

FCC Test Report (Co-Located)

Report No.: RF170731C10-5

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. 16, 2017

Applicant: Extreme Networks, Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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**FCC Registration /
Designation Number:** 788550 / TW0003



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Release Control Record

Issue No.	Description	Date Issued
RF170731C10-5	Original release.	Nov. 16, 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

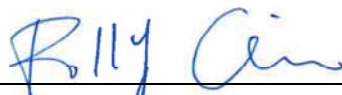
Applicant: Extreme Networks, Inc.

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 :


Polly Chien / Specialist

Date:

Nov. 16, 2017

Approved by :


Ken Liu / Senior Manager

Date:

Nov. 16, 2017

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 -0.1dB at 11490.00MHz.

*For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOB test plots were recorded in Annex A.

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: 5180 ~ 5240MHz, 5745 ~ 5825MHz
	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) 5180 ~ 5240MHz: 4 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80)
	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. 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	

2. 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.

3. 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

4. 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.

5. Indoor Access Point mode is the worst case for final radiated emission tests after pretesting Indoor Access Point mode and Outdoor Access Point mode.
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	5180~5240MHz		5745~5825MHz	
	CDD Mode (mW)	Beamforming Mode (mW)	CDD Mode (mW)	Beamforming Mode (mW)
ML-5299-FHPA6-01R	383.807	191.917	424.208	209.453
ML-2452-PNA5-01R	410.361	200.234	301.100	150.560
ML-2452-PNA7-01R	215.165	107.590	331.869	165.946
ML-2452-PNL6M4-N36	410.361	200.234	275.386	137.702
ML-2452-PNL9M3-N36	268.252	149.814	328.889	164.456

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		

For 5180~5240MHz:

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

Channel	Frequency	Channel	Frequency
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210MHz

5745~5825MHz:

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

Channel	Frequency	Channel	Frequency
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz		

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

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775MHz

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 $\geq$ 1G	RE<1G	
-	√	√	-

Where RE $\geq$ 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 165 + CH 39	BPSK
	ML-5299-FHPA6-01R	802.11a	5745-5825	149 to 165		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 165 + CH 11	BPSK
	ML-5299-FHPA6-01R	802.11a	5745-5825	149 to 165		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 165 + CH 39	BPSK
	ML-5299-FHPA6-01R	802.11a	5745-5825	149 to 165		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 165 + CH 11	BPSK
	ML-5299-FHPA6-01R	802.11a	5745-5825	149 to 165		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 165 + CH 39	BPSK
		802.11a	5745-5825	149 to 165		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 165 + CH 11	BPSK
		802.11a	5745-5825	149 to 165		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 165 + CH 39	BPSK
		802.11a	5745-5825	149 to 165		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 165 + CH 11	BPSK
		802.11a	5745-5825	149 to 165		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 149 + CH 39	DBPSK
		802.11n (HT20)	5745-5825	149 to 165		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 149 + CH 11	DBPSK
		802.11n (HT20)	5745-5825	149 to 165		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 149 + CH 39	DBPSK
		802.11n (HT20)	5745-5825	149 to 165		OFDM
		BT LE	2402~2480	0 to 39		GFSK
-	ML-2452-PNA7-01R	802.11b	2412~2462	1 to 11	CH 6 + CH 149 + CH 11	DBPSK
		802.11n (HT20)	5745-5825	149 to 165		OFDM
		Zigbee	2405~2480	11 to 26		O-QPSK
-	ML-2452-PNL6M4-N36	802.11n (HT20)	2412~2462	1 to 11	CH 6 + CH 149 + CH 39	BPSK
		802.11n (HT20)	5745-5825	149 to 165		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 149 + CH 11	BPSK
		802.11n (HT20)	5745-5825	149 to 165		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 149 + CH 39	BPSK
		802.11n (HT20)	5745-5825	149 to 165		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 149 + CH 11	BPSK
		802.11n (HT20)	5745-5825	149 to 165		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 165 + CH 39	DBPSK
		802.11n (HT20)	5745-5825	149 to 165		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 165 + CH 11	DBPSK
		802.11n (HT20)	5745-5825	149 to 165		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 165 + CH 39	DBPSK
		802.11n (HT20)	5745-5825	149 to 165		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 165 + CH 11	DBPSK
		802.11n (HT20)	5745-5825	149 to 165		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 165 + CH 39	BPSK
	ML-5299-FHPA6-01R	802.11a	5745-5825	149 to 165		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 165 + CH 11	BPSK
	ML-5299-FHPA6-01R	802.11a	5745-5825	149 to 165		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 165 + CH 39	BPSK
	ML-5299-FHPA6-01R	802.11a	5745-5825	149 to 165		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 165 + CH 11	BPSK
	ML-5299-FHPA6-01R	802.11a	5745-5825	149 to 165		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 165 + CH 39	BPSK
		802.11a	5745-5825	149 to 165		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 165 + CH 11	BPSK
		802.11a	5745-5825	149 to 165		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 165 + CH 39	BPSK
		802.11a	5745-5825	149 to 165		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 165 + CH 11	BPSK
		802.11a	5745-5825	149 to 165		OFDM
	ML-2452-PNA7-01R	Zigbee	2405~2480	11 to 26		O-QPSK
-	ML-2452-PNA7-01R	802.11b	2412~2462	1 to 11	CH 6 + CH 149 + CH 39	DBPSK
		802.11n (HT20)	5745-5825	149 to 165		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 149 + CH 11	DBPSK
		802.11n (HT20)	5745-5825	149 to 165		OFDM
	ML-2499-HPA8-01	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 149 + CH 39	DBPSK
		802.11n (HT20)	5745-5825	149 to 165		OFDM
		BT LE	2402~2480	0 to 39		GFSK
-	ML-2452-PNA7-01R	802.11b	2412~2462	1 to 11	CH 6 + CH 149 + CH 11	DBPSK
		802.11n (HT20)	5745-5825	149 to 165		OFDM
		Zigbee	2405~2480	11 to 26		O-QPSK
-	ML-2452-PNL6M4-N36	802.11n (HT20)	2412~2462	1 to 11	CH 6 + CH 149 + CH 39	BPSK
		802.11n (HT20)	5745-5825	149 to 165		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 149 + CH 11	BPSK
		802.11n (HT20)	5745-5825	149 to 165		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 149 + CH 39	BPSK
		802.11n (HT20)	5745-5825	149 to 165		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 149 + CH 11	BPSK
		802.11n (HT20)	5745-5825	149 to 165		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 165 + CH 39	DBPSK
		802.11n (HT20)	5745-5825	149 to 165		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 165 + CH 11	DBPSK
		802.11n (HT20)	5745-5825	149 to 165		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 165 + CH 39	DBPSK
		802.11n (HT20)	5745-5825	149 to 165		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 165 + CH 11	DBPSK
		802.11n (HT20)	5745-5825	149 to 165		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.

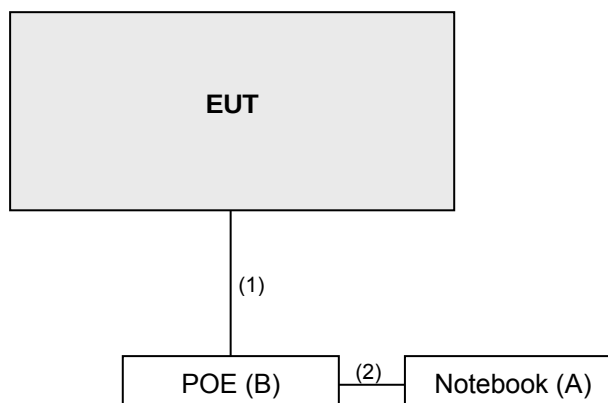
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5420	BPQ7MQ1	FCC DoC Approved	-
B.	POE	EnGenius	EPA5006GP	NA	NA	Supplied by the manufacturer

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:

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

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:

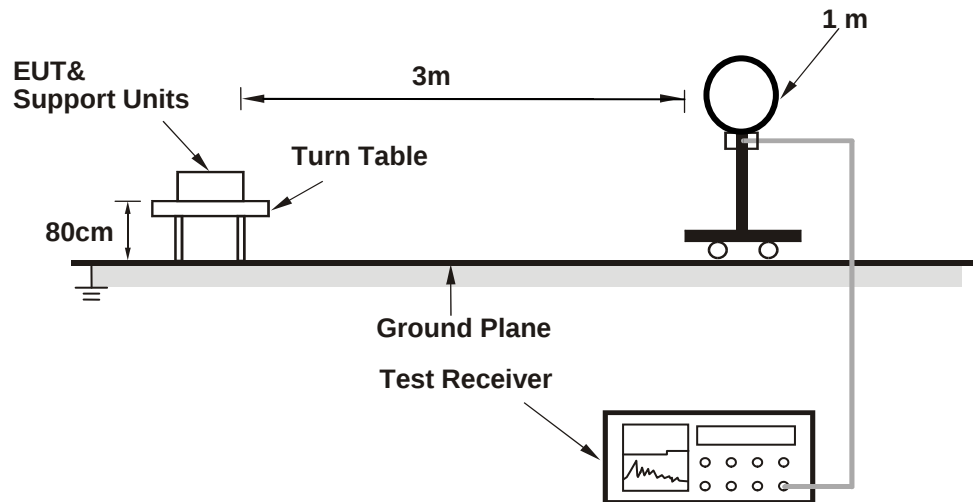
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) 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

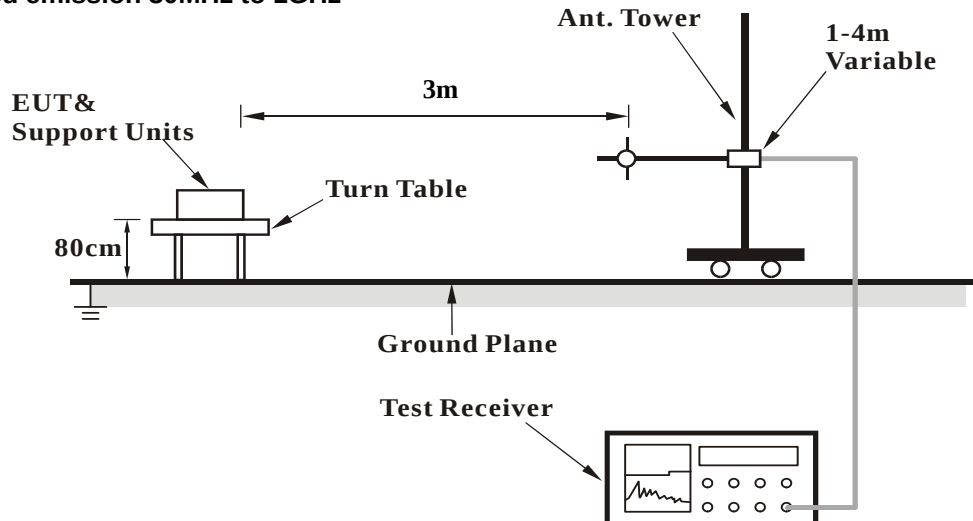
No deviation.

4.1.5 Test Setup

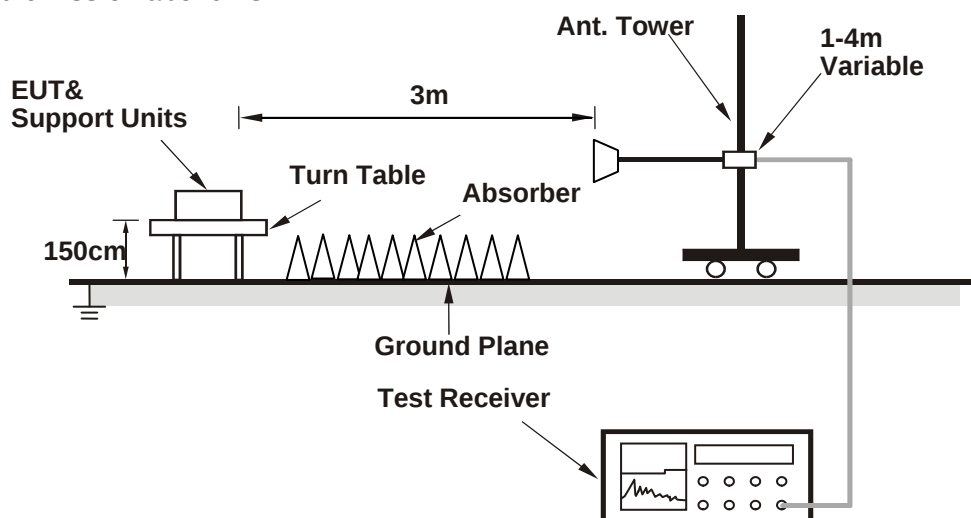
For Radiated emission below 30MHz



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

- Placed the EUT on the testing table.
- Prepared a notebook to act as a communication partner and placed it outside of testing area.
- 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.
- 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 165 + 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	65.3 PK	74.0	-8.7	3.03 H	198	32.40	32.90
2	2390.00	52.0 AV	54.0	-2.0	3.03 H	198	19.10	32.90
3	*2437.00	128.5 PK			3.03 H	355	95.30	33.20
4	*2437.00	118.1 AV			3.03 H	355	84.90	33.20
5	*2480.00	90.1 PK			2.03 H	199	56.70	33.40
6	*2480.00	67.1 AV			2.03 H	199	33.70	33.40
7	2483.50	67.0 PK	74.0	-7.0	1.86 H	309	33.60	33.40
8	2483.50	53.6 AV	54.0	-0.4	1.86 H	309	20.20	33.40
9	4874.00	56.5 PK	74.0	-17.5	1.99 H	133	52.90	3.60
10	4874.00	42.9 AV	54.0	-11.1	1.99 H	133	39.30	3.60
11	4960.00	51.9 PK	74.0	-22.1	2.11 H	193	48.20	3.70
12	4960.00	42.3 AV	54.0	-11.7	2.11 H	193	38.60	3.70
13	#5640.80	56.7 PK	68.2	-11.5	1.47 H	172	52.40	4.30
14	*5825.00	128.9 PK			1.47 H	172	88.30	40.60
15	*5825.00	118.3 AV			1.47 H	172	77.70	40.60
16	#5934.40	58.1 PK	68.2	-10.1	1.47 H	172	53.10	5.00
17	11650.00	63.2 PK	74.0	-10.8	1.55 H	293	45.10	18.10
18	11650.00	50.1 AV	54.0	-3.9	1.55 H	293	32.00	18.10

