

PCTEST ENGINEERING LABORATORY, INC.

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MEASUREMENT REPORT FCC Part 22, 24, & 27 LTE

Applicant Name:

Samsung Electronics Co., Ltd. 129, Samsung-ro, Yeongtong-gu, Suwon-si Gyeonggi-do, 16677, Korea

Date of Testing: 12/1 - 12/29/15, 1/26/16 Test Site/Location: PCTEST Lab., Columbia, MD, USA **Test Report Serial No.:** 0Y1512012035-R1.A3L

EIRP

FCC ID :

APPLICANT:

A3LSMG930US

SAMSUNG ELECTRONICS CO., LTD.

Application Type: FCC Classification: FCC Rule Part(s): Test Procedure(s): EUT Type: Model(s): **Test Device Serial No.:** Certification PCS Licensed Transmitter Held to Ear (PCE) §2; §22; §24; §27 ANSI/TIA-603-C-2004, KDB 971168 D01 v02r02, KDB 648474 D03 v01r04 Portable Handset SM-G930V, SM-G930A, SM-G930P, SM-G930T, SM-G930R4 identical prototype [S/N: C3D41, C3D2E, C3D8C, C436C, C3DC0, C3DAD]

Emission (Mde) Emission (MHz) Modulation Designator (MHz) Emission Designator (MHz) Modulation Designator (MHz) Emission Designator (MHz) Emission Designator (MHz) Modulation Designator (MHz) Emission Designator (MHz) Emission Designator (MBM) Designator (MBM) Designator (MBM) <th< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th>Mode</th><th>Tx Frequency (MHz)</th><th>Emission Designator</th><th>Modulation</th><th>Max. Pow er (W)</th><th>Max. Pow er (dBm)</th></th<>							Mode	Tx Frequency (MHz)	Emission Designator	Modulation	Max. Pow er (W)	Max. Pow er (dBm)
ITE Band 4 1711.5 - 178.5 2M72C7D OPSK 0.196 22.92 ITE Band 4 1711.5 - 178.5 2M7207D IGOAM 0.198 22.92 ITE Band 4 1711.5 - 178.5 2M7207D IGOAM 0.198 22.92 ITE Band 4 1711.5 - 178.5 2M4507D OPSK 0.208 23.19 ITE Band 12 699.7 - 715.3 1M11G7D QPSK 0.003 18.62 ITE Band 4 1715 - 1780 BM9907D OPSK 0.120 20.72 ITE Band 12 699.7 - 715.3 1M11G7D QPSK 0.003 18.62 ITE Band 4 1715 - 1747.5 13M907D IGOAM 0.148 21.70 ITE Band 12 700.5 - 714.5 2M7207D IGOAM 0.066 18.91 ITE Band 225 1860.7 - 1914.3 1M1107D IGOAM 0.148 21.70 ITE Band 12 701.5 - 713.5 4M4507D QPSK 0.073 18.85 ITE Band 225 1851.5 - 1913.5 2M72C7D QPSK 0.148 21.70 ITE Band 12 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>LTE Band 4</td><td>1710.7 - 1754.3</td><td>1M11G7D</td><td>QPSK</td><td>0.226</td><td>23.54</td></td<>							LTE Band 4	1710.7 - 1754.3	1M11G7D	QPSK	0.226	23.54
Mode Tx Frequency (MHz) Emission Designator Modulation ERP ILTE Band 1 1712.5 1725.5 4M49W7D 16QAM 0.198 22.96 LTE Band 12 699.7 715.3 1M1107D QPSK 0.073 18.62 1175 1775.5 4M49W7D 16QAM 0.174 22.40 LTE Band 12 699.7 715.3 1M1107D QPSK 0.073 18.62 1175 1777.5 13M507D QPSK 0.126 22.33 LTE Band 12 699.7 715.3 1M12W7D 16QAM 0.066 18.19 118 Band 4 1712.5 1747.5 13M507D OPSK 0.138 21.70 LTE Band 12 700.5 714.5 2M71G7D QPSK 0.077 18.65 118 Band 225 1850.7 1914.3 1M1107D OPSK 0.148 21.70 LTE Band 12 701.5 713.5 4M3007D QPSK 0.077 18.73 LTE Band 225 1851.5 1913.5 2M71G7D QPSK 0.144 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>LTE Band 4</td> <td>1710.7 - 1754.3</td> <td>1M11W7D</td> <td>16QAM</td> <td>0.177</td> <td>22.48</td>							LTE Band 4	1710.7 - 1754.3	1M11W7D	16QAM	0.177	22.48
Mode Tx Frequency (MHz) Emission Designator ERP Modulation Modulation Mex. Power (dBm) Max. Power (dBm) ITE Band 4 1712.5 1752.5 4M4307D 0PSK 0.208 23.394 LTE Band 12 699.7 -715.3 1M11G7D QPSK 0.073 18.62 LTE Band 4 1715.1730 1BM0G7D QPSK 0.208 23.33 LTE Band 12 699.7 -715.3 1M11G7D QPSK 0.073 18.62 LTE Band 4 1717.5 1747.5 1BM0G7D OPSK 0.120 20.79 LTE Band 12 700.5 -714.5 2M71G7D OPSK 0.073 18.65 LTE Band 4 1720 1745 1BM0G7D OPSK 0.138 21.43 LTE Band 12 700.5 -714.5 2M71G7D OPSK 0.073 18.65 LTE Band 225 1850.7 1914.3 1M1107D OPSK 0.188 21.62 LTE Band 12 701.5 -713.5 4M50G7D QPSK 0.076 18.73 L							LTE Band 4					
Mode Tx Frequency (MHz) Emission Designator Modulation Modulation ERP LTE Band 4 1712.5-1782.5 4M49W7D 16QAM 0.214 22.99 LTE Band 12 699.7 - 715.3 1M11G7D QPSK 0.073 18.62 LTE Band 12 699.7 - 715.3 1M11W7D 16QAM 0.076 18.62 LTE Band 12 700.5 - 714.5 2M7107D QPSK 0.073 18.62 LTE Band 12 700.5 - 714.5 2M7107D QPSK 0.073 18.65 LTE Band 12 700.5 - 714.5 2M7107D QPSK 0.0773 18.65 LTE Band 12 701.5 - 713.5 4M50G7D QPSK 0.077 18.86 LTE Band 12 701.5 - 714.5 2M72W7D 16QAM 0.076 18.73 LTE Band 12 701.5 - 713.5 4M50G7D QPSK 0.077 18.88 LTE Band 225 1851.5 1913.5 2M7207D QPSK 0.184 20.79 LTE Band 12 704 - 711 8M9807D QPSK 0.077 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>												
Mode Tx Frequency (MHz) Emission Designator Modulation Max. Power (dBm) LTE Band 4 1715 - 1750 8M99C7D OPSK 0.248 23.94 LTE Band 12 699.7 - 715.3 1M11G7D QPSK 0.073 18.62 LTE Band 4 1717.5 - 1747.5 13M507D 0PSK 0.216 23.33 LTE Band 12 699.7 - 715.3 1M11G7D QPSK 0.073 18.62 LTE Band 4 172.5 - 1747.5 13M507D 0PSK 0.118 20.72 LTE Band 12 700.5 - 714.5 2M71G7D QPSK 0.073 18.65 LTE Band 225 1800.7 - 1914.3 1M1107D QPSK 0.152 21.82 LTE Band 12 701.5 - 713.5 2M70G7D QPSK 0.073 18.85 LTE Band 225 1805.7 - 1914.3 1M1107D QPSK 0.182 20.73 LTE Band 12 701.5 - 713.5 4MM39W7D 16QAM 0.075 18.73 LTE Band 225 1851.5 - 1913.5 2M71W7D 16QAM 0.181 22.75 LTE Band 12 704 - 711 8M9												
Mode Tx Frequency (MHz) Emission Designator Modulation Max. Power (W) Max. Power (dBm) Lite Band 4 1715-1730 8M99G/D Cursk 0.248 2.3,94 LTE Band 12 699.7 - 715.3 1M11G7D QPSK 0.073 18.62 Lite Band 4 1715-1730 8M99G/D QPSK 0.120 20.79 LTE Band 12 699.7 - 715.3 1M11Q7D QPSK 0.073 18.62 Lite Band 4 1717-1745 18M0G7D QPSK 0.139 21.43 LTE Band 12 700.5 - 714.5 2M71G7D QPSK 0.073 18.62 Lite Band 225 1850.7 - 1914.3 1M11G7D QPSK 0.148 21.70 LTE Band 12 701.5 - 713.5 4M50G7D QPSK 0.0077 18.88 Lite Band 225 1851.5 - 1913.5 2M7207D QPSK 0.118 20.73 LTE Band 12 704 - 711 8M96G7D QPSK 0.033 21.23 Lite Band 225 1852.5 - 1912.5 4M50W7D 16QAM 0.162 21.78 LTE Band 13 779.5 -					E	DD						
Mode (MHz) Designator Modulation Max. Pow er (W) Max. Pow er (dBm) Into 1 no 1			Emission									
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LTE Local Lite Lite <th< td=""><td></td><td>(MHZ)</td><td>Designator</td><td></td><td>(W)</td><td>(dBm)</td><td></td><td></td><td></td><td></td><td></td><td></td></th<>		(MHZ)	Designator		(W)	(dBm)						
LTE Band 12 G99.7 - 715.3 IMT2W7D I6QAM 0.066 18.19 LTE Band 12 700.5 - 714.5 2M71G7D QPSK 0.073 18.65 LTE Band 12 700.5 - 714.5 2M71G7D QPSK 0.073 18.65 LTE Band 12 700.5 - 714.5 2M71G7D QPSK 0.073 18.65 LTE Band 12 700.5 - 714.5 2M72W7D 16QAM 0.068 18.30 LTE Band 12 701.5 - 713.5 4M50G7D QPSK 0.077 18.86 LTE Band 12 701.5 - 713.5 4M49W7D 16QAM 0.075 18.73 LTE Band 12 704 - 711 8M98G7D QPSK 0.084 19.24 LTE Band 13 779.5 - 784.5 4M52G7D QPSK 0.133 21.23 LTE Band 13 779.5 - 784.5 4M52G7D QPSK 0.133 21.23 LTE Band 13 779.5 - 784.5 4M50W7D 16QAM 0.172 20.67 LTE Band 13 778.5 - 784.5 4M50W7D 16QAM 0.172						. ,						
LTE Band 12 COS - 714.5 IMT2W7D IbQAM 0.006 10.19 LTE Band 12 700.5 - 714.5 2M7107D QPSK 0.073 18.63 ITE Band 2/25 1850.7 - 1914.3 1M11W7D 16QAM 0.123 20.88 LTE Band 12 700.5 - 714.5 2M72W7D 16QAM 0.068 18.30 ITE Band 2/25 1851.5 - 1913.5 2M7207D QPSK 0.142 21.62 LTE Band 12 701.5 - 713.5 4M49W7D 16QAM 0.075 18.73 ITE Band 2/25 1851.5 - 1913.5 2M71W7D 16QAM 0.118 20.73 LTE Band 12 704 - 711 8M9607D QPSK 0.084 19.24 ItE Band 2/25 1852.5 - 1912.5 4M5007D QPSK 0.188 22.75 LTE Band 13 779.5 - 784.5 4M507D QPSK 0.133 21.23 ItE Band 2/25 1857.5 - 1907.5 13M507D QPSK 0.162 21.99 LTE Band 13 779.5 - 784.5 4M507D QPSK 0.133 21.23 ItE Band 2/25 1857.5 - 1907.5	LTE Band 12	699.7 - 715.3	1M11G7D	QPSK	0.073	18.62						
LIE Band 12 700.5 - 714.5 2M/1G/D QPSK 0.073 18.65 ITE Band 225 1850.7 - 1914.3 1M11W7D 16QAM 0.123 20.88 LTE Band 12 700.5 - 714.5 2M72W7D 16QAM 0.068 18.30 ITE Band 2/25 1851.5 - 1913.5 2M72G7D QPSK 0.144 21.60 LTE Band 12 701.5 - 713.5 4M450G7D QPSK 0.077 18.88 ITE Band 2/25 1851.5 - 1913.5 2M71W7D 16QAM 0.114 20.73 LTE Band 12 704 - 711 8M98G7D QPSK 0.084 19.24 ITE Band 2/25 1852.5 - 1912.5 4M50G7D QPSK 0.188 22.76 LTE Band 13 779.5 - 784.5 4M52G7D QPSK 0.133 21.23 ITE Band 2/25 1855 - 1910 8M96W7D 16QAM 0.151 21.89 LTE Band 13 779.5 - 784.5 4M50W7D 16QAM 0.117 20.67 ITE Band 2/25 1857.5 - 1907.5 13M50W7D 16QAM 0.151 21.78 LTE Band 13 782	LTE Band 12	699.7 - 715.3	1M12W7D	16QAM	0.066	18.19						
LTE Band 12 700.5 - 714.5 2M72W7D 16QAM 0.068 18.30 LTE Band 225 180.7 - 1914.3 1/1/1/17D 16QAM 0.123 207.05 LTE Band 12 701.5 - 713.5 4M/50G7D QPSK 0.077 18.88 LTE Band 2/25 1851.5 - 1913.5 2M7207D QPSK 0.144 21.60 LTE Band 12 701.5 - 713.5 4M49W7D 16QAM 0.075 18.73 LTE Band 2/25 1852.5 - 1912.5 4M50G7D QPSK 0.084 19.24 LTE Band 2/25 1852.5 - 1912.5 4M50G7D QPSK 0.188 22.75 LTE Band 12 704 - 711 8M9807D QPSK 0.133 21.23 LTE Band 2/25 1855.5 - 1910.5 13M507D QPSK 0.158 21.99 LTE Band 13 779.5 - 784.5 4M50W7D 16QAM 0.117 20.67 LTE Band 125	LTE Band 12	700.5 - 714.5	2M71G7D	QPSK	0.073	18.65						
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LTE Band 12 701.5 - 713.5 4M49W7D 16QAM 0.075 18.73 LTE Band 2/25 1852.5 - 1912.5 4M50G7D QPSK 0.188 22.75 LTE Band 12 704 - 711 8M98G7D QPSK 0.084 19.24 LTE Band 2/25 1852.5 - 1912.5 4M5007D QPSK 0.151 21.80 LTE Band 12 704 - 711 8M95W7D 16QAM 0.076 18.80 LTE Band 2/25 1855 - 1910 8M96W7D 16QAM 0.136 21.39 LTE Band 13 779.5 - 784.5 4M50W7D 16QAM 0.117 20.67 LTE Band 2/25 1857.5 - 1907.5 13M5G7D QPSK 0.188 22.77 LTE Band 13 782 8M97G7D QPSK 0.140 21.45 LTE Band 2/25 1860 - 1905 18M007D QPSK 0.161 22.07 LTE Band 5/26 824.7 - 848.3 1M12G7D QPSK 0.129 21.09 LTE Band 30 2307.5 - 2312.5 4M5007D QPSK 0.114 20.63 LTE Band 5/26 825.5 - 847.5 2M72G7D </td <td></td>												
LTE Band 12 704 - 711 8M98G7D QPSK 0.084 19.24 LTE Band 2/25 1852.5 1912.5 4M50W7D 16QAM 0.151 21.80 LTE Band 12 704 - 711 8M98G7D QPSK 0.084 19.24 LTE Band 2/25 1855.5 1910 8M9807D QPSK 0.158 21.99 LTE Band 13 779.5 784.5 4M50W7D 16QAM 0.176 18.80 LTE Band 2/25 1855.5 1900 8M9807D QPSK 0.158 21.99 LTE Band 13 779.5 784.5 4M50W7D 16QAM 0.117 20.67 LTE Band 13 782 8M96W7D 16QAM 0.122 20.87 LTE Band 2/25 1860 - 1905 18M007D QPSK 0.161 22.07 LTE Band 5/26 824.7 848.3 1M12G7D QPSK 0.129 21.09 LTE Band 30 2307.5<-2312.5												
LTE Band 12 704 - 711 8M95W7D 16QAM 0.076 18.24 LTE Band 12 704 - 711 8M95W7D 16QAM 0.076 18.84 LTE Band 13 779.5 - 784.5 4M52G7D QPSK 0.133 21.23 LTE Band 13 779.5 - 784.5 4M50W7D 16QAM 0.117 20.67 LTE Band 13 779.5 - 784.5 4M50W7D 16QAM 0.117 20.67 LTE Band 13 779.5 - 784.5 4M50W7D 16QAM 0.117 20.67 LTE Band 13 782 8M97G7D QPSK 0.122 20.7 1EB Band 2/25 1860 - 1905 18M0G7D QPSK 0.24 23.10 LTE Band 5/26 824.7 - 848.3 1M12G7D QPSK 0.129 21.09 1EB Band 30 2307.5 - 2312.5 4M50G7D QPSK 0.144 21.68 LTE Band 5/26 825.5 - 847.5 2M72G7D QPSK 0.121 20.87 1EB Band 30 2307.5 - 2312.5 4M50G7D QPSK 0.123 20.90 1EB Band 30 2310												
LTE Band 12 7/04 - 7 H1 8/M9SW7D 16QAM 0.076 18.00 LTE Band 13 779.5 - 784.5 4M52G7D QPSK 0.133 21.23 LTE Band 13 779.5 - 784.5 4M52G7D QPSK 0.133 21.23 LTE Band 13 779.5 - 784.5 4M50W7D 16QAM 0.117 20.67 LTE Band 13 782 8M97G7D QPSK 0.140 21.45 LTE Band 13 782 8M96W7D 16QAM 0.112 20.87 LTE Band 5/26 824.7 - 848.3 1M12G7D QPSK 0.129 21.09 LTE Band 5/26 824.7 - 848.3 1M11W7D 16QAM 0.103 20.12 LTE Band 5/26 824.7 - 848.3 1M11W7D 16QAM 0.103 20.12 LTE Band 5/26 825.5 - 847.5 2M72G7D QPSK 0.129 21.09 LTE Band 5/26 825.5 - 847.5 2M72G7D QPSK 0.121 20.84 LTE Band 5/26 825.5 - 847.5 2M72G7D QPSK 0.121 20.84												
LTE Band 13 779.5 - 784.5 4M/52G7D QPSK 0.133 21.23 LTE Band 2/25 1857.5 - 1907.5 13M6G7D QPSK 0.189 22.77 LTE Band 13 779.5 - 784.5 4M/50W7D 16QAM 0.117 20.67 LTE Band 2/25 1857.5 - 1907.5 13M6G7D QPSK 0.151 21.78 LTE Band 13 782 8M96W7D 16QAM 0.140 21.45 LTE Band 2/25 1860 - 1905 18M007D QPSK 0.161 22.07 LTE Band 5/26 824.7 - 848.3 1M12G7D QPSK 0.122 20.87 LTE Band 30 2307.5 - 2312.5 4M/5007D QPSK 0.144 21.58 LTE Band 5/26 824.7 - 848.3 1M11W7D 16QAM 0.103 20.12 LTE Band 30 2307.5 - 2312.5 4M/5007D QPSK 0.144 21.58 LTE Band 5/26 825.5 - 847.5 2M72G7D QPSK 0.121 20.84 LTE Band 30 2310 9M01W7D 16QAM 0.098 19.91 LTE Band 41 2498.5 - 2687.5 4M5007D <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>												
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LTE Band 13 782 8M96W7D 16QAM 0.122 20.87 LTE Band 5/26 824.7 - 848.3 1M12G7D QPSK 0.129 21.09 LTE Band 5/26 824.7 - 848.3 1M12G7D QPSK 0.129 21.09 LTE Band 5/26 824.7 - 848.3 1M11W7D 16QAM 0.103 20.12 LTE Band 5/26 825.5 - 847.5 2M72G7D QPSK 0.121 20.84 LTE Band 5/26 825.5 - 847.5 2M72W7D 16QAM 0.098 19.91 LTE Band 5/26 826.5 - 847.5 2M72W7D 16QAM 0.098 19.91 LTE Band 5/26 826.5 - 846.5 4M53G7D QPSK 0.081 19.09 LTE Band 5/26 826.5 - 846.5 4M53G7D QPSK 0.081 19.09 LTE Band 5/26 826.5 - 846.5 4M50G7D QPSK 0.120 20.81 LTE Band 5/26 826.5 - 846.5 4M50G7D QPSK 0.081 19.09 LTE Band 5/26 829 - 844 8M99G7D QPSK 0.120	LTE Band 13	779.5 - 784.5	4M50W7D	16QAM	0.117	20.67						
LTE Band 5/26 824.7 848.3 IMI2GTD QPSK 0.129 21.09 LTE Band 5/26 824.7 848.3 IMI1W7D 16QAM 0.103 20.12 LTE Band 5/26 824.7 848.3 IM11W7D 16QAM 0.103 20.12 LTE Band 5/26 824.7 848.3 IM11W7D 16QAM 0.103 20.12 LTE Band 5/26 825.5 847.5 2M72G7D QPSK 0.121 20.84 LTE Band 5/26 825.5 847.5 2M72W7D 16QAM 0.098 19.91 LTE Band 5/26 825.5 846.5 4M53G7D QPSK 0.281 19.09 LTE Band 5/26 826.5 846.5 4M53G7D QPSK 0.081 19.09 LTE Band 5/26 826.5 846.5 4M53G7D QPSK 0.120 20.81 LTE Band 5/26 829 844 8M99G7D QPSK 0.120 20.81 LTE Band 5/26 829 844 8M99G7D QPSK 0.120	LTE Band 13	782	8M97G7D	QPSK	0.140	21.45	LTE Band 2/25	1860 - 1905	18M0G7D	QPSK	0.204	23.10
LTE Band 5/26 824.7 - 848.3 1M12G7D QPSK 0.129 21.09 LTE Band 5/26 824.7 - 848.3 1M11W7D 16QAM 0.103 20.12 LTE Band 30 2307.5 - 2312.5 4M5007D QPSK 0.144 21.68 LTE Band 5/26 824.7 - 848.3 1M11W7D 16QAM 0.103 20.12 LTE Band 30 2307.5 - 2312.5 4M5007D QPSK 0.124 20.84 LTE Band 5/26 825.5 - 847.5 2M72G7D QPSK 0.121 20.84 LTE Band 30 2310 8M98G7D QPSK 0.123 20.90 LTE Band 5/26 825.5 - 847.5 2M72W7D 16QAM 0.098 19.91 LTE Band 31 2310 9M01W7D 16QAM 0.098 19.91 LTE Band 5/26 826.5 - 846.5 4M53G7D QPSK 0.081 19.09 LTE Band 41 2498.5 -2887.5 4M49W7D 16QAM 0.082 19.13 LTE Band 5/26 829 - 844 8M99G7D QPSK 0.120 20.81 LTE Band 41 2501 - 2868 8M9907D	LTE Band 13	782	8M96W7D	16QAM	0.122	20.87	LTE Band 2/25	1860 - 1905	18M0W7D	16QAM	0.161	22.07
LTE Band 5/26 824.7 - 848.3 1M11W7D 16QAM 0.103 20.12 LTE Band 30 2307.5 - 2312.5 4M50W7D 16QAM 0.116 20.63 LTE Band 5/26 825.5 - 847.5 2M72G7D QPSK 0.121 20.84 LTE Band 30 2310 8M98G7D QPSK 0.123 20.90 LTE Band 5/26 825.5 - 847.5 2M72W7D 16QAM 0.098 19.91 LTE Band 30 2310 9M01W7D 16QAM 0.098 19.91 LTE Band 5/26 826.5 - 846.5 4M53G7D QPSK 0.081 19.09 LTE Band 41 2498.5 - 2687.5 4M50G7D QPSK 0.111 20.46 LTE Band 5/26 826.5 - 846.5 4M51W7D 16QAM 0.065 18.12 LTE Band 41 2501 - 2685 8M9607D QPSK 0.128 221.08 LTE Band 5/26 829 - 844 8M99G7D QPSK 0.120 20.81 LTE Band 41 2503.5 - 2682.5 13M5G7D QPSK 0.166 22.17 LTE Band 26 831.5 - 841.5 13M5G7D		-			-		LTE Band 30	2307.5 - 2312.5	4M50G7D	QPSK	0.144	21.58
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LTE Band 26 831.5 - 841.5 13M5G7D QPSK 0.134 21.29 LTE Band 41 2506 - 2680 18M0G7D QPSK 0.127 21.03	LTE Band 5/26	829 - 844	8M97W7D	16QAM	0.105	20.23						
	LTE Band 26	831.5 - 841.5	13M5G7D	QPSK	0.134	21.29						
	LTE Band 26	831.5 - 841.5	13M4W7D	16QAM	0.124	20.93	LTE Band 41	2506 - 2680	18M0W7D	16QAM	0.127	20.94

