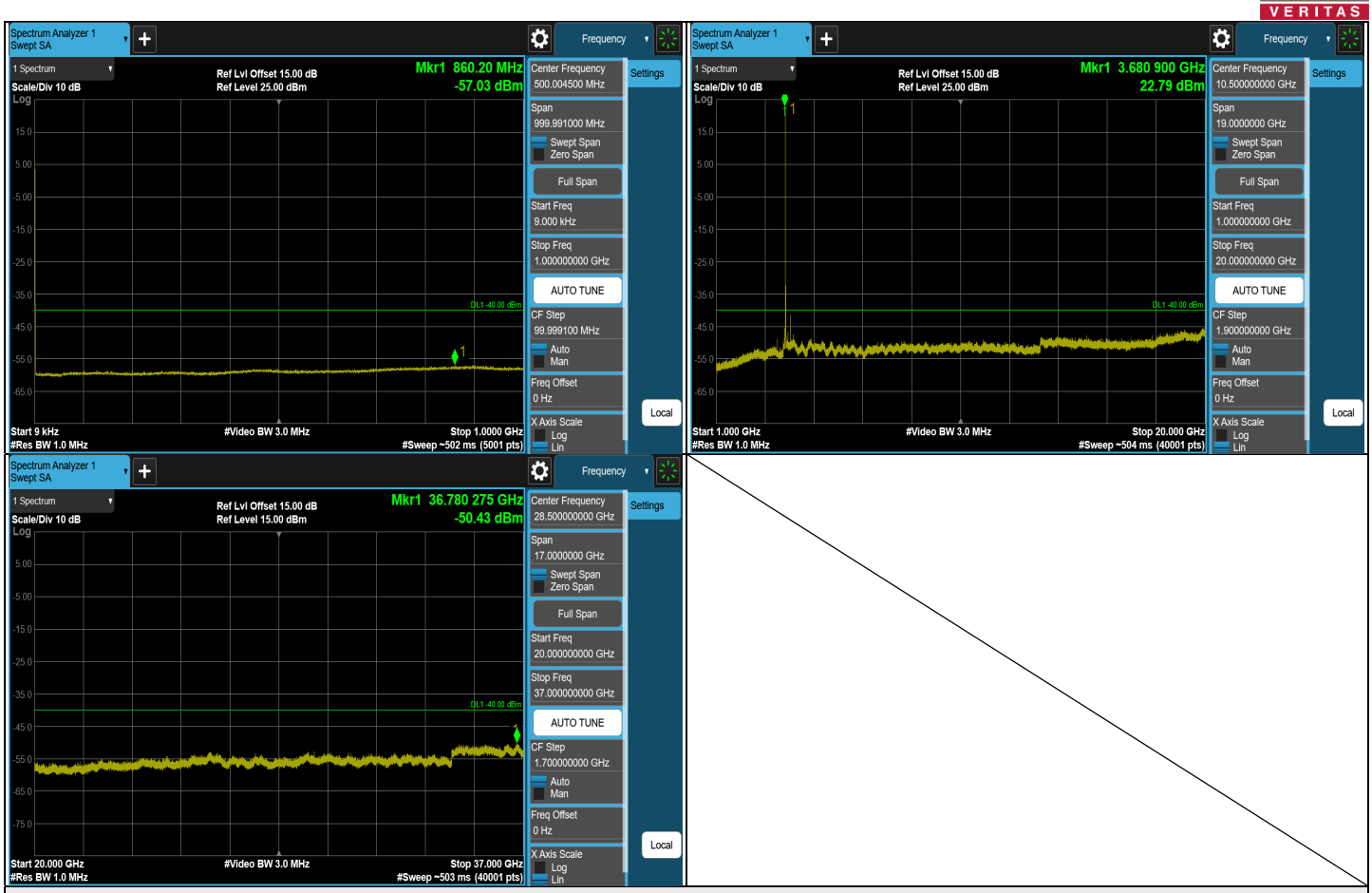
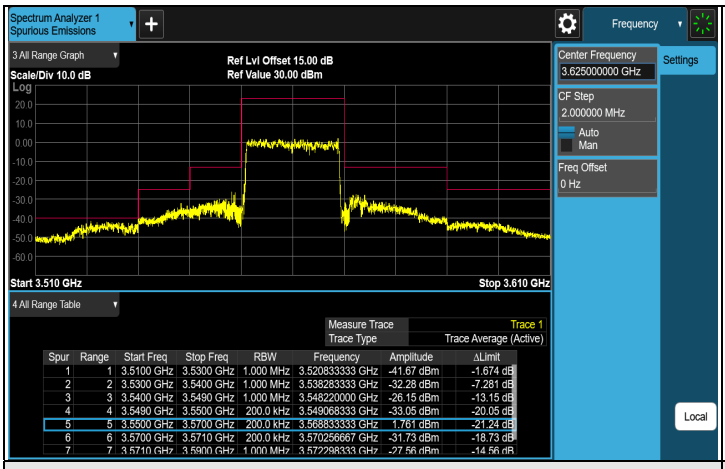
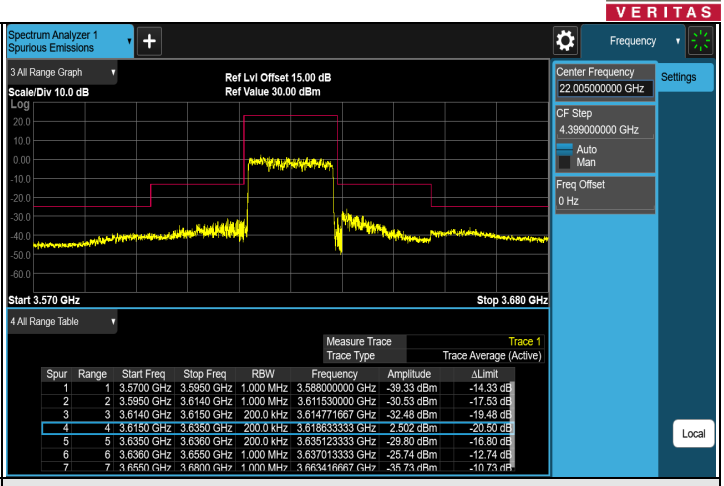


