FCC Test Report

(Co-Located)

Report No.:	RF170731C10A-2
FCC ID:	QXO-AP3917E
Test Model:	AP3917e
Series Model:	AP7662 (refer to item 3.1 for more details)
Received Date:	Jul. 31, 2017
Test Date:	Nov. 08 ~ Nov. 10, 2017
Issued Date:	Nov. 24, 2017
Applicant:	Extreme Networks, Inc.
Address:	6480 VIA DEL ORO SAN JOSE CA 95119 USA
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)
FCC Registration / Designation Number:	788550 / TW0003

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
RF170731C10A-2	Original release.	Nov. 24, 2017

1 Certificate of Conformity

Product:	Wireless 802.11 a/ac+b/g/n Access Point
Brand:	Extreme Networks
Test Model:	AP3917e
Series Model:	AP7662 (refer to item 3.1 for more details)
Sample Status:	Engineering sample
Applicant:	Extreme Networks, Inc.
Test Date:	Nov. 08 ~ Nov. 10, 2017
Standards:	47 CFR FCC Part 15, Subpart C (Section 15.247) 47 CFR FCC Part 15, Subpart E (Section 15.407) ANSI C63.10-2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : _____ , **Date:** Nov. 24, 2017

Polly Chien / Specialist

Approved by : _____ , **Date:** Nov. 24, 2017

Ken Liu / Senior Manager

2 Summary of Test Results

Applied Standard:	47 CFR FCC Part 15, Subpart C (Section 15.247) 47 CFR FCC Part 15, Subpart E (Section 15.407)		
FCC Clause	Test Item	Result	Remarks
15.205 / 15.209 / 15.247(d) 15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -0.2dB at 2483.50MHz.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.86 dB
	200MHz ~1000MHz	3.87 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Wireless 802.11 a/ac+b/g/n Access Point	
Brand	Extreme Networks	
Test Model	AP3917e	
Series Model	AP7662	
Model Difference	Refer to note for more details	
Status of EUT	Engineering sample	
Power Supply Rating	54Vdc from POE	
Modulation Type	WLAN	CCK, DQPSK, DBPSK for DSSS 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM
	Bluetooth LE	GFSK
	Zigbee	O-QPSK
Modulation Technology	WLAN	DSSS, OFDM
Transfer Rate	WLAN	802.11b:11/5.5/2/1Mbps 802.11a/g: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 300Mbps 802.11ac: up to 867Mbps
	Bluetooth LE	1Mbps
	Zigbee	250kbps
Operating Frequency	WLAN	2.4GHz: 2412 ~ 2462MHz 5.0GHz: 5260~5320MHz, 5500~5720MHz
	Bluetooth LE	2402 ~ 2480MHz
	Zigbee	2405 ~ 2480MHz
Number of Channel	WLAN	2412 ~ 2462MHz: 11 for 802.11b, 802.11g, 802.11n (HT20) 7 for 802.11n (HT40) 5260~5320MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 4 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1 5500~5720MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 12 802.11n (HT40), 802.11ac (VHT40): 6 802.11ac (VHT80): 3
	Bluetooth LE	40
	Zigbee	16

Output Power	WLAN	Refer to Note
	Bluetooth LE	ML-2499-HPA8-01 Ant.: 1.250mW ML-2452-PNA7-01R Ant.: 1.265mW
	Zigbee	ML-2499-HPA8-01 Ant.: 1.997mW ML-2452-PNA7-01R Ant.: 1.997mW
Antenna Type	Refer to Note	
Antenna Connector	Refer to Note	
Accessory Device	NA	
Cable Supplied	1.75m non-shielded grounding cable w/o core	

Note:

1. This report is prepared for FCC class II permissive change. The difference compared with the original report (BV ADT report no.: RF170731C10-5) is adding 5.26GHz to 5.32GHz and 5.50GHz to 5.70GHz by software.
2. All models are listed as below. Model: AP3917e was chosen for final test.

Brand	Model	Difference
Extreme Networks	AP3917e	All models are electrically identical, only cover printing different.
	AP7662	

3. The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitters and 2 receivers.

Band	Modulation Mode	TX Function	Beamforming
2.4GHz	802.11b	2TX	Not Support
	802.11g	2TX	Not Support
	802.11n (HT20)	2TX	Support
	802.11n (HT40)	2TX	Support
5GHz	802.11a	2TX	Not Support
	802.11n (HT20)	2TX	Support
	802.11n (HT40)	2TX	Support
	802.11ac (VHT20)	2TX	Support
	802.11ac (VHT40)	2TX	Support
	802.11ac (VHT80)	2TX	Support

* The modulation and bandwidth are similar for 802.11n mode for 20MHz/40MHz and 802.11ac mode for 20MHz/40MHz, therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

* For 802.11n, CDD mode is the worst case for final radiated emission and power line conducted emission tests after pretesting CDD mode and beamforming mode.

4. The EUT consumes power from following POE. (Support unit only)

POE	
Brand	EnGenius
Model	EPA5006GP
Input Power	100-240Vac, 50-60Hz, 0.8A
Output Power	54Vdc, 0.6A Pin 4, 5: 54Vdc Pin 7, 8: Return

5. The EUT uses following antennas.

Item	Function	Antenna Type	Part No	Connector	Gain (dBi)		
					2.4G	4.9G	5G
1	WLAN	Dipole	ML-2452-HPAG5A8-01	N Male	5	7.5	8
2	WLAN	Dipole	ML-2452-HPAG4A6-01	N Male	4		7.3
3	WLAN	Dipole	ML-2452-HPA6X6-036	N Male	4		6
4	WLAN	Dipole	WS-AO-DQ04360N	4 N Male	5.5		6
5	WLAN	Dipole	ML-2499-HPA4-01	N Male	4.5		
6	WLAN	Dipole	ML-2452-HPA6-01	N Male	5.3	4.6	6.1
7	WLAN	Dipole	ML-5299-HPA5-01	N Male			5.6
8	WLAN & BT LE & Zigbee	Dipole	ML-2499-HPA8-01	N Male	8		
9	WLAN	Dipole	ML-2499-FHPA5-01R	N Male	7.7		
10	WLAN	Dipole	ML-5299-FHPA6-01R	N Male		8.25	8.25
11	WLAN	Panel	ML-2452-PNA5-01R	N Male	4.5	5	5~4.5 MAX:5
12	WLAN & BT LE & Zigbee	Panel	ML-2452-PNA7-01R	N Male	7.8	7	10.7~7 MAX:10.7
13	WLAN	Polarized Panel	ML-2452-PNL6M4-N36	4 N Male	5.6	6.7	6.7
14	WLAN	Polarized Panel	ML-2452-SEC6M4-N36	4 N Male	6.92		7.23
15	WLAN	Polarized Panel	ML-2452-SEC6M4-N30	4 N Male	5.5		6
16	WLAN	Polarized Panel	ML-2452-PNL9M3-N36	N Male	11	7.3	10.7

For 2.4GHz band:
* Antenna 8 with the maximum gain was chosen for final test among Antenna 1~10.
* Antenna 11, 12 were chosen for final test.
* Antenna 13 with the maximum gain was chosen for final test among Antenna 13 & 15.
* Antenna 16 with the maximum gain was chosen for final test among Antenna 14 & 16.

For 5GHz band:
* Antenna 10 with the maximum gain was chosen for final test among Antenna 1~10.
* Antenna 11, 12 were chosen for final test.
* Antenna 13 with the maximum gain was chosen for final test among Antenna 13 & 15.
* Antenna 16 with the maximum gain was chosen for final test among Antenna 14 & 16.

For 4.9GHz band:
* Antenna 10 with the maximum gain was chosen for final test among Antenna 1~10.
* Antenna 11, 12 were chosen for final test.
* Antenna 13 with the maximum gain was chosen for final test among Antenna 13 & 15.
* Antenna 16 with the maximum gain was chosen for final test among Antenna 14 & 16.

6. 2.4GHz & 4.9GHz/5GHz & BT LE/Zigbee technologies can transmit at same time.
   BT LE & Zigbee technologies cannot transmit at same time.
7. Spurious emission of the simultaneous operation (2.4GHz & 4.9GHz/5GHz & BT LE/Zigbee) has been evaluated and no non-compliance was found.

8. Output Power is listed as below.

Antenna Model	2412~2472MHz	
	CDD Mode (mW)	Beamforming Mode (mW)
ML-2499-HPA8-01	548.600	510.589
ML-2452-PNA5-01R	541.158	510.589
ML-2452-PNA7-01R	541.158	461.969
ML-2452-PNL6M4-N36	548.600	510.589
ML-2452-PNL9M3-N36	296.431	286.514

Antenna Model	5260~5320MHz		5500~5720MHz	
	CDD Mode (mW)	Beamforming Mode (mW)	CDD Mode (mW)	Beamforming Mode (mW)
ML-5299-FHPA6-01R	143.794	71.897	113.808	56.904
ML-2452-PNA5-01R	248.336	124.168	244.649	122.325
ML-2452-PNA7-01R	69.112	34.556	73.161	36.580
ML-2452-PNL6M4-N36	207.937	103.969	197.711	98.856
ML-2452-PNL9M3-N36	69.112	37.069	74.138	36.580

3.2 Description of Test Modes

For 2.4GHz

11 channels are provided for 802.11b, 802.11g and 802.11n (HT20):

Channel	Frequency	Channel	Frequency
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

7 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

5260~5320MHz:

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
58	5290MHz

5500~5720MHz:

12 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz	144	5720 MHz

6 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz	142	5710 MHz

3 channels are provided for 802.11ac (VHT80):

Channel	Frequency	Channel	Frequency
106	5530 MHz	122	5610 MHz
138	5690 MHz		

For Bluetooth LE:

40 channels are provided to this EUT:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

For Zigbee:

16 channels are provided to this EUT:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
11	2405	15	2425	19	2445	23	2465
12	2410	16	2430	20	2450	24	2470
13	2415	17	2435	21	2455	25	2475
14	2420	18	2440	22	2460	26	2480

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to		Description
	RE≥1G	RE<1G	
-	√	√	-

Where **RE≥1G:** Radiated Emission above 1GHz & Bandedge Measurement **RE<1G:** Radiated Emission below 1GHz

Radiated Emission Test (Above 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Ant.	Mode	Freq. Range (MHz)	Available Channel	Tested Channel	Modulation Technology
-	ML-2499-HPA8-01	802.11g	2412~2462	1 to 11	CH 6 + CH 144 + CH 39	BPSK
	ML-5299-FHPA6-01R	802.11a	5500-5720	100 to 144		OFDM
	ML-2499-HPA8-01	BT LE	2402~2480	0 to 39		GFSK
-	ML-2499-HPA8-01	802.11g	2412~2462	1 to 11	CH 6 + CH 144 + CH 11	BPSK
	ML-5299-FHPA6-01R	802.11a	5500-5720	100 to 144		OFDM
	ML-2499-HPA8-01	Zigbee	2405~2480	11 to 26		O-QPSK
-	ML-2499-HPA8-01	802.11g	2412~2462	1 to 11	CH 6 + CH 144 + CH 39	BPSK
	ML-5299-FHPA6-01R	802.11a	5500-5720	100 to 144		OFDM
	ML-2452-PNA7-01R	BT LE	2402~2480	0 to 39		GFSK
-	ML-2499-HPA8-01	802.11g	2412~2462	1 to 11	CH 6 + CH 144 + CH 11	BPSK
	ML-5299-FHPA6-01R	802.11a	5500-5720	100 to 144		OFDM
	ML-2452-PNA7-01R	Zigbee	2405~2480	11 to 26		O-QPSK
-	ML-2452-PNA5-01R	802.11g	2412~2462	1 to 11	CH 6 + CH 60 + CH 39	BPSK
		802.11n (HT20)	5260-5320	52 to 64		OFDM
	ML-2499-HPA8-01	BT LE	2402~2480	0 to 39		GFSK
-	ML-2452-PNA5-01R	802.11g	2412~2462	1 to 11	CH 6 + CH 60 + CH 11	BPSK
		802.11n (HT20)	5260-5320	52 to 64		OFDM
	ML-2499-HPA8-01	Zigbee	2405~2480	11 to 26		O-QPSK
-	ML-2452-PNA5-01R	802.11g	2412~2462	1 to 11	CH 6 + CH 60 + CH 39	BPSK
		802.11n (HT20)	5260-5320	52 to 64		OFDM
	ML-2452-PNA7-01R	BT LE	2402~2480	0 to 39		GFSK
-	ML-2452-PNA5-01R	802.11g	2412~2462	1 to 11	CH 6 + CH 60 + CH 11	BPSK
		802.11n (HT20)	5260-5320	52 to 64		OFDM
	ML-2452-PNA7-01R	Zigbee	2405~2480	11 to 26		O-QPSK

EUT Configure Mode	Ant.	Mode	Freq. Range (MHz)	Available Channel	Tested Channel	Modulation Technology
-	ML-2452-PNA7-01R	802.11b	2412~2462	1 to 11	CH 6 + CH 60 + CH 39	DBPSK
		802.11a	5260-5320	52 to 64		OFDM
	ML-2499-HPA8-01	BT LE	2402~2480	0 to 39		GFSK
-	ML-2452-PNA7-01R	802.11b	2412~2462	1 to 11	CH 6 + CH 60 + CH 11	DBPSK
		802.11a	5260-5320	52 to 64		OFDM
	ML-2499-HPA8-01	Zigbee	2405~2480	11 to 26		O-QPSK
-	ML-2452-PNA7-01R	802.11b	2412~2462	1 to 11	CH 6 + CH 60 + CH 39	DBPSK
		802.11a	5260-5320	52 to 64		OFDM
		BT LE	2402~2480	0 to 39		GFSK
-	ML-2452-PNA7-01R	802.11b	2412~2462	1 to 11	CH 6 + CH 60 + CH 11	DBPSK
		802.11a	5260-5320	52 to 64		OFDM
		Zigbee	2405~2480	11 to 26		O-QPSK
-	ML-2452-PNL6M4-N36	802.11n (HT20)	2412~2462	1 to 11	CH 6 + CH 100 + CH 39	BPSK
		802.11n (HT20)	5500-5720	100 to 144		OFDM
	ML-2499-HPA8-01	BT LE	2402~2480	0 to 39		GFSK
-	ML-2452-PNL6M4-N36	802.11n (HT20)	2412~2462	1 to 11	CH 6 + CH 100 + CH 11	BPSK
		802.11n (HT20)	5500-5720	100 to 144		OFDM
	ML-2499-HPA8-01	Zigbee	2405~2480	11 to 26		O-QPSK
-	ML-2452-PNL6M4-N36	802.11n (HT20)	2412~2462	1 to 11	CH 6 + CH 100 + CH 39	BPSK
		802.11n (HT20)	5500-5720	100 to 144		OFDM
	ML-2452-PNA7-01R	BT LE	2402~2480	0 to 39		GFSK
-	ML-2452-PNL6M4-N36	802.11n (HT20)	2412~2462	1 to 11	CH 6 + CH 100 + CH 11	BPSK
		802.11n (HT20)	5500-5720	100 to 144		OFDM
	ML-2452-PNA7-01R	Zigbee	2405~2480	11 to 26		O-QPSK
-	ML-2452-PNL9M3-N36	802.11n (HT20)	2412~2462	1 to 11	CH 6 + CH 100 + CH 39	DBPSK
		802.11n (HT20)	5500-5720	100 to 144		OFDM
	ML-2499-HPA8-01	BT LE	2402~2480	0 to 39		GFSK
-	ML-2452-PNL9M3-N36	802.11n (HT20)	2412~2462	1 to 11	CH 6 + CH 100 + CH 11	DBPSK
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	ML-2499-HPA8-01	Zigbee	2405~2480	11 to 26		O-QPSK
-	ML-2452-PNL9M3-N36	802.11n (HT20)	2412~2462	1 to 11	CH 6 + CH 100 + CH 39	DBPSK
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-	ML-2452-PNL9M3-N36	802.11n (HT20)	2412~2462	1 to 11	CH 6 + CH 100 + CH 11	DBPSK
		802.11n (HT20)	5500-5720	100 to 144		OFDM
	ML-2452-PNA7-01R	Zigbee	2405~2480	11 to 26		O-QPSK