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947. Test results reported herein relate only to the item(s) tested.

This revised Test Report (S/N: 0Y1512012035-R1.A3L) supersedes and replaces the previously issued test report (S/N: 0Y1512012035.A3L) on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Result Orlanez President				
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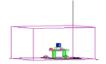


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MEASUREMENT REPORT FCC Part 22, 24, & 27



§2.1033 General Information

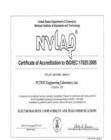
APPLICANT:	Samsung Electronics Co., L	Samsung Electronics Co., Ltd.				
APPLICANT ADDRESS:	129, Samsung-ro,					
	Yeongtong-gu, Suwon-si, G	yeonggi-do, 16677,	Korea			
TEST SITE:	PCTEST ENGINEERING L	ABORATORY, INC.				
TEST SITE ADDRESS:	7185 Oakland Mills Road, O	Columbia, MD 21045	5 USA			
FCC RULE PART(S):	§2; §22; §24; §27					
BASE MODEL:	SM-G930V, SM-G930A, SN	/I-G930P, SM-G930	T, SM-G930R4			
FCC ID:	A3LSMG930US					
FCC CLASSIFICATION:	PCS Licensed Transmitter I	Held to Ear (PCE)				
FREQUENCY TOLERANCE:	±0.00025 % (2.5 ppm)					
Test Device Serial No.:	C3D41, C3D2E, C3D8C, C436C, C3DC0, C3DAD	Production	Pre-Production	Engineering		
DATE(S) OF TEST:	12/7 - 12/29/15; 01/26/16					
TEST REPORT S/N:	0Y1512012035-R1.A3L					

Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab located in Columbia, MD 21046, U.S.A.

