Band

LTE7

15MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG
Project #: 15I20402
Date: 03/31/15
Test Engineer: Charles Vergonio
Configuration: EUT Only, Z position
Mode: TX, LTE band 7, 15MHz, 16QAM

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2507.50	4.08	V	0.9	9.5	12.70	33.0	-20.3	
2507.50	13.60	H	0.9	9.5	22.22	33.0	-10.8	
Mid Ch								
2535.00	4.79	V	0.9	9.5	13.41	33.0	-19.6	
2535.00	14.39	H	0.9	9.5	23.01	33.0	-10.0	
High Ch								
2562.50	4.71	V	0.9	9.5	13.36	33.0	-19.6	
2562.50	13.93	H	0.9	9.5	22.58	33.0	-10.4	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

LTE7

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG
Project #: 15I20402
Date: 03/31/15
Test Engineer: Charles Vergonio
Configuration: EUT Only, Z position
Mode: TX, LTE band 7, 10MHz, 16QAM

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2505.00	3.54	V	0.9	9.5	12.16	33.0	-20.8	
2505.00	12.84	H	0.9	9.5	21.46	33.0	-11.5	
Mid Ch								
2535.00	3.54	V	0.9	9.5	12.16	33.0	-20.8	
2535.00	12.87	H	0.9	9.5	21.49	33.0	-11.5	
High Ch								
2565.00	3.71	V	0.9	9.5	12.36	33.0	-20.6	
2565.00	13.27	H	0.9	9.5	21.92	33.0	-11.1	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

LTE7

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG
Project #: 15I20402
Date: 03/31/15
Test Engineer: Charles Vergonio
Configuration: EUT Only, Z position
Mode: TX, LTE band 7, 10MHz, 16QAM

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2505.00	4.91	V	0.9	9.5	13.53	33.0	-19.5	
2505.00	13.62	H	0.9	9.5	22.24	33.0	-10.8	
Mid Ch								
2535.00	4.64	V	0.9	9.5	13.26	33.0	-19.7	
2535.00	13.65	H	0.9	9.5	22.27	33.0	-10.7	
High Ch								
2565.00	4.85	V	0.9	9.5	13.50	33.0	-19.5	
2565.00	13.96	H	0.9	9.5	22.61	33.0	-10.4	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

LTE7

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG
Project #: 15I20402
Date: 03/31/15
Test Engineer: Charles Vergonio
Configuration: EUT Only, Z position
Mode: TX, LTE band 7, 5MHz, 16QAM

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2502.50	3.53	V	0.9	9.5	12.15	33.0	-20.9	
2502.50	12.63	H	0.9	9.5	21.25	33.0	-11.8	
Mid Ch								
2535.00	3.46	V	0.9	9.5	12.08	33.0	-20.9	
2535.00	13.04	H	0.9	9.5	21.66	33.0	-11.3	
High Ch								
2567.50	4.39	V	0.9	9.5	13.04	33.0	-20.0	
2567.50	13.85	H	0.9	9.5	22.50	33.0	-10.5	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

LTE7

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG
Project #: 15I20402
Date: 03/31/15
Test Engineer: Charles Vergonio
Configuration: EUT Only, Z position
Mode: TX, LTE band 7, 5MHz, 16QAM

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2502.50	3.94	V	0.9	9.5	12.56	33.0	-20.4	
2502.50	13.35	H	0.9	9.5	21.97	33.0	-11.0	
Mid Ch								
2535.00	4.46	V	0.9	9.5	13.08	33.0	-19.9	
2535.00	13.89	H	0.9	9.5	22.51	33.0	-10.5	
High Ch								
2567.50	5.11	V	0.9	9.5	13.76	33.0	-19.2	
2567.50	14.53	H	0.9	9.5	23.18	33.0	-9.8	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

LTE5

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 04/04/15
Test Engineer: R.Alegre
Configuration: EUT only
Location: Chamber B
Mode: LTE_16QAM Band 5 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Hybrid T243, and Chamber B SMA Cables
Substitution: Dipole T273, 3ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
829.00	12.79	V	0.9	0.0	11.89	38.5	-26.6	
829.00	21.17	H	0.9	0.0	20.27	38.5	-18.2	
Mid Ch								
836.50	12.87	V	0.9	0.0	11.97	38.5	-26.5	
836.50	21.80	H	0.9	0.0	20.90	38.5	-17.6	
High Ch								
844.00	13.17	V	0.9	0.0	12.27	38.5	-26.2	
844.00	21.41	H	0.9	0.0	20.51	38.5	-18.0	

Band

LTE5

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 04/04/15
Test Engineer: R.Alegre
Configuration: EUT only
Location: Chamber B
Mode: LTE_QPSK Band 5 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Hybrid T243, and Chamber B SMA Cables
Substitution: Dipole T273, 3ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
829.00	13.28	V	0.9	0.0	12.38	38.5	-26.1	
829.00	22.02	H	0.9	0.0	21.12	38.5	-17.4	
Mid Ch								
836.50	13.42	V	0.9	0.0	12.52	38.5	-26.0	
836.50	22.66	H	0.9	0.0	21.76	38.5	-16.7	
High Ch								
844.00	13.94	V	0.9	0.0	13.04	38.5	-25.5	
844.00	22.15	H	0.9	0.0	21.25	38.5	-17.3	

Band

LTE5

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company:	LG
Project #:	15I20402
Date:	04/04/15
Test Engineer:	R.Alegre
Configuration:	EUT only
Location:	Chamber B
Mode:	LTE_16QAM Band 5 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Hybrid T243, and Chamber B SMA Cables
Substitution: Dipole T273, 3ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
826.50	12.65	V	0.9	0.0	11.75	38.5	-26.8	
826.50	21.44	H	0.9	0.0	20.54	38.5	-18.0	
Mid Ch								
836.50	12.81	V	0.9	0.0	11.91	38.5	-26.6	
836.50	21.12	H	0.9	0.0	20.22	38.5	-18.3	
High Ch								
846.50	13.05	V	0.9	0.0	12.15	38.5	-26.4	
846.50	21.25	H	0.9	0.0	20.35	38.5	-18.2	

Band

LTE5

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company:	LG
Project #:	15I20402
Date:	04/04/15
Test Engineer:	R.Alegre
Configuration:	EUT only
Location:	Chamber B
Mode:	LTE_QPSK Band 5 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Hybrid T243, and Chamber B SMA Cables
Substitution: Dipole T273, 3ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
826.50	13.26	V	0.9	0.0	12.36	38.5	-26.1	
826.50	22.29	H	0.9	0.0	21.39	38.5	-17.1	
Mid Ch								
836.50	13.35	V	0.9	0.0	12.45	38.5	-26.1	
836.50	21.97	H	0.9	0.0	21.07	38.5	-17.4	
High Ch								
846.50	13.77	V	0.9	0.0	12.87	38.5	-25.6	
846.50	22.00	H	0.9	0.0	21.10	38.5	-17.4	

Band

LTE5

3MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company:	LG
Project #:	15I20402
Date:	04/04/15
Test Engineer:	R.Alegre
Configuration:	EUT only
Location:	Chamber B
Mode:	LTE_16QAM Band 5 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Hybrid T243, and Chamber B SMA Cables
Substitution: Dipole T273, 3ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
825.50	12.66	V	0.9	0.0	11.76	38.5	-26.7	
825.50	21.47	H	0.9	0.0	20.57	38.5	-17.9	
Mid Ch								
836.50	12.76	V	0.9	0.0	11.86	38.5	-26.6	
836.50	21.10	H	0.9	0.0	20.20	38.5	-18.3	
High Ch								
847.50	13.04	V	0.9	0.0	12.14	38.5	-26.4	
847.50	21.35	H	0.9	0.0	20.45	38.5	-18.1	

Band

LTE5

3MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company:	LG
Project #:	15I20402
Date:	04/04/15
Test Engineer:	R.Alegre
Configuration:	EUT only
Location:	Chamber B
Mode:	LTE_QPSK Band 5 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Hybrid T243, and Chamber B SMA Cables
Substitution: Dipole T273, 3ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
825.50	13.24	V	0.9	0.0	12.34	38.5	-26.2	
825.50	22.33	H	0.9	0.0	21.43	38.5	-17.1	
Mid Ch								
836.50	13.37	V	0.9	0.0	12.47	38.5	-26.0	
836.50	21.96	H	0.9	0.0	21.06	38.5	-17.4	
High Ch								
847.50	13.78	V	0.9	0.0	12.88	38.5	-25.6	
847.50	22.02	H	0.9	0.0	21.12	38.5	-17.4	

Band

LTE5

1.4MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 04/04/15
Test Engineer: R.Alegre
Configuration: EUT only
Location: Chamber B
Mode: LTE_16QAM Band 5 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Hybrid T243, and Chamber B SMA Cables
Substitution: Dipole T273, 3ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
824.70	12.77	V	0.9	0.0	11.87	38.5	-26.6	
824.70	21.23	H	0.9	0.0	20.33	38.5	-18.2	
Mid Ch								
836.50	12.83	V	0.9	0.0	11.93	38.5	-26.6	
836.50	21.02	H	0.9	0.0	20.12	38.5	-18.4	
High Ch								
848.30	13.15	V	0.9	0.0	12.25	38.5	-26.3	
848.30	21.10	H	0.9	0.0	20.20	38.5	-18.3	

Band

LTE5

1.4MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 04/04/15
Test Engineer: R.Alegre
Configuration: EUT only
Location: Chamber B
Mode: LTE_QPSK Band 5 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Hybrid T243, and Chamber B SMA Cables
Substitution: Dipole T273, 3ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
824.70	13.27	V	0.9	0.0	12.37	38.5	-26.1	
824.70	22.18	H	0.9	0.0	21.28	38.5	-17.2	
Mid Ch								
836.50	13.36	V	0.9	0.0	12.46	38.5	-26.0	
836.50	21.83	H	0.9	0.0	20.93	38.5	-17.6	
High Ch								
848.30	13.81	V	0.9	0.0	12.91	38.5	-25.6	
848.30	22.00	H	0.9	0.0	21.10	38.5	-17.4	

Band

LTE4

20MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 3/28/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_16QAM Band 4 Fundamentals, 20MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1720.00	13.65	V	0.9	8.2	20.99	30.0	-9.0	
1720.00	19.53	H	0.9	8.2	26.87	30.0	-3.1	
Mid Ch								
1732.50	14.04	V	0.9	8.2	21.31	30.0	-8.7	
1732.50	19.42	H	0.9	8.2	26.69	30.0	-3.3	
High Ch								
1745.00	14.17	V	0.9	8.1	21.37	30.0	-8.6	
1745.00	19.78	H	0.9	8.1	26.98	30.0	-3.0	

Band

LTE4

20MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 3/28/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 4 Fundamentals, 20MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1720.00	14.54	V	0.9	8.2	21.88	30.0	-8.1	
1720.00	20.24	H	0.9	8.2	27.58	30.0	-2.4	
Mid Ch								
1732.50	14.95	V	0.9	8.2	22.22	30.0	-7.8	
1732.50	20.35	H	0.9	8.2	27.62	30.0	-2.4	
High Ch								
1745.00	15.04	V	0.9	8.1	22.24	30.0	-7.8	
1745.00	20.39	H	0.9	8.1	27.59	30.0	-2.4	

Band

LTE4

15MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 3/28/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_16QAM Band 4 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1717.50	13.53	V	0.9	8.2	20.88	30.0	-9.1	
1717.50	19.72	H	0.9	8.2	27.07	30.0	-2.9	
Mid Ch								
1732.50	14.01	V	0.9	8.2	21.28	30.0	-8.7	
1732.50	19.53	H	0.9	8.2	26.80	30.0	-3.2	
High Ch								
1747.50	14.19	V	0.9	8.1	21.38	30.0	-8.6	
1747.50	20.02	H	0.9	8.1	27.21	30.0	-2.8	

Band

LTE4

15MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 3/28/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 4 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1717.50	14.48	V	0.9	8.2	21.83	30.0	-8.2	
1717.50	20.36	H	0.9	8.2	27.71	30.0	-2.3	
Mid Ch								
1732.50	14.92	V	0.9	8.2	22.19	30.0	-7.8	
1732.50	20.46	H	0.9	8.2	27.73	30.0	-2.3	
High Ch								
1747.50	15.06	V	0.9	8.1	22.25	30.0	-7.7	
1747.50	20.47	H	0.9	8.1	27.66	30.0	-2.3	

Band

LTE4

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 3/28/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_16QAM Band 4 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1715.00	13.57	V	0.9	8.2	20.84	30.0	-9.2	
1715.00	19.49	H	0.9	8.2	26.76	30.0	-3.2	
Mid Ch								
1732.50	13.92	V	0.9	8.2	21.19	30.0	-8.8	
1732.50	19.59	H	0.9	8.2	26.86	30.0	-3.1	
High Ch								
1750.00	14.16	V	0.9	8.1	21.35	30.0	-8.6	
1750.00	19.64	H	0.9	8.1	26.83	30.0	-3.2	

Band

LTE4

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 3/28/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 4 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1715.00	14.46	V	0.9	8.2	21.73	30.0	-8.3	
1715.00	20.12	H	0.9	8.2	27.39	30.0	-2.6	
Mid Ch								
1732.50	14.90	V	0.9	8.2	22.17	30.0	-7.8	
1732.50	20.49	H	0.9	8.2	27.76	30.0	-2.2	
High Ch								
1750.00	15.03	V	0.9	8.1	22.22	30.0	-7.8	
1750.00	20.15	H	0.9	8.1	27.34	30.0	-2.7	

Band

LTE4

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 3/28/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_16QAM Band 4 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1712.50	13.53	V	0.9	8.2	20.87	30.0	-9.1	
1712.50	19.69	H	0.9	8.2	27.03	30.0	-3.0	
Mid Ch								
1732.50	14.05	V	0.9	8.2	21.32	30.0	-8.7	
1732.50	19.72	H	0.9	8.2	26.99	30.0	-3.0	
High Ch								
1752.50	14.15	V	0.9	8.1	21.35	30.0	-8.7	
1752.50	19.68	H	0.9	8.1	26.88	30.0	-3.1	

Band

LTE4

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 3/28/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 4 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1712.50	14.43	V	0.9	8.2	21.77	30.0	-8.2	
1712.50	20.34	H	0.9	8.2	27.68	30.0	-2.3	
Mid Ch								
1732.50	14.95	V	0.9	8.2	22.22	30.0	-7.8	
1732.50	20.56	H	0.9	8.2	27.83	30.0	-2.2	
High Ch								
1752.50	14.89	V	0.9	8.1	22.09	30.0	-7.9	
1752.50	20.22	H	0.9	8.1	27.42	30.0	-2.6	

Band

LTE4

3MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 3/28/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_16QAM Band 4 Fundamentals, 3MHz Bandwidth

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1711.50	13.54	V	0.9	8.2	20.89	30.0	-9.1	
1711.50	19.90	H	0.9	8.2	27.25	30.0	-2.8	
Mid Ch								
1732.50	14.04	V	0.9	8.2	21.31	30.0	-8.7	
1732.50	19.75	H	0.9	8.2	27.02	30.0	-3.0	
High Ch								
1753.50	14.04	V	0.9	8.1	21.23	30.0	-8.8	
1753.50	19.37	H	0.9	8.1	26.56	30.0	-3.4	

Band

LTE4

3MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 3/28/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 4 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1711.50	14.47	V	0.9	8.2	21.82	30.0	-8.2	
1711.50	20.50	H	0.9	8.2	27.85	30.0	-2.2	
Mid Ch								
1732.50	14.97	V	0.9	8.2	22.24	30.0	-7.8	
1732.50	20.52	H	0.9	8.2	27.79	30.0	-2.2	
High Ch								
1753.50	15.05	V	0.9	8.1	22.24	30.0	-7.8	
1753.50	20.04	H	0.9	8.1	27.23	30.0	-2.8	

Band

LTE4

1.4MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 3/28/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_16QAM Band 4 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1710.70	13.65	V	0.9	8.2	20.92	30.0	-9.1	
1710.70	19.68	H	0.9	8.2	26.95	30.0	-3.0	
Mid Ch								
1732.50	14.02	V	0.9	8.2	21.29	30.0	-8.7	
1732.50	19.71	H	0.9	8.2	26.98	30.0	-3.0	
High Ch								
1754.30	14.11	V	0.9	8.1	21.30	30.0	-8.7	
1754.30	19.17	H	0.9	8.1	26.36	30.0	-3.6	

Band

LTE4

1.4MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 3/28/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 4 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1710.70	14.56	V	0.9	8.2	21.83	30.0	-8.2	
1710.70	20.38	H	0.9	8.2	27.65	30.0	-2.3	
Mid Ch								
1732.50	15.07	V	0.9	8.2	22.34	30.0	-7.7	
1732.50	20.60	H	0.9	8.2	27.87	30.0	-2.1	
High Ch								
1754.30	15.06	V	0.9	8.1	22.25	30.0	-7.7	
1754.30	20.03	H	0.9	8.1	27.22	30.0	-2.8	

Band

LTE2

20MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company:	LG
Project #:	15I20402
Date:	3/29/2015
Test Engineer:	R.Alegre
Configuration:	EUT Only
Location:	Chamber C
Mode:	LTE_16QAM Band 2 Fundamentals, 20MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1860.00	6.41	V	0.9	8.0	13.52	33.0	-19.5	
1860.00	18.92	H	0.9	8.0	26.03	33.0	-7.0	
Mid Ch								
1880.00	5.96	V	0.9	8.0	13.07	33.0	-19.9	
1880.00	18.36	H	0.9	8.0	25.47	33.0	-7.5	
High Ch								
1900.00	6.96	V	0.9	8.0	14.07	33.0	-18.9	
1900.00	17.17	H	0.9	8.0	24.28	33.0	-8.7	

