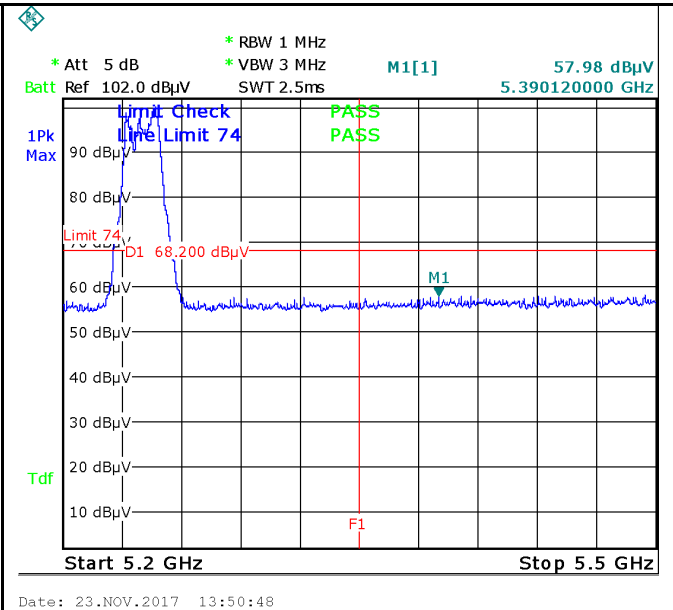
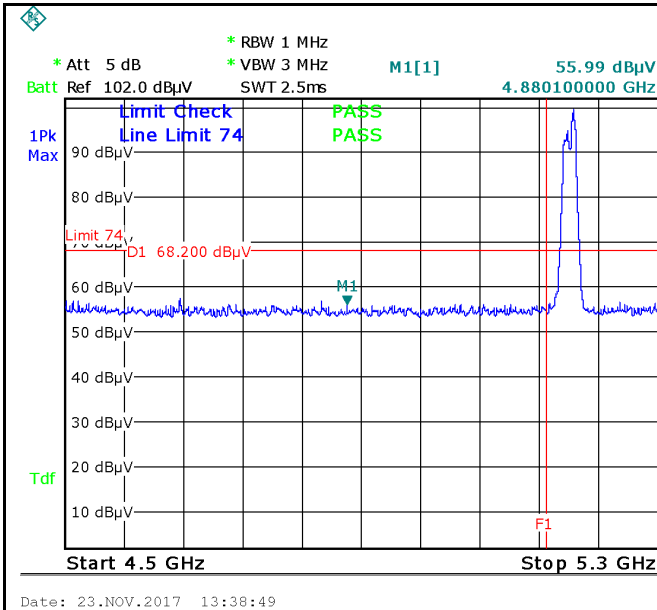


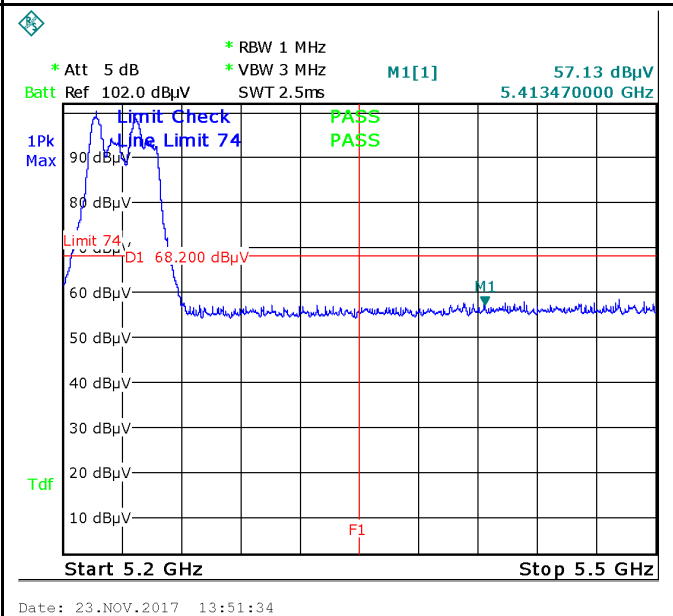
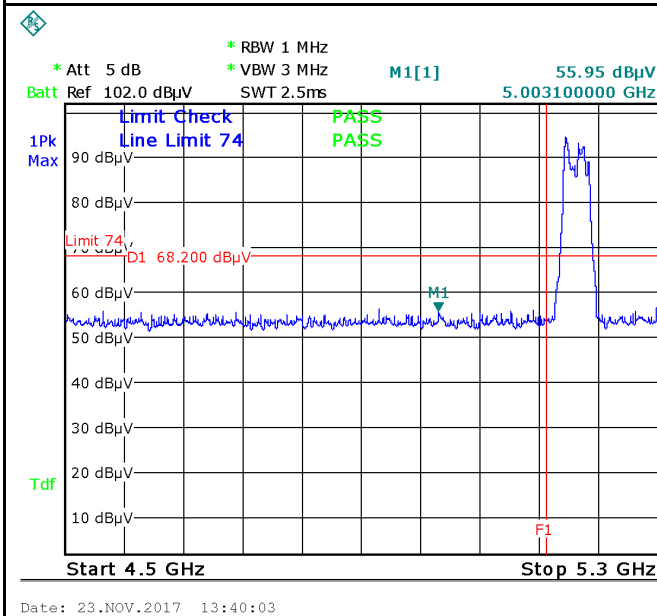


Band Edge, Left Side (Peak) - n20

Note: F1 is frequency 4500MHz;

Band Edge, Right Side (Peak) - n20

Note: F1 is frequency 5200MHz



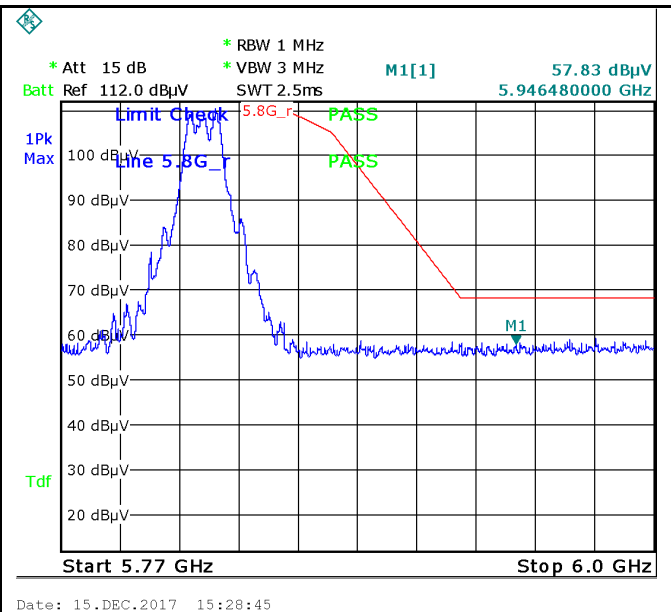
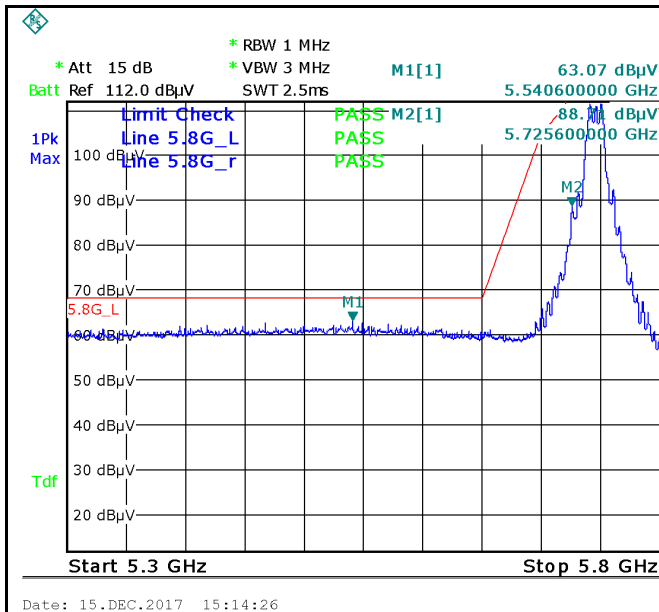
Band Edge, Left Side (Peak) - n40

Note: F1 is frequency 4500MHz;

Band Edge, Right Side (Peak) - n40

Note: F1 is frequency 5200MHz

5725-5825MHz

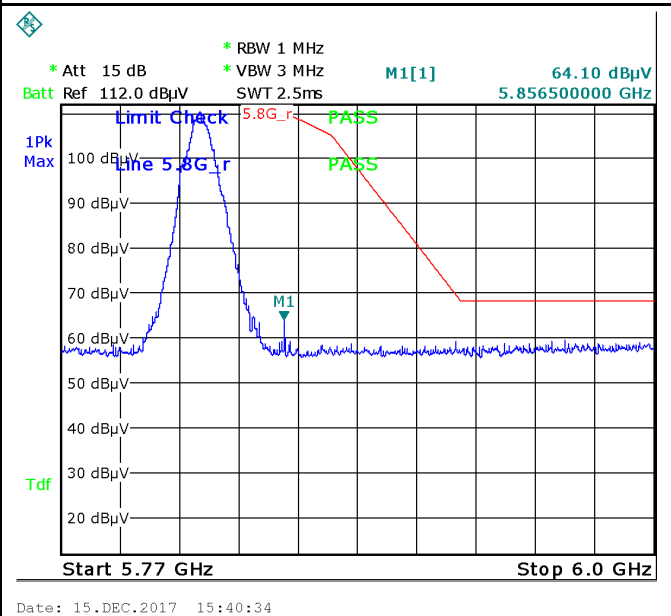
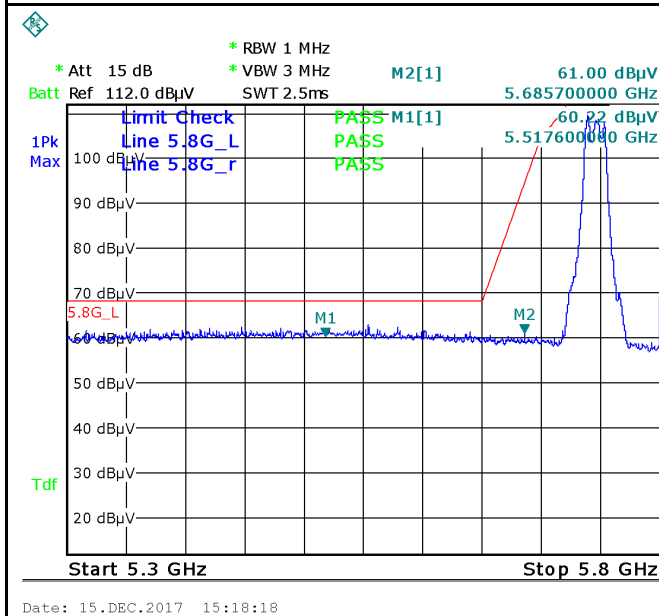


Band Edge, Left Side (Peak) - a

Note: F1 is frequency 5100MHz;

Band Edge, Right Side (Peak) - a

Note: F1 is frequency 5400MHz

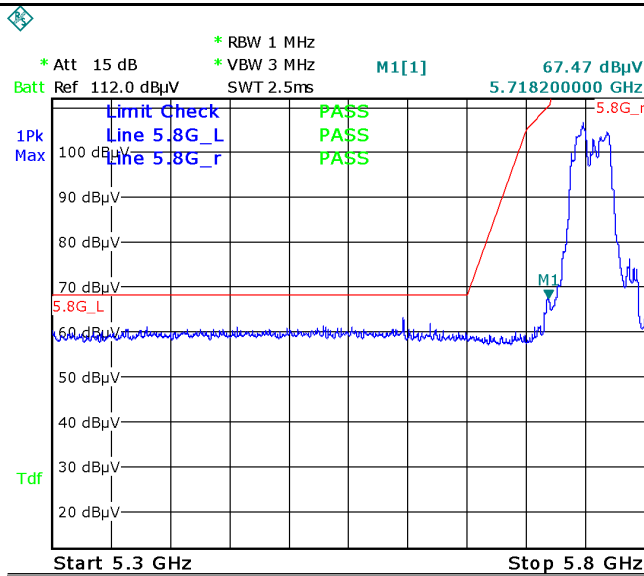


Band Edge, Left Side (Peak) - ac20

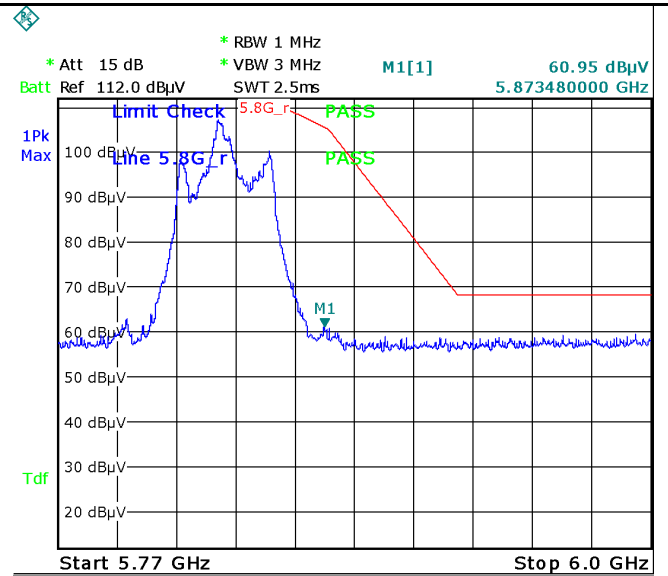
Note: F1 is frequency 5100MHz;

Band Edge, Right Side (Peak) - ac20

Note: F1 is frequency 5400MHz



Date: 15.DEC.2017 15:19:55



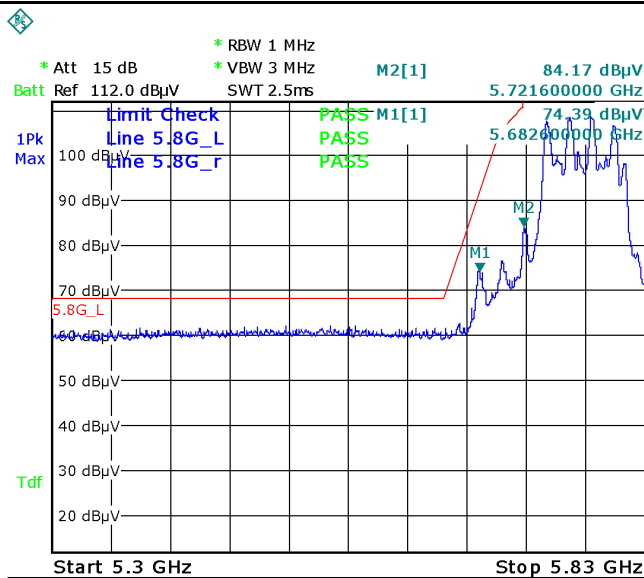
Date: 15.DEC.2017 15:34:53

Band Edge, Left Side (Peak) - ac40

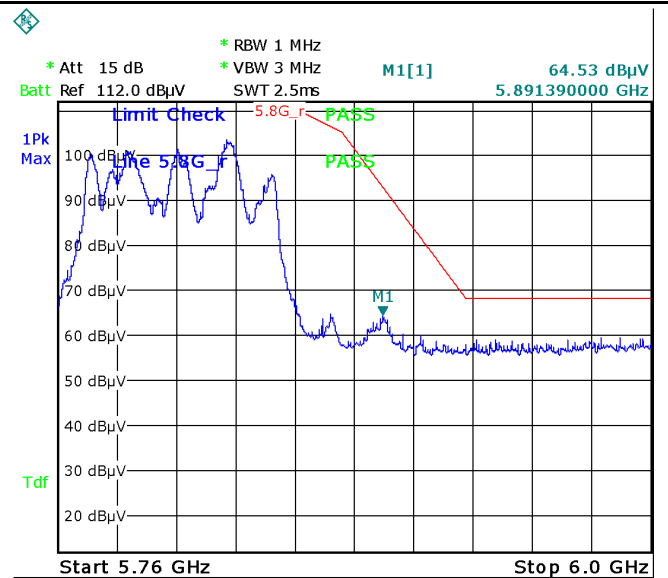
Note: F1 is frequency 5100MHz;