- PCTEST facility is an FCC registered (PCTEST Reg. No. 159966) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules and Industry Canada (2451B-1).
 - PCTEST Lab is accredited to ISO 17025 by U.S. National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP Lab code: 100431-0) in EMC, FCC and Telecommunications.
 - PCTEST Lab is accredited to ISO 17025-2005 by the American Association for Laboratory Accreditation (A2LA) in Specific Absorption Rate (SAR) testing, Hearing Aid Compatibility (HAC) testing, CTIA Test Plans, and wireless testing for FCC and Industry Canada Rules.
 - PCTEST Lab is a recognized U.S. Conformity Assessment Body (CAB) in EMC and R&TTE (n.b. 0982) under the U.S.-EU Mutual Recognition Agreement (MRA).
 - PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC Guide 65 by the American National Standards Institute (ANSI) in all scopes of FCC Rules and Industry Canada Standards (RSS).
 - PCTEST facility is an IC registered (2451B-1) test laboratory with the site description on file at Industry Canada.
 - PCTEST is a CTIA Authorized Test Laboratory (CATL) for AMPS, CDMA, and EvDO wireless devices and for Over-the-Air (OTA) Antenna Performance testing for AMPS, CDMA, GSM, GPRS, EGPRS, UMTS (W-CDMA), CDMA 1xEVDO, and CDMA 1xRTT.

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1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Industry Canada Certification and Engineering Bureau.

1.2 Testing Facility

The map below shows the location of the PCTEST LABORATORY, its proximity to the FCC Laboratory, the Columbia vicinity, the Baltimore-Washington Internt'I (BWI) airport, the city of Baltimore and the Washington, DC area. (See Figure 1-1).

These measurement tests were conducted at the PCTEST Engineering Laboratory, Inc. facility located at 7185 Oakland Mills Road, Columbia, MD 21046. The site coordinates are 39° 10'23" N latitude and 76° 49'50" W longitude. The facility is 0.4 miles North of the FCC laboratory, and the ambient signal and ambient signal strength are approximately equal to those of the FCC laboratory. The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4-2014 on January 22, 2015.

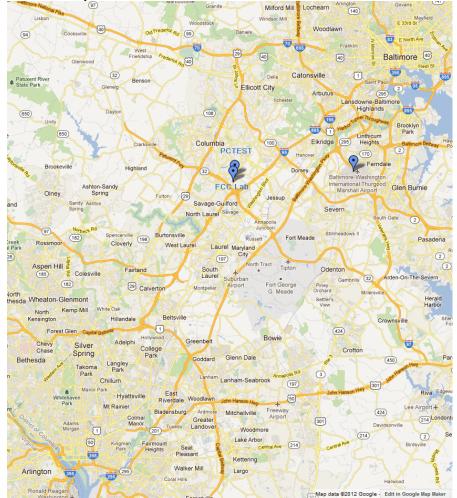


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

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2.0 **PRODUCT INFORMATION**

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LSMG930US**. The test data contained in this report pertains only to the emissions due to the EUT's LTE function.

This device uses a closed-loop tuner circuit that dynamically updates the antenna impedance parameters to optimize antenna performance. The tuner for this device was set to simulate a "free space" condition in which the transmit antenna is matched to the medium into which it is transmitting and, thus, all power is at its maximum level.

This device also employs an antenna switching diversity (ASDiv) mechanism that allows for radiated transmission from one of two antennas at a time for LTE Band 5/26, Band 12, and Band 13. Both antennas cannot transmit simultaneously so dual transmission conditions were not investigated. The two antennas share the same conducted circuitry so only one set of conducted measurements is included. The main transmit antenna data is labeled as "Antenna A" and the secondary transmit antenna data is labeled as "Antenna B" in the radiated section of this report.

2.2 Device Capabilities

This device contains the following capabilities:

850/1900 CDMA/EvDO Rev0/A (BC0, BC1, BC10), 850/1900 GSM/GPRS/EDGE, 850/1700/1900 WCDMA/HSPA, Multi-band LTE, 802.11b/g/n WLAN, 802.11a/n/ac UNII, Bluetooth (1x, EDR, LE), NFC, ANT+

LTE Band 26 (814.7 – 849 MHz) overlaps the entire frequency range of LTE Band 5 (824 – 849 MHz). Therefore, test data provided in this report covers Band 5 and the portion of Band 26 subject to Part 22.

LTE Band 25 (1850 - 1915 MHz) overlaps the entire frequency range of LTE Band 2 (1850 - 1910 MHz). Therefore, test data provided in this report covers Band 2 as well as Band 25.

2.3 Test Configuration

The Samsung Portable Handset FCC ID: A3LSMG930US was tested per the guidance of ANSI/TIA-603-C-2004 and KDB 971168 D01 v02r02. See Section 7.0 of this test report for a description of the radiated and antenna port conducted emissions tests.

This device supports wireless charging capability and, thus, is subject to the test requirements of KDB 648474 D03 v01r04. Additional radiated spurious emission measurements were performed with the EUT lying flat on a certified wireless charging pad (WCP) while operating under normal conditions in a simulated call or data transmission configuration. The worst case radiated emissions data is shown in this report.

2.4 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and no modifications were made during testing.

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3.0 DESCRIPTION OF TESTS

3.1 Measurement Procedure

The measurement procedures described in the document titled "Land Mobile FM or PM – Communications Equipment – Measurements and Performance Standards" (ANSI/TIA-603-C-2004) and "Procedures for Compliance Measurement of the Fundamental Emission Power of Licensed Wideband (> 1 MHz) Digital Transmission Systems" (KDB 971168 D01 v02r02) were used in the measurement of the **Samsung Portable Handset FCC ID: A3LSMG930US.**

3.1 Block C Frequency Range §27.5(b)(3)

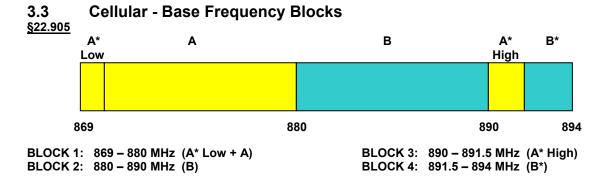
Two paired channels of 11 megahertz each are available for assignment in Block C in the 746-757 MHz and 776-787 MHz bands. In the event that no licenses for two channels in this Block C are assigned based on the results of the first auction in which such licenses were offered because the auction results do not satisfy the applicable reserve price, the spectrum in the 746-757 MHz and 776-787 MHz bands will instead be made available for assignment at a subsequent auction as follows: (i) Two paired channels of 6 megahertz each available for assignment in Block C1 in the 746-752 MHz and 776-782 MHz bands. (ii) Two paired channels of 5 megahertz each available for assignment in Block C1 in the 746-752 MHz and 776-782 MHz bands.

3.2 Block A Frequency Range

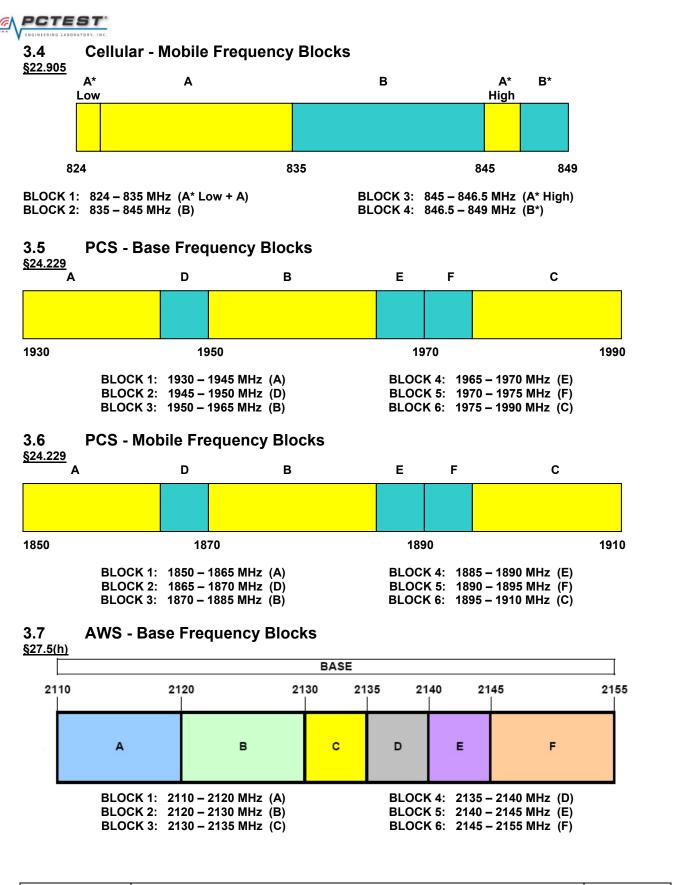
<u>§27.5(c)</u>

<u>698-746 MHz band</u>. The following frequencies are available for licensing pursuant to this part in the 698-746 MHz band: (1) Three paired channel blocks of 12 megahertz each are available for assignment as follows:

Block A: 698-704 MHz and 728-734 MHz; Block B: 704-710 MHz and 734-740 MHz; and Block C: 710-716 MHz and 740-746 MHz.



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3.8 AWS - Mobile Frequency Blocks

<u>§27.5(h)</u>

			MOBILE				
1710	17	20 17	'30 17 	35 17	40 17	45	1758
	А	В	с	D	E	F	
	BLOCK 2: 172	10 – 1720 MHz (A) 20 – 1730 MHz (B) 30 – 1735 MHz (C)		BLOCK	5: 1740 -	1740 MHz (D) 1745 MHz (E) 1755 MHz (F)	

3.9 WCS – Mobile/Base Frequency Blocks §27.5(a)

The following frequencies are available for WCS in the 2305-2320 MHz and 2345-2360 MHz bands:

BLOCK 1: 2305-2310 and 2350-2355 MHz (A)

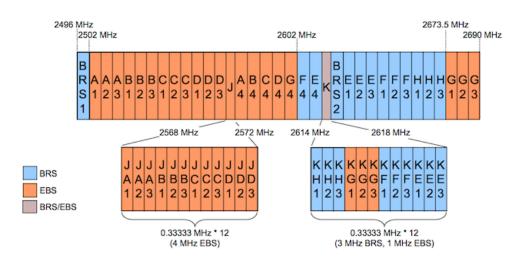
BLOCK 2: 2310-2315 and 2355-236 MHz (B)

BLOCK 3: 2315-2320 MHz (C)

BLOCK 4: 2345-2350 MHz (D)

3.10 BRS/EBS Frequency Block

<u>§27.5</u>



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3.11 Radiated Power and Radiated Spurious Emissions §2.1053 §22.913(a.2) §22.917(a) §24.232(c) §24.238(a) §27.50(b.10) §27.50(c.10) §27.50(d.4) §27.53(a.4) §27.53(f) §27.53(g) §27.53(h) 27.53(m)

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. The test site inside the chamber is a 6m x 5.2m elliptical, obstruction-free area in accordance with Clause 5, Figure 5.7 of ANSI C63.4-2009. For measurements above 1GHz absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1GHz, the absorbers are removed. An ETS Lindgren Model 2188 raised turntable is used for radiated measurement. It is a continuously rotatable, remote-controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. A 78cm high PVC support structure is placed on top of the turntable. A $\frac{3}{4}$ " (~1.9cm) sheet of high density polyethylene is used as the table top and is placed on top of the PVC supports to bring the total height of the table to 80cm.

The equipment under test was transmitting while connected to its integral antenna and is placed on a turntable 3 meters from the receive antenna. The receive antenna height is adjusted between 1 and 4 meter height, the turntable is rotated through 360 degrees, and the EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer. Radiated power levels are also investigated with the receive antenna horizontally and vertically polarized. The maximized power level is recorded using the spectrum analyzer "Channel Power" function with the integration band set to the emissions' occupied bandwidth, a RMS detector, RBW = 100kHz, VBW = 300kHz, and a 1 second sweep time over a minimum of 10 sweeps, per the guidelines of KDB 971168 D01 v02r02.

Per the guidance of ANSI/TIA-603-C-2004, a half-wave dipole is then substituted in place of the EUT. For emissions above 1GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer level previously recorded from the spurious emission from the EUT. The power of the emission is calculated using the following formula:

Pd [dBm] = Pg [dBm] - cable loss [dB] + antenna gain [dBd/dBi]

Where, P_d is the dipole equivalent power, P_g is the generator output into the substitution antenna, and the antenna gain is the gain of the substitute antenna used relative to either a half-wave dipole (dBd) or an isotropic source (dBi). The substitute level is equal to $P_g [dBm]$ – cable loss [dB].

The calculated P_d levels are then compared to the absolute spurious emission limit of -13dBm which is equivalent to the required minimum attenuation of 43 + 10log₁₀(Power _[Watts]). For Band 41, the calculated P_d levels are compared to the absolute spurious emission limit of -25dBm which is equivalent to the required minimum attenuation of 55 + 10log₁₀(Power _[Watts]). For Band 30, the calculated P_d levels are compared to the absolute spurious emission limit of -40dBm which is equivalent to the required minimum attenuation of 70 + 10log₁₀(Power _[Watts]).

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4.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014. All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95% level of confidence. The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Contribution	Expanded Uncertainty (±dB)
Conducted Bench Top Measurements	1.13
Radiated Disturbance (<1GHz)	4.98
Radiated Disturbance (>1GHz)	5.07
Radiated Disturbance (>18GHz)	5.09

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5.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST).