Radiated Emission Test (Below 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Ant.	Mode	Freq. Range (MHz)	Available Channel	Tested Channel	Modulation Technology
-	ML-2499-HPA8-01	802.11g	2412~2462	1 to 11	CH 6 + CH 144 + CH 39	BPSK
	ML-5299-FHPA6-01R	802.11a	5500-5720	100 to 144		OFDM
	ML-2499-HPA8-01	BT LE	2402~2480	0 to 39		GFSK
-	ML-2499-HPA8-01	802.11g	2412~2462	1 to 11	CH 6 + CH 144 + CH 11	BPSK
	ML-5299-FHPA6-01R	802.11a	5500-5720	100 to 144		OFDM
	ML-2499-HPA8-01	Zigbee	2405~2480	11 to 26		O-QPSK
-	ML-2499-HPA8-01	802.11g	2412~2462	1 to 11	CH 6 + CH 144 + CH 39	BPSK
	ML-5299-FHPA6-01R	802.11a	5500-5720	100 to 144		OFDM
	ML-2452-PNA7-01R	BT LE	2402~2480	0 to 39		GFSK
-	ML-2499-HPA8-01	802.11g	2412~2462	1 to 11	CH 6 + CH 144 + CH 11	BPSK
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	ML-2452-PNA7-01R	Zigbee	2405~2480	11 to 26		O-QPSK
-	ML-2452-PNA5-01R	802.11g	2412~2462	1 to 11	CH 6 + CH 60 + CH 39	BPSK
		802.11n (HT20)	5260-5320	52 to 64		OFDM
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-	ML-2452-PNA7-01R	802.11b	2412~2462	1 to 11	CH 6 + CH 60 + CH 39	DBPSK
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-	ML-2452-PNA7-01R	802.11b	2412~2462	1 to 11	CH 6 + CH 60 + CH 11	DBPSK
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		802.11a	5260-5320	52 to 64		OFDM
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-	ML-2452-PNA7-01R	802.11b	2412~2462	1 to 11	CH 6 + CH 60 + CH 11	DBPSK
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		Zigbee	2405~2480	11 to 26		O-QPSK

EUT Configure Mode	Ant.	Mode	Freq. Range (MHz)	Available Channel	Tested Channel	Modulation Technology
-	ML-2452-PNL6M4-N36	802.11n (HT20)	2412~2462	1 to 11	CH 6 + CH 100 + CH 39	BPSK
		802.11n (HT20)	5500-5720	100 to 144		OFDM
	ML-2499-HPA8-01	BT LE	2402~2480	0 to 39		GFSK
-	ML-2452-PNL6M4-N36	802.11n (HT20)	2412~2462	1 to 11	CH 6 + CH 100 + CH 11	BPSK
		802.11n (HT20)	5500-5720	100 to 144		OFDM
	ML-2499-HPA8-01	Zigbee	2405~2480	11 to 26		O-QPSK
-	ML-2452-PNL6M4-N36	802.11n (HT20)	2412~2462	1 to 11	CH 6 + CH 100 + CH 39	BPSK
		802.11n (HT20)	5500-5720	100 to 144		OFDM
	ML-2452-PNA7-01R	BT LE	2402~2480	0 to 39		GFSK
-	ML-2452-PNL6M4-N36	802.11n (HT20)	2412~2462	1 to 11	CH 6 + CH 100 + CH 11	BPSK
		802.11n (HT20)	5500-5720	100 to 144		OFDM
	ML-2452-PNA7-01R	Zigbee	2405~2480	11 to 26		O-QPSK
-	ML-2452-PNL9M3-N36	802.11n (HT20)	2412~2462	1 to 11	CH 6 + CH 100 + CH 39	DBPSK
		802.11n (HT20)	5500-5720	100 to 144		OFDM
	ML-2499-HPA8-01	BT LE	2402~2480	0 to 39		GFSK
-	ML-2452-PNL9M3-N36	802.11n (HT20)	2412~2462	1 to 11	CH 6 + CH 100 + CH 11	DBPSK
		802.11n (HT20)	5500-5720	100 to 144		OFDM
	ML-2499-HPA8-01	Zigbee	2405~2480	11 to 26		O-QPSK
-	ML-2452-PNL9M3-N36	802.11n (HT20)	2412~2462	1 to 11	CH 6 + CH 100 + CH 39	DBPSK
		802.11n (HT20)	5500-5720	100 to 144		OFDM
	ML-2452-PNA7-01R	BT LE	2402~2480	0 to 39		GFSK
-	ML-2452-PNL9M3-N36	802.11n (HT20)	2412~2462	1 to 11	CH 6 + CH 100 + CH 11	DBPSK
		802.11n (HT20)	5500-5720	100 to 144		OFDM
	ML-2452-PNA7-01R	Zigbee	2405~2480	11 to 26		O-QPSK

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE≥1G	22 deg. C, 66% RH 23 deg. C, 64% RH	120Vac, 60Hz	Adair Peng, Willy Cheng
RE<1G	26 deg. C, 68% RH	120Vac, 60Hz	Adair Peng

3.3 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

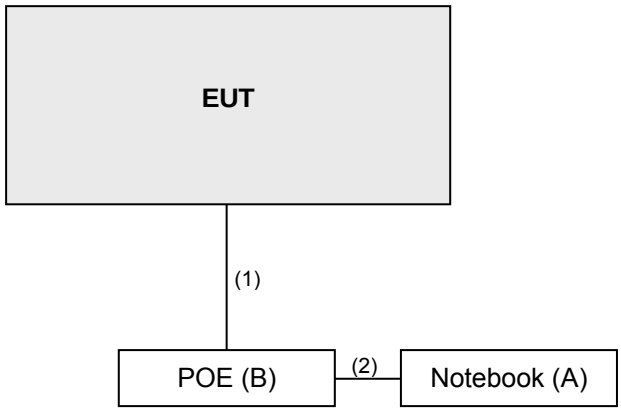
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5420	BPQ7MQ1	FCC DoC Approved	-
B.	POE	EnGenius	EPA5006GP	NA	NA	Supplied by the manufacturer

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ45, Cat5e	1	10	N	0	-
2.	RJ45, Cat5e	1	1.5	N	0	-

3.3.1 Configuration of System under Test



3.4 General Description of Applied Standards

The EUT is a RF Product. According to the specification of the EUT declared by the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C (15.247)

FCC Part 15, Subpart E (15.407)

ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

Note: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

Applicable To			Limit	
789033 D02 General UNII Test Procedure New Rules v01r04			Field Strength at 3m	
			PK: 74 (dBμV/m)	AV: 54 (dBμV/m)
Frequency Band	Applicable To		EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)		PK: -27 (dBm/MHz)	PK: 68.2(dBμV/m)
5250~5350 MHz	15.407(b)(2)			
5470~5725 MHz	15.407(b)(3)			
5725~5850 MHz	☒	15.407(b)(4)(i)	PK: -27 (dBm/MHz) [*1] PK: 10 (dBm/MHz) [*2] PK: 15.6 (dBm/MHz) [*3] PK: 27 (dBm/MHz) [*4]	PK: 68.2(dBμV/m) [*1] PK: 105.2 (dBμV/m) [*2] PK: 110.8(dBμV/m) [*3] PK: 122.2 (dBμV/m) [*4]
	☐	15.407(b)(4)(ii)	Emission limits in section 15.247(d)	

[*1] beyond 75 MHz or more above of the band edge.

[*2] below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

[*3] below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

[*4] from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3}$$ μV/m, where P is the eirp (Watts).

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESIB7	100187	May 02, 2017	May 01, 2018
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Nov. 16, 2016	Nov. 15, 2017
BILOG Antenna SCHWARZBECK	VULB9168	9168-171	Dec. 28, 2016	Dec. 27, 2017
HORN Antenna SCHWARZBECK	9120D	209	Dec. 27, 2016	Dec. 26, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 14, 2016	Dec. 13, 2017
Loop Antenna	EM-6879	269	Aug. 11, 2017	Aug. 10, 2018
Preamplifier Agilent	8447D	2944A10738	Aug. 21, 2017	Aug. 20, 2018
Preamplifier Agilent	8449B	3008A02465	Apr. 05, 2017	Apr. 04, 2018
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (223653/4)	Aug. 21, 2017	Aug. 20, 2018
RF signal cable HUBER+SUHNER& EMCI	SUCOFLEX 106	Cable-CH3-03 (309224+12738)	Aug. 21, 2017	Aug. 20, 2018
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
High Speed Peak Power Meter	ML2495A	1145013	Mar. 07, 2017	Mar. 06, 2018
Power Sensor	MA2411B	1126085	Mar. 07, 2017	Mar. 06, 2018
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 08, 2017	Jun. 07, 2018
26GHz ~ 40GHz Amplifier Agilent	8449B	3008A1960	Aug. 08, 2017	Aug. 07, 2018

Note:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 3.
3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Designation Number is TW0003. The number will be varied with the Lab location and scope as attached.
5. The IC Site Registration No. is IC 7450F-3.

4.1.3 Test Procedures

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. Both X and Y axes of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. 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.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

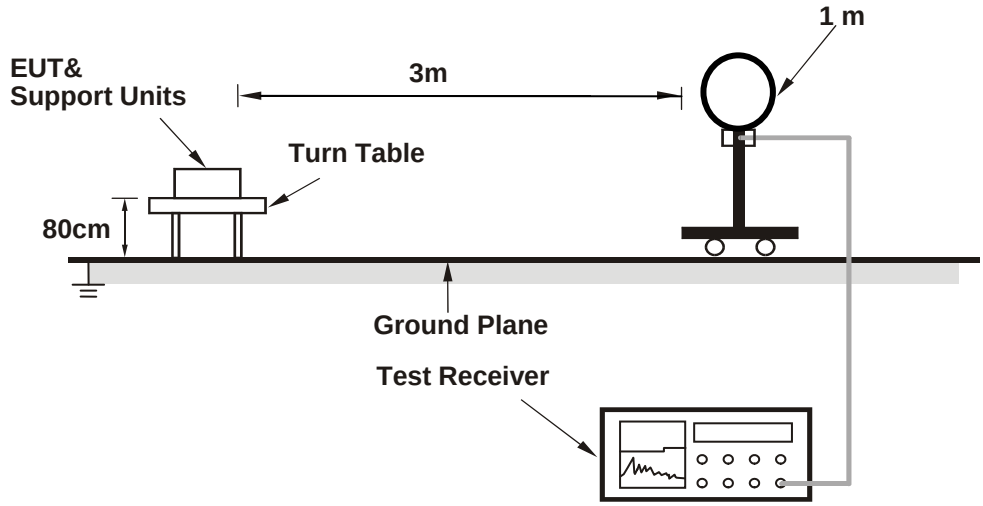
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

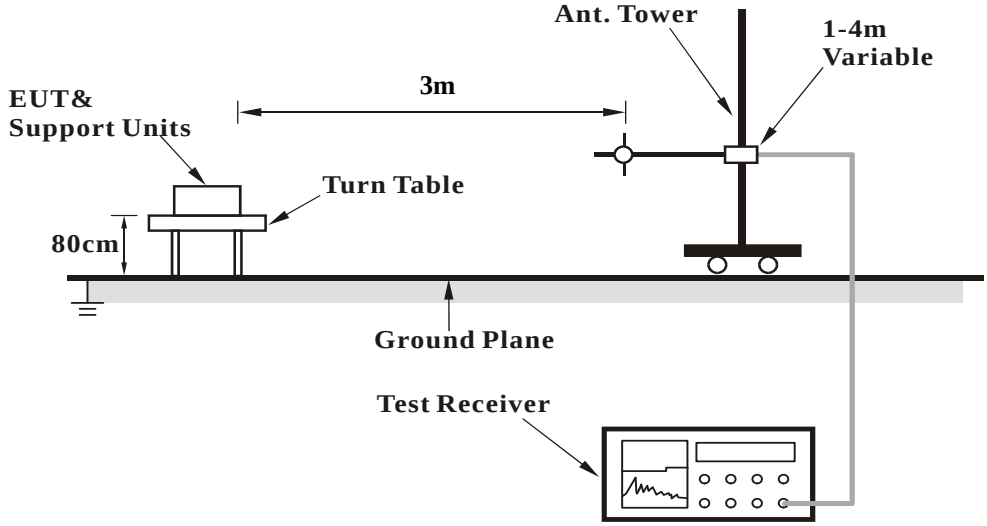
No deviation.

4.1.5 Test Setup

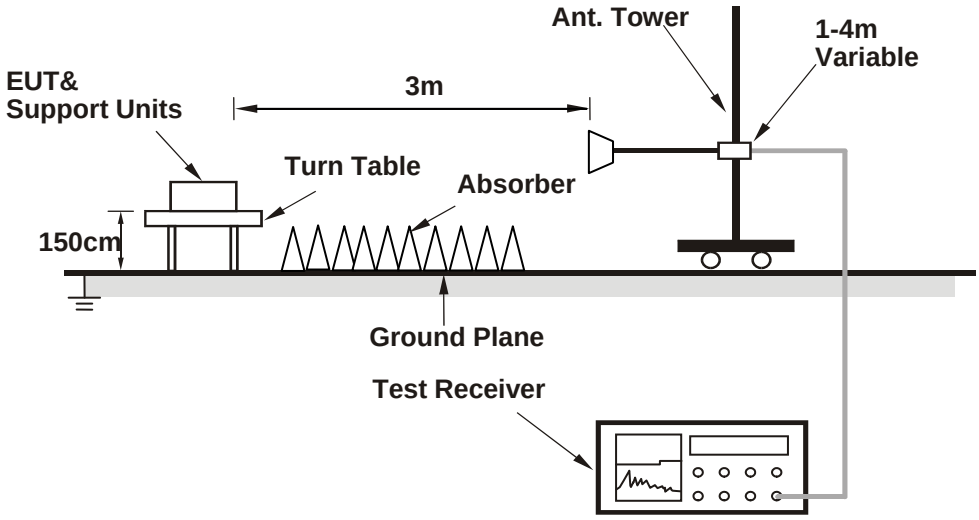
For Radiated emission below 30MHz



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).

4.1.6 EUT Operating Conditions

a. Placed the EUT on the testing table.
b. Prepared a notebook to act as a communication partner and placed it outside of testing area.
c. The communication partner connected with EUT via a RJ45 cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
d. The communication partner sent data to EUT by command "PING".

4.1.7 Test Results

Above 1GHz Data:

ML-2499-HPA8-01 Ant. + ML-5299-FHPA6-01R Ant.+ ML-2499-HPA8-01 Ant.