Band Edge, Right Side (Peak) - ac40

Note: F1 is frequency 5400MHz



Date: 15.DEC.2017 15:21:14



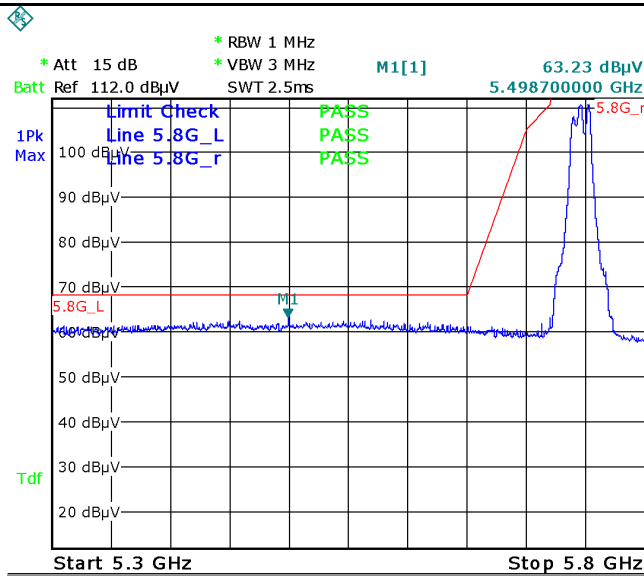
Date: 15.DEC.2017 15:49:40

Band Edge, Left Side (Peak) - ac80

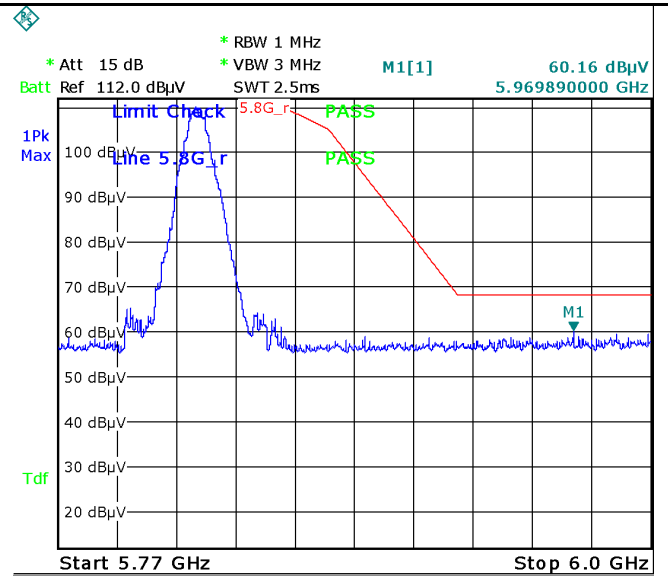
Note: F1 is frequency 5100MHz;

Band Edge, Right Side (Peak) - ac80

Note: F1 is frequency 5400MHz



Date: 15.DEC.2017 15:12:00



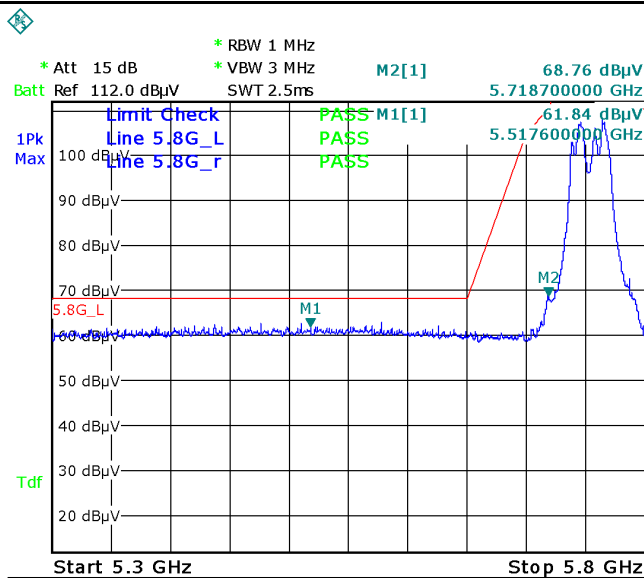
Date: 15.DEC.2017 15:31:19

Band Edge, Left Side (Peak) - n20

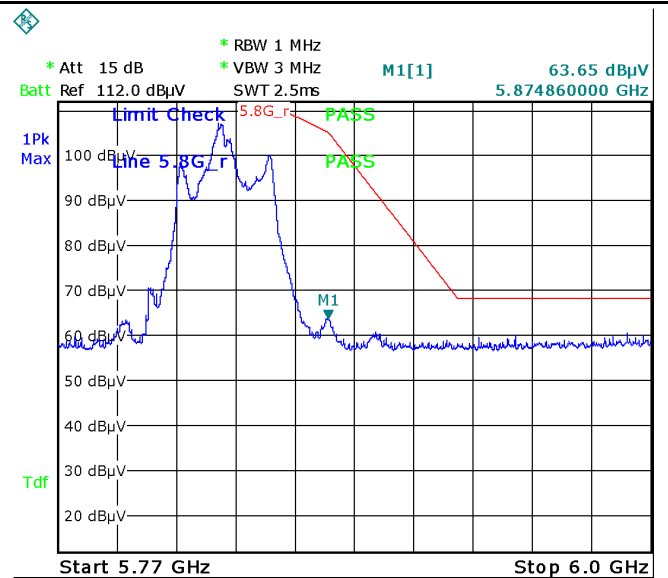
Note: F1 is frequency 5100MHz;

Band Edge, Right Side (Peak) - n20

Note: F1 is frequency 5400MHz



Date: 15.DEC.2017 15:16:41



Date: 15.DEC.2017 15:33:34

Band Edge, Left Side (Peak) - n40

Note: F1 is frequency 5100MHz;

Band Edge, Right Side (Peak) - n40

Note: F1 is frequency 5400MHz

6.7 §15.207 (a) - AC Power Line Conducted Emissions

Requirement:

Frequency of emission (MHz)	Conducted limit (dBμ V)	
	Quasi-peak	Average
0.15– 0.5	66 to 56*	56 to 46*
0.5– 5	56	46
5– 30	60	50

*Decreases with the logarithm of the frequency.

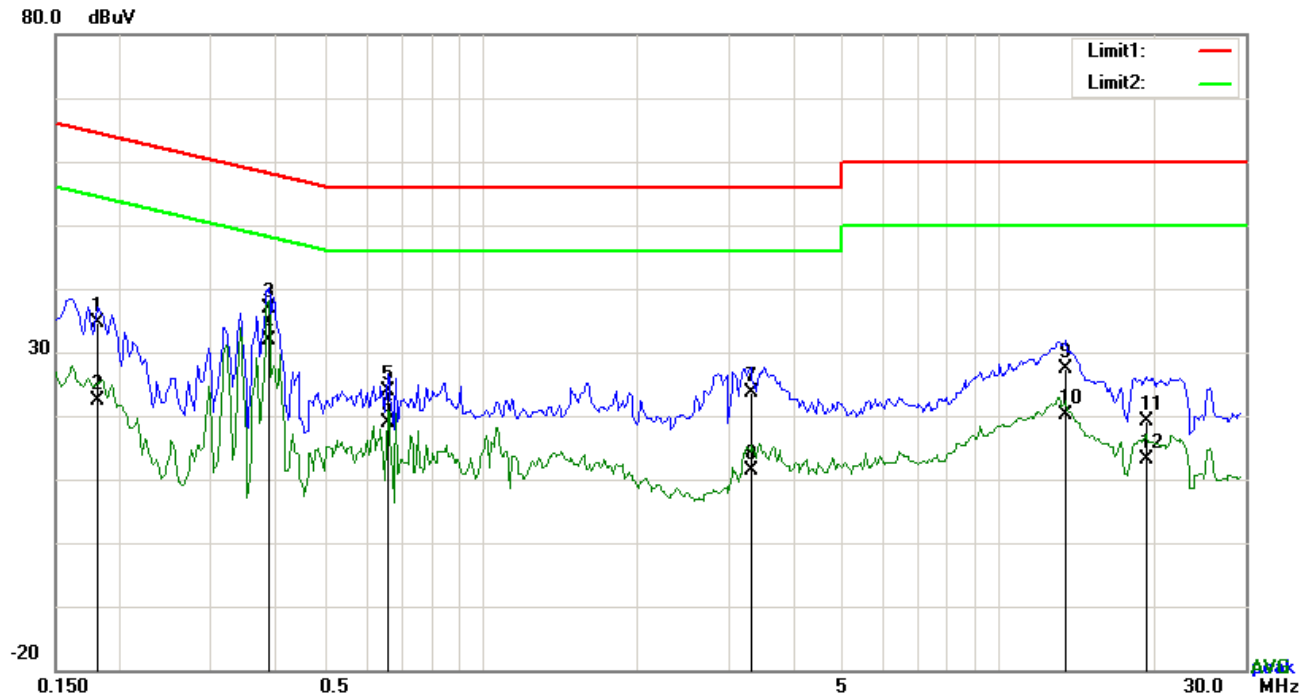
Procedures:

1. All possible modes of operation were investigated. Only the 6 worst case emissions measured, using the correct CISPR and Average detectors, are reported. All other emissions were relatively insignificant.
2. A "-ve" margin indicates a PASS as it refers to the margin present below the limit line at the particular frequency.
3. Conducted Emissions Measurement Uncertainty
All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 9kHz – 30MHz (Average & Quasi-peak) is ±3.5dB.
4. Environmental Conditions

Temperature	25°C
Relative Humidity	57%
Atmospheric Pressure	1015mbar
5. Test date : December 12, 2017
Tested By : Aaron Liang

Result: PASS

Test Mode: Transmitting Mode

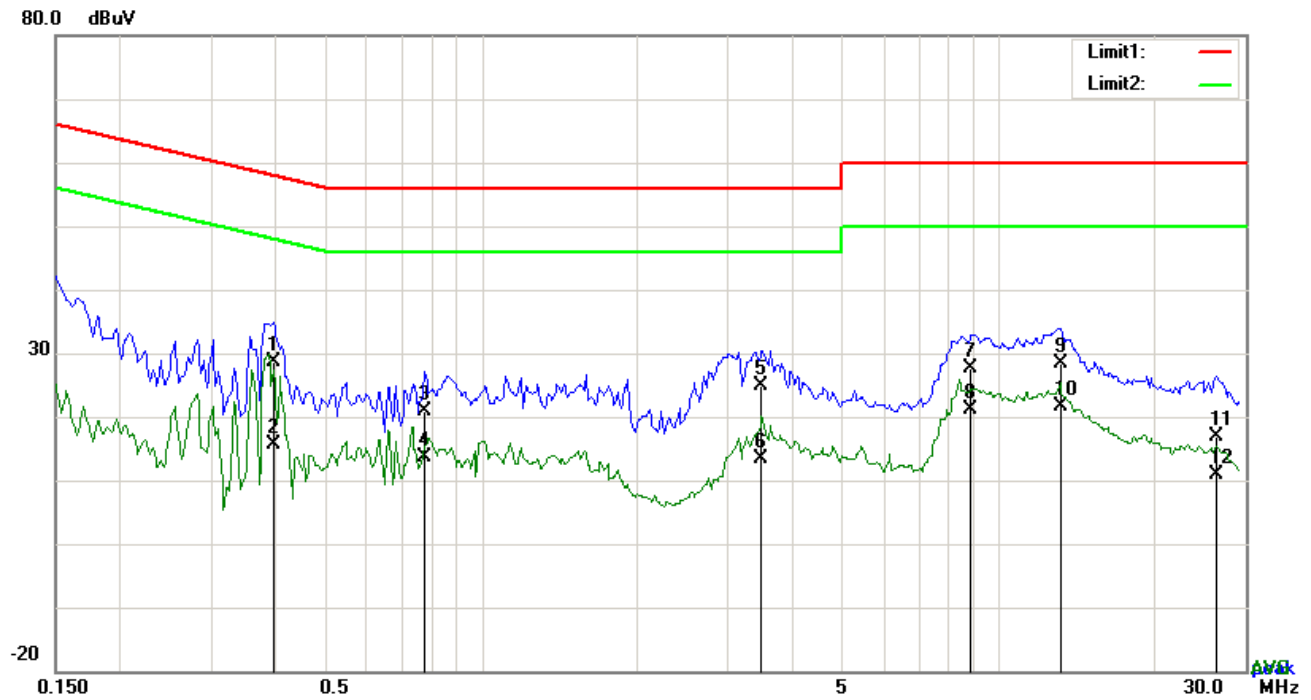


Test Data

Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)
1	L1	0.1812	24.49	QP	10.03	34.52	64.43	-29.91
2	L1	0.1812	12.27	AVG	10.03	22.30	54.43	-32.13
3	L1	0.3879	26.89	QP	10.03	36.92	58.11	-21.19
4	L1	0.3879	21.96	AVG	10.03	31.99	48.11	-16.12
5	L1	0.6609	13.82	QP	10.03	23.85	56.00	-32.15
6	L1	0.6609	8.84	AVG	10.03	18.87	46.00	-27.13
7	L1	3.3120	13.60	QP	10.06	23.66	56.00	-32.34
8	L1	3.3120	1.36	AVG	10.06	11.42	46.00	-34.58
9	L1	13.4910	17.27	QP	10.20	27.47	60.00	-32.53
10	L1	13.4910	9.96	AVG	10.20	20.16	50.00	-29.84
11	L1	19.2474	8.76	QP	10.29	19.05	60.00	-40.95
12	L1	19.2474	2.84	AVG	10.29	13.13	50.00	-36.87