Band

LTE2

20MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company:	LG
Project #:	15I20402
Date:	3/29/2015
Test Engineer:	R.Alegre
Configuration:	EUT Only
Location:	Chamber C
Mode:	LTE_QPSK Band 2 Fundamentals, 20MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1860.00	7.09	V	0.9	8.0	14.20	33.0	-18.8	
1860.00	19.24	H	0.9	8.0	26.35	33.0	-6.7	
Mid Ch								
1880.00	6.70	V	0.9	8.0	13.81	33.0	-19.2	
1880.00	19.04	H	0.9	8.0	26.15	33.0	-6.8	
High Ch								
1900.00	7.82	V	0.9	8.0	14.93	33.0	-18.1	
1900.00	17.84	H	0.9	8.0	24.95	33.0	-8.1	

Band

LTE2

15MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company:	LG
Project #:	15I20402
Date:	3/29/2015
Test Engineer:	R.Alegre
Configuration:	EUT Only
Location:	Chamber C
Mode:	LTE_16QAM Band 2 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1857.50	6.43	V	0.9	8.0	13.54	33.0	-19.5	
1857.50	18.95	H	0.9	8.0	26.06	33.0	-6.9	
Mid Ch								
1880.00	5.98	V	0.9	8.0	13.09	33.0	-19.9	
1880.00	18.41	H	0.9	8.0	25.52	33.0	-7.5	
High Ch								
1902.50	7.24	V	0.9	8.0	14.35	33.0	-18.7	
1902.50	17.25	H	0.9	8.0	24.36	33.0	-8.6	

Band

LTE2

15MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 3/29/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 2 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1857.50	7.12	V	0.9	8.0	14.23	33.0	-18.8	
1857.50	19.26	H	0.9	8.0	26.37	33.0	-6.6	
Mid Ch								
1880.00	6.68	V	0.9	8.0	13.79	33.0	-19.2	
1880.00	18.98	H	0.9	8.0	26.09	33.0	-6.9	
High Ch								
1902.50	7.83	V	0.9	8.0	14.94	33.0	-18.1	
1902.50	17.87	H	0.9	8.0	24.98	33.0	-8.0	

Band

LTE2

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company:	LG
Project #:	15I20402
Date:	3/29/2015
Test Engineer:	R.Alegre
Configuration:	EUT Only
Location:	Chamber C
Mode:	LTE_16QAM Band 2 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1855.00	6.41	V	0.9	8.0	13.52	33.0	-19.5	
1855.00	18.92	H	0.9	8.0	26.03	33.0	-7.0	
Mid Ch								
1880.00	6.01	V	0.9	8.0	13.12	33.0	-19.9	
1880.00	17.91	H	0.9	8.0	25.02	33.0	-8.0	
High Ch								
1905.00	7.28	V	0.9	8.0	14.39	33.0	-18.6	
1905.00	17.16	H	0.9	8.0	24.27	33.0	-8.7	

Band

LTE2

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 3/29/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_QPSK Band 2 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1855.00	7.09	V	0.9	8.0	14.20	33.0	-18.8	
1855.00	19.24	H	0.9	8.0	26.35	33.0	-6.7	
Mid Ch								
1880.00	6.65	V	0.9	8.0	13.76	33.0	-19.2	
1880.00	18.52	H	0.9	8.0	25.63	33.0	-7.4	
High Ch								
1905.00	7.86	V	0.9	8.0	14.97	33.0	-18.0	
1905.00	17.82	H	0.9	8.0	24.93	33.0	-8.1	

Band

LTE2

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company:	LG
Project #:	15I20402
Date:	3/29/2015
Test Engineer:	R.Alegre
Configuration:	EUT Only
Location:	Chamber C
Mode:	LTE_16QAM Band 2 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1852.50	6.42	V	0.9	8.0	13.53	33.0	-19.5	
1852.50	18.95	H	0.9	8.0	26.06	33.0	-6.9	
Mid Ch								
1880.00	5.92	V	0.9	8.0	13.03	33.0	-20.0	
1880.00	18.21	H	0.9	8.0	25.32	33.0	-7.7	
High Ch								
1907.50	7.29	V	0.9	8.0	14.40	33.0	-18.6	
1907.50	17.02	H	0.9	8.0	24.13	33.0	-8.9	

Band

LTE2

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company:	LG
Project #:	15I20402
Date:	3/29/2015
Test Engineer:	R.Alegre
Configuration:	EUT Only
Location:	Chamber C
Mode:	LTE_QPSK Band 2 Fundamentals, 5MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1852.50	7.05	V	0.9	8.0	14.16	33.0	-18.8	
1852.50	19.26	H	0.9	8.0	26.37	33.0	-6.6	
Mid Ch								
1880.00	6.55	V	0.9	8.0	13.66	33.0	-19.3	
1880.00	18.62	H	0.9	8.0	25.73	33.0	-7.3	
High Ch								
1907.50	7.82	V	0.9	8.0	14.93	33.0	-18.1	
1907.50	17.64	H	0.9	8.0	24.75	33.0	-8.2	

Band

LTE2

3MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company:	LG
Project #:	15I20402
Date:	3/29/2015
Test Engineer:	R.Alegre
Configuration:	EUT Only
Location:	Chamber C
Mode:	LTE_16QAM Band 2 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1851.50	6.37	V	0.9	8.0	13.48	33.0	-19.5	
1851.50	18.93	H	0.9	8.0	26.04	33.0	-7.0	
Mid Ch								
1880.00	6.05	V	0.9	8.0	13.16	33.0	-19.8	
1880.00	17.94	H	0.9	8.0	25.05	33.0	-8.0	
High Ch								
1908.50	7.28	V	0.9	8.0	14.39	33.0	-18.6	
1908.50	17.15	H	0.9	8.0	24.26	33.0	-8.7	

Band

LTE2

3MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company:	LG
Project #:	15I20402
Date:	3/29/2015
Test Engineer:	R.Alegre
Configuration:	EUT Only
Location:	Chamber C
Mode:	LTE_QPSK Band 2 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1851.50	7.24	V	0.9	8.0	14.35	33.0	-18.7	
1851.50	19.30	H	0.9	8.0	26.41	33.0	-6.6	
Mid Ch								
1880.00	6.64	V	0.9	8.0	13.75	33.0	-19.3	
1880.00	18.37	H	0.9	8.0	25.48	33.0	-7.5	
High Ch								
1908.50	7.83	V	0.9	8.0	14.94	33.0	-18.1	
1908.50	17.75	H	0.9	8.0	24.86	33.0	-8.1	

Band

LTE2

1.4MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 3/29/2015
Test Engineer: R.Alegre
Configuration: EUT Only
Location: Chamber C
Mode: LTE_16QAM Band 2 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1850.70	6.28	V	0.9	8.0	13.39	33.0	-19.6	
1850.70	18.91	H	0.9	8.0	26.02	33.0	-7.0	
Mid Ch								
1880.00	6.02	V	0.9	8.0	13.13	33.0	-19.9	
1880.00	17.67	H	0.9	8.0	24.78	33.0	-8.2	
High Ch								
1909.30	7.26	V	0.9	8.0	14.37	33.0	-18.6	
1909.30	17.15	H	0.9	8.0	24.26	33.0	-8.7	

Band

LTE2

1.4MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company:	LG
Project #:	15I20402
Date:	3/29/2015
Test Engineer:	R.Alegre
Configuration:	EUT Only
Location:	Chamber C
Mode:	LTE_QPSK Band 2 Fundamentals, 1.4MHz Bandwidth

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1850.70	7.04	V	0.9	8.0	14.15	33.0	-18.9	
1850.70	19.28	H	0.9	8.0	26.39	33.0	-6.6	
Mid Ch								
1880.00	6.67	V	0.9	8.0	13.78	33.0	-19.2	
1880.00	18.18	H	0.9	8.0	25.29	33.0	-7.7	
High Ch								
1909.30	7.84	V	0.9	8.0	14.95	33.0	-18.1	
1909.30	17.81	H	0.9	8.0	24.92	33.0	-8.1	

11.1. ADDITIONAL TESTS (PHONE WITH SMART COVER)

11.1.1. RADIATED POWER (ERP & EIRP) WITH SMART COVER

11.1.1.1. CDMA (MID CHANNEL ONLY)

Band

BC1

EVDO

High Frequency Fundamental Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 5/15/2015
Test Engineer: Jude Semana
Configuration: EUT + Smart Cover + Charging Dock
Mode: CDMA RTT BC1

Test Equipment:
Receiving: Horn T711, and Chamber G SMA Cables
Substitution: Horn T60, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.8513		V	0.90	8.01		33.0		
1.8513		H	0.90	8.01		33.0		
Mid Ch								
1.8800	14.6	V	0.90	8.01	21.66	33.0	-11.3	
1.8800	18.3	H	0.90	8.01	25.41	33.0	-7.6	
High Ch								
1.9088		V	0.90	8.01		33.0		
1.9088		H	0.90	8.01		33.0		

Rev. 3.17.11

Band

BC0

EVDO

High Frequency Substitution Measurement
UL Verification Services Chamber G

Company: LG
Project #: 15I20286
Date: 3/31/2015
Test Engineer: R.Z
Configuration: EUT w/ Smart Case
Mode: CDMA EVDO BC0

Test Equipment:
Receiving: T899, and Chamber G Cable
Substitution: Dipole T273, 6ft SMA Cable

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Mid Ch								
836.52	15.40	V	0.9	0.0	14.50	38.5	-23.9	
836.52	22.96	H	0.9	0.0	22.06	38.5	-16.4	

Rev. 3.17.11

Band

BC0

EVDO

High Frequency Substitution Measurement
UL Verification Services Chamber G

Company: LG
Project #: 15I20402
Date: 5/15/2015
Test Engineer: Jude Semana
Configuration: EUT + Smart Cover + Charging Dock
Mode: CDMA RTT BC0

Test Equipment:
Receiving: Horn T899, and Chamber G SMA Cables
Substitution: Horn T273, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.70		V	0.9	0.0		38.5		
824.70		H	0.9	0.0		38.5		
Mid Ch								
836.52	18.73	V	0.9	0.0	17.83	38.5	-20.6	
836.52	22.09	H	0.9	0.0	21.19	38.5	-17.3	
High Ch								
848.31		V	0.9	0.0		38.5		
848.31		H	0.9	0.0		38.5		

Rev. 3.17.11

11.1.1.1. LTE (MID CHANNEL ONLY)

Band

LTE13

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber B

Company:	LG
Project #:	15I20402
Date:	4/13/2015
Test Engineer:	Jude Semana
Configuration:	EUT + Smart Cover + Dock (Spot Check)
Location:	Chamber G
Mode:	LTE_QPSK Band 5 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Sunol T899, and 3m Chamber G N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
Mid Ch								
782.00	12.02	V	0.9	0.0	11.12	34.8	-23.6	
782.00	20.80	H	0.9	0.0	19.90	34.8	-14.9	
High Ch								

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

Band

LTE7

15MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber G

Company: LG
Project #: 15I20402
Date: 04/15/15
Test Engineer: Jude Semana
Configuration: EUT + Smart Cover + Charging Dock
Mode: TX, LTE band 7, 15MHz, QPSK

Test Equipment:
Receiving: Horn T711, and Chamber G SMA Cables
Substitution: Horn T60, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2507.50		V	0.9	9.5		33.0		
2507.50		H	0.9	9.5		33.0		
Mid Ch								
2535.00	2.60	V	0.9	9.5	11.22	33.0	-21.8	
2535.00	13.60	H	0.9	9.5	22.22	33.0	-10.8	
High Ch								
2562.50		V	0.9	9.5		33.0		
2562.50		H	0.9	9.5		33.0		

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

LTE5

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company:	LG
Project #:	15I20402
Date:	4/15/2015
Test Engineer:	Jude Semana
Configuration:	EUT + Smart Cover + Dock (Spot Check)
Location:	Chamber G
Mode:	LTE_QPSK Band 5 Fundamentals, 10MHz Bandwidth

Test Equpment:
Receiving: Horn T899, and Chamber G SMA Cables
Substitution: Horn T273, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
829.00	0.00	V	0.9	0.0	0.00	38.5	0.0	
829.00	0.00	H	0.9	0.0	0.00	38.5	0.0	
Mid Ch								
836.50	11.81	V	0.9	0.0	10.91	38.5	-27.6	
836.50	22.00	H	0.9	0.0	21.10	38.5	-17.4	
High Ch								
844.00	0.00	V	0.9	0.0	0.00	38.5	0.0	
844.00	0.00	H	0.9	0.0	0.00	38.5	0.0	

Band

LTE4

1.4MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 4/13/2015
Test Engineer: Jude Semana
Configuration: EUT + Smart Cover + Dock (Spot Check)
Location: Chamber G
Mode: LTE_QPSK Band 2 Fundamentals, 3MHz Bandwidth

Test Equpment:
Receiving: Horn T711, and Chamber G SMA Cables
Substitution: Horn T60, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1710.70	0.00	V	0.9	8.2	0.00	30.0	0.0	
1710.70	0.00	H	0.9	8.2	0.00	30.0	0.0	
Mid Ch								
1732.50	18.68	V	0.9	8.2	25.95	30.0	-4.0	
1732.50	20.30	H	0.9	8.2	27.57	30.0	-2.4	
High Ch								
1754.30	0.00	V	0.9	8.1	0.00	30.0	0.0	
1754.30	0.00	H	0.9	8.1	0.00	30.0	0.0	

Band

LTE2

15 MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 4/13/2015
Test Engineer: Jude Semana
Configuration: EUT + Smart Cover + Dock (Spot Check)
Location: Chamber C
Mode: LTE_QPSK Band 2 Fundamentals, 15MHz Bandwidth

Test Equpment:
Receiving: Horn T711, and Chamber G SMA Cables
Substitution: Horn T60, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1857.50	0.00	V	0.9	8.0	0.00	33.0	0.0	
1857.50	0.00	H	0.9	8.0	0.00	33.0	0.0	
Mid Ch								
1880.00	11.45	V	0.9	8.0	18.56	33.0	-14.4	
1880.00	18.29	H	0.9	8.0	25.40	33.0	-7.6	
High Ch								
1902.50	0.00	V	0.9	8.0	0.00	33.0	0.0	
1902.50	0.00	H	0.9	8.0	0.00	33.0	0.0	

11.1.1.2. GSM (MID CHANNEL ONLY)

Band

GSM

1900

GPRS

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber G

Company:	LG
Project #:	15I20402
Date:	4/13/2015
Test Engineer:	Jude Semana
Configuration:	EUT Only
Location:	Chamber G
Mode:	GPRS 1900

Test Equipment:
Receiving: Horn T711, and Chamber G SMA Cables
Substitution: Horn T60, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1850.20		V	0.9	8.0		33.0		
1850.20		H	0.9	8.0		33.0		
Mid Ch								
1880.00	17.37	V	0.9	8.0	24.48	33.0	-8.5	
1880.00	24.60	H	0.9	8.0	31.71	33.0	-1.3	
High Ch								
1909.80		V	0.9	8.0		33.0		
1909.80		H	0.9	8.0		33.0		

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

GSM

850

GPRS

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber G

Company: LG
Project #: 15I20402
Date: 05/15/15
Test Engineer: Jude Semana
Configuration: EUT + Smart Cover + Charging Dock
Mode: GPRS850

Test Equipment:
Receiving: Horn T711, and Chamber G SMA Cables
Substitution: Horn T60, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.20		V	0.9	0.0		38.5		
824.20		H	0.9	0.0		38.5		
Mid Ch								
836.60	29.04	V	0.9	0.0	28.14	38.5	-10.3	
836.60	32.20	H	0.9	0.0	31.30	38.5	-7.1	
High Ch								
848.80		V	0.9	0.0		38.5		
848.80		H	0.9	0.0		38.5		

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

11.1.1.3. WCDMA (MID CHANNEL ONLY)

Band 2 REL99

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 3/29/2015
Test Engineer: R.Alegre
Configuration: EUT + Smart Cover + Dock (Spot Check)
Location: Chamber G
Mode: Rel99 B2

Test Equipment:
Receiving: Horn T711, and Chamber C SMA Cables
Substitution: Horn T60 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.40		V	0.9	8.0		33.0		
1852.40		H	0.9	8.0		33.0		
Mid Ch								
1880.00	13.58	V	0.9	8.0	20.69	33.0	-12.3	
1880.00	18.30	H	0.9	8.0	25.41	33.0	-7.6	
High Ch								
1907.60		V	0.9	8.0		33.0		
1907.60		H	0.9	8.0		33.0		

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band 5 REL99

High Frequency Substitution Measurement Chamber G
UL Verification Services, Inc.

Company: LG
Project #: 15I20402
Date: 3/29/2015
Test Engineer: R.Alegre
Configuration: EUT + Smart Cover + Dock (Spot Check)
Mode: REL99 B5 FUND

Test Equipment:
Receiving: Sunol T899, and 3m Chamber G N-type Cable
Substitution: Dipole T273, 4ft SMA Cable Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.40		V	0.9	0.0		38.5		
826.40		H	0.9	0.0		38.5		
Mid Ch								
836.60	20.75	V	0.9	0.0	19.85	38.5	-18.6	
836.60	21.20	H	0.9	0.0	20.30	38.5	-18.1	
High Ch								
846.60		V	0.9	0.0		38.5		
846.60		H	0.9	0.0		38.5		

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

11.1. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, §27.53

LIMIT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

Part 27: (m)(4) (4) For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

TEST PROCEDURE

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. 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. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). 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 emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. 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. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). 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 emissions are attenuated at least 26 dB below the transmitter power.

