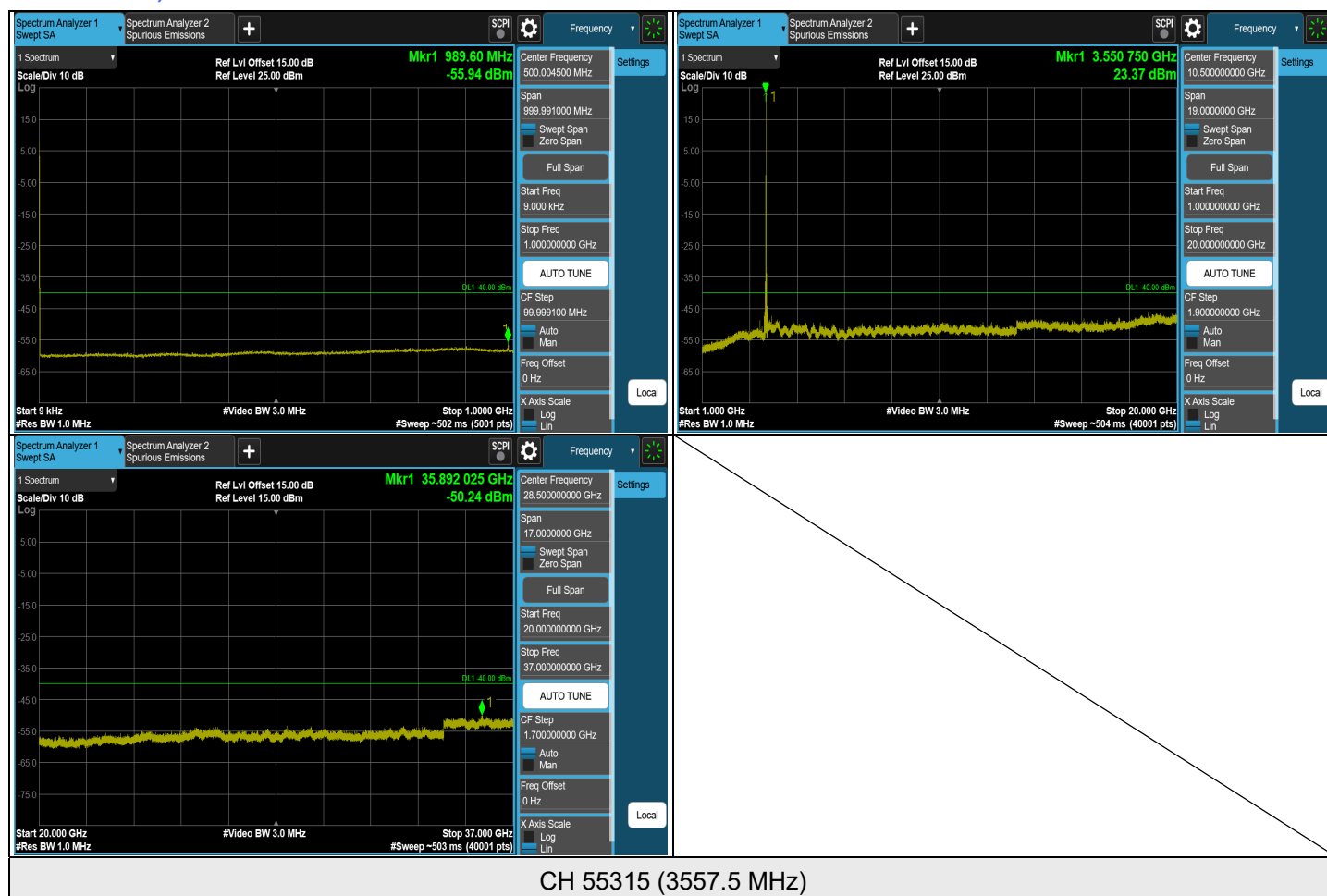
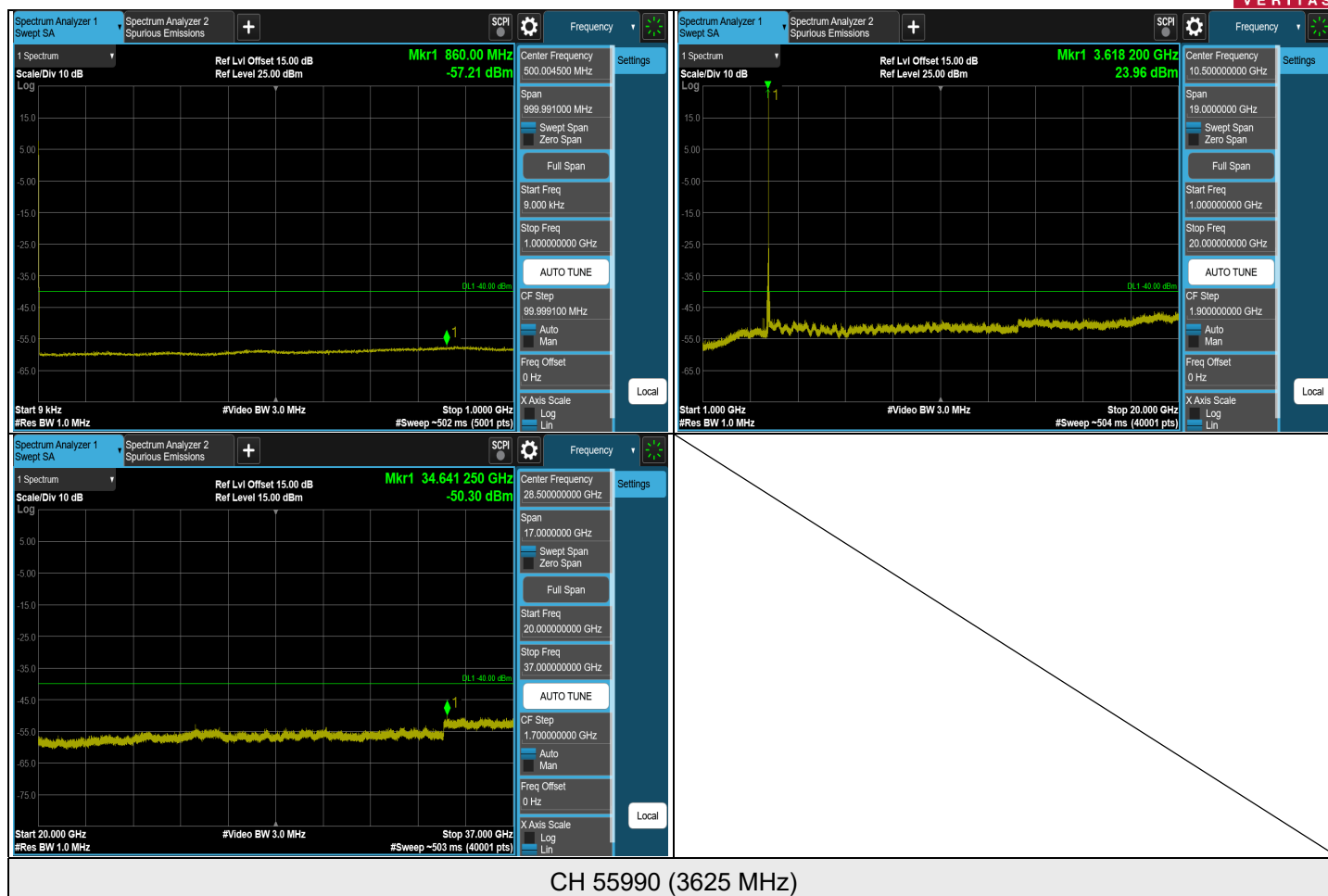
