

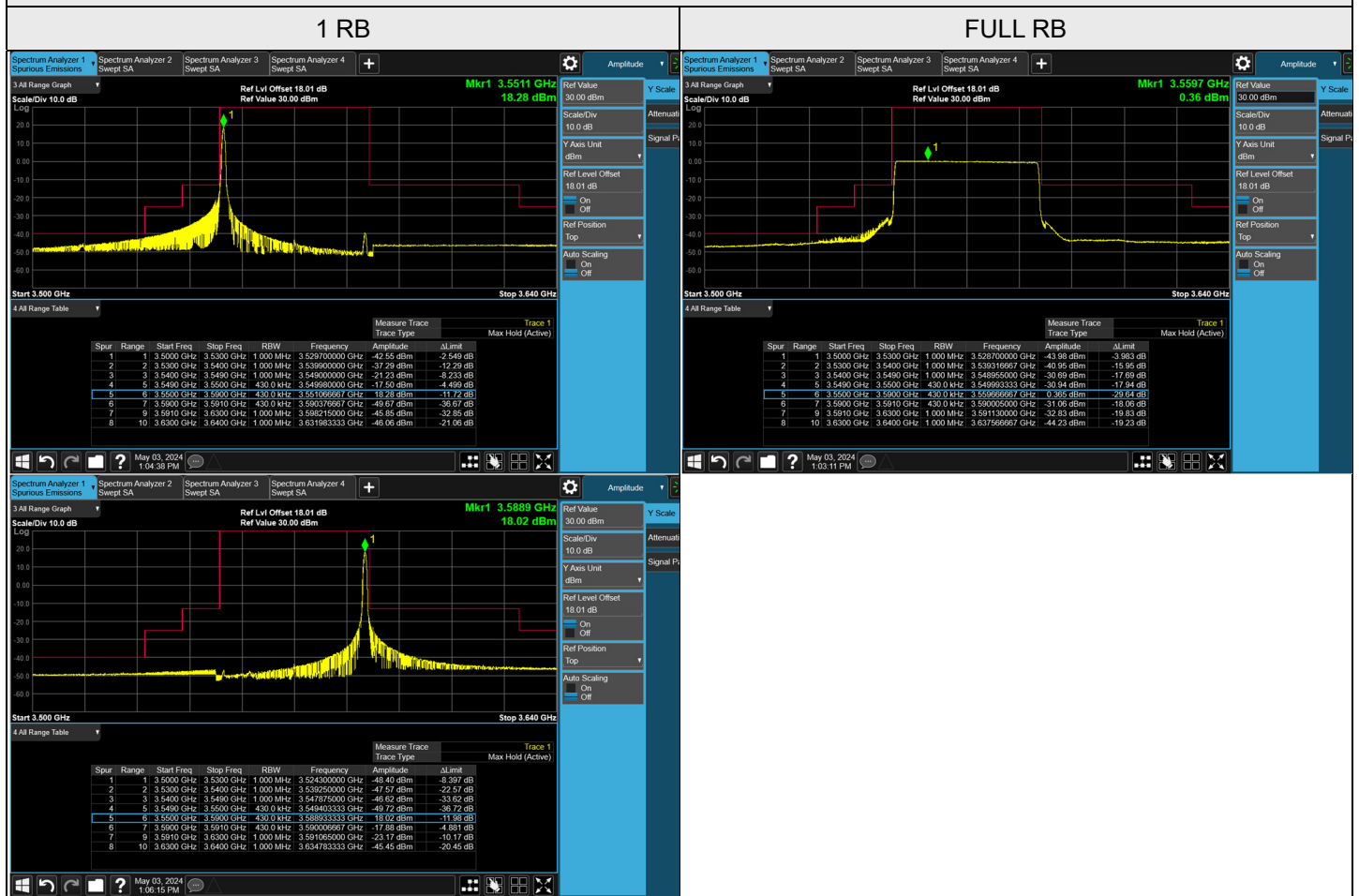
CH 645332 (3679.98 MHz)