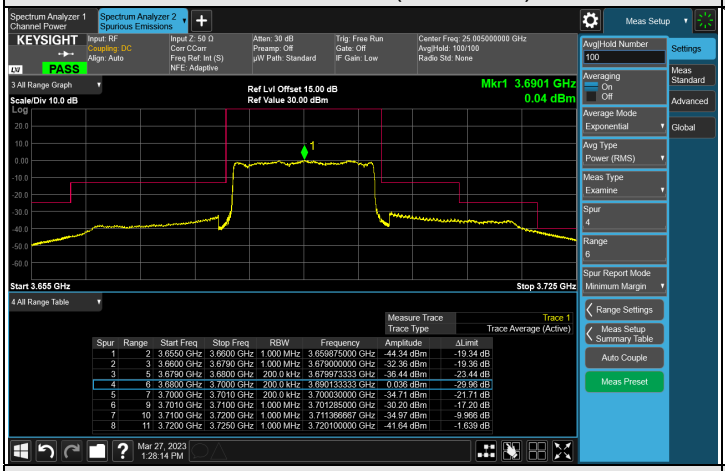
CH 56640 (3690 MHz)



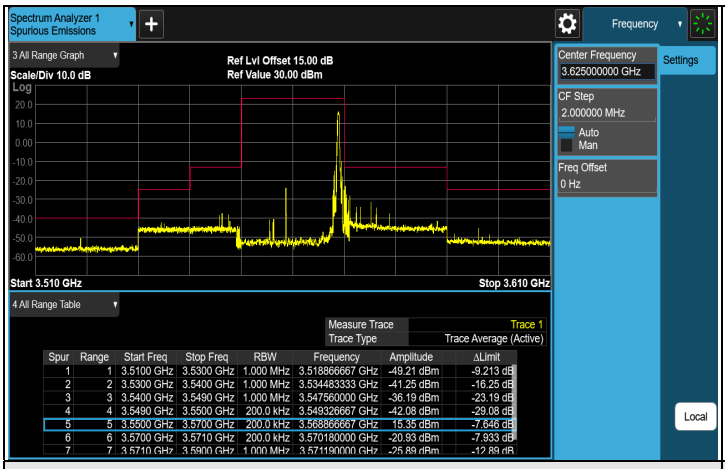
FULL CH 55340 (3560 MHz)