RESULTS

11.1.1. SPURIOUS RADIATION DATA

GSM

Band

GSM 1900

EGPRS

UL Verification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/31/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: EGPRS 1900 MHz Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850.2									
3700.40	-17.4	V	3.0	35.9	1.0	-52.3	-13.0	-39.3	
5550.60	-0.2	V	3.0	35.5	1.0	-34.6	-13.0	-21.6	
7400.80	-13.1	V	3.0	35.7	1.0	-47.8	-13.0	-34.8	
3700.40	-18.4	H	3.0	35.9	1.0	-53.3	-13.0	-40.3	
5550.60	-12.4	H	3.0	35.5	1.0	-46.9	-13.0	-33.9	
7400.80	-11.1	H	3.0	35.7	1.0	-45.8	-13.0	-32.8	
Mid Ch, 1880									
3760.00	-18.0	V	3.0	35.8	1.0	-52.8	-13.0	-39.8	
5640.00	-4.8	V	3.0	35.5	1.0	-39.3	-13.0	-26.3	
7520.00	-10.8	V	3.0	35.7	1.0	-45.5	-13.0	-32.5	
3760.00	-18.8	H	3.0	35.8	1.0	-53.6	-13.0	-40.6	
5640.00	-7.3	H	3.0	35.5	1.0	-41.8	-13.0	-28.8	
7520.00	-12.6	H	3.0	35.7	1.0	-47.4	-13.0	-34.4	
High Ch, 1909.8									
3819.60	-18.1	V	3.0	35.8	1.0	-52.9	-13.0	-39.9	
5729.40	-11.0	V	3.0	35.5	1.0	-45.5	-13.0	-32.5	
7639.20	-9.4	V	3.0	35.8	1.0	-44.1	-13.0	-31.1	
3819.60	-17.3	H	3.0	35.8	1.0	-52.1	-13.0	-39.1	
5729.40	-13.1	H	3.0	35.5	1.0	-47.6	-13.0	-34.6	
7639.20	-12.4	H	3.0	35.8	1.0	-47.2	-13.0	-34.2	

Band

GSM 1900

GPRS

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/31/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: GPRS 1900 MHz Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850.2									
3700.40	-19.3	V	3.0	35.9	1.0	-54.2	-13.0	-41.2	
5550.60	2.7	V	3.0	35.5	1.0	-31.8	-13.0	-18.8	
7400.80	-7.2	V	3.0	35.7	1.0	-41.9	-13.0	-28.9	
3700.40	-18.2	H	3.0	35.9	1.0	-53.1	-13.0	-40.1	
5550.60	-10.0	H	3.0	35.5	1.0	-44.5	-13.0	-31.5	
7400.80	-9.5	H	3.0	35.7	1.0	-44.3	-13.0	-31.3	
Mid Ch, 1880									
3760.00	-18.0	V	3.0	35.8	1.0	-52.8	-13.0	-39.8	
5640.00	-9.6	V	3.0	35.5	1.0	-44.1	-13.0	-31.1	
7520.00	-7.8	V	3.0	35.7	1.0	-42.6	-13.0	-29.6	
3760.00	-18.3	H	3.0	35.8	1.0	-53.2	-13.0	-40.2	
5640.00	-6.6	H	3.0	35.5	1.0	-41.1	-13.0	-28.1	
7520.00	-9.5	H	3.0	35.7	1.0	-44.2	-13.0	-31.2	
High Ch, 1909.8									
3819.60	-13.3	V	3.0	35.8	1.0	-48.1	-13.0	-35.1	
5729.40	-12.3	V	3.0	35.5	1.0	-46.8	-13.0	-33.8	
7639.20	-7.2	V	3.0	35.8	1.0	-41.9	-13.0	-28.9	
3819.60	-17.7	H	3.0	35.8	1.0	-52.5	-13.0	-39.5	
5729.40	-14.6	H	3.0	35.5	1.0	-49.1	-13.0	-36.1	
7639.20	-11.5	H	3.0	35.8	1.0	-46.3	-13.0	-33.3	

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/31/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: EGPRS 850 MHz Harmonics

Band

GSM 850

EGPRS

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.2									
1648.40	-9.7	V	3.0	37.0	1.0	-45.8	-13.0	-32.8	
2472.60	-21.1	V	3.0	36.4	1.0	-56.5	-13.0	-43.5	
3296.80	-20.3	V	3.0	36.2	1.0	-55.5	-13.0	-42.5	
1648.40	-10.3	H	3.0	37.0	1.0	-46.4	-13.0	-33.4	
2472.60	-17.4	H	3.0	36.4	1.0	-52.8	-13.0	-39.8	
3296.80	-19.4	H	3.0	36.2	1.0	-54.5	-13.0	-41.5	
Mid Ch, 836.6									
1673.20	-9.8	V	3.0	37.0	1.0	-45.8	-13.0	-32.8	
2509.80	-22.3	V	3.0	36.4	1.0	-57.7	-13.0	-44.7	
3346.40	-20.3	V	3.0	36.1	1.0	-55.5	-13.0	-42.5	
1673.20	-10.8	H	3.0	37.0	1.0	-46.8	-13.0	-33.8	
2509.80	-18.6	H	3.0	36.4	1.0	-54.1	-13.0	-41.1	
3346.40	-19.6	H	3.0	36.1	1.0	-54.7	-13.0	-41.7	
High Ch, 848.8									
1697.60	-8.7	V	3.0	37.0	1.0	-44.7	-13.0	-31.7	
2546.40	-22.9	V	3.0	36.4	1.0	-58.3	-13.0	-45.3	
3395.20	-20.8	V	3.0	36.1	1.0	-55.8	-13.0	-42.8	
1697.60	-15.3	H	3.0	37.0	1.0	-51.3	-13.0	-38.3	
2546.40	-21.2	H	3.0	36.4	1.0	-56.6	-13.0	-43.6	
3395.20	-19.8	H	3.0	36.1	1.0	-54.9	-13.0	-41.9	

Band

GSM850

GPRS

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/31/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: GPRS 850 MHz Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.2									
1648.40	-7.7	V	3.0	37.0	1.0	-43.8	-13.0	-30.8	
2472.60	-19.1	V	3.0	36.4	1.0	-54.6	-13.0	-41.6	
3296.80	-19.6	V	3.0	36.2	1.0	-54.8	-13.0	-41.8	
1648.40	-9.7	H	3.0	37.0	1.0	-45.7	-13.0	-32.7	
2472.60	-16.6	H	3.0	36.4	1.0	-52.1	-13.0	-39.1	
3296.80	-19.7	H	3.0	36.2	1.0	-54.8	-13.0	-41.8	
Mid Ch, 836.6									
1673.20	-8.7	V	3.0	37.0	1.0	-44.7	-13.0	-31.7	
2509.80	-20.7	V	3.0	36.4	1.0	-56.1	-13.0	-43.1	
3346.40	-19.4	V	3.0	36.1	1.0	-54.5	-13.0	-41.5	
1673.20	-10.1	H	3.0	37.0	1.0	-46.1	-13.0	-33.1	
2509.80	-17.5	H	3.0	36.4	1.0	-53.0	-13.0	-40.0	
3346.40	-19.7	H	3.0	36.1	1.0	-54.8	-13.0	-41.8	
High Ch, 848.8									
1697.60	-8.2	V	3.0	37.0	1.0	-44.2	-13.0	-31.2	
2546.40	-22.3	V	3.0	36.4	1.0	-57.7	-13.0	-44.7	
3395.20	-20.0	V	3.0	36.1	1.0	-55.1	-13.0	-42.1	
1697.60	-13.3	H	3.0	37.0	1.0	-49.3	-13.0	-36.3	
2546.40	-19.9	H	3.0	36.4	1.0	-55.3	-13.0	-42.3	
3395.20	-19.8	H	3.0	36.1	1.0	-54.9	-13.0	-41.9	

WCDMA

Band

Band 2

HSDPA

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/31/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: HSDPA Band 2 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4									
3704.80	-15.9	V	3.0	35.9	1.0	-50.8	-13.0	-37.8	
5557.20	-15.1	V	3.0	35.5	1.0	-49.6	-13.0	-36.6	
7409.60	-16.0	V	3.0	35.7	1.0	-50.7	-13.0	-37.7	
3704.80	-16.1	H	3.0	35.9	1.0	-51.0	-13.0	-38.0	
5557.20	-11.1	H	3.0	35.5	1.0	-45.6	-13.0	-32.6	
7409.60	-13.6	H	3.0	35.7	1.0	-48.3	-13.0	-35.3	
Mid Ch, 1880									
3760.00	-16.6	V	3.0	35.8	1.0	-51.5	-13.0	-38.5	
5640.00	-15.5	V	3.0	35.5	1.0	-50.0	-13.0	-37.0	
7520.00	-15.5	V	3.0	35.7	1.0	-50.3	-13.0	-37.3	
3760.00	-18.7	H	3.0	35.8	1.0	-53.5	-13.0	-40.5	
5640.00	-14.6	H	3.0	35.5	1.0	-49.0	-13.0	-36.0	
7520.00	-14.5	H	3.0	35.7	1.0	-49.2	-13.0	-36.2	
High Ch, 1907.6									
3815.20	-10.8	V	3.0	35.8	1.0	-45.5	-13.0	-32.5	
5722.80	-14.7	V	3.0	35.5	1.0	-49.2	-13.0	-36.2	
7630.40	-15.7	V	3.0	35.8	1.0	-50.5	-13.0	-37.5	
3815.20	-11.9	H	3.0	35.8	1.0	-46.7	-13.0	-33.7	
5722.80	-14.3	H	3.0	35.5	1.0	-48.8	-13.0	-35.8	
7630.40	-13.3	H	3.0	35.8	1.0	-48.0	-13.0	-35.0	

Band

Band 2

REL99

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/31/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: Rel99 Band 2 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4									
3704.80	-15.3	V	3.0	35.9	1.0	-50.1	-13.0	-37.1	
5557.20	-8.4	V	3.0	35.5	1.0	-42.9	-13.0	-29.9	
7409.60	-14.8	V	3.0	35.7	1.0	-49.5	-13.0	-36.5	
3704.80	-16.4	H	3.0	35.9	1.0	-51.3	-13.0	-38.3	
5557.20	-12.6	H	3.0	35.5	1.0	-47.1	-13.0	-34.1	
7409.60	-14.8	H	3.0	35.7	1.0	-49.6	-13.0	-36.6	
Mid Ch, 1880									
3760.00	-15.1	V	3.0	35.8	1.0	-49.9	-13.0	-36.9	
5640.00	-17.0	V	3.0	35.5	1.0	-51.5	-13.0	-38.5	
7520.00	-16.2	V	3.0	35.7	1.0	-50.9	-13.0	-37.9	
3760.00	-18.7	H	3.0	35.8	1.0	-53.5	-13.0	-40.5	
5640.00	-16.1	H	3.0	35.5	1.0	-50.6	-13.0	-37.6	
7520.00	-14.0	H	3.0	35.7	1.0	-48.7	-13.0	-35.7	
High Ch, 1907.6									
3815.20	-5.7	V	3.0	35.8	1.0	-40.4	-13.0	-27.4	
5722.80	-16.1	V	3.0	35.5	1.0	-50.6	-13.0	-37.6	
7630.40	-15.1	V	3.0	35.8	1.0	-49.9	-13.0	-36.9	
3815.20	-7.9	H	3.0	35.8	1.0	-42.7	-13.0	-29.7	
5722.80	-14.7	H	3.0	35.5	1.0	-49.2	-13.0	-36.2	
7630.40	-14.5	H	3.0	35.8	1.0	-49.2	-13.0	-36.2	

Band

Band 5

HSDPA

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/31/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: HSDPA Band 5 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.4									
1652.80	-0.1	V	3.0	37.0	1.0	-36.1	-13.0	-23.1	
2479.20	-10.7	V	3.0	36.4	1.0	-46.1	-13.0	-33.1	
3305.60	-20.1	V	3.0	36.1	1.0	-55.3	-13.0	-42.3	
1652.80	-4.6	H	3.0	37.0	1.0	-40.7	-13.0	-27.7	
2479.20	-21.5	H	3.0	36.4	1.0	-56.9	-13.0	-43.9	
3305.60	-21.2	H	3.0	36.1	1.0	-56.4	-13.0	-43.4	
Mid Ch, 836.6									
1673.20	5.0	V	3.0	37.0	1.0	-31.0	-13.0	-18.0	
2509.80	-14.2	V	3.0	36.4	1.0	-49.6	-13.0	-36.6	
3346.40	-20.1	V	3.0	36.1	1.0	-55.2	-13.0	-42.2	
1673.20	-0.9	H	3.0	37.0	1.0	-36.9	-13.0	-23.9	
2509.80	-22.9	H	3.0	36.4	1.0	-58.3	-13.0	-45.3	
3346.40	-20.4	H	3.0	36.1	1.0	-55.6	-13.0	-42.6	
High Ch, 846.6									
1693.20	4.3	V	3.0	37.0	1.0	-31.6	-13.0	-18.6	
2539.80	-12.9	V	3.0	36.4	1.0	-48.3	-13.0	-35.3	
3386.40	-19.2	V	3.0	36.1	1.0	-54.3	-13.0	-41.3	
1693.20	-3.9	H	3.0	37.0	1.0	-39.8	-13.0	-26.8	
2539.80	-22.0	H	3.0	36.4	1.0	-57.4	-13.0	-44.4	
3386.40	-20.3	H	3.0	36.1	1.0	-55.4	-13.0	-42.4	

Band

Band 5

REL99

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/31/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: Rel99 Band 5 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.4									
1652.80	-1.8	V	3.0	37.0	1.0	-37.8	-13.0	-24.8	
2479.20	-14.9	V	3.0	36.4	1.0	-50.3	-13.0	-37.3	
3305.60	-20.6	V	3.0	36.1	1.0	-55.7	-13.0	-42.7	
1652.80	-5.5	H	3.0	37.0	1.0	-41.5	-13.0	-28.5	
2479.20	-21.3	H	3.0	36.4	1.0	-56.7	-13.0	-43.7	
3305.60	-21.2	H	3.0	36.1	1.0	-56.3	-13.0	-43.3	
Mid Ch, 836.6									
1673.20	2.9	V	3.0	37.0	1.0	-33.1	-13.0	-20.1	
2509.80	-16.3	V	3.0	36.4	1.0	-51.7	-13.0	-38.7	
3346.40	-20.5	V	3.0	36.1	1.0	-55.7	-13.0	-42.7	
1673.20	-2.8	H	3.0	37.0	1.0	-38.8	-13.0	-25.8	
2509.80	-21.3	H	3.0	36.4	1.0	-56.7	-13.0	-43.7	
3346.40	-20.8	H	3.0	36.1	1.0	-55.9	-13.0	-42.9	
High Ch, 846.6									
1693.20	2.4	V	3.0	37.0	1.0	-33.6	-13.0	-20.6	
2539.80	-15.2	V	3.0	36.4	1.0	-50.6	-13.0	-37.6	
3386.40	-19.9	V	3.0	36.1	1.0	-55.0	-13.0	-42.0	
1693.20	-8.7	H	3.0	37.0	1.0	-44.6	-13.0	-31.6	
2539.80	-22.2	H	3.0	36.4	1.0	-57.6	-13.0	-44.6	
3386.40	-20.5	H	3.0	36.1	1.0	-55.6	-13.0	-42.6	

CDMA

Band

BC1

UL Verification Services Chamber B
Above 1GHz High Frequency Substitution Measurement

Company:	LG
Project #:	15I20402
Date:	04/04/15
Test Engineer:	R.Alegre
Configuration:	EUT w/ AC Adapter + HS
Mode:	EVDO BC1

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T34 8449B	Filter 1	Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.25 MHz									
3.703	-6.9	H	3.0	35.4	1.0	-41.3	-13.0	-28.3	
5.554	-6.2	H	3.0	34.7	1.0	-39.9	-13.0	-26.9	
7.405	-11.7	H	3.0	34.9	1.0	-45.6	-13.0	-32.6	
3.703	-9.2	V	3.0	35.4	1.0	-43.6	-13.0	-30.6	
5.554	-4.3	V	3.0	34.7	1.0	-38.0	-13.0	-25.0	
7.405	-13.1	V	3.0	34.9	1.0	-47.0	-13.0	-34.0	
Mid Ch, 1880 MHz									
3.760	-4.8	H	3.0	35.3	1.0	-39.1	-13.0	-26.1	
5.640	-3.3	H	3.0	34.7	1.0	-37.0	-13.0	-24.0	
7.520	-11.7	H	3.0	34.9	1.0	-45.7	-13.0	-32.7	
3.760	-9.3	V	3.0	35.3	1.0	-43.6	-13.0	-30.6	
5.640	-3.3	V	3.0	34.7	1.0	-37.0	-13.0	-24.0	
7.520	-12.9	V	3.0	34.9	1.0	-46.8	-13.0	-33.8	
High Ch, 1908.75 MHz									
3.818	-0.1	H	3.0	35.3	1.0	-34.4	-13.0	-21.4	
5.726	-2.1	H	3.0	34.7	1.0	-35.8	-13.0	-22.8	
7.635	-11.3	H	3.0	34.9	1.0	-45.3	-13.0	-32.3	
3.818	-0.7	V	3.0	35.3	1.0	-35.0	-13.0	-22.0	
5.726	-13.0	V	3.0	34.7	1.0	-46.7	-13.0	-33.7	
7.635	-12.9	V	3.0	34.9	1.0	-46.8	-13.0	-33.8	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

UL Verification Services Chamber B
Above 1GHz High Frequency Substitution Measurement

Company:	LG
Project #:	15I20402
Date:	04/04/15
Test Engineer:	R.Alegre
Configuration:	EUT w/ AC Adapter + HS
Mode:	RTT BC1 HARM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T34 8449B	Filter 1	Part 24