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 165 + 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	57.1 PK	74.0	-16.9	2.88 V	311	24.20	32.90
2	2390.00	47.1 AV	54.0	-6.9	2.88 V	311	14.20	32.90
3	*2437.00	112.8 PK			3.03 V	333	79.60	33.20
4	*2437.00	108.9 AV			3.03 V	333	75.70	33.20
5	*2480.00	106.5 PK			1.87 V	211	73.10	33.40
6	*2480.00	104.7 AV			1.87 V	211	71.30	33.40
7	2483.50	57.3 PK	74.0	-16.7	2.03 V	222	23.90	33.40
8	2483.50	47.9 AV	54.0	-6.1	2.03 V	222	14.50	33.40
9	4874.00	52.3 PK	74.0	-21.7	2.99 V	303	48.70	3.60
10	4874.00	48.7 AV	54.0	-5.3	2.99 V	303	45.10	3.60
11	4960.00	49.9 PK	74.0	-24.1	1.93 V	328	46.20	3.70
12	4960.00	40.9 AV	54.0	-13.1	1.93 V	328	37.20	3.70
13	#5604.80	56.2 PK	68.2	-12.0	1.76 V	310	51.90	4.30
14	*5825.00	120.1 PK			1.76 V	310	79.50	40.60
15	*5825.00	109.1 AV			1.76 V	310	68.50	40.60
16	#5940.80	58.5 PK	68.2	-9.7	1.76 V	310	53.50	5.00
17	11650.00	64.1 PK	74.0	-9.9	1.66 V	335	46.00	18.10
18	11650.00	50.3 AV	54.0	-3.7	1.66 V	335	32.20	18.10

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

802.11g + 802.11a + Zigbee

CHANNEL	CH 6 + CH 165 + 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	65.0 PK	74.0	-9.0	2.43 H	341	32.10	32.90
2	2390.00	51.2 AV	54.0	-2.8	2.43 H	341	18.30	32.90
3	*2405.00	103.5 PK			1.63 H	212	70.50	33.00
4	*2405.00	99.1 AV			1.63 H	212	66.10	33.00
5	*2437.00	126.2 PK			2.51 H	342	93.00	33.20
6	*2437.00	116.2 AV			2.51 H	342	83.00	33.20
7	2483.50	68.6 PK	74.0	-5.4	2.05 H	305	35.20	33.40
8	2483.50	52.7 AV	54.0	-1.3	2.05 H	305	19.30	33.40
9	4810.00	46.7 PK	74.0	-27.3	2.43 H	168	43.10	3.60
10	4810.00	35.8 AV	54.0	-18.2	2.43 H	168	32.20	3.60
11	4874.00	52.9 PK	74.0	-21.1	1.79 H	301	49.30	3.60
12	4874.00	42.4 AV	54.0	-11.6	1.79 H	301	38.80	3.60
13	#5634.40	56.1 PK	68.2	-12.1	2.66 H	347	51.80	4.30
14	*5825.00	126.0 PK			2.66 H	347	85.40	40.60
15	*5825.00	115.9 AV			2.66 H	347	75.30	40.60
16	#5948.00	58.1 PK	68.2	-10.1	2.66 H	347	53.00	5.10
17	11650.00	58.7 PK	74.0	-15.3	1.66 H	136	40.60	18.10
18	11650.00	46.3 AV	54.0	-7.7	1.66 H	136	28.20	18.10

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 165 + 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	3.35 V	294	21.80	32.90
2	2390.00	46.1 AV	54.0	-7.9	3.35 V	294	13.20	32.90
3	*2405.00	92.1 PK			3.51 V	341	59.10	33.00
4	*2405.00	87.5 AV			3.51 V	341	54.50	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	#5634.40	56.5 PK	68.2	-11.7	2.88 V	310	52.20	4.30
13	*5825.00	120.7 PK			2.88 V	310	80.10	40.60
14	*5825.00	110.4 AV			2.88 V	310	69.80	40.60
15	#5936.80	58.6 PK	68.2	-9.6	2.88 V	310	53.60	5.00
16	11650.00	60.3 PK	74.0	-13.7	2.93 V	256	42.20	18.10
17	11650.00	47.7 AV	54.0	-6.3	2.93 V	256	29.60	18.10

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

802.11g + 802.11a + BT LE

CHANNEL	CH 6 + CH 165 + 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	65.1 PK	74.0	-8.9	2.99 H	253	32.20	32.90
2	2390.00	51.1 AV	54.0	-2.9	2.99 H	253	18.20	32.90
3	*2437.00	127.7 PK			2.99 H	278	94.50	33.20
4	*2437.00	116.3 AV			2.99 H	278	83.10	33.20
5	*2480.00	107.3 PK			2.33 H	199	73.90	33.40
6	*2480.00	105.3 AV			2.33 H	199	71.90	33.40
7	2483.50	66.3 PK	74.0	-7.7	1.66 H	222	32.90	33.40
8	2483.50	53.3 AV	54.0	-0.7	1.66 H	222	19.90	33.40
9	4874.00	52.0 PK	74.0	-22.0	1.99 H	236	48.40	3.60
10	4874.00	43.0 AV	54.0	-11.0	1.99 H	236	39.40	3.60
11	4960.00	52.0 PK	74.0	-22.0	2.99 H	347	48.30	3.70
12	4960.00	41.3 AV	54.0	-12.7	2.99 H	347	37.60	3.70
13	#5633.60	57.1 PK	68.2	-11.1	2.12 H	340	52.80	4.30
14	*5825.00	121.3 PK			2.12 H	340	80.70	40.60
15	*5825.00	110.1 AV			2.12 H	340	69.50	40.60
16	#5938.40	57.9 PK	68.2	-10.3	2.12 H	340	52.90	5.00
17	11650.00	65.3 PK	74.0	-8.7	1.99 H	351	47.20	18.10
18	11650.00	50.1 AV	54.0	-3.9	1.99 H	351	32.00	18.10

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 165 + 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	62.3 PK	74.0	-11.7	2.99 V	193	29.40	32.90
2	2390.00	49.3 AV	54.0	-4.7	2.99 V	193	16.40	32.90
3	*2437.00	126.0 PK			2.94 V	357	92.80	33.20
4	*2437.00	116.0 AV			2.94 V	357	82.80	33.20
5	*2480.00	105.3 PK	74.0	31.3	2.19 V	199	71.90	33.40
6	*2480.00	102.1 AV	54.0	48.1	2.19 V	199	68.70	33.40
7	2483.50	64.1 PK	74.0	-9.9	1.52 V	303	30.70	33.40
8	2483.50	51.0 AV	54.0	-3.0	1.52 V	303	17.60	33.40
9	4874.00	49.2 PK	74.0	-24.8	1.33 V	193	45.60	3.60
10	4874.00	39.9 AV	54.0	-14.1	1.33 V	193	36.30	3.60
11	4960.00	50.1 PK	74.0	-23.9	3.01 V	321	46.40	3.70
12	4960.00	38.4 AV	54.0	-15.6	3.01 V	321	34.70	3.70
13	#5623.20	55.5 PK	68.2	-12.7	2.29 V	354	51.20	4.30
14	*5825.00	117.3 PK			2.99 V	354	76.70	40.60
15	*5825.00	107.7 AV			2.99 V	354	67.10	40.60
16	#5950.40	57.2 PK	68.2	-11.0	2.29 V	354	52.10	5.10
17	11650.00	63.3 PK	74.0	-10.7	1.96 V	341	45.20	18.10
18	11650.00	49.5 AV	54.0	-4.5	1.96 V	341	31.40	18.10

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

802.11g + 802.11a + Zigbee

CHANNEL	CH 6 + CH 165 + 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	59.3 PK	74.0	-14.7	1.77 H	301	26.40	32.90
2	2390.00	44.1 AV	54.0	-9.9	1.77 H	301	11.20	32.90
3	*2405.00	104.2 PK			1.66 H	343	71.20	33.00
4	*2405.00	100.9 AV			1.66 H	343	67.90	33.00
5	*2437.00	125.7 PK			2.13 H	329	92.50	33.20
6	*2437.00	116.1 AV			2.13 H	329	82.90	33.20
7	2483.50	66.4 PK	74.0	-7.6	1.62 H	313	33.00	33.40
8	2483.50	53.7 AV	54.0	-0.3	1.62 H	313	20.30	33.40
9	4810.00	47.3 PK	74.0	-26.7	2.47 H	155	43.70	3.60
10	4810.00	35.6 AV	54.0	-18.4	2.47 H	155	32.00	3.60
11	4874.00	54.0 PK	74.0	-20.0	1.39 H	283	50.40	3.60
12	4874.00	40.9 AV	54.0	-13.1	1.39 H	283	37.30	3.60
13	#5629.60	56.0 PK	68.2	-12.2	3.89 H	349	51.70	4.30
14	*5825.00	121.5 PK			3.89 H	349	80.90	40.60
15	*5825.00	110.8 AV			3.89 H	349	70.20	40.60
16	#5974.40	57.1 PK	68.2	-11.1	3.89 H	349	51.90	5.20
17	11650.00	62.6 PK	74.0	-11.4	2.23 H	269	44.50	18.10
18	11650.00	49.3 AV	54.0	-4.7	2.23 H	269	31.20	18.10

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 165 + 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	51.3 PK	74.0	-22.7	2.11 V	193	18.40	32.90
2	2390.00	42.1 AV	54.0	-11.9	2.11 V	193	9.20	32.90
3	*2405.00	105.3 PK			1.89 V	176	72.30	33.00
4	*2405.00	100.1 AV			1.89 V	176	67.10	33.00
5	*2437.00	113.1 PK			2.53 V	267	79.90	33.20
6	*2437.00	109.1 AV			2.53 V	267	75.90	33.20
7	2483.50	56.7 PK	74.0	-17.3	2.88 V	144	23.30	33.40
8	2483.50	47.3 AV	54.0	-6.7	2.88 V	144	13.90	33.40
9	4810.00	51.1 PK	74.0	-22.9	1.84 V	286	47.50	3.60
10	4810.00	39.8 AV	54.0	-14.2	1.84 V	286	36.20	3.60
11	4874.00	52.7 PK	74.0	-21.3	3.08 V	111	49.10	3.60
12	4874.00	49.2 AV	54.0	-4.8	3.08 V	111	45.60	3.60
13	#5618.40	56.7 PK	68.2	-11.5	2.88 V	331	52.40	4.30
14	*5825.00	117.3 PK			2.88 V	331	76.70	40.60
15	*5825.00	107.9 AV			2.88 V	331	67.30	40.60
16	#5962.40	57.3 PK	68.2	-10.9	2.88 V	331	52.20	5.10
17	11650.00	63.6 PK	74.0	-10.4	1.69 V	303	45.50	18.10
18	11650.00	49.6 AV	54.0	-4.4	1.69 V	303	31.50	18.10

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 + 802.11a + BT LE

CHANNEL	CH 6 + CH 165 + 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	58.1 PK	74.0	-15.9	1.93 H	336	25.20	32.90
2	2390.00	47.2 AV	54.0	-6.8	1.93 H	336	14.30	32.90
3	*2437.00	107.8 PK			1.73 H	303	74.60	33.20
4	*2437.00	99.5 AV			1.73 H	303	66.30	33.20
5	*2480.00	104.7 PK			2.41 H	110	71.30	33.40
6	*2480.00	103.9 AV			2.41 H	110	70.50	33.40
7	2483.50	60.3 PK	74.0	-13.7	2.22 H	319	26.90	33.40
8	2483.50	49.5 AV	54.0	-4.5	2.22 H	319	16.10	33.40
9	4874.00	46.8 PK	74.0	-27.2	2.08 H	263	43.20	3.60
10	4874.00	34.7 AV	54.0	-19.3	2.08 H	263	31.10	3.60
11	4960.00	51.2 PK	74.0	-22.8	2.55 H	193	47.50	3.70
12	4960.00	40.1 AV	54.0	-13.9	2.55 H	193	36.40	3.70
13	#5620.80	55.1 PK	68.2	-13.1	1.99 H	293	50.80	4.30
14	*5825.00	111.3 PK			1.99 H	293	70.70	40.60
15	*5825.00	100.2 AV			1.99 H	293	59.60	40.60
16	#5962.40	57.1 PK	68.2	-11.1	1.99 H	293	52.00	5.10
17	11650.00	62.1 PK	74.0	-11.9	2.99 H	333	44.00	18.10
18	11650.00	49.3 AV	54.0	-4.7	2.99 H	333	31.20	18.10

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 165 + 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	65.5 PK	74.0	-8.5	2.03 V	358	32.60	32.90
2	2390.00	51.3 AV	54.0	-2.7	2.03 V	358	18.40	32.90
3	*2437.00	122.9 PK			1.66 V	335	89.70	33.20
4	*2437.00	113.1 AV			1.66 V	335	79.90	33.20
5	*2480.00	94.1 PK			1.93 V	354	60.70	33.40
6	*2480.00	47.5 AV			1.93 V	354	14.10	33.40
7	2483.50	67.1 PK	74.0	-6.9	2.47 V	293	33.70	33.40
8	2483.50	53.0 AV	54.0	-1.0	2.47 V	293	19.60	33.40
9	4874.00	47.1 PK	74.0	-26.9	2.03 V	299	43.50	3.60
10	4874.00	35.9 AV	54.0	-18.1	2.03 V	299	32.30	3.60
11	4960.00	46.8 PK	74.0	-27.2	2.31 V	357	43.10	3.70
12	4960.00	35.7 AV	54.0	-18.3	2.31 V	357	32.00	3.70
13	#5624.80	56.7 PK	68.2	-11.5	2.68 V	336	52.40	4.30
14	*5825.00	125.1 PK			2.68 V	336	84.50	40.60
15	*5825.00	114.9 AV			2.68 V	336	74.30	40.60
16	#5934.40	58.2 PK	68.2	-10.0	2.68 V	336	53.20	5.00
17	11650.00	67.3 PK	74.0	-6.7	1.98 V	269	49.20	18.10
18	11650.00	53.0 AV	54.0	-1.0	1.98 V	269	34.90	18.10

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 + 802.11a + Zigbee

CHANNEL	CH 6 + CH 165 + 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	57.3 PK	74.0	-16.7	2.21 H	354	24.40	32.90
2	2390.00	47.5 AV	54.0	-6.5	2.21 H	354	14.60	32.90
3	*2405.00	106.5 PK			1.68 H	303	73.50	33.00
4	*2405.00	101.7 AV			1.68 H	303	68.70	33.00
5	*2437.00	109.3 PK			1.77 H	333	76.10	33.20
6	*2437.00	102.1 AV			1.77 H	333	68.90	33.20
7	4810.00	49.1 PK	74.0	-24.9	1.99 H	253	45.50	3.60
8	4810.00	36.8 AV	54.0	-17.2	1.99 H	253	33.20	3.60
9	4874.00	48.7 PK	74.0	-25.3	2.31 H	298	45.10	3.60
10	4874.00	36.5 AV	54.0	-17.5	2.31 H	298	32.90	3.60
11	#5606.40	56.6 PK	68.2	-11.6	1.56 H	316	52.30	4.30
12	*5825.00	111.3 PK			1.56 H	316	70.70	40.60
13	*5825.00	110.9 AV			1.56 H	316	70.30	40.60
14	#5936.80	58.2 PK	68.2	-10.0	1.56 H	316	53.20	5.00
15	11650.00	62.8 PK	74.0	-11.2	1.96 H	299	44.70	18.10
16	11650.00	49.8 AV	54.0	-4.2	1.96 H	299	31.70	18.10

