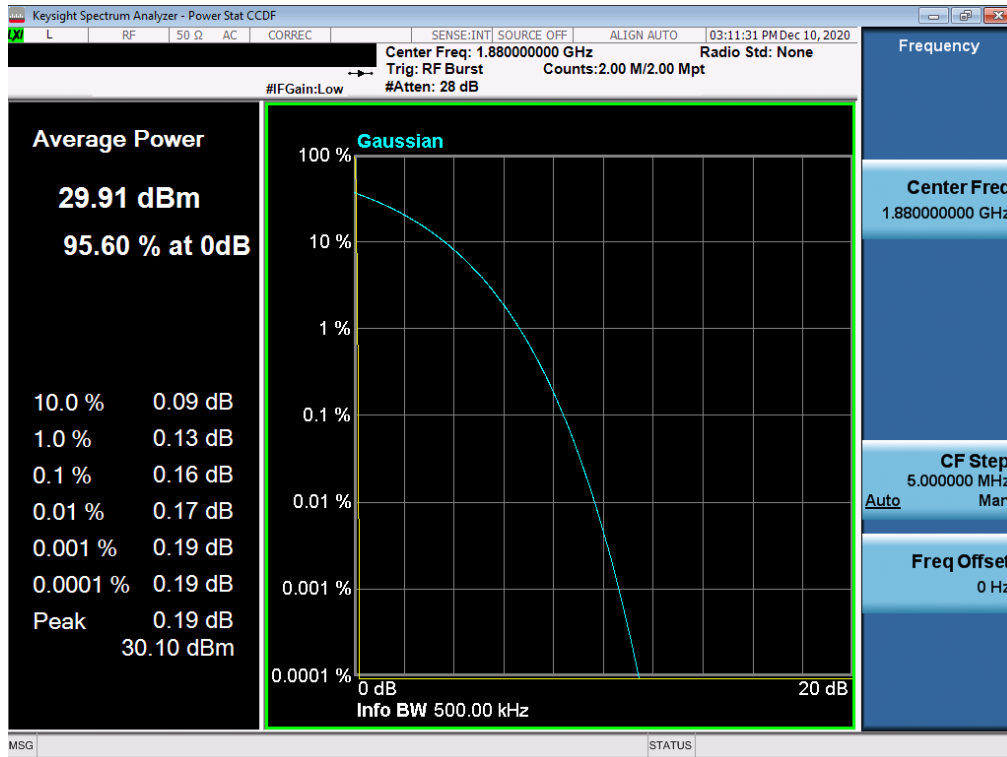
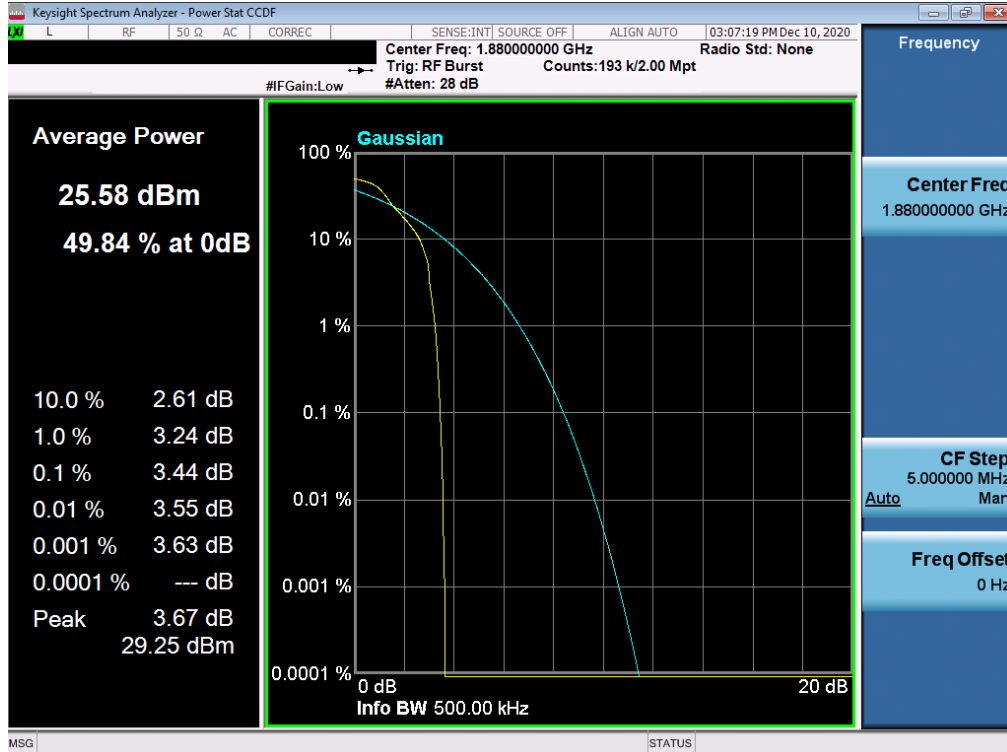


GSM/GPRS PCS



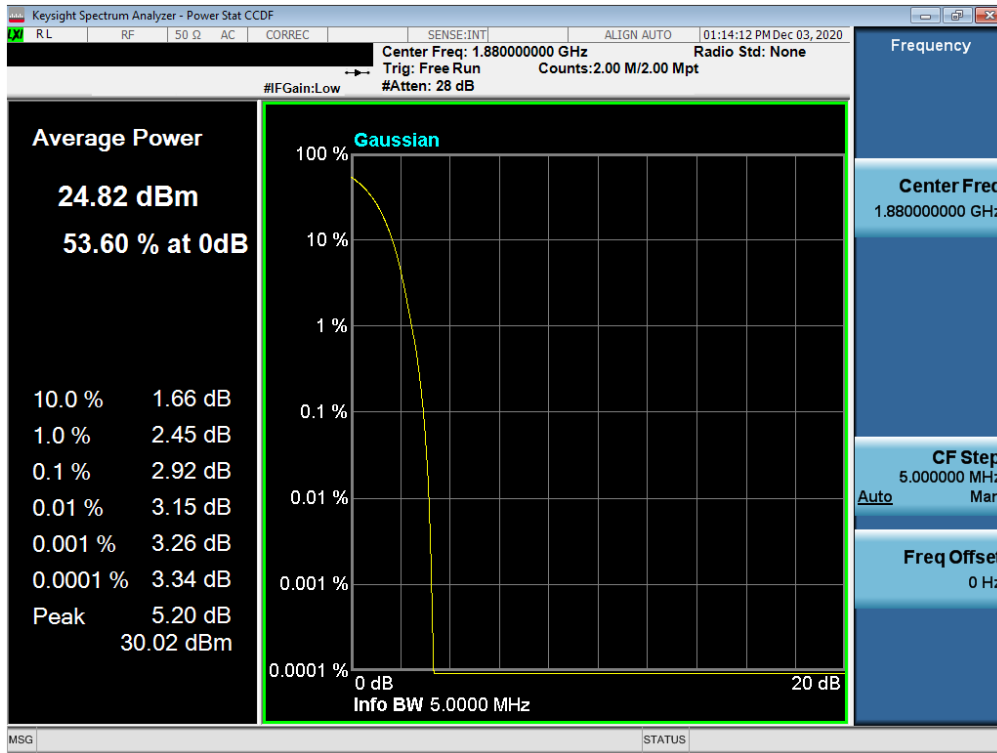
Plot 7-123. PAR Plot (GPRS, Ch. 661)