Band

BC1

1xRTT

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.25 MHz									
3.703	-6.7	H	3.0	35.4	1.0	-41.1	-13.0	-28.1	
5.554	-6.1	H	3.0	34.7	1.0	-39.8	-13.0	-26.8	
7.405	-12.5	H	3.0	34.9	1.0	-46.4	-13.0	-33.4	
3.703	-9.5	V	3.0	35.4	1.0	-43.9	-13.0	-30.9	
5.554	-3.9	V	3.0	34.7	1.0	-37.7	-13.0	-24.7	
7.405	-13.0	V	3.0	34.9	1.0	-46.9	-13.0	-33.9	
Mid Ch, 1880 MHz									
3.760	-4.8	H	3.0	35.3	1.0	-39.2	-13.0	-26.2	
5.640	-3.2	H	3.0	34.7	1.0	-37.0	-13.0	-24.0	
7.520	-11.6	H	3.0	34.9	1.0	-45.5	-13.0	-32.5	
3.760	-8.9	V	3.0	35.3	1.0	-43.2	-13.0	-30.2	
5.640	-2.9	V	3.0	34.7	1.0	-36.6	-13.0	-23.6	
7.520	-12.9	V	3.0	34.9	1.0	-46.9	-13.0	-33.9	
High Ch, 1908.75 MHz									
3.818	0.0	H	3.0	35.3	1.0	-34.3	-13.0	-21.3	
5.726	-2.0	H	3.0	34.7	1.0	-35.7	-13.0	-22.7	
7.635	-11.7	H	3.0	34.9	1.0	-45.6	-13.0	-32.6	
3.818	-0.8	V	3.0	35.3	1.0	-35.1	-13.0	-22.1	
5.726	-13.1	V	3.0	34.7	1.0	-46.8	-13.0	-33.8	
7.635	-12.7	V	3.0	34.9	1.0	-46.7	-13.0	-33.7	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

Band

BC0

UL Verification Services Chamber B
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20402
Date: 04/04/15
Test Engineer: R.Alegre
Configuration: EUT w/ AC Adapter + HS
Mode: EVDO BC0

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T34 8449B	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7MHz									
1.649	-26.6	H	3.0	37.4	1.0	-63.0	-13.0	-50.0	
2.474	-24.4	H	3.0	36.4	1.0	-59.8	-13.0	-46.8	
3.299	-21.6	H	3.0	35.8	1.0	-56.4	-13.0	-43.4	
1.649	-25.7	V	3.0	37.4	1.0	-62.0	-13.0	-49.0	
2.474	-18.9	V	3.0	36.4	1.0	-54.3	-13.0	-41.3	
3.299	-20.5	V	3.0	35.8	1.0	-55.3	-13.0	-42.3	
Mid Ch, 836.52MHz									
1.673	-25.4	H	3.0	37.3	1.0	-61.8	-13.0	-48.8	
2.510	-24.5	H	3.0	36.4	1.0	-59.9	-13.0	-46.9	
3.346	-21.4	H	3.0	35.8	1.0	-56.2	-13.0	-43.2	
1.673	-25.3	V	3.0	37.3	1.0	-61.7	-13.0	-48.7	
2.510	-17.5	V	3.0	36.4	1.0	-52.8	-13.0	-39.8	
3.346	-20.4	V	3.0	35.8	1.0	-55.2	-13.0	-42.2	
High Ch, 848.31MHz									
1.697	-22.9	H	3.0	37.3	1.0	-59.2	-13.0	-46.2	
2.545	-24.3	H	3.0	36.3	1.0	-59.6	-13.0	-46.6	
3.393	-20.6	H	3.0	35.7	1.0	-55.3	-13.0	-42.3	
1.697	-10.4	V	3.0	37.3	1.0	-46.7	-13.0	-33.7	
2.545	-19.7	V	3.0	36.3	1.0	-55.1	-13.0	-42.1	
3.393	-21.0	V	3.0	35.7	1.0	-55.7	-13.0	-42.7	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

UL Verification Services Chamber B
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 15I20402
Date: 04/04/15
Test Engineer: R.Alegre
Configuration: EUT w/ AC Adapter + HS
Mode: RTT BC0

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T34 8449B	Filter 1	Part 22

Band

BC0

1xRTT

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7MHz									
1.649	-26.6	H	3.0	37.4	1.0	-63.0	-13.0	-50.0	
2.474	-24.5	H	3.0	36.4	1.0	-59.9	-13.0	-46.9	
3.299	-21.5	H	3.0	35.8	1.0	-56.3	-13.0	-43.3	
1.649	-25.9	V	3.0	37.4	1.0	-62.3	-13.0	-49.3	
2.474	-18.8	V	3.0	36.4	1.0	-54.2	-13.0	-41.2	
3.299	-20.4	V	3.0	35.8	1.0	-55.2	-13.0	-42.2	
Mid Ch, 836.52MHz									
1.673	-25.6	H	3.0	37.3	1.0	-62.0	-13.0	-49.0	
2.510	-23.9	H	3.0	36.4	1.0	-59.3	-13.0	-46.3	
3.346	-20.9	H	3.0	35.8	1.0	-55.6	-13.0	-42.6	
1.673	-25.5	V	3.0	37.3	1.0	-61.8	-13.0	-48.8	
2.510	-17.4	V	3.0	36.4	1.0	-52.8	-13.0	-39.8	
3.346	-20.5	V	3.0	35.8	1.0	-55.3	-13.0	-42.3	
High Ch, 848.31MHz									
1.697	-22.6	H	3.0	37.3	1.0	-58.9	-13.0	-45.9	
2.545	-24.2	H	3.0	36.3	1.0	-59.5	-13.0	-46.5	
3.393	-20.5	H	3.0	35.7	1.0	-55.2	-13.0	-42.2	
1.697	-10.2	V	3.0	37.3	1.0	-46.5	-13.0	-33.5	
2.545	-19.8	V	3.0	36.3	1.0	-55.2	-13.0	-42.2	
3.393	-20.7	V	3.0	35.7	1.0	-55.4	-13.0	-42.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

Band

LTE13

10MHz

16QAM

UL Verificaton Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/31/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 13 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 782									
1564.00	0.0	V	3.0	37.1	1.0	-36.1	-13.0	-23.1	
2346.00	0.0	V	3.0	36.5	1.0	-35.5	-13.0	-22.5	
3128.00	0.0	V	3.0	36.3	1.0	-35.3	-13.0	-22.3	
1564.00	0.0	H	3.0	37.1	1.0	-36.1	-13.0	-23.1	
2346.00	0.0	H	3.0	36.5	1.0	-35.5	-13.0	-22.5	
3128.00	0.0	H	3.0	36.3	1.0	-35.3	-13.0	-22.3	
Mid Ch, 782									
1564.00	-1.0	V	3.0	37.1	1.0	-37.1	-13.0	-24.1	
2346.00	-16.4	V	3.0	36.5	1.0	-51.9	-13.0	-38.9	
3128.00	-20.1	V	3.0	36.3	1.0	-55.4	-13.0	-42.4	
1564.00	-3.8	H	3.0	37.1	1.0	-40.0	-13.0	-27.0	
2346.00	-22.8	H	3.0	36.5	1.0	-58.3	-13.0	-45.3	
3128.00	-20.8	H	3.0	36.3	1.0	-56.1	-13.0	-43.1	
High Ch, 782									
1564.00	0.0	V	3.0	37.1	1.0	-36.1	-13.0	-23.1	
2346.00	0.0	V	3.0	36.5	1.0	-35.5	-13.0	-22.5	
3128.00	0.0	V	3.0	36.3	1.0	-35.3	-13.0	-22.3	
1564.00	0.0	H	3.0	37.1	1.0	-36.1	-13.0	-23.1	
2346.00	0.0	H	3.0	36.5	1.0	-35.5	-13.0	-22.5	
3128.00	0.0	H	3.0	36.3	1.0	-35.3	-13.0	-22.3	

Band

LTE13

10MHz

QPSK

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/31/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 13 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 782									
1564.00	0.0	V	3.0	37.1	1.0	-36.1	-13.0	-23.1	
2346.00	0.0	V	3.0	36.5	1.0	-35.5	-13.0	-22.5	
3128.00	0.0	V	3.0	36.3	1.0	-35.3	-13.0	-22.3	
1564.00	0.0	H	3.0	37.1	1.0	-36.1	-13.0	-23.1	
2346.00	0.0	H	3.0	36.5	1.0	-35.5	-13.0	-22.5	
3128.00	0.0	H	3.0	36.3	1.0	-35.3	-13.0	-22.3	
Mid Ch, 782									
1564.00	-0.6	V	3.0	37.1	1.0	-36.7	-13.0	-23.7	
2346.00	-17.5	V	3.0	36.5	1.0	-53.0	-13.0	-40.0	
3128.00	-20.3	V	3.0	36.3	1.0	-55.6	-13.0	-42.6	
1564.00	-3.8	H	3.0	37.1	1.0	-39.9	-13.0	-26.9	
2346.00	-23.9	H	3.0	36.5	1.0	-59.4	-13.0	-46.4	
3128.00	-21.7	H	3.0	36.3	1.0	-56.9	-13.0	-43.9	
High Ch, 782									
1564.00	0.0	V	3.0	37.1	1.0	-36.1	-13.0	-23.1	
2346.00	0.0	V	3.0	36.5	1.0	-35.5	-13.0	-22.5	
3128.00	0.0	V	3.0	36.3	1.0	-35.3	-13.0	-22.3	
1564.00	0.0	H	3.0	37.1	1.0	-36.1	-13.0	-23.1	
2346.00	0.0	H	3.0	36.5	1.0	-35.5	-13.0	-22.5	
3128.00	0.0	H	3.0	36.3	1.0	-35.3	-13.0	-22.3	

Band

LTE13

5MHz

16QAM

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/31/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 13 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 779.5									
1559.00	-0.3	V	3.0	37.1	1.0	-36.4	-13.0	-23.4	
2338.50	-16.4	V	3.0	36.5	1.0	-51.9	-13.0	-38.9	
3118.00	-20.0	V	3.0	36.3	1.0	-55.3	-13.0	-42.3	
1559.00	-1.1	H	3.0	37.1	1.0	-37.2	-13.0	-24.2	
2338.50	-23.4	H	3.0	36.5	1.0	-58.9	-13.0	-45.9	
3118.00	-19.7	H	3.0	36.3	1.0	-54.9	-13.0	-41.9	
Mid Ch, 782									
1564.00	1.5	V	3.0	37.1	1.0	-34.6	-13.0	-21.6	
2346.00	-17.5	V	3.0	36.5	1.0	-53.0	-13.0	-40.0	
3128.00	-19.3	V	3.0	36.3	1.0	-54.6	-13.0	-41.6	
1564.00	-0.4	H	3.0	37.1	1.0	-36.6	-13.0	-23.6	
2346.00	-18.0	H	3.0	36.5	1.0	-53.5	-13.0	-40.5	
3128.00	-21.5	H	3.0	36.3	1.0	-56.8	-13.0	-43.8	
High Ch, 784.5									
1569.00	-1.0	V	3.0	37.1	1.0	-37.1	-13.0	-24.1	
2353.50	-14.4	V	3.0	36.5	1.0	-49.9	-13.0	-36.9	
3138.00	-20.5	V	3.0	36.3	1.0	-55.8	-13.0	-42.8	
1569.00	-3.8	H	3.0	37.1	1.0	-39.9	-13.0	-26.9	
2353.50	-18.0	H	3.0	36.5	1.0	-53.5	-13.0	-40.5	
3138.00	-21.7	H	3.0	36.3	1.0	-56.9	-13.0	-43.9	

Band

LTE13

5MHz

QPSK

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/31/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 13 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 779.5									
1559.00	-0.3	V	3.0	37.1	1.0	-36.5	-13.0	-23.5	
2338.50	-16.9	V	3.0	36.5	1.0	-52.4	-13.0	-39.4	
3118.00	-20.1	V	3.0	36.3	1.0	-55.4	-13.0	-42.4	
1559.00	-2.0	H	3.0	37.1	1.0	-38.2	-13.0	-25.2	
2338.50	-23.5	H	3.0	36.5	1.0	-59.0	-13.0	-46.0	
3118.00	-21.3	H	3.0	36.3	1.0	-56.6	-13.0	-43.6	
Mid Ch, 782									
1564.00	-0.7	V	3.0	37.1	1.0	-36.8	-13.0	-23.8	
2346.00	-16.6	V	3.0	36.5	1.0	-52.1	-13.0	-39.1	
3128.00	-19.9	V	3.0	36.3	1.0	-55.2	-13.0	-42.2	
1564.00	-2.3	H	3.0	37.1	1.0	-38.4	-13.0	-25.4	
2346.00	-20.4	H	3.0	36.5	1.0	-55.9	-13.0	-42.9	
3128.00	-20.7	H	3.0	36.3	1.0	-56.0	-13.0	-43.0	
High Ch, 784.5									
1569.00	-1.7	V	3.0	37.1	1.0	-37.8	-13.0	-24.8	
2353.50	-14.3	V	3.0	36.5	1.0	-49.8	-13.0	-36.8	
3138.00	-20.2	V	3.0	36.3	1.0	-55.5	-13.0	-42.5	
1569.00	-3.8	H	3.0	37.1	1.0	-40.0	-13.0	-27.0	
2353.50	-18.1	H	3.0	36.5	1.0	-53.6	-13.0	-40.6	
3138.00	-20.3	H	3.0	36.3	1.0	-55.6	-13.0	-42.6	

Band

LTE7

20MHz

16QAM

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 7 Harmonics, 20MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2510									
5020.00	-15.9	V	3.0	35.5	1.0	-50.4	-25.0	-25.4	
7530.00	-15.2	V	3.0	35.7	1.0	-50.0	-25.0	-25.0	
10040.00	-14.2	V	3.0	36.0	1.0	-49.2	-25.0	-24.2	
5020.00	-15.8	H	3.0	35.5	1.0	-50.3	-25.0	-25.3	
7530.00	-14.1	H	3.0	35.7	1.0	-48.9	-25.0	-23.9	
10040.00	-12.5	H	3.0	36.0	1.0	-47.5	-25.0	-22.5	
Mid Ch, 2535									
5070.00	-15.7	V	3.0	35.4	1.0	-50.1	-25.0	-25.1	
7605.00	-14.3	V	3.0	35.8	1.0	-49.0	-25.0	-24.0	
10140.00	-12.5	V	3.0	36.0	1.0	-47.5	-25.0	-22.5	
5070.00	-15.7	H	3.0	35.4	1.0	-50.2	-25.0	-25.2	
7605.00	-14.7	H	3.0	35.8	1.0	-49.5	-25.0	-24.5	
10140.00	-13.1	H	3.0	36.0	1.0	-48.0	-25.0	-23.0	
High Ch, 2560									
5120.00	-16.0	V	3.0	35.4	1.0	-50.4	-25.0	-25.4	
7680.00	-15.2	V	3.0	35.8	1.0	-50.0	-25.0	-25.0	
10240.00	-12.9	V	3.0	35.9	1.0	-47.8	-25.0	-22.8	
5120.00	-16.4	H	3.0	35.4	1.0	-50.9	-25.0	-25.9	
7680.00	-13.6	H	3.0	35.8	1.0	-48.4	-25.0	-23.4	
10240.00	-11.3	H	3.0	35.9	1.0	-46.2	-25.0	-21.2	

Band

LTE7

20MHz

QPSK

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 7 Harmonics, 20MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2510									
5020.00	-16.3	V	3.0	35.5	1.0	-50.8	-25.0	-25.8	
7530.00	-15.7	V	3.0	35.7	1.0	-50.4	-25.0	-25.4	
10040.00	-12.6	V	3.0	36.0	1.0	-47.6	-25.0	-22.6	
5020.00	-16.4	H	3.0	35.5	1.0	-50.8	-25.0	-25.8	
7530.00	-13.7	H	3.0	35.7	1.0	-48.5	-25.0	-23.5	
10040.00	-12.1	H	3.0	36.0	1.0	-47.1	-25.0	-22.1	
Mid Ch, 2535									
5070.00	-15.0	V	3.0	35.4	1.0	-49.4	-25.0	-24.4	
7605.00	-14.8	V	3.0	35.8	1.0	-49.5	-25.0	-24.5	
10140.00	-13.3	V	3.0	36.0	1.0	-48.3	-25.0	-23.3	
5070.00	-14.7	H	3.0	35.4	1.0	-49.2	-25.0	-24.2	
7605.00	-14.2	H	3.0	35.8	1.0	-49.0	-25.0	-24.0	
10140.00	-12.7	H	3.0	36.0	1.0	-47.6	-25.0	-22.6	
High Ch, 2560									
5120.00	-15.8	V	3.0	35.4	1.0	-50.2	-25.0	-25.2	
7680.00	-14.7	V	3.0	35.8	1.0	-49.5	-25.0	-24.5	
10240.00	-13.1	V	3.0	35.9	1.0	-48.0	-25.0	-23.0	
5120.00	-15.4	H	3.0	35.4	1.0	-49.8	-25.0	-24.8	
7680.00	-13.8	H	3.0	35.8	1.0	-48.6	-25.0	-23.6	
10240.00	-12.4	H	3.0	35.9	1.0	-47.3	-25.0	-22.3	

