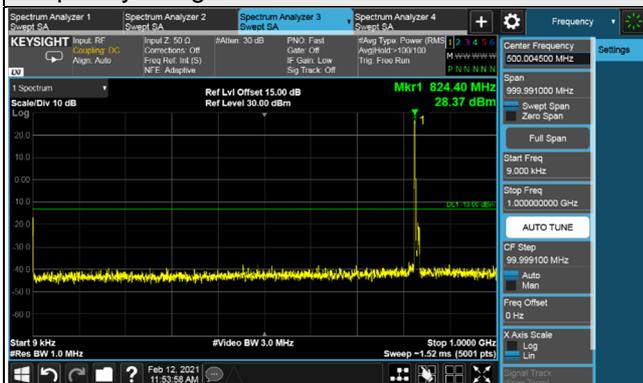## n26, Channel Bandwidth 10MHz

Channel 165800 (829.0MHz)

Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 10GHz
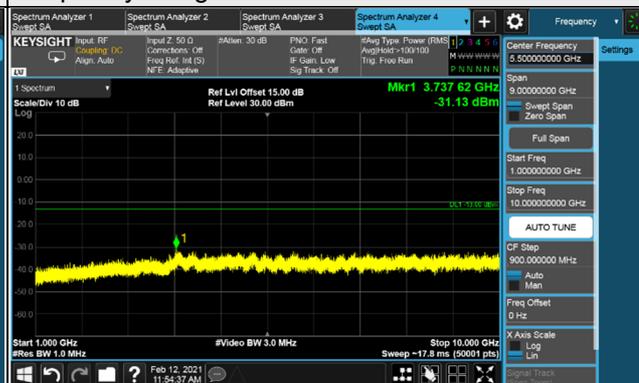
Channel 167300 (836.5MHz)

Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 10GHz
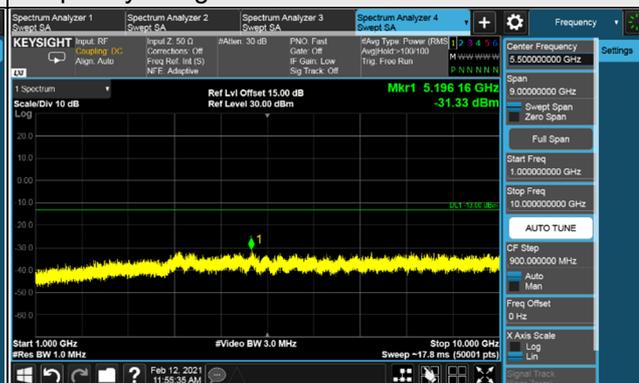
Channel 168800 (844.0MHz)

Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 10GHz
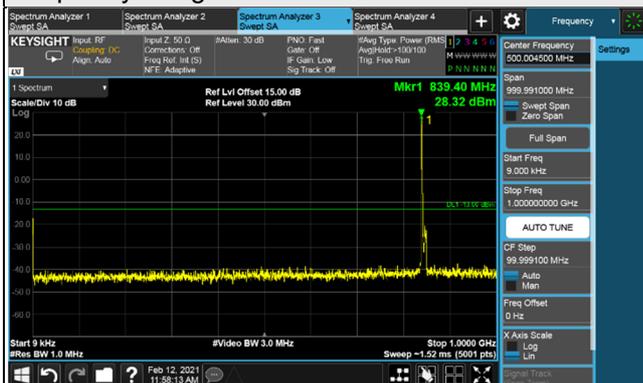
*The 9kHz signal over the limit is from Spectrum.