Plot 7-124. PAR Plot (EDGE, Ch. 661)

FCC ID: ZNFK420TM	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
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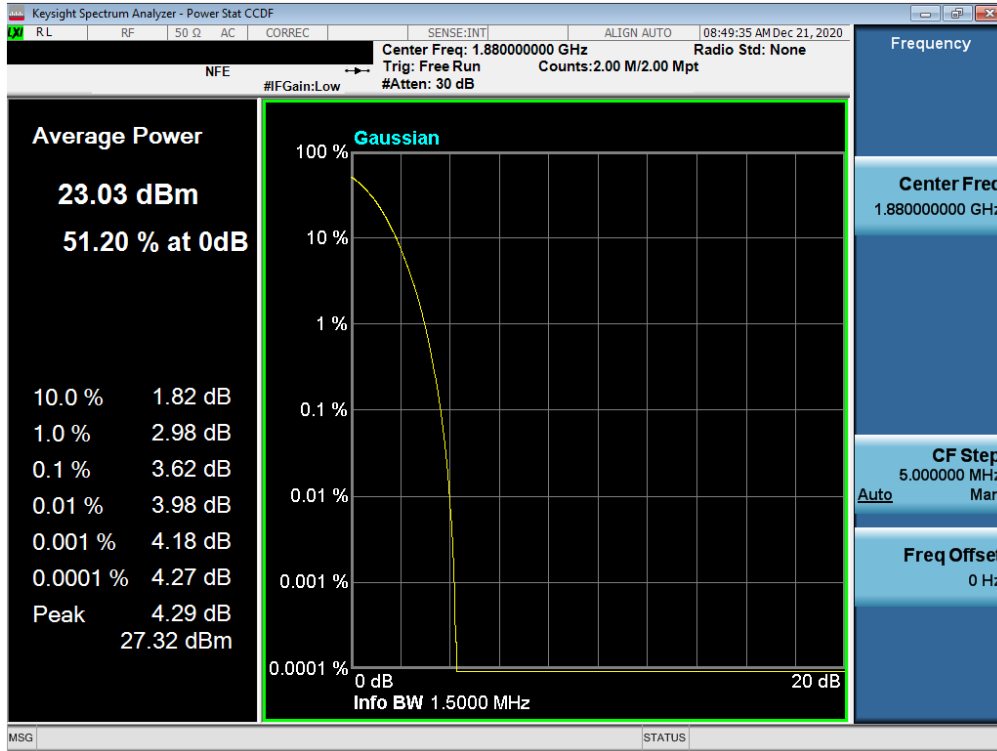
WCDMA PCS



Plot 7-125. PAR Plot (WCDMA, Ch. 9400)

FCC ID: ZNFK420TM	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
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CDMA PCS



Plot 7-126. PAR Plot (CDMA, Ch. 600)

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7.6 Radiated Power (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 broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at maximum power, and at the appropriate frequencies.



Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.2.1

ANSI/TIA-603-E-2016 – Section 2.2.17

Test Settings

1. Radiated power measurements are performed using the signal analyzer’s “channel power” measurement capability for signals with continuous operation. For signals with burst transmission, the signal analyzer’s “time domain power” measurement capability is used
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
3. VBW \geq 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points \geq 2 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

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Test Setup

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

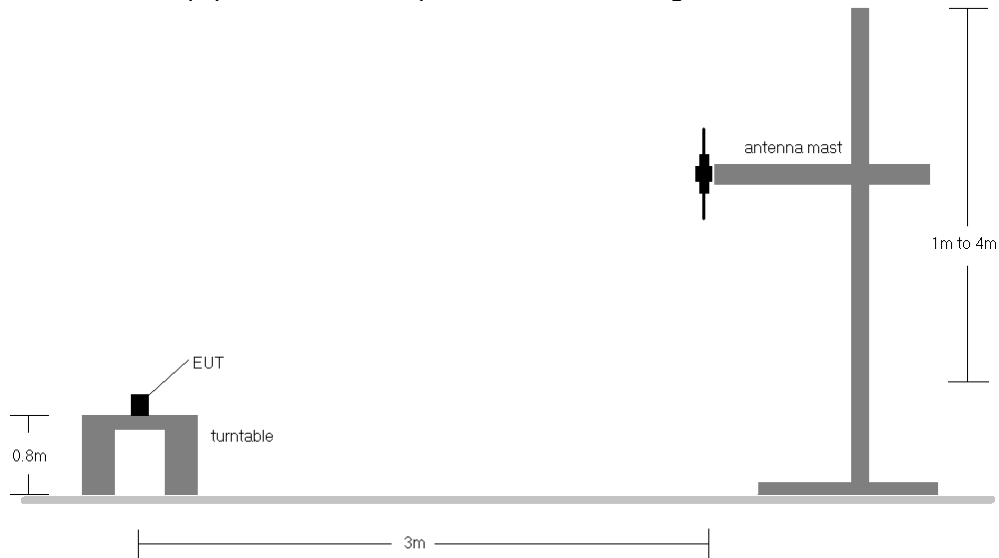




Figure 7-5. Radiated Test Setup <1GHz

Test Notes

- 1) This device employs GSM, GPRS, and EDGE capabilities. The EUT was tested under all configurations and the highest powers is reported in GPRS mode while transmitting with one slot active.
- 2) This device employs UMTS technology with WCDMA (AMR/RMC) and HSDPA capabilities. The EUT was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1".
- 3) This device was tested under all RC and SO combinations and the worst case is reported with RC3/SO55 with "All Up" power control bits.
- 4) 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.
- 5) This unit was tested with its standard battery.
- 6) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case setup is reported in the tables below.