802.11g + 802.11a + BT LE

CHANNEL	CH 6 + CH 144 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.0 PK	74.0	-9.0	2.99 H	193	32.10	32.90
2	2390.00	51.2 AV	54.0	-2.8	2.99 H	193	18.30	32.90
3	*2437.00	128.3 PK			2.99 H	344	95.10	33.20
4	*2437.00	117.9 AV			2.99 H	344	84.70	33.20
5	*2480.00	91.1 PK			1.96 H	155	57.70	33.40
6	*2480.00	89.5 AV			1.96 H	155	56.10	33.40
7	2483.50	66.9 PK	74.0	-7.1	1.99 H	296	33.50	33.40
8	2483.50	53.2 AV	54.0	-0.8	1.99 H	296	19.80	33.40
9	4874.00	56.3 PK	74.0	-17.7	1.87 H	59	52.70	3.60
10	4874.00	42.1 AV	54.0	-11.9	1.87 H	59	38.50	3.60
11	4960.00	51.3 PK	74.0	-22.7	2.03 H	99	47.60	3.70
12	4960.00	42.1 AV	54.0	-11.9	2.03 H	99	38.40	3.70
13	#5470.00	59.3 PK	74.0	-14.7	1.66 H	357	55.30	4.00
14	#5470.00	46.5 AV	54.0	-7.5	1.66 H	357	42.50	4.00
15	*5720.00	112.9 PK			1.59 H	333	72.50	40.40
16	*5720.00	61.5 AV			1.59 H	333	21.10	40.40
17	#5825.00	60.1 PK	74.0	-13.9	1.99 H	296	55.40	4.70
18	#5825.00	47.3 AV	54.0	-6.7	1.99 H	296	42.60	4.70
19	11440.00	48.2 PK	74.0	-25.8	1.93 H	321	29.90	18.30
20	11440.00	35.7 AV	54.0	-18.3	1.93 H	321	17.40	18.30

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 144 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.5 PK	74.0	-16.5	2.87 V	303	24.60	32.90
2	2390.00	47.9 AV	54.0	-6.1	2.87 V	303	15.00	32.90
3	*2437.00	113.9 PK			2.99 V	322	80.70	33.20
4	*2437.00	109.7 AV			2.99 V	322	76.50	33.20
5	*2480.00	107.0 PK			1.93 V	203	73.60	33.40
6	*2480.00	105.3 AV			1.93 V	203	71.90	33.40
7	2483.50	58.0 PK	74.0	-16.0	2.94 V	198	24.60	33.40
8	2483.50	48.3 AV	54.0	-5.7	2.94 V	198	14.90	33.40
9	4874.00	53.1 PK	74.0	-20.9	3.21 V	222	49.50	3.60
10	4874.00	49.2 AV	54.0	-4.8	3.21 V	222	45.60	3.60
11	4960.00	50.1 PK	74.0	-23.9	1.85 V	296	46.40	3.70
12	4960.00	41.1 AV	54.0	-12.9	1.85 V	296	37.40	3.70
13	#5470.00	62.9 PK	74.0	-11.1	1.99 V	296	58.90	4.00
14	#5470.00	46.8 AV	54.0	-7.2	1.99 V	296	42.80	4.00
15	*5720.00	125.8 PK			1.85 V	322	85.40	40.40
16	*5720.00	115.9 AV			1.85 V	322	75.50	40.40
17	#5825.00	64.1 PK	74.0	-9.9	1.93 V	333	59.40	4.70
18	#5825.00	51.0 AV	54.0	-3.0	1.93 V	333	46.30	4.70
19	11440.00	63.8 PK	74.0	-10.2	1.88 V	342	45.50	18.30
20	11440.00	50.0 AV	54.0	-4.0	1.88 V	342	31.70	18.30

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

ML-2499-HPA8-01 Ant. + ML-5299-FHPA6-01R Ant. + ML-2499-HPA8-01 Ant.

802.11g + 802.11a + Zigbee

CHANNEL	CH 6 + CH 144 + CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	64.8 PK	74.0	-9.2	2.52 H	353	31.90	32.90
2	2390.00	50.9 AV	54.0	-3.1	2.52 H	353	18.00	32.90
3	*2405.00	103.6 PK			1.49 H	171	70.60	33.00
4	*2405.00	99.6 AV			1.49 H	171	66.60	33.00
5	*2437.00	126.2 PK			2.42 H	353	93.00	33.20
6	*2437.00	116.3 AV			2.42 H	353	83.10	33.20
7	2483.50	68.3 PK	74.0	-5.7	2.30 H	356	34.90	33.40
8	2483.50	52.8 AV	54.0	-1.2	2.30 H	356	19.40	33.40
9	4810.00	47.6 PK	74.0	-26.4	2.10 H	331	44.00	3.60
10	4810.00	35.4 AV	54.0	-18.6	2.10 H	331	31.80	3.60
11	4874.00	53.8 PK	74.0	-20.2	1.23 H	346	50.20	3.60
12	4874.00	42.1 AV	54.0	-11.9	1.23 H	346	38.50	3.60
13	#5470.00	58.1 PK	74.0	-15.9	1.72 H	341	54.10	4.00
14	#5470.00	45.3 AV	54.0	-8.7	1.72 H	341	41.30	4.00
15	*5720.00	116.8 PK			3.01 H	346	76.40	40.40
16	*5720.00	106.0 AV			3.01 H	346	65.60	40.40
17	#5825.00	58.2 PK	74.0	-15.8	1.93 H	304	53.50	4.70
18	#5825.00	45.6 AV	54.0	-8.4	1.93 H	304	40.90	4.70
19	11440.00	64.4 PK	74.0	-9.6	1.53 H	304	46.10	18.30
20	11440.00	51.9 AV	54.0	-2.1	1.53 H	304	33.60	18.30

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 144 + CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	54.7 PK	74.0	-19.3	3.29 V	284	21.80	32.90
2	2390.00	46.1 AV	54.0	-7.9	3.29 V	284	13.20	32.90
3	*2405.00	91.9 PK			3.33 V	349	58.90	33.00
4	*2405.00	87.4 AV			3.33 V	349	54.40	33.00
5	*2437.00	113.6 PK			3.78 V	305	80.40	33.20
6	*2437.00	104.4 AV			3.78 V	305	71.20	33.20
7	2483.50	57.9 PK	74.0	-16.1	3.01 V	315	24.50	33.40
8	2483.50	45.5 AV	54.0	-8.5	3.01 V	315	12.10	33.40
9	4810.00	32.0 AV	54.0	-22.0	3.04 V	169	28.40	3.60
10	4874.00	47.2 PK	74.0	-26.8	3.63 V	249	43.60	3.60
11	4874.00	34.0 AV	54.0	-20.0	3.63 V	249	30.40	3.60
12	#5470.00	62.2 PK	74.0	-11.8	2.88 V	299	58.20	4.00
13	#5470.00	47.4 AV	54.0	-6.6	2.88 V	299	43.40	4.00
14	*5720.00	124.6 PK			2.98 V	309	84.20	40.40
15	*5720.00	114.7 AV			2.98 V	309	74.30	40.40
16	#5825.00	62.2 PK	74.0	-11.8	2.83 V	338	57.50	4.70
17	#5825.00	48.5 AV	54.0	-5.5	2.83 V	338	43.80	4.70
18	11440.00	61.4 PK	74.0	-12.6	3.43 V	314	43.10	18.30
19	11440.00	48.3 AV	54.0	-5.7	3.43 V	314	30.00	18.30

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

ML-2499-HPA8-01 Ant. + ML-5299-FHPA6-01R Ant. + ML-2452-PNA7-01R Ant.

802.11g + 802.11a + BT LE

CHANNEL	CH 6 + CH 144 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	64.7 PK	74.0	-9.3	2.83 H	201	31.80	32.90
2	2390.00	50.9 AV	54.0	-3.1	2.83 H	201	18.00	32.90
3	*2437.00	127.9 PK			2.88 H	333	94.70	33.20
4	*2437.00	117.3 AV			2.88 H	333	84.10	33.20
5	*2480.00	106.9 PK			2.03 H	19	73.50	33.40
6	*2480.00	104.1 AV			2.03 H	19	70.70	33.40
7	2483.50	66.1 PK	74.0	-7.9	1.30 H	333	32.70	33.40
8	2483.50	53.0 AV	54.0	-1.0	1.30 H	333	19.60	33.40
9	4874.00	51.5 PK	74.0	-22.5	1.50 H	111	47.90	3.60
10	4874.00	41.7 AV	54.0	-12.3	1.50 H	111	38.10	3.60
11	4960.00	51.3 PK	74.0	-22.7	2.93 H	309	47.60	3.70
12	4960.00	40.1 AV	54.0	-13.9	2.93 H	309	36.40	3.70
13	#5470.00	60.1 PK	74.0	-13.9	1.60 H	333	56.10	4.00
14	#5470.00	47.1 AV	54.0	-6.9	1.60 H	333	43.10	4.00
15	*5720.00	113.1 PK			1.88 H	358	72.70	40.40
16	*5720.00	101.3 AV			1.88 H	358	60.90	40.40
17	#5825.00	60.1 PK	74.0	-13.9	2.03 H	349	55.40	4.70
18	#5825.00	47.3 AV	54.0	-6.7	2.03 H	349	42.60	4.70
19	11440.00	67.2 PK	74.0	-6.8	2.03 H	311	48.90	18.30
20	11440.00	53.5 AV	54.0	-0.5	2.03 H	311	35.20	18.30

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 144 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.2 PK	74.0	-15.8	2.99 V	287	25.30	32.90
2	2390.00	48.3 AV	54.0	-5.7	2.99 V	287	15.40	32.90
3	*2437.00	113.3 PK			2.99 V	353	80.10	33.20
4	*2437.00	109.2 AV			2.99 V	353	76.00	33.20
5	*2480.00	95.0 PK			2.83 V	353	61.60	33.40
6	*2480.00	93.2 AV			2.83 V	353	59.80	33.40
7	2483.50	58.0 PK	74.0	-16.0	3.12 V	179	24.60	33.40
8	2483.50	47.9 AV	54.0	-6.1	3.12 V	179	14.50	33.40
9	4874.00	53.0 PK	74.0	-21.0	2.93 V	111	49.40	3.60
10	4874.00	50.0 AV	54.0	-4.0	2.93 V	111	46.40	3.60
11	4960.00	51.2 PK	74.0	-22.8	2.31 V	359	47.50	3.70
12	4960.00	40.3 AV	54.0	-13.7	2.31 V	359	36.60	3.70
13	#5470.00	63.4 PK	74.0	-10.6	1.93 V	293	59.40	4.00
14	#5470.00	48.5 AV	54.0	-5.5	1.93 V	293	44.50	4.00
15	*5720.00	126.0 PK			1.68 V	352	85.60	40.40
16	*5720.00	116.0 AV			1.68 V	352	75.60	40.40
17	#5825.00	63.0 PK	74.0	-11.0	1.79 V	322	58.30	4.70
18	#5825.00	50.0 AV	54.0	-4.0	1.79 V	322	45.30	4.70
19	11440.00	63.0 PK	74.0	-11.0	1.93 V	293	44.70	18.30
20	11440.00	49.5 AV	54.0	-4.5	1.93 V	293	31.20	18.30

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

ML-2499-HPA8-01 Ant. + ML-5299-FHPA6-01R Ant. + ML-2452-PNA7-01R Ant.

802.11g + 802.11a + Zigbee

CHANNEL	CH 6 + CH 144 + CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.3 PK	74.0	-13.7	1.91 H	258	27.40	32.90
2	2390.00	47.1 AV	54.0	-6.9	1.91 H	258	14.20	32.90
3	*2405.00	104.2 PK			1.78 H	349	71.20	33.00
4	*2405.00	101.1 AV			1.78 H	349	68.10	33.00
5	*2437.00	126.1 PK			2.44 H	308	92.90	33.20
6	*2437.00	116.1 AV			2.44 H	308	82.90	33.20
7	2483.50	66.7 PK	74.0	-7.3	1.44 H	313	33.30	33.40
8	2483.50	53.3 AV	54.0	-0.7	1.44 H	313	19.90	33.40
9	4810.00	47.3 PK	74.0	-26.7	2.39 H	155	43.70	3.60
10	4810.00	35.6 AV	54.0	-18.4	2.39 H	155	32.00	3.60
11	4874.00	54.2 PK	74.0	-19.8	1.39 H	26	50.60	3.60
12	4874.00	41.3 AV	54.0	-12.7	1.39 H	26	37.70	3.60
13	*5720.00	110.2 PK			1.86 H	348	69.80	40.40
14	*5720.00	99.9 AV			1.86 H	348	59.50	40.40
15	11440.00	65.3 PK	74.0	-8.7	1.53 H	305	47.00	18.30
16	11440.00	52.9 AV	54.0	-1.1	1.53 H	305	34.60	18.30

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 144 + CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	51.1 PK	74.0	-22.9	1.93 V	201	18.20	32.90
2	2390.00	42.3 AV	54.0	-11.7	1.93 V	201	9.40	32.90
3	*2405.00	105.3 PK			1.88 V	155	72.30	33.00
4	*2405.00	100.1 AV			1.88 V	155	67.10	33.00
5	*2437.00	113.1 PK			2.68 V	299	79.90	33.20
6	*2437.00	109.1 AV			2.68 V	299	75.90	33.20
7	2483.50	56.7 PK	74.0	-17.3	2.83 V	112	23.30	33.40
8	2483.50	47.3 AV	54.0	-6.7	2.83 V	112	13.90	33.40
9	4810.00	51.1 PK	74.0	-22.9	1.77 V	305	47.50	3.60
10	4810.00	39.8 AV	54.0	-14.2	1.77 V	305	36.20	3.60
11	4874.00	52.7 PK	74.0	-21.3	3.08 V	77	49.10	3.60
12	4874.00	49.2 AV	54.0	-4.8	3.08 V	77	45.60	3.60
13	*5720.00	124.3 PK			1.44 V	308	83.90	40.40
14	*5720.00	115.1 AV			1.44 V	308	74.70	40.40
15	11440.00	61.9 PK	74.0	-12.1	1.93 V	305	43.60	18.30
16	11440.00	48.3 AV	54.0	-5.7	1.93 V	305	30.00	18.30

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

ML-2452-PNA5-01R Ant. + ML-2499-HPA8-01 Ant.