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 165 + 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	67.5 PK	74.0	-6.5	1.99 V	315	34.60	32.90
2	2390.00	53.3 AV	54.0	-0.7	1.99 V	315	20.40	32.90
3	*2405.00	99.1 PK			2.31 V	339	66.10	33.00
4	*2405.00	95.0 AV			2.31 V	339	62.00	33.00
5	*2437.00	125.1 PK			1.71 V	303	91.90	33.20
6	*2437.00	115.9 AV			1.71 V	303	82.70	33.20
7	4810.00	50.3 PK	74.0	-23.7	2.91 V	282	46.70	3.60
8	4810.00	40.1 AV	54.0	-13.9	2.91 V	282	36.50	3.60
9	4874.00	49.8 PK	74.0	-24.2	2.03 V	266	46.20	3.60
10	4874.00	37.7 AV	54.0	-16.3	2.03 V	266	34.10	3.60
11	#5644.00	56.5 PK	68.2	-11.7	1.68 V	349	52.20	4.30
12	*5825.00	125.1 PK			1.68 V	349	84.50	40.60
13	*5825.00	114.9 AV			1.68 V	349	74.30	40.60
14	#5944.80	58.2 PK	68.2	-10.0	1.68 V	349	53.10	5.10
15	11650.00	67.9 PK	74.0	-6.1	1.99 V	333	49.80	18.10
16	11650.00	53.4 AV	54.0	-0.6	1.99 V	333	35.30	18.10

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 + 802.11a + BT LE

CHANNEL	CH 6 + CH 165 + 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	308	75.10	33.20
2	*2437.00	101.0 AV			1.53 H	308	67.80	33.20
3	*2480.00	104.3 PK			1.99 H	17	70.90	33.40
4	*2480.00	103.9 AV			1.99 H	17	70.50	33.40
5	2483.50	72.8 PK	74.0	-1.2	2.13 H	29	39.40	33.40
6	2483.50	49.1 AV	54.0	-4.9	2.13 H	29	15.70	33.40
7	4874.00	46.3 PK	74.0	-27.7	1.74 H	239	42.70	3.60
8	4874.00	35.1 AV	54.0	-18.9	1.74 H	239	31.50	3.60
9	4960.00	50.7 PK	74.0	-23.3	2.28 H	273	47.00	3.70
10	4960.00	39.4 AV	54.0	-14.6	2.28 H	273	35.70	3.70
11	#5635.20	56.0 PK	68.2	-12.2	2.52 H	339	51.70	4.30
12	*5825.00	110.5 PK			2.52 H	339	69.90	40.60
13	*5825.00	99.9 AV			2.52 H	339	59.30	40.60
14	#5972.00	57.3 PK	68.2	-10.9	2.52 H	339	52.10	5.20
15	11650.00	61.2 PK	74.0	-12.8	2.49 H	317	43.10	18.10
16	11650.00	48.9 AV	54.0	-5.1	2.49 H	317	30.80	18.10

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 165 + 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			1.48 V	315	90.60	33.20
2	*2437.00	112.9 AV			1.48 V	315	79.70	33.20
3	*2480.00	94.7 PK			2.41 V	349	61.30	33.40
4	*2480.00	92.4 AV			2.41 V	349	59.00	33.40
5	2483.50	59.6 PK	74.0	-14.4	2.49 V	308	26.20	33.40
6	2483.50	48.3 AV	54.0	-5.7	2.49 V	308	14.90	33.40
7	4874.00	47.5 PK	74.0	-26.5	1.88 V	214	43.90	3.60
8	4874.00	35.4 AV	54.0	-18.6	1.88 V	214	31.80	3.60
9	4960.00	51.6 PK	74.0	-22.4	2.07 V	284	47.90	3.70
10	4960.00	40.4 AV	54.0	-13.6	2.07 V	284	36.70	3.70
11	#5613.60	55.9 PK	68.2	-12.3	2.60 V	355	51.60	4.30
12	*5825.00	124.4 PK			2.60 V	355	83.80	40.60
13	*5825.00	114.1 AV			2.60 V	355	73.50	40.60
14	#5943.20	57.8 PK	68.2	-10.4	2.60 V	355	52.70	5.10
15	11650.00	67.1 PK	74.0	-6.9	2.84 V	305	49.00	18.10
16	11650.00	53.5 AV	54.0	-0.5	2.84 V	305	35.40	18.10

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 + 802.11a + Zigbee

CHANNEL	CH 6 + CH 165 + 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	1.93 H	299	23.00	32.90
2	2390.00	45.7 AV	54.0	-8.3	1.93 H	299	12.80	32.90
3	*2405.00	104.2 PK			2.22 H	331	71.20	33.00
4	*2405.00	100.7 AV			2.22 H	331	67.70	33.00
5	*2437.00	107.3 PK			1.74 H	298	74.10	33.20
6	*2437.00	99.4 AV			1.74 H	298	66.20	33.20
7	4810.00	47.5 PK	74.0	-26.5	3.49 H	348	43.90	3.60
8	4810.00	35.3 AV	54.0	-18.7	3.49 H	348	31.70	3.60
9	4874.00	46.3 PK	74.0	-27.7	1.55 H	284	42.70	3.60
10	4874.00	33.7 AV	54.0	-20.3	1.55 H	284	30.10	3.60
11	#5624.00	55.9 PK	68.2	-12.3	2.36 H	288	51.60	4.30
12	*5825.00	110.9 PK			2.36 H	288	70.30	40.60
13	*5825.00	99.8 AV			2.36 H	288	59.20	40.60
14	#5957.60	56.9 PK	68.2	-11.3	2.36 H	288	51.80	5.10
15	11650.00	61.3 PK	74.0	-12.7	1.93 H	304	43.20	18.10
16	11650.00	48.9 AV	54.0	-5.1	1.93 H	304	30.80	18.10

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 165 + 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	313	31.50	32.90
2	2390.00	50.3 AV	54.0	-3.7	1.94 V	313	17.40	32.90
3	*2405.00	105.2 PK			2.21 V	74	72.20	33.00
4	*2405.00	101.3 AV			2.21 V	74	68.30	33.00
5	*2437.00	124.7 PK			2.89 V	344	91.50	33.20
6	*2437.00	81.4 AV			2.89 V	344	48.20	33.20
7	4810.00	46.6 PK	74.0	-27.4	1.42 V	302	43.00	3.60
8	4810.00	35.1 AV	54.0	-18.9	1.42 V	302	31.50	3.60
9	4874.00	51.5 PK	74.0	-22.5	1.24 V	228	47.90	3.60
10	4874.00	44.4 AV	54.0	-9.6	1.24 V	228	40.80	3.60
11	#5620.80	56.9 PK	68.2	-11.3	1.93 V	18	52.60	4.30
12	*5825.00	121.3 PK			1.93 V	18	80.70	40.60
13	*5825.00	111.0 AV			1.93 V	18	70.40	40.60
14	#5935.20	58.4 PK	68.2	-9.8	1.93 V	18	53.40	5.00
15	11650.00	66.6 PK	74.0	-7.4	2.78 V	269	48.50	18.10
16	11650.00	53.7 AV	54.0	-0.3	2.78 V	269	35.60	18.10

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 + 802.11n (HT20) + BT LE

CHANNEL	CH 6 + CH 149 + 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			2.28 H	319	93.70	33.20
2	*2437.00	124.8 AV			2.28 H	319	91.60	33.20
3	*2480.00	89.6 PK			1.88 H	146	56.20	33.40
4	*2480.00	87.5 AV			1.88 H	146	54.10	33.40
5	2483.50	59.7 PK	74.0	-14.3	1.93 H	147	26.30	33.40
6	2483.50	47.9 AV	54.0	-6.1	1.93 H	147	14.50	33.40
7	4874.00	52.8 PK	74.0	-21.2	2.12 H	188	49.20	3.60
8	4874.00	48.1 AV	54.0	-5.9	2.12 H	188	44.50	3.60
9	4960.00	50.4 PK	74.0	-23.6	2.24 H	119	46.70	3.70
10	4960.00	41.1 AV	54.0	-12.9	2.24 H	119	37.40	3.70
11	#5616.00	57.1 PK	68.2	-11.1	1.10 H	355	52.80	4.30
12	*5745.00	128.9 PK			1.10 H	355	88.50	40.40
13	*5745.00	118.5 AV			1.10 H	355	78.10	40.40
14	#5940.80	58.6 PK	68.2	-9.6	1.10 H	355	53.60	5.00
15	11490.00	61.6 PK	74.0	-12.4	1.86 H	314	43.40	18.20
16	11490.00	48.9 AV	54.0	-5.1	1.86 H	314	30.70	18.20

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
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 149 + 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	114.1 PK			2.68 V	211	80.90	33.20
2	*2437.00	111.9 AV			2.68 V	211	78.70	33.20
3	*2480.00	105.7 PK			1.89 V	202	72.30	33.40
4	*2480.00	104.6 AV			1.89 V	202	71.20	33.40
5	2483.50	73.5 PK	74.0	-0.5	1.77 V	148	40.10	33.40
6	2483.50	50.3 AV	54.0	-3.7	1.77 V	148	16.90	33.40
7	4874.00	52.6 PK	74.0	-21.4	2.11 V	147	49.00	3.60
8	4874.00	48.7 AV	54.0	-5.3	2.11 V	147	45.10	3.60
9	4960.00	49.3 PK	74.0	-24.7	1.73 V	318	45.60	3.70
10	4960.00	39.7 AV	54.0	-14.3	1.73 V	318	36.00	3.70
11	#5611.20	56.3 PK	68.2	-11.9	2.88 V	331	52.00	4.30
12	*5745.00	114.1 PK			2.88 V	331	73.70	40.40
13	*5745.00	103.1 AV			2.88 V	331	62.70	40.40
14	#5986.40	57.5 PK	68.2	-10.7	2.88 V	331	52.30	5.20
15	11490.00	68.2 PK	74.0	-5.8	2.14 V	269	50.00	18.20
16	11490.00	53.6 AV	54.0	-0.4	2.14 V	269	35.40	18.20

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
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 + 802.11n (HT20) + Zigbee

CHANNEL	CH 6 + CH 149 + 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	1.98 H	142	25.70	32.90
2	2390.00	47.1 AV	54.0	-6.9	1.98 H	142	14.20	32.90
3	*2405.00	89.4 PK			1.83 H	210	56.40	33.00
4	*2405.00	85.7 AV			1.83 H	210	52.70	33.00
5	*2437.00	126.4 PK			2.26 H	188	93.20	33.20
6	*2437.00	124.4 AV			2.26 H	188	91.20	33.20
7	4810.00	49.5 PK	74.0	-24.5	1.98 H	22	45.90	3.60
8	4810.00	37.6 AV	54.0	-16.4	1.98 H	22	34.00	3.60
9	4874.00	52.3 PK	74.0	-21.7	2.14 H	188	48.70	3.60
10	4874.00	48.3 AV	54.0	-5.7	2.14 H	188	44.70	3.60
11	#5644.80	57.5 PK	68.2	-10.7	1.06 H	354	53.20	4.30
12	*5745.00	129.1 PK			1.06 H	354	88.70	40.40
13	*5745.00	118.3 AV			1.06 H	354	77.90	40.40
14	#5966.40	57.7 PK	68.2	-10.5	1.06 H	354	52.50	5.20
15	11490.00	61.5 PK	74.0	-12.5	1.87 H	283	43.30	18.20
16	11490.00	48.6 AV	54.0	-5.4	1.87 H	283	30.40	18.20

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
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 149 + 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	1.79 V	223	25.30	32.90
2	2390.00	47.3 AV	54.0	-6.7	1.79 V	223	14.40	32.90
3	*2405.00	105.1 PK			1.96 V	55	72.10	33.00
4	*2405.00	101.2 AV			1.96 V	55	68.20	33.00
5	*2437.00	114.1 PK			2.93 V	236	80.90	33.20
6	*2437.00	111.7 AV			2.93 V	236	78.50	33.20
7	4810.00	50.3 PK	74.0	-23.7	1.52 V	342	46.70	3.60
8	4810.00	39.4 AV	54.0	-14.6	1.52 V	342	35.80	3.60
9	4874.00	52.3 PK	74.0	-21.7	2.13 V	199	48.70	3.60
10	4874.00	48.9 AV	54.0	-5.1	2.13 V	199	45.30	3.60
11	#5627.20	57.0 PK	68.2	-11.2	1.00 V	336	52.70	4.30
12	*5745.00	113.9 PK			1.00 V	336	73.50	40.40
13	*5745.00	102.8 AV			1.00 V	336	62.40	40.40
14	#5941.60	58.0 PK	68.2	-10.2	1.00 V	336	53.00	5.00
15	11490.00	68.1 PK	74.0	-5.9	2.38 V	269	49.90	18.20
16	11490.00	53.2 AV	54.0	-0.8	2.38 V	269	35.00	18.20

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
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 + 802.11n (HT20) + BT LE

CHANNEL	CH 6 + CH 149 + 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	126.8 PK			2.98 H	314	93.60	33.20
2	*2437.00	124.9 AV			2.98 H	314	91.70	33.20
3	*2480.00	105.6 PK			2.04 H	19	72.20	33.40
4	*2480.00	104.2 AV			2.04 H	19	70.80	33.40
5	2483.50	72.7 PK	74.0	-1.3	2.11 H	27	39.30	33.40
6	2483.50	49.9 AV	54.0	-4.1	2.11 H	27	16.50	33.40
7	4874.00	52.1 PK	74.0	-21.9	2.64 H	183	48.50	3.60
8	4874.00	47.6 AV	54.0	-6.4	2.64 H	183	44.00	3.60
9	4960.00	50.9 PK	74.0	-23.1	2.41 H	248	47.20	3.70
10	4960.00	40.3 AV	54.0	-13.7	2.41 H	248	36.60	3.70
11	#5617.60	57.9 PK	68.2	-10.3	2.08 H	348	53.60	4.30
12	*5745.00	128.7 PK			2.08 H	348	88.30	40.40
13	*5745.00	118.6 AV			2.08 H	348	78.20	40.40
14	#5944.00	57.8 PK	68.2	-10.4	2.08 H	348	52.70	5.10
15	11490.00	61.1 PK	74.0	-12.9	1.98 H	277	42.90	18.20
16	11490.00	48.6 AV	54.0	-5.4	1.98 H	277	30.40	18.20

