	#)(BW 1.1 MHz		37.5 MHz eep 1 ms		
Res DW JOO KIIZ	<i></i>			eep mis	Mir	n Hold
Occupied Bandwidt	h	Total Power	29.4 dBm			
14	.160 MHz				De	tector
			00.00.%		Auto	Peak►
Transmit Freq Error	67.527 kHz	% of OBW Pow			Auto	<u>Man</u>
x dB Bandwidth	15.03 MHz	x dB	-26.00 dB			
100			OTATIO			
MSG			STATUS			

Plot 7-530. Occupied Bandwidth Plot (n66 15MHz QPSK-CP-OFDM - Full RB Configuration)



Plot 7-531. Occupied Bandwidth Plot (n66 15MHz 16QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 220 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 338 of 434
© 2020 PCTEST		•		V 9.0 02/01/2019



Keysight Spectrum Analyzer - Occupied B						d ×
X/RL RF 50Ω AC	CORREC	SENSE:INT r Freg: 1.745000000 GHz	04:53:22 P Radio Std	MNov 16, 2019 : None	Trace/Det	tector
		Free Run Avg Hold: n: 36 dB	100/100 Radio Dev	ice: BTS		
	#IFGain:Low #Atter	1. 30 dB	Radio Dev	ICE. BT3		
10 dB/div Ref 30.00 dB	n					
20.0	ristanting	m. Warmer Mary Mary Change			Clea	r Write
10.0					Cicu	
0.00						
-10.0						
-20.0	ylw .	h _Λ	MAN Martin manufacture	Menalle	A	verage
CON NUMBER OF AN				a contraction of the		
-40.0						
-50.0					Ма	x Hole
-60.0					_	_
Center 1.745 GHz				37.5 MHz		
Res BW 360 kHz	#	VBW 1.1 MHz	Swe	ep 1 ms	Mi	in Hole
Occupied Bandwid	th	Total Power	29.7 dBm			
	3.452 MHz				-	
L.	5.452 IVINZ				D	etecto Peak
Transmit Freq Error	-303.25 kHz	% of OBW Powe	r 99.00 %		Auto	Mai
x dB Bandwidth	14.38 MHz	x dB	-26.00 dB			
ASG			STATUS			

Plot 7-532. Occupied Bandwidth Plot (n66 15MHz 64QAM-CP-OFDM- Full RB Configuration)



Plot 7-533. Occupied Bandwidth Plot (n66 15MHz 256QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 000 af 404
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 339 of 434
© 2020 PCTEST				V 9.0 02/01/2019



Keysight Spectrum Analyzer - Occupied BW					
IX RL RF 50Ω AC	🛶 Trig: I		Radio Sto d: 100/100		Trace/Detector
	#IFGain:Low #Atter	n: 36 dB	Radio De	vice: BTS	
10 dB/div Ref 40.00 dBm					
Log 30.0 20.0		Norman Constant Strate State and Sta			Clear Write
10.0 0.00 -10.0 -20.0	~~~		Winger with some my dagen	getrad for an and	Average
-30.0					Max Hold
Center 1.745 GHz Res BW 470 kHz	#	VBW 1.5 MHz		n 50 MHz eep 1 ms	Min Hold
Occupied Bandwidt	h	Total Power	34.6 dBm		
	.034 MHz				Detector Peak▶
Transmit Freq Error	18.618 kHz	% of OBW Pow	ver 99.00 %		Auto <u>Man</u>
x dB Bandwidth	20.46 MHz	x dB	-26.00 dB		
MSG			STATUS		

Plot 7-534. Occupied Bandwidth Plot (n66 20MHz QPSK-CP-OFDM - Full RB Configuration)



Plot 7-535. Occupied Bandwidth Plot (n66 20MHz 16QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dama 040 at 404	
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 340 of 434	
© 2020 PCTEST	•	·		V 9.0 02/01/2019	



🔤 Keysight Spectrum Analyzer - Occup	ied BW				
LX/ RL RF 50Ω		SENSE:INT Freg: 1.745000000 GHz	10:01:40 P Radio Std	M Nov 19, 2019	Trace/Detector
	Trig:	Free Run Avg Hol	d: 100/100		
	#IFGain:Low #Atte	n: 36 dB	Radio Dev	rice: BTS	
10 dB/div Ref 40.00	dBm				
Log 30.0					
					Clear Write
20.0	Maparatrananalyuna	house a constrained and the			
10.0					
0.00					
-10.0	, Apple Apple		Maletar Martine		Average
-20.0 Anthony Manager And Marger And Marger			· · · · · · · · · · · · · · · · · · ·	-All Marshall	
-30.0					
-40.0					Max Hold
-50.0					Max Hold
55.5					
Center 1.745 GHz				n 50 MHz	
Res BW 470 kHz	#	VBW 1.5 MHz	Swe	eep 1 ms	Min Hold
		Total Power	33.5 dBm		
Occupied Bandw		Total Fower	33.5 dBm		
	18.994 MHz				Detector
Tana and it Farmer France		0/ - f ODW D	00.00.0/		Peak▶ Auto Man
Transmit Freq Error	r 8.607 kHz	% of OBW Pow	ver 99.00 %		Auto <u>Man</u>
x dB Bandwidth	23.77 MHz	x dB	-26.00 dB		
MSG			STATUS		
mod			014100		

Plot 7-536. Occupied Bandwidth Plot (n66 20MHz 64QAM-CP-OFDM- Full RB Configuration)