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	LTx1	Licensed Transmitter Cable Set	4/16/2015	Annual	4/16/2016	LTx1
-	RE3	Radiated Emissions Cable Set	4/29/2015	Annual	4/29/2016	RE3
Agilent	8447D	Broadband Amplifier	6/12/2015	Annual	6/12/2016	2443A01900
Agilent	N9020A	MXA Signal Analyzer	11/5/2015	Annual	11/5/2016	US46470561
Com-Power	AL-130	9kHz - 30MHz Loop Antenna	7/30/2015	Biennial	7/30/2017	121034
Emco	3115	Horn Antenna (1-18GHz)	1/30/2014	Biennial	1/30/2016	9704-5182
ETS Lindgren	3160-09	18-26.5 GHz Standard Gain Horn	6/17/2014	Biennial	6/17/2016	135427
ETS Lindgren	3164-08	Quad Ridge Horn Antenna	10/22/2014	Biennial	10/22/2016	128338
K & L	11SH10-3075/U18000	High Pass Filter	7/18/2015	Annual	7/18/2016	11SH10-3075/U18000-2
K & L	11SH10-4000/12000	High Pass Filter	12/1/2014	Annual	12/1/2015	11SH10-4000/12000-2
K & L	13SH10-1000/U1000	N Type High Pass Filter	7/18/2015	Annual	7/18/2016	13SH10-1000/U1000-1
Mini Circuits	PWR-SEN-4GHS	USB Power Sensor	3/11/2015	Annual	3/11/2016	11401010036
Mini Circuits	TVA-11-422	RF Power Amp		N/A		QA1317001
Mini-Circuits	PWR-SENS-4RMS	USB Power Sensor	3/11/2015	Annual	3/11/2016	11210140001
Mini-Circuits	TVA-11-422	RF Power Amp		N/A		QA1303002
Rohde & Schwarz	CMW500	Radio Communication Tester	10/13/2015	Annual	10/13/2016	100976
Rohde & Schwarz	ESU26	EMI Test Receiver (26.5GHz)	3/12/2015	Annual	3/12/2016	100342
Rohde & Schwarz	TS-PR18	1-18 GHz Pre-Amplifier	3/5/2015	Annual	3/5/2016	100071
Rohde & Schwarz	TS-PR26	18-26.5 GHz Pre-Amplifier	3/3/2015	Annual	3/3/2016	100040
Schwarzbeck	UHA 9105	Dipole Antenna (400 - 1GHz) Rx	2/21/2014	Biennial	2/21/2016	9105-2404
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	1/28/2014	Biennial	1/28/2016	A051107
VWR	62344-734	Thermometer with Clock	2/20/2014	Biennial	2/20/2016	140140336

Table 5-1. Test Equipment

Note:

Equipment with a calibration date of "N/A" shown in this list was not used to make direct calibrated measurements.

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6.0 SAMPLE CALCULATIONS

Emission Designator

QPSK Modulation

Emission Designator = 8M62G7D

LTE BW = 8.62 MHz G = Phase Modulation

7 =Quantized/Digital Info

D = Data transmission, telemetry, telecommand

16QAM Modulation

Emission Designator = 8M45W7D

LTE BW = 8.45 MHz W = Amplitude/Angle Modulated 7 = Quantized/Digital Info D = Data transmission, telemetry, telecommand

Spurious Radiated Emission – LTE Band

Example: Middle Channel LTE Mode 2nd Harmonic (1564 MHz)

The average spectrum analyzer reading at 3 meters with the EUT on the turntable was -81.0 dBm. The gain of the substituted antenna is 8.1 dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of -81.0 dBm on the spectrum analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 1564 MHz. So 6.1 dB is added to the signal generator reading of -30.9 dBm yielding -24.80 dBm. The fundamental EIRP was 25.501 dBm so this harmonic was 25.501 dBm – (-24.80).

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7.0 TEST RESULTS

7.1 Summary

Company Name:	Samsung Electronics Co., Ltd.
FCC ID:	A3LSMG930US
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
Mode(s):	LTE

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Result	Reference
TRANSMITTER M	ODE (TX)				
2.1049	Occupied Bandwidth	N/A		PASS	Section 7.2
2.1051 22.917(a) 24.238(a) 27.53(c) 27.53(g) 27.53(h)	Out of Band Emissions	> 43 + 10log ₁₀ (P[Watts]) at Band Edge and for all out-of-band emissions		PASS	Section 7.3, 7.4
27.53(m)	Out of Band Emissions	 > 43 + 10log₁₀ (P[Watts]) at channel edges and > 55 + 10log₁₀ (P[Watts]) at 5.5MHz away and beyond channel edges 	CONDUCTED	PASS	Section 7.3, 7.4
27.53(a)	Out of Band Emissions	 > 43 + 10log10 (P[Watts]) at (2300-2305MHz, 2345-2360MHz) > 55 + 10log10 (P[Watts]) at (2320-2324MHz, 2341-2345MHz) > 61 + 10log10 (P[Watts]) at (2324-2328MHz, 2337-2341MHz) > 67 + 10log10 (P[Watts]) at (2288-2292MHz, 2328-2337MHz) > 70 + 10log10 (P[Watts]) at (<2288MHz and >2365MHz) 		PASS	Section 7.3, 7.4
24.232(d)	Peak-Average Ratio	< 13 dB		PASS	Section 7.5
2.1046	Transmitter Conducted Output Power	N/A	-	PASS	See RF Exposure Report
2.1055. 22.355 24.235 27.54	Frequency Stability	< 2.5 ppm (Part 22) and fundamental emissions stay within authorized frequency block (Part 24, 27)		PASS	Section 7.8
22.913(a.2)	Effective Radiated Power (Band 5 26)	< 7 Watts max. ERP		PASS	Section 7.6
27.50(b.10) 27.50(c.10)	Effective Radiated Power (Band 12 13)	< 3 Watts max. ERP		PASS	Section 7.6
24.232(c) 27.50(h.2)	Equivalent Isotropic Radiated Power (Band 2 25 41)	< 2 Watts max. EIRP		PASS	Section 7.6
27.50(d.4)	Equivalent Isotropic Radiated Power (Band 4)	< 1 Watts max. EIRP		PASS	Section 7.6
27.50(a.3)	Equivalent Isotropic Radiated Power (Band 30)	< 0.25 Watts max. EIRP	RADIATED	PASS	Section 7.6
2.1053 22.917(a) 24.238(a) 27.53(c) 27.53(g) 27.53(h)	Undesirable Emissions	> 43 + 10log ₁₀ (P[Watts]) for all out-of-band emissions		PASS	Section 7.7
27.53(f)	Undesirable Emissions (Band 13)	 < -70 dBW/MHz (for wideband signals) < -80 dBW (for discrete emissions less than 700Hz BW) For all emissions in the band 1559 – 1610 MHz 	-	PASS	Section 7.7
27.53(a)	Undesirable Emissions (Band 30)	> 70 + 10log ₁₀ (P[Watts])		PASS	Section 7.7
27.53(m)	Undesirable Emissions	 > 43 + 10log₁₀ (P[Watts]) at channel edges > 55 + 10log₁₀ (P[Watts]) at 5.5MHz away and beyond channel edges Table 7-1. Summary of Test Results 		PASS	Section 7.7

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- 1) All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
- 2) The analyzer plots (Sections 7.2, 7.3, 7.4, 7.5) were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables, directional couplers, and attenuators used as part of the system to maintain a link between the call box and the EUT at all frequencies of interest.
- 3) All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables, attenuators, and couplers.
- 4) For conducted spurious emissions, automated test software was used to measure emissions and capture the corresponding plots necessary to show compliance. The measurement software utilized is PCTEST "LTE Automation," Version 4.0.

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7.2 Occupied Bandwidth §2.1049

Test Overview

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. All modes of operation were investigated and the worst case configuration results are reported in this section.

Test Procedure Used

KDB 971168 D01 v02r02- Section 4.2

Test Settings

- The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
- 2. RBW = 1 5% of the expected OBW
- 3. VBW \geq 3 x RBW
- 4. Detector = Peak
- 5. Trace mode = max hold
- 6. Sweep = auto couple
- 7. The trace was allowed to stabilize
- 8. If necessary, steps 2 7 were repeated after changing the RBW such that it would be within

1 – 5% of the 99% occupied bandwidth observed in Step 7

Test Setup

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

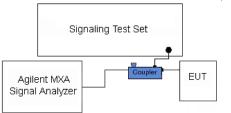


Figure 7-1. Test Instrument & Measurement Setup

Test Notes

None.

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Plot 7-1. Occupied Bandwidth Plot (Band 12 – 1.4MHz QPSK – RB Size 6)



Plot 7-2. Occupied Bandwidth Plot (Band 12 – 1.4MHz 16-QAM – RB Size 6)

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Plot 7-3. Occupied Bandwidth Plot (Band 12 – 3.0MHz QPSK – RB Size 15)



Plot 7-4. Occupied Bandwidth Plot (Band 12 – 3.0MHz 16-QAM – RB Size 15)

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Plot 7-5. Occupied Bandwidth Plot (Band 12 – 5.0MHz QPSK – RB Size 25)



Plot 7-6. Occupied Bandwidth Plot (Band 12 – 5.0MHz 16-QAM – RB Size 25)

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Plot 7-7. Occupied Bandwidth Plot (Band 12 – 10.0MHz QPSK – RB Size 50)



Plot 7-8. Occupied Bandwidth Plot (Band 12 – 10.0MHz 16-QAM – RB Size 50)

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Plot 7-9. Occupied Bandwidth Plot (Band 13 – 5.0MHz QPSK – RB Size 25)



Plot 7-10. Occupied Bandwidth Plot (Band 13 - 5.0MHz 16-QAM - RB Size 25)

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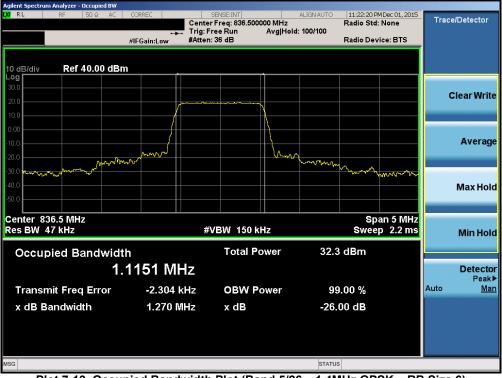
Plot 7-11. Occupied Bandwidth Plot (Band 13 – 10.0MHz QPSK – RB Size 50)



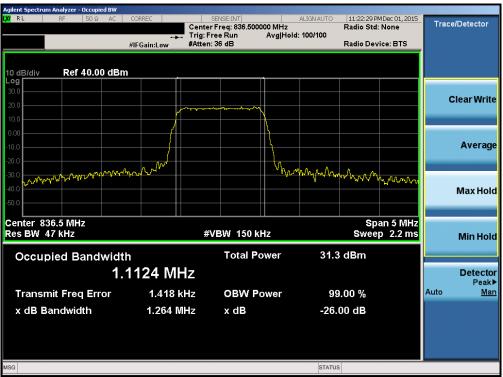
Plot 7-12. Occupied Bandwidth Plot (Band 13 – 10.0MHz 16-QAM – RB Size 50)

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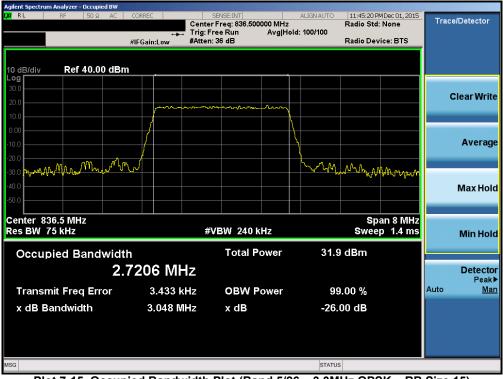
Plot 7-13. Occupied Bandwidth Plot (Band 5/26 – 1.4MHz QPSK – RB Size 6)



Plot 7-14. Occupied Bandwidth Plot (Band 5/26 – 1.4MHz 16-QAM – RB Size 6)

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Plot 7-15. Occupied Bandwidth Plot (Band 5/26 - 3.0MHz QPSK - RB Size 15)



Plot 7-16. Occupied Bandwidth Plot (Band 5/26 – 3.0MHz 16-QAM – RB Size 15)

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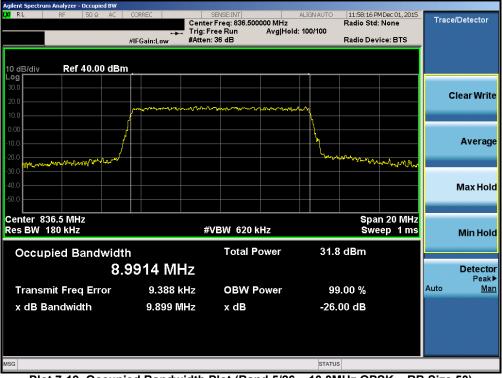
Plot 7-17. Occupied Bandwidth Plot (Band 5/26 - 5.0MHz QPSK - RB Size 25)



Plot 7-18. Occupied Bandwidth Plot (Band 5/26 - 5.0MHz 16-QAM - RB Size 25)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Plot 7-19. Occupied Bandwidth Plot (Band 5/26 - 10.0MHz QPSK - RB Size 50)



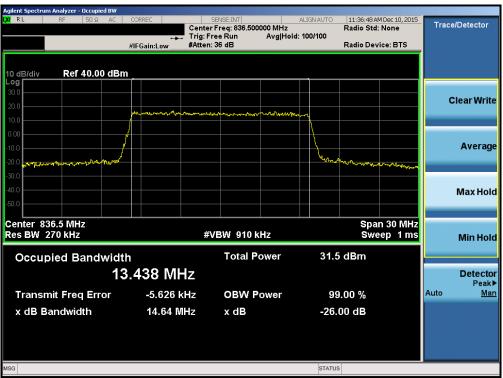
Plot 7-20. Occupied Bandwidth Plot (Band 5/26 – 10.0MHz 16-QAM – RB Size 50)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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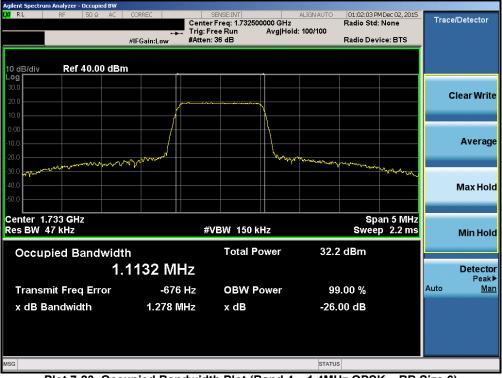
Plot 7-21. Occupied Bandwidth Plot (Band 26 – 15.0MHz QPSK – RB Size 75)