n26, Channel Bandwidth 15MHz

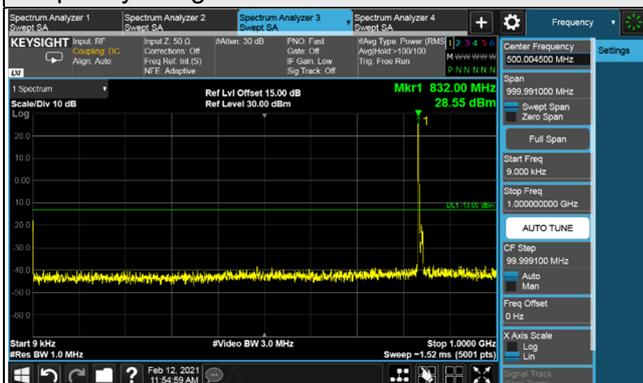### Channel 166300 (831.5MHz)

Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 10GHz
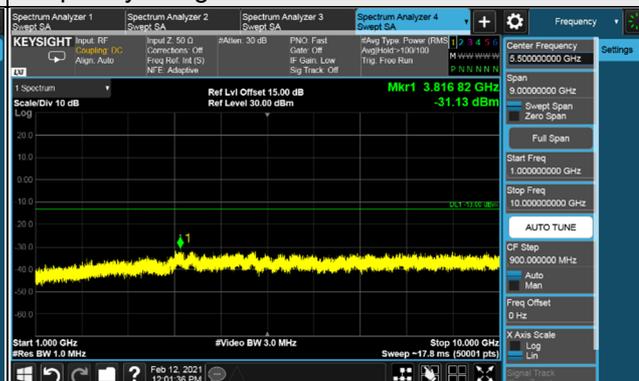
Channel 167300 (836.5MHz)

Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 10GHz

Channel 168300 (841.5MHz)

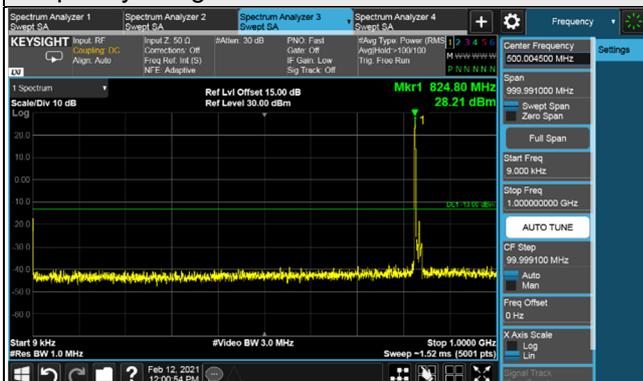| Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 10GHz
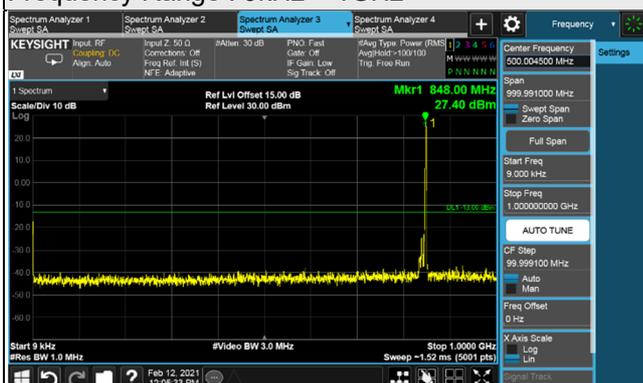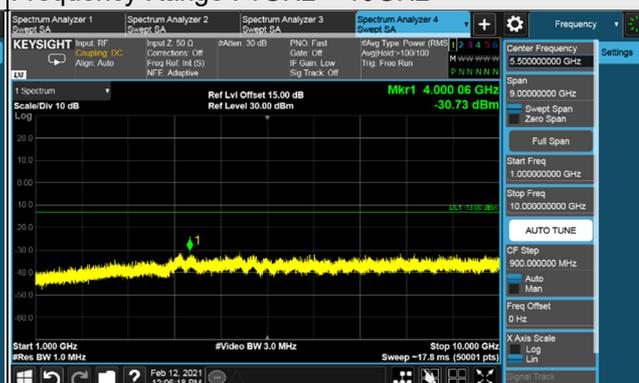
*The 9kHz signal over the limit is from Spectrum.