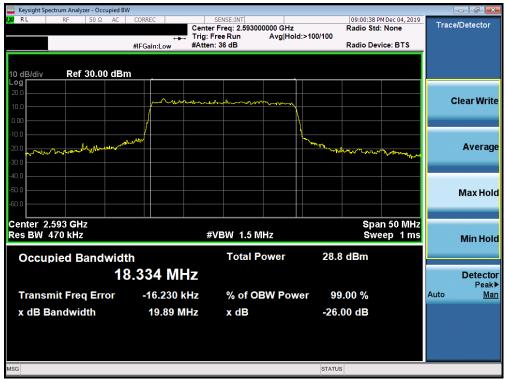
Plot 7-537. Occupied Bandwidth Plot (n66 20MHz 256QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		D 044 404
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 341 of 434
© 2020 PCTEST	·	•		V 9.0 02/01/2019



Keysight Spectrum Analyzer - Occupied BV	V				- • • •
ΙΧΙ R E RF 50 Ω AC		SENSE:INT er Freq: 2.593000000 GHz Free Run Avg Hold	Radio St	PM Dec 04, 2019 d: None	Trace/Detector
	#IFGain:Low #Atte	en: 36 dB		evice: BTS	
				le la	
10 dB/div Ref 30.00 dBn	n				
20.0					
10.0	m	an monte and			Clear Write
0.00					
-10.0					
-20.0 pmmlmmlmmlmm	. New		ha.		Average
-20.0 your Man Martin and Martin			- hourser	mon	Average
-30.0					
-40.0					
-50.0					Max Hold
-60.0					
Center 2.593 GHz			Sp	an 50 MHz	
Res BW 470 kHz		#VBW 1.5 MHz		/eep 1ms	Min Hold
		T-4-1 D	20.0 .10		
Occupied Bandwidt		Total Power	29.2 dBm		
18	3.292 MHz				Detector
Transmit Freq Error	-35.058 kHz	% of OBW Pow	er 99.00 %		Peak▶ Auto <u>Man</u>
x dB Bandwidth	19.88 MHz	x dB	-26.00 dB		
	19.00 MHZ	хuв	-20.00 aB		
MSG			STATUS		

Plot 7-538. Occupied Bandwidth Plot (n41 20MHz QPSK-CP-OFDM - Full RB Configuration)



Plot 7-539. Occupied Bandwidth Plot (n41 20MHz 16QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 342 of 434
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	e Handset	
© 2020 PCTEST	•	•		V 9 0 02/01/2019



Keysight Spectrum Analyzer - Occupied B\	N				
LXI RL RF 50Ω AC		SENSE:INT Freq: 2.593000000 GHz	09:00:47 Pt Radio Std:	MDec 04, 2019	Trace/Detector
		ree Run Avg Hold:		None	
	#IFGain:Low #Atten	: 36 dB	Radio Dev	ice: BTS	
10 dB/div Ref 30.00 dBr	n				
Log					
20.0					Clear Write
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and the second and the second se			man and and and and and and and and and a	Monorger	Average
-30.0					
-40.0					
-50.0					Max Hold
-60.0					
Center 2.593 GHz				n 50 MHz	
Res BW 470 kHz	#	VBW 1.5 MHz	Swe	ep 1 ms	Min Hold
Occupied Bandwid	h	Total Power	28.6 dBm		
			20.0 0.0		
18	3.301 MHz				Detector
Transmit Erag Emer	25 544 kH-	% of OBW Powe	r 99.00 %		Peak▶ Auto Man
Transmit Freq Error	-35.541 kHz	% of OBW Powe	99.00 %		Auto <u>Man</u>
x dB Bandwidth	20.40 MHz	x dB	-26.00 dB		
MSG			STATUS		

Plot 7-540. Occupied Bandwidth Plot (n41 20MHz 64QAM-CP-OFDM- Full RB Configuration)



Plot 7-541. Occupied Bandwidth Plot (n41 20MHz 256QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 242 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 343 of 434
© 2020 PCTEST	*	·		V 9.0 02/01/2019



Keysight Spectrum Analyzer - Occupied BV	V						d X
LX/ RL RF 50Ω DC	CORREC	SENSE:INT Center Freq: 2.59			25 PM Dec 04, 2019 Std: None	Trace/Dete	ector
	•••	Trig: Free Run	Avg Hold	: 100/100			
	#IFGain:Low	#Atten: 36 dB		Radio I	Device: BTS		
10 dB/div Ref 30.00 dBn	ņ			<u> </u>			
20.0							
10.0	Martellaladar	man man and some many some so	www.www.	here		Clear	Write
0.00							
-10.0							
						Av	erage
-20.0				Contract of the state	and the source of the second		
-40.0							
-50.0							
-60.0						Max	k Hold
-60.0							
Center 2.59300 GHz					ר 80.00 MHz		
Res BW 750 kHz		#VBW 31	VIHz	S	weep 1 ms	Mir	1 Hold
Occupied Bondwidt	i h	Tota	l Power	27.6 dBm			
Occupied Bandwidt			ITOWEI	21.0 0.011			
37	7.931 M⊦	IZ					tector Peak▶
Transmit Freq Error	-113.62 k	Hz % of	OBW Powe	er 99.00 %		Auto	Man
x dB Bandwidth	39.92 M	Hz x dB		-26.00 dB			
MSG				STATUS			