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
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 149 + 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			2.14 V	223	81.10	33.20
2	*2437.00	113.7 AV			2.14 V	223	80.50	33.20
3	*2480.00	93.4 PK			1.41 V	179	60.00	33.40
4	*2480.00	92.7 AV			1.41 V	179	59.30	33.40
5	2483.50	58.6 PK	74.0	-15.4	2.91 V	164	25.20	33.40
6	2483.50	48.3 AV	54.0	-5.7	2.91 V	164	14.90	33.40
7	4874.00	52.6 PK	74.0	-21.4	1.89 V	177	49.00	3.60
8	4874.00	48.3 AV	54.0	-5.7	1.89 V	177	44.70	3.60
9	4960.00	50.6 PK	74.0	-23.4	2.21 V	271	46.90	3.70
10	4960.00	40.1 AV	54.0	-13.9	2.21 V	271	36.40	3.70
11	#5611.20	56.0 PK	68.2	-12.2	2.83 V	305	51.70	4.30
12	*5745.00	114.5 PK			2.83 V	305	74.10	40.40
13	*5745.00	102.7 AV			2.83 V	305	62.30	40.40
14	#5928.80	57.0 PK	68.2	-11.2	2.83 V	305	52.00	5.00
15	11490.00	68.2 PK	74.0	-5.8	2.12 V	248	50.00	18.20
16	11490.00	53.1 AV	54.0	-0.9	2.12 V	248	34.90	18.20

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
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 + 802.11n (HT20) + Zigbee

CHANNEL	CH 6 + CH 149 + 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	56.6 PK	74.0	-17.4	2.23 H	311	23.70	32.90
2	2390.00	46.7 AV	54.0	-7.3	2.23 H	311	13.80	32.90
3	*2405.00	104.8 PK			1.53 H	315	71.80	33.00
4	*2405.00	100.4 AV			1.53 H	315	67.40	33.00
5	*2437.00	125.9 PK			2.05 H	336	92.70	33.20
6	*2437.00	123.8 AV			2.05 H	336	90.60	33.20
7	4810.00	48.1 PK	74.0	-25.9	2.48 H	188	44.50	3.60
8	4810.00	36.0 AV	54.0	-18.0	2.48 H	188	32.40	3.60
9	4874.00	52.2 PK	74.0	-21.8	1.99 H	167	48.60	3.60
10	4874.00	47.8 AV	54.0	-6.2	1.99 H	167	44.20	3.60
11	#5617.60	57.3 PK	68.2	-10.9	1.56 H	328	53.00	4.30
12	*5745.00	128.3 PK			1.56 H	328	87.90	40.40
13	*5745.00	118.5 AV			1.56 H	328	78.10	40.40
14	#5932.80	58.0 PK	68.2	-10.2	1.56 H	328	53.00	5.00
15	11490.00	61.1 PK	74.0	-12.9	1.61 H	284	42.90	18.20
16	11490.00	48.3 AV	54.0	-5.7	1.61 H	284	30.10	18.20

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
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 149 + 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	58.4 PK	74.0	-15.6	2.55 V	283	25.50	32.90
2	2390.00	46.4 AV	54.0	-7.6	2.55 V	283	13.50	32.90
3	*2405.00	96.1 PK			3.15 V	251	63.10	33.00
4	*2405.00	92.4 AV			3.15 V	251	59.40	33.00
5	*2437.00	113.4 PK			2.21 V	312	80.20	33.20
6	*2437.00	111.6 AV			2.21 V	312	78.40	33.20
7	4810.00	48.7 PK	74.0	-25.3	2.81 V	156	45.10	3.60
8	4810.00	38.3 AV	54.0	-15.7	2.81 V	156	34.70	3.60
9	4874.00	52.2 PK	74.0	-21.8	2.61 V	198	48.60	3.60
10	4874.00	48.4 AV	54.0	-5.6	2.61 V	198	44.80	3.60
11	#5632.00	55.5 PK	68.2	-12.7	1.00 V	359	51.20	4.30
12	*5745.00	113.1 PK			1.00 V	359	72.70	40.40
13	*5745.00	102.3 AV			1.00 V	359	61.90	40.40
14	#5951.20	57.5 PK	68.2	-10.7	1.00 V	359	52.40	5.10
15	11490.00	68.3 PK	74.0	-5.7	2.18 V	269	50.10	18.20
16	11490.00	53.9 AV	54.0	-0.1	2.18 V	269	35.70	18.20

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
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 149 + 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			1.99 H	347	92.80	33.20
2	*2437.00	116.3 AV			1.99 H	347	83.10	33.20
3	*2480.00	107.5 PK	74.0	33.5	2.22 H	293	74.10	33.40
4	*2480.00	106.3 AV	54.0	52.3	2.22 H	293	72.90	33.40
5	2483.50	73.5 PK	74.0	-0.5	2.09 H	156	40.10	33.40
6	2483.50	50.7 AV	54.0	-3.3	2.09 H	156	17.30	33.40
7	4874.00	51.5 PK	74.0	-22.5	1.99 H	354	47.90	3.60
8	4874.00	41.4 AV	54.0	-12.6	1.99 H	354	37.80	3.60
9	4960.00	52.3 PK	74.0	-21.7	2.50 H	351	48.60	3.70
10	4960.00	41.9 AV	54.0	-12.1	2.50 H	351	38.20	3.70
11	#5647.20	55.5 PK	68.2	-12.7	2.22 H	333	51.20	4.30
12	*5745.00	121.0 PK			2.11 H	330	80.60	40.40
13	*5745.00	110.7 AV			2.11 H	330	70.30	40.40
14	#5930.40	56.4 PK	68.2	-11.8	2.22 H	333	51.40	5.00
15	11490.00	64.0 PK	74.0	-10.0	1.78 H	309	45.80	18.20
16	11490.00	51.0 AV	54.0	-3.0	1.78 H	309	32.80	18.20

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
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 149 + 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	121.5 PK			3.03 V	349	88.30	33.20
2	*2437.00	111.5 AV			3.03 V	349	78.30	33.20
3	*2480.00	95.3 PK	74.0	21.3	2.57 V	303	61.90	33.40
4	*2480.00	94.7 AV	54.0	40.7	2.57 V	303	61.30	33.40
5	2483.50	60.3 PK	74.0	-13.7	2.68 V	309	26.90	33.40
6	2483.50	50.0 AV	54.0	-4.0	2.68 V	309	16.60	33.40
7	4874.00	53.0 PK	74.0	-21.0	3.11 V	293	49.40	3.60
8	4874.00	43.3 AV	54.0	-10.7	3.11 V	293	39.70	3.60
9	4960.00	52.1 PK	74.0	-21.9	2.55 V	333	48.40	3.70
10	4960.00	41.3 AV	54.0	-12.7	2.55 V	333	37.60	3.70
11	#5620.00	55.7 PK	68.2	-12.5	2.54 V	359	51.40	4.30
12	*5745.00	123.1 PK			2.55 V	349	82.70	40.40
13	*5745.00	112.5 AV			2.55 V	349	72.10	40.40
14	#5945.60	57.4 PK	68.2	-10.8	2.54 V	359	52.30	5.10
15	11490.00	67.7 PK	74.0	-6.3	2.57 V	159	49.50	18.20
16	11490.00	53.3 AV	54.0	-0.7	2.57 V	159	35.10	18.20

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
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 149 + 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	2.27 H	341	25.40	32.90
2	2390.00	48.0 AV	54.0	-6.0	2.27 H	341	15.10	32.90
3	*2405.00	106.6 PK			1.99 H	350	73.60	33.00
4	*2405.00	102.5 AV			1.99 H	350	69.50	33.00
5	*2437.00	125.7 PK			1.99 H	303	92.50	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	2.99 H	202	46.30	3.60
8	4810.00	38.0 AV	54.0	-16.0	2.99 H	202	34.40	3.60
9	4874.00	50.5 PK	74.0	-23.5	2.10 H	303	46.90	3.60
10	4874.00	41.7 AV	54.0	-12.3	2.10 H	303	38.10	3.60
11	#5634.40	56.6 PK	68.2	-11.6	1.58 H	312	52.30	4.30
12	*5745.00	121.1 PK			1.58 H	312	80.70	40.40
13	*5745.00	110.2 AV			1.58 H	312	69.80	40.40
14	#5972.80	57.2 PK	68.2	-11.0	1.58 H	312	52.00	5.20
15	11490.00	63.1 PK	74.0	-10.9	1.78 H	253	44.90	18.20
16	11490.00	50.2 AV	54.0	-3.8	1.78 H	253	32.00	18.20

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
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 149 + 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	2.03 V	133	26.80	32.90
2	2390.00	48.3 AV	54.0	-5.7	2.03 V	133	15.40	32.90
3	*2405.00	90.5 PK			1.63 V	199	57.50	33.00
4	*2405.00	87.1 AV			1.63 V	199	54.10	33.00
5	*2437.00	120.4 PK			2.50 V	333	87.20	33.20
6	*2437.00	110.1 AV			2.50 V	333	76.90	33.20
7	4810.00	50.7 PK	74.0	-23.3	1.93 V	59	47.10	3.60
8	4810.00	39.0 AV	54.0	-15.0	1.93 V	59	35.40	3.60
9	4874.00	52.5 PK	74.0	-21.5	2.20 V	110	48.90	3.60
10	4874.00	42.7 AV	54.0	-11.3	2.20 V	110	39.10	3.60
11	#5603.20	56.1 PK	68.2	-12.1	2.75 V	357	51.80	4.30
12	*5745.00	122.9 PK			2.75 V	357	82.50	40.40
13	*5745.00	112.5 AV			2.75 V	357	72.10	40.40
14	#5963.20	57.6 PK	68.2	-10.6	2.75 V	357	52.50	5.10
15	11490.00	69.1 PK	74.0	-4.9	2.44 V	199	50.90	18.20
16	11490.00	53.5 AV	54.0	-0.5	2.44 V	199	35.30	18.20

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
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 149 + 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	125.8 PK			1.90 H	333	92.60	33.20
2	*2437.00	116.0 AV			1.90 H	333	82.80	33.20
3	*2480.00	107.0 PK			2.41 H	119	73.60	33.40
4	*2480.00	106.1 AV			2.41 H	119	72.70	33.40
5	2483.50	73.4 PK	74.0	-0.6	1.93 H	133	40.00	33.40
6	2483.50	50.6 AV	54.0	-3.4	1.93 H	133	17.20	33.40
7	4874.00	51.2 PK	74.0	-22.8	1.90 H	303	47.60	3.60
8	4874.00	41.3 AV	54.0	-12.7	1.90 H	303	37.70	3.60
9	4960.00	52.0 PK	74.0	-22.0	2.41 H	344	48.30	3.70
10	4960.00	41.1 AV	54.0	-12.9	2.41 H	344	37.40	3.70
11	#5624.80	55.8 PK	68.2	-12.4	2.09 H	328	51.50	4.30
12	*5745.00	120.5 PK			2.09 H	328	80.10	40.40
13	*5745.00	110.3 AV			2.09 H	328	69.90	40.40
14	#5976.80	56.7 PK	68.2	-11.5	2.09 H	328	51.50	5.20
15	11490.00	63.7 PK	74.0	-10.3	1.69 H	293	45.50	18.20
16	11490.00	50.5 AV	54.0	-3.5	1.69 H	293	32.30	18.20

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
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 149 + 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	121.1 PK			2.97 V	351	87.90	33.20
2	*2437.00	111.2 AV			2.97 V	351	78.00	33.20
3	*2480.00	95.0 PK			2.61 V	299	61.60	33.40
4	*2480.00	94.1 AV			2.61 V	299	60.70	33.40
5	2483.50	60.1 PK	74.0	-13.9	2.51 V	290	26.70	33.40
6	2483.50	49.3 AV	54.0	-4.7	2.51 V	290	15.90	33.40
7	4874.00	52.9 PK	74.0	-21.1	2.99 V	163	49.30	3.60
8	4874.00	43.1 AV	54.0	-10.9	2.99 V	163	39.50	3.60
9	4960.00	51.9 PK	74.0	-22.1	2.30 V	322	48.20	3.70
10	4960.00	41.0 AV	54.0	-13.0	2.30 V	322	37.30	3.70
11	#5644.80	56.7 PK	68.2	-11.5	2.40 V	338	52.40	4.30
12	*5745.00	122.9 PK			2.40 V	338	82.50	40.40
13	*5745.00	112.1 AV			2.40 V	338	71.70	40.40
14	#5967.20	57.8 PK	68.2	-10.4	2.40 V	338	52.60	5.20
15	11490.00	67.9 PK	74.0	-6.1	2.33 V	123	49.70	18.20
16	11490.00	53.1 AV	54.0	-0.9	2.33 V	123	34.90	18.20

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
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 149 + 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	58.7 PK	74.0	-15.3	2.30 H	353	25.80	32.90
2	2390.00	48.2 AV	54.0	-5.8	2.30 H	353	15.30	32.90
3	*2405.00	107.0 PK			2.03 H	333	74.00	33.00
4	*2405.00	103.1 AV			2.03 H	333	70.10	33.00
5	*2437.00	125.9 PK			2.09 H	321	92.70	33.20
6	*2437.00	116.3 AV			2.09 H	321	83.10	33.20
7	4810.00	50.1 PK	74.0	-23.9	2.87 H	293	46.50	3.60
8	4810.00	39.0 AV	54.0	-15.0	2.87 H	293	35.40	3.60
9	4874.00	51.1 PK	74.0	-22.9	2.22 H	341	47.50	3.60
10	4874.00	42.3 AV	54.0	-11.7	2.22 H	341	38.70	3.60
11	#5616.80	56.2 PK	68.2	-12.0	1.60 H	352	51.90	4.30
12	*5745.00	121.9 PK			1.66 H	333	81.50	40.40
13	*5745.00	110.3 AV			1.66 H	333	69.90	40.40
14	#5948.00	56.9 PK	68.2	-11.3	1.60 H	352	51.80	5.10
15	11490.00	63.5 PK	74.0	-10.5	1.83 H	293	45.30	18.20
16	11490.00	51.0 AV	54.0	-3.0	1.83 H	293	32.80	18.20

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
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	CH 6 + CH 149 + 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	60.1 PK	74.0	-13.9	2.19 V	150	27.20	32.90
2	2390.00	48.5 AV	54.0	-5.5	2.19 V	150	15.60	32.90
3	*2405.00	90.7 PK			1.77 V	211	57.70	33.00
4	*2405.00	87.5 AV			1.77 V	211	54.50	33.00
5	*2437.00	120.5 PK			2.53 V	351	87.30	33.20
6	*2437.00	110.5 AV			2.53 V	351	77.30	33.20
7	4810.00	51.0 PK	74.0	-23.0	1.99 V	103	47.40	3.60
8	4810.00	40.0 AV	54.0	-14.0	1.99 V	103	36.40	3.60
9	4874.00	52.7 PK	74.0	-21.3	2.29 V	123	49.10	3.60
10	4874.00	43.0 AV	54.0	-11.0	2.29 V	123	39.40	3.60
11	#5641.60	55.7 PK	68.2	-12.5	2.88 V	349	51.40	4.30
12	*5745.00	123.0 PK			2.90 V	349	82.60	40.40
13	*5745.00	112.6 AV			2.90 V	349	72.20	40.40
14	#5952.80	56.8 PK	68.2	-11.4	2.88 V	349	51.70	5.10
15	11490.00	69.3 PK	74.0	-4.7	2.58 V	211	51.10	18.20
16	11490.00	53.5 AV	54.0	-0.5	2.58 V	211	35.30	18.20