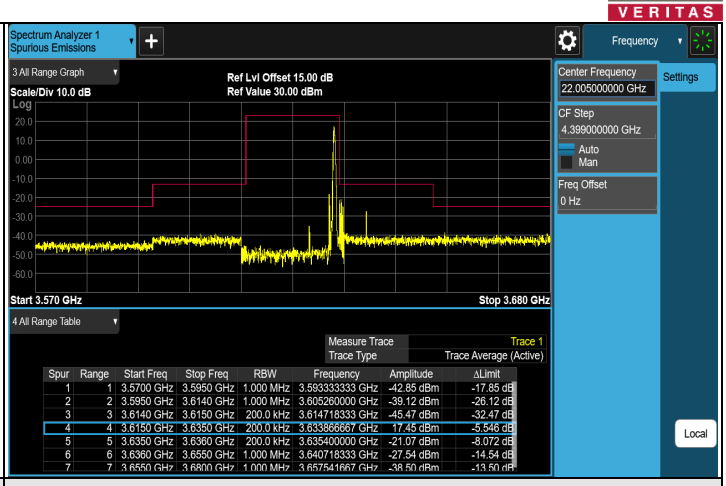
FULL CH 55990 (3625 MHz)



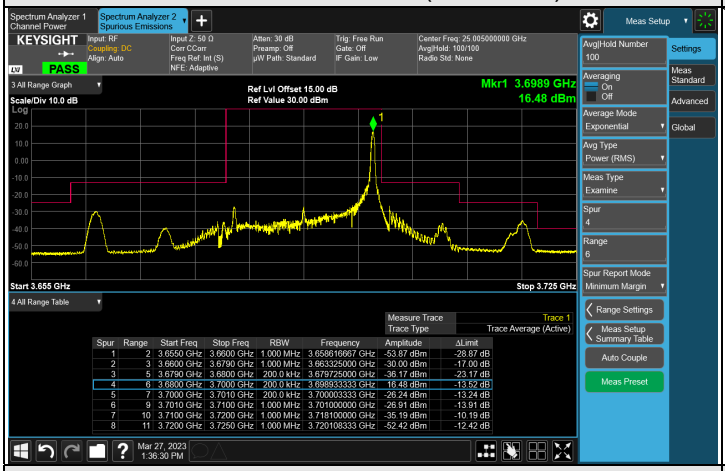
FULL CH 56640 (3690 MHz)



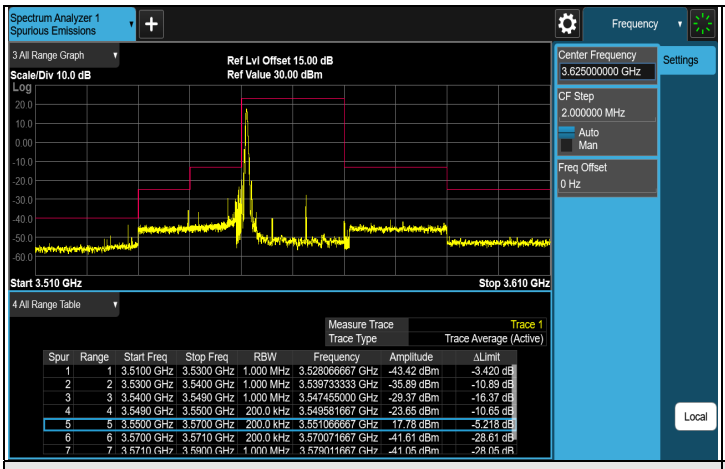
1RB#MAX CH 55340 (3560 MHz)



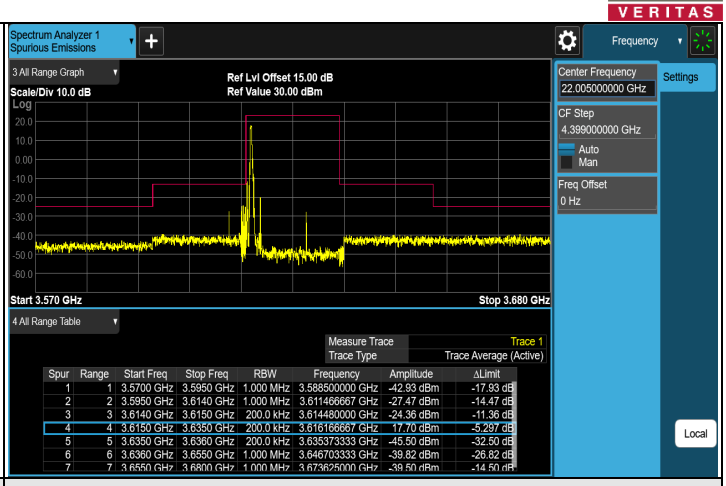
1RB#MAX CH 55990 (3625 MHz)