Test Mode: Transmitting Mode

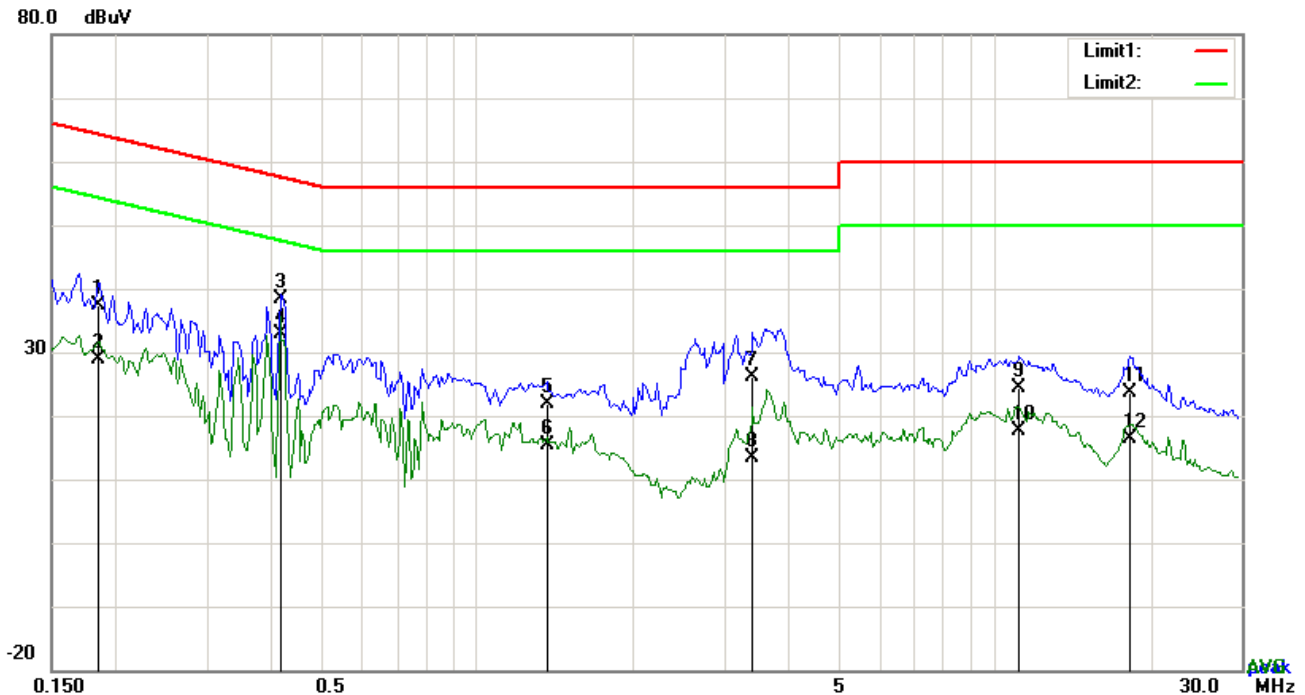


Test Data

Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)
1	N	0.3957	18.70	QP	10.03	28.73	57.94	-29.21
2	N	0.3957	5.70	AVG	10.03	15.73	47.94	-32.21
3	N	0.7779	10.83	QP	10.03	20.86	56.00	-35.14
4	N	0.7779	3.61	AVG	10.03	13.64	46.00	-32.36
5	N	3.4875	14.85	QP	10.06	24.91	56.00	-31.09
6	N	3.4875	3.40	AVG	10.06	13.46	46.00	-32.54
7	N	8.8617	17.45	QP	10.13	27.58	60.00	-32.42
8	N	8.8617	11.04	AVG	10.13	21.17	50.00	-28.83
9	N	13.1985	18.26	QP	10.20	28.46	60.00	-31.54
10	N	13.1985	11.34	AVG	10.20	21.54	50.00	-28.46
11	N	26.2986	6.44	QP	10.42	16.86	60.00	-43.14
12	N	26.2986	0.38	AVG	10.42	10.80	50.00	-39.20

Test Mode:	Transmitting Mode
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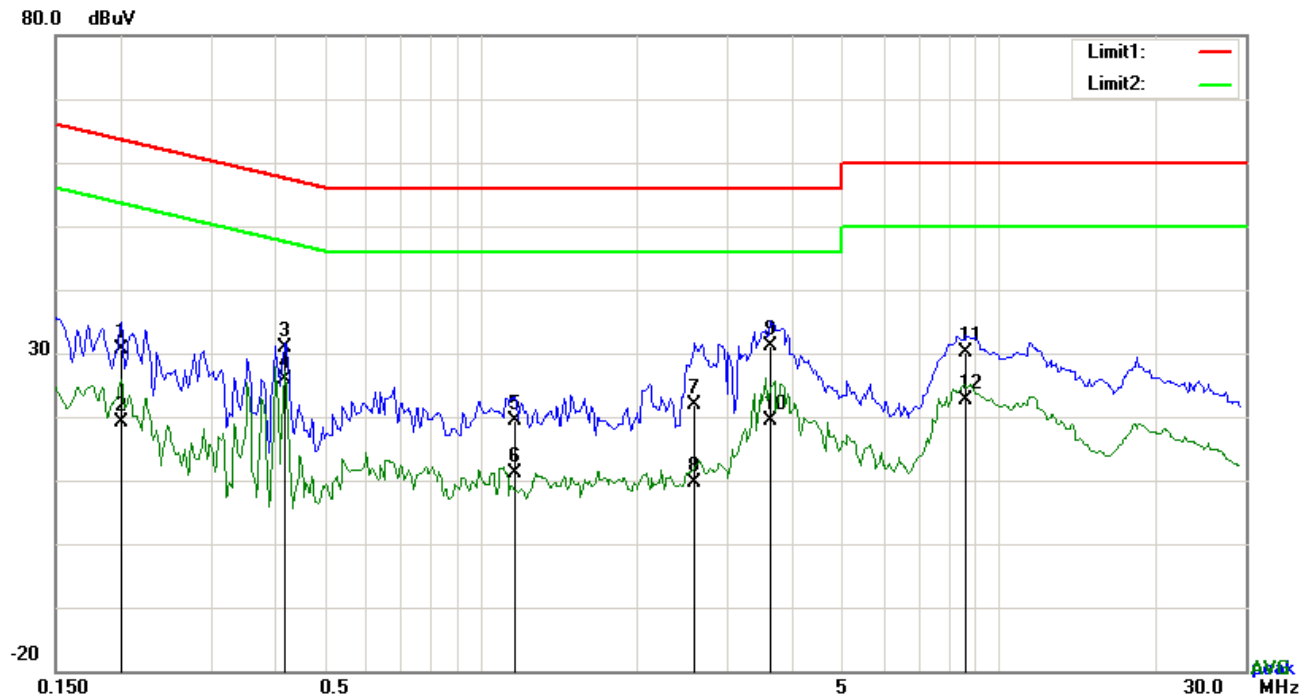


Test Data

Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)
1	L1	0.1851	27.32	QP	10.03	37.35	64.25	-26.90
2	L1	0.1851	18.93	AVG	10.03	28.96	54.25	-25.29
3	L1	0.4152	28.27	QP	10.03	38.30	57.54	-19.24
4	L1	0.4152	22.73	AVG	10.03	32.76	47.54	-14.78
5	L1	1.3629	11.97	QP	10.03	22.00	56.00	-34.00
6	L1	1.3629	5.41	AVG	10.03	15.44	46.00	-30.56
7	L1	3.4134	16.17	QP	10.06	26.23	56.00	-29.77
8	L1	3.4134	3.27	AVG	10.06	13.33	46.00	-32.67
9	L1	11.1510	14.21	QP	10.17	24.38	60.00	-35.62
10	L1	11.1510	7.56	AVG	10.17	17.73	50.00	-32.27
11	L1	18.3231	13.25	QP	10.27	23.52	60.00	-36.48
12	L1	18.3231	6.21	AVG	10.27	16.48	50.00	-33.52

Test Mode: Transmitting Mode



Test Data

Phase Neutral Plot at 240Vac, 60Hz

No.	P/L	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)
1	N	0.2007	20.49	QP	10.02	30.51	63.58	-33.07
2	N	0.2007	9.10	AVG	10.02	19.12	53.58	-34.46
3	N	0.4191	20.89	QP	10.02	30.91	57.47	-26.56
4	N	0.4191	15.96	AVG	10.02	25.98	47.47	-21.49
5	N	1.1640	9.36	QP	10.03	19.39	56.00	-36.61
6	N	1.1640	1.16	AVG	10.03	11.19	46.00	-34.81
7	N	2.5836	11.79	QP	10.05	21.84	56.00	-34.16
8	N	2.5836	-0.31	AVG	10.05	9.74	46.00	-36.26
9	N	3.6123	21.02	QP	10.06	31.08	56.00	-24.92
10	N	3.6123	9.20	AVG	10.06	19.26	46.00	-26.74
11	N	8.6589	19.92	QP	10.12	30.04	60.00	-29.96
12	N	8.6589	12.58	AVG	10.12	22.70	50.00	-27.30

6.8 §15.209, §15.205 & §15.407(b) - Radiated Spurious Emissions & Unwanted Emissions into Restricted Frequency Bands

1. All possible modes of operation were investigated. Only the 6 worst case emissions measured, using the correct CISPR detectors, are reported. All other emissions were relatively insignificant.
2. A "-ve" margin indicates a PASS as it refers to the margin present below the limit line at the particular frequency.
3. Radiated Emissions Measurement Uncertainty
All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 30MHz – 1GHz & 1GHz above (3m & 10m) is +/-6dB.
4. Environmental Conditions Temperature 25°C
 Relative Humidity 57%
 Atmospheric Pressure 1015mbar
5. Test date : December 07, 2017
Tested By : Aaron Liang

Requirement: §15.407(b) specifies that emissions which fall in the restricted bands, as defined in §15.205(a), must comply with the radiated emission limits specified in §15.209(a).

Procedures:

Radiated Spurious Emissions Measurement

An additional consideration when performing conducted measurements of restricted band emissions is that unwanted emissions radiating from the EUT cabinet, control circuits, power leads, or intermediate circuit elements will likely go undetected in a conducted measurement configuration. To address this concern, a radiated test shall be performed to ensure that emissions emanating from the EUT cabinet (rather than the antenna port) also comply with the applicable limits.

For these radiated spurious emission measurements the EUT transmit antenna may be replaced with a termination matching the nominal impedance of the antenna. Established procedures for performing radiated measurements shall be used (see C63.10). All detected emissions must comply with the applicable limits.

Measurement Detectors

§15.35(a) specifies that on frequencies less than and below 1000 MHz, the radiated emissions limits assume the use of a CISPR quasi-peak detector function and related measurement bandwidths. §15.35(b) specifies that on frequencies above 1000 MHz, the radiated emissions limits assume the use of an average detector and a minimum resolution bandwidth of 1 MHz. In addition, §15.35(b) that when average radiated emissions measurements are specified there is also a limit on the peak emissions level which is 20 dB above the applicable maximum permitted average emission limit. These specifications also apply to conducted emissions measurements.

1. CISPR Quasi-Peak Measurement

The specifications for the measuring instrument using the CISPR quasi-peak detector can be found in Publication 16 of the International Special Committee on Radio Frequency Interference (CISPR) of the International Electrotechnical Commission.

As an alternative to CISPR quasi-peak measurement, compliance can be demonstrated to the applicable emission limits using a peak detector.

2. Peak Power Measurement Procedure

Utilize the peak power measurement procedure specified in Section 8.1.1 with the following modifications:

Set analyzer center frequency to the frequency associated with the restricted band emission under examination.

Set RBW = 1 MHz.

Note that if the peak measured value complies with the average limit, it is not necessary to perform a separate average measurement. If this option is exercised, it should be so noted in the test report.

3. Average Power Measurement Procedures

The average restricted band emission levels must be measured with the EUT transmitting continuously ($\geq 98\%$ duty cycle) at its maximum power control level. Optionally, video triggering/signal gating can be used to ensure that measurements are performed only when the EUT is transmitting at its maximum power control level.

The average power measurement procedures described in Section 8.2 shall be used with the following modifications:

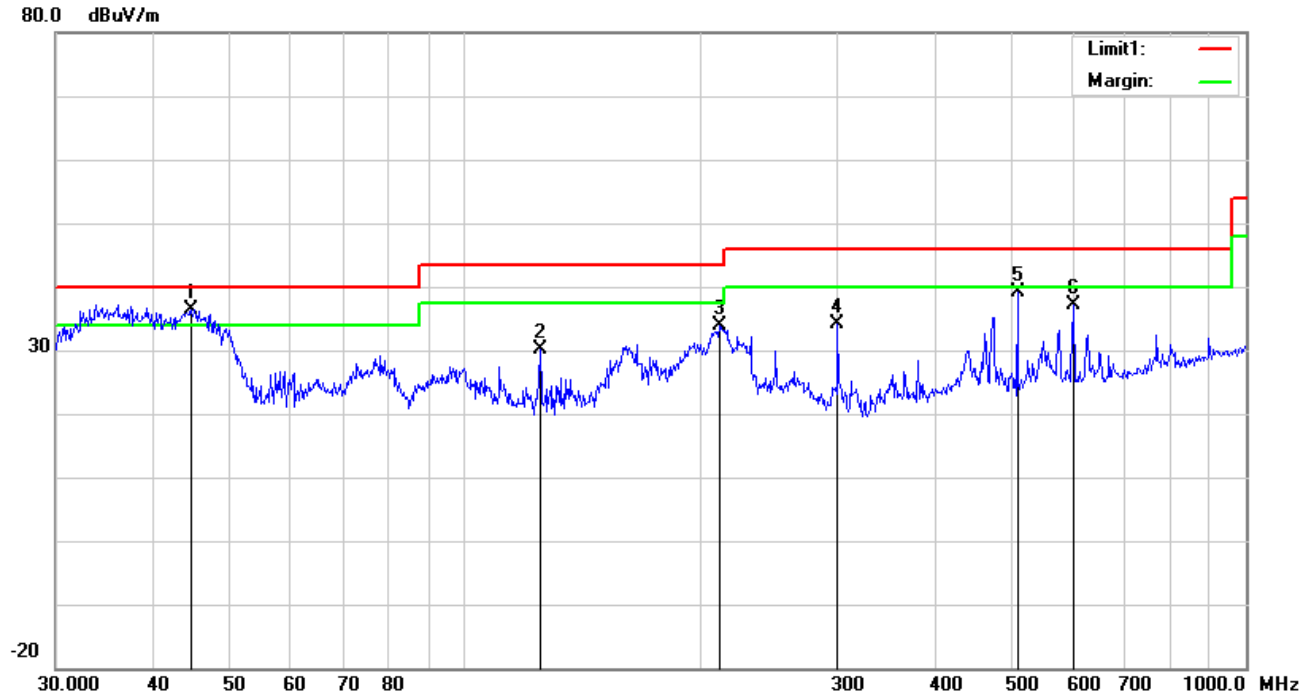
Set analyzer center frequency to the frequency associated with the restricted band emission.

Set span to at least 1 MHz.

Use peak marker function to determine the highest amplitude within the RBW (1 MHz).