802.11g + 802.11n (HT20) + BT LE

CHANNEL	CH 6 + CH 60 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.9 PK	74.0	-15.1	1.80 H	351	26.00	32.90
2	2390.00	47.5 AV	54.0	-6.5	1.80 H	351	14.60	32.90
3	*2437.00	108.1 PK			1.66 H	333	74.90	33.20
4	*2437.00	100.2 AV			1.66 H	333	67.00	33.20
5	*2480.00	105.3 PK			2.31 H	50	71.90	33.40
6	*2480.00	104.9 AV			2.31 H	50	71.50	33.40
7	2483.50	60.2 PK	74.0	-13.8	1.90 H	99	26.80	33.40
8	2483.50	49.3 AV	54.0	-4.7	1.90 H	99	15.90	33.40
9	4874.00	47.2 PK	74.0	-26.8	1.93 H	203	43.60	3.60
10	4874.00	35.0 AV	54.0	-19.0	1.93 H	203	31.40	3.60
11	4960.00	51.5 PK	74.0	-22.5	2.51 H	177	47.80	3.70
12	4960.00	40.2 AV	54.0	-13.8	2.51 H	177	36.50	3.70
13	*5300.00	109.1 PK			1.93 H	100	69.50	39.60
14	*5300.00	98.7 AV			1.93 H	100	59.10	39.60
15	11060.00	60.3 PK	74.0	-13.7	1.83 H	299	41.70	18.60
16	11060.00	47.7 AV	54.0	-6.3	1.83 H	299	29.10	18.60

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 60 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.7 PK	74.0	-8.3	1.99 V	353	32.80	32.90
2	2390.00	51.1 AV	54.0	-2.9	1.99 V	353	18.20	32.90
3	*2437.00	123.3 PK			1.59 V	321	90.10	33.20
4	*2437.00	113.5 AV			1.59 V	321	80.30	33.20
5	*2480.00	95.1 PK			2.51 V	354	61.70	33.40
6	*2480.00	94.6 AV			2.51 V	354	61.20	33.40
7	2483.50	67.1 PK	74.0	-6.9	2.03 V	188	33.70	33.40
8	2483.50	52.1 AV	54.0	-1.9	2.03 V	188	18.70	33.40
9	4874.00	47.7 PK	74.0	-26.3	1.93 V	211	44.10	3.60
10	4874.00	36.3 AV	54.0	-17.7	1.93 V	211	32.70	3.60
11	4960.00	51.3 PK	74.0	-22.7	2.41 V	333	47.60	3.70
12	4960.00	40.1 AV	54.0	-13.9	2.41 V	333	36.40	3.70
13	*5300.00	125.1 PK			1.59 V	111	85.50	39.60
14	*5300.00	113.5 AV			1.59 V	111	73.90	39.60
15	10600.00	62.1 PK	74.0	-11.9	1.59 V	303	45.00	17.10
16	10600.00	48.1 AV	54.0	-5.9	1.59 V	303	31.00	17.10

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

ML-2452-PNA5-01R Ant. + ML-2499-HPA8-01 Ant.

802.11g + 802.11n (HT20) + Zigbee

CHANNEL	CH 6 + CH 60 + CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.1 PK	74.0	-16.9	1.99 H	333	24.20	32.90
2	2390.00	47.0 AV	54.0	-7.0	1.99 H	333	14.10	32.90
3	*2405.00	106.1 PK			1.59 H	310	73.10	33.00
4	*2405.00	101.3 AV			1.59 H	310	68.30	33.00
5	*2437.00	108.9 PK			1.59 H	319	75.70	33.20
6	*2437.00	101.3 AV			1.59 H	319	68.10	33.20
7	4810.00	48.7 PK	74.0	-25.3	2.01 H	293	45.10	3.60
8	4810.00	36.2 AV	54.0	-17.8	2.01 H	293	32.60	3.60
9	4874.00	48.3 PK	74.0	-25.7	1.93 H	265	44.70	3.60
10	4874.00	36.1 AV	54.0	-17.9	1.93 H	265	32.50	3.60
11	*5300.00	110.1 PK			1.98 H	57	70.50	39.60
12	*5300.00	99.8 AV			1.98 H	57	60.20	39.60
13	10600.00	61.5 PK	74.0	-12.5	1.93 H	203	44.40	17.10
14	10600.00	48.1 AV	54.0	-5.9	1.93 H	203	31.00	17.10

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 60 + CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.1 PK	74.0	-6.9	1.93 V	350	34.20	32.90
2	2390.00	53.0 AV	54.0	-1.0	1.93 V	350	20.10	32.90
3	*2405.00	98.1 PK			2.11 V	329	65.10	33.00
4	*2405.00	94.5 AV			2.11 V	329	61.50	33.00
5	*2437.00	124.5 PK			1.56 V	333	91.30	33.20
6	*2437.00	115.1 AV			1.56 V	333	81.90	33.20
7	4810.00	50.1 PK	74.0	-23.9	2.93 V	250	46.50	3.60
8	4810.00	39.7 AV	54.0	-14.3	2.93 V	250	36.10	3.60
9	4874.00	49.1 PK	74.0	-24.9	1.96 V	258	45.50	3.60
10	4874.00	37.1 AV	54.0	-16.9	1.96 V	258	33.50	3.60
11	*5300.00	111.1 PK			1.93 V	59	71.50	39.60
12	*5300.00	100.0 AV			1.93 V	59	60.40	39.60
13	10600.00	60.3 PK	74.0	-13.7	1.61 V	293	43.20	17.10
14	10600.00	47.1 AV	54.0	-6.9	1.61 V	293	30.00	17.10

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

ML-2452-PNA5-01R Ant. + ML-2452-PNA7-01R Ant.

802.11g + 802.11n (HT20) + BT LE

CHANNEL	CH 6 + CH 60 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	108.3 PK			1.53 H	331	75.10	33.20
2	*2437.00	101.4 AV			1.53 H	331	68.20	33.20
3	*2480.00	105.3 PK			2.17 H	17	71.90	33.40
4	*2480.00	104.2 AV			2.17 H	17	70.80	33.40
5	2483.50	72.8 PK	74.0	-1.2	2.25 H	47	39.40	33.40
6	2483.50	50.2 AV	54.0	-3.8	2.25 H	47	16.80	33.40
7	4874.00	46.3 PK	74.0	-27.7	1.84 H	239	42.70	3.60
8	4874.00	34.8 AV	54.0	-19.2	1.84 H	239	31.20	3.60
9	4960.00	50.7 PK	74.0	-23.3	2.95 H	314	47.00	3.70
10	4960.00	40.3 AV	54.0	-13.7	2.95 H	314	36.60	3.70
11	*5300.00	108.7 PK			1.77 H	8	69.10	39.60
12	*5300.00	98.4 AV			1.77 H	8	58.80	39.60
13	10600.00	59.0 PK	74.0	-15.0	2.79 H	304	41.90	17.10
14	10600.00	46.3 AV	54.0	-7.7	2.79 H	304	29.20	17.10

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 60 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	123.8 PK			1.74 V	315	90.60	33.20
2	*2437.00	112.9 AV			1.74 V	315	79.70	33.20
3	*2480.00	95.0 PK			2.41 V	349	61.60	33.40
4	*2480.00	91.8 AV			2.41 V	349	58.40	33.40
5	2483.50	59.6 PK	74.0	-14.4	2.77 V	313	26.20	33.40
6	2483.50	48.6 AV	54.0	-5.4	2.77 V	313	15.20	33.40
7	4874.00	47.1 PK	74.0	-26.9	1.88 V	214	43.50	3.60
8	4874.00	35.9 AV	54.0	-18.1	1.88 V	214	32.30	3.60
9	4960.00	51.6 PK	74.0	-22.4	2.11 V	284	47.90	3.70
10	4960.00	40.4 AV	54.0	-13.6	2.11 V	284	36.70	3.70
11	*5300.00	124.2 PK			1.48 V	125	84.60	39.60
12	*5300.00	113.1 AV			1.48 V	125	73.50	39.60
13	10600.00	60.3 PK	74.0	-13.7	2.24 V	318	43.20	17.10
14	10600.00	46.8 AV	54.0	-7.2	2.24 V	318	29.70	17.10

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

ML-2452-PNA5-01R Ant. + ML-2452-PNA7-01R Ant.

802.11g + 802.11n (HT20) + Zigbee

CHANNEL	CH 6 + CH 60 + CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	55.9 PK	74.0	-18.1	1.78 H	299	23.00	32.90
2	2390.00	45.7 AV	54.0	-8.3	1.78 H	299	12.80	32.90
3	*2405.00	103.9 PK			2.22 H	312	70.90	33.00
4	*2405.00	100.9 AV			2.22 H	312	67.90	33.00
5	*2437.00	107.4 PK			1.83 H	217	74.20	33.20
6	*2437.00	99.6 AV			1.83 H	217	66.40	33.20
7	4810.00	47.5 PK	74.0	-26.5	3.01 H	348	43.90	3.60
8	4810.00	35.3 AV	54.0	-18.7	3.01 H	348	31.70	3.60
9	4874.00	45.9 PK	74.0	-28.1	1.55 H	277	42.30	3.60
10	4874.00	33.1 AV	54.0	-20.9	1.55 H	277	29.50	3.60
11	*5300.00	108.9 PK			2.24 H	39	69.30	39.60
12	*5300.00	98.1 AV			2.24 H	39	58.50	39.60
13	10600.00	59.3 PK	74.0	-14.7	3.49 H	183	42.20	17.10
14	10600.00	47.1 AV	54.0	-6.9	3.49 H	183	30.00	17.10

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 60 + CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	64.4 PK	74.0	-9.6	1.94 V	301	31.50	32.90
2	2390.00	50.3 AV	54.0	-3.7	1.94 V	301	17.40	32.90
3	*2405.00	104.6 PK			1.93 V	74	71.60	33.00
4	*2405.00	100.9 AV			1.93 V	74	67.90	33.00
5	*2437.00	124.7 PK			2.09 V	344	91.50	33.20
6	*2437.00	81.2 AV			2.09 V	344	48.00	33.20
7	4810.00	46.6 PK	74.0	-27.4	1.42 V	333	43.00	3.60
8	4810.00	35.1 AV	54.0	-18.9	1.42 V	333	31.50	3.60
9	4874.00	51.6 PK	74.0	-22.4	1.24 V	228	48.00	3.60
10	4874.00	44.3 AV	54.0	-9.7	1.24 V	228	40.70	3.60
11	*5300.00	124.7 PK			1.48 V	109	85.10	39.60
12	*5300.00	114.1 AV			1.48 V	109	74.50	39.60
13	10600.00	60.4 PK	74.0	-13.6	2.14 V	179	43.30	17.10
14	10600.00	46.7 AV	54.0	-7.3	2.14 V	179	29.60	17.10

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

ML-2452-PNA7-01R Ant. + ML-2499-HPA8-01 Ant.

802.11b + 802.11a + BT LE

CHANNEL	CH 6 + CH 60 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	126.9 PK			2.48 H	333	93.70	33.20
2	*2437.00	124.1 AV			2.48 H	333	90.90	33.20
3	*2480.00	89.2 PK			1.78 H	146	55.80	33.40
4	*2480.00	87.5 AV			1.78 H	146	54.10	33.40
5	2483.50	59.9 PK	74.0	-14.1	1.93 H	149	26.50	33.40
6	2483.50	48.3 AV	54.0	-5.7	1.93 H	149	14.90	33.40
7	4874.00	52.8 PK	74.0	-21.2	2.29 H	188	49.20	3.60
8	4874.00	48.1 AV	54.0	-5.9	2.29 H	188	44.50	3.60
9	4960.00	50.1 PK	74.0	-23.9	1.87 H	119	46.40	3.70
10	4960.00	40.9 AV	54.0	-13.1	1.87 H	119	37.20	3.70
11	5150.00	61.6 PK	74.0	-12.4	1.88 H	15	58.00	3.60
12	5150.00	51.8 AV	54.0	-2.2	1.88 H	15	48.20	3.60
13	*5300.00	122.6 PK			1.93 H	335	83.00	39.60
14	*5300.00	112.1 AV			1.93 H	335	72.50	39.60
15	10600.00	58.3 PK	74.0	-15.7	1.93 H	13	41.20	17.10
16	10600.00	46.2 AV	54.0	-7.8	1.93 H	13	29.10	17.10

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 60 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	113.9 PK			2.77 V	211	80.70	33.20
2	*2437.00	111.9 AV			2.77 V	211	78.70	33.20
3	*2480.00	105.8 PK			1.89 V	223	72.40	33.40
4	*2480.00	104.6 AV			1.89 V	223	71.20	33.40
5	**2483.50**	**73.8 PK**	**74.0**	**-0.2**	**2.02 V**	**155**	**40.40**	**33.40**
6	2483.50	50.7 AV	54.0	-3.3	2.02 V	155	17.30	33.40
7	4874.00	52.6 PK	74.0	-21.4	1.98 V	136	49.00	3.60
8	4874.00	48.7 AV	54.0	-5.3	1.98 V	136	45.10	3.60
9	4960.00	48.9 PK	74.0	-25.1	1.77 V	318	45.20	3.70
10	4960.00	39.9 AV	54.0	-14.1	1.77 V	318	36.20	3.70
11	5150.00	57.3 PK	74.0	-16.7	2.44 V	331	53.70	3.60
12	5150.00	44.5 AV	54.0	-9.5	2.44 V	331	40.90	3.60
13	*5300.00	108.7 PK			3.18 V	305	69.10	39.60
14	*5300.00	98.6 AV			3.18 V	305	59.00	39.60
15	10600.00	60.3 PK	74.0	-13.7	2.24 V	339	43.20	17.10
16	10600.00	46.8 AV	54.0	-7.2	2.24 V	339	29.70	17.10

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

ML-2452-PNA7-01R Ant. + ML-2499-HPA8-01 Ant.

802.11b + 802.11a + Zigbee

CHANNEL	CH 6 + CH 60+ CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.6 PK	74.0	-15.4	1.93 H	122	25.70	32.90
2	2390.00	46.8 AV	54.0	-7.2	1.93 H	122	13.90	32.90
3	*2405.00	89.6 PK			1.86 H	213	56.60	33.00
4	*2405.00	85.7 AV			1.86 H	213	52.70	33.00
5	*2437.00	126.6 PK			2.18 H	188	93.40	33.20
6	*2437.00	124.3 AV			2.18 H	188	91.10	33.20
7	4810.00	49.8 PK	74.0	-24.2	1.66 H	15	46.20	3.60
8	4810.00	37.6 AV	54.0	-16.4	1.66 H	15	34.00	3.60
9	4874.00	52.3 PK	74.0	-21.7	2.36 H	183	48.70	3.60
10	4874.00	48.1 AV	54.0	-5.9	2.36 H	183	44.50	3.60
11	5150.00	62.3 PK	74.0	-11.7	1.66 H	15	58.70	3.60
12	5150.00	52.7 AV	54.0	-1.3	1.66 H	15	49.10	3.60
13	*5300.00	122.5 PK			1.66 H	338	82.90	39.60
14	*5300.00	112.3 AV			1.66 H	338	72.70	39.60
15	10600.00	58.3 PK	74.0	-15.7	1.77 H	48	41.20	17.10
16	10600.00	46.2 AV	54.0	-7.8	1.77 H	48	29.10	17.10

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 60 + CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.2 PK	74.0	-15.8	1.98 V	212	25.30	32.90
2	2390.00	47.1 AV	54.0	-6.9	1.98 V	212	14.20	32.90
3	*2405.00	105.1 PK			1.93 V	55	72.10	33.00
4	*2405.00	100.9 AV			1.93 V	55	67.90	33.00
5	*2437.00	114.1 PK			2.74 V	236	80.90	33.20
6	*2437.00	111.9 AV			2.74 V	236	78.70	33.20
7	4810.00	50.3 PK	74.0	-23.7	1.48 V	313	46.70	3.60
8	4810.00	39.6 AV	54.0	-14.4	1.48 V	313	36.00	3.60
9	4874.00	52.3 PK	74.0	-21.7	2.11 V	199	48.70	3.60
10	4874.00	48.7 AV	54.0	-5.3	2.11 V	199	45.10	3.60
11	5150.00	56.9 PK	74.0	-17.1	2.41 V	336	53.30	3.60
12	5150.00	43.8 AV	54.0	-10.2	2.41 V	336	40.20	3.60
13	*5300.00	108.2 PK			3.42 V	305	68.60	39.60
14	*5300.00	97.6 AV			3.42 V	305	58.00	39.60
15	10600.00	60.3 PK	74.0	-13.7	2.74 V	301	43.20	17.10
16	10600.00	46.6 AV	54.0	-7.4	2.74 V	301	29.50	17.10

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

ML-2452-PNA7-01R Ant. + ML-2452-PNA7-01R Ant.