Plot 7-542. Occupied Bandwidth Plot (n41 40MHz QPSK-CP-OFDM - Full RB Configuration)



Plot 7-543. Occupied Bandwidth Plot (n41 40MHz 16QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 244 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 344 of 434
© 2020 PCTEST	*	·		V 9.0 02/01/2019



Keysight Spectrum Analy RL RF	50 Ω		CORREC	1		SENSE:INT		ALIG	N AUTO	06:55:53	M Dec 04, 2019	_	
10	50 32		CONTRACT		Cente	r Freq: 2.593	000000 GHz	ALIO	AUTO	Radio Sto		Trac	e/Detector
				•		Free Run	Avg Ho	ld: 100	/100				
			#IFGain:	Low	#Atte	n: 36 dB				Radio De	VICE: BIS		
	30.00	dBm											
og													
20.0			_										Clear Writ
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80.0											a national for even the first		
0.0													
50.0													Max Ho
60.0													
enter 2.59300 (2H7									Snan S	30.00 MHz		
les BW 750 kHz					#	чв₩ зм	Hz				eep 1 ms		Min Ho
											_		WIITHO
Occupied E	andw	/idth				Total	Power		27.2	2 dBm			
		37	.853	M	7								Detect
		57	.000										Peal
Transmit Fre	q Erro	r	-132	2.32	Hz	% of C	BW Pov	ver	99	0.00 %		Auto	M
x dB Bandwi	dth		20	.87 M	U -	x dB			26	00 dB			
	uun		39	.07 10	IN2	хub			-20.	UU UB			
G									STATU	5			

Plot 7-544. Occupied Bandwidth Plot (n41 40MHz 64QAM-CP-OFDM- Full RB Configuration)



Plot 7-545. Occupied Bandwidth Plot (n41 40MHz 256QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dama 045 at 404	
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 345 of 434	
© 2020 PCTEST	*	·		V 9.0 02/01/2019	



Keysight Spectrum Analyzer - Occupied BV RL RF 50 Ω DC	CORREC		ALIGN AUTO 07:0	L:54 PM Dec 04, 2019	
		er Freq: 2.593000000 GHz Free Run Avg Hold		Std: None	Trace/Detector
		n: 36 dB		Device: BTS	
0 dB/div Ref 30.00 dBn	ņ				
. 0 g 20.0					
10.0	Low Man mary with any are	Hall Month hard to the same			Clear Wri
).00					
0.0					
20.0 Langer and Mr.					Avera
30.0				+wyberthe antrastrat	
10.0					
50.0					
50.0					Max Ho
enter 2.59300 GHz				an 100.0 MHz	
tes BW 910 kHz	#	¢VBW 3 MHz		Sweep 1 ms	Min Ho
Occupied Bandwidt	h	Total Power	28.3 dBn	n .	
	.580 MHz				Detect
					Pea
Transmit Freq Error	-192.39 kHz	% of OBW Powe	er 99.00 %	6	Auto <u>M</u>
x dB Bandwidth	50.01 MHz	x dB	-26.00 di	3	
SG			STATUS		

Plot 7-546. Occupied Bandwidth Plot (n41 50MHz QPSK-CP-OFDM - Full RB Configuration)



Plot 7-547. Occupied Bandwidth Plot (n41 50MHz 16QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 246 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 346 of 434
© 2020 PCTEST	*	·		V 9.0 02/01/2019



Keysight Spectrum Analyze	50 Ω DC	CORREC		SENSE:INT	Δ	LIGN AUTO	07:01:31	PM Dec 04, 2019		
14	0012 00	001020	Center	Freq: 2.5930	00000 GHz		Radio Sto		Trace	e/Detector
				ree Run : 36 dB	Avg Hold:	100/100	D	vice: BTS		
		#IFGain:Low	#Atten	: 36 GB			Radio De	VICE: BIS		
	30.00 dE	m								
og 20.0										
										lear Wri
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30.0							1	- The date of the second		
0.0										
50.0										
										Max Ho
60.0									_	
enter 2.59300 GI	17						Span	100.0 MHz		
les BW 910 kHz			#	VBW ЗМН	lz		Sweep 1 ms			Min Ho
										WIITHO
Occupied Ba	andwid	lth		Total F	ower	27.	3 dBm			
	Δ	7.522 N	IH7							Detect
		1.022 N	11 12							Peal
Transmit Freq	Error	-169.42	2 kHz	% of O	BW Powe	r 9	9.00 %		Auto	M
x dB Bandwid	th	49.91	MHz	x dB		-26	.00 dB			
	ui	43.31	111112	A ub		-20	.00 ub			
G						STATU	JS			

Plot 7-548. Occupied Bandwidth Plot (n41 50MHz 64QAM-CP-OFDM- Full RB Configuration)



Plot 7-549. Occupied Bandwidth Plot (n41 50MHz 256QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 247 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 347 of 434
© 2020 PCTEST		· · · · · · · · · · · · · · · · · · ·	V 9.0 02/01/2019