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



NR n48 SCS 30 kHz (3.55 GHz ~ 3.7 GHz) Chain 1, Channel Bandwidth: 40 MHz

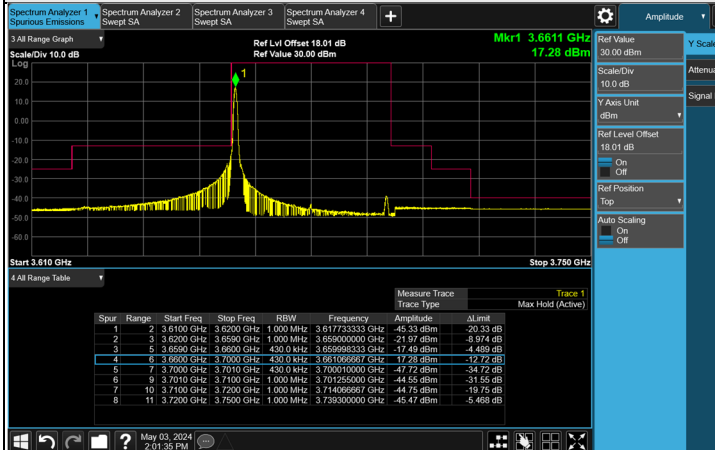
CH 638000 (3570 MHz)



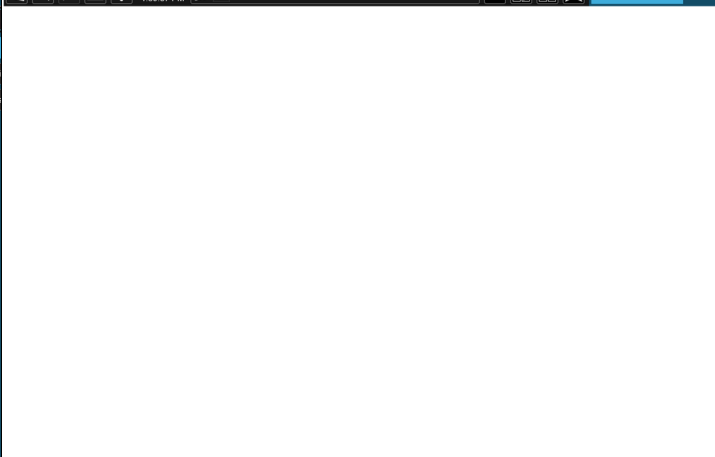
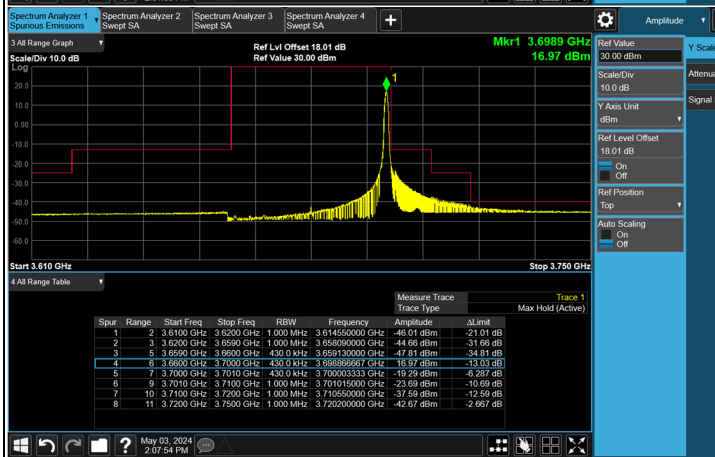
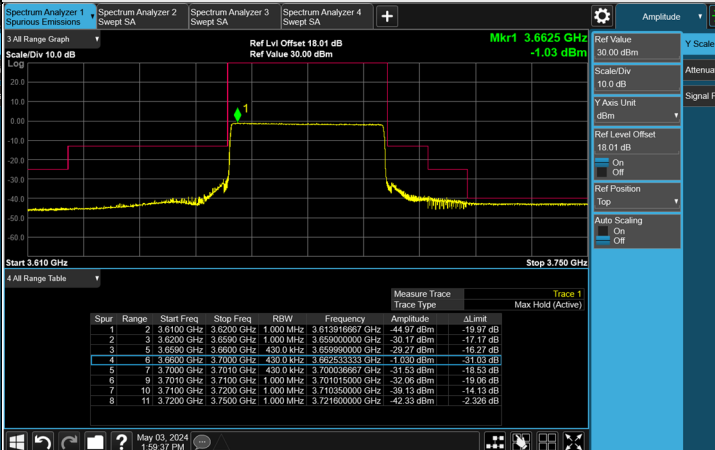