Test Mode: Transmitting Mode

(Below 1GHz)

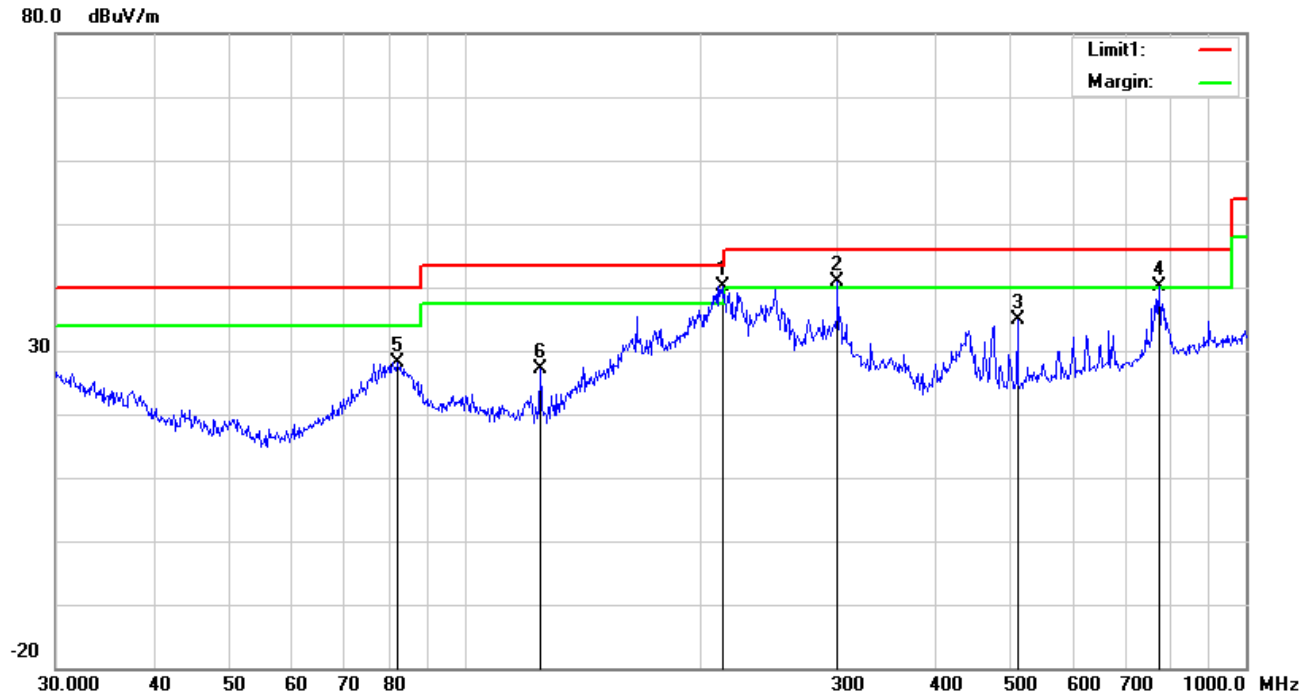


Test Data

Vertical Polarity Plot @3m

No.	Frequency	Reading	Detect or	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degree
	(MHz)	(dBuV/m)		(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	()
1	44.7434	46.25	QP	10.77	22.29	0.75	35.48	40.00	-4.52	100	127
2	125.0066	37.68	peak	13.57	22.37	1.18	30.06	43.50	-13.44	100	45
3	212.2695	42.61	peak	11.93	22.36	1.58	33.76	43.50	-9.74	100	223
4	300.3673	41.08	peak	13.61	22.29	1.79	34.19	46.00	-11.81	100	114
5	510.0436	40.62	peak	17.84	21.79	2.43	39.10	46.00	-6.90	100	252
6	601.4265	37.17	peak	19.12	21.58	2.49	37.20	46.00	-8.80	100	322

(Below 1GHz)



Test Data

Horizontal Polarity Plot @3m

No.	Frequency	Reading	Detector	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degree
	(MHz)	(dBuV/m)		(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	()
1	213.7634	47.91	QP	11.91	22.36	1.58	39.04	43.50	-4.46	100	159
2	300.3673	47.83	QP	13.61	22.29	1.79	40.94	46.00	-5.06	100	307
3	510.0436	36.36	peak	17.84	21.79	2.43	34.84	46.00	-11.16	100	44
4	774.1584	37.44	QP	21.09	21.20	2.91	40.24	46.00	-5.76	100	312
5	82.0706	41.83	peak	7.68	22.40	1.06	28.17	40.00	-11.83	100	190
6	125.0066	34.65	peak	13.57	22.37	1.18	27.03	43.50	-16.47	100	337

Above 1GHz

5150-5250MHz

Test Mode:	Transmitting Mode
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Low Channel (5180 MHz-a mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10416	44.09	AV	V	39.7	45.01	11.13	49.91	54	-4.09
10560	43.52	AV	H	39.71	45.24	11.18	49.17	54	-4.83
10416	52.71	PK	V	39.7	45.01	11.13	58.53	74	-15.47
10560	50.87	PK	H	39.71	45.24	11.18	56.52	74	-17.48
5189.446	54.83	AV	V	34.02	45.65	8.07	51.27	54	-2.73
3840.534	53.51	AV	H	31.44	48.97	6.64	42.62	54	-11.38
5189.446	64.27	PK	V	34.02	45.65	8.07	60.71	74	-13.29
3840.534	59.18	PK	H	31.44	48.97	6.64	48.29	74	-25.71

Middle Channel (5200 MHz-a mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10440	-26.57	AV	V	39.92	10.54	47.02	49.83	54	-4.17
10440	-28.02	AV	H	39.92	10.54	47.02	48.38	54	-5.62
10440	-20.41	PK	V	39.92	10.54	47.02	55.99	74	-18.01
10440	-21.26	PK	H	39.92	10.54	47.02	55.14	74	-18.86
3840.534	53.45	AV	V	31.44	48.97	6.64	42.56	54	-7.08
1019.905	61.58	AV	H	24.33	48.23	3.4	41.08	54	-16.72
3840.534	58.9	PK	V	31.44	48.97	6.64	48.01	74	-19.95
1019.905	64.25	PK	H	24.33	48.23	3.4	43.75	74	-31.69

High Channel (5240 MHz-a mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10416	43.69	AV	V	39.7	45.01	11.13	49.51	54	-4.49
10344	43.98	AV	H	39.67	44.8	11.09	49.94	54	-4.06
10416	53.96	PK	V	39.7	45.01	11.13	59.78	74	-14.22
10344	50.7	PK	H	39.67	44.8	11.09	56.66	74	-17.34
17843.125	-25.22	AV	V	42.77	16.95	47	47.6	54	-6.4
17843.432	-35.83	AV	H	42.77	16.95	47	36.99	54	-17.01
17843.125	-18.42	PK	V	42.77	16.95	47	54.4	74	-19.6
17843.432	-30.96	PK	H	42.77	16.95	47	41.86	74	-32.14

Note:

- 1, The testing has been conformed to 40GHz;
- 2, All other emissions more than 30 dB below the limit
- 3, The radiated spurious test above 18GHz is subcontracted to "BV 7LAYERS COMMUNICATION TRCHNOLOGY(SHENZHEN)CO.,LTD" Laboratories. and found 30dB below the limit at least.

Test Mode:	Transmitting Mode
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Low Channel (5180 MHz-ac20 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10416	42.45	AV	V	39.7	45.01	11.13	48.27	54	-5.73
10476	43.92	AV	H	39.72	45.19	11.17	49.62	54	-4.38
10416	52.55	PK	V	39.7	45.01	11.13	58.37	74	-15.63
10476	50.91	PK	H	39.72	45.19	11.17	56.61	74	-17.39
5515.414	49.69	AV	V	34.26	46.09	9.39	47.25	54	-6.75
5525.306	49.8	AV	H	34.27	46.14	9.39	47.32	54	-6.68
5515.414	57.98	PK	V	34.26	46.09	9.39	55.54	74	-18.46
5525.306	57.31	PK	H	34.27	46.14	9.39	54.83	74	-19.17

Middle Channel (5200 MHz-ac20 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10440	-28.35	AV	V	39.92	10.54	47.02	48.05	54	-5.95
10440	-28.77	AV	H	39.92	10.54	47.02	47.63	54	-6.37
10440	-20.66	PK	V	39.92	10.54	47.02	55.74	74	-18.26
10440	-20.69	PK	H	39.92	10.54	47.02	55.71	74	-18.29
3840.534	57.45	AV	V	31.44	48.97	6.64	46.56	54	-5.73
1393.022	58.32	AV	H	25.25	48.31	3.99	39.25	54	-17.27
3840.534	62.55	PK	V	31.44	48.97	6.64	51.66	74	-18.88
1393.022	59.94	PK	H	25.25	48.31	3.99	40.87	74	-31.67

High Channel (5240 MHz-ac20 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10416	42.66	AV	V	39.7	45.01	11.13	48.48	54	-5.52
10320	44.63	AV	H	39.67	44.73	11.07	50.64	54	-3.36
10416	52.99	PK	V	39.7	45.01	11.13	58.81	74	-15.19
10320	50.21	PK	H	39.67	44.73	11.07	56.22	74	-17.78
17843	-25.8	AV	V	42.77	16.95	47	47.02	54	-6.98
17843	-35.02	AV	H	42.77	16.95	47	37.8	54	-16.2
17843	-18.41	PK	V	42.77	16.95	47	54.41	74	-19.59
17843	-30.81	PK	H	42.77	16.95	47	42.01	74	-31.99

Note:

- 1, The testing has been conformed to 40GHz;
- 2, All other emissions more than 30 dB below the limit
- 3, The radiated spurious test above 18GHz is subcontracted to "BV 7LAYERS COMMUNICATION TECHNOLOGY(SHENZHEN)CO.,LTD" Laboratories. and found 30dB below the limit at least.

Test Mode:	Transmitting Mode
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Low Channel (5190 MHz-ac40 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10416	44.79	AV	V	39.7	45.01	11.13	50.61	54	-3.39
10512	44.62	AV	H	39.73	45.26	11.18	50.27	54	-3.73
10416	52.23	PK	V	39.7	45.01	11.13	58.05	74	-15.95
10512	51.18	PK	H	39.73	45.26	11.18	56.83	74	-17.17
5535.214	51.77	AV	V	34.28	46.18	9.4	49.27	54	-4.73
2423.297	52.23	AV	H	29.04	48.11	5.21	38.37	54	-15.63
5535.214	59.08	PK	V	34.28	46.18	9.4	56.58	74	-17.42
2423.297	58.19	PK	H	29.04	48.11	5.21	44.33	74	-29.67

Middle Channel (5230 MHz-ac40 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10440	-26.98	AV	V	39.92	10.54	47.02	49.42	54	-4.58
10440	-28.35	AV	H	39.92	10.54	47.02	48.05	54	-5.95
10440	-18.62	PK	V	39.92	10.54	47.02	57.78	74	-16.22
10440	-21.96	PK	H	39.92	10.54	47.02	54.44	74	-19.56
5189.446	52.36	AV	V	34.02	45.65	8.07	48.8	54	-5.2
3840.534	46.81	AV	H	31.44	48.97	6.64	35.92	54	-18.08
5189.446	60.02	PK	V	34.02	45.65	8.07	56.46	74	-17.54
3840.534	54.54	PK	H	31.44	48.97	6.64	43.65	74	-30.35

High Channel (5250 MHz-a mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10416	44.82	AV	V	39.7	45.01	11.13	50.64	54	-3.36
10524	44.73	AV	H	39.72	45.25	11.18	50.38	54	-3.62
10416	53.46	PK	V	39.7	45.01	11.13	59.28	74	-14.72
10524	50.86	PK	H	39.72	45.25	11.18	56.51	74	-17.49
17843	-25.68	AV	V	42.77	16.95	47	47.14	54	-6.86
17843	-35.27	AV	H	42.77	16.95	47	37.55	54	-16.45
17843	-18.05	PK	V	42.77	16.95	47	54.77	74	-19.23
17843	-30.7	PK	H	42.77	16.95	47	42.12	74	-31.88

Note:

- 1, The testing has been conformed to 40GHz;
- 2, All other emissions more than 30 dB below the limit
- 3, The radiated spurious test above 18GHz is subcontracted to "BV 7LAYERS COMMUNICATION TECHNOLOGY(SHENZHEN)CO.,LTD" Laboratories. and found 30dB below the limit at least.

Test Mode:	Transmitting Mode
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Low Channel (5210 MHz-ac80 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10416	42.66	AV	V	39.7	45.01	11.13	48.48	54	-5.52
10392	42.38	AV	H	39.69	44.94	11.12	48.25	54	-5.75
10416	51.96	PK	V	39.7	45.01	11.13	57.78	74	-16.22
10392	50.72	PK	H	39.69	44.94	11.12	56.59	74	-17.41
2543.412	51.07	AV	V	34.26	46.09	9.39	48.63	54	-5.37
5515.414	50.7	AV	H	34.24	46	9.35	48.29	54	-5.71
2543.412	58.57	PK	V	29.28	48.18	5.34	45.01	74	-28.99
5515.414	58.75	PK	H	34.26	46.09	9.39	56.31	74	-17.69

Middle Channel (5250 MHz-ac80 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10435	-29.05	AV	V	39.92	10.54	47.02	47.35	54	-6.65
10442	-28.92	AV	H	39.92	10.54	47.02	47.48	54	-6.52
10435	-16.75	PK	V	39.92	10.54	47.02	59.65	74	-14.35
10442	-18.09	PK	H	39.92	10.54	47.02	58.31	74	-15.69
5189.446	52.93	AV	V	34.02	45.65	8.07	49.37	54	-7.02
5495.685	50.7	AV	H	34.24	46	9.35	48.29	54	-7.82
5189.446	61.92	PK	V	34.02	45.65	8.07	58.36	74	-27.6
5495.685	58.06	PK	H	34.24	46	9.35	55.65	74	-16.84

High Channel (5270 MHz-ac80 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10416	43.96	AV	V	39.7	45.01	11.13	49.78	54	-4.22
10476	43.78	AV	H	39.72	45.19	11.17	49.48	54	-4.52
10416	52.71	PK	V	39.7	45.01	11.13	58.53	74	-15.47
10476	50.99	PK	H	39.72	45.19	11.17	56.69	74	-17.31
17843	-25.61	AV	V	42.77	16.95	47	47.21	54	-6.79
17843	-35.67	AV	H	42.77	16.95	47	37.15	54	-16.85
17843	-18.64	PK	V	42.77	16.95	47	54.18	74	-19.82
17843	-30.62	PK	H	42.77	16.95	47	42.2	74	-31.8

Note:

- 1, The testing has been conformed to 40GHz;
- 2, All other emissions more than 30 dB below the limit
- 3, The radiated spurious test above 18GHz is subcontracted to "BV 7LAYERS COMMUNICATION TECHNOLOGY(SHENZHEN)CO.,LTD" Laboratories. and found 30dB below the limit at least.