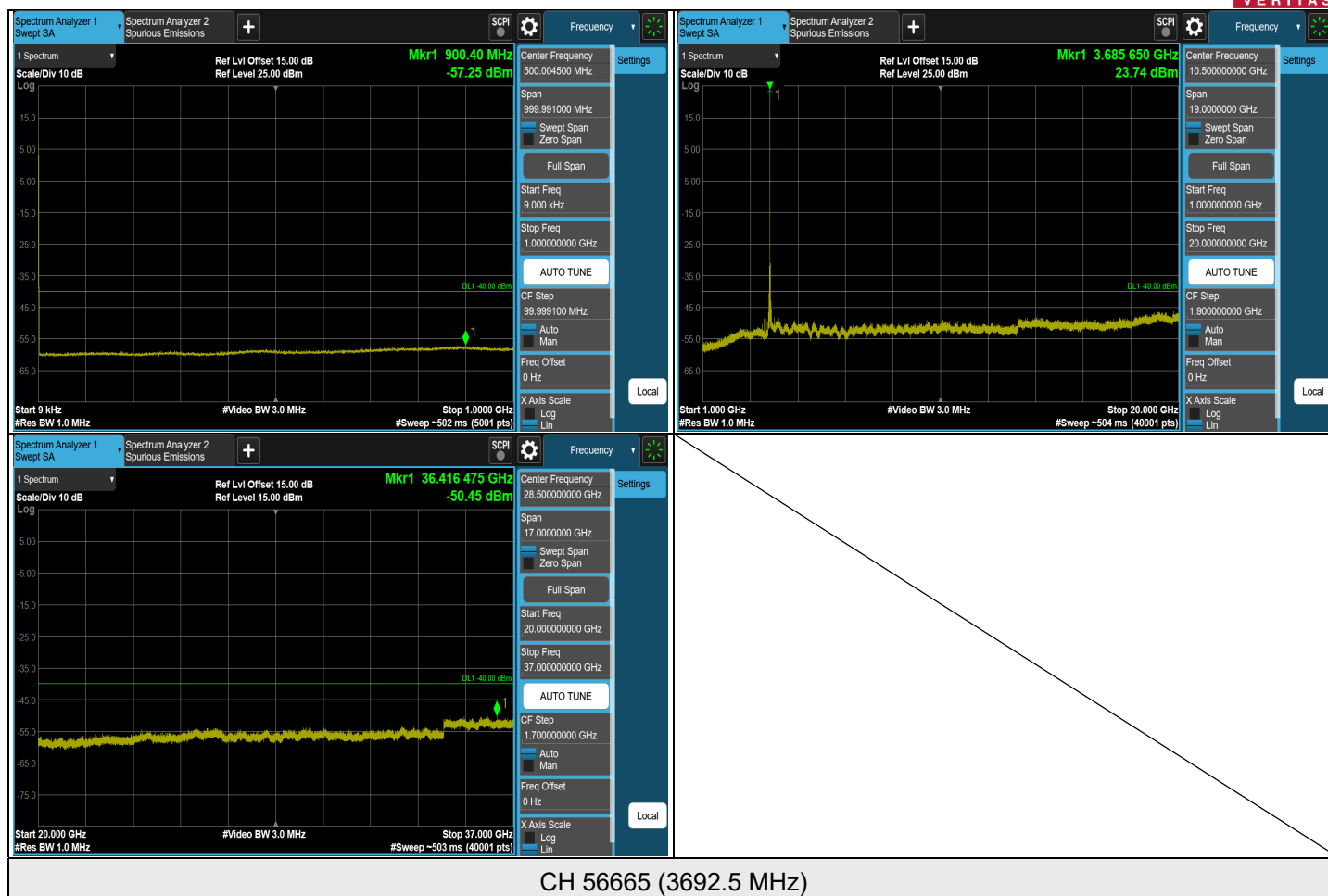