802.11b + 802.11a + BT LE

CHANNEL	CH 6 + CH 60 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	126.6 PK			2.83 H	355	93.40	33.20
2	*2437.00	124.7 AV			2.83 H	355	91.50	33.20
3	*2480.00	104.9 PK			1.99 H	24	71.50	33.40
4	*2480.00	103.4 AV			1.99 H	24	70.00	33.40
5	2483.50	72.7 PK	74.0	-1.3	2.03 H	15	39.30	33.40
6	2483.50	49.6 AV	54.0	-4.4	2.03 H	15	16.20	33.40
7	4874.00	52.1 PK	74.0	-21.9	2.64 H	155	48.50	3.60
8	4874.00	47.8 AV	54.0	-6.2	2.64 H	155	44.20	3.60
9	4960.00	50.6 PK	74.0	-23.4	2.41 H	263	46.90	3.70
10	4960.00	40.3 AV	54.0	-13.7	2.41 H	263	36.60	3.70
11	5150.00	62.3 PK	74.0	-11.7	2.09 H	20	58.70	3.60
12	5150.00	51.9 AV	54.0	-2.1	2.09 H	20	48.30	3.60
13	*5300.00	123.1 PK			1.79 H	305	83.50	39.60
14	*5300.00	112.9 AV			1.79 H	305	73.30	39.60
15	10600.00	48.3 PK	74.0	-25.7	1.93 H	47	31.20	17.10
16	10600.00	46.1 AV	54.0	-7.9	1.93 H	47	29.00	17.10

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 60 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	114.3 PK			2.44 V	266	81.10	33.20
2	*2437.00	113.1 AV			2.44 V	266	79.90	33.20
3	*2480.00	93.4 PK			1.41 V	291	60.00	33.40
4	*2480.00	92.1 AV			1.41 V	291	58.70	33.40
5	2483.50	58.9 PK	74.0	-15.1	3.11 V	211	25.50	33.40
6	2483.50	48.3 AV	54.0	-5.7	3.11 V	211	14.90	33.40
7	4874.00	52.4 PK	74.0	-21.6	2.11 V	198	48.80	3.60
8	4874.00	48.9 AV	54.0	-5.1	2.11 V	198	45.30	3.60
9	4960.00	50.6 PK	74.0	-23.4	2.08 V	271	46.90	3.70
10	4960.00	40.1 AV	54.0	-13.9	2.08 V	271	36.40	3.70
11	5150.00	62.9 PK	74.0	-11.1	1.72 V	15	59.30	3.60
12	5150.00	52.1 AV	54.0	-1.9	1.72 V	15	48.50	3.60
13	*5300.00	123.1 PK			1.74 V	338	83.50	39.60
14	*5300.00	112.2 AV			1.74 V	338	72.60	39.60
15	10600.00	58.8 PK	74.0	-15.2	1.92 V	48	41.70	17.10
16	10600.00	46.2 AV	54.0	-7.8	1.92 V	48	29.10	17.10

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

ML-2452-PNA7-01R Ant. + ML-2452-PNA7-01R Ant.

802.11b + 802.11a + Zigbee

CHANNEL	CH 6 + CH 60 + CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	56.7 PK	74.0	-17.3	2.23 H	305	23.80	32.90
2	2390.00	46.9 AV	54.0	-7.1	2.23 H	305	14.00	32.90
3	*2405.00	104.8 PK			1.48 H	338	71.80	33.00
4	*2405.00	100.6 AV			1.48 H	338	67.60	33.00
5	*2437.00	126.4 PK			2.22 H	344	93.20	33.20
6	*2437.00	124.1 AV			2.22 H	344	90.90	33.20
7	4810.00	48.1 PK	74.0	-25.9	2.39 H	188	44.50	3.60
8	4810.00	35.9 AV	54.0	-18.1	2.39 H	188	32.30	3.60
9	4874.00	52.3 PK	74.0	-21.7	2.18 H	188	48.70	3.60
10	4874.00	47.8 AV	54.0	-6.2	2.18 H	188	44.20	3.60
11	5150.00	61.9 PK	74.0	-12.1	1.66 H	11	58.30	3.60
12	5150.00	52.1 AV	54.0	-1.9	1.66 H	11	48.50	3.60
13	*5300.00	122.1 PK			1.63 H	335	82.50	39.60
14	*5300.00	112.6 AV			1.63 H	335	73.00	39.60
15	10600.00	58.1 PK	74.0	-15.9	1.88 H	48	41.00	17.10
16	10600.00	46.5 AV	54.0	-7.5	1.88 H	48	29.40	17.10

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 60 + CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.2 PK	74.0	-15.8	2.53 V	293	25.30	32.90
2	2390.00	46.3 AV	54.0	-7.7	2.53 V	293	13.40	32.90
3	*2405.00	96.1 PK			3.34 V	251	63.10	33.00
4	*2405.00	92.3 AV			3.34 V	251	59.30	33.00
5	*2437.00	113.4 PK			2.15 V	302	80.20	33.20
6	*2437.00	111.8 AV			2.15 V	302	78.60	33.20
7	4810.00	48.6 PK	74.0	-25.4	2.73 V	156	45.00	3.60
8	4810.00	38.1 AV	54.0	-15.9	2.73 V	156	34.50	3.60
9	4874.00	52.1 PK	74.0	-21.9	2.26 V	200	48.50	3.60
10	4874.00	48.3 AV	54.0	-5.7	2.26 V	200	44.70	3.60
11	5150.00	56.9 PK	74.0	-17.1	2.13 V	318	53.30	3.60
12	5150.00	43.6 AV	54.0	-10.4	2.13 V	318	40.00	3.60
13	*5300.00	108.8 PK			3.06 V	335	69.20	39.60
14	*5300.00	98.0 AV			3.06 V	335	58.40	39.60
15	10600.00	60.2 PK	74.0	-13.8	2.44 V	345	43.10	17.10
16	10600.00	46.6 AV	54.0	-7.4	2.44 V	345	29.50	17.10

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

ML-2452-PNL6M4-N36 Ant. + ML-2499-HPA8-01 Ant.

802.11n (HT20) + 802.11n (HT20) + BT LE

CHANNEL	CH 6 + CH 100 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	126.0 PK			1.90 H	344	92.80	33.20
2	*2437.00	116.1 AV			1.90 H	344	82.90	33.20
3	*2480.00	107.0 PK			2.41 H	129	73.60	33.40
4	*2480.00	106.1 AV			2.41 H	129	72.70	33.40
5	2483.50	73.7 PK	74.0	-0.3	1.99 H	153	40.30	33.40
6	2483.50	51.0 AV	54.0	-3.0	1.99 H	153	17.60	33.40
7	4874.00	51.9 PK	74.0	-22.1	1.99 H	331	48.30	3.60
8	4874.00	41.7 AV	54.0	-12.3	1.99 H	331	38.10	3.60
9	4960.00	52.1 PK	74.0	-21.9	2.57 H	347	48.40	3.70
10	4960.00	41.1 AV	54.0	-12.9	2.57 H	347	37.40	3.70
11	5460.00	67.7 PK	74.0	-6.3	1.90 H	311	63.70	4.00
12	5460.00	51.9 AV	54.0	-2.1	1.90 H	311	47.90	4.00
13	#5470.00	71.5 PK	74.0	-2.5	1.87 H	329	67.50	4.00
14	#5470.00	53.5 AV	54.0	-0.5	1.87 H	329	49.50	4.00
15	*5500.00	122.5 PK			1.77 H	287	82.50	40.00
16	*5500.00	111.9 AV			1.77 H	287	71.90	40.00
17	11000.00	45.0 PK	74.0	-29.0	1.93 H	347	26.00	19.00
18	11000.00	31.9 AV	54.0	-22.1	1.93 H	347	12.90	19.00

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 100 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	120.9 PK			3.03 V	358	87.70	33.20
2	*2437.00	111.0 AV			3.03 V	358	77.80	33.20
3	*2480.00	94.9 PK			2.66 V	307	61.50	33.40
4	*2480.00	93.7 AV			2.66 V	307	60.30	33.40
5	2483.50	60.1 PK	74.0	-13.9	2.51 V	290	26.70	33.40
6	2483.50	49.0 AV	54.0	-5.0	2.51 V	290	15.60	33.40
7	4874.00	52.8 PK	74.0	-21.2	3.09 V	177	49.20	3.60
8	4874.00	43.0 AV	54.0	-11.0	3.09 V	177	39.40	3.60
9	4960.00	51.5 PK	74.0	-22.5	2.93 V	359	47.80	3.70
10	4960.00	40.7 AV	54.0	-13.3	2.93 V	359	37.00	3.70
11	5460.00	60.8 PK	74.0	-13.2	2.55 V	359	56.80	4.00
12	5460.00	48.0 AV	54.0	-6.0	2.55 V	359	44.00	4.00
13	#5470.00	70.5 PK	74.0	-3.5	2.33 V	344	66.50	4.00
14	#5470.00	53.7 AV	54.0	-0.3	2.33 V	344	49.70	4.00
15	*5500.00	86.0 PK			2.78 V	349	46.00	40.00
16	*5500.00	75.9 AV			2.78 V	349	35.90	40.00
17	11000.00	64.5 PK	74.0	-9.5	2.19 V	312	45.50	19.00
18	11000.00	50.5 AV	54.0	-3.5	2.19 V	312	31.50	19.00

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

ML-2452-PNL6M4-N36 Ant. + ML-2499-HPA8-01 Ant.

802.11n (HT20) + 802.11n (HT20) + Zigbee

CHANNEL	CH 6 + CH 100 + CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.1 PK	74.0	-15.9	2.29 H	333	25.20	32.90
2	2390.00	47.9 AV	54.0	-6.1	2.29 H	333	15.00	32.90
3	*2405.00	106.4 PK			1.93 H	347	73.40	33.00
4	*2405.00	102.3 AV			1.93 H	347	69.30	33.00
5	*2437.00	125.3 PK			1.93 H	299	92.10	33.20
6	*2437.00	115.7 AV			1.93 H	299	82.50	33.20
7	4810.00	49.3 PK	74.0	-24.7	2.93 H	199	45.70	3.60
8	4810.00	37.5 AV	54.0	-16.5	2.93 H	199	33.90	3.60
9	4874.00	50.3 PK	74.0	-23.7	2.03 H	299	46.70	3.60
10	4874.00	41.5 AV	54.0	-12.5	2.03 H	299	37.90	3.60
11	5460.00	67.3 PK	74.0	-6.7	1.83 H	348	63.30	4.00
12	5460.00	51.5 AV	54.0	-2.5	1.83 H	348	47.50	4.00
13	#5470.00	71.5 PK	74.0	-2.5	1.83 H	329	67.50	4.00
14	#5470.00	53.1 AV	54.0	-0.9	1.83 H	329	49.10	4.00
15	*5500.00	122.7 PK			1.66 H	333	82.70	40.00
16	*5500.00	111.9 AV			1.66 H	333	71.90	40.00
17	11000.00	63.3 PK	74.0	-10.7	1.88 H	349	44.30	19.00
18	11000.00	50.1 AV	54.0	-3.9	1.88 H	349	31.10	19.00

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 100 + CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	59.5 PK	74.0	-14.5	2.03 V	133	26.60	32.90
2	2390.00	47.9 AV	54.0	-6.1	2.03 V	133	15.00	32.90
3	*2405.00	90.3 PK			1.63 V	199	57.30	33.00
4	*2405.00	87.0 AV			1.63 V	199	54.00	33.00
5	*2437.00	120.3 PK			2.50 V	333	87.10	33.20
6	*2437.00	109.1 AV			2.50 V	333	75.90	33.20
7	4810.00	50.6 PK	74.0	-23.4	1.93 V	59	47.00	3.60
8	4810.00	38.9 AV	54.0	-15.1	1.93 V	59	35.30	3.60
9	4874.00	52.3 PK	74.0	-21.7	2.20 V	110	48.70	3.60
10	4874.00	42.5 AV	54.0	-11.5	2.20 V	110	38.90	3.60
11	5460.00	60.5 PK	74.0	-13.5	2.23 V	311	56.50	4.00
12	5460.00	47.6 AV	54.0	-6.4	2.23 V	311	43.60	4.00
13	#5470.00	70.5 PK	74.0	-3.5	1.89 V	354	66.50	4.00
14	#5470.00	53.4 AV	54.0	-0.6	1.89 V	354	49.40	4.00
15	*5500.00	86.1 PK			2.99 V	313	46.10	40.00
16	*5500.00	77.5 AV			2.99 V	313	37.50	40.00
17	11000.00	65.1 PK	74.0	-8.9	2.03 V	311	46.10	19.00
18	11000.00	50.2 AV	54.0	-3.8	2.03 V	311	31.20	19.00

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

ML-2452-PNL6M4-N36 Ant. + ML-2452-PNA7-01R Ant.

802.11n (HT20) + 802.11n (HT20) + BT LE

CHANNEL	CH 6 + CH 100 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	125.7 PK			1.88 H	322	92.50	33.20
2	*2437.00	115.9 AV			1.88 H	322	82.70	33.20
3	*2480.00	106.6 PK			2.33 H	110	73.20	33.40
4	*2480.00	105.7 AV			2.33 H	110	72.30	33.40
5	2483.50	73.5 PK	74.0	-0.5	1.89 H	120	40.10	33.40
6	2483.50	50.4 AV	54.0	-3.6	1.89 H	120	17.00	33.40
7	4874.00	51.3 PK	74.0	-22.7	1.88 H	299	47.70	3.60
8	4874.00	41.5 AV	54.0	-12.5	1.88 H	299	37.90	3.60
9	4960.00	51.9 PK	74.0	-22.1	2.33 H	356	48.20	3.70
10	4960.00	40.7 AV	54.0	-13.3	2.33 H	356	37.00	3.70
11	5460.00	67.5 PK	74.0	-6.5	1.80 H	293	63.50	4.00
12	5460.00	51.5 AV	54.0	-2.5	1.80 H	293	47.50	4.00
13	#5470.00	71.1 PK	74.0	-2.9	1.81 H	303	67.10	4.00
14	#5470.00	53.1 AV	54.0	-0.9	1.81 H	303	49.10	4.00
15	*5500.00	122.3 PK			1.69 H	294	82.30	40.00
16	*5500.00	111.5 AV			1.69 H	294	71.50	40.00
17	11000.00	63.7 PK	74.0	-10.3	1.81 H	333	44.70	19.00
18	11000.00	50.1 AV	54.0	-3.9	1.81 H	333	31.10	19.00

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 100 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	120.3 PK			2.90 V	349	87.10	33.20
2	*2437.00	110.5 AV			2.90 V	349	77.30	33.20
3	*2480.00	94.5 PK			2.55 V	293	61.10	33.40
4	*2480.00	93.3 AV			2.55 V	293	59.90	33.40
5	2483.50	59.8 PK	74.0	-14.2	2.50 V	278	26.40	33.40
6	2483.50	48.6 AV	54.0	-5.4	2.50 V	278	15.20	33.40
7	4874.00	52.3 PK	74.0	-21.7	2.93 V	156	48.70	3.60
8	4874.00	42.7 AV	54.0	-11.3	2.93 V	156	39.10	3.60
9	4960.00	51.3 PK	74.0	-22.7	2.22 V	311	47.60	3.70
10	4960.00	40.5 AV	54.0	-13.5	2.22 V	311	36.80	3.70
11	5460.00	60.1 PK	74.0	-13.9	2.50 V	344	56.10	4.00
12	5460.00	47.3 AV	54.0	-6.7	2.50 V	344	43.30	4.00
13	#5470.00	70.1 PK	74.0	-3.9	2.29 V	339	66.10	4.00
14	#5470.00	53.3 AV	54.0	-0.7	2.29 V	339	49.30	4.00
15	*5500.00	85.7 PK			2.90 V	341	45.70	40.00
16	*5500.00	75.6 AV			2.90 V	341	35.60	40.00
17	11000.00	64.1 PK	74.0	-9.9	1.99 V	303	45.10	19.00
18	11000.00	50.3 AV	54.0	-3.7	1.99 V	303	31.30	19.00

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

ML-2452-PNL6M4-N36 Ant. + ML-2452-PNA7-01R Ant.