Test Mode:	Transmitting Mode
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Low Channel (5180 MHz-n20 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10416	42.42	AV	V	39.7	45.01	11.13	48.24	54	-5.76
10476	44.54	AV	H	39.72	45.19	11.17	50.24	54	-3.76
10416	52.84	PK	V	39.7	45.01	11.13	58.66	74	-15.34
10476	50.72	PK	H	39.72	45.19	11.17	56.42	74	-17.58
5189.446	52.93	AV	V	34.02	45.65	8.07	49.37	54	-4.63
5495.685	50.7	AV	H	34.24	46	9.35	48.29	54	-5.71
5189.446	61.92	PK	V	34.02	45.65	8.07	58.36	74	-15.64
5495.685	58.06	PK	H	34.24	46	9.35	55.65	74	-18.35

Middle Channel (5200 MHz-n20 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10440	-27.04	AV	V	39.92	10.54	47.02	49.36	54	-4.64
10440	-27.66	AV	H	39.92	10.54	47.02	48.74	54	-5.26
10440	-20.48	PK	V	39.92	10.54	47.02	55.92	74	-18.08
10440	-21.26	PK	H	39.92	10.54	47.02	55.14	74	-18.86
3840.534	56.1	AV	V	31.44	48.97	6.64	45.21	54	-7.19
3840.534	54.45	AV	H	31.44	48.97	6.64	43.56	54	-16.81
3840.534	62.61	PK	V	31.44	48.97	6.64	51.72	74	-19.76
3840.534	61.28	PK	H	31.44	48.97	6.64	50.39	74	-32.08

High Channel (5240 MHz-n20 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10416	45.36	AV	V	38.7	45.01	11.13	50.18	54	-3.82
10440	46.41	AV	H	37.71	45.08	11.14	50.18	54	-3.82
10416	52.98	PK	V	39.7	45.01	11.13	58.8	74	-15.2
10440	51.51	PK	H	39.71	45.08	11.14	57.28	74	-16.72
17843	-26.08	AV	V	42.77	16.95	47	46.74	54	-7.26
17843	-35.57	AV	H	42.77	16.95	47	37.25	54	-16.75
17843	-18.71	PK	V	42.77	16.95	47	54.11	74	-19.89
17843	-30.64	PK	H	42.77	16.95	47	42.18	74	-31.82

Note:

- 1, The testing has been conformed to 40GHz;
- 2, All other emissions more than 30 dB below the limit
- 3, The radiated spurious test above 18GHz is subcontracted to "BV 7LAYERS COMMUNICATION TECHNOLOGY(SHENZHEN)CO.,LTD" Laboratories. and found 30dB below the limit at least.

Test Mode:	Transmitting Mode
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Low Channel (5190 MHz-n40 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10416	44.45	AV	V	39.7	45.01	11.13	50.27	54	-3.73
10308	43.36	AV	H	39.66	44.7	11.06	49.38	54	-4.62
10416	52.96	PK	V	39.7	45.01	11.13	58.78	74	-15.22
10308	50.49	PK	H	39.66	44.7	11.06	56.51	74	-17.49
5189.446	52.83	AV	V	34.02	45.65	8.07	49.27	54	-4.73
5535.214	49.09	AV	H	34.28	46.18	9.4	46.59	54	-7.41
5189.446	60.3	PK	V	34.02	45.65	8.07	56.74	74	-17.26
5535.214	58.38	PK	H	34.28	46.18	9.4	55.88	74	-18.12

Middle Channel (5230 MHz-n40 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10440	-28.61	AV	V	39.92	10.54	47.02	47.79	54	-6.21
10440	-29.08	AV	H	39.92	10.54	47.02	47.32	54	-6.68
10440	-17.87	PK	V	39.92	10.54	47.02	58.53	74	-15.47
10440	-19.31	PK	H	39.92	10.54	47.02	57.09	74	-16.91
9946.127	-32.45	AV	V	39.79	10.46	48.48	45.36	54	-8.64
9946.548	-39.24	AV	H	39.79	10.46	48.48	38.57	54	-15.43
9946.127	-21.12	PK	V	39.79	10.46	48.48	56.69	74	-17.31
9946.548	-33.4	PK	H	39.79	10.46	48.48	44.41	74	-29.59

High Channel (5250 MHz-n40 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10416	47.99	AV	V	37.7	45.01	11.13	51.81	52	-4.19
10392	43.75	AV	H	39.69	44.94	11.12	49.62	54	-4.38
10416	54.14	PK	V	39.7	45.01	11.13	59.96	74	-14.04
10392	50.43	PK	H	39.69	44.94	11.12	56.3	74	-17.7
17843	-26.17	AV	V	42.77	16.95	47	46.65	54	-7.35
17843	-34.97	AV	H	42.77	16.95	47	37.85	54	-16.15
17843	-19.18	PK	V	42.77	16.95	47	53.64	74	-20.36
17843	-29.93	PK	H	42.77	16.95	47	42.89	74	-31.11

Above 1GHz

5725-5825MHz

Test Mode:	Transmitting Mode
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Low Channel (5745 MHz-a mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11532	39.73	AV	V	39.92	43.56	11.78	47.87	54	-6.13
11580	40.52	AV	H	39.91	43.66	11.8	48.57	54	-5.43
11532	50.97	PK	V	39.91	43.75	11.83	58.96	74	-15.04
11580	50.84	PK	H	39.92	43.56	11.78	58.98	74	-15.02
3840.534	52.76	AV	V	31.44	48.97	6.64	41.87	54	-12.13
4002.11	51.23	AV	H	31.76	48.55	6.77	41.21	54	-12.79
3840.534	59.9	PK	V	31.44	48.97	6.64	49.01	74	-24.99
4002.11	57.95	PK	H	31.76	48.55	6.77	47.93	74	-26.07

Middle Channel (5785 MHz-a mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11540	-29.9	AV	V	39.92	10.54	47.02	46.5	54	-7.5
11540	-27.79	AV	H	39.92	10.54	47.02	48.61	54	-5.39
11540	-20.84	PK	V	39.92	10.54	47.02	55.56	74	-18.44
11540	-22.39	PK	H	39.92	10.54	47.02	54.01	74	-19.99
3840.534	55.75	AV	V	31.44	48.97	6.64	44.86	54	-11.51
3840.534	53.02	AV	H	31.44	48.97	6.64	42.13	54	-18.31
3840.534	62.01	PK	V	31.44	48.97	6.64	51.12	74	-24.76
3840.534	60.08	PK	H	31.44	48.97	6.64	49.19	74	-36.68

High Channel (5825 MHz-a mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11640	-28.29	AV	V	39.67	10.56	47.04	47.86	54	-6.14
11640	-32.16	AV	H	39.67	10.56	47.04	43.99	54	-10.01
11640	-24.53	PK	V	39.67	10.56	47.04	51.62	74	-22.38
11640	-21.58	PK	H	39.67	10.56	47.04	54.57	74	-19.43
17843	-25.65	AV	V	42.77	16.95	47	47.17	54	-6.83
17843	-38.7	AV	H	42.77	16.95	47	34.12	54	-19.88
17843	-23.25	PK	V	42.77	16.95	47	49.57	74	-24.43
17843	-31.78	PK	H	42.77	16.95	47	41.04	74	-32.96

Note:

- 1, The testing has been conformed to 40GHz;
- 2, All other emissions more than 30 dB below the limit
- 3, The radiated spurious test above 18GHz is subcontracted to "BV 7LAYERS COMMUNICATION TRCHNOLOGY(SHENZHEN)CO.,LTD" Laboratories. and found 30dB below the limit at least.

Test Mode:	Transmitting Mode
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Low Channel (5745 MHz-ac20 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11520	40.38	AV	V	39.93	43.54	11.77	48.54	54	-5.46
11448	39.59	AV	H	39.88	43.66	11.7	47.51	54	-6.49
11520	50.7	PK	V	39.93	43.54	11.77	58.86	74	-15.14
11448	50.8	PK	H	39.88	43.66	11.7	58.72	74	-15.28
5505.541	53.06	AV	V	34.25	46.04	9.38	50.65	54	-3.35
5757.763	52.41	AV	H	34.52	47.28	9.62	49.27	54	-4.73
5505.541	57.9	PK	V	34.25	46.04	9.38	55.49	74	-18.51
5757.763	61.33	PK	H	34.52	47.28	9.62	58.19	74	-15.81

Middle Channel (5785 MHz-ac20 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11640	-31.23	AV	V	39.92	10.54	47.02	45.17	54	-8.83
11640	-29.51	AV	H	39.92	10.54	47.02	46.89	54	-7.11
11640	-23.01	PK	V	39.92	10.54	47.02	53.39	74	-20.61
11640	-22.27	PK	H	39.92	10.54	47.02	54.13	74	-19.87
9946	-35.19	AV	V	39.79	10.46	48.48	42.62	54	-11.38
9946	-44.48	AV	H	39.79	10.46	48.48	33.33	54	-20.67
9946	-25.96	PK	V	39.79	10.46	48.48	51.85	74	-22.15
9946	-37.1	PK	H	39.79	10.46	48.48	40.71	74	-33.29

High Channel (5825 MHz-ac20 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11680	-28.19	AV	V	39.67	10.56	47.04	47.96	54	-6.04
11680	-29.76	AV	H	39.67	10.56	47.04	46.39	54	-7.61
11680	-22.4	PK	V	39.67	10.56	47.04	53.75	74	-20.25
11680	-23.06	PK	H	39.67	10.56	47.04	53.09	74	-20.91
17843	-27.94	AV	V	42.77	16.95	47	44.88	54	-9.12
17843	-38.04	AV	H	42.77	16.95	47	34.78	54	-19.22
17843	-19.69	PK	V	42.77	16.95	47	53.13	74	-20.87
17843	-30.2	PK	H	42.77	16.95	47	42.62	74	-31.38

Note:

- 1, The testing has been conformed to 40GHz;
- 2, All other emissions more than 30 dB below the limit
- 3, The radiated spurious test above 18GHz is subcontracted to "BV 7LAYERS COMMUNICATION TECHNOLOGY(SHENZHEN)CO.,LTD" Laboratories. and found 30dB below the limit at least.

Test Mode:	Transmitting Mode
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Low Channel (5755 MHz-ac40 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11508	38.61	AV	V	39.93	43.52	11.76	46.78	54	-7.22
11532	40.07	AV	H	39.92	43.56	11.78	48.21	54	-5.79
11508	50.9	PK	V	39.93	43.52	11.76	59.07	74	-14.93
11532	50.96	PK	H	39.92	43.56	11.78	59.1	74	-14.9
5485.847	53.12	AV	V	34.23	45.99	9.31	50.67	54	-3.33
5757.763	54.39	AV	H	34.52	47.28	9.62	51.25	54	-2.75
5485.847	58.97	PK	V	34.23	45.99	9.31	56.52	74	-17.48
5757.763	60.08	PK	H	34.52	47.28	9.62	56.94	74	-17.06

Middle Channel (5795 MHz-ac40 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11540	-26.7	AV	V	39.92	10.54	47.02	49.7	54	-4.3
11540	-28.16	AV	H	39.92	10.54	47.02	48.24	54	-5.76
11540	-20.82	PK	V	39.92	10.54	47.02	55.58	74	-18.42
11540	-21.36	PK	H	39.92	10.54	47.02	55.04	74	-18.96
3840.534	56.1	AV	V	31.44	48.97	6.64	45.21	54	-6.43
1019.905	61.06	AV	H	24.33	48.23	3.4	40.56	54	-17.2
3840.534	63.82	PK	V	31.44	48.97	6.64	52.93	74	-19.31
1019.905	63.71	PK	H	24.33	48.23	3.4	43.21	74	-31.49

High Channel (5835 MHz-a mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11680	-29.12	AV	V	39.67	10.56	47.04	47.03	54	-6.97
11680	-27.81	AV	H	39.67	10.56	47.04	48.34	54	-5.66
11680	-20	PK	V	39.67	10.56	47.04	56.15	74	-17.85
11680	-21.24	PK	H	39.67	10.56	47.04	54.91	74	-19.09
17843	-25.36	AV	V	42.77	16.95	47	47.46	54	-6.54
17843	-35.19	AV	H	42.77	16.95	47	37.63	54	-16.37
17843	-18.56	PK	V	42.77	16.95	47	54.26	74	-19.74
17843	-30.98	PK	H	42.77	16.95	47	41.84	74	-32.16

Note:

- 1, The testing has been conformed to 40GHz;
- 2, All other emissions more than 30 dB below the limit
- 3, The radiated spurious test above 18GHz is subcontracted to "BV 7LAYERS COMMUNICATION TECHNOLOGY(SHENZHEN)CO.,LTD" Laboratories. and found 30dB below the limit at least.

Test Mode:	Transmitting Mode
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Low Channel (5775 MHz-ac80 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11532	39.73	AV	V	39.92	43.56	11.78	47.87	54	-6.13
11544	39.43	AV	H	39.92	43.59	11.78	47.54	54	-6.46
11532	50.79	PK	V	39.92	43.56	11.78	58.93	74	-15.07
11544	51.46	PK	H	39.92	43.59	11.78	59.57	74	-14.43
4926	-27.1	AV	V	33.74	7.76	48.81	47.69	54	-6.31
5757.763	53.79	AV	H	34.52	47.28	9.62	50.65	54	-3.35
4926	-24.2	PK	V	33.74	7.76	48.81	50.59	74	-23.41
5757.763	59.93	PK	H	34.52	47.28	9.62	56.79	74	-17.21

Middle Channel (5815 MHz-ac80 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11440	-28.3	AV	V	39.92	10.54	47.02	48.1	54	-5.9
11440	-27.56	AV	H	39.92	10.54	47.02	48.84	54	-5.16
11440	-20.59	PK	V	39.92	10.54	47.02	55.81	74	-18.19
11440	-20.94	PK	H	39.92	10.54	47.02	55.46	74	-18.54
1018.079	60.63	AV	V	24.33	48.23	3.4	40.13	54	-11.21
1019.905	60.63	AV	H	24.33	48.23	3.4	40.13	54	-12.7
1018.079	63.92	PK	V	24.33	48.23	3.4	43.42	74	-23.88
1019.905	64.49	PK	H	24.33	48.23	3.4	43.99	74	-25.09

High Channel (5855 MHz-ac80 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11680	-29.73	AV	V	39.67	10.56	47.04	46.42	54	-7.58
11680	-30.06	AV	H	39.67	10.56	47.04	46.09	54	-7.91
11680	-20.49	PK	V	39.67	10.56	47.04	55.66	74	-18.34
11680	-20.96	PK	H	39.67	10.56	47.04	55.19	74	-18.81
3840.534	57.12	AV	V	31.44	48.97	6.64	46.23	54	-11.63
3840.534	56.57	AV	H	31.44	48.97	6.64	45.68	54	-12.56
3840.534	61.87	PK	V	31.44	48.97	6.64	50.98	74	-22.81
3840.534	61.46	PK	H	31.44	48.97	6.64	50.57	74	-25.27

Note:

- 1, The testing has been conformed to 40GHz;
- 2, All other emissions more than 30 dB below the limit
- 3, The radiated spurious test above 18GHz is subcontracted to "BV 7LAYERS COMMUNICATION TECHNOLOGY(SHENZHEN)CO.,LTD" Laboratories. and found 30dB below the limit at least.