LTE Band 48, Channel Bandwidth: 15 MHz

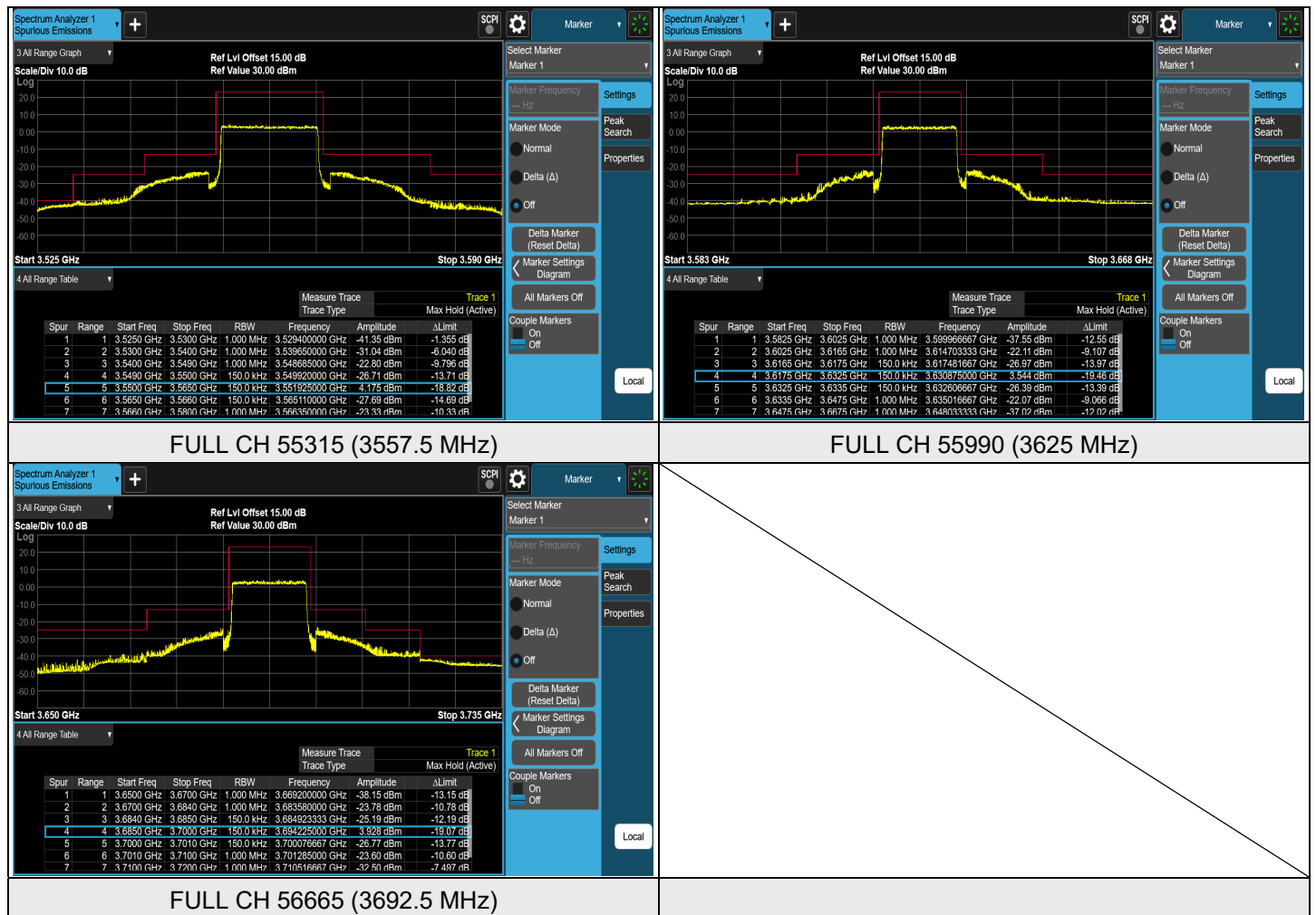


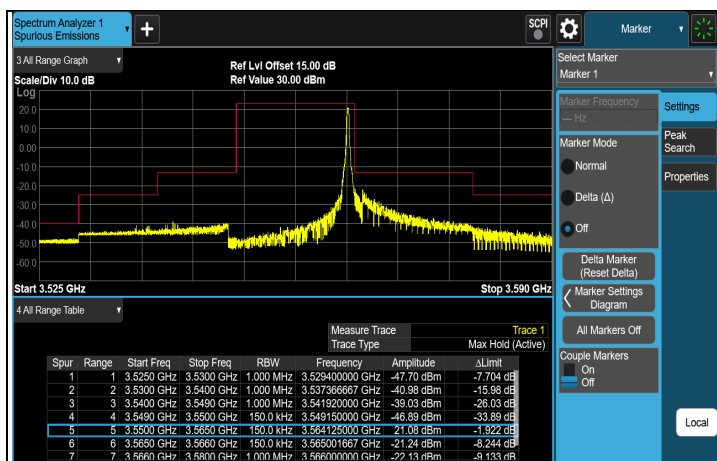




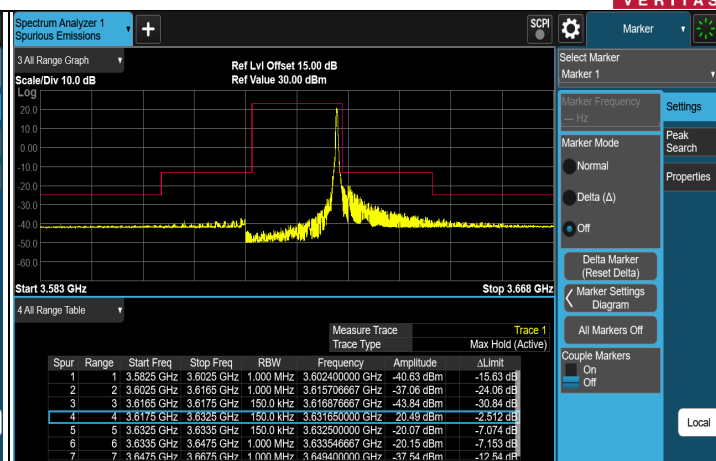
Note: The signal at 9 kHz is IF signal from spectrum analyzer.

LTE Band 48, Channel Bandwidth: 15 MHz

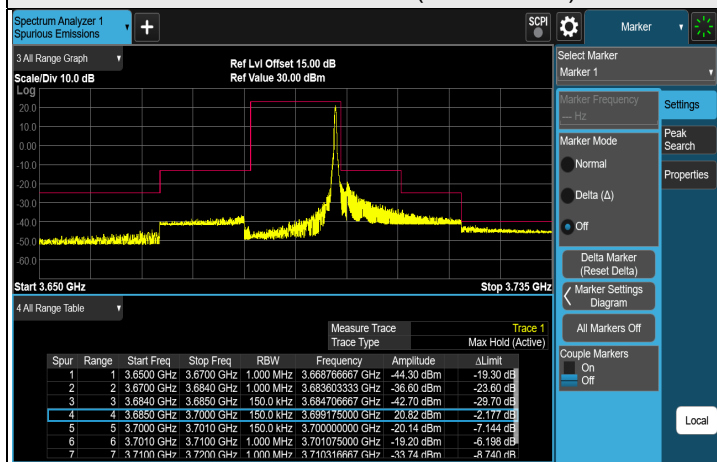




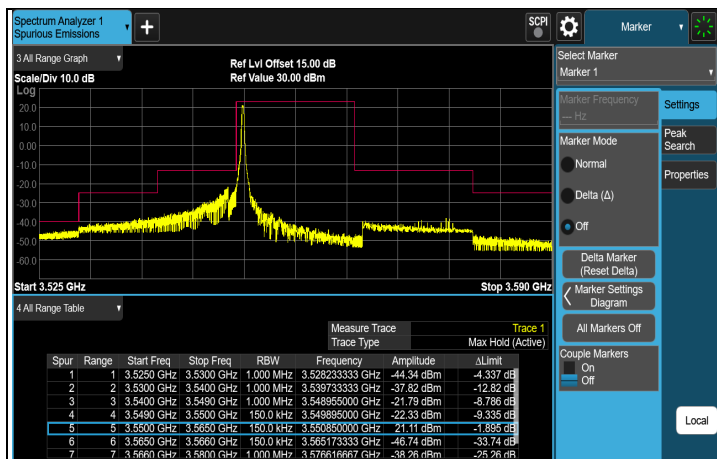
1RB#MAX CH 55315 (3557.5 MHz)