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Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	EUT Pol.	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
20 MHz	QPSK	1860.0	H	X	120	3	8.64	1 / 0	16.58	25.22	0.333	33.01	-7.79
		1882.5	H	X	122	7	8.65	1 / 0	16.68	25.33	0.341	33.01	-7.68
		1905.0	H	X	114	8	8.66	1 / 0	15.92	24.58	0.287	33.01	-8.43
	16-QAM	1882.5	H	X	122	7	8.65	1 / 0	15.86	24.51	0.283	33.01	-8.50
	64-QAM	1882.5	H	X	122	7	8.65	1 / 0	14.83	23.48	0.223	33.01	-9.53
15 MHz	QPSK	1857.5	H	X	126	14	8.64	1 / 0	16.87	25.51	0.356	33.01	-7.50
		1882.5	H	X	128	6	8.65	1 / 37	16.35	25.00	0.316	33.01	-8.01
		1907.5	H	X	122	8	8.66	1 / 37	16.12	24.78	0.300	33.01	-8.23
	16-QAM	1857.5	H	X	126	14	8.64	1 / 0	16.09	24.73	0.297	33.01	-8.28
	64-QAM	1857.5	H	X	126	14	8.64	1 / 0	15.21	23.85	0.243	33.01	-9.16
10 MHz	QPSK	1855.0	H	X	124	6	8.64	1 / 0	17.10	25.74	0.375	33.01	-7.27
		1882.5	H	X	118	4	8.65	1 / 0	16.52	25.17	0.329	33.01	-7.84
		1910.0	H	X	107	0	8.66	1 / 25	15.39	24.05	0.254	33.01	-8.96
	16-QAM	1855.0	H	X	124	6	8.64	1 / 0	16.31	24.95	0.313	33.01	-8.06
	64-QAM	1855.0	H	X	124	6	8.64	1 / 0	15.27	23.91	0.246	33.01	-9.10
5 MHz	QPSK	1852.5	H	X	151	1	8.64	1 / 12	16.56	25.20	0.331	33.01	-7.81
		1882.5	H	X	121	16	8.65	1 / 0	16.50	25.15	0.327	33.01	-7.86
		1912.5	H	X	156	5	8.66	1 / 12	15.95	24.61	0.289	33.01	-8.40
	16-QAM	1852.5	H	X	151	1	8.64	1 / 12	15.93	24.57	0.287	33.01	-8.44
	64-QAM	1852.5	H	X	151	1	8.64	1 / 12	14.91	23.55	0.227	33.01	-9.46
3 MHz	QPSK	1851.5	H	X	121	12	8.64	1 / 7	16.85	25.49	0.354	33.01	-7.52
		1882.5	H	X	125	5	8.65	1 / 0	16.44	25.09	0.323	33.01	-7.92
		1913.5	H	X	147	4	8.66	1 / 7	16.24	24.90	0.309	33.01	-8.11
	16-QAM	1851.5	H	X	121	12	8.64	1 / 7	15.97	24.61	0.289	33.01	-8.40
	64-QAM	1851.5	H	X	121	12	8.64	1 / 7	14.95	23.59	0.229	33.01	-9.42
1.4 MHz	QPSK	1850.7	H	X	129	9	8.64	1 / 3	17.32	25.96	0.395	33.01	-7.05
		1882.5	H	X	121	5	8.65	1 / 3	16.47	25.12	0.325	33.01	-7.89
		1914.3	H	X	149	8	8.66	1 / 3	16.07	24.73	0.297	33.01	-8.28
	16-QAM	1850.7	H	X	129	9	8.64	1 / 3	16.35	24.99	0.316	33.01	-8.02
	64-QAM	1850.7	H	X	129	9	8.64	1 / 3	15.45	24.09	0.257	33.01	-8.92
20 MHz	Opposite Pol.	1850.7	V	Y	115	56	8.64	1 / 3	16.87	25.51	0.356	33.01	-7.50

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

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.20	GPRS1900	H	103	9	21.62	8.64	30.26	1.062	33.01	-2.75
1880.00	GPRS1900	H	119	8	20.83	8.65	29.48	0.887	33.01	-3.53
1909.80	GPRS1900	H	126	2	20.76	8.66	29.42	0.875	33.01	-3.59
1850.20	GPRS1900	V	240	241	21.02	8.64	29.66	0.925	33.01	-3.35
1850.20	EDGE1900	H	103	9	17.66	8.64	26.30	0.427	33.01	-6.71



Table 7-3. EIRP Data (GPRS PCS)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1852.40	WCDMA 1900	H	123	16	16.72	8.64	25.36	0.344	33.01	-7.65
1880.00	WCDMA 1900	H	100	9	16.47	8.65	25.12	0.325	33.01	-7.89
1907.60	WCDMA 1900	H	144	5	16.02	8.66	24.68	0.294	33.01	-8.33
1852.40	WCDMA 1900	V	106	59	16.69	8.64	25.33	0.341	33.01	-7.68

Table 7-4. EIRP Data (WCDMA PCS)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1851.25	CDMA 1900	V	110	258	14.54	8.64	23.18	0.208	33.01	-9.83
1880.00	CDMA 1900	V	101	118	14.37	8.65	23.02	0.200	33.01	-9.99
1908.75	CDMA 1900	V	110	124	14.30	8.66	22.96	0.198	33.01	-10.05
1851.25	CDMA 1900	H	113	22	13.41	8.64	22.05	0.160	33.01	-10.96

Table 7-5. EIRP Data (CDMA PCS)

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7.7 Radiated Spurious Emissions Measurements

Test Overview



Radiated spurious emissions measurements are performed using the field strength conversion method described in KDB 971168 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using horizontally and vertically polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as average RMS measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.8

Test Settings

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

FCC ID: ZNFK420TM	 PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	 LG	Approved by: Technical Manager
Test Report S/N: 1M2011180184-13.ZNF	Test Dates: 12/3/2020	EUT Type: Portable Handset		Page 87 of 103