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
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 165 + 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	58.2 PK	74.0	-15.8	1.88 H	163	25.30	32.90
2	2390.00	47.2 AV	54.0	-6.8	1.88 H	163	14.30	32.90
3	*2437.00	120.1 PK			2.24 H	135	86.90	33.20
4	*2437.00	109.5 AV			2.24 H	135	76.30	33.20
5	*2480.00	91.0 PK			2.03 H	122	57.60	33.40
6	*2480.00	90.3 AV			2.03 H	122	56.90	33.40
7	2483.50	61.0 PK	74.0	-13.0	1.66 H	139	27.60	33.40
8	2483.50	49.1 AV	54.0	-4.9	1.66 H	139	15.70	33.40
9	4874.00	46.3 PK	74.0	-27.7	2.69 H	299	42.70	3.60
10	4874.00	34.8 AV	54.0	-19.2	2.69 H	299	31.20	3.60
11	4960.00	52.1 PK	74.0	-21.9	2.22 H	154	48.40	3.70
12	4960.00	41.5 AV	54.0	-12.5	2.22 H	154	37.80	3.70
13	#5646.40	56.1 PK	68.2	-12.1	2.27 H	18	51.80	4.30
14	*5825.00	123.1 PK			2.27 H	18	82.50	40.60
15	*5825.00	113.4 AV			2.27 H	18	72.80	40.60
16	#5979.20	57.2 PK	68.2	-11.0	2.27 H	18	52.00	5.20
17	11650.00	62.3 PK	74.0	-11.7	2.49 H	301	44.20	18.10
18	11650.00	49.4 AV	54.0	-4.6	2.49 H	301	31.30	18.10

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 165 + 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	58.6 PK	74.0	-15.4	1.83 V	226	25.70	32.90
2	2390.00	47.3 AV	54.0	-6.7	1.83 V	226	14.40	32.90
3	*2437.00	119.3 PK			2.64 V	38	86.10	33.20
4	*2437.00	107.9 AV			2.64 V	38	74.70	33.20
5	*2480.00	107.1 PK			2.13 V	193	73.70	33.40
6	*2480.00	106.9 AV			2.13 V	193	73.50	33.40
7	2483.50	73.4 PK	74.0	-0.6	1.88 V	222	40.00	33.40
8	2483.50	50.9 AV	54.0	-3.1	1.88 V	222	17.50	33.40
9	4874.00	47.3 PK	74.0	-26.7	2.84 V	305	43.70	3.60
10	4874.00	34.9 AV	54.0	-19.1	2.84 V	305	31.30	3.60
11	4960.00	50.1 PK	74.0	-23.9	2.33 V	339	46.40	3.70
12	4960.00	40.3 AV	54.0	-13.7	2.33 V	339	36.60	3.70
13	#5648.00	56.1 PK	68.2	-12.1	2.40 V	335	51.80	4.30
14	*5825.00	122.3 PK			2.40 V	335	81.70	40.60
15	*5825.00	110.8 AV			2.40 V	335	70.20	40.60
16	#5970.40	57.7 PK	68.2	-10.5	2.40 V	335	52.50	5.20
17	11650.00	68.3 PK	74.0	-5.7	2.43 V	108	50.20	18.10
18	11650.00	52.7 AV	54.0	-1.3	2.43 V	108	34.60	18.10

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

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

CHANNEL	CH 6 + CH 165 + 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	1.83 H	131	25.70	32.90
2	2390.00	46.7 AV	54.0	-7.3	1.83 H	131	13.80	32.90
3	*2405.00	89.7 PK			1.88 H	266	56.70	33.00
4	*2405.00	85.7 AV			1.88 H	266	52.70	33.00
5	*2437.00	119.8 PK			2.56 H	316	86.60	33.20
6	*2437.00	108.5 AV			2.56 H	316	75.30	33.20
7	4810.00	49.6 PK	74.0	-24.4	2.05 H	336	46.00	3.60
8	4810.00	37.1 AV	54.0	-16.9	2.05 H	336	33.50	3.60
9	4874.00	46.7 PK	74.0	-27.3	2.38 H	308	43.10	3.60
10	4874.00	34.5 AV	54.0	-19.5	2.38 H	308	30.90	3.60
11	#5621.60	56.4 PK	68.2	-11.8	2.12 H	299	52.10	4.30
12	*5825.00	122.6 PK			2.12 H	299	82.00	40.60
13	*5825.00	111.9 AV			2.12 H	299	71.30	40.60
14	#5957.60	58.0 PK	68.2	-10.2	2.12 H	299	52.90	5.10
15	11650.00	62.1 PK	74.0	-11.9	2.65 H	305	44.00	18.10
16	11650.00	49.7 AV	54.0	-4.3	2.65 H	305	31.60	18.10

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 165 + 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	58.9 PK	74.0	-15.1	2.49 V	311	26.00	32.90
2	2390.00	46.9 AV	54.0	-7.1	2.49 V	311	14.00	32.90
3	*2405.00	105.3 PK			2.24 V	88	72.30	33.00
4	*2405.00	100.9 AV			2.24 V	88	67.90	33.00
5	*2437.00	119.8 PK			2.41 V	16	86.60	33.20
6	*2437.00	108.6 AV			2.41 V	16	75.40	33.20
7	4810.00	50.5 PK	74.0	-23.5	1.77 V	295	46.90	3.60
8	4810.00	39.8 AV	54.0	-14.2	1.77 V	295	36.20	3.60
9	4874.00	47.6 PK	74.0	-26.4	3.23 V	296	44.00	3.60
10	4874.00	34.4 AV	54.0	-19.6	3.23 V	296	30.80	3.60
11	#5649.60	56.9 PK	68.2	-11.3	2.39 V	318	52.60	4.30
12	*5825.00	122.2 PK			2.39 V	318	81.60	40.60
13	*5825.00	111.3 AV			2.39 V	318	70.70	40.60
14	#5974.40	57.9 PK	68.2	-10.3	2.39 V	318	52.70	5.20
15	11650.00	67.6 PK	74.0	-6.4	1.99 V	178	49.50	18.10
16	11650.00	52.9 AV	54.0	-1.1	1.99 V	178	34.80	18.10

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

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

CHANNEL	CH 6 + CH 165 + 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	93.7 PK			2.88 H	316	60.30	33.40
4	*2480.00	91.6 AV			2.88 H	316	58.20	33.40
5	2483.50	59.1 PK	74.0	-14.9	1.99 H	276	25.70	33.40
6	2483.50	48.2 AV	54.0	-5.8	1.99 H	276	14.80	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	50.4 PK	74.0	-23.6	2.01 H	335	46.70	3.70
10	4960.00	40.3 AV	54.0	-13.7	2.01 H	335	36.60	3.70
11	#5649.60	56.2 PK	68.2	-12.0	2.14 H	337	51.90	4.30
12	*5825.00	122.9 PK			2.14 H	337	82.30	40.60
13	*5825.00	112.4 AV			2.14 H	337	71.80	40.60
14	#5947.20	57.8 PK	68.2	-10.4	2.14 H	337	52.70	5.10
15	11650.00	62.1 PK	74.0	-11.9	2.09 H	18	44.00	18.10
16	11650.00	50.2 AV	54.0	-3.8	2.09 H	18	32.10	18.10

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 165 + 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			2.88 V	317	87.10	33.20
2	*2437.00	109.5 AV			2.88 V	317	76.30	33.20
3	*2480.00	93.4 PK			2.63 V	298	60.00	33.40
4	*2480.00	92.6 AV			2.63 V	298	59.20	33.40
5	2483.50	58.3 PK	74.0	-15.7	2.02 V	263	24.90	33.40
6	2483.50	47.9 AV	54.0	-6.1	2.02 V	263	14.50	33.40
7	4874.00	47.3 PK	74.0	-26.7	2.88 V	274	43.70	3.60
8	4874.00	35.3 AV	54.0	-18.7	2.88 V	274	31.70	3.60
9	4960.00	51.1 PK	74.0	-22.9	1.83 V	293	47.40	3.70
10	4960.00	40.5 AV	54.0	-13.5	1.83 V	293	36.80	3.70
11	#5621.60	56.4 PK	68.2	-11.8	2.25 V	313	52.10	4.30
12	*5825.00	122.6 PK			2.25 V	313	82.00	40.60
13	*5825.00	110.4 AV			2.25 V	313	69.80	40.60
14	#5970.40	57.3 PK	68.2	-10.9	2.25 V	313	52.10	5.20
15	11650.00	68.3 PK	74.0	-5.7	2.84 V	110	50.20	18.10
16	11650.00	53.1 AV	54.0	-0.9	2.84 V	110	35.00	18.10

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

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

CHANNEL	CH 6 + CH 165 + 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	1.99 H	305	23.00	32.90
2	2390.00	46.6 AV	54.0	-7.4	1.99 H	305	13.70	32.90
3	*2405.00	104.5 PK			1.42 H	348	71.50	33.00
4	*2405.00	100.8 AV			1.42 H	348	67.80	33.00
5	*2437.00	119.6 PK			1.58 H	11	86.40	33.20
6	*2437.00	108.9 AV			1.58 H	11	75.70	33.20
7	4810.00	47.6 PK	74.0	-26.4	2.18 H	184	44.00	3.60
8	4810.00	35.2 AV	54.0	-18.8	2.18 H	184	31.60	3.60
9	4874.00	46.8 PK	74.0	-27.2	1.55 H	339	43.20	3.60
10	4874.00	34.6 AV	54.0	-19.4	1.55 H	339	31.00	3.60
11	#5618.40	56.5 PK	68.2	-11.7	2.30 H	16	52.20	4.30
12	*5825.00	122.8 PK			2.30 H	16	82.20	40.60
13	*5825.00	111.9 AV			2.30 H	16	71.30	40.60
14	#5971.20	57.8 PK	68.2	-10.4	2.30 H	16	52.60	5.20
15	11650.00	61.5 PK	74.0	-12.5	1.00 H	18	43.40	18.10
16	11650.00	49.6 AV	54.0	-4.4	1.00 H	18	31.50	18.10

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 165 + 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	58.4 PK	74.0	-15.6	2.66 V	313	25.50	32.90
2	2390.00	46.5 AV	54.0	-7.5	2.66 V	313	13.60	32.90
3	*2405.00	96.4 PK			3.15 V	287	63.40	33.00
4	*2405.00	92.5 AV			3.15 V	287	59.50	33.00
5	*2437.00	119.6 PK			2.88 V	45	86.40	33.20
6	*2437.00	108.4 AV			2.88 V	45	75.20	33.20
7	4810.00	48.8 PK	74.0	-25.2	2.51 V	187	45.20	3.60
8	4810.00	38.1 AV	54.0	-15.9	2.51 V	187	34.50	3.60
9	4874.00	47.6 PK	74.0	-26.4	2.78 V	336	44.00	3.60
10	4874.00	34.4 AV	54.0	-19.6	2.78 V	336	30.80	3.60
11	#5648.00	56.0 PK	68.2	-12.2	2.12 V	349	51.70	4.30
12	*5825.00	121.3 PK			2.12 V	349	80.70	40.60
13	*5825.00	110.8 AV			2.12 V	349	70.20	40.60
14	#5977.60	58.0 PK	68.2	-10.2	2.12 V	349	52.80	5.20
15	11650.00	67.2 PK	74.0	-6.8	2.48 V	100	49.10	18.10
16	11650.00	53.1 AV	54.0	-0.9	2.48 V	100	35.00	18.10

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.

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 165 + 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	23.5 QP	40.0	-16.5	2.00 H	80	38.20	-14.70
2	70.73	25.7 QP	40.0	-14.3	2.00 H	274	42.10	-16.40
3	270.99	36.7 QP	46.0	-9.3	1.00 H	322	50.20	-13.50
4	395.43	28.0 QP	46.0	-18.0	1.50 H	118	39.30	-11.30
5	690.96	30.3 QP	46.0	-15.7	1.00 H	300	36.50	-6.20
6	937.88	36.2 QP	46.0	-9.8	1.50 H	270	38.60	-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	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	224.33	22.8 QP	46.0	-23.2	1.01 V	35	39.00	-16.20
4	416.81	22.1 QP	46.0	-23.9	2.00 V	99	33.10	-11.00
5	611.24	27.5 QP	46.0	-18.5	1.01 V	71	34.90	-7.40
6	914.55	27.0 QP	46.0	-19.0	1.01 V	106	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

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

802.11g + 802.11a + Zigbee

CHANNEL	CH 6 + CH 165 + 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	35.73	25.5 QP	40.0	-14.5	1.50 H	102	41.50	-16.00
2	146.56	27.1 QP	43.5	-16.4	1.00 H	208	41.20	-14.10
3	263.21	34.0 QP	46.0	-12.0	1.00 H	312	48.00	-14.00
4	358.48	28.9 QP	46.0	-17.1	1.00 H	119	40.90	-12.00
5	720.12	32.2 QP	46.0	-13.8	1.00 H	168	37.90	-5.70
6	825.11	30.8 QP	46.0	-15.2	1.00 H	182	34.70	-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	88.23	28.0 QP	43.5	-15.5	1.51 V	90	47.80	-19.80
2	125.17	24.4 QP	43.5	-19.1	1.51 V	95	40.20	-15.80
3	171.83	25.0 QP	43.5	-18.5	2.00 V	34	39.40	-14.40
4	342.93	20.2 QP	46.0	-25.8	1.51 V	345	32.30	-12.10
5	486.81	22.4 QP	46.0	-23.6	1.01 V	0	32.10	-9.70
6	778.45	28.1 QP	46.0	-17.9	2.00 V	169	32.70	-4.60

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

802.11g + 802.11a + BT LE

CHANNEL	CH 6 + CH 165 + 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	23.9 QP	40.0	-16.1	2.00 H	69	38.60	-14.70
2	88.23	35.4 QP	43.5	-8.1	2.00 H	103	55.20	-19.80
3	181.55	29.8 QP	43.5	-13.7	1.51 H	332	45.20	-15.40
4	366.26	31.9 QP	46.0	-14.1	1.01 H	177	43.60	-11.70
5	541.25	28.5 QP	46.0	-17.5	1.01 H	4	37.40	-8.90
6	877.61	27.7 QP	46.0	-18.3	1.01 H	181	30.80	-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	134.89	20.6 QP	43.5	-22.9	1.51 V	301	35.60	-15.00
3	181.55	24.2 QP	43.5	-19.3	1.01 V	68	39.60	-15.40
4	486.81	22.4 QP	46.0	-23.6	1.01 V	0	32.10	-9.70
5	716.23	28.1 QP	46.0	-17.9	1.01 V	270	34.00	-5.90
6	852.33	25.6 QP	46.0	-20.4	1.01 V	151	29.50	-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-2452-PNA7-01R Ant.