802.11n (HT20) + 802.11n (HT20) + Zigbee

CHANNEL	CH 6 + CH 100 + CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.3 PK	74.0	-15.7	2.30 H	353	25.40	32.90
2	2390.00	48.0 AV	54.0	-6.0	2.30 H	353	15.10	32.90
3	*2405.00	106.1 PK			1.99 H	353	73.10	33.00
4	*2405.00	103.1 AV			1.99 H	353	70.10	33.00
5	*2437.00	125.1 PK			1.99 H	303	91.90	33.20
6	*2437.00	115.9 AV			1.99 H	303	82.70	33.20
7	4810.00	49.9 PK	74.0	-24.1	2.81 H	203	46.30	3.60
8	4810.00	38.1 AV	54.0	-15.9	2.81 H	203	34.50	3.60
9	4874.00	50.5 PK	74.0	-23.5	2.11 H	303	46.90	3.60
10	4874.00	42.0 AV	54.0	-12.0	2.11 H	303	38.40	3.60
11	5460.00	67.5 PK	74.0	-6.5	1.90 H	333	63.50	4.00
12	5460.00	52.0 AV	54.0	-2.0	1.90 H	333	48.00	4.00
13	#5470.00	71.7 PK	74.0	-2.3	1.90 H	354	67.70	4.00
14	#5470.00	53.2 AV	54.0	-0.8	1.90 H	354	49.20	4.00
15	*5500.00	122.6 PK			1.80 H	339	82.60	40.00
16	*5500.00	112.1 AV			1.80 H	339	72.10	40.00
17	11000.00	64.1 PK	74.0	-9.9	1.90 H	350	45.10	19.00
18	11000.00	51.2 AV	54.0	-2.8	1.90 H	350	32.20	19.00

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 100 + CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	59.7 PK	74.0	-14.3	2.09 V	150	26.80	32.90
2	2390.00	48.1 AV	54.0	-5.9	2.09 V	150	15.20	32.90
3	*2405.00	90.7 PK			1.77 V	201	57.70	33.00
4	*2405.00	87.3 AV			1.77 V	201	54.30	33.00
5	*2437.00	120.9 PK			2.51 V	351	87.70	33.20
6	*2437.00	110.3 AV			2.51 V	351	77.10	33.20
7	4810.00	50.9 PK	74.0	-23.1	1.87 V	103	47.30	3.60
8	4810.00	39.9 AV	54.0	-14.1	1.87 V	103	36.30	3.60
9	4874.00	52.5 PK	74.0	-21.5	2.30 V	129	48.90	3.60
10	4874.00	42.7 AV	54.0	-11.3	2.30 V	129	39.10	3.60
11	5460.00	60.1 PK	74.0	-13.9	2.51 V	350	56.10	4.00
12	5460.00	48.1 AV	54.0	-5.9	2.51 V	350	44.10	4.00
13	#5470.00	70.7 PK	74.0	-3.3	1.90 V	333	66.70	4.00
14	#5470.00	53.3 AV	54.0	-0.7	1.90 V	333	49.30	4.00
15	*5500.00	77.8 PK			3.00 V	319	37.80	40.00
16	*5500.00	65.8 AV			3.00 V	319	25.80	40.00
17	11000.00	66.1 PK	74.0	-7.9	2.11 V	339	47.10	19.00
18	11000.00	51.3 AV	54.0	-2.7	2.11 V	339	32.30	19.00

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

ML-2452-PNL9M3-036 Ant. + ML-2499-HPA8-01 Ant.

802.11n (HT20) + 802.11n (HT20) + BT LE

CHANNEL	CH 6 + CH 100 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.6 PK	74.0	-15.4	1.93 H	147	25.70	32.90
2	2390.00	46.9 AV	54.0	-7.1	1.93 H	147	14.00	32.90
3	*2437.00	120.1 PK			2.16 H	115	86.90	33.20
4	*2437.00	109.3 AV			2.16 H	115	76.10	33.20
5	*2480.00	90.5 PK			1.99 H	111	57.10	33.40
6	*2480.00	89.1 AV			1.99 H	111	55.70	33.40
7	2483.50	60.5 PK	74.0	-13.5	1.99 H	122	27.10	33.40
8	2483.50	48.7 AV	54.0	-5.3	1.99 H	122	15.30	33.40
9	4874.00	46.5 PK	74.0	-27.5	2.74 H	299	42.90	3.60
10	4874.00	34.8 AV	54.0	-19.2	2.74 H	299	31.20	3.60
11	4960.00	51.0 PK	74.0	-23.0	1.99 H	111	47.30	3.70
12	4960.00	41.1 AV	54.0	-12.9	1.99 H	111	37.40	3.70
13	5460.00	63.3 PK	74.0	-10.7	1.77 H	284	59.30	4.00
14	5460.00	53.1 AV	54.0	-0.9	1.77 H	284	49.10	4.00
15	#5470.00	63.2 PK	74.0	-10.8	1.77 H	284	59.20	4.00
16	#5470.00	51.5 AV	54.0	-2.5	1.77 H	284	47.50	4.00
17	*5500.00	118.3 PK			1.59 H	357	78.30	40.00
18	*5500.00	107.5 AV			1.59 H	357	67.50	40.00
19	11000.00	62.1 PK	74.0	-11.9	2.28 H	331	43.10	19.00
20	11000.00	48.3 AV	54.0	-5.7	2.28 H	331	29.30	19.00

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 100 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.3 PK	74.0	-15.7	1.68 V	214	25.40	32.90
2	2390.00	47.1 AV	54.0	-6.9	1.68 V	214	14.20	32.90
3	*2437.00	119.6 PK			2.64 V	22	86.40	33.20
4	*2437.00	108.3 AV			2.64 V	22	75.10	33.20
5	*2480.00	107.0 PK			1.93 V	199	73.60	33.40
6	*2480.00	105.9 AV			1.93 V	199	72.50	33.40
7	2483.50	72.1 PK	74.0	-1.9	1.99 V	211	38.70	33.40
8	2483.50	50.3 AV	54.0	-3.7	1.99 V	211	16.90	33.40
9	4874.00	47.1 PK	74.0	-26.9	2.69 V	247	43.50	3.60
10	4874.00	34.8 AV	54.0	-19.2	2.69 V	247	31.20	3.60
11	4960.00	50.1 PK	74.0	-23.9	1.88 V	339	46.40	3.70
12	4960.00	40.3 AV	54.0	-13.7	1.88 V	339	36.60	3.70
13	5460.00	60.1 PK	74.0	-13.9	1.83 V	262	56.10	4.00
14	5460.00	48.2 AV	54.0	-5.8	1.83 V	262	44.20	4.00
15	#5470.00	63.3 PK	74.0	-10.7	1.83 V	262	59.30	4.00
16	#5470.00	51.6 AV	54.0	-2.4	1.83 V	262	47.60	4.00
17	*5500.00	117.2 PK			1.93 V	341	77.20	40.00
18	*5500.00	106.8 AV			1.93 V	341	66.80	40.00
19	11000.00	62.7 PK	74.0	-11.3	1.93 V	314	43.70	19.00
20	11000.00	48.6 AV	54.0	-5.4	1.93 V	314	29.60	19.00

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

ML-2452-PNL9M3-036 Ant. + ML-2499-HPA8-01 Ant.

802.11n (HT20) + 802.11n (HT20) + Zigbee

CHANNEL	CH 6 + CH 100 + CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.4 PK	74.0	-15.6	1.83 H	125	25.50	32.90
2	2390.00	46.7 AV	54.0	-7.3	1.83 H	125	13.80	32.90
3	*2405.00	89.8 PK			1.86 H	260	56.80	33.00
4	*2405.00	85.6 AV			1.86 H	260	52.60	33.00
5	*2437.00	119.8 PK			2.56 H	315	86.60	33.20
6	*2437.00	108.5 AV			2.56 H	315	75.30	33.20
7	4810.00	49.6 PK	74.0	-24.4	1.11 H	355	46.00	3.60
8	4810.00	37.1 AV	54.0	-16.9	1.11 H	355	33.50	3.60
9	4874.00	46.7 PK	74.0	-27.3	2.42 H	308	43.10	3.60
10	4874.00	34.3 AV	54.0	-19.7	2.42 H	308	30.70	3.60
11	5460.00	62.5 PK	74.0	-11.5	2.17 H	308	58.50	4.00
12	5460.00	53.1 AV	54.0	-0.9	2.17 H	308	49.10	4.00
13	#5470.00	63.4 PK	74.0	-10.6	2.17 H	308	59.40	4.00
14	#5470.00	51.1 AV	54.0	-2.9	2.17 H	308	47.10	4.00
15	*5500.00	118.9 PK			2.05 H	299	78.90	40.00
16	*5500.00	107.5 AV			2.05 H	299	67.50	40.00
17	11000.00	61.7 PK	74.0	-12.3	2.39 H	314	42.70	19.00
18	11000.00	47.1 AV	54.0	-6.9	2.39 H	314	28.10	19.00

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 100 + CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.7 PK	74.0	-15.3	2.56 V	304	25.80	32.90
2	2390.00	46.9 AV	54.0	-7.1	2.56 V	304	14.00	32.90
3	*2405.00	104.9 PK			2.24 V	78	71.90	33.00
4	*2405.00	100.9 AV			2.24 V	78	67.90	33.00
5	*2437.00	119.7 PK			2.39 V	6	86.50	33.20
6	*2437.00	108.6 AV			2.39 V	6	75.40	33.20
7	4810.00	50.5 PK	74.0	-23.5	1.69 V	295	46.90	3.60
8	4810.00	39.7 AV	54.0	-14.3	1.69 V	295	36.10	3.60
9	4874.00	47.5 PK	74.0	-26.5	3.11 V	296	43.90	3.60
10	4874.00	34.3 AV	54.0	-19.7	3.11 V	296	30.70	3.60
11	5460.00	59.9 PK	74.0	-14.1	2.52 V	308	55.90	4.00
12	5460.00	47.5 AV	54.0	-6.5	2.52 V	308	43.50	4.00
13	#5470.00	62.5 PK	74.0	-11.5	2.52 V	308	58.50	4.00
14	#5470.00	50.8 AV	54.0	-3.2	2.52 V	308	46.80	4.00
15	*5500.00	117.2 PK			2.63 V	349	77.20	40.00
16	*5500.00	107.1 AV			2.63 V	349	67.10	40.00
17	11000.00	62.3 PK	74.0	-11.7	2.55 V	272	43.30	19.00
18	11000.00	48.1 AV	54.0	-5.9	2.55 V	272	29.10	19.00

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

ML-2452-PNL9M3-036 Ant. + ML-2452-PNA7-01R Ant.

802.11n (HT20) + 802.11n (HT20) + BT LE

CHANNEL	CH 6 + CH 100 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	119.4 PK			1.62 H	18	86.20	33.20
2	*2437.00	108.9 AV			1.62 H	18	75.70	33.20
3	*2480.00	104.6 PK			2.51 H	303	71.20	33.40
4	*2480.00	103.8 AV			2.51 H	303	70.40	33.40
5	2483.50	72.3 PK	74.0	-1.7	2.05 H	293	38.90	33.40
6	2483.50	49.8 AV	54.0	-4.2	2.05 H	293	16.40	33.40
7	4874.00	46.8 PK	74.0	-27.2	1.63 H	341	43.20	3.60
8	4874.00	34.9 AV	54.0	-19.1	1.63 H	341	31.30	3.60
9	4960.00	50.2 PK	74.0	-23.8	2.41 H	188	46.50	3.70
10	4960.00	39.7 AV	54.0	-14.3	2.41 H	168	36.00	3.70
11	5460.00	62.5 PK	74.0	-11.5	2.21 H	348	58.50	4.00
12	5460.00	52.7 AV	54.0	-1.3	2.21 H	348	48.70	4.00
13	#5470.00	63.8 PK	74.0	-10.2	2.21 H	348	59.80	4.00
14	#5470.00	51.4 AV	54.0	-2.6	2.21 H	348	47.40	4.00
15	*5500.00	119.7 PK			2.53 H	314	79.70	40.00
16	*5500.00	108.1 AV			2.53 H	314	68.10	40.00
17	11000.00	61.6 PK	74.0	-12.4	2.69 H	294	42.60	19.00
18	11000.00	47.4 AV	54.0	-6.6	2.69 H	294	28.40	19.00

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 100 + CH 39	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	120.2 PK			2.80 V	348	87.00	33.20
2	*2437.00	109.3 AV			2.80 V	348	76.10	33.20
3	*2480.00	93.4 PK			2.44 V	298	60.00	33.40
4	*2480.00	92.6 AV			2.44 V	298	59.20	33.40
5	2483.50	58.3 PK	74.0	-15.7	1.98 V	258	24.90	33.40
6	2483.50	47.7 AV	54.0	-6.3	1.98 V	258	14.30	33.40
7	4874.00	47.3 PK	74.0	-26.7	2.96 V	307	43.70	3.60
8	4874.00	34.8 AV	54.0	-19.2	2.96 V	307	31.20	3.60
9	4960.00	51.1 PK	74.0	-22.9	1.83 V	286	47.40	3.70
10	4960.00	40.3 AV	54.0	-13.7	1.83 V	286	36.60	3.70
11	5460.00	59.8 PK	74.0	-14.2	2.22 V	334	55.80	4.00
12	5460.00	47.8 AV	54.0	-6.2	2.22 V	334	43.80	4.00
13	#5470.00	62.6 PK	74.0	-11.4	2.22 V	334	58.60	4.00
14	#5470.00	50.8 AV	54.0	-3.2	2.22 V	334	46.80	4.00
15	*5500.00	117.1 PK			2.14 V	339	77.10	40.00
16	*5500.00	106.8 AV			2.14 V	339	66.80	40.00
17	11000.00	62.5 PK	74.0	-11.5	2.18 V	308	43.50	19.00
18	11000.00	49.1 AV	54.0	-4.9	2.18 V	308	30.10	19.00

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

ML-2452-PNL9M3-036 Ant. + ML-2452-PNA7-01R Ant.