Band

LTE7

15MHz

16QAM

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 4/1/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 7 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2507.5									
5015.00	-16.1	V	3.0	35.5	1.0	-50.6	-25.0	-25.6	
7522.50	-15.7	V	3.0	35.7	1.0	-50.4	-25.0	-25.4	
10030.00	-13.5	V	3.0	36.0	1.0	-48.5	-25.0	-23.5	
5015.00	-15.4	H	3.0	35.5	1.0	-49.8	-25.0	-24.8	
7522.50	-14.0	H	3.0	35.7	1.0	-48.8	-25.0	-23.8	
10030.00	-12.3	H	3.0	36.0	1.0	-47.3	-25.0	-22.3	
Mid Ch, 2535									
5070.00	-15.0	V	3.0	35.4	1.0	-49.5	-25.0	-24.5	
7605.00	-14.2	V	3.0	35.8	1.0	-48.9	-25.0	-23.9	
10140.00	-13.0	V	3.0	36.0	1.0	-47.9	-25.0	-22.9	
5070.00	-13.9	H	3.0	35.4	1.0	-48.3	-25.0	-23.3	
7605.00	-13.9	H	3.0	35.8	1.0	-48.6	-25.0	-23.6	
10140.00	-12.1	H	3.0	36.0	1.0	-47.0	-25.0	-22.0	
High Ch, 2562.5									
5125.00	-15.5	V	3.0	35.4	1.0	-50.0	-25.0	-25.0	
7687.50	-14.7	V	3.0	35.8	1.0	-49.5	-25.0	-24.5	
10250.00	-13.0	V	3.0	35.9	1.0	-47.9	-25.0	-22.9	
5125.00	-12.6	H	3.0	35.4	1.0	-47.0	-25.0	-22.0	
7687.50	-13.9	H	3.0	35.8	1.0	-48.7	-25.0	-23.7	
10250.00	-12.8	H	3.0	35.9	1.0	-47.7	-25.0	-22.7	

Band

LTE7

15MHz

QPSK

UL Verification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 4/1/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 7 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2507.5									
5015.00	-15.5	V	3.0	35.5	1.0	-50.0	-25.0	-25.0	
7522.50	-16.2	V	3.0	35.7	1.0	-50.9	-25.0	-25.9	
10030.00	-13.4	V	3.0	36.0	1.0	-48.4	-25.0	-23.4	
5015.00	-15.7	H	3.0	35.5	1.0	-50.1	-25.0	-25.1	
7522.50	-15.0	H	3.0	35.7	1.0	-49.7	-25.0	-24.7	
10030.00	-12.0	H	3.0	36.0	1.0	-47.0	-25.0	-22.0	
Mid Ch, 2535									
5070.00	-14.4	V	3.0	35.4	1.0	-48.9	-25.0	-23.9	
7605.00	-14.4	V	3.0	35.8	1.0	-49.2	-25.0	-24.2	
10140.00	-13.2	V	3.0	36.0	1.0	-48.2	-25.0	-23.2	
5070.00	-12.3	H	3.0	35.4	1.0	-46.7	-25.0	-21.7	
7605.00	-13.7	H	3.0	35.8	1.0	-48.5	-25.0	-23.5	
10140.00	-12.2	H	3.0	36.0	1.0	-47.1	-25.0	-22.1	
High Ch, 2562.5									
5125.00	-15.9	V	3.0	35.4	1.0	-50.3	-25.0	-25.3	
7687.50	-13.9	V	3.0	35.8	1.0	-48.7	-25.0	-23.7	
10250.00	-13.0	V	3.0	35.9	1.0	-47.9	-25.0	-22.9	
5125.00	-12.2	H	3.0	35.4	1.0	-46.6	-25.0	-21.6	
7687.50	-12.4	H	3.0	35.8	1.0	-47.2	-25.0	-22.2	
10250.00	-11.3	H	3.0	35.9	1.0	-46.2	-25.0	-21.2	

Band

LTE7

10MHz

16QAM

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 7 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2505									
5010.00	-16.1	V	3.0	35.5	1.0	-50.6	-25.0	-25.6	
7515.00	-14.8	V	3.0	35.7	1.0	-49.5	-25.0	-24.5	
10020.00	-13.2	V	3.0	36.0	1.0	-48.2	-25.0	-23.2	
5010.00	-15.4	H	3.0	35.5	1.0	-49.9	-25.0	-24.9	
7515.00	-13.3	H	3.0	35.7	1.0	-48.0	-25.0	-23.0	
10020.00	-12.5	H	3.0	36.0	1.0	-47.5	-25.0	-22.5	
Mid Ch, 2535									
5070.00	-15.1	V	3.0	35.4	1.0	-49.6	-25.0	-24.6	
7605.00	-14.9	V	3.0	35.8	1.0	-49.6	-25.0	-24.6	
10140.00	-12.6	V	3.0	36.0	1.0	-47.5	-25.0	-22.5	
5070.00	-15.4	H	3.0	35.4	1.0	-49.9	-25.0	-24.9	
7605.00	-13.1	H	3.0	35.8	1.0	-47.9	-25.0	-22.9	
10140.00	-11.6	H	3.0	36.0	1.0	-46.5	-25.0	-21.5	
High Ch, 2565									
5130.00	-15.3	V	3.0	35.4	1.0	-49.7	-25.0	-24.7	
7695.00	-14.8	V	3.0	35.8	1.0	-49.5	-25.0	-24.5	
10260.00	-10.8	V	3.0	35.9	1.0	-45.7	-25.0	-20.7	
5130.00	-14.5	H	3.0	35.4	1.0	-49.0	-25.0	-24.0	
7695.00	-12.4	H	3.0	35.8	1.0	-47.1	-25.0	-22.1	
10260.00	-10.9	H	3.0	35.9	1.0	-45.8	-25.0	-20.8	

Band
LTE7
10MHz
QPSK

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 7 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2505									
5010.00	-15.0	V	3.0	35.5	1.0	-49.4	-25.0	-24.4	
7515.00	-15.4	V	3.0	35.7	1.0	-50.1	-25.0	-25.1	
10020.00	-12.9	V	3.0	36.0	1.0	-47.9	-25.0	-22.9	
5010.00	-16.2	H	3.0	35.5	1.0	-50.6	-25.0	-25.6	
7515.00	-13.3	H	3.0	35.7	1.0	-48.0	-25.0	-23.0	
10020.00	-11.6	H	3.0	36.0	1.0	-46.6	-25.0	-21.6	
Mid Ch, 2535									
5070.00	-15.2	V	3.0	35.4	1.0	-49.7	-25.0	-24.7	
7605.00	-11.1	V	3.0	35.8	1.0	-45.8	-25.0	-20.8	
10140.00	-11.8	V	3.0	36.0	1.0	-46.7	-25.0	-21.7	
5070.00	-14.5	H	3.0	35.4	1.0	-49.0	-25.0	-24.0	
7605.00	-14.2	H	3.0	35.8	1.0	-48.9	-25.0	-23.9	
10140.00	-11.4	H	3.0	36.0	1.0	-46.4	-25.0	-21.4	
High Ch, 2565									
5130.00	-16.0	V	3.0	35.4	1.0	-50.4	-25.0	-25.4	
7695.00	-14.3	V	3.0	35.8	1.0	-49.0	-25.0	-24.0	
10260.00	-11.9	V	3.0	35.9	1.0	-46.8	-25.0	-21.8	
5130.00	-13.8	H	3.0	35.4	1.0	-48.2	-25.0	-23.2	
7695.00	-13.7	H	3.0	35.8	1.0	-48.5	-25.0	-23.5	
10260.00	-10.1	H	3.0	35.9	1.0	-45.0	-25.0	-20.0	

Band

LTE7

5MHz

16QAM

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 7 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2502.5									
5005.00	-12.6	V	3.0	35.5	1.0	-47.0	-25.0	-22.0	
7507.50	-14.2	V	3.0	35.7	1.0	-48.9	-25.0	-23.9	
10010.00	-9.3	V	3.0	36.0	1.0	-44.3	-25.0	-19.3	
5005.00	-14.4	H	3.0	35.5	1.0	-48.8	-25.0	-23.8	
7507.50	-12.5	H	3.0	35.7	1.0	-47.2	-25.0	-22.2	
10010.00	-11.6	H	3.0	36.0	1.0	-46.6	-25.0	-21.6	
Mid Ch, 2535									
5070.00	-11.9	V	3.0	35.4	1.0	-46.3	-25.0	-21.3	
7605.00	-13.4	V	3.0	35.8	1.0	-48.2	-25.0	-23.2	
10140.00	-8.6	V	3.0	36.0	1.0	-43.6	-25.0	-18.6	
5070.00	-11.7	H	3.0	35.4	1.0	-46.2	-25.0	-21.2	
7605.00	-13.9	H	3.0	35.8	1.0	-48.7	-25.0	-23.7	
10140.00	-10.6	H	3.0	36.0	1.0	-45.6	-25.0	-20.6	
High Ch, 2567.5									
5135.00	-14.2	V	3.0	35.4	1.0	-48.6	-25.0	-23.6	
7702.50	-12.8	V	3.0	35.8	1.0	-47.6	-25.0	-22.6	
10270.00	-7.7	V	3.0	35.9	1.0	-42.6	-25.0	-17.6	
5135.00	-10.2	H	3.0	35.4	1.0	-44.6	-25.0	-19.6	
7702.50	-14.1	H	3.0	35.8	1.0	-48.9	-25.0	-23.9	
10270.00	-9.8	H	3.0	35.9	1.0	-44.7	-25.0	-19.7	

Band
LTE7
5MHz
QPSK

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 7 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2502.5									
5005.00	-12.0	V	3.0	35.5	1.0	-46.5	-25.0	-21.5	
7507.50	-13.5	V	3.0	35.7	1.0	-48.3	-25.0	-23.3	
10010.00	-7.4	V	3.0	36.0	1.0	-42.4	-25.0	-17.4	
5005.00	-14.6	H	3.0	35.5	1.0	-49.1	-25.0	-24.1	
7507.50	-12.8	H	3.0	35.7	1.0	-47.6	-25.0	-22.6	
10010.00	-12.4	H	3.0	36.0	1.0	-47.4	-25.0	-22.4	
Mid Ch, 2535									
5070.00	-10.7	V	3.0	35.4	1.0	-45.2	-25.0	-20.2	
7605.00	-13.8	V	3.0	35.8	1.0	-48.6	-25.0	-23.6	
10140.00	-6.9	V	3.0	36.0	1.0	-41.8	-25.0	-16.8	
5070.00	-10.2	H	3.0	35.4	1.0	-44.7	-25.0	-19.7	
7605.00	-13.9	H	3.0	35.8	1.0	-48.6	-25.0	-23.6	
10140.00	-11.2	H	3.0	36.0	1.0	-46.1	-25.0	-21.1	
High Ch, 2567.5									
5135.00	-13.3	V	3.0	35.4	1.0	-47.7	-25.0	-22.7	
7702.50	-13.3	V	3.0	35.8	1.0	-48.0	-25.0	-23.0	
10270.00	-6.7	V	3.0	35.9	1.0	-41.6	-25.0	-16.6	
5135.00	-10.4	H	3.0	35.4	1.0	-44.8	-25.0	-19.8	
7702.50	-13.5	H	3.0	35.8	1.0	-48.3	-25.0	-23.3	
10270.00	-8.6	H	3.0	35.9	1.0	-43.5	-25.0	-18.5	

Band

LTE5

10MHz

16QAM

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 5 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 829									
1658.00	-1.2	V	3.0	37.0	1.0	-37.2	-13.0	-24.2	
2487.00	-17.4	V	3.0	36.4	1.0	-52.8	-13.0	-39.8	
3316.00	-19.9	V	3.0	36.1	1.0	-55.0	-13.0	-42.0	
1658.00	-6.9	H	3.0	37.0	1.0	-43.0	-13.0	-30.0	
2487.00	-23.1	H	3.0	36.4	1.0	-58.5	-13.0	-45.5	
3316.00	-20.8	H	3.0	36.1	1.0	-56.0	-13.0	-43.0	
Mid Ch, 836.5									
1673.00	1.1	V	3.0	37.0	1.0	-34.9	-13.0	-21.9	
2509.50	-19.7	V	3.0	36.4	1.0	-55.1	-13.0	-42.1	
3346.00	-21.1	V	3.0	36.1	1.0	-56.3	-13.0	-43.3	
1673.00	-6.1	H	3.0	37.0	1.0	-42.1	-13.0	-29.1	
2509.50	-22.2	H	3.0	36.4	1.0	-57.6	-13.0	-44.6	
3346.00	-20.8	H	3.0	36.1	1.0	-56.0	-13.0	-43.0	
High Ch, 844									
1688.00	0.2	V	3.0	37.0	1.0	-35.7	-13.0	-22.7	
2532.00	-16.3	V	3.0	36.4	1.0	-51.8	-13.0	-38.8	
3376.00	-20.1	V	3.0	36.1	1.0	-55.2	-13.0	-42.2	
1688.00	-6.8	H	3.0	37.0	1.0	-42.8	-13.0	-29.8	
2532.00	-21.5	H	3.0	36.4	1.0	-56.9	-13.0	-43.9	
3376.00	-19.5	H	3.0	36.1	1.0	-54.6	-13.0	-41.6	

Band
LTE5
10MHz
QPSK

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 5 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 829									
1658.00	-1.1	V	3.0	37.0	1.0	-37.1	-13.0	-24.1	
2487.00	-16.9	V	3.0	36.4	1.0	-52.3	-13.0	-39.3	
3316.00	-19.8	V	3.0	36.1	1.0	-55.0	-13.0	-42.0	
1658.00	-7.7	H	3.0	37.0	1.0	-43.7	-13.0	-30.7	
2487.00	-21.3	H	3.0	36.4	1.0	-56.7	-13.0	-43.7	
3316.00	-21.1	H	3.0	36.1	1.0	-56.3	-13.0	-43.3	
Mid Ch, 836.5									
1673.00	0.7	V	3.0	37.0	1.0	-35.3	-13.0	-22.3	
2509.50	-19.3	V	3.0	36.4	1.0	-54.7	-13.0	-41.7	
3346.00	-20.4	V	3.0	36.1	1.0	-55.5	-13.0	-42.5	
1673.00	-6.3	H	3.0	37.0	1.0	-42.3	-13.0	-29.3	
2509.50	-23.1	H	3.0	36.4	1.0	-58.5	-13.0	-45.5	
3346.00	-21.1	H	3.0	36.1	1.0	-56.2	-13.0	-43.2	
High Ch, 844									
1688.00	0.7	V	3.0	37.0	1.0	-35.3	-13.0	-22.3	
2532.00	-14.7	V	3.0	36.4	1.0	-50.1	-13.0	-37.1	
3376.00	-20.7	V	3.0	36.1	1.0	-55.8	-13.0	-42.8	
1688.00	-7.1	H	3.0	37.0	1.0	-43.1	-13.0	-30.1	
2532.00	-21.3	H	3.0	36.4	1.0	-56.7	-13.0	-43.7	
3376.00	-20.6	H	3.0	36.1	1.0	-55.7	-13.0	-42.7	

Band

LTE5

5MHz

16QAM

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 5 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.5									
1653.00	-1.5	V	3.0	37.0	1.0	-37.5	-13.0	-24.5	
2479.50	-17.8	V	3.0	36.4	1.0	-53.2	-13.0	-40.2	
3306.00	-20.6	V	3.0	36.1	1.0	-55.8	-13.0	-42.8	
1653.00	-6.2	H	3.0	37.0	1.0	-42.2	-13.0	-29.2	
2479.50	-23.5	H	3.0	36.4	1.0	-58.9	-13.0	-45.9	
3306.00	-21.3	H	3.0	36.1	1.0	-56.4	-13.0	-43.4	
Mid Ch, 836.5									
1673.00	1.8	V	3.0	37.0	1.0	-34.2	-13.0	-21.2	
2509.50	-17.5	V	3.0	36.4	1.0	-52.9	-13.0	-39.9	
3346.00	-20.8	V	3.0	36.1	1.0	-55.9	-13.0	-42.9	
1673.00	-1.9	H	3.0	37.0	1.0	-37.9	-13.0	-24.9	
2509.50	-21.9	H	3.0	36.4	1.0	-57.3	-13.0	-44.3	
3346.00	-19.9	H	3.0	36.1	1.0	-55.0	-13.0	-42.0	
High Ch, 846.5									
1693.00	1.9	V	3.0	37.0	1.0	-34.1	-13.0	-21.1	
2539.50	-13.0	V	3.0	36.4	1.0	-48.4	-13.0	-35.4	
3386.00	-19.4	V	3.0	36.1	1.0	-54.5	-13.0	-41.5	
1693.00	-6.5	H	3.0	37.0	1.0	-42.5	-13.0	-29.5	
2539.50	-21.6	H	3.0	36.4	1.0	-57.0	-13.0	-44.0	
3386.00	-20.8	H	3.0	36.1	1.0	-55.9	-13.0	-42.9	

Band
LTE5
5MHz
QPSK

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 5 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.5									
1653.00	-2.3	V	3.0	37.0	1.0	-38.3	-13.0	-25.3	
2479.50	-16.6	V	3.0	36.4	1.0	-52.1	-13.0	-39.1	
3306.00	-20.7	V	3.0	36.1	1.0	-55.8	-13.0	-42.8	
1653.00	-5.7	H	3.0	37.0	1.0	-41.7	-13.0	-28.7	
2479.50	-21.5	H	3.0	36.4	1.0	-57.0	-13.0	-44.0	
3306.00	-20.9	H	3.0	36.1	1.0	-56.0	-13.0	-43.0	
Mid Ch, 836.5									
1673.00	1.5	V	3.0	37.0	1.0	-34.5	-13.0	-21.5	
2509.50	-19.0	V	3.0	36.4	1.0	-54.4	-13.0	-41.4	
3346.00	-19.9	V	3.0	36.1	1.0	-55.0	-13.0	-42.0	
1673.00	-2.9	H	3.0	37.0	1.0	-38.9	-13.0	-25.9	
2509.50	-21.8	H	3.0	36.4	1.0	-57.2	-13.0	-44.2	
3346.00	-20.0	H	3.0	36.1	1.0	-55.1	-13.0	-42.1	
High Ch, 846.5									
1693.00	1.6	V	3.0	37.0	1.0	-34.3	-13.0	-21.3	
2539.50	-13.5	V	3.0	36.4	1.0	-48.9	-13.0	-35.9	
3386.00	-20.1	V	3.0	36.1	1.0	-55.2	-13.0	-42.2	
1693.00	-7.5	H	3.0	37.0	1.0	-43.5	-13.0	-30.5	
2539.50	-21.9	H	3.0	36.4	1.0	-57.3	-13.0	-44.3	
3386.00	-20.5	H	3.0	36.1	1.0	-55.6	-13.0	-42.6	