CH 645332 (3679.98 MHz)

1 RB



FULL RB



7.6 Radiated Spurious Emissions below 1GHz

7.6.1 NR n48 - MIMO

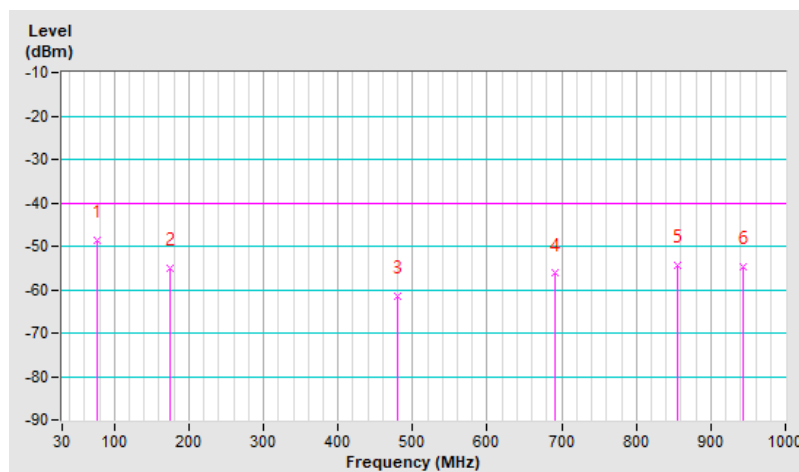
RF Mode	NR n48 Channel Bandwidth: 40MHz	Channel	CH 641666 : 3624.99 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 67 % RH
Tested By	Vincent Chen		

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	77.15	-48.70	-40.00	-8.70	1.50 H	111	59.30	-108.00
2	174.55	-55.00	-40.00	-15.00	1.50 H	266	49.30	-104.30
3	479.22	-61.50	-40.00	-21.50	1.00 H	177	37.10	-98.60
4	691.22	-56.30	-40.00	-16.30	2.00 H	222	38.50	-94.80
5	855.25	-54.40	-40.00	-14.40	1.00 H	119	37.20	-91.60
6	944.22	-54.90	-40.00	-14.90	1.50 H	177	35.10	-90.00

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.

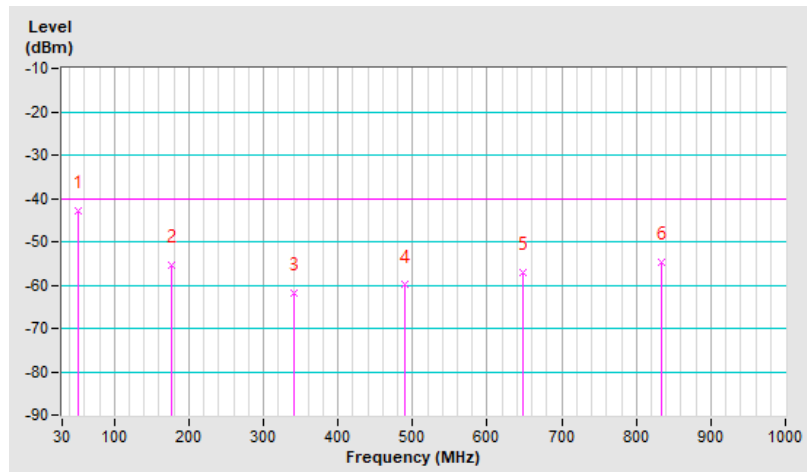


RF Mode	NR n48 Channel Bandwidth: 40MHz	Channel	CH 641666 : 3624.99 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 67 % RH
Tested By	Vincent Chen		

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	51.22	-42.80	-40.00	-2.80	1.00 V	55	61.50	-104.30
2	177.15	-55.40	-40.00	-15.40	1.50 V	199	49.20	-104.60
3	341.22	-62.00	-40.00	-22.00	1.50 V	144	39.30	-101.30
4	488.77	-60.00	-40.00	-20.00	1.50 V	355	38.50	-98.50
5	648.22	-57.20	-40.00	-17.20	1.50 V	194	38.20	-95.40
6	833.36	-54.80	-40.00	-14.80	1.50 V	145	37.20	-92.00