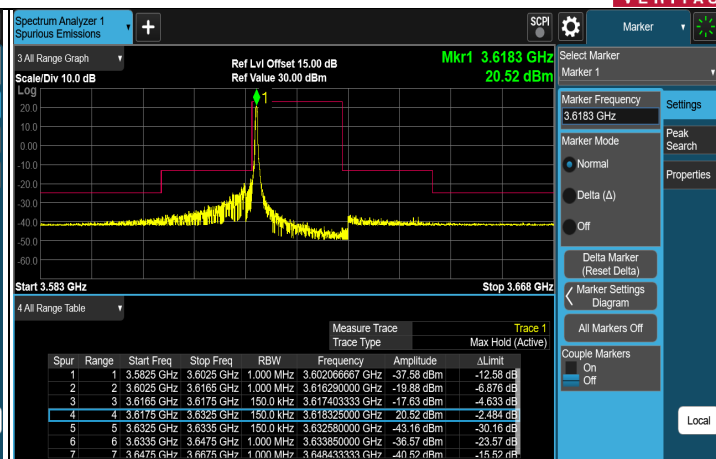
1RB#MAX CH 55990 (3625 MHz)



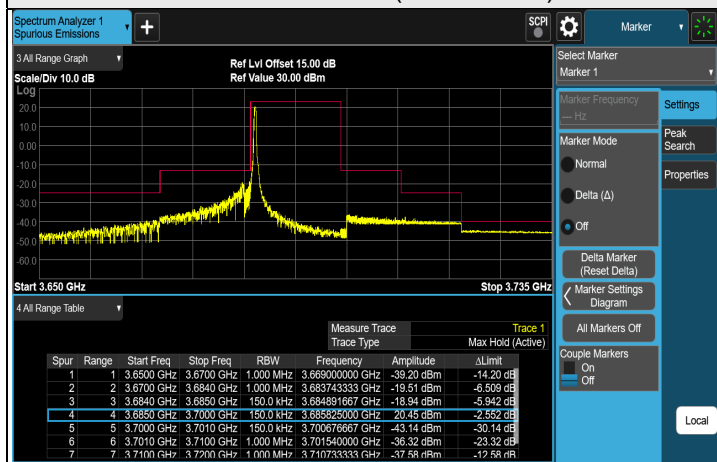
1RB#MAX CH 56665 (3692.5 MHz)



1RB#0 CH 55315 (3557.5 MHz)

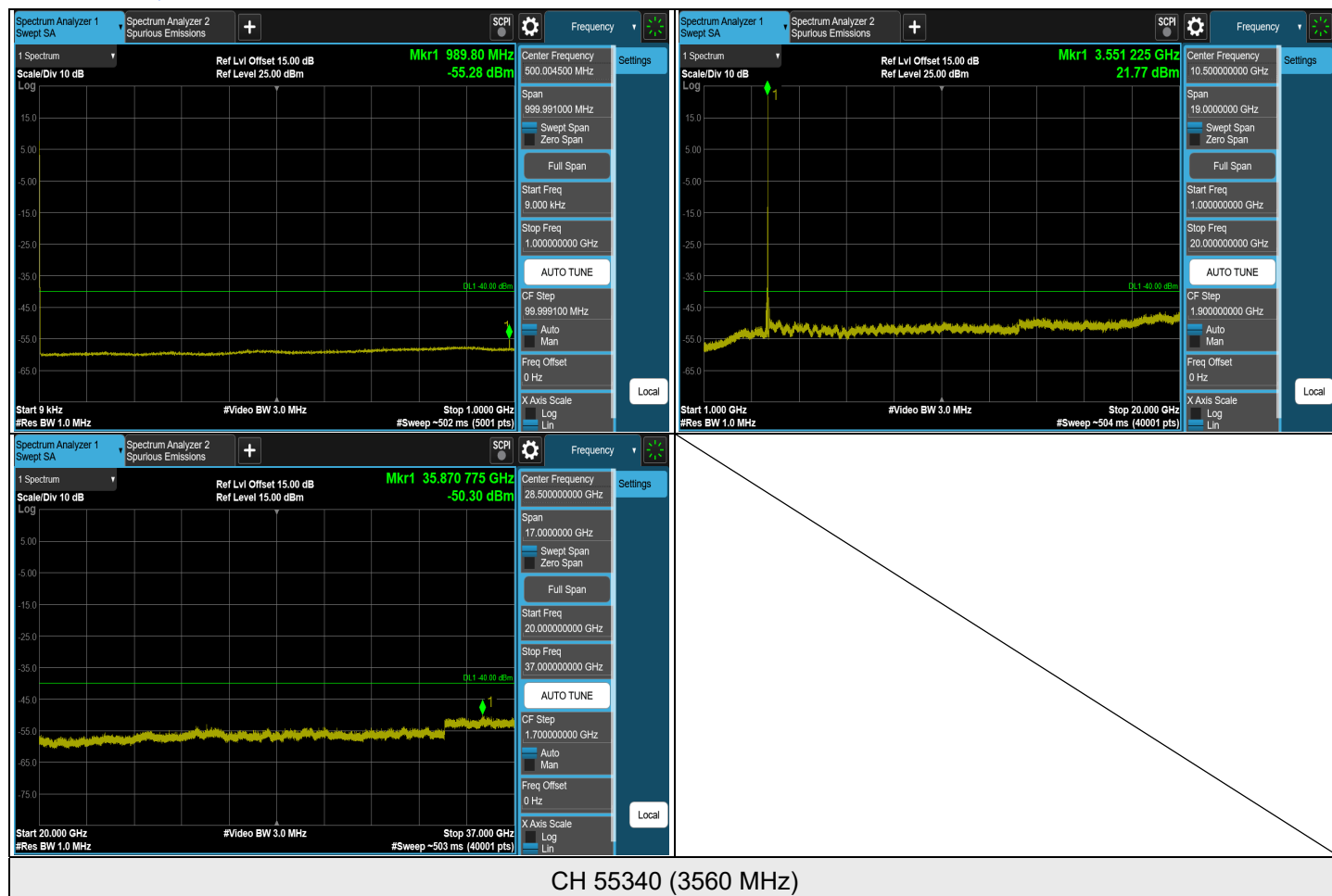


1RB#0 CH 55990 (3625 MHz)