Test Setup

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

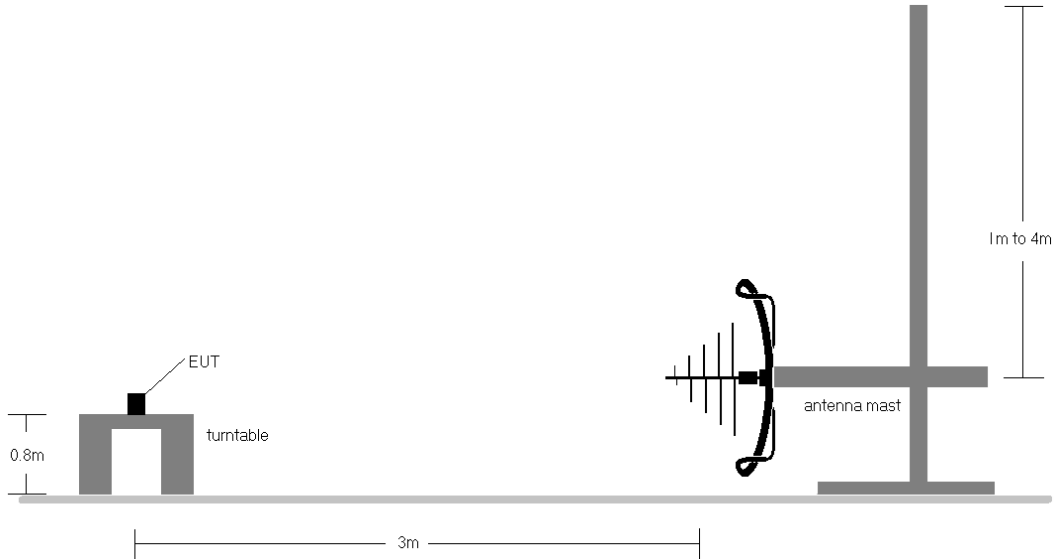


Figure 7-6. Test Instrument & Measurement Setup < 1GHz

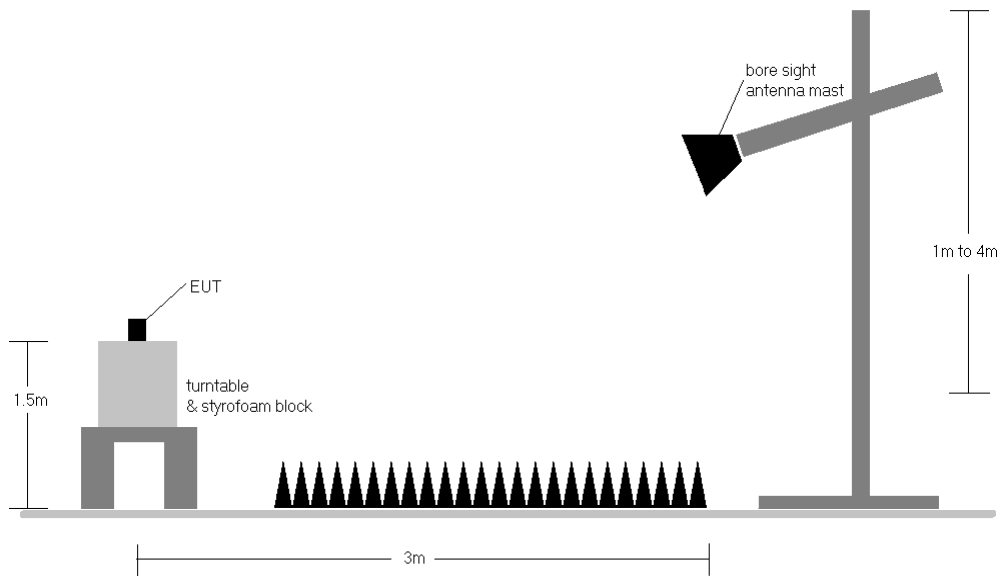




Figure 7-7. Test Instrument & Measurement Setup >1 GHz

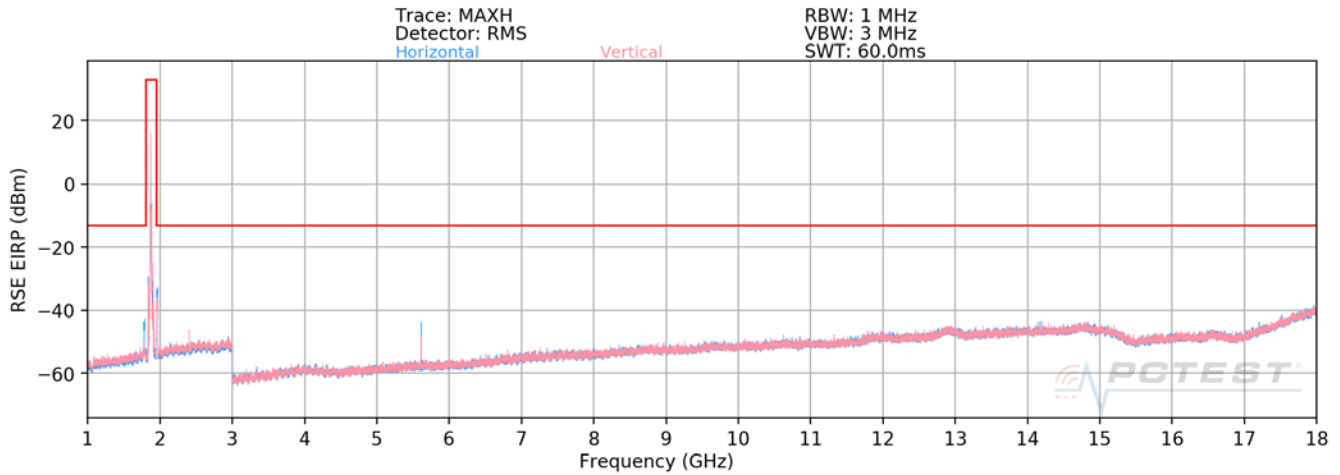
FCC ID: ZNFK420TM	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	LG	Approved by: Technical Manager
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Test Notes

- 1) Field strengths are calculated using the Measurement quantity conversions in KDB 971168 Section 5.8.4.
 - a) $E(\text{dB}\mu\text{V}/\text{m}) = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$
 - b) $\text{EIRP (dBm)} = E(\text{dB}\mu\text{V}/\text{m}) + 20\log D - 104.8$; where D is the measurement distance in meters.
- 2) This device employs GSM, GPRS, and EDGE capabilities. The EUT was tested under all configurations and the highest powers is reported in GPRS mode while transmitting with one slot active.
- 3) This device employs UMTS technology with WCDMA (AMR/RMC) and HSDPA capabilities. The EUT was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1".
- 4) For CDMA, this device was tested under all RC and SO combinations and the worst case is reported with RC3/SO55 with "All Up" power control bits.
- 5) 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.
- 6) This unit was tested with its standard battery.
- 7) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case setup is reported in the tables below.
- 8) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 9) 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.
- 10) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