802.11g + 802.11a + Zigbee

CHANNEL	CH 6 + CH 165 + 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	80.45	25.5 QP	40.0	-14.5	2.00 H	93	44.10	-18.60
2	105.73	29.1 QP	43.5	-14.4	2.00 H	307	46.90	-17.80
3	142.67	26.8 QP	43.5	-16.7	2.00 H	10	41.00	-14.20
4	243.77	28.2 QP	46.0	-17.8	1.01 H	314	43.00	-14.80
5	613.19	33.4 QP	46.0	-12.6	1.01 H	306	40.70	-7.30
6	760.95	29.7 QP	46.0	-16.3	1.01 H	174	34.50	-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	43.51	35.7 QP	40.0	-4.3	1.01 V	9	50.40	-14.70
2	109.62	25.9 QP	43.5	-17.6	1.01 V	134	43.30	-17.40
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	558.75	26.3 QP	46.0	-19.7	1.01 V	352	34.80	-8.50
6	852.33	25.6 QP	46.0	-20.4	1.01 V	151	29.50	-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-2452-PNA5-01R Ant. + ML-2499-HPA8-01 Ant.

802.11g + 802.11a + BT LE

CHANNEL	CH 6 + CH 165 + 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	27.6 QP	40.0	-12.4	1.49 H	103	43.60	-16.00
2	70.73	25.2 QP	40.0	-14.8	1.99 H	73	41.60	-16.40
3	109.62	30.5 QP	43.5	-13.0	1.49 H	34	47.90	-17.40
4	247.66	26.8 QP	46.0	-19.2	1.00 H	65	41.50	-14.70
5	663.74	27.9 QP	46.0	-18.1	1.00 H	352	34.60	-6.70
6	899.00	26.0 QP	46.0	-20.0	1.00 H	8	29.00	-3.00
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	263.21	27.6 QP	46.0	-18.4	1.00 V	45	41.60	-14.00
3	405.15	21.3 QP	46.0	-24.7	1.00 V	197	32.50	-11.20
4	698.74	27.7 QP	46.0	-18.3	1.49 V	286	33.80	-6.10
5	881.50	26.2 QP	46.0	-19.8	1.49 V	50	29.40	-3.20
6	974.82	27.6 QP	54.0	-26.4	1.00 V	71	29.50	-1.90

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

802.11g + 802.11a + Zigbee

CHANNEL	CH 6 + CH 165 + 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	62.95	35.1 QP	40.0	-4.9	1.01 H	0	50.30	-15.20
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	422.65	18.4 QP	46.0	-27.6	1.01 H	9	29.20	-10.80
5	797.89	25.8 QP	46.0	-20.2	1.01 H	282	30.20	-4.40
6	904.83	26.2 QP	46.0	-19.8	2.00 H	305	29.20	-3.00
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	32.1 QP	40.0	-7.9	1.00 V	308	48.50	-16.40
2	99.89	30.7 QP	43.5	-12.8	1.00 V	84	49.30	-18.60
3	144.61	27.8 QP	43.5	-15.7	1.00 V	293	41.90	-14.10
4	216.55	26.0 QP	46.0	-20.0	1.50 V	148	42.10	-16.10
5	714.29	30.6 QP	46.0	-15.4	2.00 V	100	36.50	-5.90
6	916.50	27.2 QP	46.0	-18.8	1.00 V	96	29.70	-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

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

802.11g + 802.11a + BT LE

CHANNEL	CH 6 + CH 165 + 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	61.01	36.9 QP	40.0	-3.1	1.01 H	282	51.90	-15.00
2	97.95	30.9 QP	43.5	-12.6	1.01 H	84	49.70	-18.80
3	216.55	26.9 QP	46.0	-19.1	1.01 H	143	43.00	-16.10
4	418.76	21.5 QP	46.0	-24.5	1.01 H	5	32.40	-10.90
5	617.08	27.4 QP	46.0	-18.6	1.01 H	7	34.50	-7.10
6	815.39	25.9 QP	46.0	-20.1	1.01 H	206	29.90	-4.00
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	90.17	29.3 QP	43.5	-14.2	1.00 V	78	48.90	-19.60
2	115.45	24.9 QP	43.5	-18.6	1.50 V	11	41.50	-16.60
3	210.72	25.5 QP	43.5	-18.0	1.50 V	165	42.00	-16.50
4	340.99	18.5 QP	46.0	-27.5	1.00 V	130	30.60	-12.10
5	442.09	23.0 QP	46.0	-23.0	2.00 V	275	33.30	-10.30
6	667.63	27.1 QP	46.0	-18.9	1.50 V	117	33.70	-6.60

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

802.11g + 802.11a + Zigbee

CHANNEL	CH 6 + CH 165 + 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	25.6 QP	40.0	-14.4	1.99 H	96	40.30	-14.70
2	97.95	27.8 QP	43.5	-15.7	1.99 H	219	46.60	-18.80
3	171.83	27.0 QP	43.5	-16.5	1.49 H	257	41.40	-14.40
4	432.37	19.3 QP	46.0	-26.7	1.99 H	16	29.70	-10.40
5	636.52	26.3 QP	46.0	-19.7	1.00 H	112	33.10	-6.80
6	900.94	26.3 QP	46.0	-19.7	1.49 H	306	29.30	-3.00
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	31.2 QP	40.0	-8.8	1.00 V	154	47.60	-16.40
2	97.95	30.3 QP	43.5	-13.2	1.00 V	78	49.10	-18.80
3	142.67	27.8 QP	43.5	-15.7	1.00 V	252	42.00	-14.20
4	216.55	26.3 QP	46.0	-19.7	1.00 V	154	42.40	-16.10
5	638.46	24.6 QP	46.0	-21.4	1.00 V	181	31.30	-6.70
6	881.50	26.2 QP	46.0	-19.8	1.49 V	50	29.40	-3.20

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 + 802.11n (HT20) + BT LE

CHANNEL	CH 6 + CH 149 + 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	117.39	25.9 QP	43.5	-17.6	1.51 H	52	42.30	-16.40
3	162.11	30.9 QP	43.5	-12.6	1.01 H	237	44.80	-13.90
4	237.94	25.1 QP	46.0	-20.9	1.01 H	334	40.30	-15.20
5	335.15	23.2 QP	46.0	-22.8	1.01 H	349	35.30	-12.10
6	537.36	24.9 QP	46.0	-21.1	1.51 H	148	34.00	-9.10
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	43.51	38.6 QP	40.0	-1.4	1.00 V	29	53.30	-14.70
2	61.01	36.6 QP	40.0	-3.4	1.00 V	5	51.60	-15.00
3	107.67	29.0 QP	43.5	-14.5	1.00 V	22	46.60	-17.60
4	160.17	26.2 QP	43.5	-17.3	1.49 V	232	40.00	-13.80
5	383.76	23.0 QP	46.0	-23.0	1.49 V	77	34.50	-11.50
6	595.69	27.9 QP	46.0	-18.1	1.99 V	190	35.50	-7.60

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 + 802.11n (HT20) + Zigbee

CHANNEL	CH 6 + CH 149 + 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	53.23	26.1 QP	40.0	-13.9	1.49 H	90	40.40	-14.30
2	99.89	25.5 QP	43.5	-18.0	2.00 H	244	44.10	-18.60
3	162.11	30.1 QP	43.5	-13.4	1.49 H	42	44.00	-13.90
4	263.21	28.5 QP	46.0	-17.5	1.00 H	308	42.50	-14.00
5	428.48	19.9 QP	46.0	-26.1	2.00 H	270	30.40	-10.50
6	564.58	25.0 QP	46.0	-21.0	1.49 H	206	33.40	-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	35.73	39.7 QP	40.0	-0.3	1.00 V	19	55.70	-16.00
2	55.18	36.4 QP	40.0	-3.6	1.00 V	310	50.90	-14.50
3	99.89	29.7 QP	43.5	-13.8	1.00 V	111	48.30	-18.60
4	160.17	23.9 QP	43.5	-19.6	1.49 V	243	37.70	-13.80
5	315.71	24.2 QP	46.0	-21.8	1.99 V	283	36.50	-12.30
6	609.30	28.9 QP	46.0	-17.1	1.49 V	16	36.30	-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-PNA7-01R Ant. + ML-2452-PNA7-01R Ant.

802.11b + 802.11n (HT20) + BT LE

CHANNEL	CH 6 + CH 149 + 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	27.3 QP	40.0	-12.7	1.51 H	6	43.30	-16.00
2	53.23	26.5 QP	40.0	-13.5	2.00 H	67	40.80	-14.30
3	107.67	27.7 QP	43.5	-15.8	2.00 H	261	45.30	-17.60
4	142.67	26.3 QP	43.5	-17.2	2.00 H	218	40.50	-14.20
5	216.55	25.9 QP	46.0	-20.1	1.01 H	231	42.00	-16.10
6	333.21	25.6 QP	46.0	-20.4	1.01 H	117	37.60	-12.00
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	36.79	38.9 QP	40.0	-1.1	1.00 V	60	54.70	-15.80
2	51.46	38.6 QP	40.0	-1.4	1.00 V	327	53.00	-14.40
3	70.73	30.7 QP	40.0	-9.3	1.99 V	321	47.10	-16.40
4	160.17	26.2 QP	43.5	-17.3	1.49 V	232	40.00	-13.80
5	216.55	21.8 QP	46.0	-24.2	1.00 V	5	37.90	-16.10
6	276.82	27.2 QP	46.0	-18.8	1.00 V	256	40.40	-13.20

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-2452-PNA7-01R Ant.

802.11b + 802.11n (HT20) + Zigbee

CHANNEL	CH 6 + CH 149 + 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	26.7 QP	40.0	-13.3	2.00 H	66	41.40	-14.70
2	107.67	29.3 QP	43.5	-14.2	1.49 H	68	46.90	-17.60
3	169.89	27.0 QP	43.5	-16.5	1.49 H	254	41.20	-14.20
4	333.21	26.5 QP	46.0	-19.5	1.00 H	320	38.50	-12.00
5	465.42	22.4 QP	46.0	-23.6	2.00 H	75	32.40	-10.00
6	615.13	28.9 QP	46.0	-17.1	1.00 H	166	36.20	-7.30
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	43.51	38.3 QP	40.0	-1.7	1.49 V	16	53.00	-14.70
2	61.01	38.7 QP	40.0	-1.3	1.00 V	268	53.70	-15.00
3	90.17	28.7 QP	43.5	-14.8	1.49 V	112	48.30	-19.60
4	152.39	26.9 QP	43.5	-16.6	1.49 V	270	40.90	-14.00
5	261.27	24.8 QP	46.0	-21.2	1.00 V	67	38.90	-14.10
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 149 + 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	35.73	27.0 QP	40.0	-13.0	1.49 H	51	43.00	-16.00
2	80.45	30.1 QP	40.0	-9.9	1.49 H	158	48.70	-18.60
3	125.17	28.1 QP	43.5	-15.4	1.49 H	97	43.90	-15.80
4	286.55	27.1 QP	46.0	-18.9	1.00 H	119	40.10	-13.00
5	383.76	26.3 QP	46.0	-19.7	1.00 H	25	37.80	-11.50
6	640.41	29.8 QP	46.0	-16.2	1.00 H	106	36.60	-6.80
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	53.23	36.2 QP	40.0	-3.8	1.50 V	294	50.50	-14.30
2	80.45	31.5 QP	40.0	-8.5	1.00 V	110	50.10	-18.60
3	107.67	29.5 QP	43.5	-14.0	1.00 V	37	47.10	-17.60
4	152.39	26.6 QP	43.5	-16.9	1.00 V	294	40.60	-14.00
5	216.55	24.5 QP	46.0	-21.5	1.00 V	105	40.60	-16.10
6	383.76	22.7 QP	46.0	-23.3	1.50 V	16	34.20	-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) + Zigbee

CHANNEL	CH 6 + CH 149 + 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	27.9 QP	40.0	-12.1	2.00 H	349	42.50	-14.60
2	80.45	31.0 QP	40.0	-9.0	2.00 H	177	49.60	-18.60
3	125.17	27.4 QP	43.5	-16.1	1.50 H	105	43.20	-15.80
4	169.89	27.1 QP	43.5	-16.4	2.00 H	200	41.30	-14.20
5	309.88	26.2 QP	46.0	-19.8	1.00 H	106	38.80	-12.60
6	374.04	27.7 QP	46.0	-18.3	1.00 H	41	39.30	-11.60
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	35.73	38.3 QP	40.0	-1.7	1.00 V	127	54.30	-16.00
2	53.23	34.8 QP	40.0	-5.2	1.51 V	274	49.10	-14.30
3	97.95	31.8 QP	43.5	-11.7	1.00 V	88	50.60	-18.80
4	134.89	24.2 QP	43.5	-19.3	1.00 V	289	39.20	-15.00
5	216.55	25.1 QP	46.0	-20.9	1.00 V	99	41.20	-16.10
6	374.04	24.5 QP	46.0	-21.5	1.00 V	130	36.10	-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-PNL6M4-N36 Ant. + ML-2452-PNA7-01R Ant.

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

CHANNEL	CH 6 + CH 149 + 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	27.9 QP	40.0	-12.1	2.00 H	81	42.50	-14.60
2	88.23	33.2 QP	43.5	-10.3	2.00 H	201	53.00	-19.80
3	162.11	32.8 QP	43.5	-10.7	1.51 H	267	46.70	-13.90
4	274.88	30.2 QP	46.0	-15.8	1.01 H	239	43.50	-13.30
5	374.04	29.4 QP	46.0	-16.6	1.01 H	65	41.00	-11.60
6	599.58	31.6 QP	46.0	-14.4	1.51 H	165	39.10	-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	35.26	38.5 QP	40.0	-1.5	1.00 V	73	54.40	-15.90
2	43.51	36.1 QP	40.0	-3.9	1.00 V	181	50.80	-14.70
3	51.29	37.6 QP	40.0	-2.4	1.00 V	334	52.00	-14.40
4	61.01	38.1 QP	40.0	-1.9	1.00 V	315	53.10	-15.00
5	311.82	31.2 QP	46.0	-14.8	1.00 V	184	43.70	-12.50
6	374.04	28.0 QP	46.0	-18.0	2.00 V	176	39.60	-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-PNL6M4-N36 Ant. + ML-2452-PNA7-01R Ant.