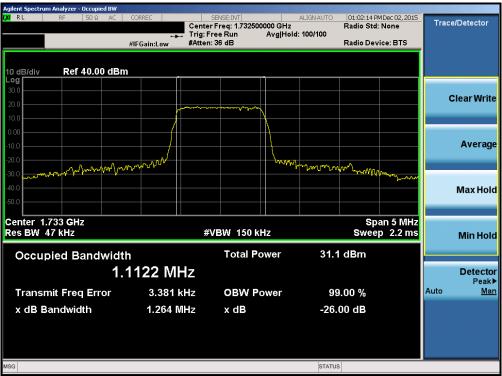
Plot 7-22. Occupied Bandwidth Plot (Band 26 – 15.0MHz 16-QAM – RB Size 75)

FCC ID: A3LSMG930US	<u> PCTEST</u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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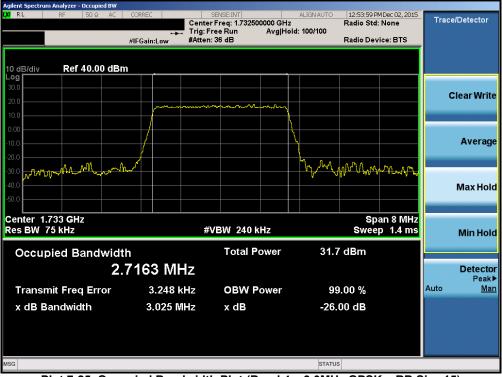
Plot 7-23. Occupied Bandwidth Plot (Band 4 – 1.4MHz QPSK – RB Size 6)



Plot 7-24. Occupied Bandwidth Plot (Band 4 – 1.4MHz 16-QAM – RB Size 6)

FCC ID: A3LSMG930US	<u> PCTEST</u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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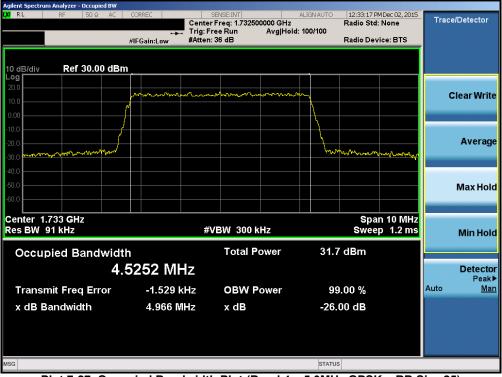
Plot 7-25. Occupied Bandwidth Plot (Band 4 – 3.0MHz QPSK – RB Size 15)



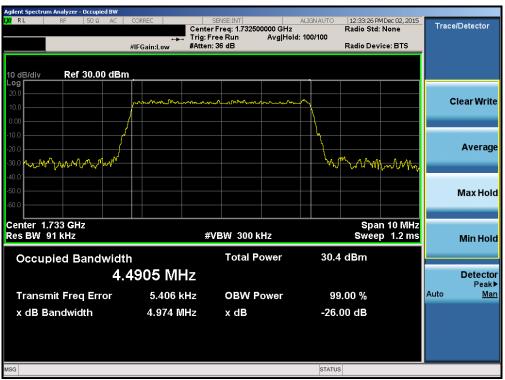
Plot 7-26. Occupied Bandwidth Plot (Band 4 – 3.0MHz 16-QAM – RB Size 15)

FCC ID: A3LSMG930US	<u> PCTEST</u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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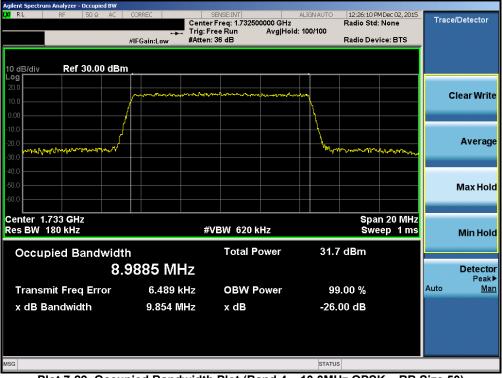
Plot 7-27. Occupied Bandwidth Plot (Band 4 – 5.0MHz QPSK – RB Size 25)



Plot 7-28. Occupied Bandwidth Plot (Band 4 – 5.0MHz 16-QAM – RB Size 25)

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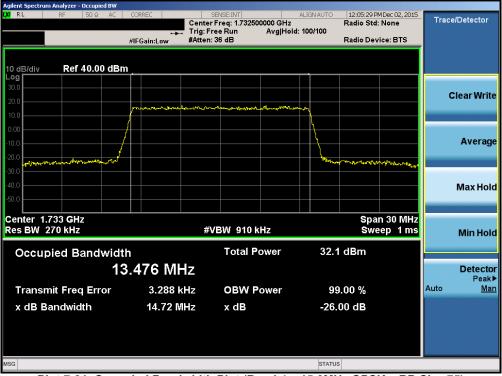
Plot 7-29. Occupied Bandwidth Plot (Band 4 – 10.0MHz QPSK – RB Size 50)



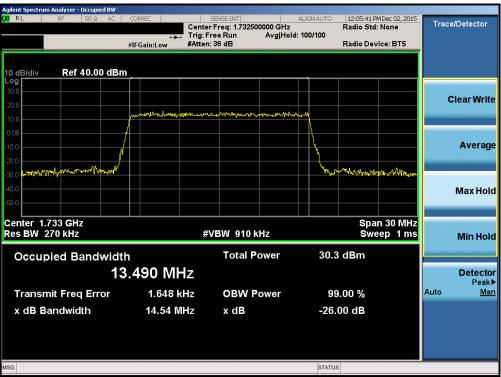
Plot 7-30. Occupied Bandwidth Plot (Band 4 – 10.0MHz 16-QAM – RB Size 50)

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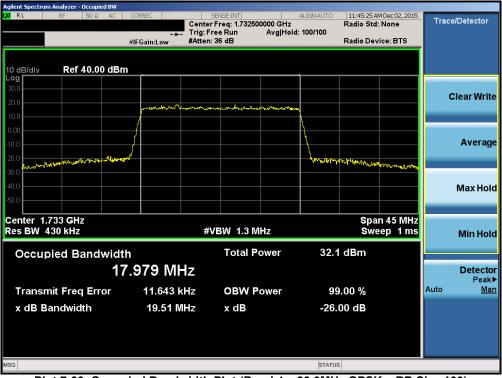
Plot 7-31. Occupied Bandwidth Plot (Band 4 – 15.0MHz QPSK – RB Size 75)



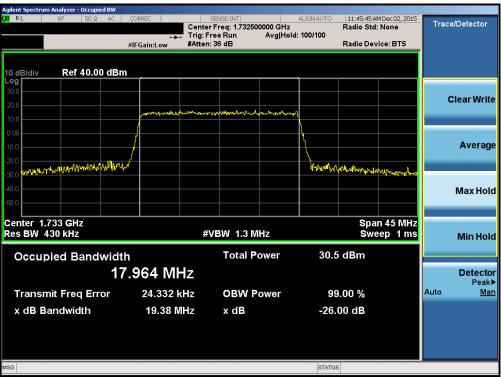
Plot 7-32. Occupied Bandwidth Plot (Band 4 – 15.0MHz 16-QAM – RB Size 75)

FCC ID: A3LSMG930US	CTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dego 21 of 100
0Y1512012035-R1.A3L	12/1 - 12/29/15, 1/26/16	Portable Handset		Page 31 of 190
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Plot 7-33. Occupied Bandwidth Plot (Band 4 – 20.0MHz QPSK – RB Size 100)



Plot 7-34. Occupied Bandwidth Plot (Band 4 – 20.0MHz 16-QAM – RB Size 100)

FCC ID: A3LSMG930US	<u> PCTEST</u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 22 of 100
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Plot 7-35. Occupied Bandwidth Plot (Band 2/25 – 1.4MHz QPSK – RB Size 6)



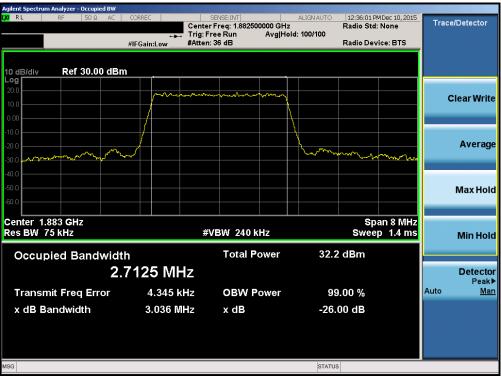
Plot 7-36. Occupied Bandwidth Plot (Band 2/25 – 1.4MHz 16-QAM – RB Size 6)

FCC ID: A3LSMG930US	<u> PCTEST</u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 22 of 100
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Plot 7-37. Occupied Bandwidth Plot (Band 2/25 – 3.0MHz QPSK – RB Size 15)



Plot 7-38. Occupied Bandwidth Plot (Band 2/25 – 3.0MHz 16-QAM – RB Size 15)

FCC ID: A3LSMG930US	<u> PCTEST</u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 24 of 100
0Y1512012035-R1.A3L	12/1 - 12/29/15, 1/26/16	Portable Handset		Page 34 of 190
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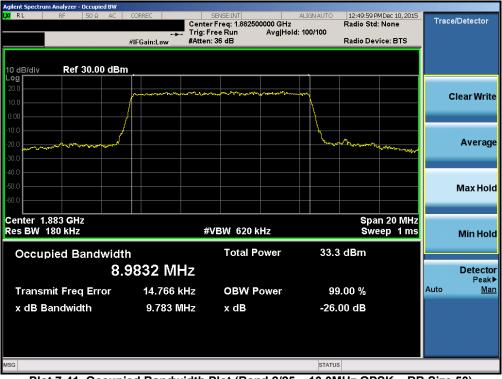
Plot 7-39. Occupied Bandwidth Plot (Band 2/25 - 5.0MHz QPSK - RB Size 25)



Plot 7-40. Occupied Bandwidth Plot (Band 2/25 - 5.0MHz 16-QAM - RB Size 25)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dego 25 of 100
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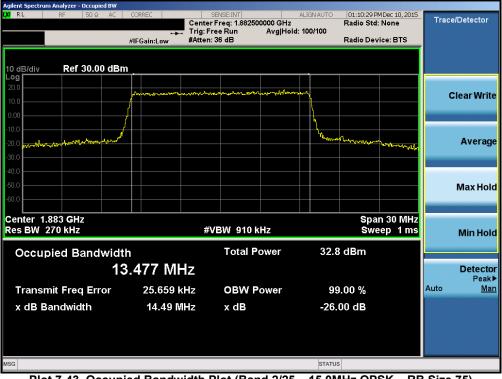
Plot 7-41. Occupied Bandwidth Plot (Band 2/25 – 10.0MHz QPSK – RB Size 50)



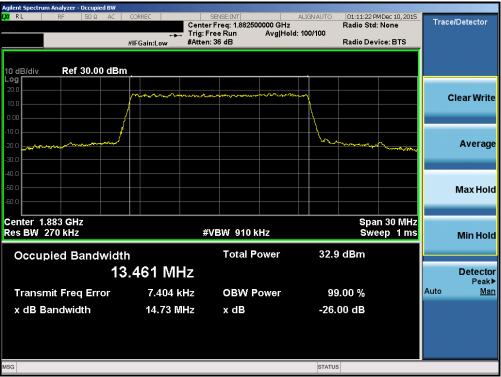
Plot 7-42. Occupied Bandwidth Plot (Band 2/25 – 10.0MHz 16-QAM – RB Size 50)

FCC ID: A3LSMG930US	<u> PCTEST</u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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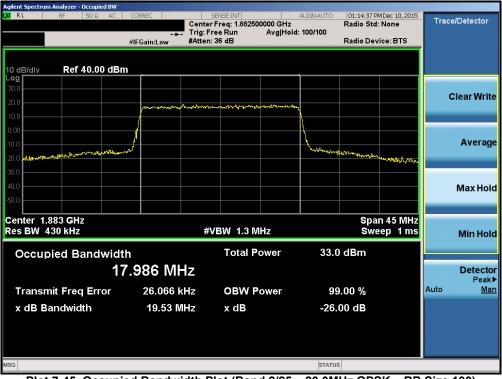
Plot 7-43. Occupied Bandwidth Plot (Band 2/25 – 15.0MHz QPSK – RB Size 75)



Plot 7-44. Occupied Bandwidth Plot (Band 2/25 – 15.0MHz 16-QAM – RB Size 75)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dego 27 of 100	
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Plot 7-45. Occupied Bandwidth Plot (Band 2/25 – 20.0MHz QPSK – RB Size 100)



Plot 7-46. Occupied Bandwidth Plot (Band 2/25 – 20.0MHz 16-QAM – RB Size 100)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dega 29 of 100	
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Plot 7-47. Occupied Bandwidth Plot (Band 30 – 5.0MHz QPSK – RB Size 25)



Plot 7-48. Occupied Bandwidth Plot (Band 30 – 5.0MHz 16-QAM – RB Size 25)

FCC ID: A3LSMG930US	<u> PCTEST</u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 20 of 100
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Plot 7-49. Occupied Bandwidth Plot (Band 30 - 10.0MHz QPSK - RB Size 50)