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LTE Band 25/2



Plot 7-127. Radiated Spurious Plot (LTE Band 25/2)

Bandwidth (MHz):	1.4
Frequency (MHz):	1850.7
RB / Offset:	1 / 3
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3701.4	V	145	48	-0.19	32.70	-62.56	-13.00	-49.56
5552.1	V	122	192	3.64	44.99	-50.26	-13.00	-37.26
7402.8	V	-	-	8.59	35.08	-60.18	-13.00	-47.18
9253.5	V	-	-	11.09	37.13	-58.13	-13.00	-45.13
11104.2	V	-	-	13.49	38.34	-56.92	-13.00	-43.92

Table 7-6. Radiated Spurious Data (LTE Band 25/2 – Low Channel)

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Bandwidth (MHz):	1.4
Frequency (MHz):	1882.5
RB / Offset:	1 / 3
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz



Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3765.0	V	150	49	-0.18	32.61	-62.65	-13.00	-49.65
5647.5	V	111	183	4.31	45.15	-50.11	-13.00	-37.11
7530.0	V	-	-	8.83	36.36	-58.90	-13.00	-45.90
9412.5	V	-	-	11.61	37.14	-58.12	-13.00	-45.12
11295.0	V	-	-	13.68	38.76	-56.49	-13.00	-43.49

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

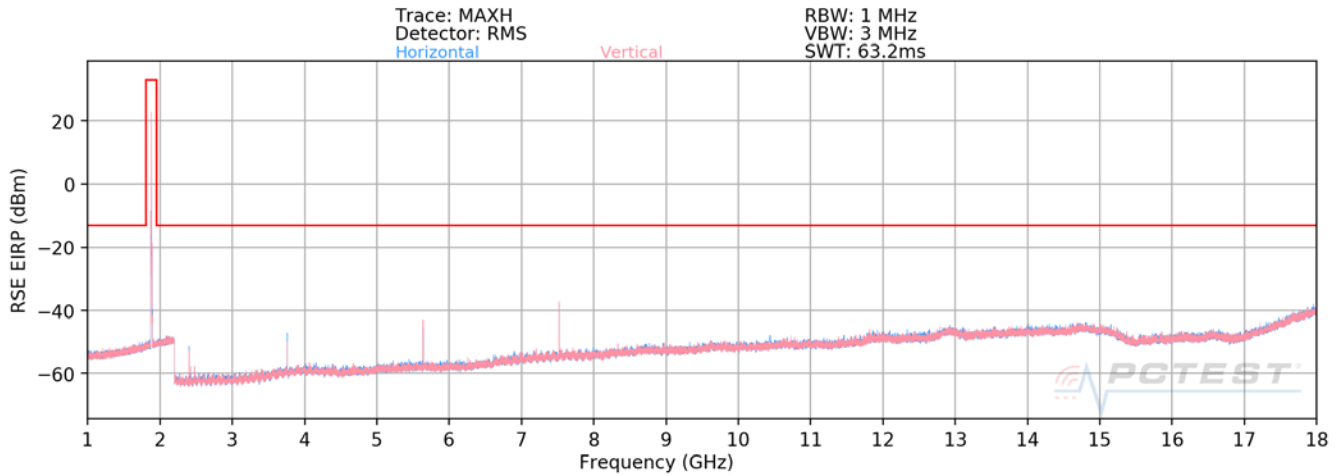
Bandwidth (MHz):	1.4
Frequency (MHz):	1914.3
RB / Offset:	1 / 3
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3828.60	V	149	49	0.30	33.19	-62.07	-13.00	-49.07
5742.90	V	128	187	4.54	45.23	-50.03	-13.00	-37.03
7657.20	V	-	-	8.62	36.08	-59.18	-13.00	-46.18
9571.50	V	-	-	11.62	37.55	-57.71	-13.00	-44.71
11485.80	V	-	-	13.96	38.83	-56.43	-13.00	-43.43

Table 7-8. Radiated Spurious Data (LTE Band 25/2 – High Channel)

FCC ID: ZNFK420TM	 PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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GPRS PCS





Plot 7-128. Radiated Spurious Plot (GPRS PCS)

Mode:	GPRS 1 Tx Slot							
Channel:	512							
Frequency (MHz):	1850.2							
Detector / Trace Mode:	RMS / Max Hold							
RBW / VBW:	1MHz / 3MHz							

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3700.4	H	131	38	-0.18	46.79	-48.47	-13.00	-35.47
5550.6	H	320	86	3.64	48.91	-46.34	-13.00	-33.34
7400.8	H	103	174	8.58	63.60	-31.66	-13.00	-18.66
9251.0	H	100	172	11.08	46.63	-48.63	-13.00	-35.63
11101.2	H	-	-	13.63	46.11	-49.15	-13.00	-36.15
12951.4	H	-	-	18.28	50.55	-44.71	-13.00	-31.71
14801.6	H	-	-	19.27	51.51	-43.75	-13.00	-30.75

Table 7-9. Radiated Spurious Data (GPRS PCS – Low Channel)

FCC ID: ZNFK420TM	 PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	 LG	Approved by: Technical Manager
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Mode:	GPRS 1 Tx Slot
Channel:	661
Frequency (MHz):	1880
Detector / Trace Mode:	RMS / Max Hold
RBW / VBW:	1MHz / 3MHz



Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3760.0	H	142	32	-0.17	46.79	-48.47	-13.00	-35.47
5640.0	H	322	89	4.12	49.54	-45.72	-13.00	-32.72
7520.0	H	100	171	8.84	59.99	-35.27	-13.00	-22.27
9400.0	H	-	-	11.56	44.83	-50.42	-13.00	-37.42
11280.0	H	-	-	13.93	46.57	-48.69	-13.00	-35.69
13160.0	H	-	-	17.02	49.20	-46.06	-13.00	-33.06
15040.0	H	-	-	18.62	50.64	-44.62	-13.00	-31.62

Table 7-10. Radiated Spurious Data (GPRS PCS – Mid Channel)