Test Mode:	Transmitting Mode
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Low Channel (5745 MHz-n20 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11628	40.25	AV	V	39.91	43.75	11.83	48.24	54	-5.76
11484	39.43	AV	H	39.92	43.55	11.74	47.54	54	-6.46
11628	50.97	PK	V	39.91	43.75	11.83	58.96	74	-15.04
11484	51.23	PK	H	39.92	43.55	11.74	59.34	74	-14.66
3840.534	54.53	AV	V	31.44	48.97	6.64	43.64	54	-10.36
4926.683	56.3	AV	H	33.67	45.72	7.96	52.21	54	-4.79
3840.534	60.39	PK	V	31.44	48.97	6.64	49.5	74	-24.5
4926.683	65.56	PK	H	33.67	45.72	7.96	61.47	74	-12.53

Middle Channel (5785 MHz-n20 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11540	-26.96	AV	V	39.92	10.54	47.02	49.44	54	-4.56
11540	-28.21	AV	H	39.92	10.54	47.02	48.19	54	-5.81
11540	-19.63	PK	V	39.92	10.54	47.02	56.77	74	-17.23
11540	-20.75	PK	H	39.92	10.54	47.02	55.65	74	-18.35
1393.022	58.63	AV	V	25.25	48.31	3.99	39.56	54	-6.54
1019.905	61.06	AV	H	24.33	48.23	3.4	40.56	54	-16.4
1393.022	59.23	PK	V	25.25	48.31	3.99	40.16	74	-20.4
1019.905	63.56	PK	H	24.33	48.23	3.4	43.06	74	-31.08

High Channel (5825 MHz-n20 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10480	-26.17	AV	V	39.67	10.56	47.04	49.98	54	-4.02
10480	-27.9	AV	H	39.67	10.56	47.04	48.25	54	-5.75
10480	-20.57	PK	V	39.67	10.56	47.04	55.58	74	-18.42
10480	-20.63	PK	H	39.67	10.56	47.04	55.52	74	-18.48
17843	-26.37	AV	V	42.77	16.95	47	46.45	54	-7.55
17843	-34.76	AV	H	42.77	16.95	47	38.06	54	-15.94
17843	-18.17	PK	V	42.77	16.95	47	54.65	74	-19.35
17843	-29.97	PK	H	42.77	16.95	47	42.85	74	-31.15

Note:

- 1, The testing has been conformed to 40GHz;
- 2, All other emissions more than 30 dB below the limit
- 3, The radiated spurious test above 18GHz is subcontracted to "BV 7LAYERS COMMUNICATION TECHNOLOGY(SHENZHEN)CO.,LTD" Laboratories. and found 30dB below the limit at least.

Test Mode:	Transmitting Mode
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Low Channel (5755 MHz-n20 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11532	39.73	AV	V	39.92	43.56	11.78	47.87	54	-6.13
11520	40.7	AV	H	39.93	43.54	11.77	48.86	54	-5.14
11532	50.77	PK	V	39.92	43.56	11.78	58.91	74	-15.09
11520	51.4	PK	H	39.93	43.54	11.77	59.56	74	-14.44
2436.358	57.38	AV	V	29.07	48.11	5.22	43.56	54	-6.99
5757.763	56.3	AV	H	33.67	45.72	7.96	52.21	54	-16.83
2436.358	62.54	PK	V	29.07	48.11	5.22	48.72	74	-19.47
5757.763	65.56	PK	H	33.67	45.72	7.96	61.47	74	-31.66

Middle Channel (5795 MHz-n20 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11540	-30.78	AV	V	39.92	10.54	47.02	45.62	54	-8.38
11540	-28.5	AV	H	39.92	10.54	47.02	47.9	54	-6.1
11540	-24.14	PK	V	39.92	10.54	47.02	52.26	74	-21.74
11540	-25.72	PK	H	39.92	10.54	47.02	50.68	74	-23.32
9946	-31.56	AV	V	39.79	10.46	48.48	46.25	54	-7.75
9946	-44.98	AV	H	39.79	10.46	48.48	32.83	54	-21.17
9946	-24.56	PK	V	39.79	10.46	48.48	53.25	74	-20.75
9946	-39.34	PK	H	39.79	10.46	48.48	38.47	74	-35.53

High Channel (5835 MHz-n20 mode)

Frequency (MHz)	S.A. Reading (dBμV)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
11680	-29.05	AV	V	39.67	10.56	47.04	47.1	54	-6.9
11680	-27.77	AV	H	39.67	10.56	47.04	48.38	54	-5.62
11680	-21.35	PK	V	39.67	10.56	47.04	54.8	74	-19.2
11680	-20.82	PK	H	39.67	10.56	47.04	55.33	74	-18.67
17843	-29	AV	V	42.77	16.95	47	43.82	54	-10.18
17843	-38.43	AV	H	42.77	16.95	47	34.39	54	-19.61
17843	-20.18	PK	V	42.77	16.95	47	52.64	74	-21.36
17843	-32.85	PK	H	42.77	16.95	47	39.97	74	-34.03

Note:

- 1, The testing has been conformed to 40GHz;
- 2, All other emissions more than 30 dB below the limit
- 3, The radiated spurious test above 18GHz is subcontracted to "BV 7LAYERS COMMUNICATION TECHNOLOGY(SHENZHEN)CO.,LTD" Laboratories. and found 30dB below the limit at least.

Annex A. TEST INSTRUMENT

Annex A.i. TEST INSTRUMENTATION & GENERAL PROCEDURES

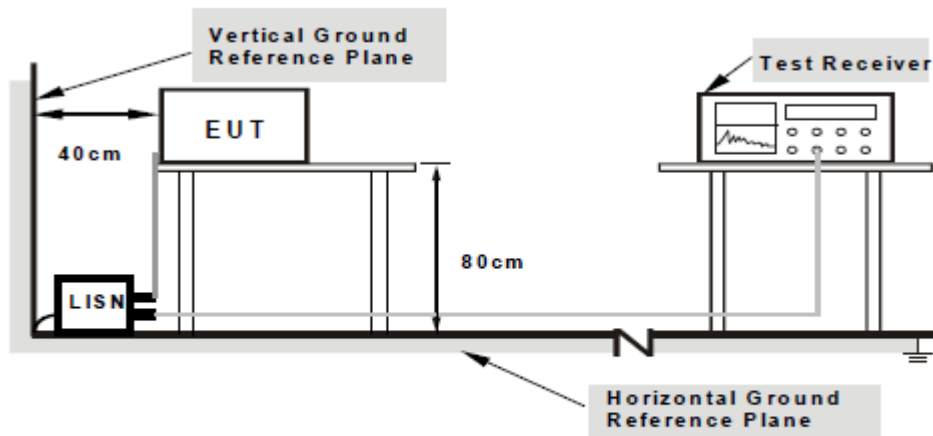
Instrument	Model	Serial #	Cal Date	Cal Due	In use
AC Line Conducted					
EMI test receiver	ESCS30	8471241027	09/15/2017	09/14/2018	☒
Line Impedance	LI-125A	191106	09/23/2017	09/22/2018	☒
Line Impedance	LI-125A	191107	09/23/2017	09/22/2018	☒
ISN	ISN T800	34373	09/23/2017	09/22/2018	☐
Transient Limiter	LIT-153	531118	08/30/2017	08/29/2018	☐
RF conducted test					
Agilent ESA-E SERIES	E4407B	MY45108319	09/15/2017	09/14/2018	☒
Power Splitter	1#	1#	08/30/2017	08/29/2018	☒
DC Power Supply	E3640A	MY40004013	09/15/2017	09/14/2018	☒
Radiated Emissions					
EMI test receiver	ESL6	100262	09/15/2017	09/14/2018	☒
Positioning Controller	UC3000	MF780208282	11/18/2016	11/17/2017	☒
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	08/30/2017	08/29/2018	☒
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/23/2017	03/22/2018	☒
Horn Antenna	BBHA9170	3145226D1	09/27/2017	09/26/2018	☒
Active Antenna (9kHz-30MHz)	AL-130	121031	10/12/2017	10/11/2018	☒
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/19/2017	09/18/2018	☒
Double Ridge Horn Antenna (1 ~18GHz)	AH-118	71283	09/22/2017	09/21/2018	☒
Universal Radio Communication Tester	CMU200	121393	09/23/2017	09/22/2018	☒

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May 06,17	May 05,18
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Dec. 16,16	Dec. 15,17
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jul. 24,17	Jul. 23,18
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Mar. 10,17	Mar. 09,18
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Jul. 24,17	Jul. 23,18

Annex A.ii. CONDUCTED EMISSIONS TEST DESCRIPTION

Test Set-up

1. The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m x 1m x 0.8m high, non-metallic table, as shown in Annex B.
2. The power supply for the EUT was fed through a 50 Ω /50 μ H EUT LISN, connected to filtered mains.
3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable.
4. All other supporting equipments were powered separately from another main supply.



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration1.

Test Method

1. The EUT was switched on and allowed to warm up to its normal operating condition.
2. A scan was made on the NEUTRAL line (for AC mains) or Earth line (for DC power) over the required frequency range using an EMI test receiver.

3. High peaks, relative to the limit line, were then selected.
4. The EMI test receiver was then tuned to the selected frequencies and the necessary measurements made with a receiver bandwidth setting of 10 kHz. For FCC tests, only Quasi-peak measurements were made; while for CISPR/EN tests, both Quasi-peak and Average measurements were made.
5. Steps 2 to 4 were then repeated for the LIVE line (for AC mains) or DC line (for DC power).

Description of Conducted Emission Program

This EMC Measurement software run LabView automation software and offers a common user interface for electromagnetic interference (EMI) measurements. This software is a modern and powerful tool for controlling and monitoring EMI test receivers and EMC test systems. It guarantees reliable collection, evaluation, and documentation of measurement results. Basically, this program will run a pre-scan measurement before it proceeds with the final measurement. The pre-scan routine will run the common scan range from 150 kHz to 30 MHz; the program will first start a peak and average scan on selectable measurement time and step size. After the program complete the pre-scan, this program will perform the Quasi Peak and Average measurement, based on the pre-scan peak data reduction result.

Sample Calculation Example

At 20 MHz
dB μ V

limit = 250 μ V = 47.96

Transducer factor of LISN, pulse limiter & cable loss at 20 MHz = 11.20 dB

Q-P reading obtained directly from EMI Receiver = 40.00 dB μ V
(Calibrated for system losses)

Therefore, Q-P margin = 47.96 – 40.00 = 7.96
limit i.e. **7.96 dB below**

Annex A. iii RADIATED EMISSIONS TEST DESCRIPTION

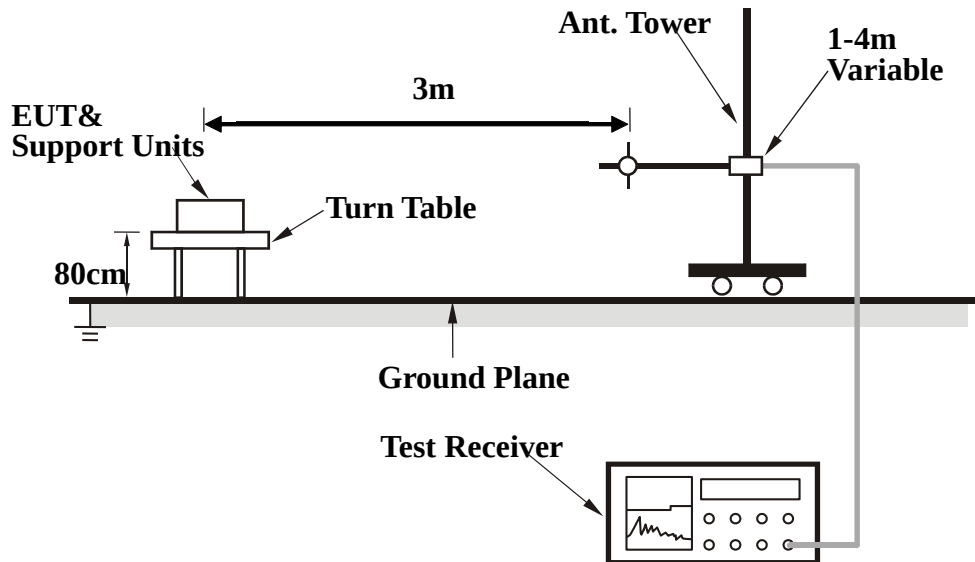
EUT Characterisation

EUT characterisation, over the frequency range from 30MHz to 10th Harmonic , was done in order to minimise radiated emissions testing time while still maintaining high confidence in the test results.

The EUT was placed in the chamber, at a height of about 0.8m on a turntable. Its radiated emissions frequency profile was observed, using a spectrum analyzer /receiver with the appropriate broadband antenna placed 3m away from the EUT. Radiated emissions from the EUT were maximised by rotating the turntable manually, changing the antenna polarisation and manipulating the EUT cables while observing the frequency profile on the spectrum analyzer / receiver. Frequency points at which maximum emissions occurred, clock frequencies and operating frequencies were then noted for the formal radiated emissions test at the Open Area Test Site (OATS).

Test Set-up

1. The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m X 1.0m X 0.8m high, non-metallic table.
2. The filtered power supply for the EUT and supporting equipment were tapped from the appropriate power sockets located on the turntable.
3. The relevant broadband antenna was set at the required test distance away from the EUT and supporting equipment boundary.



Test Method

The following procedure was performed to determine the maximum emission axis of EUT:

1. With the receiving antenna is H polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.
2. With the receiving antenna is V polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.
3. Compare the results derived from above two steps. So, the axis of maximum emission from EUT was determined and the configuration was used to perform the final measurement.

Final Radiated Emission Measurement

1. Setup the configuration according to figure 1. Turn on EUT and make sure that it is in normal function.
2. For emission frequencies measured below 1 GHz, a pre-scan is performed in a shielded chamber to determine the accurate frequencies of higher emissions will be checked on a open test site. As the same purpose, for emission frequencies measured above 1 GHz, a pre-scan also be performed with a 1 meter measuring distance before final test.
3. For emission frequencies measured below and above 1 GHz, set the spectrum analyzer on a 100 kHz and 1 MHz resolution bandwidth respectively for each frequency measured in step 2.
4. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0。 to 360。 with a speed as slow as possible, and keep the azimuth that highest emission is indicated on the spectrum analyzer. Vary the antenna position again and record the highest value as a final reading.
5. Repeat step 4 until all frequencies need to be measured was complete.
6. Repeat step 5 with search antenna in vertical polarized orientations.

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	Peak	100 kHz	100 kHz

Above 1000	Peak	1 MHz	1 MHz
	Average	1 MHz	10 Hz

Sample Calculation Example

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. For the limit is employed average value, therefore the peak value can be transferred to average value by subtracting the duty factor. The basic equation with a sample calculation is as follows:

$$\text{Peak} = \text{Reading} + \text{Corrected Factor}$$

where

Corr. Factor = Antenna Factor + Cable Factor - Amplifier Gain (if any)

And the average value is

$$\text{Average} = \text{Peak Value} + \text{Duty Factor or}$$

$$\text{Set RBW} = 1\text{MHz}, \text{VBW} = 10\text{Hz}.$$

Note :

If the measured frequencies are fall in the restricted frequency band, the limit employed must be quasi peak value when frequencies are below or equal to 1 GHz. And the measuring instrument is set to quasi peak detector function.