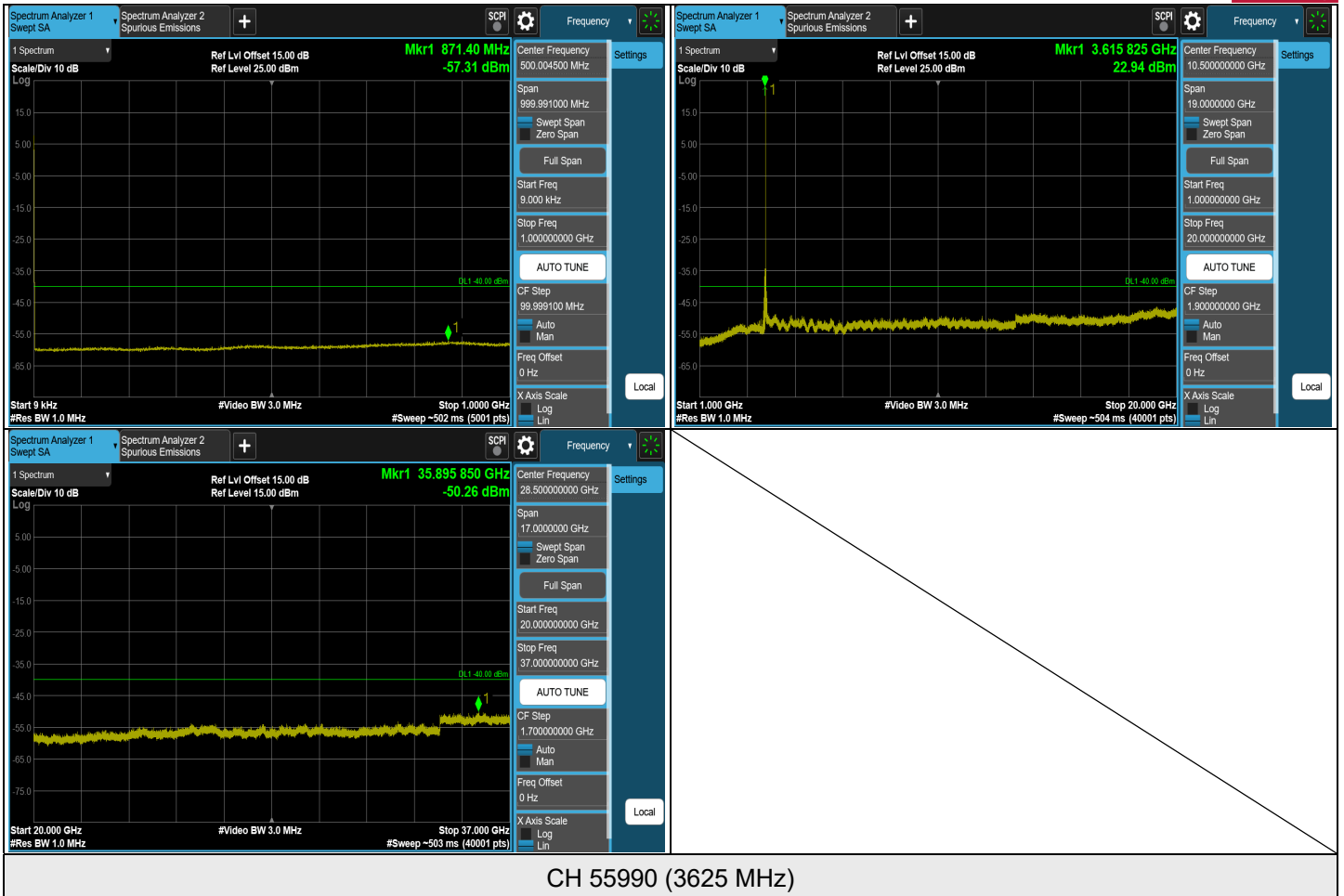


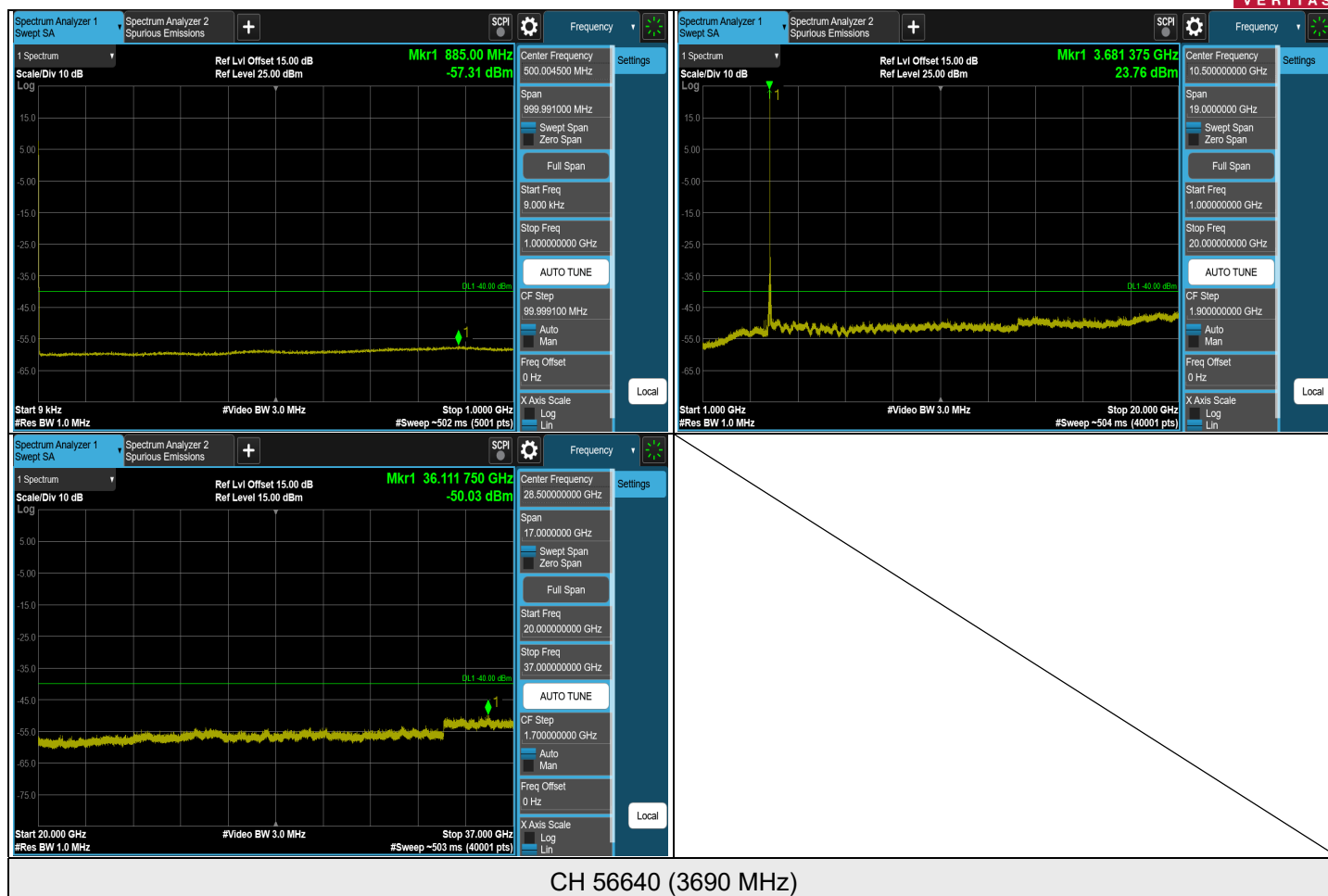
1RB#0 CH 56665 (3692.5 MHz)