n26, Channel Bandwidth 20MHz
Channel 167300 (836.5MHz)

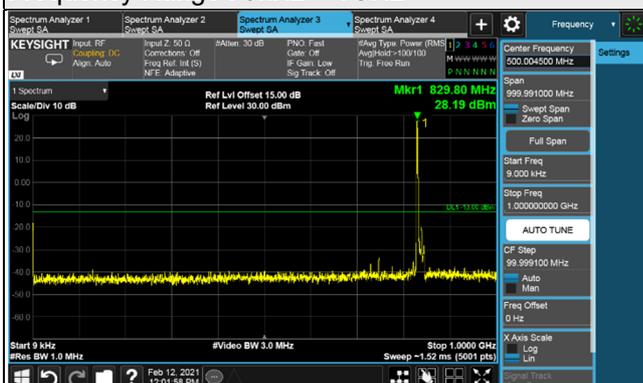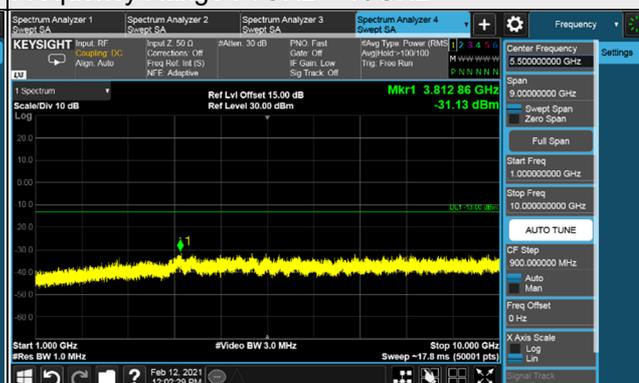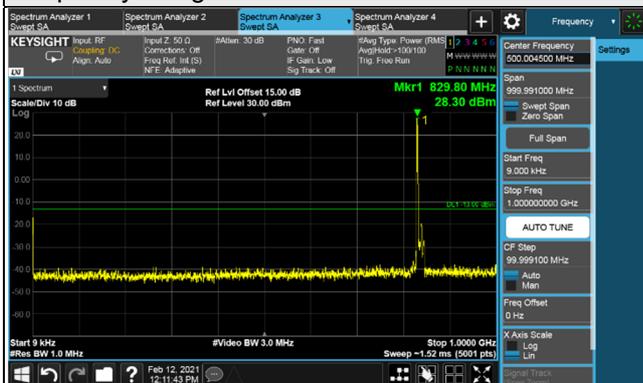| Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 10GHz
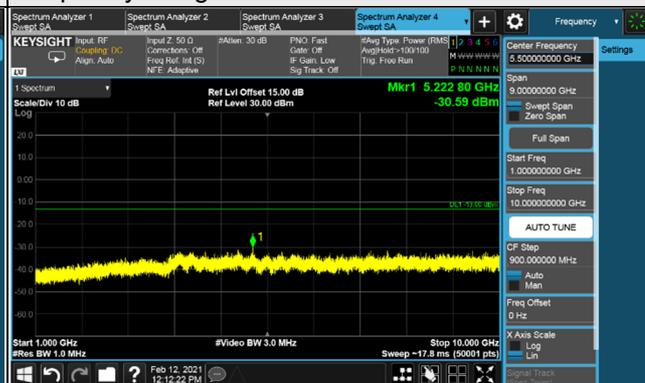
*The 9kHz signal over the limit is from Spectrum.

4.8   Radiated Emission Measurement

4.8.1   Limits of Radiated Emission Measurement

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. The emission limit equal to –13dBm.

4.8.2   Test Procedure

a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m(below or equal 1GHz) and/or 1.5m(above 1GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.

b. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

c. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP/ERP level.

d. Following C63.26 section 5.5 and 5.2.7
   - EIRP (dBm) = E (dBμV/m) + 20log(D) - 104.8; where D is the measurement distance (in the far field region) in m.
   - ERP (dBm) = E (dBμV/m) + 20log(D) - 104.8 - 2.15; where D is the measurement distance (in the far field region) in m.