802.11n (HT20) + 802.11n (HT20) + Zigbee

CHANNEL	CH 6 + CH 100 + CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	55.8 PK	74.0	-18.2	2.05 H	311	22.90	32.90
2	2390.00	46.6 AV	54.0	-7.4	2.05 H	311	13.70	32.90
3	*2405.00	104.5 PK			1.42 H	339	71.50	33.00
4	*2405.00	101.1 AV			1.42 H	339	68.10	33.00
5	*2437.00	119.4 PK			1.62 H	18	86.20	33.20
6	*2437.00	108.9 AV			1.62 H	18	75.70	33.20
7	4810.00	47.6 PK	74.0	-26.4	2.28 H	184	44.00	3.60
8	4810.00	35.4 AV	54.0	-18.6	2.28 H	184	31.80	3.60
9	4874.00	46.8 PK	74.0	-27.2	1.63 H	341	43.20	3.60
10	4874.00	34.9 AV	54.0	-19.1	1.63 H	341	31.30	3.60
11	5460.00	62.3 PK	74.0	-11.7	1.83 H	345	58.30	4.00
12	5460.00	52.8 AV	54.0	-1.2	1.83 H	345	48.80	4.00
13	#5470.00	63.3 PK	74.0	-10.7	1.83 H	345	59.30	4.00
14	#5470.00	51.5 AV	54.0	-2.5	1.83 H	345	47.50	4.00
15	*5500.00	118.9 PK			1.66 H	302	78.90	40.00
16	*5500.00	107.5 AV			1.66 H	302	67.50	40.00
17	11000.00	61.9 PK	74.0	-12.1	1.77 H	338	42.90	19.00
18	11000.00	47.5 AV	54.0	-6.5	1.77 H	338	28.50	19.00

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 100 + CH 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.1 PK	74.0	-15.9	2.56 V	320	25.20	32.90
2	2390.00	46.3 AV	54.0	-7.7	2.56 V	320	13.40	32.90
3	*2405.00	96.3 PK			3.14 V	277	63.30	33.00
4	*2405.00	92.4 AV			3.14 V	277	59.40	33.00
5	*2437.00	119.6 PK			2.77 V	26	86.40	33.20
6	*2437.00	108.8 AV			2.77 V	26	75.60	33.20
7	4810.00	48.6 PK	74.0	-25.4	2.76 V	183	45.00	3.60
8	4810.00	37.9 AV	54.0	-16.1	2.76 V	183	34.30	3.60
9	4874.00	47.6 PK	74.0	-26.4	2.74 V	336	44.00	3.60
10	4874.00	34.5 AV	54.0	-19.5	2.74 V	336	30.90	3.60
11	5460.00	58.3 PK	74.0	-15.7	1.66 V	345	54.30	4.00
12	5460.00	46.7 AV	54.0	-7.3	1.66 V	345	42.70	4.00
13	#5470.00	61.4 PK	74.0	-12.6	1.66 V	345	57.40	4.00
14	#5470.00	50.1 AV	54.0	-3.9	1.66 V	345	46.10	4.00
15	*5500.00	116.2 PK			1.76 V	336	76.20	40.00
16	*5500.00	106.4 AV			1.76 V	336	66.40	40.00
17	11000.00	61.6 PK	74.0	-12.4	1.88 V	315	42.60	19.00
18	11000.00	48.3 AV	54.0	-5.7	1.88 V	315	29.30	19.00

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Below 1GHz data

ML-2499-HPA8-01 Ant. + ML-5299-FHPA6-01R Ant.+ ML-2499-HPA8-01 Ant.

802.11g + 802.11a + BT LE

CHANNEL	CH 6 + CH 144 + CH 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	33.79	26.7 QP	40.0	-13.3	1.50 H	121	42.70	-16.00
2	90.17	35.8 QP	43.5	-7.7	2.00 H	116	55.40	-19.60
3	164.06	31.6 QP	43.5	-11.9	1.50 H	257	45.50	-13.90
4	278.77	41.3 QP	46.0	-4.7	1.00 H	317	54.40	-13.10
5	626.80	35.3 QP	46.0	-10.7	1.00 H	300	42.30	-7.00
6	885.39	30.5 QP	46.0	-15.5	2.00 H	341	33.90	-3.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	55.18	35.3 QP	40.0	-4.7	1.01 V	344	49.80	-14.50
2	88.23	28.0 QP	43.5	-15.5	1.51 V	90	47.80	-19.80
3	164.06	26.1 QP	43.5	-17.4	1.01 V	252	40.00	-13.90
4	249.60	24.3 QP	46.0	-21.7	1.51 V	273	38.90	-14.60
5	624.85	28.4 QP	46.0	-17.6	2.00 V	280	35.40	-7.00
6	825.11	26.7 QP	46.0	-19.3	2.00 V	169	30.60	-3.90

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ML-2499-HPA8-01 Ant. + ML-5299-FHPA6-01R Ant. + ML-2499-HPA8-01 Ant.

802.11g + 802.11a + Zigbee

CHANNEL	CH 6 + CH 144 + CH 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	88.23	34.5 QP	43.5	-9.0	2.00 H	95	54.30	-19.80
2	179.61	29.1 QP	43.5	-14.4	1.50 H	338	44.20	-15.10
3	418.76	24.0 QP	46.0	-22.0	1.50 H	123	34.90	-10.90
4	640.41	34.0 QP	46.0	-12.0	1.00 H	314	40.80	-6.80
5	724.01	29.8 QP	46.0	-16.2	1.00 H	115	35.50	-5.70
6	897.05	26.5 QP	46.0	-19.5	2.00 H	14	29.60	-3.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	70.73	31.3 QP	40.0	-8.7	1.01 V	322	47.70	-16.40
2	146.56	26.7 QP	43.5	-16.8	1.01 V	88	40.80	-14.10
3	292.38	22.6 QP	46.0	-23.4	1.51 V	156	35.50	-12.90
4	387.65	27.9 QP	46.0	-18.1	1.01 V	83	39.40	-11.50
5	550.97	27.0 QP	46.0	-19.0	1.01 V	354	35.70	-8.70
6	716.23	28.1 QP	46.0	-17.9	1.01 V	270	34.00	-5.90

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ML-2499-HPA8-01 Ant. + ML-5299-FHPA6-01R Ant. + ML-2452-PNA7-01R Ant.

802.11g + 802.11a + BT LE

CHANNEL	CH 6 + CH 144 + CH 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	33.79	26.6 QP	40.0	-13.4	1.51 H	112	42.60	-16.00
2	90.17	36.9 QP	43.5	-6.6	2.00 H	102	56.50	-19.60
3	278.77	40.6 QP	46.0	-5.4	1.01 H	328	53.70	-13.10
4	366.26	31.9 QP	46.0	-14.1	1.01 H	177	43.60	-11.70
5	624.85	34.7 QP	46.0	-11.3	1.01 H	308	41.70	-7.00
6	716.23	32.1 QP	46.0	-13.9	1.01 H	174	38.00	-5.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	55.18	35.3 QP	40.0	-4.7	1.01 V	344	49.80	-14.50
2	80.45	30.2 QP	40.0	-9.8	1.01 V	153	48.80	-18.60
3	154.33	30.4 QP	43.5	-13.1	1.01 V	7	44.30	-13.90
4	278.77	30.7 QP	46.0	-15.3	1.01 V	88	43.80	-13.10
5	550.97	27.0 QP	46.0	-19.0	1.01 V	354	35.70	-8.70
6	891.22	26.8 QP	46.0	-19.2	1.01 V	176	30.20	-3.40

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ML-2499-HPA8-01 Ant. + ML-5299-FHPA6-01R Ant. + ML-2452-PNA7-01R Ant.

802.11g + 802.11a + Zigbee

CHANNEL	CH 6 + CH 144 + CH 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	78.51	25.3 QP	40.0	-14.7	2.00 H	123	43.50	-18.20
2	125.17	28.8 QP	43.5	-14.7	1.51 H	329	44.60	-15.80
3	272.94	38.2 QP	46.0	-7.8	1.01 H	314	51.60	-13.40
4	480.97	22.9 QP	46.0	-23.1	1.51 H	354	32.70	-9.80
5	694.85	31.3 QP	46.0	-14.7	1.01 H	297	37.40	-6.10
6	893.16	26.5 QP	46.0	-19.5	2.00 H	45	29.70	-3.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	55.18	35.3 QP	40.0	-4.7	1.01 V	344	49.80	-14.50
2	146.56	26.7 QP	43.5	-16.8	1.01 V	88	40.80	-14.10
3	189.33	25.4 QP	43.5	-18.1	1.01 V	35	41.60	-16.20
4	284.60	29.2 QP	46.0	-16.8	1.01 V	304	42.20	-13.00
5	564.58	26.8 QP	46.0	-19.2	1.01 V	354	35.20	-8.40
6	762.90	26.9 QP	46.0	-19.1	2.00 V	171	31.60	-4.70

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ML-2452-PNA5-01R Ant. + ML-2499-HPA8-01 Ant.

802.11g + 802.11n (HT20) + BT LE

CHANNEL	CH 6 + CH 60 + CH 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	57.12	28.7 QP	40.0	-11.3	1.99 H	231	43.30	-14.60
2	109.62	30.5 QP	43.5	-13.0	1.49 H	34	47.90	-17.40
3	164.06	31.8 QP	43.5	-11.7	1.49 H	242	45.70	-13.90
4	261.27	28.9 QP	46.0	-17.1	1.00 H	72	43.00	-14.10
5	599.58	27.6 QP	46.0	-18.4	1.49 H	210	35.10	-7.50
6	746.83	17.9 QP	46.0	-28.1	1.48 H	130	22.80	-4.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	80.45	30.4 QP	40.0	-9.6	1.00 V	92	49.00	-18.60
2	171.83	20.0 QP	43.5	-23.5	1.99 V	163	34.40	-14.40
3	208.77	24.4 QP	43.5	-19.1	1.99 V	169	41.00	-16.60
4	362.37	20.2 QP	46.0	-25.8	1.99 V	183	32.00	-11.80
5	619.02	26.5 QP	46.0	-19.5	1.49 V	68	33.60	-7.10
6	757.06	26.0 QP	46.0	-20.0	1.00 V	317	30.80	-4.80

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ML-2452-PNA5-01R Ant. + ML-2499-HPA8-01 Ant.

802.11g +802.11n (HT20) + Zigbee

CHANNEL	CH 6 + CH 60 + CH 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	78.51	29.3 QP	40.0	-10.7	1.01 H	198	47.50	-18.20
2	107.67	30.0 QP	43.5	-13.5	1.01 H	89	47.60	-17.60
3	216.55	26.9 QP	46.0	-19.1	1.01 H	143	43.00	-16.10
4	257.38	26.0 QP	46.0	-20.0	1.01 H	50	40.20	-14.20
5	617.08	27.4 QP	46.0	-18.6	1.01 H	7	34.50	-7.10
6	881.50	26.7 QP	46.0	-19.3	2.00 H	355	29.90	-3.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	115.45	24.9 QP	43.5	-18.6	1.50 V	11	41.50	-16.60
2	374.04	22.5 QP	46.0	-23.5	1.50 V	284	34.10	-11.60
3	442.09	23.0 QP	46.0	-23.0	2.00 V	275	33.30	-10.30
4	619.02	25.9 QP	46.0	-20.1	1.50 V	67	33.00	-7.10
5	760.95	25.7 QP	46.0	-20.3	1.50 V	212	30.50	-4.80
6	932.05	30.6 QP	46.0	-15.4	2.00 V	7	33.00	-2.40

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ML-2452-PNA5-01R Ant. + ML-2452-PNA7-01R Ant.

802.11g + 802.11n (HT20) + BT LE

CHANNEL	CH 6 + CH 60 + CH 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	70.73	31.8 QP	40.0	-8.2	2.00 H	286	48.20	-16.40
2	107.67	30.0 QP	43.5	-13.5	1.01 H	89	47.60	-17.60
3	317.65	20.4 QP	46.0	-25.6	1.51 H	102	32.70	-12.30
4	459.59	20.0 QP	46.0	-26.0	1.51 H	6	30.10	-10.10
5	601.52	27.3 QP	46.0	-18.7	2.00 H	316	34.70	-7.40
6	760.95	25.0 QP	46.0	-21.0	1.51 H	19	29.80	-4.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	78.51	30.4 QP	40.0	-9.6	1.00 V	138	48.60	-18.20
2	109.62	29.2 QP	43.5	-14.3	1.00 V	66	46.60	-17.40
3	189.33	18.8 QP	43.5	-24.7	1.50 V	181	35.00	-16.20
4	284.60	27.1 QP	46.0	-18.9	2.00 V	151	40.10	-13.00
5	584.02	23.9 QP	46.0	-22.1	1.50 V	83	31.80	-7.90
6	784.28	25.5 QP	46.0	-20.5	2.00 V	33	30.00	-4.50

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ML-2452-PNA5-01R Ant. + ML-2452-PNA7-01R Ant.

802.11g + 802.11n (HT20) + Zigbee

CHANNEL	CH 6 + CH 60 + CH 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	51.29	26.6 QP	40.0	-13.4	1.99 H	88	41.00	-14.40
2	90.17	28.5 QP	43.5	-15.0	1.99 H	278	48.10	-19.60
3	111.56	28.5 QP	43.5	-15.0	1.49 H	15	45.70	-17.20
4	426.53	19.0 QP	46.0	-27.0	1.99 H	128	29.60	-10.60
5	704.57	27.7 QP	46.0	-18.3	1.00 H	356	33.70	-6.00
6	871.78	25.6 QP	46.0	-20.4	1.49 H	26	29.30	-3.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	57.12	36.6 QP	40.0	-3.4	1.49 V	16	51.20	-14.60
2	142.67	27.8 QP	43.5	-15.7	1.00 V	252	42.00	-14.20
3	261.27	26.3 QP	46.0	-19.7	1.00 V	42	40.40	-14.10
4	440.14	18.7 QP	46.0	-27.3	1.49 V	16	29.00	-10.30
5	628.74	25.4 QP	46.0	-20.6	1.49 V	61	32.40	-7.00
6	813.45	25.4 QP	46.0	-20.6	1.49 V	215	29.60	-4.20

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ML-2452-PNA7-01R Ant. + ML-2499-HPA8-01 Ant.

802.11b + 802.11a + BT LE

CHANNEL	CH 6 + CH 60 + CH 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	57.12	29.1 QP	40.0	-10.9	2.00 H	180	43.70	-14.60
2	88.23	26.6 QP	43.5	-16.9	2.00 H	82	46.40	-19.80
3	109.62	27.1 QP	43.5	-16.4	1.51 H	80	44.50	-17.40
4	171.83	26.6 QP	43.5	-16.9	1.51 H	80	41.00	-14.40
5	253.49	27.3 QP	46.0	-18.7	1.01 H	332	41.80	-14.50
6	502.36	25.2 QP	46.0	-20.8	1.51 H	149	34.60	-9.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	33.12	39.6 QP	40.0	-0.4	1.00 V	60	55.70	-16.10
2	58.59	39.4 QP	40.0	-0.6	1.00 V	327	54.10	-14.70
3	90.17	29.5 QP	43.5	-14.0	1.00 V	90	49.10	-19.60
4	134.89	23.4 QP	43.5	-20.1	1.00 V	5	38.40	-15.00
5	255.44	26.4 QP	46.0	-19.6	1.00 V	306	40.80	-14.40
6	374.04	22.5 QP	46.0	-23.5	1.49 V	70	34.10	-11.60

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ML-2452-PNA7-01R Ant. + ML-2499-HPA8-01 Ant.