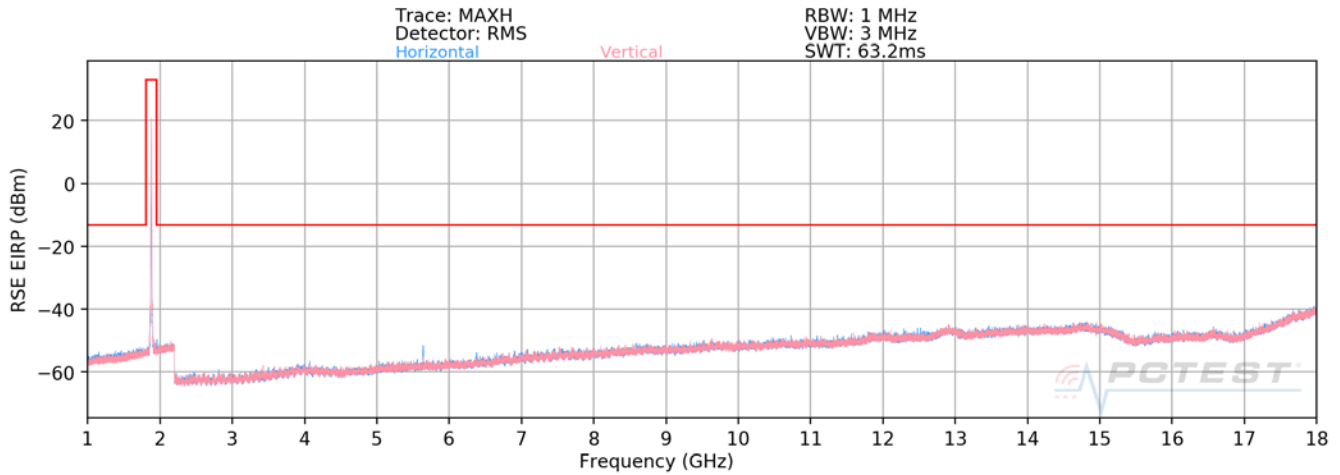
Mode:	GPRS 1 Tx Slot
Channel:	810
Frequency (MHz):	1909.8
Detector / Trace Mode:	RMS / Max Hold
RBW / VBW:	1MHz / 3MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3819.6	H	125	34	0.24	46.62	-48.64	-13.00	-35.64
5729.4	H	308	89	4.47	48.33	-46.93	-13.00	-33.93
7639.2	H	114	177	8.71	55.38	-39.87	-13.00	-26.87
9549.0	H	-	-	11.61	45.25	-50.01	-13.00	-37.01
11458.8	H	-	-	14.03	46.64	-48.62	-13.00	-35.62
13368.6	H	-	-	17.13	49.02	-46.24	-13.00	-33.24
15278.4	H	-	-	16.91	48.59	-46.66	-13.00	-33.66

Table 7-11. Radiated Spurious Data (GPRS PCS – High Channel)

FCC ID: ZNFK420TM	 PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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WCDMA PCS





Plot 7-129. Radiated Spurious Plot (WCDMA PCS)

Mode:	WCDMA RMC
Channel:	9262
Frequency (MHz):	1852.4
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3704.8	H	268	151	-0.23	31.86	-63.40	-13.00	-50.40
5557.2	H	109	239	3.64	45.34	-49.91	-13.00	-36.91
7409.6	H	-	-	8.63	35.52	-59.74	-13.00	-46.74
9262.0	H	-	-	11.05	36.74	-58.52	-13.00	-45.52
11114.4	H	-	-	13.44	38.59	-56.67	-13.00	-43.67

Table 7-12. Radiated Spurious Data (WCDMA PCS – Low Channel)

FCC ID: ZNFK420TM	 PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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Mode:	WCDMA RMC
Channel:	9400
Frequency (MHz):	1880
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz



Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3760.0	H	245	139	-0.17	32.30	-62.96	-13.00	-49.96
5640.0	H	116	236	4.12	44.80	-50.46	-13.00	-37.46
7520.0	H	-	-	8.84	36.15	-59.11	-13.00	-46.11
9400.0	H	-	-	11.56	37.48	-57.77	-13.00	-44.77
11280.0	H	-	-	13.93	39.17	-56.09	-13.00	-43.09

Table 7-13. Radiated Spurious Data (WCDMA PCS – Mid Channel)

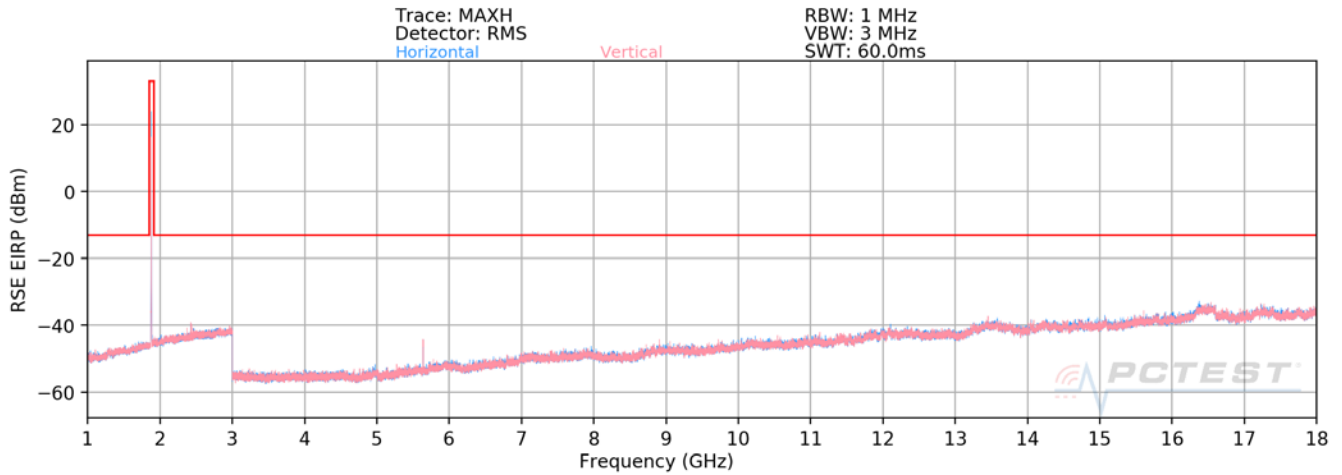
Mode:	WCDMA RMC
Channel:	9538
Frequency (MHz):	1907.6
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3815.2	H	243	142	0.24	62.71	-32.55	-13.00	-19.55
5722.8	H	102	231	4.45	46.66	-48.60	-13.00	-35.60
7630.4	H	-	-	8.76	36.35	-58.91	-13.00	-45.91
9538.0	H	-	-	11.69	38.01	-57.24	-13.00	-44.24
11445.6	H	-	-	14.54	38.77	-56.49	-13.00	-43.49

Table 7-14. Radiated Spurious Data (WCDMA PCS – High Channel)