Annex B. EUT

Annex B.i. Photograph: EUT External Photo

Whole Package View



Adapter - Front View



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EUT - Front View



EUT - Rear View



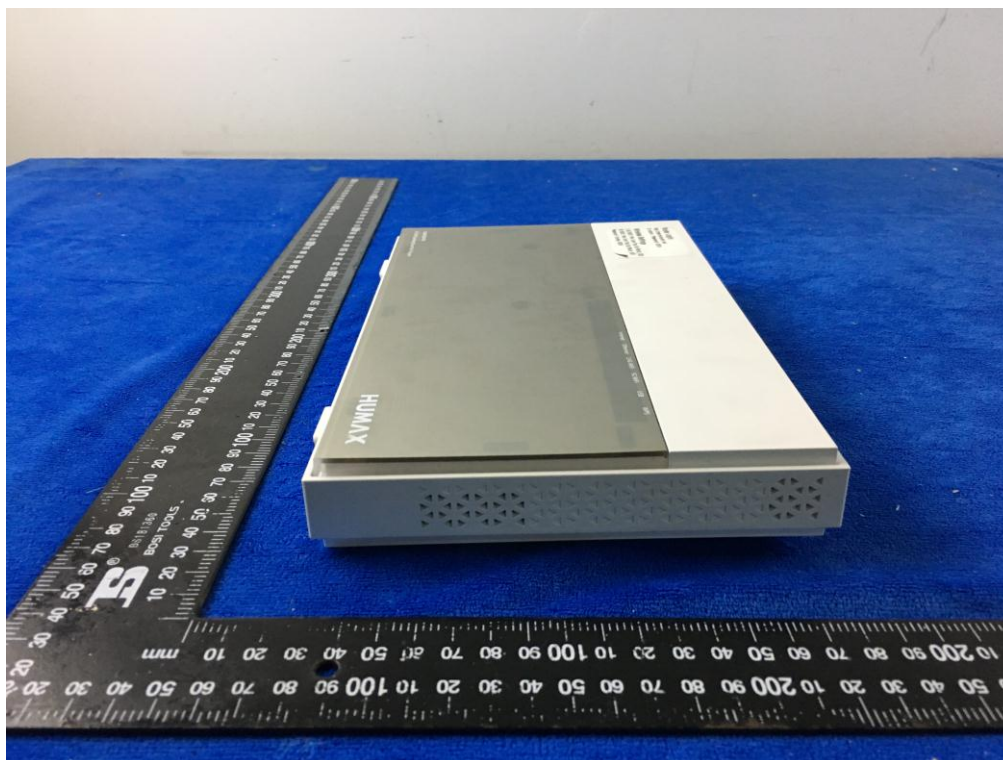
EUT - Top View



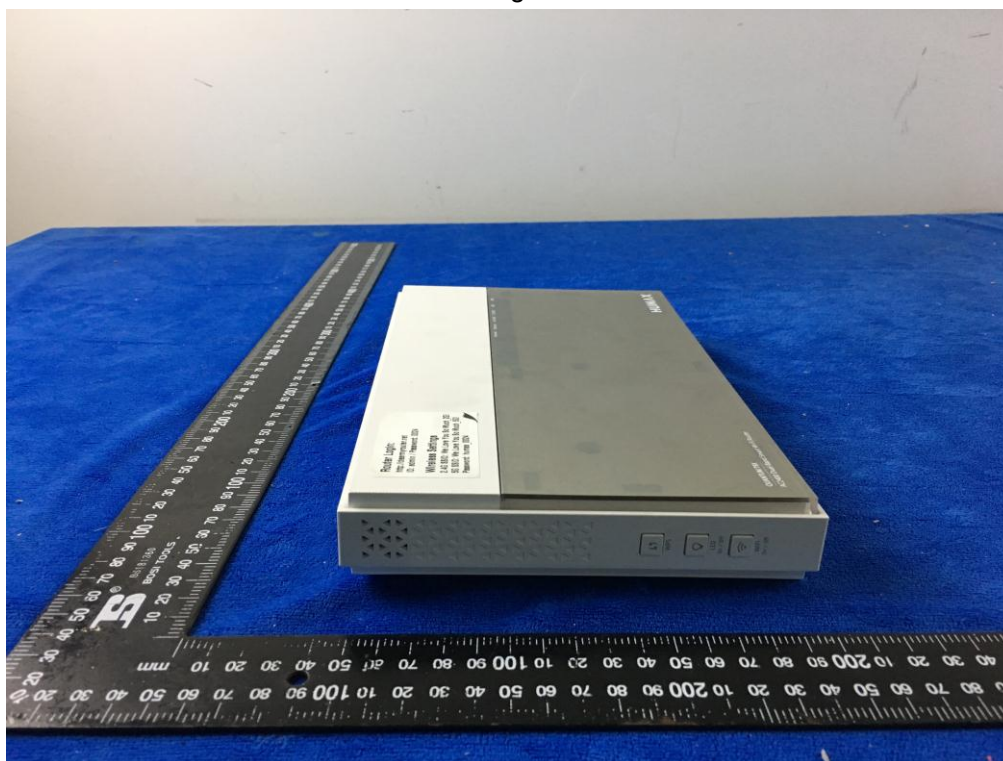
EUT - Bottom View



EUT - Left View



EUT - Right View

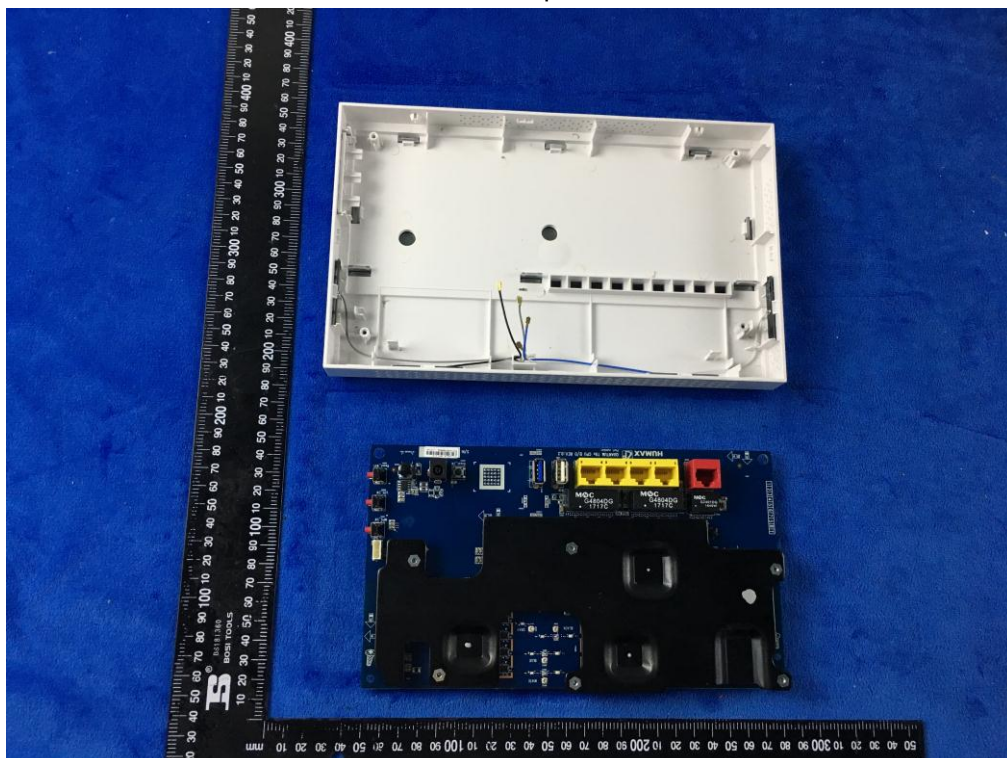


Annex B.ii. Photograph: EUT Internal Photo

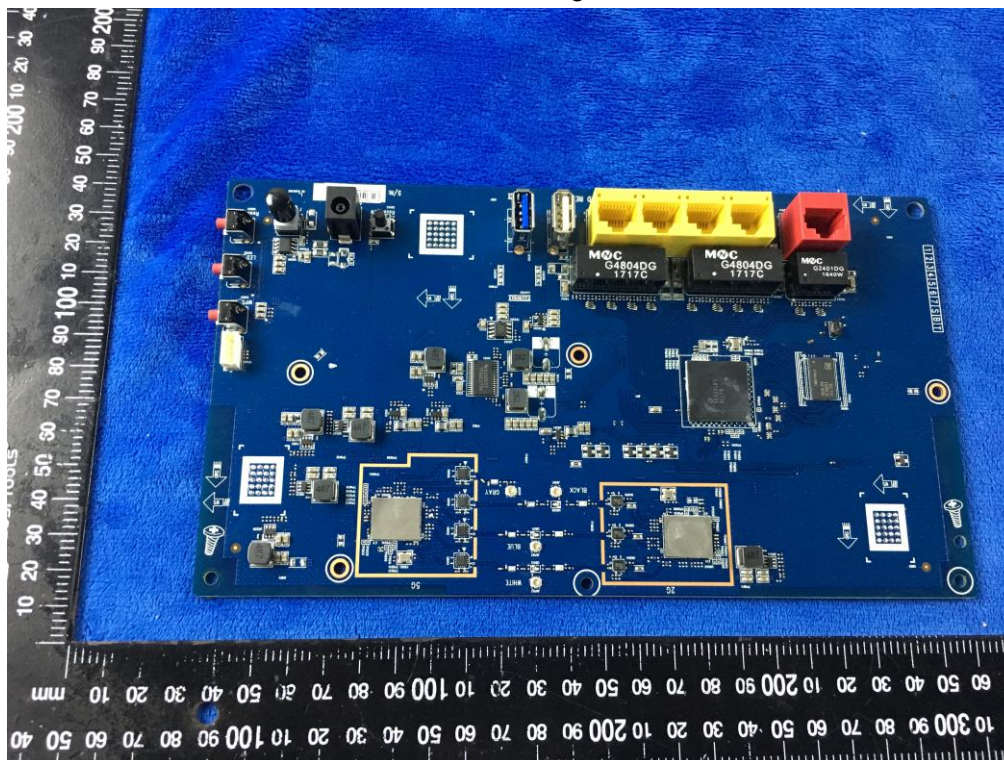
Cover Off - Top View 1



Cover Off - Top View 2



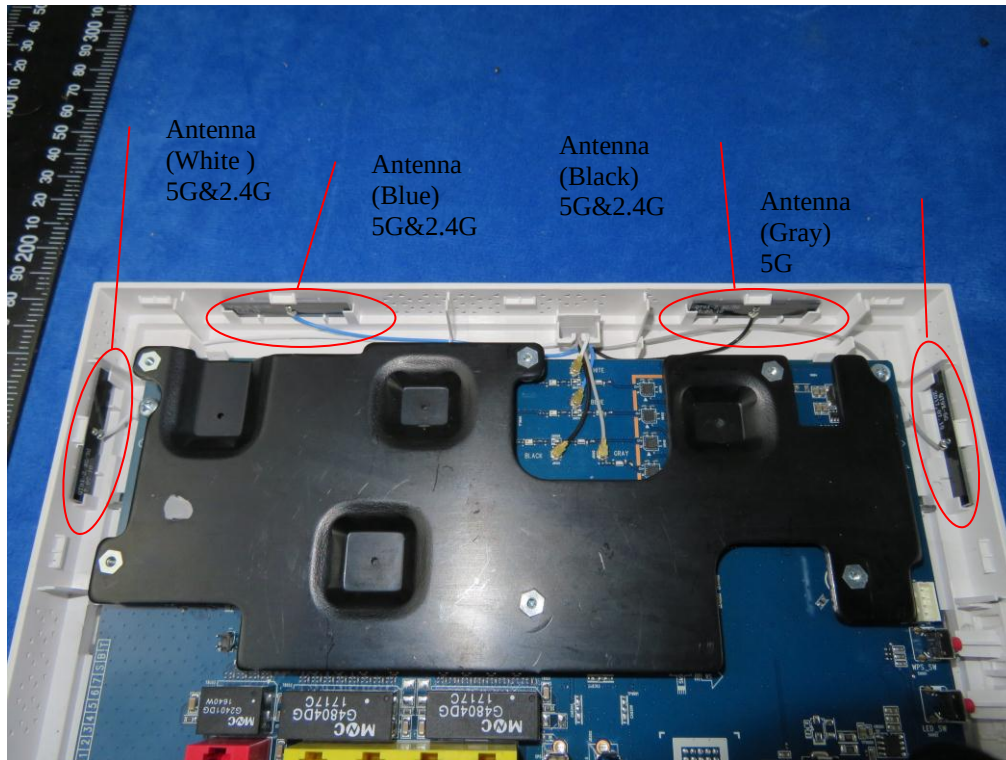
Mainboard with Shielding - Front View



Mainboard without Shielding - Front View

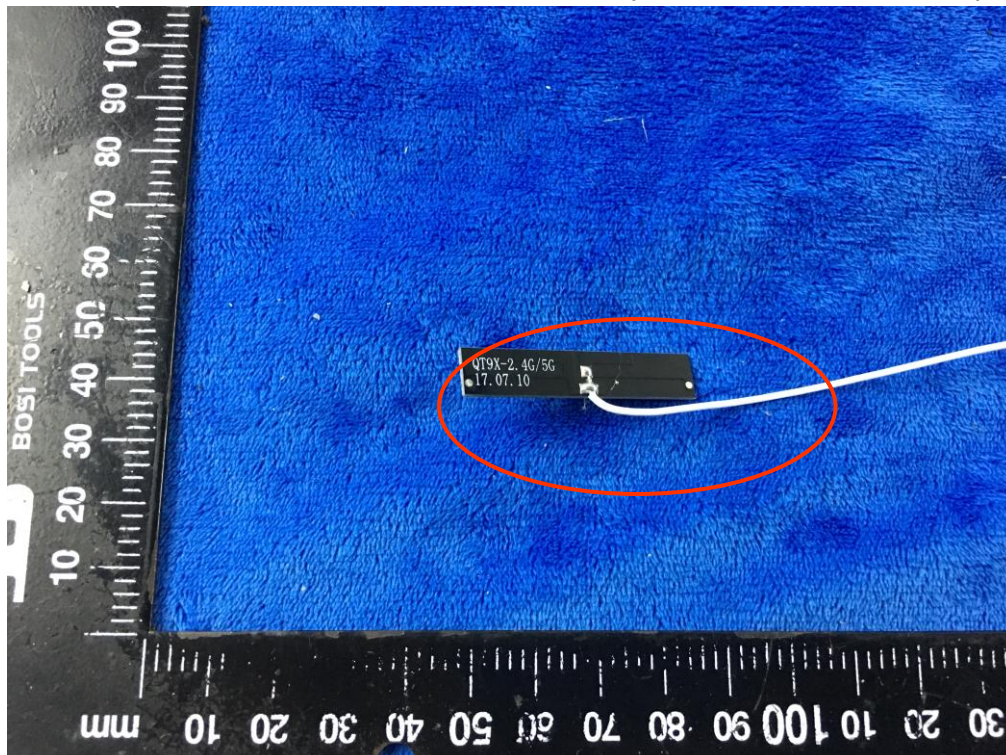


2.4G&5G Antenna View



Close-up View

Note : Because all of the antenna are same, we only show the one, as a Close-up.