Note:
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.
2. The emission levels were against the limit of frequency range 9 kHz ~ 30 MHz:
    The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

4.8.3   Deviation from Test Standard

No deviation.

4.8.4 Test Setup

For radiated emission 30MHz to 1GHz
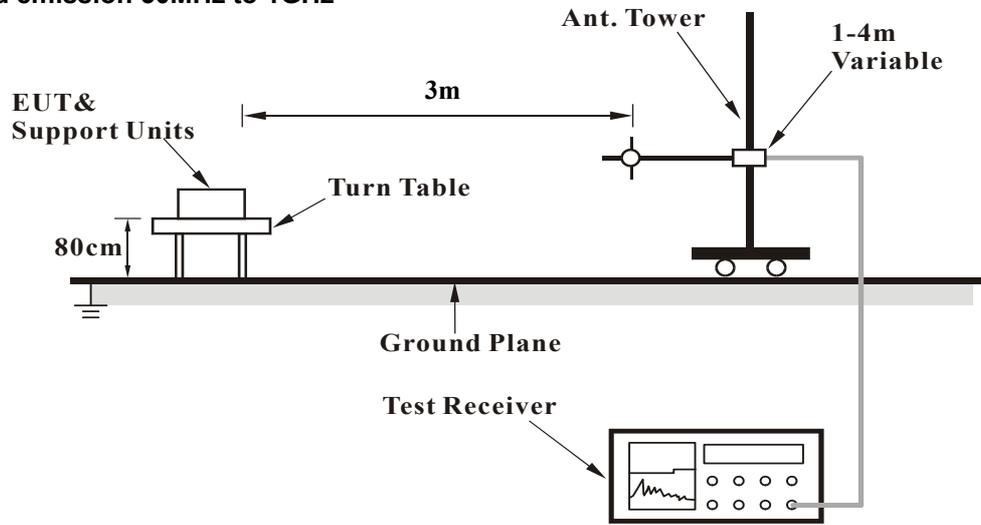
For radiated emission above 1GHz
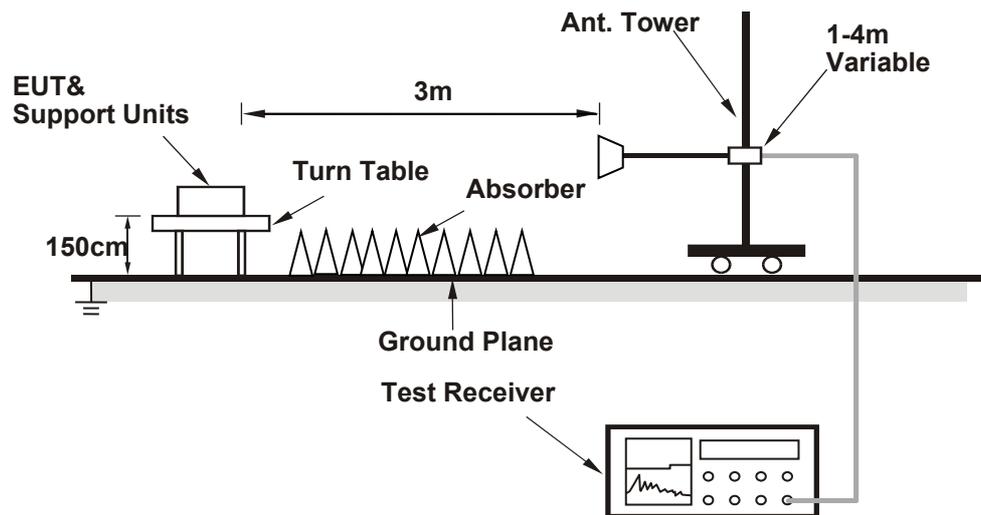
For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.8.5 Test Results