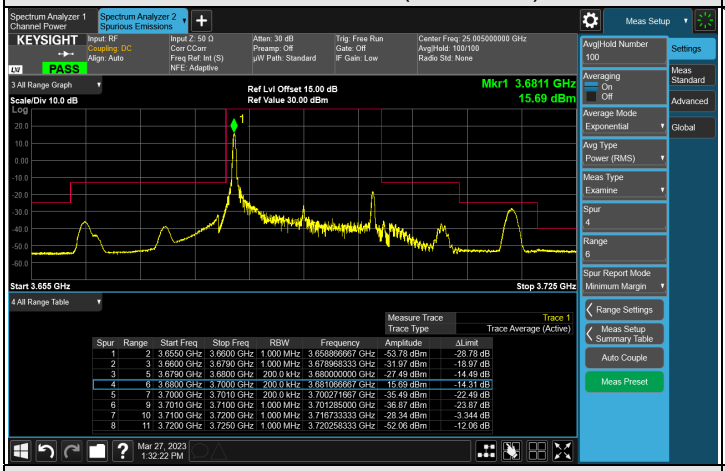
1RB#MAX CH 56640 (3690 MHz)



1RB#0 CH 55340 (3560 MHz)



1RB#0 CH 55990 (3625 MHz)



1RB#0 CH 56640 (3690 MHz)

7.6 Radiated Spurious Emissions below 1GHz

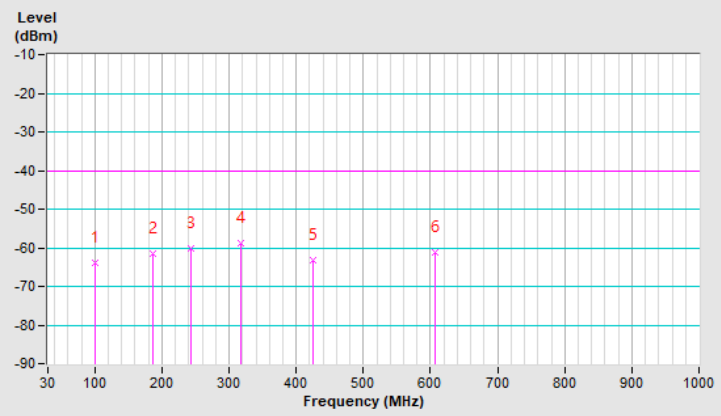
7.6.1 LTE Band 48

RF Mode	LTE Band 48 Channel Bandwidth: 5MHz	**Channel**	CH 55990：3625 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	20°C, 68% RH
Tested By	Edison Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	100.81	-64.05	-40.00	-24.05	2.00 H	176	48.66	-112.71
2	186.17	-61.42	-40.00	-21.42	1.00 H	83	49.34	-110.76
3	242.43	-60.29	-40.00	-20.29	1.00 H	189	49.63	-109.92
4	317.12	-58.95	-40.00	-18.95	1.00 H	246	48.49	-107.44
5	424.79	-63.14	-40.00	-23.14	1.50 H	19	41.68	-104.82
6	607.15	-61.10	-40.00	-21.10	1.00 H	222	39.47	-100.57

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The EIRP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