FCC ID: ZNFK420TM	 PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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CDMA PCS





Plot 7-130. Radiated Spurious Plot (CDMA PCS)

Mode:	CDMA
Channel:	25
Frequency (MHz):	1851.25
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3702.50	V	-	-	7.82	34.24	-61.01	-13.00	-48.01
5553.75	V	102	8	11.74	41.80	-53.46	-13.00	-40.46
7405.00	V	-	-	15.93	40.31	-54.94	-13.00	-41.94
9256.25	V	-	-	18.24	41.64	-53.62	-13.00	-40.62
11107.50	V	-	-	21.49	44.58	-50.68	-13.00	-37.68

Table 7-15. Radiated Spurious Data (CDMA PCS – Low Channel)

FCC ID: ZNFK420TM	 PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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Mode:	CDMA
Channel:	600
Frequency (MHz):	1880
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz



Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3760.00	V	-	-	8.26	34.88	-60.38	-13.00	-47.38
5640.00	V	102	5	11.02	42.89	-52.37	-13.00	-39.37
7520.00	V	-	-	15.78	40.03	-55.23	-13.00	-42.23
9400.00	V	-	-	19.12	42.32	-52.94	-13.00	-39.94
11280.00	V	-	-	22.00	44.80	-50.46	-13.00	-37.46

Table 7-16. Radiated Spurious Data (CDMA PCS – Mid Channel)

Mode:	CDMA
Channel:	1175
Frequency (MHz):	1908.75
Detector / Trace Mode:	RMS / Average
RBW / VBW:	1MHz / 3MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3817.50	V	-	-	8.58	37.06	-58.20	-13.00	-45.20
5726.25	V	101	4	12.26	44.90	-50.36	-13.00	-37.36
7635.00	V	-	-	16.53	43.65	-51.61	-13.00	-38.61
9543.75	V	-	-	18.63	45.44	-49.82	-13.00	-36.82
11452.50	V	-	-	22.29	48.91	-46.35	-13.00	-33.35

Table 7-17. Radiated Spurious Data (CDMA PCS – High Channel)

FCC ID: ZNFK420TM	 PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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7.8 Frequency Stability / Temperature Variation

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI/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.

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.

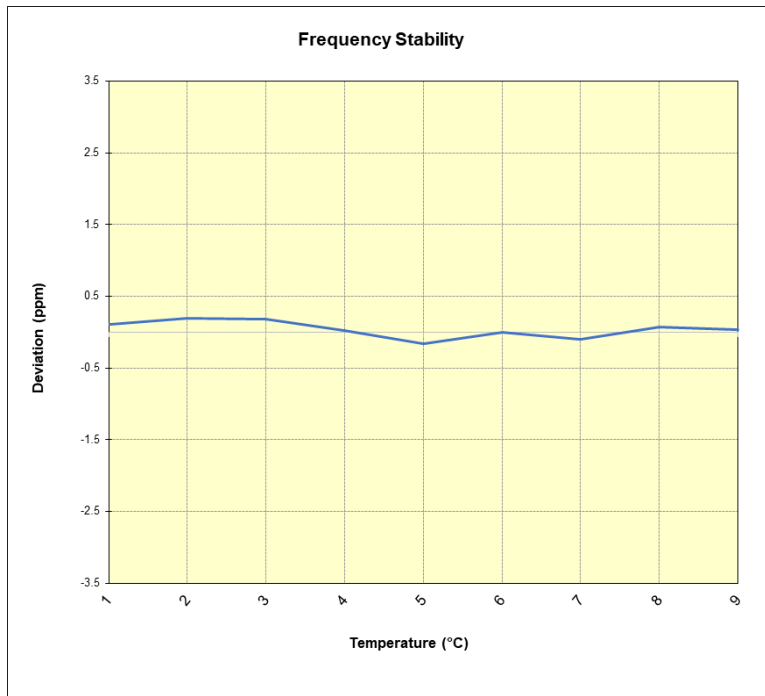
Test Notes

None



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LTE Band 25/2					
Operating Frequency (Hz):		1,882,500,000			
Ref. Voltage (VDC):		4.40			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.40	- 30	1,880,000,174	207	0.0000110
		- 20	1,880,000,341	374	0.0000199
		- 10	1,880,000,302	335	0.0000178
		0	1,880,000,011	44	0.0000023
		+ 10	1,879,999,656	-311	-0.0000165
		+ 20 (Ref)	1,879,999,967	0	0.0000000
		+ 30	1,879,999,781	-186	-0.0000099
		+ 40	1,880,000,096	129	0.0000069
Battery Endpoint	2.50	+ 20	1,880,000,113	146	0.0000078

Table 7-18. LTE Band 25/2 Frequency Stability Data

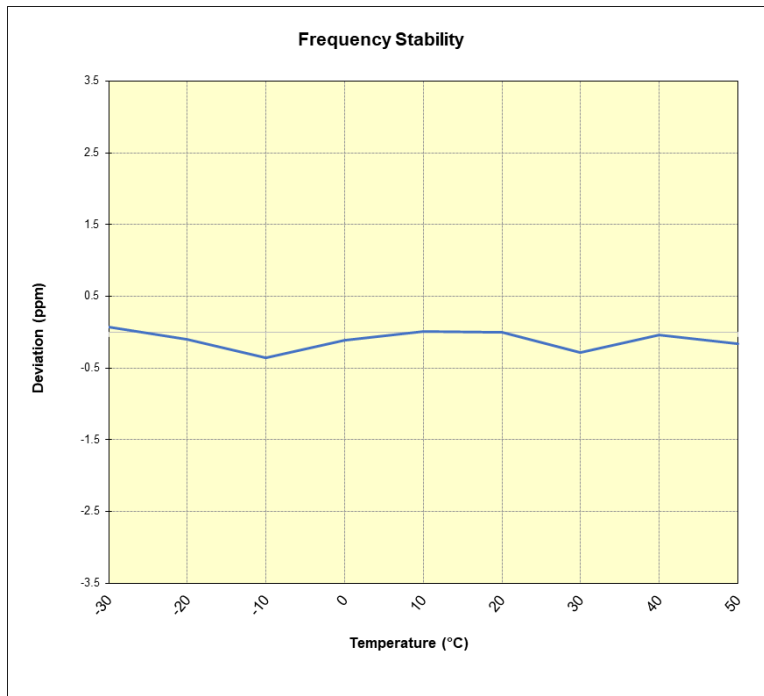


Plot 7-131. LTE Band 25/2 Frequency Stability Chart



FCC ID: ZNFK420TM	 PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	 LG	Approved by: Technical Manager
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GSM/GPRS PCS					
Operating Frequency (Hz):		1,880,000,000			
Ref. Voltage (VDC):		4.40			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.40	- 30	1,880,000,384	145	0.0000077
		- 20	1,880,000,048	-191	-0.0000102
		- 10	1,879,999,579	-660	-0.0000351
		0	1,880,000,024	-215	-0.0000114
		+ 10	1,880,000,262	23	0.0000012
		+ 20 (Ref)	1,880,000,239	0	0.0000000
		+ 30	1,879,999,695	-544	-0.0000289
		+ 40	1,880,000,158	-81	-0.0000043
Battery Endpoint	2.50	+ 20	1,880,000,442	203	0.0000108