Below 1GHz

n5, Channel Bandwidth 20MHz

Mode	TX channel 167800 (839.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	23deg. C, 67%RH	Input Power	120Vac, 60Hz
Tested By	Adair Peng		

	Antenna Polarity & Test Distance : Horizontal at 3 m							
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	80.44	-62.60	-13.00	-49.60	1.50 H	165	58.48	-121.08
2	137.67	-58.00	-13.00	-45.00	1.00 H	102	58.15	-116.15
3	155.13	-57.40	-13.00	-44.40	1.50 H	72	58.05	-115.45
4	268.62	-58.40	-13.00	-45.40	2.00 H	215	57.80	-116.20
5	391.81	-61.54	-13.00	-48.54	1.00 H	49	51.21	-112.75
6	471.35	-64.47	-13.00	-51.47	1.00 H	56	46.17	-110.64

Remarks:

1. ERP(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 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 167800 (839.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	23deg. C, 67%RH	Input Power	120Vac, 60Hz
Tested By	Adair Peng		

	Antenna Polarity & Test Distance : Vertical at 3m							
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	**33.88**	**-51.70**	**-13.00**	**-38.70**	**2.00 V**	**2**	**65.17**	**-116.87**
2	55.22	-56.60	-13.00	-43.60	1.00 V	351	59.59	-116.19
3	80.44	-59.60	-13.00	-46.60	1.50 V	256	61.48	-121.08
4	137.67	-55.20	-13.00	-42.20	1.50 V	128	60.95	-116.15
5	182.29	-60.85	-13.00	-47.85	1.00 V	137	56.60	-117.45
6	507.24	-61.40	-13.00	-48.40	2.00 V	259	48.71	-110.11

Remarks:

1. ERP(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 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

n26, Channel Bandwidth 5MHz

Mode	TX channel 165300 (826.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	23deg. C, 67%RH	Input Power	120Vac, 60Hz
Tested By	Adair Peng		

	Antenna Polarity & Test Distance : Horizontal at 3 m							
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	80.44	-62.90	-13.00	-49.90	2.00 H	164	58.18	-121.08
2	137.67	-57.43	-13.00	-44.43	1.00 H	102	58.72	-116.15
3	164.83	-57.90	-13.00	-44.90	1.50 H	231	57.82	-115.72
4	266.68	-58.10	-13.00	-45.10	1.50 H	46	58.21	-116.31
5	365.62	-60.55	-13.00	-47.55	1.00 H	58	52.90	-113.45
6	392.78	-60.47	-13.00	-47.47	1.00 H	46	52.26	-112.73

Remarks:

1. ERP(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 - 2.15
3. Margin value = ERP – Limit value
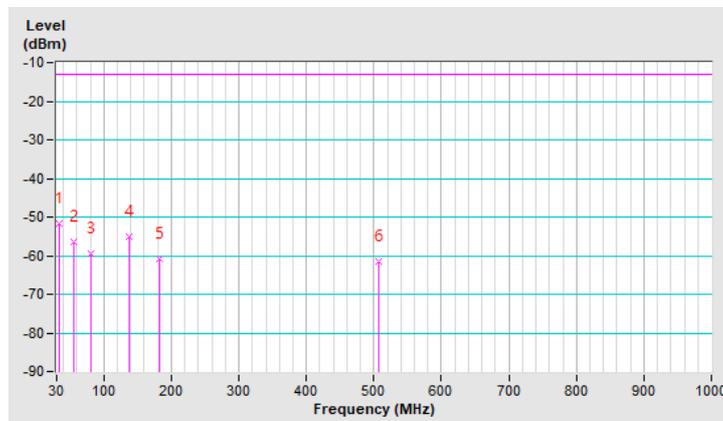4. The other ERP levels were very low against the limit.