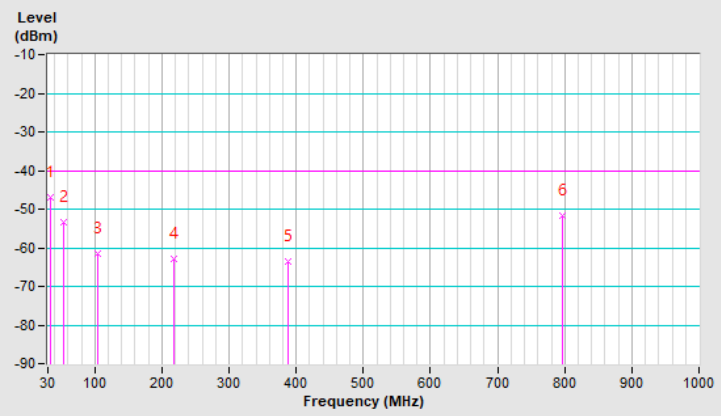


RF Mode	LTE Band 48 Channel Bandwidth: 5MHz	**Channel**	CH 55990：3625 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	20°C, 68% RH
Tested By	Edison Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	**33.88**	**-46.97**	**-40.00**	**-6.97**	**1.50 V**	**213**	**62.49**	**-109.46**
2	53.28	-53.33	-40.00	-13.33	1.00 V	352	55.33	-108.66
3	103.72	-61.59	-40.00	-21.59	1.00 V	195	50.65	-112.24
4	218.18	-63.02	-40.00	-23.02	1.50 V	114	49.02	-112.04
5	387.93	-63.52	-40.00	-23.52	2.00 V	241	42.16	-105.68
6	796.30	-51.77	-40.00	-11.77	1.00 V	18	46.25	-98.02

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The EIRP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



7.7 Radiated Spurious Emissions above 1GHz

7.7.1 LTE Band 48

RF Mode	LTE Band 48 Channel Bandwidth: 5MHz	**Channel**	CH 55265：3552.5 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 68% RH
Tested By	Edison Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7105.00	-43.29	-40.00	-3.29	1.10 H	176	43.92	-87.21
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7105.00	-41.61	-40.00	-1.61	2.57 V	154	45.60	-87.21

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

RF Mode	LTE Band 48 Channel Bandwidth: 5MHz	**Channel**	CH 55990：3625 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 68% RH
Tested By	Edison Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7250.00	-43.23	-40.00	-3.23	1.17 H	180	43.90	-87.13
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	**7250.00**	**-41.41**	**-40.00**	**-1.41**	**2.58 V**	**155**	**45.72**	**-87.13**

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

RF Mode	LTE Band 48 Channel Bandwidth: 5MHz	**Channel**	CH 56715：3697.5 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 68% RH
Tested By	Edison Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7395.00	-43.18	-40.00	-3.18	1.17 H	179	44.00	-87.18
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7395.00	-41.92	-40.00	-1.92	2.58 V	155	45.26	-87.18

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

RF Mode	LTE Band 48 Channel Bandwidth: 20MHz	**Channel**	CH 55340：3560 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 68% RH
Tested By	Edison Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7120.00	-43.31	-40.00	-3.31	1.11 H	178	43.89	-87.20
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7120.00	-41.81	-40.00	-1.81	2.56 V	157	45.39	-87.20

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

RF Mode	LTE Band 48 Channel Bandwidth: 20MHz	**Channel**	CH 55990：3625 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 68% RH
Tested By	Edison Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7250.00	-43.03	-40.00	-3.03	1.13 H	175	44.10	-87.13
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7250.00	-41.53	-40.00	-1.53	2.61 V	155	45.60	-87.13

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

RF Mode	LTE Band 48 Channel Bandwidth: 20MHz	**Channel**	CH 56640：3690 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 68% RH
Tested By	Edison Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7380.00	-43.26	-40.00	-3.26	1.09 H	178	43.91	-87.17
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7380.00	-41.81	-40.00	-1.81	2.54 V	157	45.36	-87.17

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

7.8 Frequency Stability

Environmental Conditions:	25°C, 60% RH	Tested By:	Ted Chang

7.8.1 LTE Band 48

LTE Band 48, Channel Bandwidth: 5 MHz

Frequency Stability Versus Voltage				
Voltage (Vdc)	CH 55265 (3552.5 MHz)		CH 56715 (3697.5 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.28	3552.500002	0.0006	3697.500002	0.0005
3.87	3552.499996	0.0011	3697.499998	0.0005
4.46	3552.5	0	3697.499998	0.0005

Note: The applicant defined the normal working voltage is from 3.28 to 4.46 Vdc.