Plot 7-50. Occupied Bandwidth Plot (Band 30 – 10.0MHz 16-QAM – RB Size 50)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 40 of 100
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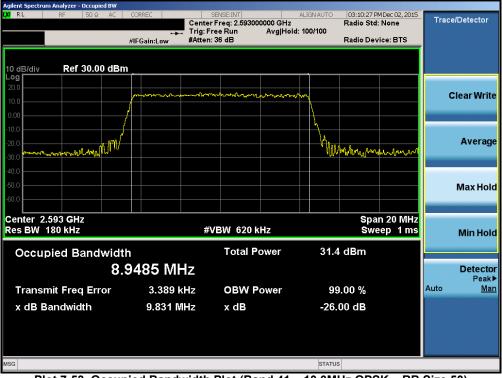
Plot 7-51. Occupied Bandwidth Plot (Band 41 – 5.0MHz QPSK – RB Size 25)



Plot 7-52. Occupied Bandwidth Plot (Band 41 – 5.0MHz 16-QAM – RB Size 25)

FCC ID: A3LSMG930US	CTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dego 41 of 100	
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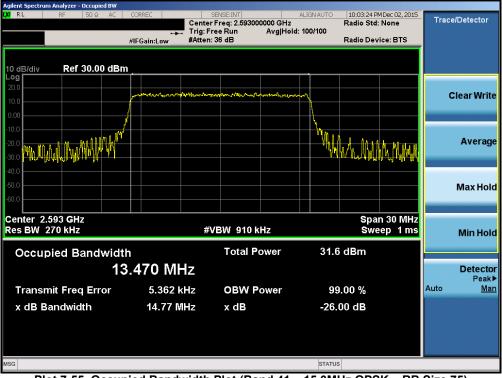
Plot 7-53. Occupied Bandwidth Plot (Band 41 – 10.0MHz QPSK – RB Size 50)



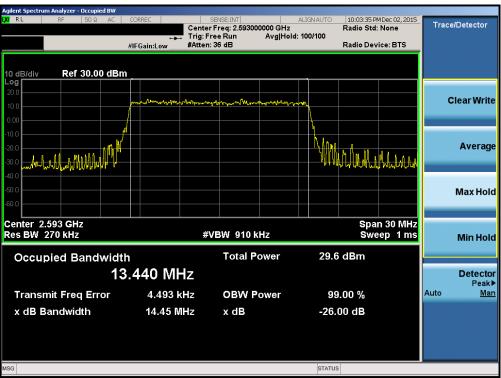
Plot 7-54. Occupied Bandwidth Plot (Band 41 – 10.0MHz 16-QAM – RB Size 50)

FCC ID: A3LSMG930US	<u> PCTEST</u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 42 of 100	
0Y1512012035-R1.A3L	12/1 - 12/29/15, 1/26/16	Portable Handset		Page 42 of 190	
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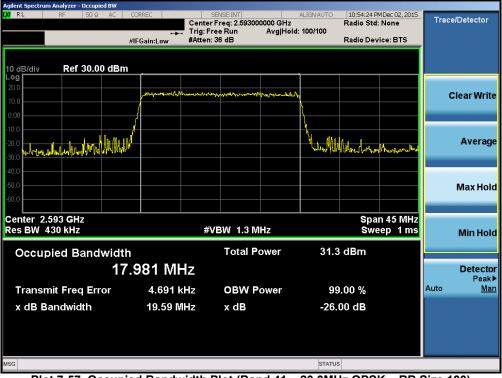
Plot 7-55. Occupied Bandwidth Plot (Band 41 – 15.0MHz QPSK – RB Size 75)



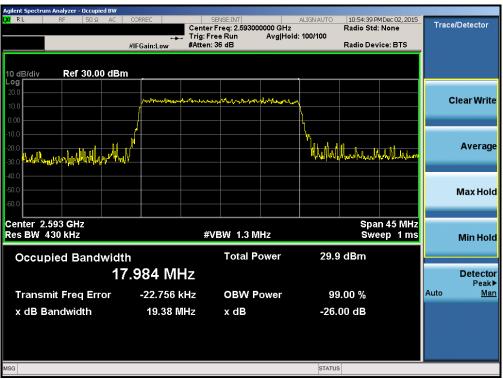
Plot 7-56. Occupied Bandwidth Plot (Band 41 – 15.0MHz 16-QAM – RB Size 75)

FCC ID: A3LSMG930US	<u> PCTEST</u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 42 of 100
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Plot 7-57. Occupied Bandwidth Plot (Band 41 – 20.0MHz QPSK – RB Size 100)



Plot 7-58. Occupied Bandwidth Plot (Band 41 – 20.0MHz 16-QAM – RB Size 100)

FCC ID: A3LSMG930US	<u> PCTEST</u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dago 44 of 100	
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7.3 Spurious and Harmonic Emissions at Antenna Terminal §2.1051 §22.917(a) §24.238(a) §27.53(c.2) §27.53(g) §27.53(h) §27.53(m) §27.53(a.4)

Test Overview

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates 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.

For Band 30, the minimum permissible attenuation level of any spurious emission <2288MHz and >2365MHz is 70 + log10(P[Watts]).

For Band 41, the minimum permissible attenuation level of any spurious emission is $55 + \log_{10}(P_{[Watts]})$.

The minimum permissible attenuation level of any spurious emission is $43 + \log_{10}(P_{[Watts]})$, where P is the transmitter power in Watts.

Test Procedure Used

KDB 971168 D01 v02r02- Section 6.0

Test Settings

- 1. Start frequency was set to 30MHz and stop frequency was set to at least 10 * the fundamental frequency (separated into at least two plots per channel)
- 2. Detector = RMS
- 3. Trace mode = trace average for continuous emissions, max hold for pulse emissions
- 4. Sweep time = auto couple
- 5. The trace was allowed to stabilize
- 6. Please see test notes below for RBW and VBW settings

Test Setup

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

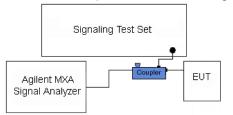


Figure 7-2. Test Instrument & Measurement Setup

FCC ID: A3LSMG930US	<u> PCTEST</u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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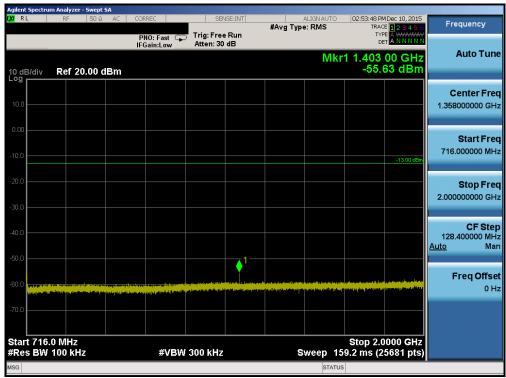
Compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for frequencies less than 1 GHz and 1 MHz or greater for frequencies greater than 1 GHz. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	Reviewed by: Quality Manager		
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	m Analyzer - Swept SA					
(X/ RL	RF 50Ω AC	CORREC	SENSE:INT	ALIGN AUT #Avg Type: RMS	0 02:53:38 PM Dec 10, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWWW	Frequency
		PNO: Fast 😱 IFGain:Low	Trig: Free Run Atten: 30 dB			
10 dB/div	Ref 20.00 dBm				Mkr1 697.05 MHz -49.14 dBm	Auto Tune
	Ker 20.00 dBill					
						Center Freq
10.0						363.950000 MHz
0.00						Start Freq
-10.0						30.000000 MHz
-10.0					-13.00 dBm	
-20.0						Oton From
						Stop Freq 697.900000 MHz
-30.0						037.300000 WI 12
						05.01.0
-40.0						CF Step 66.790000 MHz
						<u>Auto</u> Man
-50.0						
						Freq Offset
-60.0 Research		and a standard standard and a standard standard at the standard standard standard standard standard standard st	an id kataminin dan di bara sinda at		Cardina a final set provide a provide a firm of the set of the set	0 Hz
-70.0						
-70.0						
Start 30.0		41) (D)A(300 kHz	Curren	Stop 697.9 MHz	
#Res BW	TOUTEN	#VBW	JUU KHZ		82.82 ms (13359 pts)	
MSG				STA	TUS	

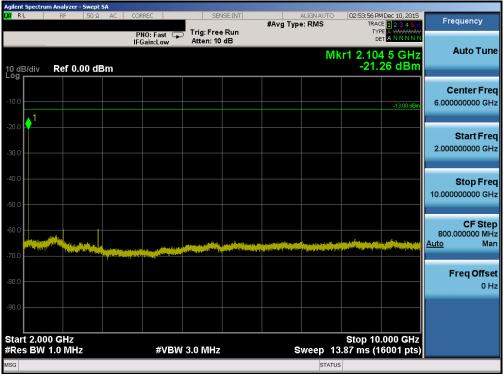
Plot 7-59. Conducted Spurious Plot (Band 12 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



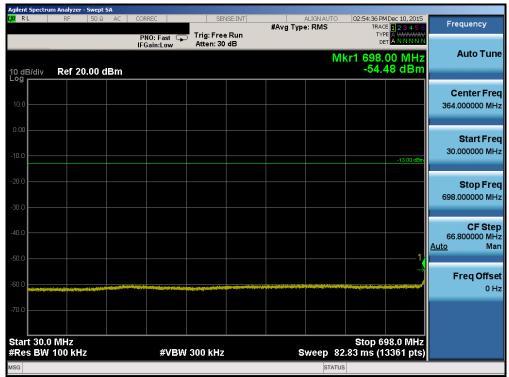
Plot 7-60. Conducted Spurious Plot (Band 12 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: A3LSMG930US	<u> <u> <u> </u> <u> </u></u></u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
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Plot 7-61. Conducted Spurious Plot (Band 12 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



Plot 7-62. Conducted Spurious Plot (Band 12 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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	m Analyzer - Swept SA					
LXIRL	RF 50 Ω AC	CORREC	SENSE:INT	#Avg Type: RMS	02:54:44 PMDec 10, 2015 TRACE 12 3 4 5 6	Frequency
		PNO: Fast 🖵 IFGain:Low	Trig: Free Run Atten: 30 dB		TRACE 12 3 4 5 6 TYPE A WWWWW DET A NN NN N Kr1 716.35 MHz	Auto Tune
10 dB/div Log	Ref 20.00 dBn	1 I			-45.13 dBm	
10.0						Center Freq 1.358000000 GHz
-10.0					-13.00 dBm	Start Freq 716.000000 MHz
-20.0						Stop Freq 2.000000000 GHz
-40.0 - 1						CF Step 128.400000 MHz <u>Auto</u> Man
	en for en stef en port and a sterre for former for port and a sterre for		en gesteren steftig blek zich en der ein bester Regesteren geben ein geben ein geben ein geben ein stere	an fan fan fan fan fan fan ster gan fan fan ster fan ster fan fan fan ster fan fan fan ster fan fan fan ster f	e e general and de general se se a se se a se	Freq Offset 0 Hz
-70.0						
Start 716. #Res BW		#VBW	300 kHz	Sweep 1	Stop 2.0000 GHz 59.2 ms (25681 pts)	
MSG				STATU		

Plot 7-63. Conducted Spurious Plot (Band 12 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



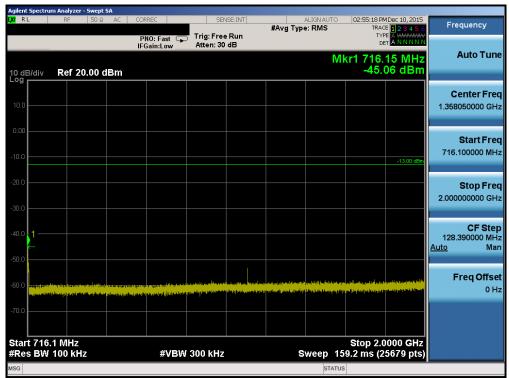
Plot 7-64. Conducted Spurious Plot (Band 12 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Agilent Spectru LXI RL	um Analyzer - Swept S RF 50 Ω		056	051				00.55.44.5	10 10 0015	
CAU RL	RF 50 Ω	AC COR			ISE:INT	#Avg Type	ALIGN AUTO E: RMS	TRAC	4Dec 10, 2015 E 1 2 3 4 5 6 E A WWWWW	Frequency
		PI IFG	IO: Fast 🛛 🖵 iain:Low	Trig: Free Atten: 30				DE	ANNNN	
10 dB/div	Ref 20.00 d	Bm					М	kr1 697. -52.	85 MHz 42 dBm	Auto Tune
10.0										Center Freq 364.000000 MHz
-10.0									-13.00 dBm	Start Freq 30.000000 MHz
-20.0										Stop Freq 698.000000 MHz
-40.0									1	CF Step 66.800000 MHz <u>Auto</u> Man
-60.0	g and have a set of the group of the set of	an a filman	a an	na manana na kata na kata kata kata kata kat		a na pana di san kata di kata sa Kata ya kata sa kata s	a de la surra de la surra La surra de la s	Hereiten auf eine einen		Freq Offset 0 Hz
-70.0	0 MHz							Stop 6	98.0 MHz	
#Res BW			#VBW	300 kHz		S	weep 8	2.83 ms (1	3361 pts)	
MSG							STATU	s		

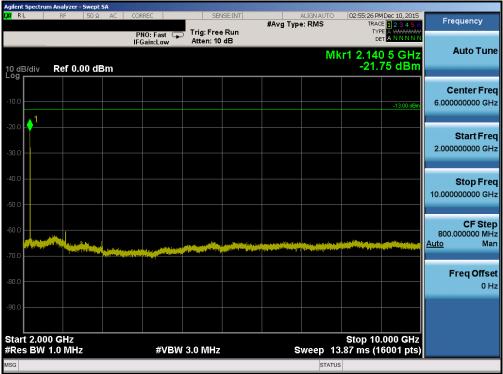
Plot 7-65. Conducted Spurious Plot (Band 12 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