Keysight Spectrum Ana KIRL RF	50 Ω		CORREC		SENSE:INT		ALIGN	AUTO C)7:04:16 PI	M Dec 04, 2019	-	
					r Freq: 2.5930				adio Std:	None	Trac	e/Detector
			#IFGain:Lov		Free Run 1:36 dB	Avg Hold	1: 100/		adio Dev	ice: BTS		
			#IFGaIII.LOV	#/ 11101	1. 00 dB			T.	adio Bet	100. 010		
_												
0 dB/div Re	f 30.00	dBn	i –									
20.0												
10.0			A work work the	~^}**	en loron bill had an							Clear Wri
3.00		/						۱ ۱				
10.0		- {										
	when the star	ma										Avera
20.0								Stall Search Station	And a staff water	man fill many report		Avera
30.0												
40.0												
50.0												Max Ho
60.0												
	<u></u>											
Center 2.59300 · Res BW 1.1 MH				#	∨в жизм	47				20.0 MHz ep 1 ms		
	2			"		12			OWC	сртпэ		Min Ho
Occupied I	Band	widt	h		Total	Power		28.2 d	Bm			
			7.981	ᄱᆸᆂ								Detect
		51	.0011									Peal
Transmit Fre	q Erro	or	-166.′	8 kHz	% of C	BW Pow	er	99.00	0 %		Auto	M
x dB Bandwi	idth		60 5	6 MHz	x dB			-26.00	dB			
	aun		00.0					-20.00	u D			
SG								STATUS				

Plot 7-550. Occupied Bandwidth Plot (n41 60MHz QPSK-CP-OFDM - Full RB Configuration)



Plot 7-551. Occupied Bandwidth Plot (n41 60MHz 16QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Page 348 of 434	
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset			
© 2020 PCTEST	-			V 9.0 02/01/2019	



🤤 Keysight Spectrum Analyzer - Occupied E	W					_	
LXI RL RF 50Ω DC	CORREC	SENSE:INT Center Freq: 2.59300		Radio Std:	MDec 04, 2019 None	Tracel	Detector
	#IFGain:Low	 Trig: Free Run #Atten: 36 dB 	Avg Hold: 100/1	00 Radio Dev	ice: BTS		
10 dB/div Ref 30.00 dB	m						
20.0							
10.0	And you replay the second	~~~	er where the property second			C	ear Write
0.00	[]						
-10.0							
-20.0 pagety the talk when the provident the				howerhourpelleuror	Channa Antonia		Average
-30.0							
-40.0							
-50.0							Max Hold
-60.0							
Center 2.59300 GHz			· · · ·		20.0 MHz		
Res BW 1.1 MHz		#VBW_3 MH	2	Swe	ep 1 ms		Min Hold
Occupied Bandwid	th	Total P	ower	27.5 dBm			
	7.921 MH	7					Detector
						A	Peak▶
Transmit Freq Error	-239.27 k		BW Power	99.00 %		Auto	Man
x dB Bandwidth	60.82 M	Hz x dB		-26.00 dB			
MSG				STATUS			
mod			•	016100			

Plot 7-552. Occupied Bandwidth Plot (n41 60MHz 64QAM-CP-OFDM- Full RB Configuration)



Plot 7-553. Occupied Bandwidth Plot (n41 60MHz 256QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dama 040 af 404	
1M1911010179-03.A3L	10/11/19 - 01/09/20	19 – 01/09/20 Portable Handset		Page 349 of 434
© 2020 PCTEST		·		V 9.0 02/01/2019



Keysight Spectrum Analyzer - Occupied B RL RF 50 Ω DC	CORREC	SENSE:INT	ALIGN AUTO 07:13	14 PM Dec 04, 2019	
		r Freq: 2.593000000 GHz		Std: None	Trace/Detector
		FreeRun Avg Hold: n:36 dB		Device: BTS	
	#IT Galli.EOW (Itel				
0 dB/div Ref 30.00 dB	<u>m</u>				
20.0					
10.0	mound	What and the second of the sec	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		Clear Wri
0.00			<u> </u>		
10.0 Mary man				where the set of the set	
20.0			And a state of the	althe A. Ca. on the Juncture	Avera
30.0					
40.0					
50.0					
60.0					Max Ho
30.0					
Center 2.59300 GHz				n 160.0 MHz	
Res BW 1.5 MHz	#	VBW 8 MHz	4	Sweep 1ms	Min Ho
Occupied Bandwid	th	Total Power	28.6 dBm		
			20.0 4811		
	8.389 MHz				Detect Peal
Transmit Freq Error	-514.96 kHz	% of OBW Powe	er 99.00 %		Auto <u>M</u>
x dB Bandwidth	157.6 MHz	x dB	-26.00 dB		
	137.0 MHZ	XUD	-20.00 UB		
			1		
SG			STATUS		

Plot 7-554. Occupied Bandwidth Plot (n41 80MHz QPSK-CP-OFDM - Full RB Configuration)



Plot 7-555. Occupied Bandwidth Plot (n41 80MHz 16QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager		
Test Report S/N:	Test Dates:	EUT Type:	JT Type:			
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 350 of 434		
© 2020 PCTEST				V 9.0 02/01/2019		