Band

LTE5

3MHz

16QAM

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 5 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 825.5									
1651.00	-0.3	V	3.0	37.0	1.0	-36.3	-13.0	-23.3	
2476.50	-9.7	V	3.0	36.4	1.0	-45.1	-13.0	-32.1	
3302.00	-19.9	V	3.0	36.2	1.0	-55.0	-13.0	-42.0	
1651.00	-11.3	H	3.0	37.0	1.0	-47.3	-13.0	-34.3	
2476.50	-25.2	H	3.0	36.4	1.0	-60.7	-13.0	-47.7	
3302.00	-21.6	H	3.0	36.2	1.0	-56.7	-13.0	-43.7	
Mid Ch, 836.5									
1673.00	3.6	V	3.0	37.0	1.0	-32.4	-13.0	-19.4	
2509.50	-17.7	V	3.0	36.4	1.0	-53.1	-13.0	-40.1	
3346.00	-21.0	V	3.0	36.1	1.0	-56.1	-13.0	-43.1	
1673.00	-1.9	H	3.0	37.0	1.0	-37.9	-13.0	-24.9	
2509.50	-22.0	H	3.0	36.4	1.0	-57.4	-13.0	-44.4	
3346.00	-20.8	H	3.0	36.1	1.0	-55.9	-13.0	-42.9	
High Ch, 847.5									
1695.00	2.5	V	3.0	37.0	1.0	-33.5	-13.0	-20.5	
2542.50	-18.8	V	3.0	36.4	1.0	-54.2	-13.0	-41.2	
3390.00	-21.2	V	3.0	36.1	1.0	-56.3	-13.0	-43.3	
1695.00	-7.6	H	3.0	37.0	1.0	-43.6	-13.0	-30.6	
2542.50	-23.6	H	3.0	36.4	1.0	-59.0	-13.0	-46.0	
3390.00	-21.3	H	3.0	36.1	1.0	-56.4	-13.0	-43.4	

Band

LTE5

3MHz

QPSK

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 5 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 825.5									
1651.00	-1.6	V	3.0	37.0	1.0	-37.6	-13.0	-24.6	
2476.50	-8.8	V	3.0	36.4	1.0	-44.2	-13.0	-31.2	
3302.00	-19.0	V	3.0	36.2	1.0	-54.2	-13.0	-41.2	
1651.00	-10.3	H	3.0	37.0	1.0	-46.3	-13.0	-33.3	
2476.50	-24.5	H	3.0	36.4	1.0	-60.0	-13.0	-47.0	
3302.00	-21.0	H	3.0	36.2	1.0	-56.2	-13.0	-43.2	
Mid Ch, 836.5									
1673.00	2.6	V	3.0	37.0	1.0	-33.4	-13.0	-20.4	
2509.50	-16.6	V	3.0	36.4	1.0	-52.0	-13.0	-39.0	
3346.00	-19.8	V	3.0	36.1	1.0	-54.9	-13.0	-41.9	
1673.00	-1.9	H	3.0	37.0	1.0	-37.9	-13.0	-24.9	
2509.50	-22.8	H	3.0	36.4	1.0	-58.2	-13.0	-45.2	
3346.00	-20.7	H	3.0	36.1	1.0	-55.8	-13.0	-42.8	
High Ch, 847.5									
1695.00	2.9	V	3.0	37.0	1.0	-33.1	-13.0	-20.1	
2542.50	-18.0	V	3.0	36.4	1.0	-53.5	-13.0	-40.5	
3390.00	-20.5	V	3.0	36.1	1.0	-55.6	-13.0	-42.6	
1695.00	-6.1	H	3.0	37.0	1.0	-42.0	-13.0	-29.0	
2542.50	-22.3	H	3.0	36.4	1.0	-57.7	-13.0	-44.7	
3390.00	-20.5	H	3.0	36.1	1.0	-55.5	-13.0	-42.5	

Band

LTE5

1.4MHz

16QAM

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 5 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7									
1649.40	4.4	V	3.0	37.0	1.0	-31.6	-13.0	-18.6	
2474.10	-15.6	V	3.0	36.4	1.0	-51.0	-13.0	-38.0	
3298.80	-19.6	V	3.0	36.2	1.0	-54.8	-13.0	-41.8	
1649.40	-14.1	H	3.0	37.0	1.0	-50.1	-13.0	-37.1	
2474.10	-23.8	H	3.0	36.4	1.0	-59.2	-13.0	-46.2	
3298.80	-21.3	H	3.0	36.2	1.0	-56.5	-13.0	-43.5	
Mid Ch, 836.5									
1673.00	6.5	V	3.0	37.0	1.0	-29.5	-13.0	-16.5	
2509.50	-15.3	V	3.0	36.4	1.0	-50.7	-13.0	-37.7	
3346.00	-20.5	V	3.0	36.1	1.0	-55.7	-13.0	-42.7	
1673.00	-15.0	H	3.0	37.0	1.0	-51.0	-13.0	-38.0	
2509.50	-23.5	H	3.0	36.4	1.0	-58.9	-13.0	-45.9	
3346.00	-21.0	H	3.0	36.1	1.0	-56.1	-13.0	-43.1	
High Ch, 848.3									
1696.60	3.8	V	3.0	37.0	1.0	-32.2	-13.0	-19.2	
2544.90	-15.8	V	3.0	36.4	1.0	-51.2	-13.0	-38.2	
3393.20	-20.8	V	3.0	36.1	1.0	-55.8	-13.0	-42.8	
1696.60	-15.5	H	3.0	37.0	1.0	-51.5	-13.0	-38.5	
2544.90	-21.3	H	3.0	36.4	1.0	-56.7	-13.0	-43.7	
3393.20	-20.0	H	3.0	36.1	1.0	-55.1	-13.0	-42.1	

Band

LTE5

1.4MHz

QPSK

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 5 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7									
1649.40	4.3	V	3.0	37.0	1.0	-31.7	-13.0	-18.7	
2474.10	-16.0	V	3.0	36.4	1.0	-51.4	-13.0	-38.4	
3298.80	-19.4	V	3.0	36.2	1.0	-54.6	-13.0	-41.6	
1649.40	-17.0	H	3.0	37.0	1.0	-53.0	-13.0	-40.0	
2474.10	-23.4	H	3.0	36.4	1.0	-58.8	-13.0	-45.8	
3298.80	-20.4	H	3.0	36.2	1.0	-55.5	-13.0	-42.5	
Mid Ch, 836.5									
1673.00	6.8	V	3.0	37.0	1.0	-29.2	-13.0	-16.2	
2509.50	-14.7	V	3.0	36.4	1.0	-50.1	-13.0	-37.1	
3346.00	-20.6	V	3.0	36.1	1.0	-55.7	-13.0	-42.7	
1673.00	-15.0	H	3.0	37.0	1.0	-51.0	-13.0	-38.0	
2509.50	-23.2	H	3.0	36.4	1.0	-58.6	-13.0	-45.6	
3346.00	-20.4	H	3.0	36.1	1.0	-55.5	-13.0	-42.5	
High Ch, 848.3									
1696.60	3.3	V	3.0	37.0	1.0	-32.6	-13.0	-19.6	
2544.90	-16.0	V	3.0	36.4	1.0	-51.4	-13.0	-38.4	
3393.20	-20.6	V	3.0	36.1	1.0	-55.7	-13.0	-42.7	
1696.60	-25.5	H	3.0	37.0	1.0	-61.5	-13.0	-48.5	
2544.90	-22.9	H	3.0	36.4	1.0	-58.3	-13.0	-45.3	
3393.20	-20.4	H	3.0	36.1	1.0	-55.5	-13.0	-42.5	

Band
LTE4
20MHz
16QAM

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 4 Harmonics, 20MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1720									
3440.00	-19.9	V	3.0	36.0	1.0	-54.9	-13.0	-41.9	
5160.00	-16.1	V	3.0	35.4	1.0	-50.5	-13.0	-37.5	
6880.00	-17.3	V	3.0	35.7	1.0	-52.0	-13.0	-39.0	
3440.00	-20.5	H	3.0	36.0	1.0	-55.5	-13.0	-42.5	
5160.00	-15.2	H	3.0	35.4	1.0	-49.7	-13.0	-36.7	
6880.00	-15.2	H	3.0	35.7	1.0	-49.8	-13.0	-36.8	
Mid Ch, 1732.5									
3465.00	-21.1	V	3.0	36.0	1.0	-56.1	-13.0	-43.1	
5197.50	-17.4	V	3.0	35.4	1.0	-51.8	-13.0	-38.8	
6930.00	-16.1	V	3.0	35.7	1.0	-50.8	-13.0	-37.8	
3465.00	-21.3	H	3.0	36.0	1.0	-56.4	-13.0	-43.4	
5197.50	-17.0	H	3.0	35.4	1.0	-51.5	-13.0	-38.5	
6930.00	-15.3	H	3.0	35.7	1.0	-49.9	-13.0	-36.9	
High Ch, 1745									
3490.00	-20.5	V	3.0	36.0	1.0	-55.5	-13.0	-42.5	
5235.00	-15.3	V	3.0	35.4	1.0	-49.8	-13.0	-36.8	
6980.00	-16.6	V	3.0	35.7	1.0	-51.3	-13.0	-38.3	
3490.00	-20.5	H	3.0	36.0	1.0	-55.5	-13.0	-42.5	
5235.00	-14.8	H	3.0	35.4	1.0	-49.2	-13.0	-36.2	
6980.00	-14.8	H	3.0	35.7	1.0	-49.5	-13.0	-36.5	

Band
LTE4
20MHz
QPSK

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 4 Harmonics, 20MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1720									
3440.00	-21.5	V	3.0	36.0	1.0	-56.6	-13.0	-43.6	
5160.00	-16.8	V	3.0	35.4	1.0	-51.2	-13.0	-38.2	
6880.00	-17.0	V	3.0	35.7	1.0	-51.7	-13.0	-38.7	
3440.00	-21.0	H	3.0	36.0	1.0	-56.1	-13.0	-43.1	
5160.00	-16.2	H	3.0	35.4	1.0	-50.6	-13.0	-37.6	
6880.00	-15.2	H	3.0	35.7	1.0	-49.8	-13.0	-36.8	
Mid Ch, 1732.5									
3465.00	-21.2	V	3.0	36.0	1.0	-56.3	-13.0	-43.3	
5197.50	-16.7	V	3.0	35.4	1.0	-51.1	-13.0	-38.1	
6930.00	-16.6	V	3.0	35.7	1.0	-51.3	-13.0	-38.3	
3465.00	-20.8	H	3.0	36.0	1.0	-55.8	-13.0	-42.8	
5197.50	-16.1	H	3.0	35.4	1.0	-50.5	-13.0	-37.5	
6930.00	-15.2	H	3.0	35.7	1.0	-49.9	-13.0	-36.9	
High Ch, 1745									
3490.00	-20.8	V	3.0	36.0	1.0	-55.8	-13.0	-42.8	
5235.00	-17.1	V	3.0	35.4	1.0	-51.6	-13.0	-38.6	
6980.00	-15.5	V	3.0	35.7	1.0	-50.2	-13.0	-37.2	
3490.00	-21.1	H	3.0	36.0	1.0	-56.1	-13.0	-43.1	
5235.00	-15.7	H	3.0	35.4	1.0	-50.2	-13.0	-37.2	
6980.00	-14.9	H	3.0	35.7	1.0	-49.5	-13.0	-36.5	

Band

LTE4

15MHz

16QAM

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 4 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1717.5									
3435.00	-18.4	V	3.0	36.1	1.0	-53.5	-13.0	-40.5	
5152.50	-15.4	V	3.0	35.4	1.0	-49.8	-13.0	-36.8	
6870.00	-14.0	V	3.0	35.7	1.0	-48.6	-13.0	-35.6	
3435.00	-19.1	H	3.0	36.1	1.0	-54.1	-13.0	-41.1	
5152.50	-15.2	H	3.0	35.4	1.0	-49.7	-13.0	-36.7	
6870.00	-13.9	H	3.0	35.7	1.0	-48.6	-13.0	-35.6	
Mid Ch, 1732.5									
3465.00	-20.5	V	3.0	36.0	1.0	-55.6	-13.0	-42.6	
5197.50	-17.4	V	3.0	35.4	1.0	-51.8	-13.0	-38.8	
6930.00	-16.3	V	3.0	35.7	1.0	-51.0	-13.0	-38.0	
3465.00	-21.2	H	3.0	36.0	1.0	-56.2	-13.0	-43.2	
5197.50	-17.4	H	3.0	35.4	1.0	-51.8	-13.0	-38.8	
6930.00	-14.3	H	3.0	35.7	1.0	-49.0	-13.0	-36.0	
High Ch, 1747.5									
3495.00	-17.3	V	3.0	36.0	1.0	-52.3	-13.0	-39.3	
5242.50	-16.9	V	3.0	35.4	1.0	-51.3	-13.0	-38.3	
6990.00	-14.7	V	3.0	35.7	1.0	-49.4	-13.0	-36.4	
3495.00	-19.3	H	3.0	36.0	1.0	-54.3	-13.0	-41.3	
5242.50	-15.5	H	3.0	35.4	1.0	-49.9	-13.0	-36.9	
6990.00	-14.0	H	3.0	35.7	1.0	-48.7	-13.0	-35.7	

Band
LTE4
15MHz
QPSK

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 4 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1717.5									
3435.00	-19.5	V	3.0	36.1	1.0	-54.6	-13.0	-41.6	
5152.50	-16.5	V	3.0	35.4	1.0	-50.9	-13.0	-37.9	
6870.00	-15.1	V	3.0	35.7	1.0	-49.7	-13.0	-36.7	
3435.00	-20.1	H	3.0	36.1	1.0	-55.2	-13.0	-42.2	
5152.50	-16.3	H	3.0	35.4	1.0	-50.7	-13.0	-37.7	
6870.00	-15.0	H	3.0	35.7	1.0	-49.7	-13.0	-36.7	
Mid Ch, 1732.5									
3465.00	-20.4	V	3.0	36.0	1.0	-55.4	-13.0	-42.4	
5197.50	-16.8	V	3.0	35.4	1.0	-51.2	-13.0	-38.2	
6930.00	-16.7	V	3.0	35.7	1.0	-51.4	-13.0	-38.4	
3465.00	-21.8	H	3.0	36.0	1.0	-56.8	-13.0	-43.8	
5197.50	-16.3	H	3.0	35.4	1.0	-50.7	-13.0	-37.7	
6930.00	-15.3	H	3.0	35.7	1.0	-50.0	-13.0	-37.0	
High Ch, 1747.5									
3495.00	-18.4	V	3.0	36.0	1.0	-53.4	-13.0	-40.4	
5242.50	-18.0	V	3.0	35.4	1.0	-52.4	-13.0	-39.4	
6990.00	-15.8	V	3.0	35.7	1.0	-50.5	-13.0	-37.5	
3495.00	-20.4	H	3.0	36.0	1.0	-55.4	-13.0	-42.4	
5242.50	-16.6	H	3.0	35.4	1.0	-51.0	-13.0	-38.0	
6990.00	-15.1	H	3.0	35.7	1.0	-49.8	-13.0	-36.8	

Band

LTE4

10MHz

16QAM

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 4 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1715									
3430.00	-17.9	V	3.0	36.1	1.0	-52.9	-13.0	-39.9	
5145.00	-18.2	V	3.0	35.4	1.0	-52.6	-13.0	-39.6	
6860.00	-16.1	V	3.0	35.7	1.0	-50.8	-13.0	-37.8	
3430.00	-20.6	H	3.0	36.1	1.0	-55.6	-13.0	-42.6	
5145.00	-17.2	H	3.0	35.4	1.0	-51.6	-13.0	-38.6	
6860.00	-16.4	H	3.0	35.7	1.0	-51.1	-13.0	-38.1	
Mid Ch, 1732.5									
3465.00	-19.4	V	3.0	36.0	1.0	-54.4	-13.0	-41.4	
5197.50	-16.5	V	3.0	35.4	1.0	-50.9	-13.0	-37.9	
6930.00	-14.5	V	3.0	35.7	1.0	-49.2	-13.0	-36.2	
3465.00	-21.6	H	3.0	36.0	1.0	-56.6	-13.0	-43.6	
5197.50	-16.5	H	3.0	35.4	1.0	-50.9	-13.0	-37.9	
6930.00	-14.6	H	3.0	35.7	1.0	-49.3	-13.0	-36.3	
High Ch, 1750									
3500.00	-19.8	V	3.0	36.0	1.0	-54.8	-13.0	-41.8	
5250.00	-16.7	V	3.0	35.4	1.0	-51.1	-13.0	-38.1	
7000.00	-16.2	V	3.0	35.7	1.0	-50.9	-13.0	-37.9	
3500.00	-20.9	H	3.0	36.0	1.0	-55.9	-13.0	-42.9	
5250.00	-16.3	H	3.0	35.4	1.0	-50.7	-13.0	-37.7	
7000.00	-15.1	H	3.0	35.7	1.0	-49.8	-13.0	-36.8	