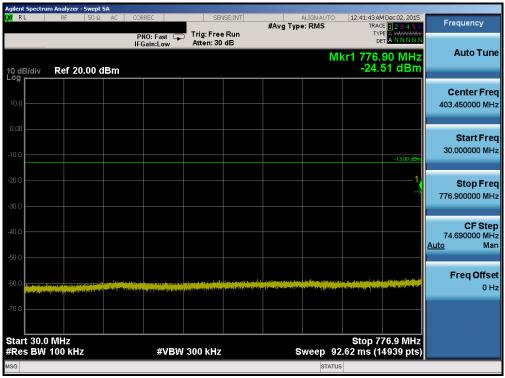
Plot 7-66. Conducted Spurious Plot (Band 12 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Plot 7-67. Conducted Spurious Plot (Band 12 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



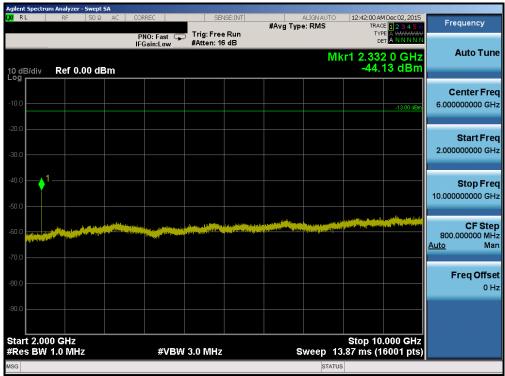
Plot 7-68. Conducted Spurious Plot (Band 13 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: A3LSMG930US	<u> PCTEST</u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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	ım Analyzer - Swept S					1				
(X/RL	RF 50 Ω	AC CORR	EC	SEN	ISE:INT	#Avg Type	ALIGN AUTO		1 Dec 02, 2015 E 1 2 3 4 5 6 E A WWWWW	Frequency
		PN IFG	0: Fast 😱 ain:Low	Trig: Free Atten: 30			Mkr	Di		Auto Tune
10 dB/div Log	Ref 20.00 d	Bm						-53.1	24 dBm	
10.0										Center Freq 1.393500000 GHz
-10.0									-13.00 dBm	Start Freq 787.000000 MHz
-20.0										Stop Freq 2.00000000 GHz
-40.0						1				CF Step 121.300000 MHz <u>Auto</u> Man
-50.0	the from motion of the Department	an a tha tha an	n a gapan () na ang ang ang ang ang ang ang ang ang	an si an is pana an is in an is Ny INSEE dia mampikamben'ny fisiana	profil from generation	es survey and a structure of the second s	langkaranan yangatarana Tanan pelakan pentapata	Henry Harry States and Henry All	l la presidente a su de la companya	Freq Offset 0 Hz
-70.0										
Start 787 #Res BW			#VBW	300 kHz		S	weep 15	Stop 2.0 0.4 ms (2	0000 GHz 4261 pts)	
MSG							STATUS			

Plot 7-69. Conducted Spurious Plot (Band 13 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



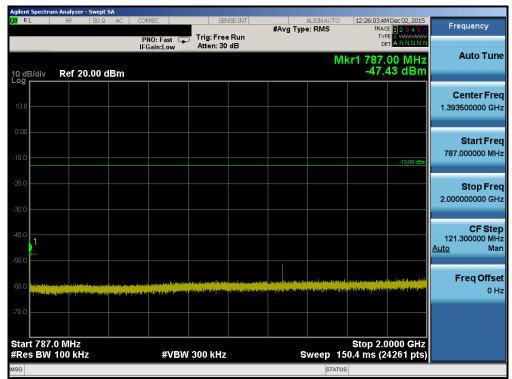
Plot 7-70. Conducted Spurious Plot (Band 13 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: A3LSMG930US	<u> <u> PCTEST</u> </u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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PNO: Fast IFGainLow Trig: Free Run Atten: 30 dB Mkr1 777.00 MHz -47.87 dBm Auto Tune Mkr1 777.00 MHz -47.87 dBm Center Free 403.500000 MHz Center Free 403.500000 MHz Start Free 30.00000 MHz 00 00 00 00 00 00 00 00 00 00 00 00 00	Agilent Spectru	m Analyzer - Swept SA	CODDEC			10.05.55.41.5 - 00.0015	
Image: Production Attent: 30 dB Det ANNUME Mkr1 7777.00 MHz 47.87 dBm Auto Tune Mkr1 7777.00 MHz 47.87 dBm Center Free 403.500000 MHz Muse Image: Production of the second s	KL	RF 50Ω AC	UURREL			TRACE 123456	Frequency
ABXdiv Ref 20.00 dBm A7.87 dBm ABXdiv Ref 20.00 dBm A7.87 dBm ABXdiv Ref 20.00 dBm Center Freq 403.500000 MHz ABXdiv Start Freq 30.00000 MHz ABXdiv AF.87 dBm ABXdiv Start Freq 30.00000 MHz ABXdiv AF.87 dBm ABXdiv AF.87 dBm <td></td> <td></td> <td>PNO: Fast 🖵 IFGain:Low</td> <td></td> <td></td> <td>DET A NNNN</td> <td></td>			PNO: Fast 🖵 IFGain:Low			DET A NNNN	
Center Free 403.500000 MH2 30.000000 MH2 30.000000 MH2 30.000000 MH2 30.000000 MH2 30.000000 MH2 30.000000 MH2 30.00000 MH2 30.0000 MH2 30.00000 MH2 30.0000 MH2 30.00000 MH2 30.000000 MH2 30.000000 MH2 30.000000 MH2 30.000000	10 dB/div	Ref 20.00 dBm			M	kr1 777.00 MHz -47.87 dBm	Auto Tune
Start Free 30.00000 MHz 30.00000 MHz 4.1300 dm 4.1300 dm 5.1300 dm 4.1300 dm 4.1300 dm 5.1300 dm 4.140 Mar 5.1300 dm 4.140 Mar 6.140 Mar 6.140 Mar 6.140 Mar 7.14,70000 MHz 4.140 Mar 6.140 Mar 6.140 Mar 7.14,70000 MHz 4.140 Mar 6.140 Mar 7.14,70000 MHz 4.140 Mar 6.140 Mar 7.14,70000 MHz 6.140 Mar 7.14,70000 MHz 6.140 Mar 7.140 Mar	10.0						Center Freq 403.500000 MHz
Stop Free 777.000000 MH2 CF Step 74.700000 MH2 Mar Freq Offset 0 H2 Stop 777.0 MHz Sweep 92.63 ms (14941 pts)	-10.0					-13.00 dBm	Start Freq 30.000000 MHz
Tree of the second seco	-20.0						Stop Freq 777.000000 MHz
Freq Offset 0 Hz art 30.0 MHz Res BW 100 kHz #VBW 300 kHz Sweep 92.63 ms (14941 pts)	-40.0					1,	CF Step 74.700000 MHz <u>Auto</u> Man
tart 30.0 MHz Stop 777.0 MHz Res BW 100 kHz #VBW 300 kHz Sweep 92.63 ms (14941 pts)		ner men af see a second sect a ner part of the second sectors of the second sectors of the second sectors of the	a la de la constituir de La constituir de la constit	the second state of the se	a National y Roman and a strain y last the state of the sport of the s	e fan fan sereite fan fan sereite fan s	Freq Offset 0 Hz
Res BW 100 kHz #VBW 300 kHz Sweep 92.63 ms (14941 pts)	-70.0						
			#VBW	300 kHz	Sweep 92	Stop 777.0 MHz 2.63 ms (14941 pts)	
G	MSG				STATUS		

Plot 7-71. Conducted Spurious Plot (Band 13 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



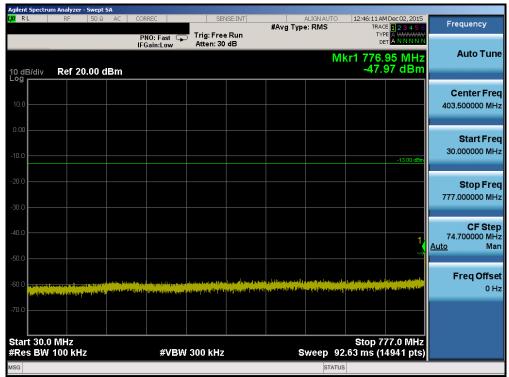
Plot 7-72. Conducted Spurious Plot (Band 13 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 52 of 100
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Plot 7-73. Conducted Spurious Plot (Band 13 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



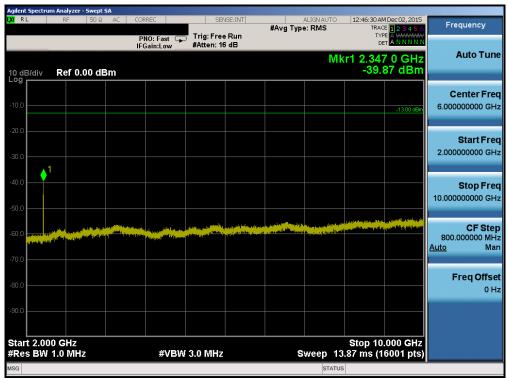
Plot 7-74. Conducted Spurious Plot (Band 13 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 54 of 100
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	m Analyzer - Swep									
LXI RL	RF 50 \$	2 AC	CORREC	SEI	NSE:INT	#Avg Typ	ALIGN AUTO e: RMS	TRAC	M Dec 02, 2015 CE <mark>1 2 3 4 5 6</mark>	Frequency
			PNO: Fast	Trig: Free Atten: 30		0 //		TY		
10 dB/div Log	Ref 20.00	dBm					Μ	kr1 788. -46.	40 MHz 73 dBm	Auto Tune
10.0										Center Freq 1.393550000 GHz
-10.0									-13.00 dBm	Start Freq 787.100000 MHz
-20.0										Stop Freq 2.000000000 GHz
-40.0										CF Step 121.290000 MHz <u>Auto</u> Man
-60.0 (11) / (11)	ny sy af determenter kardere a y staat die kardere	an bhair bhaire Martin Island	n tegen lagan <mark>milangki b</mark> asi Aga milan dan pagingka ki ki	an ang palanan Sugar pada Palanan Kang Jula II	a na sa fa fa sa	a da mang pang kang sa dan pang pang kang Mang da pang pang sa dan pang sa dan pang sa dan pang sa	a ana ang ang ang ang ang ang ang ang an		e poerte la seconda de la composition - la compositio (incompositio) de la c	Freq Offset 0 Hz
-70.0										
Start 787. #Res BW			#VB\	N 300 kHz		s	weep 15		0000 GHz 4259 pts)	
MSG							STATUS	3		

Plot 7-75. Conducted Spurious Plot (Band 13 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



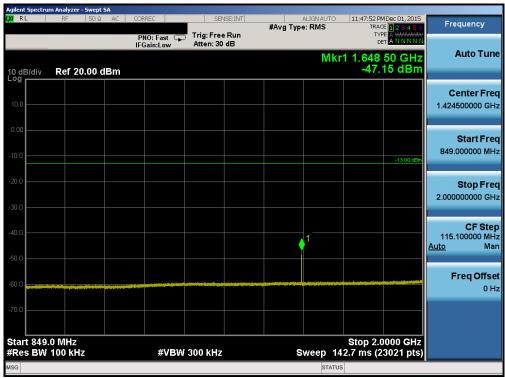
Plot 7-76. Conducted Spurious Plot (Band 13 – 5.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Daga EE of 100	
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	m Analyzer - Swept Si									
LXI RL	RF 50 Ω	AC CORF	REC	SEN	ISE:INT	#Avg Type	ALIGN AUTO	11:47:12 PM TRAC	MDec 01, 2015	Frequency
			0: Fast 🖵 ain:Low	Trig: Free Atten: 30				Di	CE 123456 PE A WWWWWW A N N N N N	Auto Tune
10 dB/div Log	Ref 20.00 di	Bm					M	kr1 823. -38.	00 MHz 53 dBm	Auto Tune
10.0										Center Freq 426.500000 MHz
-10.0									-13.00 dBm	Start Freq 30.000000 MHz
-20.0										Stop Freq 823.000000 MHz
-40.0										CF Step 79.300000 MHz <u>Auto</u> Man
-60.0 apoption	prospination and and any second states of		- Transfel and a state of the	an a	e line ou in an i i i i i i i i i i i i i i i i i	a dag dar para sidar ya Yan mjaya bada dhaji si	Angester gesegende Mitte Alle Sime bei Vegelichte	an bawaraya saya ya saya ta ya sa Saya ta ya saya ta ya s		Freq Offset 0 Hz
-70.0 Start 30.0	MHz							Stop 8	23.0 MHz	
#Res BW			#VBW	300 kHz		S	weep 98	.33 ms (1	5861 pts)	
MSG							STATUS	;		

Plot 7-77. Conducted Spurious Plot (Band 5/26 – 3.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



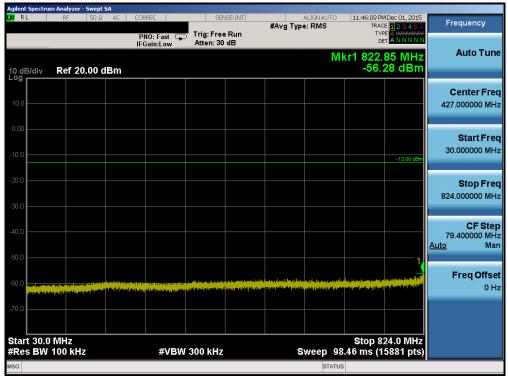
Plot 7-78. Conducted Spurious Plot (Band 5/26 - 3.0MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
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Plot 7-79. Conducted Spurious Plot (Band 5/26 - 3.0MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)