Keysight Spectrum Analyze	50 Ω DC	CORREC		SENSE:INT		ALIGN AUT	07:12:52 P	M Dec 04, 2019	_	
				r Freq: 2.5930			Radio Std	: None	Trac	e/Detector
				Free Run	Avg Hold:	: 100/100	Dealle Dea	des DTC		
		#IFGain:Low	#Atter	n: 36 dB			Radio Dev	VICE: BIS		
	30.00 dE	3m								
.og										
20.0										Clear Wri
0.0			lolongoleonoutgens	han mar and the second s	haderley and ble	wan				
).00		<u> </u>				<u> </u>				
0.0 mileserentetetetetetetetetetetetetetetetetete	and the state of the	/					and the second second second			
20.0							**************************************			Avera
30.0										
0.0										
50.0										Max Ho
50.0										
enter 2.59300 GI	Hz							60.0 MHz		
tes BW 1.5 MHz			#	VBW 8 MI	HZ		SW	eep 1 ms		Min Ho
Occupied Ba				Total	Power	29	.2 dBm			
Occupied Ba				Total	OWCI	20				
	7	8.475	ЛНz							Detect
Terrer and it France		5747	5 J.J.	0/ -50	DW D		00.00.0/		Auto	Peal M
Transmit Freq	Error	-574.7	O KHZ	% of C	BW Powe	er s	99.00 %		Auto	<u>IVI</u>
x dB Bandwid	th	160.0) MHz	x dB		-2	6.00 dB			
G						STA	TUS			

Plot 7-556. Occupied Bandwidth Plot (n41 80MHz 64QAM-CP-OFDM- Full RB Configuration)



Plot 7-557. Occupied Bandwidth Plot (n41 80MHz 256QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dama 054 af 404	
1M1911010179-03.A3L	10/11/19 - 01/09/20	- 01/09/20 Portable Handset		Page 351 of 434
© 2020 PCTEST				V 9.0 02/01/2019



Keysight Spectrum A RL RF	50 Ω		CORRE	C		SENSE:INT		ALIGN	AUTO	07:14:35 P	M Dec 04, 2019		
						er Freq: 2.5930				Radio Std		Trac	e/Detector
						Free Run en: 36 dB	Avg Hold	d: 100/		Radio Dev	ine: BTS		
			#IFGa	in:Low	#Atte	en: 36 dB				Radio Dev	ice: DIS		
	ef 30.00) dBr	n										
og 20.0													
			Maria	moundary	montom	mar una horas							Clear Wri
0.0							and a second state of the	a halo da a	1				
		/											
0.0	Innormal	hal							Lun,	Manul	mall marshipson		
0.0										- 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4	. W. Carley		Avera
30.0													
0.0													
io.o													
an n													Max Ho
50.0													
enter 2.59300) GHz									Span 1	80.0 MHz		
les BW 1.8 M	Hz					#VBW 8 M	Hz				eep 1 ms		Min Ho
Occupied	Band	widt	th			Total	Power		28.8	dBm			
		87	7.86	7 M	Hz_								Detect
													Pea
Transmit F	req Erro	or	-1	35.19	kHz	% of C	BW Pow	er	99.0	00 %		Auto	<u>M</u>
x dB Bandy	vidth		9	98.35	ИНz	x dB			-26.0	0 dB			
G									STATUS				

Plot 7-558. Occupied Bandwidth Plot (n41 90MHz QPSK-CP-OFDM - Full RB Configuration)



Plot 7-559. Occupied Bandwidth Plot (n41 90MHz 16QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager		
Test Report S/N:	Test Dates:	EUT Type:	UT Type:			
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 352 of 434		
© 2020 PCTEST				V 9.0 02/01/2019		



Keysight Spectrum Analyze	50 Ω DC	CORREC	SEN	SE:INT		ALIGN	AUTO 07:14	4:58 PM Dec 04, 20	9	
				eq: 2.593000		4000		Std: None	Ira	ce/Detector
		⊶ #IFGain:Low	Trig: Free #Atten: 36		Avg Hold:	100/1		Device: BTS		
		an dumeon _							T	
a IDI II DALI	0.00 -10-									
0 dB/div Ref 3	30.00 dBr	<u>n</u>								
20.0										
0.0		and man and manual	and the second	واساله معالمه مر	-					Clear Wri
0.0										
0.0 may water and the	www.www.						handergannes	a ware a have been a served	ь.	Avera
										Avera
30.0										
10.0										
50.0										Max Ho
60.0										
enter 2,59300 GI							Dr.(
es BW 1.8 MHz	12		#VB	W 8 MHz				an 180.0 MH Sweep 1 m		
			<i>"</i> • =					oncep in		Min Ho
Occupied Ba	Indwidt	th		Total Po	wer		27.9 dBn	n		
		7.811 M	47							Detect
	0		112							Peal
Transmit Freq	Error	-81.655	kHz	% of OB	W Powe	er	99.00 %	6	Auto	M
x dB Bandwid	th	92.28		x dB			-26.00 di	•		
		52.20	VINZ	X UB			-20.00 ui	5		
G							STATUS			

Plot 7-560. Occupied Bandwidth Plot (n41 90MHz 64QAM-CP-OFDM- Full RB Configuration)



Plot 7-561. Occupied Bandwidth Plot (n41 90MHz 256QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager		
Test Report S/N:	Test Dates:	EUT Type:	ЈТ Туре:			
1M1911010179-03.A3L	10/11/19 - 01/09/20	09/20 Portable Handset		Page 353 of 434		
© 2020 PCTEST	•			V 9.0 02/01/2019		