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

CHANNEL	CH 6 + CH 149 + 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	35.73	26.0 QP	40.0	-14.0	2.00 H	41	42.00	-16.00
2	53.23	24.4 QP	40.0	-15.6	2.00 H	15	38.70	-14.30
3	88.23	32.6 QP	43.5	-10.9	2.00 H	130	52.40	-19.80
4	134.89	23.8 QP	43.5	-19.7	2.00 H	69	38.80	-15.00
5	191.28	24.4 QP	43.5	-19.1	1.50 H	79	40.80	-16.40
6	249.60	22.1 QP	46.0	-23.9	1.00 H	86	36.70	-14.60
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	53.23	34.8 QP	40.0	-5.2	1.51 V	274	49.10	-14.30
2	97.95	31.8 QP	43.5	-11.7	1.00 V	88	50.60	-18.80
3	154.33	25.4 QP	43.5	-18.1	1.00 V	238	39.30	-13.90
4	199.05	21.6 QP	43.5	-21.9	2.00 V	60	38.20	-16.60
5	527.64	24.8 QP	46.0	-21.2	1.00 V	130	34.00	-9.20
6	597.63	28.9 QP	46.0	-17.1	1.51 V	85	36.40	-7.50

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

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

CHANNEL	CH 6 + CH 165 + 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	25.5 QP	40.0	-14.5	1.51 H	42	41.50	-16.00
2	70.73	25.2 QP	40.0	-14.8	2.00 H	104	41.60	-16.40
3	125.17	22.5 QP	43.5	-21.0	1.51 H	244	38.30	-15.80
4	399.31	21.8 QP	46.0	-24.2	2.00 H	240	33.10	-11.30
5	578.19	25.4 QP	46.0	-20.6	2.00 H	210	33.40	-8.00
6	832.89	25.6 QP	46.0	-20.4	1.51 H	303	29.60	-4.00
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	33.6 QP	40.0	-6.4	1.49 V	165	51.80	-18.20
2	134.89	27.6 QP	43.5	-15.9	1.00 V	233	42.60	-15.00
3	269.05	23.1 QP	46.0	-22.9	1.49 V	159	36.70	-13.60
4	374.04	28.6 QP	46.0	-17.4	2.00 V	162	40.20	-11.60
5	657.91	26.4 QP	46.0	-19.6	1.00 V	124	33.10	-6.70
6	747.34	28.1 QP	46.0	-17.9	1.00 V	79	33.00	-4.90

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

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

CHANNEL	CH 6 + CH 165 + 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	49.34	21.9 QP	40.0	-18.1	2.00 H	175	36.20	-14.30
2	134.89	22.1 QP	43.5	-21.4	2.00 H	257	37.10	-15.00
3	201.00	28.2 QP	43.5	-15.3	1.51 H	198	44.90	-16.70
4	292.38	28.0 QP	46.0	-18.0	1.00 H	105	40.90	-12.90
5	529.58	22.1 QP	46.0	-23.9	1.51 H	297	31.30	-9.20
6	799.84	25.3 QP	46.0	-20.7	1.00 H	156	29.70	-4.40
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	76.56	26.9 QP	40.0	-13.1	1.00 V	136	44.50	-17.60
2	142.67	29.5 QP	43.5	-14.0	1.00 V	278	43.70	-14.20
3	288.49	27.8 QP	46.0	-18.2	1.49 V	278	40.80	-13.00
4	494.58	20.8 QP	46.0	-25.2	1.49 V	186	30.40	-9.60
5	622.91	26.7 QP	46.0	-19.3	1.00 V	210	33.70	-7.00
6	809.56	26.3 QP	46.0	-19.7	1.49 V	316	30.50	-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-PNL9M3-036 Ant. + ML-2452-PNA7-01R Ant.

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

CHANNEL	CH 6 + CH 165 + 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	37.68	26.9 QP	40.0	-13.1	1.00 H	350	42.40	-15.50
2	97.95	24.1 QP	43.5	-19.4	2.00 H	279	42.90	-18.80
3	183.50	25.8 QP	43.5	-17.7	2.00 H	306	41.40	-15.60
4	426.53	19.0 QP	46.0	-27.0	2.00 H	202	29.60	-10.60
5	687.07	27.5 QP	46.0	-18.5	1.00 H	276	33.80	-6.30
6	902.89	26.5 QP	46.0	-19.5	1.49 H	83	29.50	-3.00
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	32.6 QP	40.0	-7.4	1.99 V	310	49.00	-16.40
2	125.17	26.5 QP	43.5	-17.0	1.00 V	15	42.30	-15.80
3	220.44	24.5 QP	46.0	-21.5	1.00 V	280	40.60	-16.10
4	387.65	23.0 QP	46.0	-23.0	1.99 V	169	34.50	-11.50
5	601.52	27.1 QP	46.0	-18.9	1.49 V	126	34.50	-7.40
6	829.00	25.5 QP	46.0	-20.5	1.99 V	12	29.50	-4.00

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-2452-PNA7-01R Ant.

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

CHANNEL	CH 6 + CH 165 + 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	37.68	26.9 QP	40.0	-13.1	1.00 H	350	42.40	-15.50
2	202.94	27.1 QP	43.5	-16.4	1.49 H	322	43.90	-16.80
3	340.99	25.2 QP	46.0	-20.8	1.00 H	116	37.30	-12.10
4	578.19	25.3 QP	46.0	-20.7	1.49 H	39	33.30	-8.00
5	786.23	24.8 QP	46.0	-21.2	1.49 H	116	29.40	-4.60
6	972.88	27.7 QP	54.0	-26.3	1.00 H	15	29.60	-1.90
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	41.57	31.9 QP	40.0	-8.1	1.49 V	3	46.90	-15.00
2	132.95	25.1 QP	43.5	-18.4	1.00 V	231	40.30	-15.20
3	247.66	20.6 QP	46.0	-25.4	1.49 V	126	35.30	-14.70
4	543.19	23.9 QP	46.0	-22.1	1.00 V	118	32.80	-8.90
5	755.12	24.8 QP	46.0	-21.2	1.49 V	140	29.60	-4.80
6	965.10	27.2 QP	54.0	-26.8	1.49 V	11	29.30	-2.10

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

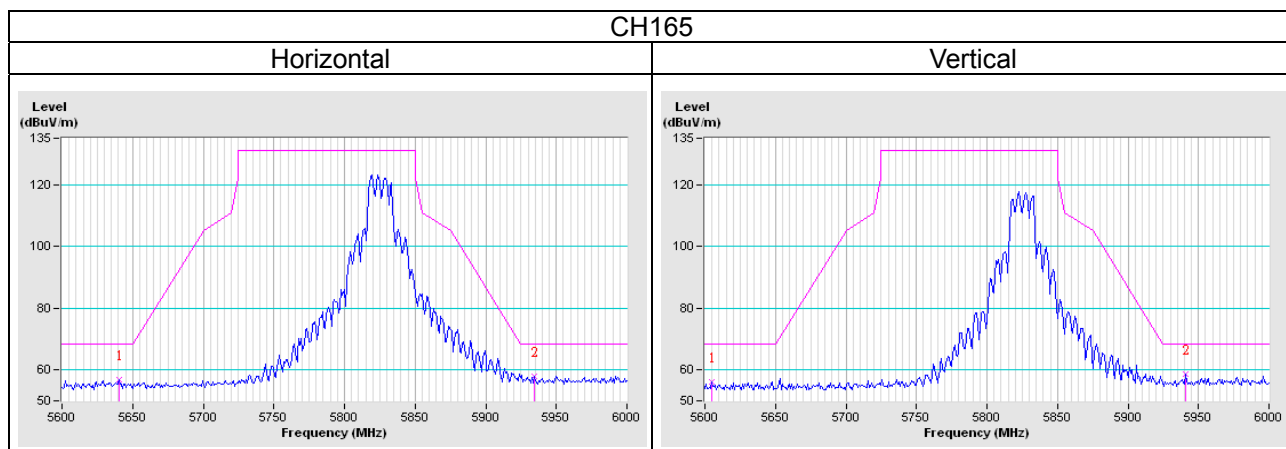
5 Pictures of Test Arrangements

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

Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

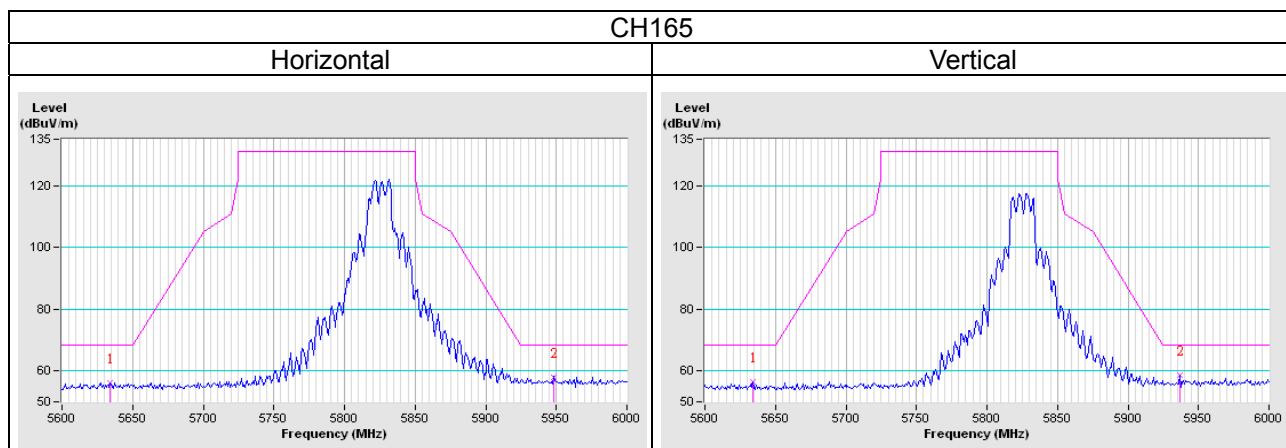
ML-5299-FHPA6-01R Ant. + ML-2499-HPA8-01Ant.

802.11a



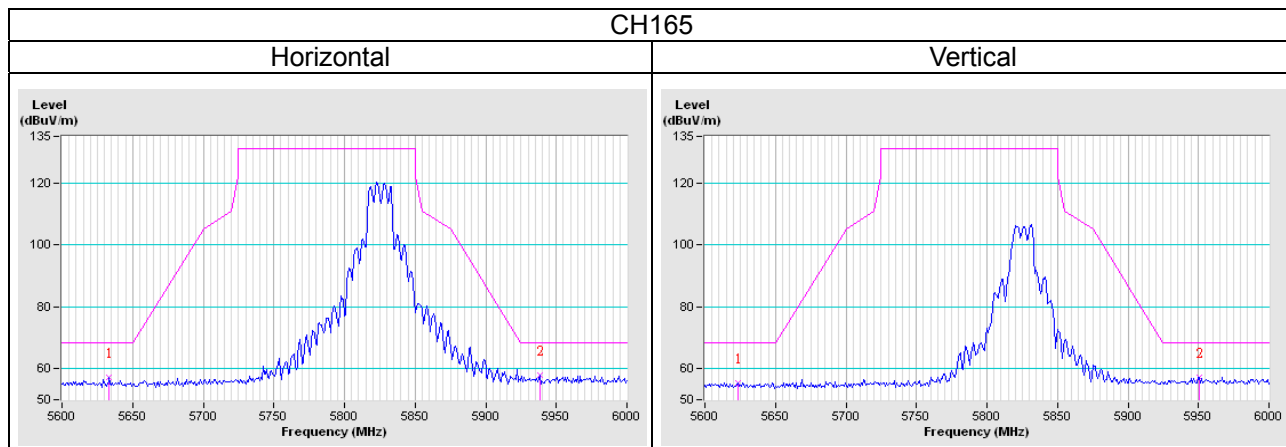
ML-5299-FHPA6-01R Ant. + ML-2499-HPA8-01Ant.

802.11a



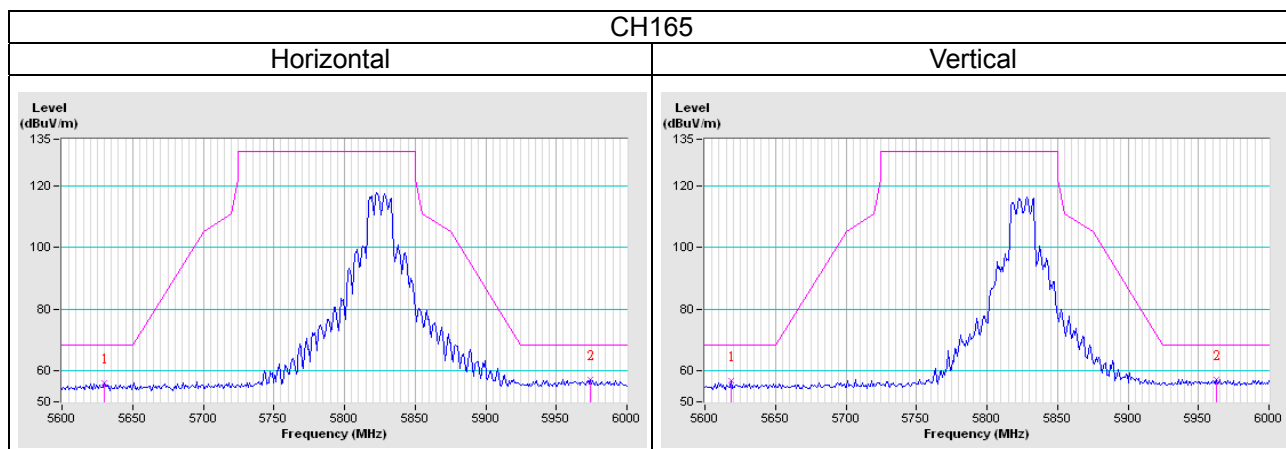
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802.11a



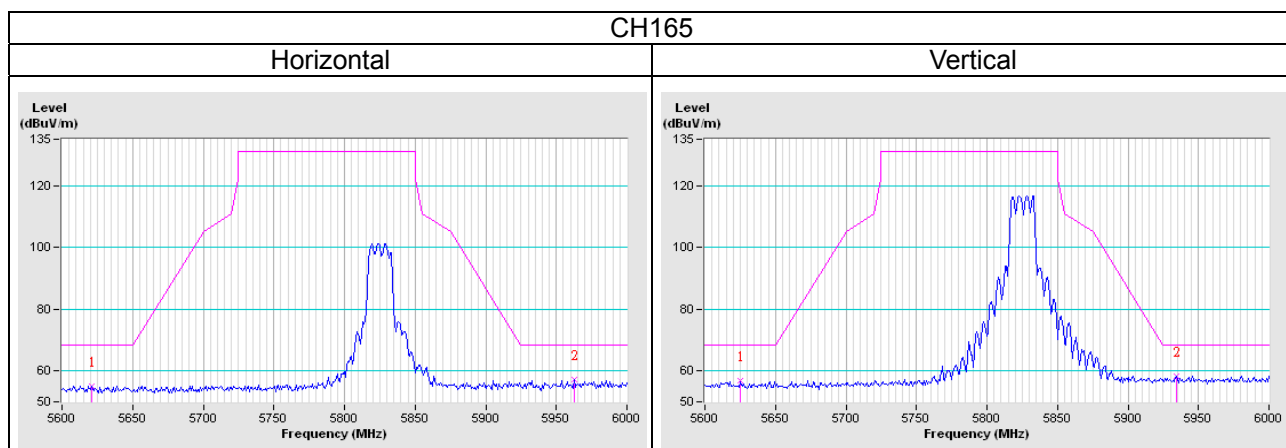
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802.11a