Band
LTE4
10MHz
QPSK

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 4 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1715									
3430.00	-18.7	V	3.0	36.1	1.0	-53.7	-13.0	-40.7	
5145.00	-17.3	V	3.0	35.4	1.0	-51.8	-13.0	-38.8	
6860.00	-16.1	V	3.0	35.7	1.0	-50.8	-13.0	-37.8	
3430.00	-20.0	H	3.0	36.1	1.0	-55.0	-13.0	-42.0	
5145.00	-16.6	H	3.0	35.4	1.0	-51.0	-13.0	-38.0	
6860.00	-15.8	H	3.0	35.7	1.0	-50.5	-13.0	-37.5	
Mid Ch, 1732.5									
3465.00	-18.8	V	3.0	36.0	1.0	-53.8	-13.0	-40.8	
5197.50	-15.8	V	3.0	35.4	1.0	-50.2	-13.0	-37.2	
6930.00	-13.4	V	3.0	35.7	1.0	-48.1	-13.0	-35.1	
3465.00	-21.0	H	3.0	36.0	1.0	-56.0	-13.0	-43.0	
5197.50	-15.1	H	3.0	35.4	1.0	-49.6	-13.0	-36.6	
6930.00	-16.2	H	3.0	35.7	1.0	-50.8	-13.0	-37.8	
High Ch, 1750									
3500.00	-18.4	V	3.0	36.0	1.0	-53.4	-13.0	-40.4	
5250.00	-16.9	V	3.0	35.4	1.0	-51.4	-13.0	-38.4	
7000.00	-13.8	V	3.0	35.7	1.0	-48.5	-13.0	-35.5	
3500.00	-20.3	H	3.0	36.0	1.0	-55.3	-13.0	-42.3	
5250.00	-15.7	H	3.0	35.4	1.0	-50.1	-13.0	-37.1	
7000.00	-14.5	H	3.0	35.7	1.0	-49.2	-13.0	-36.2	

Band

LTE4

5MHz

16QAM

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 4 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1712.5									
3425.00	-12.2	V	3.0	36.1	1.0	-47.3	-13.0	-34.3	
5137.50	-13.5	V	3.0	35.4	1.0	-47.9	-13.0	-34.9	
6850.00	-13.1	V	3.0	35.7	1.0	-47.8	-13.0	-34.8	
3425.00	-14.9	H	3.0	36.1	1.0	-49.9	-13.0	-36.9	
5137.50	-15.8	H	3.0	35.4	1.0	-50.2	-13.0	-37.2	
6850.00	-13.2	H	3.0	35.7	1.0	-47.9	-13.0	-34.9	
Mid Ch, 1732.5									
3465.00	-17.1	V	3.0	36.0	1.0	-52.2	-13.0	-39.2	
5197.50	-13.1	V	3.0	35.4	1.0	-47.5	-13.0	-34.5	
6930.00	-15.8	V	3.0	35.7	1.0	-50.4	-13.0	-37.4	
3465.00	-20.5	H	3.0	36.0	1.0	-55.6	-13.0	-42.6	
5197.50	-14.3	H	3.0	35.4	1.0	-48.8	-13.0	-35.8	
6930.00	-15.5	H	3.0	35.7	1.0	-50.2	-13.0	-37.2	
High Ch, 1752.5									
3505.00	-16.4	V	3.0	36.0	1.0	-51.4	-13.0	-38.4	
5257.50	-10.3	V	3.0	35.4	1.0	-44.8	-13.0	-31.8	
7010.00	-13.6	V	3.0	35.7	1.0	-48.2	-13.0	-35.2	
3505.00	-18.6	H	3.0	36.0	1.0	-53.6	-13.0	-40.6	
5257.50	-11.9	H	3.0	35.4	1.0	-46.4	-13.0	-33.4	
7010.00	-13.8	H	3.0	35.7	1.0	-48.5	-13.0	-35.5	

Band
LTE4
5MHz
QPSK

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 4 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1712.5									
3425.00	-12.5	V	3.0	36.1	1.0	-47.6	-13.0	-34.6	
5137.50	-15.3	V	3.0	35.4	1.0	-49.7	-13.0	-36.7	
6850.00	-14.4	V	3.0	35.7	1.0	-49.1	-13.0	-36.1	
3425.00	-15.4	H	3.0	36.1	1.0	-50.5	-13.0	-37.5	
5137.50	-16.4	H	3.0	35.4	1.0	-50.8	-13.0	-37.8	
6850.00	-13.8	H	3.0	35.7	1.0	-48.5	-13.0	-35.5	
Mid Ch, 1732.5									
3465.00	-16.7	V	3.0	36.0	1.0	-51.7	-13.0	-38.7	
5197.50	-13.1	V	3.0	35.4	1.0	-47.6	-13.0	-34.6	
6930.00	-15.1	V	3.0	35.7	1.0	-49.8	-13.0	-36.8	
3465.00	-19.9	H	3.0	36.0	1.0	-55.0	-13.0	-42.0	
5197.50	-13.9	H	3.0	35.4	1.0	-48.3	-13.0	-35.3	
6930.00	-14.5	H	3.0	35.7	1.0	-49.2	-13.0	-36.2	
High Ch, 1752.5									
3505.00	-16.3	V	3.0	36.0	1.0	-51.3	-13.0	-38.3	
5257.50	-10.3	V	3.0	35.4	1.0	-44.7	-13.0	-31.7	
7010.00	-14.6	V	3.0	35.7	1.0	-49.3	-13.0	-36.3	
3505.00	-19.0	H	3.0	36.0	1.0	-54.0	-13.0	-41.0	
5257.50	-12.4	H	3.0	35.4	1.0	-46.8	-13.0	-33.8	
7010.00	-14.2	H	3.0	35.7	1.0	-48.9	-13.0	-35.9	

Band

LTE4

3MHz

16QAM

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 4 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1711.5									
3423.00	-17.5	V	3.0	36.1	1.0	-52.5	-13.0	-39.5	
5134.50	-16.1	V	3.0	35.4	1.0	-50.6	-13.0	-37.6	
6846.00	-16.5	V	3.0	35.7	1.0	-51.2	-13.0	-38.2	
3423.00	-17.5	H	3.0	36.1	1.0	-52.5	-13.0	-39.5	
5134.50	-15.7	H	3.0	35.4	1.0	-50.2	-13.0	-37.2	
6846.00	-15.0	H	3.0	35.7	1.0	-49.6	-13.0	-36.6	
Mid Ch, 1732.5									
3465.00	-19.9	V	3.0	36.0	1.0	-54.9	-13.0	-41.9	
5197.50	-13.1	V	3.0	35.4	1.0	-47.5	-13.0	-34.5	
6930.00	-16.6	V	3.0	35.7	1.0	-51.3	-13.0	-38.3	
3465.00	-20.1	H	3.0	36.0	1.0	-55.2	-13.0	-42.2	
5197.50	-16.0	H	3.0	35.4	1.0	-50.4	-13.0	-37.4	
6930.00	-15.3	H	3.0	35.7	1.0	-50.0	-13.0	-37.0	
High Ch, 1753.5									
3507.00	-16.2	V	3.0	36.0	1.0	-51.2	-13.0	-38.2	
5260.50	-11.1	V	3.0	35.4	1.0	-45.5	-13.0	-32.5	
7014.00	-17.3	V	3.0	35.7	1.0	-52.0	-13.0	-39.0	
3507.00	-15.7	H	3.0	36.0	1.0	-50.7	-13.0	-37.7	
5260.50	-10.8	H	3.0	35.4	1.0	-45.3	-13.0	-32.3	
7014.00	-15.1	H	3.0	35.7	1.0	-49.8	-13.0	-36.8	

Band
LTE4
3MHz
QPSK

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 4 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1711.5									
3423.00	-17.7	V	3.0	36.1	1.0	-52.8	-13.0	-39.8	
5134.50	-16.4	V	3.0	35.4	1.0	-50.8	-13.0	-37.8	
6846.00	-16.7	V	3.0	35.7	1.0	-51.4	-13.0	-38.4	
3423.00	-17.7	H	3.0	36.1	1.0	-52.7	-13.0	-39.7	
5134.50	-16.0	H	3.0	35.4	1.0	-50.4	-13.0	-37.4	
6846.00	-15.2	H	3.0	35.7	1.0	-49.9	-13.0	-36.9	
Mid Ch, 1732.5									
3465.00	-20.1	V	3.0	36.0	1.0	-55.1	-13.0	-42.1	
5197.50	-13.3	V	3.0	35.4	1.0	-47.7	-13.0	-34.7	
6930.00	-16.8	V	3.0	35.7	1.0	-51.5	-13.0	-38.5	
3465.00	-19.9	H	3.0	36.0	1.0	-54.9	-13.0	-41.9	
5197.50	-16.6	H	3.0	35.4	1.0	-51.0	-13.0	-38.0	
6930.00	-15.3	H	3.0	35.7	1.0	-50.0	-13.0	-37.0	
High Ch, 1753.5									
3507.00	-16.4	V	3.0	36.0	1.0	-51.4	-13.0	-38.4	
5260.50	-11.3	V	3.0	35.4	1.0	-45.8	-13.0	-32.8	
7014.00	-17.5	V	3.0	35.7	1.0	-52.2	-13.0	-39.2	
3507.00	-15.9	H	3.0	36.0	1.0	-50.9	-13.0	-37.9	
5260.50	-11.0	H	3.0	35.4	1.0	-45.5	-13.0	-32.5	
7014.00	-15.4	H	3.0	35.7	1.0	-50.1	-13.0	-37.1	

Band

LTE4

1.4MHz

16QAM

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 4 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1710.7									
3421.40	-12.5	V	3.0	36.1	1.0	-47.6	-13.0	-34.6	
5132.10	-19.2	V	3.0	35.4	1.0	-53.6	-13.0	-40.6	
6842.80	-18.9	V	3.0	35.7	1.0	-53.5	-13.0	-40.5	
3421.40	-8.3	H	3.0	36.1	1.0	-43.4	-13.0	-30.4	
5132.10	-16.0	H	3.0	35.4	1.0	-50.5	-13.0	-37.5	
6842.80	-16.0	H	3.0	35.7	1.0	-50.7	-13.0	-37.7	
Mid Ch, 1732.5									
3465.00	-18.0	V	3.0	36.0	1.0	-53.0	-13.0	-40.0	
5197.50	-16.3	V	3.0	35.4	1.0	-50.7	-13.0	-37.7	
6930.00	-17.2	V	3.0	35.7	1.0	-51.9	-13.0	-38.9	
3465.00	-14.1	H	3.0	36.0	1.0	-49.1	-13.0	-36.1	
5197.50	-14.4	H	3.0	35.4	1.0	-48.8	-13.0	-35.8	
6930.00	-15.7	H	3.0	35.7	1.0	-50.3	-13.0	-37.3	
High Ch, 1754.3									
3508.60	-14.4	V	3.0	36.0	1.0	-49.4	-13.0	-36.4	
5262.90	-17.3	V	3.0	35.4	1.0	-51.8	-13.0	-38.8	
7017.20	-16.7	V	3.0	35.7	1.0	-51.3	-13.0	-38.3	
3508.60	-10.5	H	3.0	36.0	1.0	-45.5	-13.0	-32.5	
5262.90	-14.7	H	3.0	35.4	1.0	-49.2	-13.0	-36.2	
7017.20	-15.4	H	3.0	35.7	1.0	-50.1	-13.0	-37.1	

Band

LTE4

1.4MHz

QPSK

UL Verification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 4 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1710.7									
3421.40	-10.5	V	3.0	36.1	1.0	-45.6	-13.0	-32.6	
5132.10	-18.6	V	3.0	35.4	1.0	-53.0	-13.0	-40.0	
6842.80	-17.1	V	3.0	35.7	1.0	-51.8	-13.0	-38.8	
3421.40	-7.3	H	3.0	36.1	1.0	-42.4	-13.0	-29.4	
5132.10	-15.9	H	3.0	35.4	1.0	-50.3	-13.0	-37.3	
6842.80	-15.0	H	3.0	35.7	1.0	-49.6	-13.0	-36.6	
Mid Ch, 1732.5									
3465.00	-16.7	V	3.0	36.0	1.0	-51.7	-13.0	-38.7	
5197.50	-16.7	V	3.0	35.4	1.0	-51.1	-13.0	-38.1	
6930.00	-16.8	V	3.0	35.7	1.0	-51.4	-13.0	-38.4	
3465.00	-14.0	H	3.0	36.0	1.0	-49.0	-13.0	-36.0	
5197.50	-14.3	H	3.0	35.4	1.0	-48.8	-13.0	-35.8	
6930.00	-15.5	H	3.0	35.7	1.0	-50.2	-13.0	-37.2	
High Ch, 1754.3									
3508.60	-12.8	V	3.0	36.0	1.0	-47.8	-13.0	-34.8	
5262.90	-16.3	V	3.0	35.4	1.0	-50.7	-13.0	-37.7	
7017.20	-16.7	V	3.0	35.7	1.0	-51.4	-13.0	-38.4	
3508.60	-10.3	H	3.0	36.0	1.0	-45.3	-13.0	-32.3	
5262.90	-13.8	H	3.0	35.4	1.0	-48.2	-13.0	-35.2	
7017.20	-15.3	H	3.0	35.7	1.0	-50.0	-13.0	-37.0	

Band

LTE2

20MHz

16QAM

UL Verification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 2 Harmonics, 20MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1860									
3720.00	-20.9	V	3.0	35.8	1.0	-55.8	-13.0	-42.8	
5580.00	-18.0	V	3.0	35.5	1.0	-52.4	-13.0	-39.4	
7440.00	-16.9	V	3.0	35.7	1.0	-51.7	-13.0	-38.7	
3720.00	-20.8	H	3.0	35.8	1.0	-55.7	-13.0	-42.7	
5580.00	-17.5	H	3.0	35.5	1.0	-52.0	-13.0	-39.0	
7440.00	-15.4	H	3.0	35.7	1.0	-50.2	-13.0	-37.2	
Mid Ch, 1880									
3760.00	-19.4	V	3.0	35.8	1.0	-54.2	-13.0	-41.2	
5640.00	-17.7	V	3.0	35.5	1.0	-52.2	-13.0	-39.2	
7520.00	-15.7	V	3.0	35.7	1.0	-50.4	-13.0	-37.4	
3760.00	-20.4	H	3.0	35.8	1.0	-55.2	-13.0	-42.2	
5640.00	-17.4	H	3.0	35.5	1.0	-51.9	-13.0	-38.9	
7520.00	-15.1	H	3.0	35.7	1.0	-49.9	-13.0	-36.9	
High Ch, 1900									
3800.00	-19.1	V	3.0	35.8	1.0	-53.8	-13.0	-40.8	
5700.00	-17.7	V	3.0	35.5	1.0	-52.2	-13.0	-39.2	
7600.00	-16.7	V	3.0	35.8	1.0	-51.5	-13.0	-38.5	
3800.00	-18.8	H	3.0	35.8	1.0	-53.6	-13.0	-40.6	
5700.00	-17.8	H	3.0	35.5	1.0	-52.3	-13.0	-39.3	
7600.00	-15.7	H	3.0	35.8	1.0	-50.4	-13.0	-37.4	

Band
LTE2
20MHz
QPSK

UL Verification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 2 Harmonics, 20MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1860									
3720.00	-20.8	V	3.0	35.8	1.0	-55.7	-13.0	-42.7	
5580.00	-18.2	V	3.0	35.5	1.0	-52.7	-13.0	-39.7	
7440.00	-17.8	V	3.0	35.7	1.0	-52.6	-13.0	-39.6	
3720.00	-20.5	H	3.0	35.8	1.0	-55.4	-13.0	-42.4	
5580.00	-17.3	H	3.0	35.5	1.0	-51.7	-13.0	-38.7	
7440.00	-15.3	H	3.0	35.7	1.0	-50.0	-13.0	-37.0	
Mid Ch, 1880									
3760.00	-20.5	V	3.0	35.8	1.0	-55.3	-13.0	-42.3	
5640.00	-18.2	V	3.0	35.5	1.0	-52.7	-13.0	-39.7	
7520.00	-17.7	V	3.0	35.7	1.0	-52.5	-13.0	-39.5	
3760.00	-20.2	H	3.0	35.8	1.0	-55.0	-13.0	-42.0	
5640.00	-17.2	H	3.0	35.5	1.0	-51.7	-13.0	-38.7	
7520.00	-15.2	H	3.0	35.7	1.0	-49.9	-13.0	-36.9	
High Ch, 1900									
3800.00	-18.9	V	3.0	35.8	1.0	-53.7	-13.0	-40.7	
5700.00	-18.5	V	3.0	35.5	1.0	-53.0	-13.0	-40.0	
7600.00	-16.8	V	3.0	35.8	1.0	-51.5	-13.0	-38.5	
3800.00	-18.7	H	3.0	35.8	1.0	-53.5	-13.0	-40.5	
5700.00	-17.6	H	3.0	35.5	1.0	-52.1	-13.0	-39.1	
7600.00	-15.5	H	3.0	35.8	1.0	-50.2	-13.0	-37.2	

Band

LTE2

15MHz

16QAM

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 2 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1857.5									
3715.00	-20.9	V	3.0	35.8	1.0	-55.7	-13.0	-42.7	
5572.50	-18.3	V	3.0	35.5	1.0	-52.7	-13.0	-39.7	
7430.00	-16.2	V	3.0	35.7	1.0	-50.9	-13.0	-37.9	
3715.00	-20.5	H	3.0	35.8	1.0	-55.3	-13.0	-42.3	
5572.50	-17.3	H	3.0	35.5	1.0	-51.7	-13.0	-38.7	
7430.00	-14.8	H	3.0	35.7	1.0	-49.6	-13.0	-36.6	
Mid Ch, 1880									
3760.00	-20.5	V	3.0	35.8	1.0	-55.3	-13.0	-42.3	
5640.00	-17.2	V	3.0	35.5	1.0	-51.7	-13.0	-38.7	
7520.00	-16.0	V	3.0	35.7	1.0	-50.7	-13.0	-37.7	
3760.00	-20.0	H	3.0	35.8	1.0	-54.8	-13.0	-41.8	
5640.00	-16.1	H	3.0	35.5	1.0	-50.6	-13.0	-37.6	
7520.00	-14.2	H	3.0	35.7	1.0	-49.0	-13.0	-36.0	
High Ch, 1902.5									
3805.00	-18.7	V	3.0	35.8	1.0	-53.5	-13.0	-40.5	
5707.50	-17.5	V	3.0	35.5	1.0	-52.0	-13.0	-39.0	
7610.00	-16.4	V	3.0	35.8	1.0	-51.2	-13.0	-38.2	
3805.00	-18.0	H	3.0	35.8	1.0	-52.8	-13.0	-39.8	
5707.50	-16.3	H	3.0	35.5	1.0	-50.8	-13.0	-37.8	
7610.00	-14.8	H	3.0	35.8	1.0	-49.6	-13.0	-36.6	