Keysight Spectrum Analyzer - Occupied RL RF 50 Ω DC	BW CORREC	SENSE:INT	ALIGN AUTO	07:19:05 PM Dec 04,	2019
		Center Freq: 2.593000	000 GHz	Radio Std: None	Trace/Detector
	+→ #IFGain:Low	Trig: Free Run #Atten: 36 dB	Avg Hold: 100/100	Radio Device: BT	s
	#IT Gallit.EOW				
0 dB/div Ref 30.00 dE	sm				
20.0					
0.0	And all a stand and a stand and a stand of the stand of t	material and a second	- martine and		Clear Wri
1.00	<i>\</i>		N		
0.0					
0.0 What make a start way			here	monupation brick and the second states	Avera
80.0					
10.0					
0.0					
60.0					Max Ho
DU.U					
enter 2.5930 GHz				Span 200.0 N	ЛНZ
es BW 1.8 MHz		#VBW 8 MHz		Sweep 1	ms Min Ho
		Total Po		6 dBm	
Occupied Bandwid			wer zo.	o abm	
9	7.651 MH	Z			Detect
Transmit Freq Error	-309.30 kl	Hz % of OR	W Power 9	9.00 %	Peal Auto M
x dB Bandwidth	102.4 MI	Hz xdB	-26	.00 dB	
			STATU		

Plot 7-562. Occupied Bandwidth Plot (n41 100MHz QPSK-CP-OFDM - Full RB Configuration)



Plot 7-563. Occupied Bandwidth Plot (n41 100MHz 16QAM-CP-OFDM - Full RB Configuration)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager		
Test Report S/N:	Test Dates:	EUT Type:	ИТ Туре:			
1M1911010179-03.A3L	10/11/19 - 01/09/20	9/20 Portable Handset		Page 354 of 434		
© 2020 PCTEST	•			V 9.0 02/01/2019		



Keysight Spectrum Analyzer - Occupied B							d Z
X RL RF 50Ω DC	CORREC Center	SENSE:INT er Freq: 2.593000000 GHz	ALIGN AUTO	Radio Std:	1Dec 04, 2019 None	Trace/Det	tector
		Free Run Avg Hol n: 36 dB	d: 100/100	Radio Dev	Inc. BTS		
	#IFGain:Low #Atte	1. 30 00		Radio Dev	CE. DT3		
10 dB/div Ref 30.00 dBr	<u>p</u>						
20.0						Clas	r Writ
10.0	and apply for the stand of the second	males for the property when the open	Part and a			Clea	rvvri
0.00							
				a			
20.0 unvhannentellentellentellentellentellentellentellentellentellentellentellentellentellentellentellentellente			YL-mkr.	- Constant Index No	Wwwwwwwww	A	vera
80.0							
40.0							
50.0						Ма	ax Ho
60.0							
enter 2.5930 GHz				Snan 2	00.0 MHz		
Res BW 1.8 MHz	#	≠VBW 8 MHz			ep 1 ms	M	in Ho
					<u> </u>		inno
Occupied Bandwid		Total Power	28.2	2 dBm			
9	7.672 MHz					D	etect
Transmit Freq Error	-193.82 kHz	% of OBW Pow	or 00	0.00 %		Auto	Peal
						, lato	<u> </u>
x dB Bandwidth	102.6 MHz	x dB	-26.	00 dB			
SG			STATU	5			

Plot 7-564. Occupied Bandwidth Plot (n41 100MHz 64QAM-CP-OFDM- Full RB Configuration)



Plot 7-565. Occupied Bandwidth Plot (n41 100MHz 256QAM-CP-OFDM - Full RB Configuration)

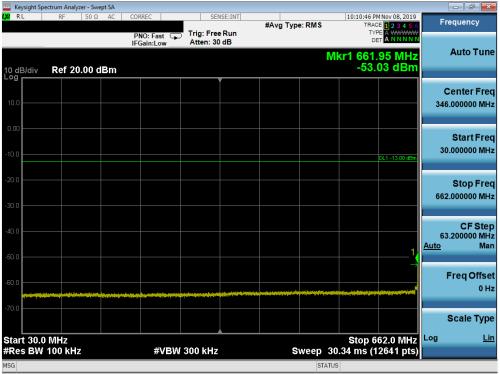
FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 255 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 355 of 434
© 2020 PCTEST		·		V 9.0 02/01/2019



Spurious and Harmonic Emissions at the Antenna Terminal

All SCS's and Waveforms (CP-OFDM vs 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.

NR Band n71



Plot 7-566. Conducted Spurious Plot (n71 - 20MHz DFT-s-OFDM-QPSK - RB Size 1, RB Offset 1 - Low Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 050 af 404
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 356 of 434
© 2020 PCTEST	•	•		V 9.0 02/01/2019



	ectrum Analyzer - Swep										
LX/ RL	RF 50 Ω	AC (CORREC		ISE:INT	#Avg Typ	e: RMS	TRAC	E 1 2 3 4 5 6	Fr	equency
			PNO: Fast ↔ IFGain:Low	. Trig: Free Atten: 30				TYF			
10 dB/div	Ref 20.00 di	Bm					N	lkr1 888. -61.8	85 MHz 99 dBm		Auto Tune
10.0											Center Freq
0.00										040	
-10.0										698	Start Freq 8.000000 MHz
-20.0									DL1 -13.00 dBm		
-30.0										1.00	Stop Freq 0000000 GHz
-40.0											CF Step
										30 <u>Auto</u>	0.200000 MHz Man
-50.0						1					Freq Offset
-60.0	1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -	Vicelal Annual Cont	datarlasitende tringet saterne	a-ji-a- jadynd, 3- ./ jidy/d a			a) Margantas (C. Vicense es	upper al generation of the second	an a		0 Hz
-70.0											Scale Type
Start 0.69								Stop 1.0		Log	<u>Lin</u>
#Res BW	100 kHz		#VBW	300 kHz			Sweep	14.50 ms (6041 pts)		
MSG							STATU	JS			