LTE Band 48, Channel Bandwidth: 20 MHz



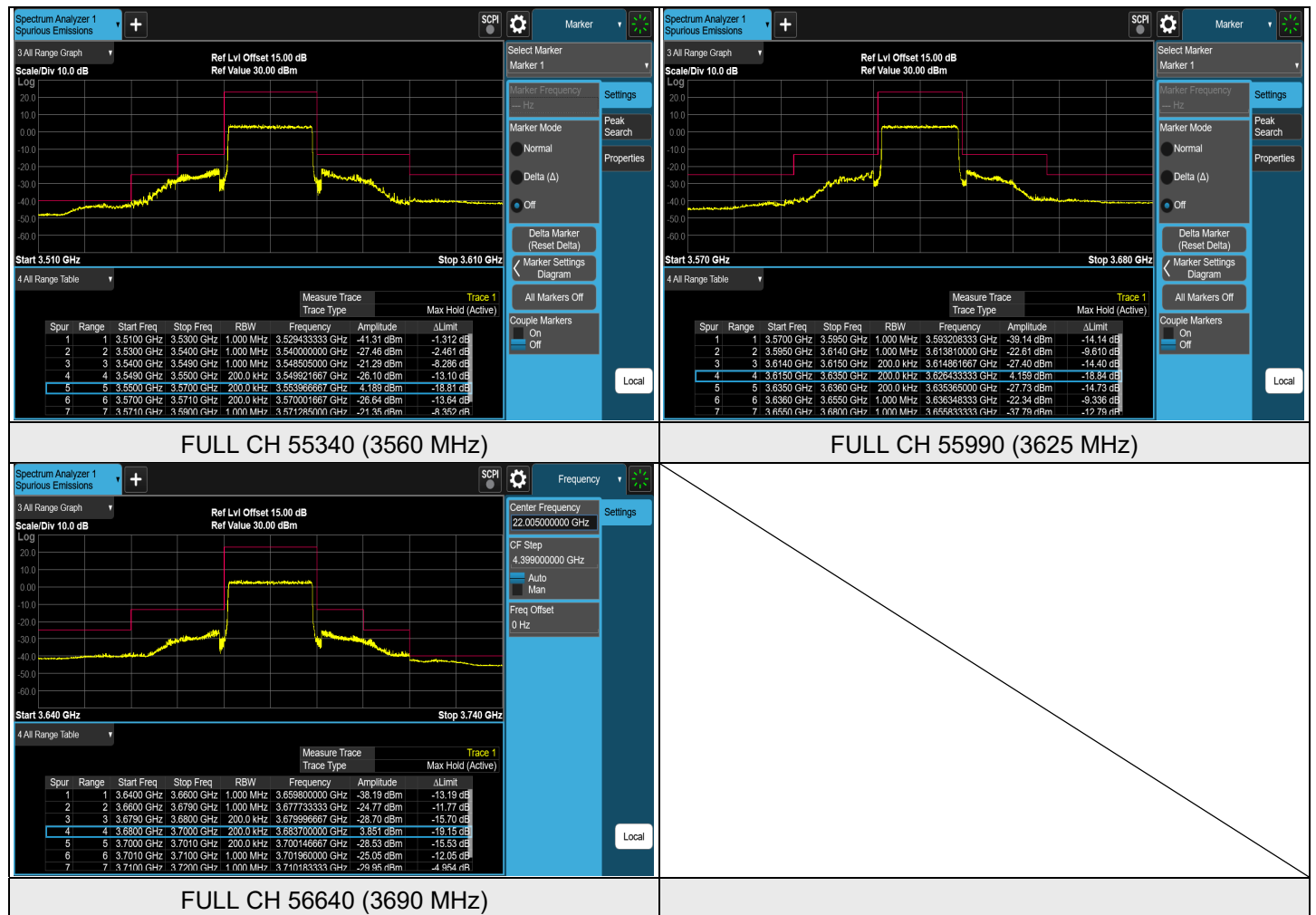
CH 55340 (3560 MHz)