Mode	TX channel 165300 (826.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	23deg. C, 67%RH	Input Power	120Vac, 60Hz
Tested By	Adair Peng		

No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
				Antenna Polarity & Test Distance : Vertical at 3m				
1	34.85	-58.38	-13.00	-45.38	1.00 V	186	58.63	-117.01
2	55.22	-57.60	-13.00	-44.60	1.50 V	322	58.59	-116.19
3	80.44	-59.19	-13.00	-46.19	1.00 V	239	61.89	-121.08
4	137.67	-55.47	-13.00	-42.47	1.00 V	135	60.68	-116.15
5	157.07	-60.30	-13.00	-47.30	2.00 V	169	55.09	-115.39
6	480.08	-61.94	-13.00	-48.94	1.00 V	187	48.62	-110.56

Remarks:

1. ERP(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 - 2.15
3. Margin value = ERP – Limit value
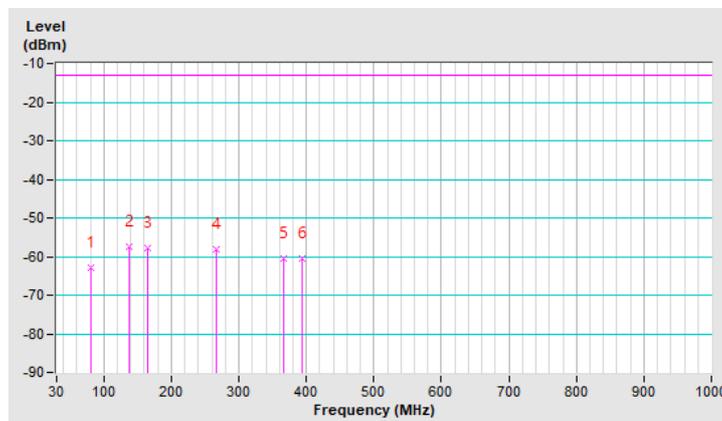4. The other ERP levels were very low against the limit.

Above 1GHz

n5, Channel Bandwidth 5MHz

Mode	TX channel 165300 (826.5MHz)	Frequency Range	1GHz ~ 10GHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

	Antenna Polarity & Test Distance : Horizontal at 3 m						
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1653.00	-59.19	-13.00	-46.19	2.10 H	30	44.39	-103.58

	Antenna Polarity & Test Distance : Vertical at 3m						
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1653.00	-59.93	-13.00	-46.93	1.05 V	231	43.65	-103.58

Remarks:

1. ERP(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 - 2.15
3. Margin value = ERP – Limit value
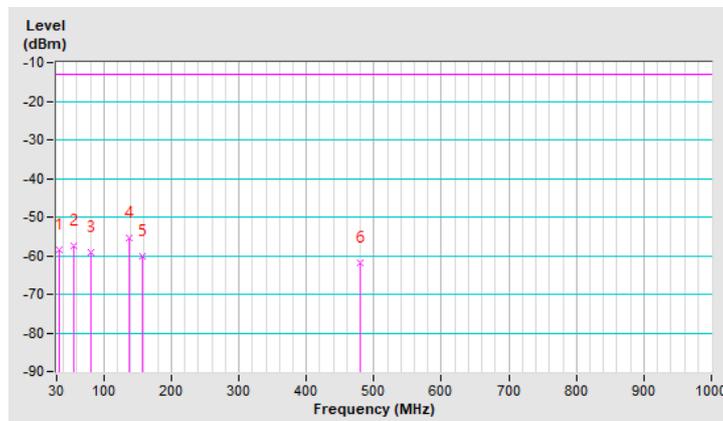4. The other ERP levels were very low against the limit.