Plot 7-567. Conducted Spurious Plot (n71 - 20MHz DFT-s-OFDM-QPSK - RB Size 1, RB Offset 1 - Low Channel)



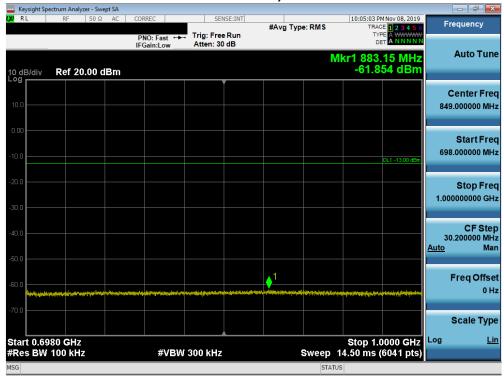
Plot 7-568. Conducted Spurious Plot (n71 - 20MHz DFT-s-OFDM-QPSK - RB Size 1, RB Offset 1 - Low Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 257 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 357 of 434
© 2020 PCTEST	*	·		V 9.0 02/01/2019



	ectrum Analyzer -										
LXI RL	RF 5	OΩ AC	CORREC		SENSE:INT	#Avg Typ	e: RMS	TRA	M Nov 08, 2019 CE 1 2 3 4 5 6	Fr	equency
			PNO: Fas IFGain:Lo		Free Run 1: 30 dB						
10 dB/div	Ref 20.0	0 dBm						Mkr1 661 -35.	.60 MHz 96 dBm		Auto Tune
					Ĭ						Center Freq
10.0										346	.500000 MHz
0.00											Start Freq
-10.0									DL1 -13.00 dBm	30	.000000 MHz
-20.0											Stop Freq
-30.0									1	663	.000000 MHz
-40.0									<u> </u>		CF Step
-50.0										Auto	.300000 MHz Man
											Freq Offset
-60.0	والمراجع المحمول والمراجع	Ali in a prime and				ing and the product of the second		14110 - a 17212 (pro 1400-14)			0 Hz
-70.0											Scale Type
Start 30.0	MHz							Stop	63.0 MHz		Lin
#Res BW			#\	/BW 300 k	Hz	s	Sweep	30.38 ms (1	12661 pts)		
MSG							STA	TUS			

Plot 7-569. Conducted Spurious Plot (n71 - 20MHz DFT-s-OFDM-QPSK - RB Size 1, RB Offset 1 - Mid Channel)



Plot 7-570. Conducted Spurious Plot (n71 - 20MHz DFT-s-OFDM-QPSK - RB Size 1, RB Offset 1 - Mid Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 259 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 358 of 434
© 2020 PCTEST		·		V 9.0 02/01/2019



	ctrum Analyzer - Sw										
LXU RL	RF 50 Ω	AC CO	DRREC	SEN	ISE:INT	#Avg Typ	e: RMS		M Nov 08, 2019	Fr	equency
10 dB/div	Ref 20.00	l	PNO: Fast ↔ FGain:Low	Trig: Free #Atten: 3			N	۳۲ ۵ /kr1 9.99			Auto Tune
10.0											Center Freq 0000000 GHz
-10.0									DL1 -13.00 dBm	1.00	Start Freq 0000000 GHz
-20.0										10.00	Stop Freq 0000000 GHz
-40.0			~~~ ~~						1	900 <u>Auto</u>	CF Step 0.000000 MHz Man
-60.0											Freq Offset 0 Hz
-70.0								Ston-44			Scale Type Lin
Start 1.00 #Res BW			#VBW	3.0 MHz		s	weep	500 10 Stop 10	.000 GHz 8001 pts)	L~9	<u></u>
MSG							STA		<u> </u>		

Plot 7-571. Conducted Spurious Plot (n71 - 20MHz DFT-s-OFDM-QPSK - RB Size 1, RB Offset 1 - Mid Channel)



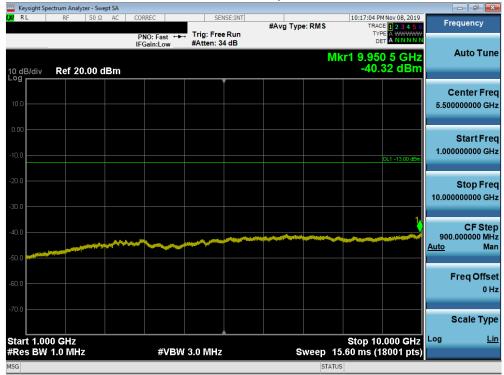
Plot 7-572. Conducted Spurious Plot (n71 - 20MHz DFT-s-OFDM-QPSK - RB Size 1, RB Offset 1 - High Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 250 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 359 of 434
© 2020 PCTEST	*	·		V 9.0 02/01/2019



	ectrum Ana												
X/RL	RF	50 <u>Ω</u>	AC	CORREC			NSE:INT	#Avg Typ	e:RMS	TRA	M Nov 08, 2019 CE 1 2 3 4 5 6	Fi	equency
				PNO: F IFGain:l	ast ↔ .ow	, Trig: Free #Atten: 3				D			
10 dB/div Log	Ref 2	0.00 dl	Bm						Ν	/kr1 704 -39.5	.75 MHz 33 dBm		Auto Tune
												(Center Freq
10.0												849).500000 MHz
0.00													Start Fred
-10.0											DL1 -13.00 dBm	699	0.000000 MHz
-20.0													_
-20.0												1.00	Stop Freq 0000000 GHz
-30.0													
-40.0												30	CF Step 0.100000 MHz
-50.0												<u>Auto</u>	Man
			Sec. March and some		a dia kata ara	ala ya ku wa na asala ini ini a			and the second second	Advantue III	a da firmu jerda ar		Freq Offset
-60.0					_								0 Hz
-70.0													Scale Type
Start 0.69										Stop 4			Lin
start 0.69 #Res BW				3	¢VB₩	300 kHz			Sweep	14.45 ms	0000 GHz (6021 pts)	209	<u></u>
MSG									STAT	US			