Table 7-19. GSM/GPRS PCS Frequency Stability Data

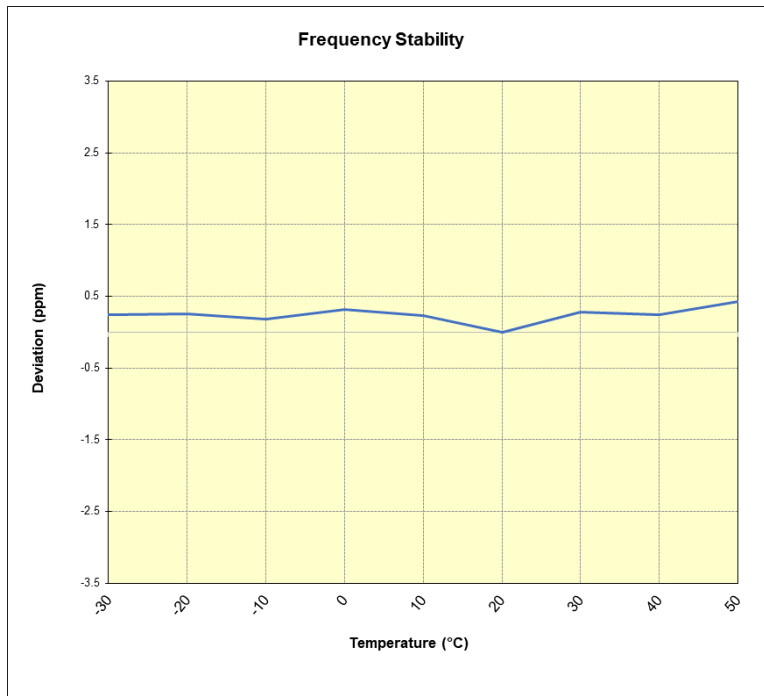


Plot 7-132. GSM/GPRS PCS Frequency Stability Chart



FCC ID: ZNFK420TM	 PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	 LG	Approved by: Technical Manager
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WCDMA PCS					
Operating Frequency (Hz):		1,880,000,000			
Ref. Voltage (VDC):		4.40			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.40	- 30	1,882,500,026	449	0.0000239
		- 20	1,882,500,051	474	0.0000252
		- 10	1,882,499,911	334	0.0000177
		0	1,882,500,180	603	0.0000320
		+ 10	1,882,500,018	441	0.0000234
		+ 20 (Ref)	1,882,499,577	0	0.0000000
		+ 30	1,882,500,099	522	0.0000277
		+ 40	1,882,500,044	467	0.0000248
Battery Endpoint	2.50	+ 20	1,882,500,146	569	0.0000302

Table 7-20. WCDMA PCS Frequency Stability Data

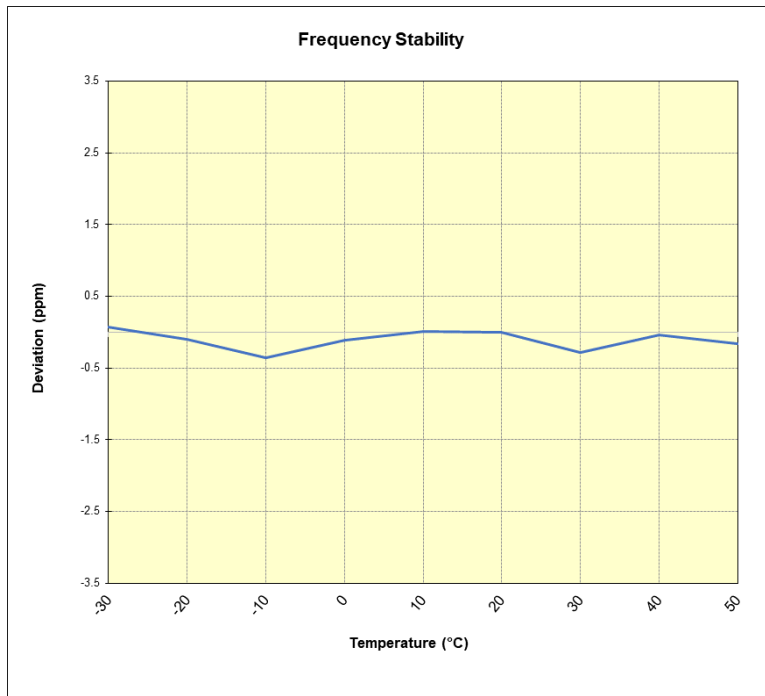


Plot 7-133. WCDMA PCS Frequency Stability Chart

FCC ID: ZNFK420TM	 PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	 LG	Approved by: Technical Manager
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CDMA PCS					
Operating Frequency (Hz):		1,880,000,000			
Ref. Voltage (VDC):		4.40			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.40	- 30	1,880,000,384	145	0.0000077
		- 20	1,880,000,048	-191	-0.0000102
		- 10	1,879,999,579	-660	-0.0000351
		0	1,880,000,024	-215	-0.0000114
		+ 10	1,880,000,262	23	0.0000012
		+ 20 (Ref)	1,880,000,239	0	0.0000000
		+ 30	1,879,999,695	-544	-0.0000289
		+ 40	1,880,000,158	-81	-0.0000043
Battery Endpoint	2.50	+ 20	1,880,000,442	203	0.0000108

Table 7-21. CDMA PCS Frequency Stability Data





Plot 7-134. CDMA PCS Frequency Stability Chart

FCC ID: ZNFK420TM	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	LG	Approved by: Technical Manager
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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Portable Handset FCC ID: ZNFK420TM** complies with all the requirements of Part 24 of the FCC rules.

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Test Report S/N: 1M2011180184-13.ZNF	Test Dates: 12/3/2020	EUT Type: Portable Handset	Page 103 of 103