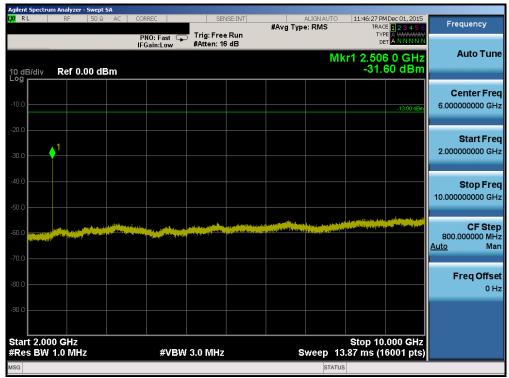
Plot 7-80. Conducted Spurious Plot (Band 5/26 – 3.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dege 57 of 100	
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Agilent Spectrur L <mark>XI</mark> RL	n Analyzer - Swept : RF 50 Ω		REC	SEN	JSE:INT		ALIGNAUTO		MDec 01, 2015	
		Р	NO: Fast 🗔	Trig: Free		#Avg Typ	e: RMS	TY	CE 123456 PE A WWWWW	Frequency
		IFO	Gain:Low	Atten: 30	dB				ET A N N N N N	Auto Tune
10 dB/div Log	Ref 20.00 d	IBm					WKr	1 1.670 -50.	50 GHz 36 dBm	
10.0										Center Freq 1.424500000 GHz
-10.0									-13.00 dBm	Start Freq 849.000000 MHz
-20.0										Stop Freq 2.000000000 GHz
-40.0							↓ ¹			CF Step 115.100000 MHz <u>Auto</u> Man
-60.0	new and the state of the state	na kana ya tabisi si Gubuni ya Leijatele	a for some for strengt	alaan galaa ahaa ahaa ahaa	fan Derfer Tepenet Hans Y en fallten af stepelen	yyer herry herrist and so the re-	a the second	displacity says of the state gal part of the state	- Corporation Manager State Projection and the Orientia	Freq Offset 0 Hz
-70.0 Start 849.	0 MHz							Stop 24		
#Res BW	100 kHz		#VBW	300 kHz		s	weep 14	2.7 ms (2	0000 GHz 3021 pts)	
мsg 🤹 Point	s changed; all t	races clear	ed				STATUS	;		

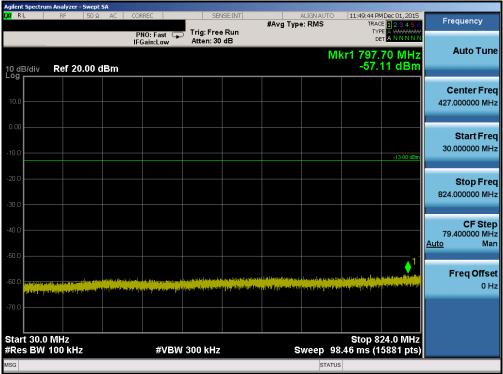
Plot 7-81. Conducted Spurious Plot (Band 5/26 – 3.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



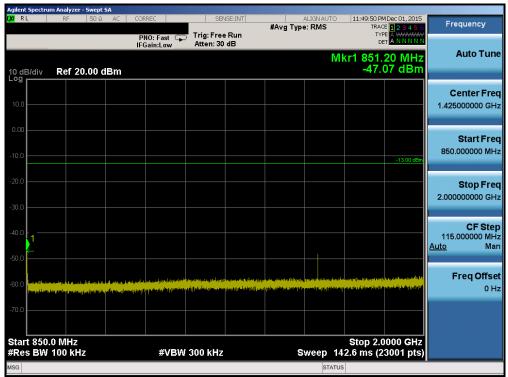
Plot 7-82. Conducted Spurious Plot (Band 5/26 – 3.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Page 58 of 190	
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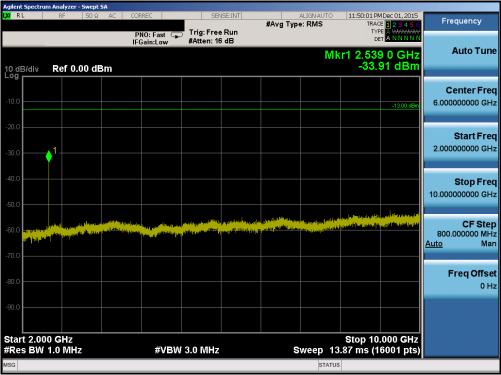
Plot 7-83. Conducted Spurious Plot (Band 5/26 - 3.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



Plot 7-84. Conducted Spurious Plot (Band 5/26 – 3.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: A3LSMG930US	<u> PCTEST</u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Page 59 of 190	
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Plot 7-85. Conducted Spurious Plot (Band 5/26 – 3.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



Plot 7-86. Conducted Spurious Plot (Band 4 – 3.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dage 60 of 100	
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Plot 7-87. Conducted Spurious Plot (Band 4 – 3.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



Plot 7-88. Conducted Spurious Plot (Band 4 – 3.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Daga 61 of 100	
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Agilent Spectru	m Analyzer - Swept SA	C	SENSE:INT	ALIGNAUTO		
LAU RL	RF 50 Ω A	AC CORREC		#Avg Type: RMS	12:55:13 PM Dec 02, 2015 TRACE 1 2 3 4 5 6	Frequency
		PNO: Fast 🕞 IFGain:Low	Trig: Free Run Atten: 30 dB		TYPE A WWWWW DET A N N N N N	
		II OGINEON		M	kr1 1.707 5 GHz	Auto Tune
10 dB/div Log	Ref 20.00 dBi	m			kr1 1.707 5 GHz -47.45 dBm	
209						Center Freq
10.0						870.000000 MHz
0.00						Start From
						Start Freq 30.000000 MHz
-10.0					-13.00 dBm	
-20.0						
20.0						Stop Freq 1.710000000 GHz
-30.0						1.7 10000000 GHZ
						CF Step
-40.0					1	168.000000 MHz
						<u>Auto</u> Man
-50.0		terite and a second	and the second			
-60.0						Freq Offset
00.0						0 Hz
-70.0						
Start 30.0	MHz				Stop 1.7100 GHz	
#Res BW		#VBV	/ 3.0 MHz	Sweep	2.240 ms (3361 pts)	
MSG				STATU	s	

Plot 7-89. Conducted Spurious Plot (Band 4 – 3.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



Plot 7-90. Conducted Spurious Plot (Band 4 – 3.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Daga 62 of 100	
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Plot 7-91. Conducted Spurious Plot (Band 4 – 3.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



Plot 7-92. Conducted Spurious Plot (Band 4 – 3.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: A3LSMG930US	<u> PCTEST</u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Page 63 of 190	
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Plot 7-93. Conducted Spurious Plot (Band 4 – 3.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



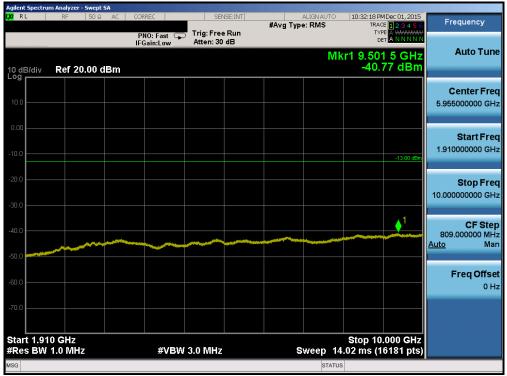
Plot 7-94. Conducted Spurious Plot (Band 4 – 3.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 64 of 190
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	um Analyzer - Swept SA					
LXI RL	RF 50 Ω AC	CORREC	SENSE:INT	ALIGN AUTO #Avg Type: RMS	10:31:44 PMDec 01, 2015 TRACE 1 2 3 4 5 6	Frequency
		PNO: Fast 🖵 IFGain:Low	Trig: Free Run Atten: 30 dB		TYPE A WWWWWW DET A N N N N N	
	-	II Gain.cow		M	(r1 1 848 5 GHz	Auto Tune
10 dB/div	Ref 20.00 dBm				r1 1.848 5 GHz -19.07 dBm	
Log						
10.0						Center Freq
10.0						939.500000 MHz
0.00						
						Start Freq
-10.0					-13.00 dBm	30.000000 MHz
					1	
-20.0					<u> </u>	Stop Freq
						1.849000000 GHz
-30.0						
-40.0						CF Step
-40.0						181.900000 MHz Auto Man
-50.0	والمتعادية والمعروف والمتعادية والمتعادية		a hat the second start fragment of the	and the second		Auto
الططاب ومراسي						Freq Offset
-60.0						0 Hz
						0112
-70.0						
Start 30.0					Stop 1.8490 GHz	
#Res BW	1.0 MHz	#VBW	3.0 MHz	Sweep 2	2.425 ms (3639 pts)	
MSG				STATU	S	

Plot 7-95. Conducted Spurious Plot (Band 2/25 – 1.4MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



Plot 7-96. Conducted Spurious Plot (Band 2/25 – 1.4MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Plot 7-97. Conducted Spurious Plot (Band 2/25 – 1.4MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



Plot 7-98. Conducted Spurious Plot (Band 2/25 – 1.4MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Plot 7-99. Conducted Spurious Plot (Band 2/25 - 1.4MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)



Plot 7-100. Conducted Spurious Plot (Band 2/25 - 1.4MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMG930US	<u> <u> <u> </u> <u> </u></u></u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dege 67 of 100
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	um Analyzer - Swept SA					
(X) RL	RF 50 Ω AC	CORREC	SENSE:INT	ALIGNAU #Avg Type: RMS	TRACE 1 2 3 4 5 (Frequency
		PNO: Fast 🖵 IFGain:Low	Trig: Free Run Atten: 30 dB			
		IFGall.LUW	nach. oo ub		Mkr1 1 729 0 GHz	Auto Tune
10 dB/div	Ref 20.00 dBm				Mkr1 1.729 0 GHz -47.37 dBm	
Log						1
						Center Freq
10.0						940.000000 MHz
0.00						
0.00						Start Freq
-10.0						30.000000 MHz
					-13.00 dBm	
-20.0						Stop Freq
						1.85000000 GHz
-30.0						
						CF Step
-40.0						182.000000 MHz
						<u>Auto</u> Man
-50.0	********	and the second secon				
-60.0						Freq Offset
-00.0						0 Hz
-70.0						
Start 30. #Res Bia	0 MHZ / 1.0 MHz	#\/B\M	3.0 MHz	Sweet	Stop 1.8500 GHz p 2.427 ms (3641 pts)	
MSG					p 2:427 ms (3041 pts) tatus	
				0		

Plot 7-101. Conducted Spurious Plot (Band 2/25 – 1.4MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



Plot 7-102. Conducted Spurious Plot (Band 2/25 – 1.4MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 68 of 190
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Plot 7-103. Conducted Spurious Plot (Band 2/25 – 1.4MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



Plot 7-104. Conducted Spurious Plot (Band 30 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: A3LSMG930US		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 69 of 190
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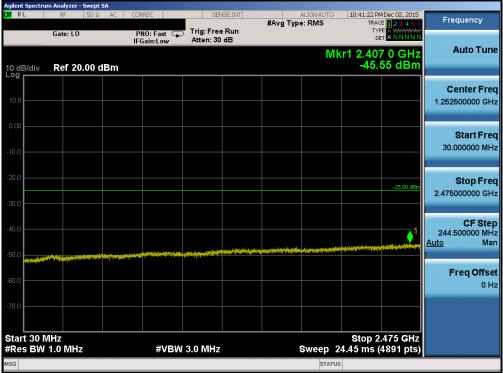
Plot 7-105. Conducted Spurious Plot (Band 30 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



Plot 7-106. Conducted Spurious Plot (Band 30 – 10.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga 70 of 100
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Plot 7-107. Conducted Spurious Plot (Band 41 – 15.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



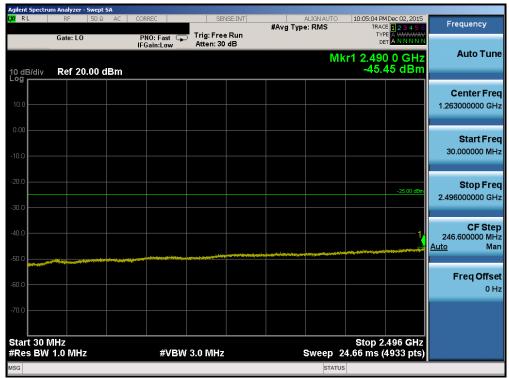
Plot 7-108. Conducted Spurious Plot (Band 41 – 15.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Plot 7-109. Conducted Spurious Plot (Band 41 – 15.0MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)



Plot 7-110. Conducted Spurious Plot (Band 41 – 15.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Plot 7-111. Conducted Spurious Plot (Band 41 – 15.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)



Plot 7-112. Conducted Spurious Plot (Band 41 – 15.0MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: A3LSMG930US	<u> <u> <u> </u> <u> </u></u></u>	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Plot 7-113. Conducted Spurious Plot (Band 41 – 15.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



Plot 7-114. Conducted Spurious Plot (Band 41 – 15.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: A3LSMG930US	PCTEST	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager	
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Plot 7-115. Conducted Spurious Plot (Band 41 – 15.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

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