Plot 7-573. Conducted Spurious Plot (n71 - 20MHz DFT-s-OFDM-QPSK - RB Size 1, RB Offset 1 - High Channel)



Plot 7-574. Conducted Spurious Plot (n71 - 20MHz DFT-s-OFDM-QPSK - RB Size 1, RB Offset 1 - High Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 200 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 360 of 434
© 2020 PCTEST		·		V 9.0 02/01/2019



NR Band n66

	Spectrum Anal													
RL	RF	50 Ω	AC	CORRE	C ∣ Fast ↔	, Trig: Fre		#Avç	Type: RMS	S	TRA	PM Nov 09, 2019 CE 1 2 3 4 5 6 PE A WWWWWW ET A NNNNN		requency
0 dB/div	Ref 2	0.00 di	Bm		n:Low	Atten: 3	0 dB			Mkr	1 1.70	9 0 GHz 21 dBm		Auto Tun
.og														Center Fre 9.500000 MH
0.00												DL1 -13.00 dBm	3	Start Fre 0.000000 MH
20.0 30.0 													1.70	Stop Fre
40.0										ten sent y el lui	مى بىلى ئۇرىيى		16 <u>Auto</u>	CF Ste 7.900000 M M
60.0	ander der Allen an ander an				a) cércénet rinsiph									Freq Offs 0
70.0)300 GHz										Stop 1	7090 GHz	Log	Scale Tyj L
	V 1.0 MH				#VBW	/ 3.0 MHz	z		Swee	ep 2.2	239 ms	(3359 pts)		
SG										STATUS				

Plot 7-575. Conducted Spurious Plot (n66 - 20MHz DFT-s-OFDM-QPSK - RB Size 1, RB Offset 1 - Low Channel)



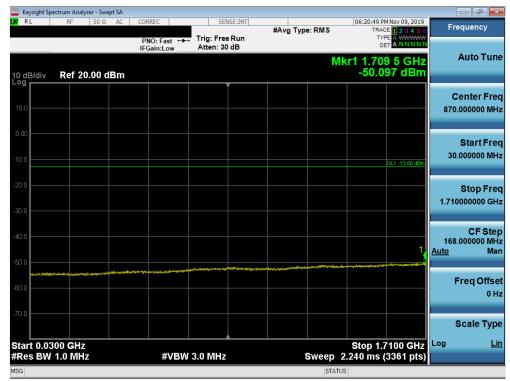
Plot 7-576. Conducted Spurious Plot (n66 - 20MHz DFT-s-OFDM-QPSK - RB Size 1, RB Offset 1 - Low Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 201 of 424
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset	Page 361 of 434
© 2020 PCTEST	•		V 9.0 02/01/2019





Plot 7-577. Conducted Spurious Plot (n66 - 20MHz DFT-s-OFDM-QPSK - RB Size 1, RB Offset 1 - Low Channel)



Plot 7-578. Conducted Spurious Plot (n66 - 20MHz DFT-s-OFDM-QPSK - RB Size 1, RB Offset 1 - Mid Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 202 of 424	
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 362 of 434	
© 2020 PCTEST	-			V 9.0 02/01/2019	



	ectrum Analyzer											×
LXI RL	RF 5	0Ω AC	COR	REC	SEI	ISE:INT	#Avg Typ	e: RMS		M Nov 09, 2019	F	requency
			PN IFG	IO: Fast ↔ ain:Low	. Trig: Free Atten: 30				TY			
10 dB/div Log	Ref 20.0	0 dBm	1					MI	kr1 9.98 -44.	1 5 GHz 58 dBm		Auto Tune
10.0												Center Freq 0000000 GHz
-10.0										DL1 -13.00 dBm	1.78	Start Freq
-20.0											10.00	Stop Freq 0000000 GHz
-40.0										1	82: <u>Auto</u>	CF Step 2.000000 MHz Man
-50.0												Freq Offset
-70.0												0 Hz
												Scale Type
Start 1.78 #Res BW				#VBW	3.0 MHz		s	weep 14	Stop 10 1.25 ms (1	.000 GHz 6441 pts)	Log	<u>Lin</u>
MSG								STATU	S			

Plot 7-579. Conducted Spurious Plot (n66 - 20MHz DFT-s-OFDM-QPSK - RB Size 1, RB Offset 1 - Mid Channel)



Plot 7-580. Conducted Spurious Plot (n66 - 20MHz DFT-s-OFDM-QPSK - RB Size 1, RB Offset 1 - Mid Channel)

FCC ID: A3LSMG986W	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 202 of 424	
1M1911010179-03.A3L	10/11/19 - 01/09/20	Portable Handset		Page 363 of 434	
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