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 NR n48 - MIMO

RF Mode	NR n48 Channel Bandwidth: 10MHz	Channel	CH 637000 : 3555 MHz
Frequency Range	1 GHz ~ 40 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	7110.00	-42.03	-40.00	-2.03	1.75 H	336	43.59	-85.62
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	7110.00	-42.24	-40.00	-2.24	2.85 V	239	43.38	-85.62

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	NR n48 Channel Bandwidth: 10MHz	Channel	CH 641666 : 3624.99 MHz
Frequency Range	1 GHz ~ 40 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	7249.98	-41.27	-40.00	-1.27	1.75 H	333	43.55	-84.82
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	7249.98	-41.41	-40.00	-1.41	2.85 V	242	43.41	-84.82

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	NR n48 Channel Bandwidth: 10MHz	Channel	CH 646332 : 3694.98 MHz
Frequency Range	1 GHz ~ 40 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	7389.96	-41.38	-40.00	-1.38	1.57 H	341	43.64	-85.02
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	7389.96	-41.68	-40.00	-1.68	2.89 V	249	43.34	-85.02

Remarks:

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



RF Mode	NR n48 Channel Bandwidth: 20MHz	Channel	CH 637334 : 3560.01 MHz
Frequency Range	1 GHz ~ 40 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	7120.02	-41.77	-40.00	-1.77	1.49 H	345	43.81	-85.58
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	7120.02	-42.01	-40.00	-2.01	2.93 V	239	43.57	-85.58

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	NR n48 Channel Bandwidth: 20MHz	Channel	CH 641666 : 3624.99 MHz
Frequency Range	1 GHz ~ 40 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	7249.98	-41.15	-40.00	-1.15	1.57 H	333	43.67	-84.82
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	7249.98	-41.34	-40.00	-1.34	2.77 V	237	43.48	-84.82

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	NR n48 Channel Bandwidth: 20MHz	Channel	CH 646000 : 3690 MHz
Frequency Range	1 GHz ~ 40 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	7380.00	-41.38	-40.00	-1.38	1.57 H	337	43.62	-85.00
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	-41.73	-40.00	-1.73	2.79 V	245	43.27	-85.00

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	NR n48 Channel Bandwidth: 40MHz	Channel	CH 638000 : 3570 MHz
Frequency Range	1 GHz ~ 40 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	7140.00	-41.69	-40.00	-1.69	1.55 H	297	43.77	-85.46
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	7140.00	-41.85	-40.00	-1.85	2.71 V	252	43.61	-85.46

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	NR n48 Channel Bandwidth: 40MHz	Channel	CH 641666 : 3624.99 MHz
Frequency Range	1 GHz ~ 40 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	7249.98	-41.10	-40.00	-1.10	1.52 H	326	43.72	-84.82
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	7249.98	-41.34	-40.00	-1.34	2.82 V	249	43.48	-84.82

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	NR n48 Channel Bandwidth: 40MHz	Channel	CH 645332 : 3679.98 MHz
Frequency Range	1 GHz ~ 40 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	7359.96	-41.27	-40.00	-1.27	1.57 H	339	43.69	-84.96
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	7359.96	-41.58	-40.00	-1.58	2.77 V	228	43.38	-84.96

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:	Willy Cheng
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7.8.1 NR n48 SCS 30 kHz (3.55 GHz ~ 3.7 GHz) – MIMO (Chain 0)

NR n48 SCS 30 kHz (3.55 GHz ~ 3.7 GHz), Channel Bandwidth: 10 MHz

Frequency Stability Versus Voltage				
Voltage (Vdc)	CH 637000 (3555 MHz)		CH 646333 (3694.98 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.27	3555.000002	0.0006	3694.979998	-0.0005
3.85	3554.999994	-0.0017	3694.979999	-0.0027
4.43	3554.999997	-0.0008	3694.979996	-0.0011

Note: The applicant defined the normal working voltage is from 3.27 to 4.43 Vdc.