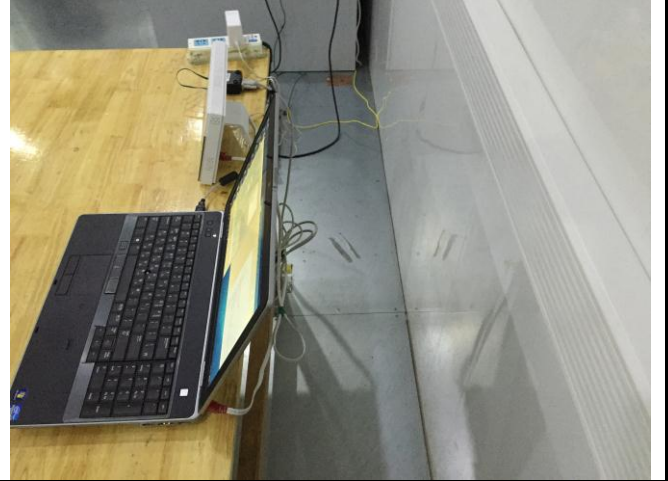


Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

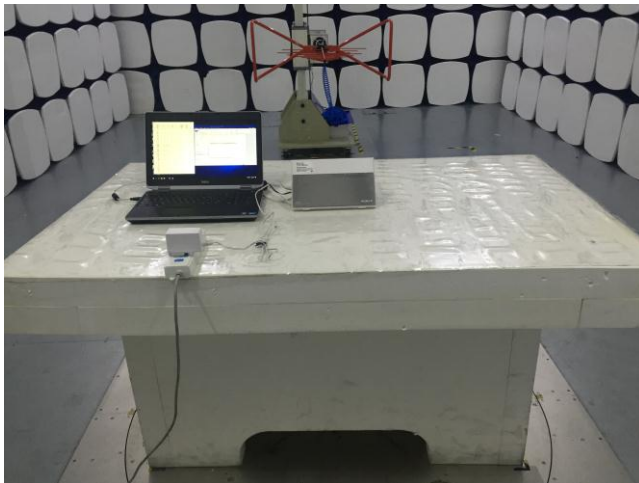
Annex B.iii. Photograph: Test Setup Photo



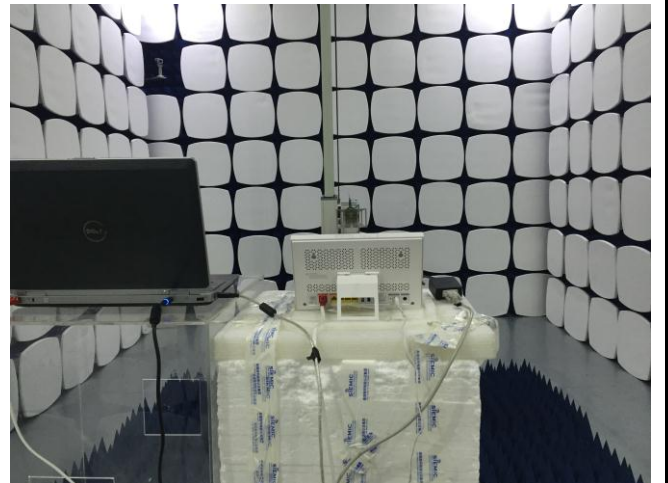
Conducted Emissions Test Setup Front View



Conducted Emissions Test Setup Side View



Radiated Spurious Emissions Test Setup Below 1GHz



Radiated Spurious Emissions Test Setup Above
1GHz

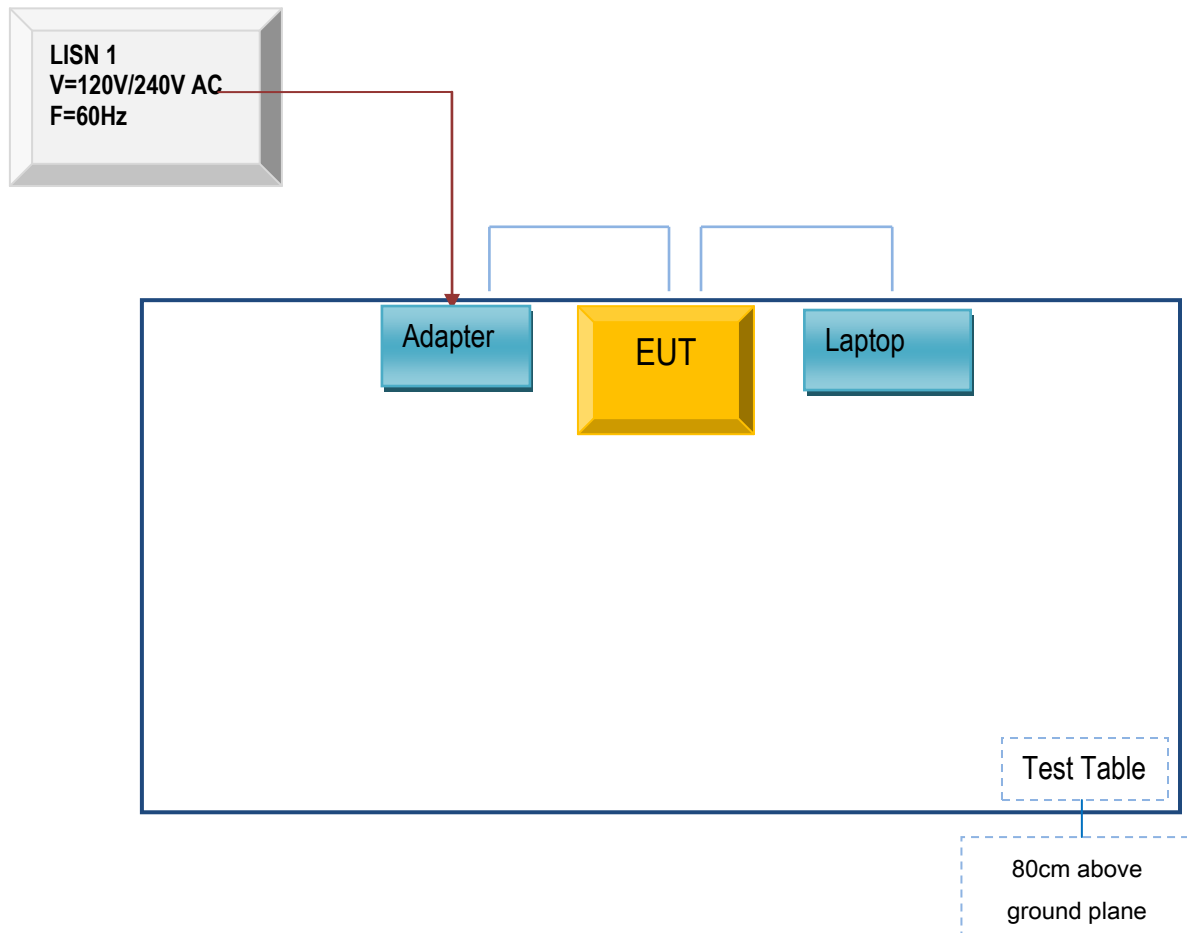
Annex C. i. SUPPORTING EQUIPMENT DESCRIPTION

The following is a description of supporting equipment and details of cables used with the EUT.

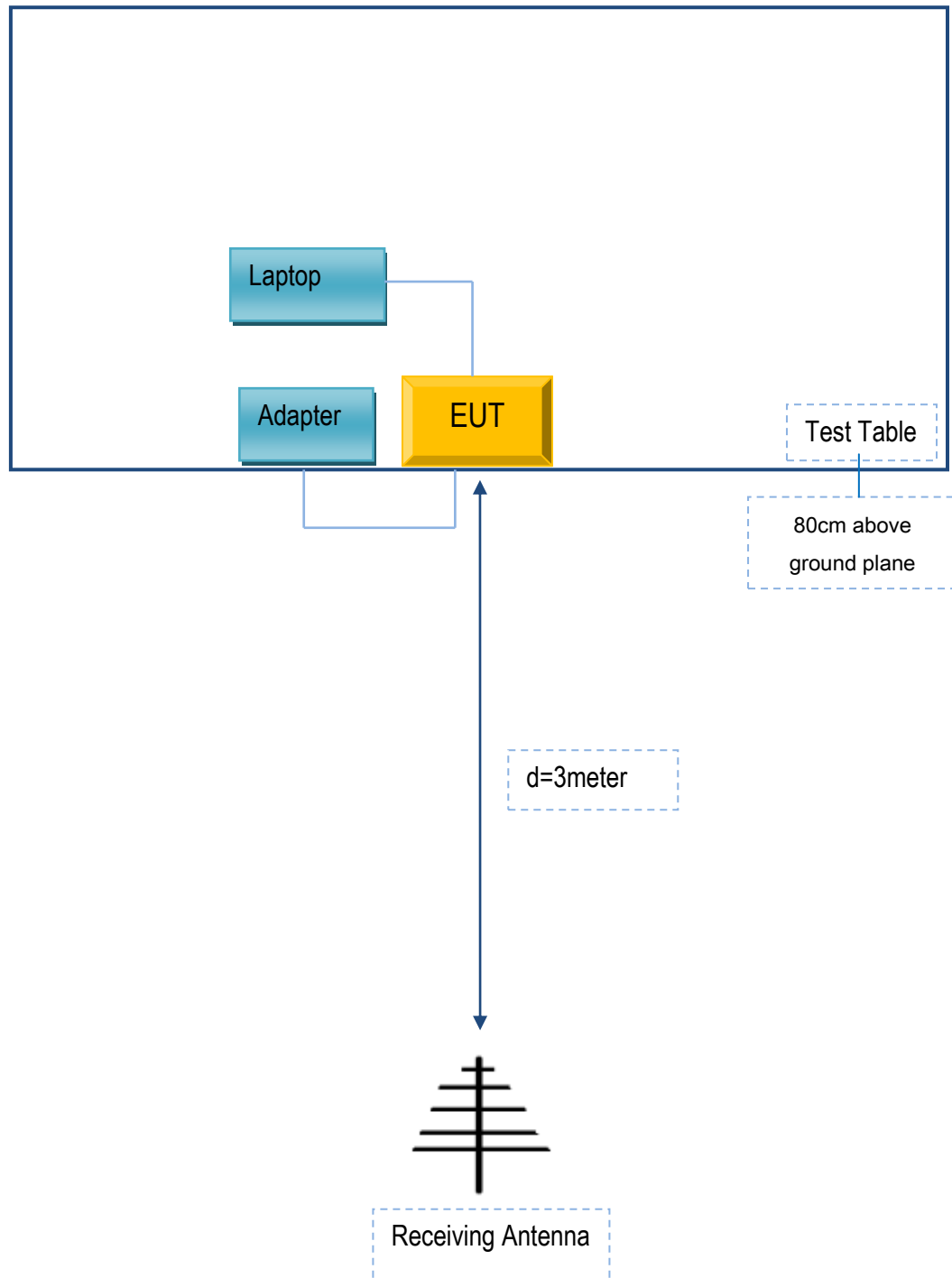
Supporting Equipment:

Manufacturer	Equipment Description	Model	Serial No
Humax Co., Ltd.	Adapter	ADS-30FD-12 12030E	N/A
Lenovo	Laptop	E40	N/A

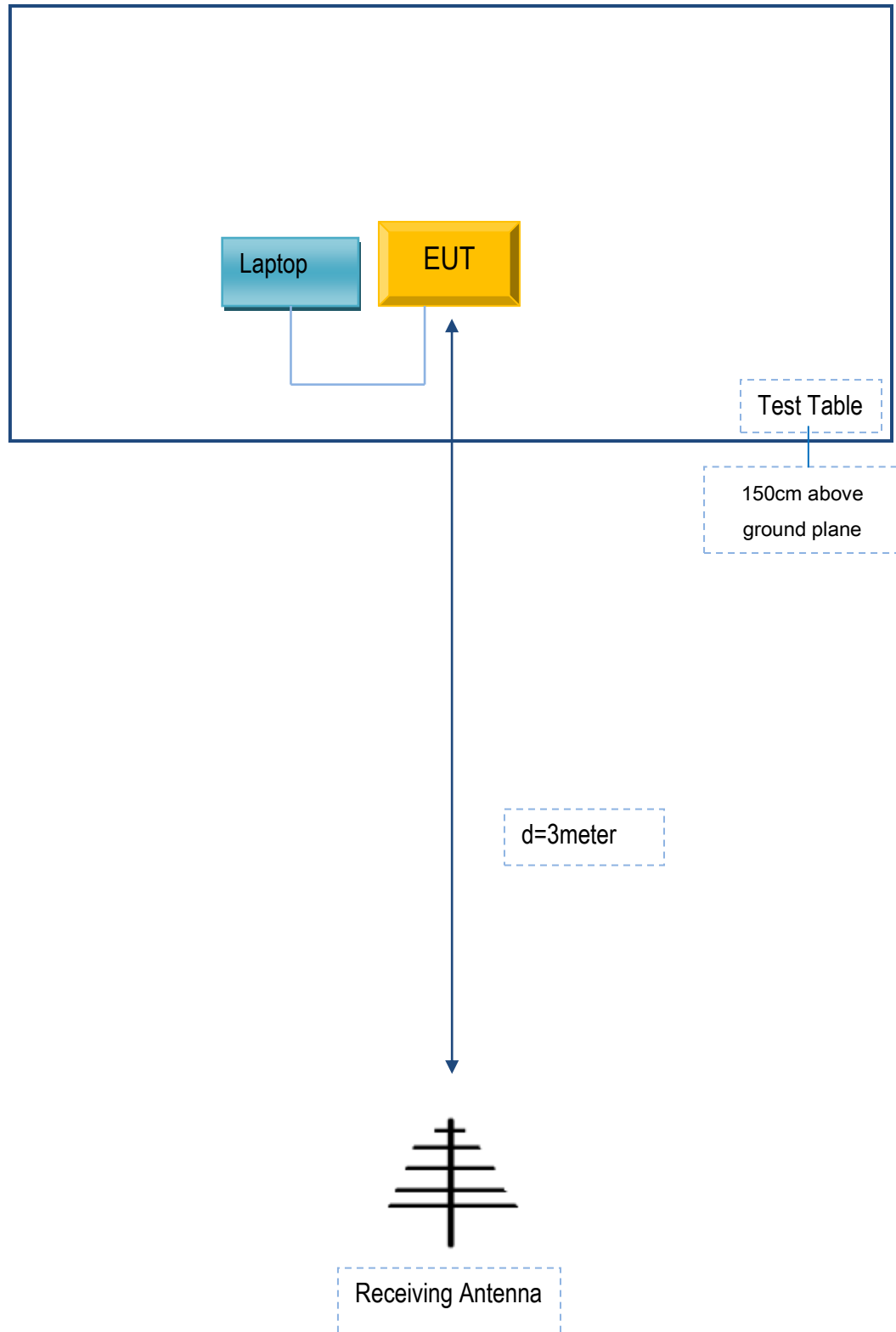
Block Configuration Diagram for AC Line Conducted Emissions



Block Configuration Diagram for Radiated Emissions (Below 1GHz) .



Block Configuration Diagram for Radiated Emissions (Above 1GHz) .



Annex C.ii. EUT OPERATING CONDITIONS

The following is the description of how the EUT is exercised during testing.

Test	Description Of Operation
Emissions Testing	The EUT was continuously transmitting to stimulate the worst case.

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Annex D. User Manual / Block Diagram / Schematics / Partlist

See attachment

Annex E. DECLARATION OF SIMILARITY

Humax Co., Ltd.

To: SIEMIC ,775 Montague Expressway, Milpitas, CA 95035,USA

Declaration Letter

Dear Sir,

For our business issue and marketing requirement, we would like to list 3 model numbers on the **FCC&CE** certificates and reports, as following:

Model No.: QUANTUM T9x,QUANTUM T7x ,QUANTUM T5x

FCC ID: O6ZT9X

We declare that, All the model PCB, Antenna and appearance shape, accessories are the same. The difference of these is listed as below:

Main Model No	Serial Model No	Difference
QUANTUM T9x	QUANTUM T7x ,QUANTUM T5x	only unused antennas is removed

Thank you!

Signature:



Printed name/ title: Inseok Seo / Senior Engineer

Address: HUMAX Village, 11-4, Sunae-dong, Bundang-gu, Seongnam city, Gyeonggi-do, South Korea 463-825