802.11b + 802.11a + Zigbee

CHANNEL	CH 6 + CH 60 + CH 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	70.73	24.4 QP	40.0	-15.6	2.00 H	273	40.80	-16.40
2	144.61	27.3 QP	43.5	-16.2	2.00 H	46	41.40	-14.10
3	164.06	29.6 QP	43.5	-13.9	2.00 H	202	43.50	-13.90
4	237.94	23.4 QP	46.0	-22.6	1.49 H	318	38.60	-15.20
5	389.59	20.5 QP	46.0	-25.5	1.00 H	144	31.90	-11.40
6	504.31	24.1 QP	46.0	-21.9	1.49 H	177	33.50	-9.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	51.29	38.0 QP	40.0	-2.0	1.49 V	16	52.40	-14.40
2	70.73	30.6 QP	40.0	-9.4	1.99 V	324	47.00	-16.40
3	109.62	26.3 QP	43.5	-17.2	1.00 V	57	43.70	-17.40
4	270.99	27.0 QP	46.0	-19.0	1.00 V	239	40.50	-13.50
5	298.21	22.8 QP	46.0	-23.2	1.99 V	158	35.60	-12.80
6	549.03	24.4 QP	46.0	-21.6	1.49 V	16	33.10	-8.70

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ML-2452-PNA7-01R Ant. + ML-2452-PNA7-01R Ant.

802.11b +802.11a + BT LE

CHANNEL	CH 6 + CH 60 + CH 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	43.51	26.3 QP	40.0	-13.7	1.51 H	75	41.00	-14.70
2	88.23	26.6 QP	43.5	-16.9	2.00 H	82	46.40	-19.80
3	129.06	25.8 QP	43.5	-17.7	1.51 H	6	41.50	-15.70
4	171.83	26.6 QP	43.5	-16.9	1.51 H	80	41.00	-14.40
5	253.49	27.3 QP	46.0	-18.7	1.01 H	332	41.80	-14.50
6	422.65	23.1 QP	46.0	-22.9	2.00 H	112	33.90	-10.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	35.33	39.2 QP	40.0	-0.8	1.00 V	60	55.10	-15.90
2	54.05	37.5 QP	40.0	-2.5	1.00 V	327	51.80	-14.30
3	107.67	29.0 QP	43.5	-14.5	1.00 V	22	46.60	-17.60
4	265.16	28.2 QP	46.0	-17.8	1.00 V	29	42.10	-13.90
5	383.76	23.0 QP	46.0	-23.0	1.49 V	77	34.50	-11.50
6	550.97	24.6 QP	46.0	-21.4	1.00 V	180	33.30	-8.70

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ML-2452-PNA7-01R Ant. + ML-2452-PNA7-01R Ant.

802.11b + 802.11a + Zigbee

CHANNEL	CH 6 + CH 60 + CH 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	33.79	26.2 QP	40.0	-13.8	2.00 H	57	42.20	-16.00
2	125.17	29.3 QP	43.5	-14.2	1.49 H	251	45.10	-15.80
3	274.88	30.9 QP	46.0	-15.1	1.00 H	342	44.20	-13.30
4	374.04	23.4 QP	46.0	-22.6	1.00 H	118	35.00	-11.60
5	506.25	28.2 QP	46.0	-17.8	1.49 H	168	37.50	-9.30
6	603.47	30.6 QP	46.0	-15.4	1.00 H	174	38.00	-7.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	34.91	39.3 QP	40.0	-0.7	1.00 V	141	55.30	-16.00
2	53.86	36.5 QP	40.0	-3.5	1.00 V	6	50.80	-14.30
3	99.89	29.7 QP	43.5	-13.8	1.00 V	111	48.30	-18.60
4	224.33	22.2 QP	46.0	-23.8	1.99 V	110	38.40	-16.20
5	305.99	29.7 QP	46.0	-16.3	1.00 V	293	42.30	-12.60
6	383.76	22.9 QP	46.0	-23.1	1.49 V	70	34.40	-11.50

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ML-2452-PNL6M4-N36 Ant. + ML-2499-HPA8-01 Ant.

802.11n (HT20) + 802.11n (HT20) + BT LE

CHANNEL	CH 6 + CH 100 + CH 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	57.12	29.3 QP	40.0	-10.7	2.00 H	38	43.90	-14.60
2	107.67	30.4 QP	43.5	-13.1	1.49 H	7	48.00	-17.60
3	216.55	31.3 QP	46.0	-14.7	1.00 H	109	47.40	-16.10
4	276.82	27.8 QP	46.0	-18.2	1.00 H	121	41.00	-13.20
5	374.04	28.7 QP	46.0	-17.3	1.00 H	38	40.30	-11.60
6	593.74	30.4 QP	46.0	-15.6	1.49 H	49	38.10	-7.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	35.29	38.1 QP	40.0	-1.9	1.00 V	85	54.00	-15.90
2	61.01	37.0 QP	40.0	-3.0	1.99 V	5	52.00	-15.00
3	144.61	30.1 QP	43.5	-13.4	1.00 V	283	44.20	-14.10
4	282.66	27.6 QP	46.0	-18.4	1.50 V	76	40.70	-13.10
5	374.04	24.6 QP	46.0	-21.4	1.50 V	135	36.20	-11.60
6	609.30	29.3 QP	46.0	-16.7	1.00 V	200	36.70	-7.40

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ML-2452-PNL6M4-N36 Ant. + ML-2499-HPA8-01 Ant.

802.11n (HT20) + 802.11n (HT20) + Zigbee

CHANNEL	CH 6 + CH 100 + CH 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	90.17	33.8 QP	43.5	-9.7	2.00 H	126	53.40	-19.60
2	162.11	31.6 QP	43.5	-11.9	2.00 H	214	45.50	-13.90
3	218.50	31.6 QP	46.0	-14.4	1.50 H	113	47.70	-16.10
4	284.60	27.9 QP	46.0	-18.1	1.00 H	111	40.90	-13.00
5	374.04	27.7 QP	46.0	-18.3	1.00 H	41	39.30	-11.60
6	591.80	30.2 QP	46.0	-15.8	1.50 H	56	37.90	-7.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	35.20	38.0 QP	40.0	-2.0	1.00 V	102	53.90	-15.90
2	61.01	38.3 QP	40.0	-1.7	1.00 V	4	53.30	-15.00
3	144.61	29.4 QP	43.5	-14.1	1.00 V	266	43.50	-14.10
4	206.83	24.4 QP	43.5	-19.1	1.00 V	66	41.20	-16.80
5	296.27	24.0 QP	46.0	-22.0	1.51 V	159	36.80	-12.80
6	455.70	25.3 QP	46.0	-20.7	1.00 V	190	35.50	-10.20

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ML-2452-PNL6M4-N36 Ant. + ML-2452-PNA7-01R Ant.

802.11n (HT20) + 802.11n (HT20) + BT LE

CHANNEL	CH 6 + CH 100 + CH 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	88.23	34.2 QP	43.5	-9.3	1.99 H	210	54.00	-19.80
2	162.11	31.8 QP	43.5	-11.7	1.99 H	270	45.70	-13.90
3	208.77	27.7 QP	43.5	-15.8	1.50 H	265	44.30	-16.60
4	276.82	29.7 QP	46.0	-16.3	1.00 H	127	42.90	-13.20
5	374.04	28.1 QP	46.0	-17.9	1.00 H	50	39.70	-11.60
6	597.63	33.7 QP	46.0	-12.3	1.50 H	171	41.20	-7.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	35.32	38.1 QP	40.0	-1.9	1.00 V	15	54.00	-15.90
2	53.23	38.0 QP	40.0	-2.0	1.00 V	6	52.30	-14.30
3	61.01	37.4 QP	40.0	-2.6	1.00 V	229	52.40	-15.00
4	162.11	27.9 QP	43.5	-15.6	1.00 V	280	41.80	-13.90
5	305.99	28.1 QP	46.0	-17.9	1.00 V	276	40.70	-12.60
6	640.41	33.9 QP	46.0	-12.1	1.50 V	233	40.70	-6.80

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ML-2452-PNL6M4-N36 Ant. + ML-2452-PNA7-01R Ant.

802.11n (HT20) + 802.11n (HT20) + Zigbee

CHANNEL	CH 6 + CH 60 + CH 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	43.51	25.0 QP	40.0	-15.0	1.50 H	71	39.70	-14.70
2	70.73	25.5 QP	40.0	-14.5	2.00 H	8	41.90	-16.40
3	142.67	27.5 QP	43.5	-16.0	1.50 H	275	41.70	-14.20
4	206.83	27.6 QP	43.5	-15.9	1.50 H	91	44.40	-16.80
5	319.60	22.6 QP	46.0	-23.4	1.00 H	88	34.80	-12.20
6	566.52	26.8 QP	46.0	-19.2	1.50 H	50	35.20	-8.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	31.84	33.3 QP	40.0	-6.7	1.00 V	45	49.70	-16.40
2	62.95	34.9 QP	40.0	-5.1	1.00 V	320	50.10	-15.20
3	82.40	28.3 QP	40.0	-11.7	1.00 V	109	47.40	-19.10
4	142.67	28.6 QP	43.5	-14.9	1.00 V	301	42.80	-14.20
5	274.88	25.3 QP	46.0	-20.7	1.51 V	100	38.60	-13.30
6	440.14	20.7 QP	46.0	-25.3	2.00 V	77	31.00	-10.30

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ML-2452-PNL9M3-036 Ant. + ML-2499-HPA8-01 Ant.

802.11n (HT20) + 802.11n (HT20) + BT LE

CHANNEL	CH 6 + CH 100 + CH 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	41.57	33.3 QP	40.0	-6.7	1.51 H	49	48.30	-15.00
2	92.12	29.6 QP	43.5	-13.9	2.00 H	219	49.10	-19.50
3	162.11	32.1 QP	43.5	-11.4	1.51 H	297	46.00	-13.90
4	286.55	31.8 QP	46.0	-14.2	1.00 H	123	44.80	-13.00
5	712.35	31.6 QP	46.0	-14.4	2.00 H	10	37.60	-6.00
6	928.16	26.7 QP	46.0	-19.3	1.00 H	7	29.10	-2.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	80.45	34.9 QP	40.0	-5.1	1.00 V	115	53.50	-18.60
2	97.95	30.0 QP	43.5	-13.5	1.00 V	79	48.80	-18.80
3	134.89	27.6 QP	43.5	-15.9	1.00 V	233	42.60	-15.00
4	280.71	31.3 QP	46.0	-14.7	2.00 V	273	44.40	-13.10
5	545.14	26.2 QP	46.0	-19.8	1.00 V	117	35.00	-8.80
6	902.89	27.6 QP	46.0	-18.4	1.49 V	188	30.60	-3.00

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ML-2452-PNL9M3-036 Ant. + ML-2499-HPA8-01 Ant.

802.11n (HT20) + 802.11n (HT20) + Zigbee

CHANNEL	CH 6 + CH 100 + CH 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	57.12	29.1 QP	40.0	-10.9	2.00 H	83	43.70	-14.60
2	80.45	28.4 QP	40.0	-11.6	2.00 H	93	47.00	-18.60
3	150.45	26.7 QP	43.5	-16.8	2.00 H	294	40.80	-14.10
4	459.59	21.3 QP	46.0	-24.7	2.00 H	213	31.40	-10.10
5	655.96	28.1 QP	46.0	-17.9	1.51 H	122	34.90	-6.80
6	850.39	25.1 QP	46.0	-20.9	1.51 H	202	29.00	-3.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	43.51	36.8 QP	40.0	-3.2	1.00 V	41	51.50	-14.70
2	76.56	26.9 QP	40.0	-13.1	1.00 V	136	44.50	-17.60
3	134.89	27.6 QP	43.5	-15.9	1.00 V	233	42.60	-15.00
4	208.77	24.3 QP	43.5	-19.2	1.49 V	244	40.90	-16.60
5	568.47	23.5 QP	46.0	-22.5	2.00 V	106	31.90	-8.40
6	801.78	25.4 QP	46.0	-20.6	1.49 V	91	29.80	-4.40

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ML-2452-PNL9M3-036 Ant. + ML-2452-PNA7-01R Ant.

802.11n (HT20) + 802.11n (HT20) + BT LE

CHANNEL	CH 6 + CH 100 + CH 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	53.23	31.1 QP	40.0	-8.9	2.00 H	157	45.40	-14.30
2	92.12	29.3 QP	43.5	-14.2	2.00 H	45	48.80	-19.50
3	164.06	31.5 QP	43.5	-12.0	2.00 H	270	45.40	-13.90
4	379.87	25.2 QP	46.0	-20.8	1.00 H	285	36.70	-11.50
5	582.08	26.4 QP	46.0	-19.6	1.49 H	217	34.40	-8.00
6	850.39	25.1 QP	46.0	-20.9	2.00 H	144	29.00	-3.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	43.51	36.5 QP	40.0	-3.5	1.49 V	14	51.20	-14.70
2	62.95	34.4 QP	40.0	-5.6	1.49 V	3	49.60	-15.20
3	171.83	22.8 QP	43.5	-20.7	1.00 V	324	37.20	-14.40
4	286.55	30.2 QP	46.0	-15.8	1.49 V	286	43.20	-13.00
5	617.08	27.8 QP	46.0	-18.2	1.49 V	114	34.90	-7.10
6	910.66	26.5 QP	46.0	-19.5	1.00 V	300	29.20	-2.70

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

ML-2452-PNL9M3-036 Ant. + ML-2452-PNA7-01R Ant.

802.11n (HT20) + 802.11n (HT20) + Zigbee

CHANNEL	CH 6 + CH 100 + CH 11	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	61.01	22.9 QP	40.0	-17.1	1.49 H	85	37.90	-15.00
2	94.06	24.3 QP	43.5	-19.2	2.00 H	249	43.60	-19.30
3	142.67	25.8 QP	43.5	-17.7	2.00 H	265	40.00	-14.20
4	276.82	30.2 QP	46.0	-15.8	2.00 H	15	43.40	-13.20
5	387.65	24.3 QP	46.0	-21.7	1.00 H	276	35.80	-11.50
6	687.07	27.5 QP	46.0	-18.5	1.00 H	276	33.80	-6.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	61.01	36.8 QP	40.0	-3.2	1.00 V	266	51.80	-15.00
2	142.67	29.7 QP	43.5	-13.8	1.00 V	258	43.90	-14.20
3	181.55	20.7 QP	43.5	-22.8	1.49 V	190	36.10	-15.40
4	383.76	26.7 QP	46.0	-19.3	1.99 V	164	38.20	-11.50
5	609.30	27.7 QP	46.0	-18.3	1.49 V	119	35.10	-7.40
6	922.33	27.0 QP	46.0	-19.0	1.49 V	67	29.50	-2.50

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

5 Pictures of Test Arrangements

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

Appendix – Information on 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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Hsin Chu EMC/RF/Telecom Lab
Tel: 886-3-6668565
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Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

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