Frequency Stability Versus Temperature				
Temperature (°C)	CH 637000 (3555 MHz)		CH 646333 (3694.98 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	3555.000004	0.0011	3694.98	0
-20	3554.999992	-0.0023	3694.979999	-0.0027
-10	3555	0	3694.979999	-0.0003
0	3555.000009	0.0025	3694.980007	0.0019
10	3555.000002	0.0006	3694.979997	-0.0008
20	3554.999998	-0.0006	3694.979996	-0.0011
30	3554.999991	-0.0025	3694.979993	-0.0019
40	3555.000007	0.002	3694.980004	0.0011
50	3555.000008	0.0023	3694.980009	0.0024
55	3555	0	3694.980001	0.0003

NR n48 SCS 30 kHz (3.55 GHz ~ 3.7 GHz), Channel Bandwidth: 15 MHz

Frequency Stability Versus Voltage				
Voltage (Vdc)	CH 637168 (3557.52 MHz)		CH 646166 (3692.49 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.27	3557.519994	-0.0017	3692.489994	-0.0016
3.85	3557.519999	-0.0003	3692.490002	0.0005
4.43	3557.520007	0.002	3692.490007	0.0019

Note: The applicant defined the normal working voltage is from 3.27 to 4.43 Vdc.

Frequency Stability Versus Temperature				
Temperature (°C)	CH 637168 (3557.52 MHz)		CH 646166 (3692.49 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	3557.52	0	3692.489999	-0.0003
-20	3557.519991	-0.0025	3692.489993	-0.0019
-10	3557.520005	0.0014	3692.490001	0.0003
0	3557.520004	0.0011	3692.490007	0.0019
10	3557.519991	-0.0025	3692.489991	-0.0024
20	3557.520008	0.0022	3692.49001	0.0027
30	3557.519998	-0.0006	3692.490002	0.0005
40	3557.519997	-0.0008	3692.489995	-0.0014
50	3557.520007	0.002	3692.490007	0.0019
55	3557.520007	0.002	3692.490008	0.0022

NR n48 SCS 30 kHz (3.55 GHz ~ 3.7 GHz), Channel Bandwidth: 20 MHz

Frequency Stability Versus Voltage				
Voltage (Vdc)	CH 637334 (3560.01 MHz)		CH 646000 (3690 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.27	3560.010003	0.0008	3690	0
3.85	3560.010003	0.0008	3690.000007	0.0019
4.43	3560.010005	0.0014	3690.000001	0.0003

Note: The applicant defined the normal working voltage is from 3.27 to 4.43 Vdc.

Frequency Stability Versus Temperature				
Temperature (°C)	CH 637334 (3560.01 MHz)		CH 646000 (3690 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	3560.009991	-0.0025	3689.999991	-0.0024
-20	3560.010008	0.0022	3690.000007	0.0019
-10	3560.009995	-0.0014	3689.999992	-0.0022
0	3560.009998	-0.0006	3690	0
10	3560.01001	0.0028	3690.000009	0.0024
20	3560.009993	-0.002	3689.999992	-0.0022
30	3560.010006	0.0017	3690.000008	0.0022
40	3560.009996	-0.0011	3689.999994	-0.0016
50	3560.010009	0.0025	3690.000007	0.0019
55	3560.009999	-0.0003	3690	0

NR n48 SCS 30 kHz (3.55 GHz ~ 3.7 GHz), Channel Bandwidth: 30 MHz

Frequency Stability Versus Voltage				
Voltage (Vdc)	CH 637668 (3565.02 MHz)		CH 645666 (3684.99 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.27	3565.019998	-0.0006	3684.990003	0.0008
3.85	3565.019993	-0.002	3684.98999	-0.0027
4.43	3565.019993	-0.002	3684.98999	-0.0027

Note: The applicant defined the normal working voltage is from 3.27 to 4.43 Vdc.