Frequency Stability Versus Temperature				
Temperature (℃)	CH 55265 (3552.5 MHz)		CH 56715 (3697.5 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	3552.500002	0.0006	3697.500005	0.0014
-20	3552.5	0	3697.5	0
-10	3552.499995	0.0014	3697.5	0
0	3552.5	0	3697.500004	0.0011
10	3552.499993	0.002	3697.499992	0.0022
20	3552.499992	0.0023	3697.499991	0.0024
30	3552.499993	0.002	3697.49999	0.0027
40	3552.500004	0.0011	3697.500004	0.0011
50	3552.499999	0.0003	3697.499997	0.0008
60	3552.500003	0.0008	3697.500004	0.0011

LTE Band 48, Channel Bandwidth: 10 MHz

Frequency Stability Versus Voltage				
Voltage (Vdc)	CH 55290 (3555 MHz)		CH 56690 (3695 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.28	3554.999991	0.0025	3694.999991	0.0024
3.87	3555.000009	0.0025	3695.000005	0.0014
4.46	3555.00001	0.0028	3695.000007	0.0019

Note: The applicant defined the normal working voltage is from 3.28 to 4.46 Vdc.

Frequency Stability Versus Temperature				
Temperature (℃)	CH 55290 (3555 MHz)		CH 56690 (3695 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	3554.999995	0.0014	3694.999998	0.0005
-20	3554.999995	0.0014	3694.999993	0.0019
-10	3554.999999	0.0003	3695	0
0	3555.000001	0.0003	3694.999997	0.0008
10	3554.999998	0.0006	3695.000001	0.0003
20	3554.999993	0.002	3694.999993	0.0019
30	3554.999998	0.0006	3694.999995	0.0014
40	3555.000006	0.0017	3695.000005	0.0014
50	3555.000009	0.0025	3695.000005	0.0014
60	3555.000006	0.0017	3695.000007	0.0019

LTE Band 48, Channel Bandwidth: 15 MHz

Frequency Stability Versus Voltage				
Voltage (Vdc)	CH 55315 (3557.5 MHz)		CH 56665 (3692.5 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.28	3557.500006	0.0017	3692.500005	0.0014
3.87	3557.500002	0.0006	3692.500003	0.0008
4.46	3557.500008	0.0022	3692.500008	0.0022

Note: The applicant defined the normal working voltage is from 3.28 to 4.46 Vdc.

Frequency Stability Versus Temperature				
Temperature (℃)	CH 55315 (3557.5 MHz)		CH 56665 (3692.5 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	3557.500007	0.002	3692.500006	0.0016
-20	3557.500003	0.0008	3692.500003	0.0008
-10	3557.499994	0.0017	3692.499997	0.0008
0	3557.500008	0.0022	3692.500006	0.0016
10	3557.500007	0.002	3692.500003	0.0008
20	3557.499998	0.0006	3692.500001	0.0003
30	3557.499991	0.0025	3692.499994	0.0016
40	3557.500001	0.0003	3692.499997	0.0008
50	3557.5	0	3692.5	0
60	3557.49999	0.0028	3692.499992	0.0022

LTE Band 48, Channel Bandwidth: 20 MHz

Frequency Stability Versus Voltage				
Voltage (Vdc)	CH 55340 (3560 MHz)		CH 56640 (3690 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.28	3560.00001	0.0028	3690.00001	0.0027
3.87	3559.999996	0.0011	3689.999999	0.0003
4.46	3559.99999	0.0028	3689.999994	0.0016

Note: The applicant defined the normal working voltage is from 3.28 to 4.46 Vdc.

Frequency Stability Versus Temperature				
Temperature (℃)	CH 55340 (3560 MHz)		CH 56640 (3690 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	3559.999995	0.0014	3689.999992	0.0022
-20	3560.000003	0.0008	3689.999999	0.0003
-10	3560.000001	0.0003	3690	0
0	3559.999996	0.0011	3689.999996	0.0011
10	3560.000007	0.002	3690.000003	0.0008
20	3560.000001	0.0003	3689.999999	0.0003
30	3560	0	3690.000005	0.0014
40	3560.000007	0.002	3690.000006	0.0016
50	3559.999999	0.0003	3689.999995	0.0014
60	3559.999999	0.0003	3690	0

8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

9 Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Lin Kou EMC/RF Lab
Tel: 886-2-26052180
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Fax: 886-3-6668323

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Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@bureauveritas.com
Web Site: http://ee.bureauveritas.com.tw

The address and road map of all our labs can be found in our web site also.

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