Band
LTE2
15MHz
QPSK

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 2 Harmonics, 15MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1857.5									
3715.00	-20.1	V	3.0	35.8	1.0	-55.0	-13.0	-42.0	
5572.50	-17.3	V	3.0	35.5	1.0	-51.7	-13.0	-38.7	
7430.00	-17.0	V	3.0	35.7	1.0	-51.7	-13.0	-38.7	
3715.00	-19.8	H	3.0	35.8	1.0	-54.6	-13.0	-41.6	
5572.50	-16.1	H	3.0	35.5	1.0	-50.6	-13.0	-37.6	
7430.00	-15.5	H	3.0	35.7	1.0	-50.3	-13.0	-37.3	
Mid Ch, 1880									
3760.00	-20.4	V	3.0	35.8	1.0	-55.3	-13.0	-42.3	
5640.00	-17.0	V	3.0	35.5	1.0	-51.5	-13.0	-38.5	
7520.00	-15.9	V	3.0	35.7	1.0	-50.7	-13.0	-37.7	
3760.00	-20.1	H	3.0	35.8	1.0	-54.9	-13.0	-41.9	
5640.00	-16.6	H	3.0	35.5	1.0	-51.1	-13.0	-38.1	
7520.00	-15.5	H	3.0	35.7	1.0	-50.2	-13.0	-37.2	
High Ch, 1902.5									
3805.00	-19.7	V	3.0	35.8	1.0	-54.5	-13.0	-41.5	
5707.50	-17.6	V	3.0	35.5	1.0	-52.1	-13.0	-39.1	
7610.00	-15.8	V	3.0	35.8	1.0	-50.5	-13.0	-37.5	
3805.00	-18.8	H	3.0	35.8	1.0	-53.6	-13.0	-40.6	
5707.50	-16.5	H	3.0	35.5	1.0	-51.0	-13.0	-38.0	
7610.00	-14.6	H	3.0	35.8	1.0	-49.3	-13.0	-36.3	

Band

LTE2

10MHz

16QAM

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 2 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1855									
3710.00	-21.6	V	3.0	35.9	1.0	-56.5	-13.0	-43.5	
5565.00	-19.3	V	3.0	35.5	1.0	-53.7	-13.0	-40.7	
7420.00	-17.0	V	3.0	35.7	1.0	-51.8	-13.0	-38.8	
3710.00	-21.1	H	3.0	35.9	1.0	-55.9	-13.0	-42.9	
5565.00	-18.5	H	3.0	35.5	1.0	-53.0	-13.0	-40.0	
7420.00	-15.6	H	3.0	35.7	1.0	-50.4	-13.0	-37.4	
Mid Ch, 1880									
3760.00	-21.1	V	3.0	35.8	1.0	-55.9	-13.0	-42.9	
5640.00	-18.4	V	3.0	35.5	1.0	-52.9	-13.0	-39.9	
7520.00	-15.8	V	3.0	35.7	1.0	-50.5	-13.0	-37.5	
3760.00	-20.4	H	3.0	35.8	1.0	-55.2	-13.0	-42.2	
5640.00	-17.3	H	3.0	35.5	1.0	-51.8	-13.0	-38.8	
7520.00	-14.1	H	3.0	35.7	1.0	-48.9	-13.0	-35.9	
High Ch, 1905									
3810.00	-20.4	V	3.0	35.8	1.0	-55.2	-13.0	-42.2	
5715.00	-18.5	V	3.0	35.5	1.0	-53.0	-13.0	-40.0	
7620.00	-16.4	V	3.0	35.8	1.0	-51.2	-13.0	-38.2	
3810.00	-20.0	H	3.0	35.8	1.0	-54.8	-13.0	-41.8	
5715.00	-17.3	H	3.0	35.5	1.0	-51.8	-13.0	-38.8	
7620.00	-15.0	H	3.0	35.8	1.0	-49.7	-13.0	-36.7	

Band
LTE2
10MHz
QPSK

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 2 Harmonics, 10MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1855									
3710.00	-21.0	V	3.0	35.9	1.0	-55.8	-13.0	-42.8	
5565.00	-18.9	V	3.0	35.5	1.0	-53.4	-13.0	-40.4	
7420.00	-17.0	V	3.0	35.7	1.0	-51.8	-13.0	-38.8	
3710.00	-20.6	H	3.0	35.9	1.0	-55.4	-13.0	-42.4	
5565.00	-18.1	H	3.0	35.5	1.0	-52.5	-13.0	-39.5	
7420.00	-15.3	H	3.0	35.7	1.0	-50.0	-13.0	-37.0	
Mid Ch, 1880									
3760.00	-20.5	V	3.0	35.8	1.0	-55.3	-13.0	-42.3	
5640.00	-17.9	V	3.0	35.5	1.0	-52.4	-13.0	-39.4	
7520.00	-16.1	V	3.0	35.7	1.0	-50.9	-13.0	-37.9	
3760.00	-20.0	H	3.0	35.8	1.0	-54.8	-13.0	-41.8	
5640.00	-17.2	H	3.0	35.5	1.0	-51.6	-13.0	-38.6	
7520.00	-15.1	H	3.0	35.7	1.0	-49.8	-13.0	-36.8	
High Ch, 1905									
3810.00	-20.7	V	3.0	35.8	1.0	-55.5	-13.0	-42.5	
5715.00	-18.5	V	3.0	35.5	1.0	-53.0	-13.0	-40.0	
7620.00	-15.9	V	3.0	35.8	1.0	-50.6	-13.0	-37.6	
3810.00	-19.8	H	3.0	35.8	1.0	-54.5	-13.0	-41.5	
5715.00	-17.0	H	3.0	35.5	1.0	-51.5	-13.0	-38.5	
7620.00	-14.4	H	3.0	35.8	1.0	-49.1	-13.0	-36.1	

Band

LTE2

5MHz

16QAM

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 2 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.5									
3705.00	-20.6	V	3.0	35.9	1.0	-55.4	-13.0	-42.4	
5557.50	-18.0	V	3.0	35.5	1.0	-52.5	-13.0	-39.5	
7410.00	-15.6	V	3.0	35.7	1.0	-50.3	-13.0	-37.3	
3705.00	-20.6	H	3.0	35.9	1.0	-55.4	-13.0	-42.4	
5557.50	-17.3	H	3.0	35.5	1.0	-51.8	-13.0	-38.8	
7410.00	-14.1	H	3.0	35.7	1.0	-48.8	-13.0	-35.8	
Mid Ch, 1880									
3760.00	-20.3	V	3.0	35.8	1.0	-55.1	-13.0	-42.1	
5640.00	-17.9	V	3.0	35.5	1.0	-52.4	-13.0	-39.4	
7520.00	-16.7	V	3.0	35.7	1.0	-51.5	-13.0	-38.5	
3760.00	-20.2	H	3.0	35.8	1.0	-55.0	-13.0	-42.0	
5640.00	-16.9	H	3.0	35.5	1.0	-51.3	-13.0	-38.3	
7520.00	-15.0	H	3.0	35.7	1.0	-49.7	-13.0	-36.7	
High Ch, 1907.5									
3815.00	-20.1	V	3.0	35.8	1.0	-54.8	-13.0	-41.8	
5722.50	-17.7	V	3.0	35.5	1.0	-52.2	-13.0	-39.2	
7630.00	-16.2	V	3.0	35.8	1.0	-51.0	-13.0	-38.0	
3815.00	-19.7	H	3.0	35.8	1.0	-54.4	-13.0	-41.4	
5722.50	-16.2	H	3.0	35.5	1.0	-50.7	-13.0	-37.7	
7630.00	-13.8	H	3.0	35.8	1.0	-48.5	-13.0	-35.5	

Band

LTE2

5MHz

QPSK

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 2 Harmonics, 5MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.5									
3705.00	-21.4	V	3.0	35.9	1.0	-56.3	-13.0	-43.3	
5557.50	-18.0	V	3.0	35.5	1.0	-52.5	-13.0	-39.5	
7410.00	-16.6	V	3.0	35.7	1.0	-51.4	-13.0	-38.4	
3705.00	-21.0	H	3.0	35.9	1.0	-55.9	-13.0	-42.9	
5557.50	-17.0	H	3.0	35.5	1.0	-51.5	-13.0	-38.5	
7410.00	-15.1	H	3.0	35.7	1.0	-49.8	-13.0	-36.8	
Mid Ch, 1880									
3760.00	-20.6	V	3.0	35.8	1.0	-55.4	-13.0	-42.4	
5640.00	-18.2	V	3.0	35.5	1.0	-52.7	-13.0	-39.7	
7520.00	-16.2	V	3.0	35.7	1.0	-50.9	-13.0	-37.9	
3760.00	-19.9	H	3.0	35.8	1.0	-54.7	-13.0	-41.7	
5640.00	-17.0	H	3.0	35.5	1.0	-51.5	-13.0	-38.5	
7520.00	-15.2	H	3.0	35.7	1.0	-49.9	-13.0	-36.9	
High Ch, 1907.5									
3815.00	-20.8	V	3.0	35.8	1.0	-55.5	-13.0	-42.5	
5722.50	-17.8	V	3.0	35.5	1.0	-52.3	-13.0	-39.3	
7630.00	-15.2	V	3.0	35.8	1.0	-49.9	-13.0	-36.9	
3815.00	-19.7	H	3.0	35.8	1.0	-54.5	-13.0	-41.5	
5722.50	-16.2	H	3.0	35.5	1.0	-50.7	-13.0	-37.7	
7630.00	-13.4	H	3.0	35.8	1.0	-48.2	-13.0	-35.2	

Band

LTE2

3MHz

16QAM

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 2 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.5									
3703.00	-20.9	V	3.0	35.9	1.0	-55.8	-13.0	-42.8	
5554.50	-17.7	V	3.0	35.5	1.0	-52.2	-13.0	-39.2	
7406.00	-16.1	V	3.0	35.7	1.0	-50.9	-13.0	-37.9	
3703.00	-20.9	H	3.0	35.9	1.0	-55.8	-13.0	-42.8	
5554.50	-16.9	H	3.0	35.5	1.0	-51.4	-13.0	-38.4	
7406.00	-14.9	H	3.0	35.7	1.0	-49.6	-13.0	-36.6	
Mid Ch, 1880									
3760.00	-20.7	V	3.0	35.8	1.0	-55.5	-13.0	-42.5	
5640.00	-18.0	V	3.0	35.5	1.0	-52.5	-13.0	-39.5	
7520.00	-15.6	V	3.0	35.7	1.0	-50.3	-13.0	-37.3	
3760.00	-20.4	H	3.0	35.8	1.0	-55.3	-13.0	-42.3	
5640.00	-17.4	H	3.0	35.5	1.0	-51.9	-13.0	-38.9	
7520.00	-14.1	H	3.0	35.7	1.0	-48.9	-13.0	-35.9	
High Ch, 1908.5									
3817.00	-20.1	V	3.0	35.8	1.0	-54.9	-13.0	-41.9	
5725.50	-17.1	V	3.0	35.5	1.0	-51.6	-13.0	-38.6	
7634.00	-15.7	V	3.0	35.8	1.0	-50.5	-13.0	-37.5	
3817.00	-20.1	H	3.0	35.8	1.0	-54.9	-13.0	-41.9	
5725.50	-17.1	H	3.0	35.5	1.0	-51.6	-13.0	-38.6	
7634.00	-14.2	H	3.0	35.8	1.0	-48.9	-13.0	-35.9	

Band

LTE2

3MHz

QPSK

UL Verification Services, Inc
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 2 Harmonics, 3MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.5									
3703.00	-21.5	V	3.0	35.9	1.0	-56.4	-13.0	-43.4	
5554.50	-18.0	V	3.0	35.5	1.0	-52.4	-13.0	-39.4	
7406.00	-16.0	V	3.0	35.7	1.0	-50.8	-13.0	-37.8	
3703.00	-21.4	H	3.0	35.9	1.0	-56.3	-13.0	-43.3	
5554.50	-17.1	H	3.0	35.5	1.0	-51.6	-13.0	-38.6	
7406.00	-14.4	H	3.0	35.7	1.0	-49.1	-13.0	-36.1	
Mid Ch, 1880									
3760.00	-20.4	V	3.0	35.8	1.0	-55.2	-13.0	-42.2	
5640.00	-18.2	V	3.0	35.5	1.0	-52.6	-13.0	-39.6	
7520.00	-15.8	V	3.0	35.7	1.0	-50.6	-13.0	-37.6	
3760.00	-20.2	H	3.0	35.8	1.0	-55.0	-13.0	-42.0	
5640.00	-17.6	H	3.0	35.5	1.0	-52.1	-13.0	-39.1	
7520.00	-14.7	H	3.0	35.7	1.0	-49.5	-13.0	-36.5	
High Ch, 1908.5									
3817.00	-20.6	V	3.0	35.8	1.0	-55.3	-13.0	-42.3	
5725.50	-17.4	V	3.0	35.5	1.0	-51.9	-13.0	-38.9	
7634.00	-15.5	V	3.0	35.8	1.0	-50.2	-13.0	-37.2	
3817.00	-20.3	H	3.0	35.8	1.0	-55.1	-13.0	-42.1	
5725.50	-17.0	H	3.0	35.5	1.0	-51.5	-13.0	-38.5	
7634.00	-14.9	H	3.0	35.8	1.0	-49.6	-13.0	-36.6	

Band

LTE2

1.4MHz

16QAM

UL Verification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_16QAM Band 2 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850.7									
3701.40	-20.9	V	3.0	35.9	1.0	-55.8	-13.0	-42.8	
5552.10	-19.2	V	3.0	35.5	1.0	-53.6	-13.0	-40.6	
7402.80	-16.7	V	3.0	35.7	1.0	-51.4	-13.0	-38.4	
3701.40	-20.6	H	3.0	35.9	1.0	-55.4	-13.0	-42.4	
5552.10	-16.6	H	3.0	35.5	1.0	-51.1	-13.0	-38.1	
7402.80	-15.2	H	3.0	35.7	1.0	-49.9	-13.0	-36.9	
Mid Ch, 1880									
3760.00	-21.0	V	3.0	35.8	1.0	-55.8	-13.0	-42.8	
5640.00	-18.8	V	3.0	35.5	1.0	-53.3	-13.0	-40.3	
7520.00	-16.5	V	3.0	35.7	1.0	-51.2	-13.0	-38.2	
3760.00	-20.7	H	3.0	35.8	1.0	-55.6	-13.0	-42.6	
5640.00	-17.4	H	3.0	35.5	1.0	-51.9	-13.0	-38.9	
7520.00	-15.2	H	3.0	35.7	1.0	-49.9	-13.0	-36.9	
High Ch, 1909.3									
3818.60	-19.8	V	3.0	35.8	1.0	-54.6	-13.0	-41.6	
5727.90	-18.0	V	3.0	35.5	1.0	-52.5	-13.0	-39.5	
7637.20	-16.0	V	3.0	35.8	1.0	-50.8	-13.0	-37.8	
3818.60	-19.1	H	3.0	35.8	1.0	-53.9	-13.0	-40.9	
5727.90	-16.8	H	3.0	35.5	1.0	-51.3	-13.0	-38.3	
7637.20	-14.7	H	3.0	35.8	1.0	-49.4	-13.0	-36.4	

Band
LTE2
1.4MHz
QPSK

UL Verification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 15I20402
Date: 3/30/2015
Test Engineer: J. Hsu
Configuration: EUT w/ AC Adapter + Headset
Location: Chamber G
Mode: LTE_QPSK Band 2 Harmonics, 1.4MHz Bandwidth

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850.7									
3701.40	-21.7	V	3.0	35.9	1.0	-56.6	-13.0	-43.6	
5552.10	-18.0	V	3.0	35.5	1.0	-52.5	-13.0	-39.5	
7402.80	-15.9	V	3.0	35.7	1.0	-50.6	-13.0	-37.6	
3701.40	-21.5	H	3.0	35.9	1.0	-56.3	-13.0	-43.3	
5552.10	-17.1	H	3.0	35.5	1.0	-51.6	-13.0	-38.6	
7402.80	-14.4	H	3.0	35.7	1.0	-49.2	-13.0	-36.2	
Mid Ch, 1880									
3760.00	-20.5	V	3.0	35.8	1.0	-55.3	-13.0	-42.3	
5640.00	-18.0	V	3.0	35.5	1.0	-52.5	-13.0	-39.5	
7520.00	-16.6	V	3.0	35.7	1.0	-51.3	-13.0	-38.3	
3760.00	-19.0	H	3.0	35.8	1.0	-53.9	-13.0	-40.9	
5640.00	-16.8	H	3.0	35.5	1.0	-51.2	-13.0	-38.2	
7520.00	-14.7	H	3.0	35.7	1.0	-49.4	-13.0	-36.4	
High Ch, 1909.3									
3818.60	-20.2	V	3.0	35.8	1.0	-54.9	-13.0	-41.9	
5727.90	-17.2	V	3.0	35.5	1.0	-51.7	-13.0	-38.7	
7637.20	-16.1	V	3.0	35.8	1.0	-50.9	-13.0	-37.9	
3818.60	-20.0	H	3.0	35.8	1.0	-54.7	-13.0	-41.7	
5727.90	-16.7	H	3.0	35.5	1.0	-51.2	-13.0	-38.2	
7637.20	-13.7	H	3.0	35.8	1.0	-48.4	-13.0	-35.4	