Frequency Stability Versus Temperature				
Temperature (°C)	CH 637668 (3565.02 MHz)		CH 645666 (3684.99 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	3565.020004	0.0011	3684.990007	0.0019
-20	3565.020009	0.0025	3684.990009	0.0024
-10	3565.020006	0.0017	3684.990009	0.0024
0	3565.019992	-0.0022	3684.989993	-0.0019
10	3565.019991	-0.0025	3684.989991	-0.0024
20	3565.020006	0.0017	3684.990008	0.0022
30	3565.019997	-0.0008	3684.989992	-0.0022
40	3565.019991	-0.0025	3684.989991	-0.0024
50	3565.01999	-0.0028	3684.989991	-0.0024
55	3565.020001	0.0003	3684.989998	-0.0005

NR n48 SCS 30 kHz (3.55 GHz ~ 3.7 GHz), Channel Bandwidth: 40 MHz

Frequency Stability Versus Voltage				
Voltage (Vdc)	CH 638000 (3570 MHz)		CH 645332 (3679.98 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.27	3570	0	3679.980005	0.0014
3.85	3570.00001	0.0028	3679.98001	0.0027
4.43	3570.000003	0.0008	3679.980007	0.0019

Note: The applicant defined the normal working voltage is from 3.27 to 4.43 Vdc.

Frequency Stability Versus Temperature				
Temperature (°C)	CH 638000 (3570 MHz)		CH 645332 (3679.98 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	3569.999999	-0.0003	3679.980002	0.0005
-20	3569.999999	-0.0003	3679.980003	0.0008
-10	3569.999995	-0.0014	3679.979997	-0.0008
0	3569.999995	-0.0014	3679.979995	-0.0014
10	3569.999997	-0.0008	3679.979999	-0.0003
20	3569.999997	-0.0008	3679.98	0
30	3570	0	3679.980002	0.0005
40	3570.000006	0.0017	3679.980008	0.0022
50	3570.000009	0.0025	3679.980007	0.0019
55	3570.000002	0.0006	3679.980004	0.0011

7.8.2 NR n48 SCS 30 kHz (3.55 GHz ~ 3.7 GHz) – MIMO (Chain 1)

NR n48 SCS 30 kHz (3.55 GHz ~ 3.7 GHz), Channel Bandwidth: 10 MHz

Frequency Stability Versus Voltage				
Voltage (Vdc)	CH 637000 (3555 MHz)		CH 646333 (3694.98 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.27	3554.999997	-0.0008	3694.979997	-0.0008
3.85	3554.999995	-0.0014	3694.979996	-0.0011
4.43	3554.999999	-0.0003	3694.979997	-0.0008

Note: The applicant defined the normal working voltage is from 3.27 to 4.43 Vdc.

Frequency Stability Versus Temperature				
Temperature (°C)	CH 637000 (3555 MHz)		CH 646333 (3694.98 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	3555.000001	0.0003	3694.980003	0.0008
-20	3554.999998	-0.0006	3694.979997	-0.0008
-10	3554.999993	-0.002	3694.979997	-0.0008
0	3554.999998	-0.0006	3694.980001	0.0003
10	3554.999992	-0.0023	3694.979991	-0.0024
20	3554.99999	-0.0028	3694.979994	-0.0016
30	3554.999993	-0.002	3694.979994	-0.0016
40	3554.999998	-0.0006	3694.979997	-0.0008
50	3554.999995	-0.0014	3694.979996	-0.0011
55	3555.000001	0.0003	3694.980006	0.0016

NR n48 SCS 30 kHz (3.55 GHz ~ 3.7 GHz), Channel Bandwidth: 15 MHz

Frequency Stability Versus Voltage				
Voltage (Vdc)	CH 637168 (3557.52 MHz)		CH 646166 (3692.49 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.27	3557.519998	-0.0006	3692.490002	0.0005
3.85	3557.52001	0.0028	3692.490007	0.0019
4.43	3557.52	0	3692.490004	0.0011

Note: The applicant defined the normal working voltage is from 3.27 to 4.43 Vdc.