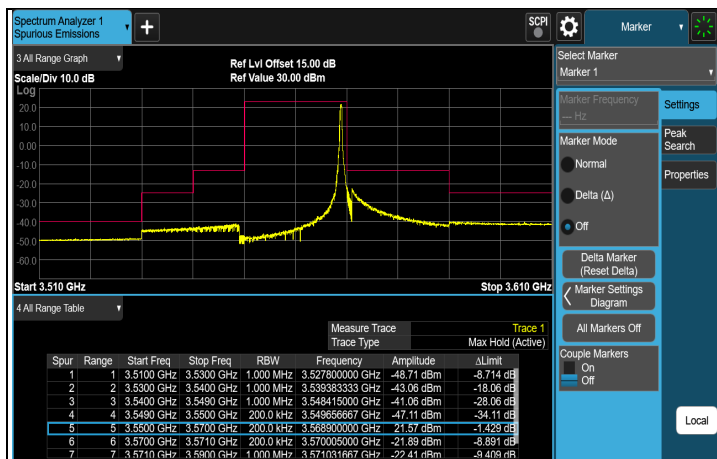




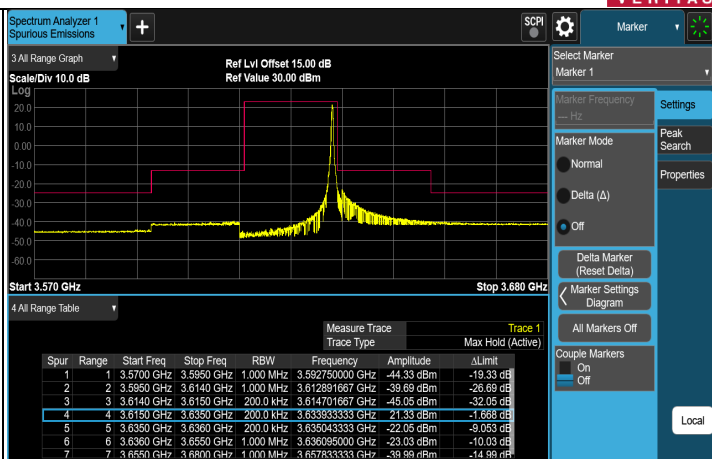
Note: The signal at 9 kHz is IF signal from spectrum analyzer.

LTE Band 48, Channel Bandwidth: 20 MHz

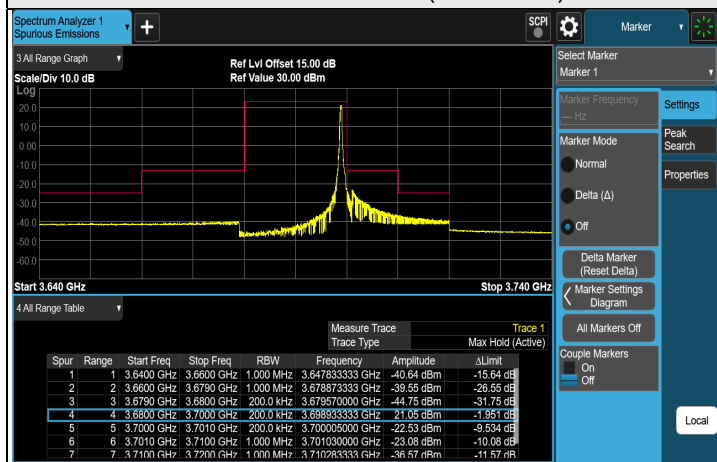




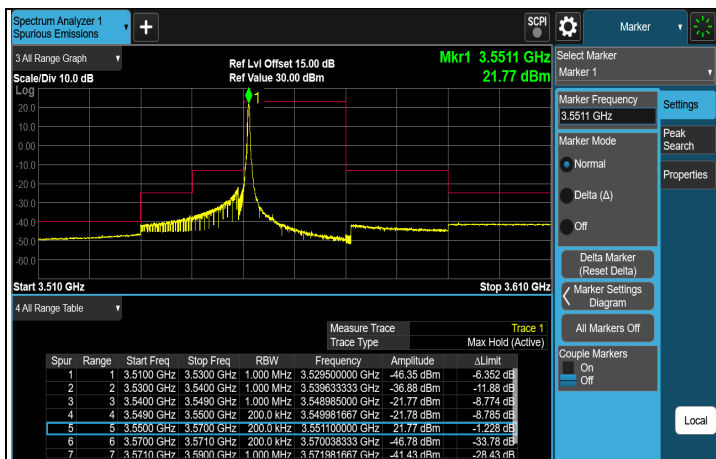
1RB#MAX CH 55340 (3560 MHz)



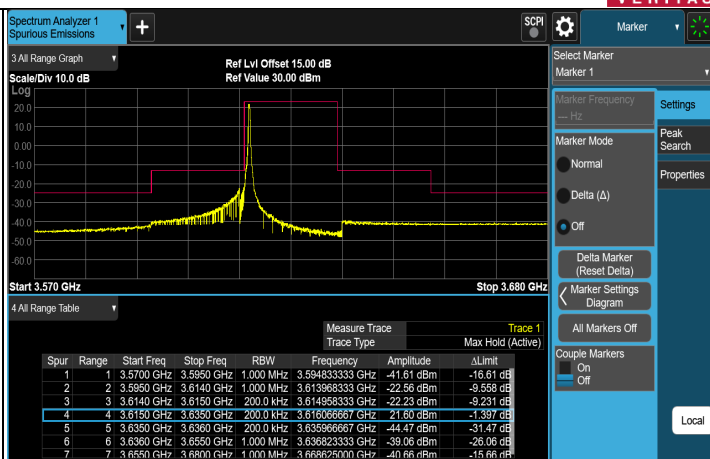
1RB#MAX CH 55990 (3625 MHz)



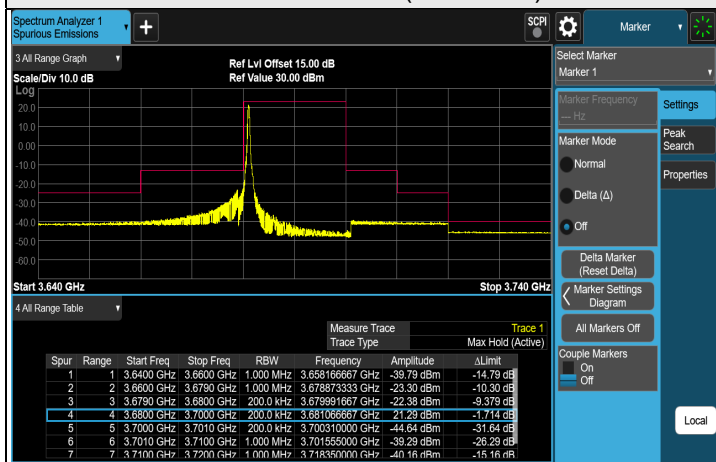
1RB#MAX CH 56640 (3690 MHz)