Mode	TX channel 167300 (836.5MHz)	Frequency Range	1GHz ~ 10GHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

	Antenna Polarity & Test Distance : Horizontal at 3 m						
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1673.00	-59.70	-13.00	-46.70	1.34 H	311	43.86	-103.56

	Antenna Polarity & Test Distance : Vertical at 3m						
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1673.00	-59.47	-13.00	-46.47	2.08 V	136	44.09	-103.56

Remarks:

1. ERP(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 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 169300 (846.5MHz)	Frequency Range	1GHz ~ 10GHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

	Antenna Polarity & Test Distance : Horizontal at 3 m							
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1693.00	-59.00	-13.00	-46.00	2.00 H	122	44.56	-103.56
	Antenna Polarity & Test Distance : Vertical at 3m							
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1693.00	-59.64	-13.00	-46.64	1.07 V	317	43.92	-103.56

Remarks:

1. ERP(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 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

n5, Channel Bandwidth 20MHz

Mode	TX channel 166800 (834.0MHz)	Frequency Range	1GHz ~ 10GHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

	Antenna Polarity & Test Distance : Horizontal at 3 m							
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1668.00	-59.42	-13.00	-46.42	1.34 H	258	44.15	-103.57
	Antenna Polarity & Test Distance : Vertical at 3m							
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1668.00	-59.75	-13.00	-46.75	1.33 V	358	43.82	-103.57

Remarks:

1. ERP(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 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 167300 (836.5MHz)	Frequency Range	1GHz ~ 10GHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

	Antenna Polarity & Test Distance : Horizontal at 3 m							
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1673.00	-59.60	-13.00	-46.60	1.31 H	209	43.96	-103.56
	Antenna Polarity & Test Distance : Vertical at 3m							
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1673.00	-60.21	-13.00	-47.21	2.45 V	31	43.35	-103.56

Remarks:

1. ERP(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 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 167800 (839.0MHz)	Frequency Range	1GHz ~ 10GHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

	Antenna Polarity & Test Distance : Horizontal at 3 m							
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1678.00	-58.94	-13.00	-45.94	2.66 H	300	44.63	-103.57
	Antenna Polarity & Test Distance : Vertical at 3m							
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1678.00	-59.35	-13.00	-46.35	3.00 V	25	44.22	-103.57

Remarks:

1. ERP(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 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

n26, Channel Bandwidth 5MHz

Mode	TX channel 165300 (826.5MHz)	Frequency Range	1GHz ~ 10GHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
Antenna Polarity & Test Distance : Horizontal at 3 m								
1	1653.00	-59.01	-13.00	-46.01	1.34 H	207	44.57	-103.58
Antenna Polarity & Test Distance : Vertical at 3m								
1	1653.00	-59.37	-13.00	-46.37	1.33 V	150	44.21	-103.58

Remarks:

1. ERP(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 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 167300 (836.5MHz)	Frequency Range	1GHz ~ 10GHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
Antenna Polarity & Test Distance : Horizontal at 3 m								
1	1673.00	-59.64	-13.00	-46.64	2.02 H	108	43.92	-103.56
Antenna Polarity & Test Distance : Vertical at 3m								
1	1673.00	-59.04	-13.00	-46.04	1.31 V	200	44.52	-103.56

Remarks:

1. ERP(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 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 169300 (846.5MHz)	Frequency Range	1GHz ~ 10GHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

	Antenna Polarity & Test Distance : Horizontal at 3 m							
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1693.00	-58.84	-13.00	-45.84	2.45 H	359	44.72	-103.56
	Antenna Polarity & Test Distance : Vertical at 3m							
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1693.00	-59.34	-13.00	-46.34	1.03 V	58	44.22	-103.56

Remarks:

1. ERP(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 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

n26, Channel Bandwidth 20MHz

Mode	TX channel 167300 (836.5MHz)	Frequency Range	1GHz ~ 10GHz
Environmental Conditions	25deg. C, 65%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

	Antenna Polarity & Test Distance : Horizontal at 3 m							
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1673.00	-59.71	-13.00	-46.71	1.05 H	166	43.85	-103.56
	Antenna Polarity & Test Distance : Vertical at 3m							
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1673.00	-59.13	-13.00	-46.13	1.85 V	134	44.43	-103.56

Remarks:

1. ERP(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 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – 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 and approved according to ISO/IEC 17025.

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

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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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