Frequency Stability Versus Temperature				
Temperature (°C)	CH 637168 (3557.52 MHz)		CH 646166 (3692.49 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	3557.520004	0.0011	3692.490008	0.0022
-20	3557.519992	-0.0022	3692.489997	-0.0008
-10	3557.520001	0.0003	3692.490005	0.0014
0	3557.519994	-0.0017	3692.489995	-0.0014
10	3557.52001	0.0028	3692.490007	0.0019
20	3557.519996	-0.0011	3692.489995	-0.0014
30	3557.519999	-0.0003	3692.489998	-0.0005
40	3557.52	0	3692.489997	-0.0008
50	3557.519992	-0.0022	3692.489994	-0.0016
55	3557.519991	-0.0025	3692.489995	-0.0014

NR n48 SCS 30 kHz (3.55 GHz ~ 3.7 GHz), Channel Bandwidth: 20 MHz

Frequency Stability Versus Voltage				
Voltage (Vdc)	CH 637334 (3560.01 MHz)		CH 646000 (3690 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.27	3560.009999	-0.0003	3689.999999	-0.0003
3.85	3560.009997	-0.0008	3690	0
4.43	3560.009992	-0.0022	3689.999997	-0.0008

Note: The applicant defined the normal working voltage is from 3.27 to 4.43 Vdc.

Frequency Stability Versus Temperature				
Temperature (°C)	CH 637334 (3560.01 MHz)		CH 646000 (3690 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	3560.010003	0.0008	3690.000001	0.0003
-20	3560.009997	-0.0008	3689.999999	-0.0003
-10	3560.009996	-0.0011	3689.999995	-0.0014
0	3560.010003	0.0008	3690.000007	0.0019
10	3560.009995	-0.0014	3689.999995	-0.0014
20	3560.009995	-0.0014	3689.999999	-0.0027
30	3560.010001	0.0003	3690.000006	0.0016
40	3560.010009	0.0025	3690.000009	0.0024
50	3560.009992	-0.0022	3689.999992	-0.0022
55	3560.009994	-0.0017	3689.999992	-0.0022

NR n48 SCS 30 kHz (3.55 GHz ~ 3.7 GHz), Channel Bandwidth: 30 MHz

Frequency Stability Versus Voltage				
Voltage (Vdc)	CH 637668 (3565.02 MHz)		CH 645666 (3684.99 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.27	3565.020005	0.0014	3684.990003	0.0008
3.85	3565.02	0	3684.989999	-0.0003
4.43	3565.020004	0.0011	3684.990006	0.0016

Note: The applicant defined the normal working voltage is from 3.27 to 4.43 Vdc.

Frequency Stability Versus Temperature				
Temperature (°C)	CH 637668 (3565.02 MHz)		CH 645666 (3684.99 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	3565.019992	-0.0022	3684.989992	-0.0022
-20	3565.02001	0.0028	3684.990005	0.0014
-10	3565.019996	-0.0011	3684.989997	-0.0008
0	3565.01999	-0.0028	3684.989993	-0.0019
10	3565.020009	0.0025	3684.990008	0.0022
20	3565.019996	-0.0011	3684.99	0
30	3565.020008	0.0022	3684.990008	0.0022
40	3565.020009	0.0025	3684.990004	0.0011
50	3565.019994	-0.0017	3684.989999	-0.0003
55	3565.020002	0.0006	3684.990005	0.0014

NR n48 SCS 30 kHz (3.55 GHz ~ 3.7 GHz), Channel Bandwidth: 40 MHz

Frequency Stability Versus Voltage				
Voltage (Vdc)	CH 638000 (3570 MHz)		CH 645332 (3679.98 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.27	3570	0	3679.98	0
3.85	3570.000001	0.0003	3679.979996	-0.0011
4.43	3569.999993	-0.002	3679.979991	-0.0024

Note: The applicant defined the normal working voltage is from 3.27 to 4.43 Vdc.

Frequency Stability Versus Temperature				
Temperature (°C)	CH 638000 (3570 MHz)		CH 645332 (3679.98 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	3570.000007	0.002	3679.980003	0.0008
-20	3569.999992	-0.0022	3679.979991	-0.0024
-10	3570	0	3679.98	0
0	3569.999998	-0.0006	3679.980002	0.0005
10	3569.999993	-0.002	3679.979995	-0.0014
20	3569.999997	-0.0008	3679.979996	-0.0011
30	3570.000006	0.0017	3679.980004	0.0011
40	3569.999999	-0.0003	3679.980001	0.0003
50	3570.000003	0.0008	3679.980001	0.0003
55	3570.000001	0.0003	3679.979997	-0.0008

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.

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

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