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

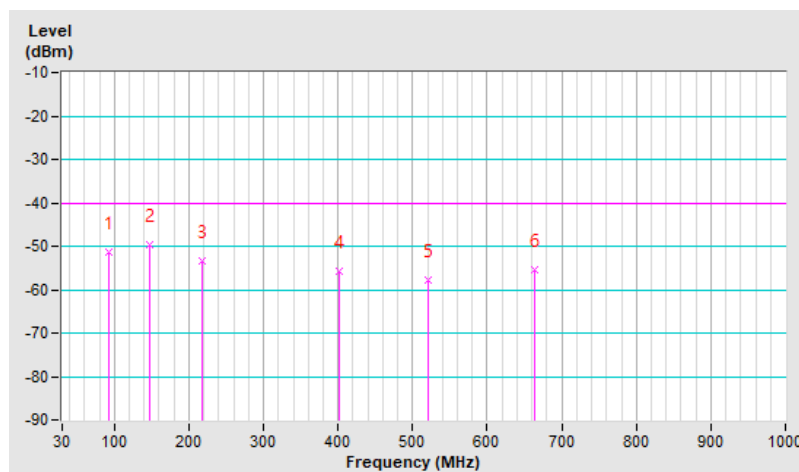
7.6.1 LTE Band 48

RF Mode	LTE Band 48 Channel Bandwidth: 20MHz	Channel	CH 56640 : 3690 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 67% RH
Tested By	Adair Peng		

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	93.05	-51.32	-40.00	-11.32	1.00 H	275	58.01	-109.33
2	147.37	-49.51	-40.00	-9.51	1.50 H	116	54.07	-103.58
3	217.21	-53.45	-40.00	-13.45	1.00 H	110	52.41	-105.86
4	401.51	-55.64	-40.00	-15.64	1.50 H	150	44.02	-99.66
5	520.82	-57.74	-40.00	-17.74	1.00 H	7	39.79	-97.53
6	664.38	-55.40	-40.00	-15.40	2.00 H	118	39.31	-94.71

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
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 frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

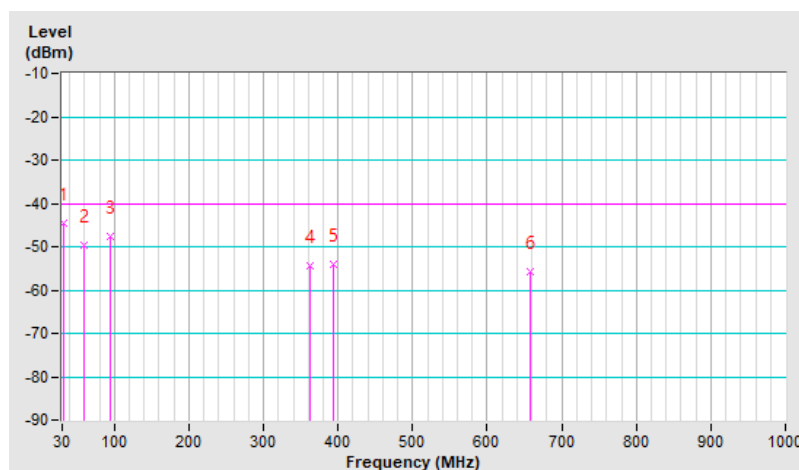


RF Mode	LTE Band 48 Channel Bandwidth: 20MHz	Channel	CH 56640 : 3690 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 67% RH
Tested By	Adair Peng		

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	31.94	-44.58	-40.00	-4.58	1.50 V	88	61.04	-105.62
2	59.10	-49.75	-40.00	-9.75	1.50 V	16	54.71	-104.46
3	94.02	-47.54	-40.00	-7.54	1.00 V	226	61.76	-109.30
4	362.71	-54.41	-40.00	-14.41	2.00 V	162	46.04	-100.45
5	393.75	-54.17	-40.00	-14.17	1.00 V	179	45.57	-99.74
6	658.56	-55.68	-40.00	-15.68	1.00 V	109	39.12	-94.80

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
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 frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this 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, 75% RH
Tested By	Adair Peng		

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	-47.96	-40.00	-7.96	3.37 H	104	36.85	-84.81
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	-47.39	-40.00	-7.39	2.83 V	214	37.42	-84.81

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
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, 75% RH
Tested By	Adair Peng		

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	-46.97	-40.00	-6.97	3.34 H	104	37.48	-84.45
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	-46.80	-40.00	-6.80	2.81 V	211	37.65	-84.45

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
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, 75% RH
Tested By	Adair Peng		

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	-46.76	-40.00	-6.76	3.30 H	102	36.97	-83.73
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	-46.39	-40.00	-6.39	2.85 V	214	37.34	-83.73

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
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, 75% RH
Tested By	Adair Peng		

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	-47.84	-40.00	-7.84	3.30 H	104	36.94	-84.78
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	-47.64	-40.00	-7.64	2.83 V	210	37.14	-84.78

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
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, 75% RH
Tested By	Adair Peng		

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	-47.00	-40.00	-7.00	3.33 H	104	37.45	-84.45
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	-46.79	-40.00	-6.79	2.86 V	211	37.66	-84.45

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
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, 75% RH
Tested By	Adair Peng		

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	-46.59	-40.00	-6.59	3.36 H	105	37.20	-83.79
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	-46.36	-40.00	-6.36	2.82 V	215	37.43	-83.79

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
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:	Kevin Kuo
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7.8.1 LTE Band 48

LTE Band 48, Channel Bandwidth: 20 MHz

Frequency Stability Versus Voltage					
Voltage (Vdc)	CH 55340 (3560 MHz)		CH 56640 (3690 MHz)		Test Result
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
3.4	3560.000002	0.0006	3690.000005	0.0014	Pass
3.8	3559.999995	-0.0014	3689.999993	-0.002	Pass
4.4	3559.999995	-0.0014	3689.999995	-0.0014	Pass

Note: The applicant defined the normal working voltage is from 3.4 to 4.4 Vdc.

Frequency Stability Versus Temperature					
Temperature (°C)	CH 55340 (3560 MHz)		CH 56640 (3690 MHz)		Test Result
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)	
-30	3560.000001	0.0003	3690.000004	0.0011	Pass
-20	3559.999995	-0.0014	3689.999993	-0.002	Pass
-10	3559.999999	-0.0003	3690.000001	0.0003	Pass
0	3560.000001	0.0003	3689.999997	-0.0008	Pass
10	3559.999998	-0.0006	3690.000001	0.0003	Pass
20	3559.999993	-0.002	3689.999993	-0.002	Pass
30	3559.999999	-0.0003	3689.999996	-0.0011	Pass
40	3560.000007	0.002	3690.000002	0.0006	Pass
50	3559.99999	-0.0028	3689.999995	-0.0014	Pass
60	3559.999992	-0.0022	3689.999995	-0.0014	Pass
70	3560.000003	0.0008	3690.000006	0.0017	Pass
75	3559.999998	-0.0006	3689.999999	-0.0003	Pass

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:

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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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