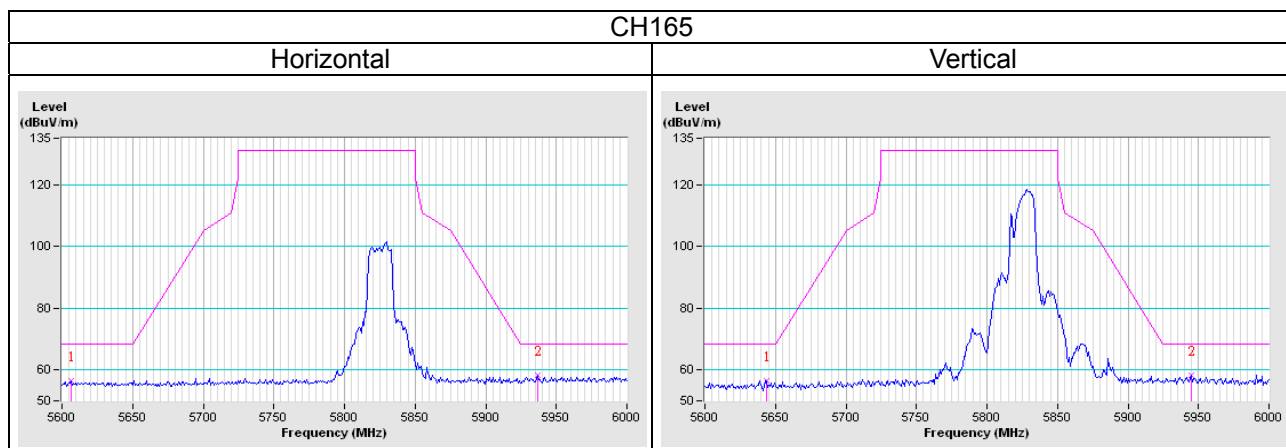
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802.11a



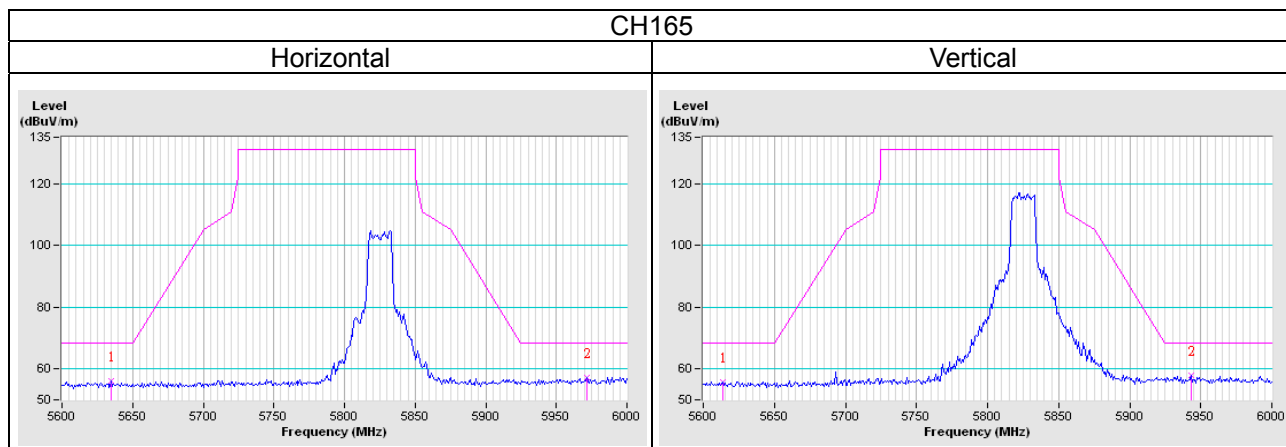
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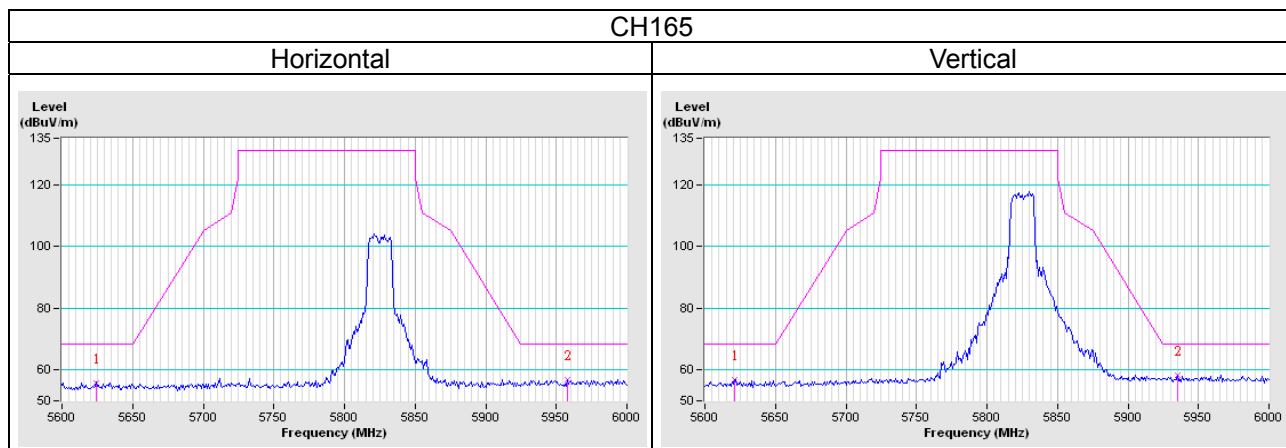
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802.11a



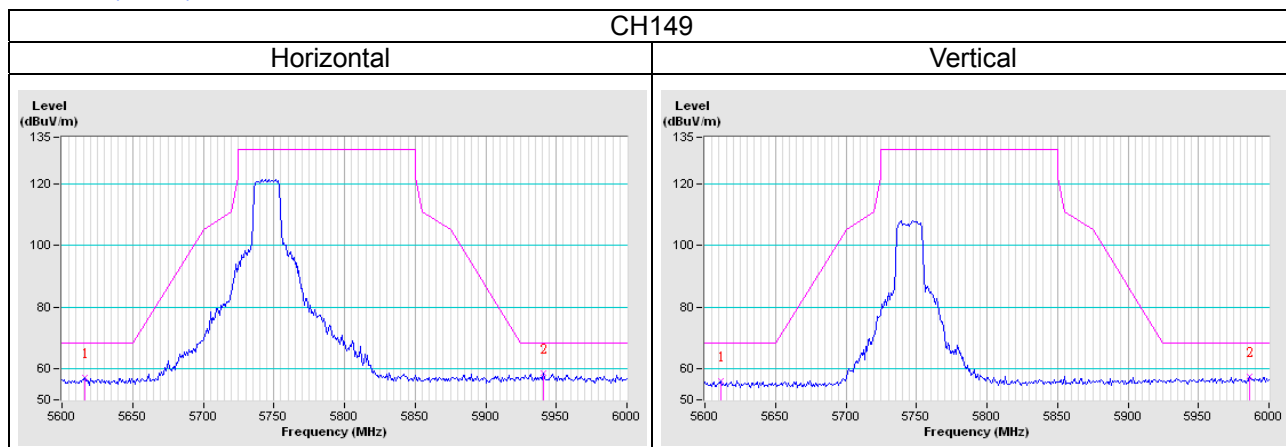
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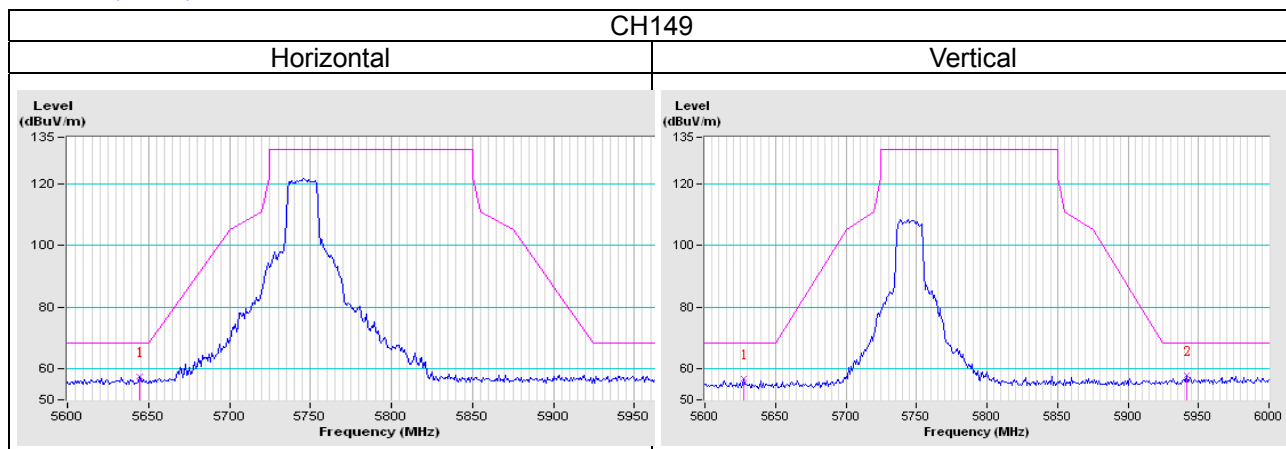
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802.11n (HT20)



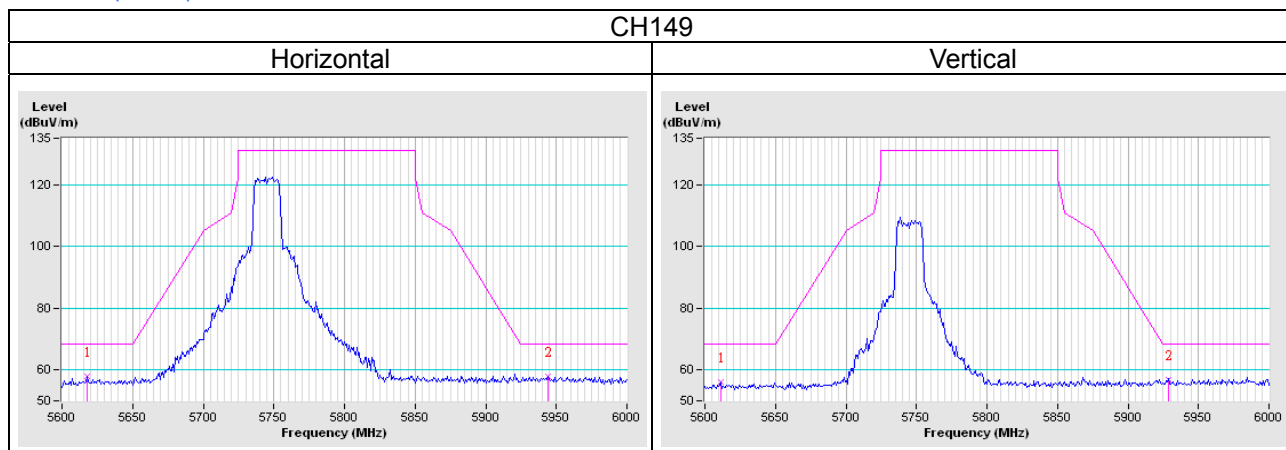
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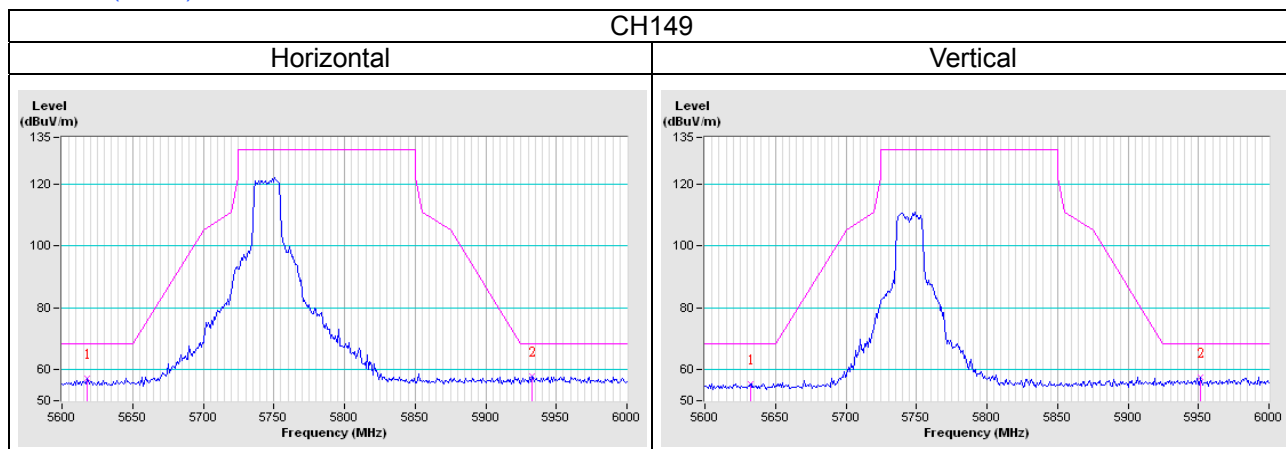
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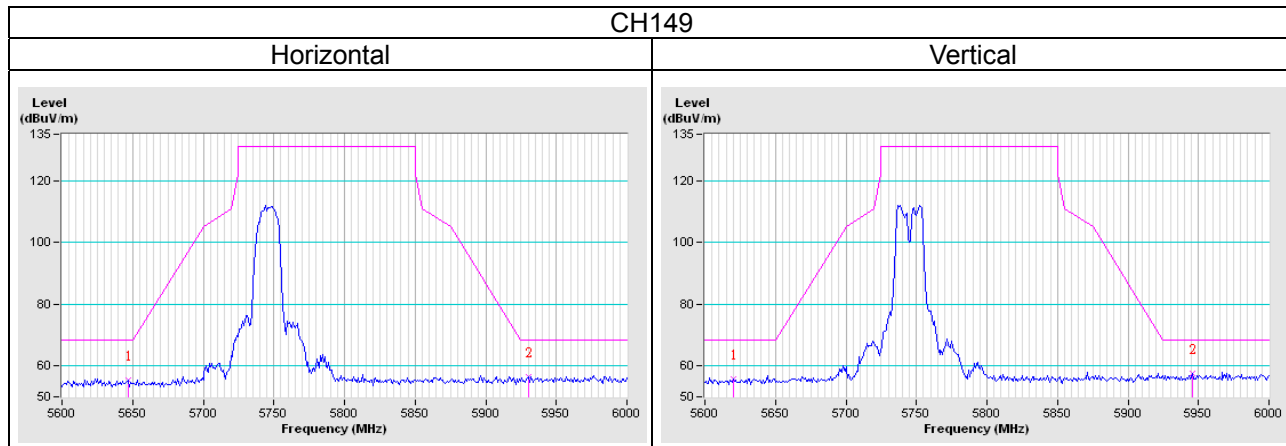
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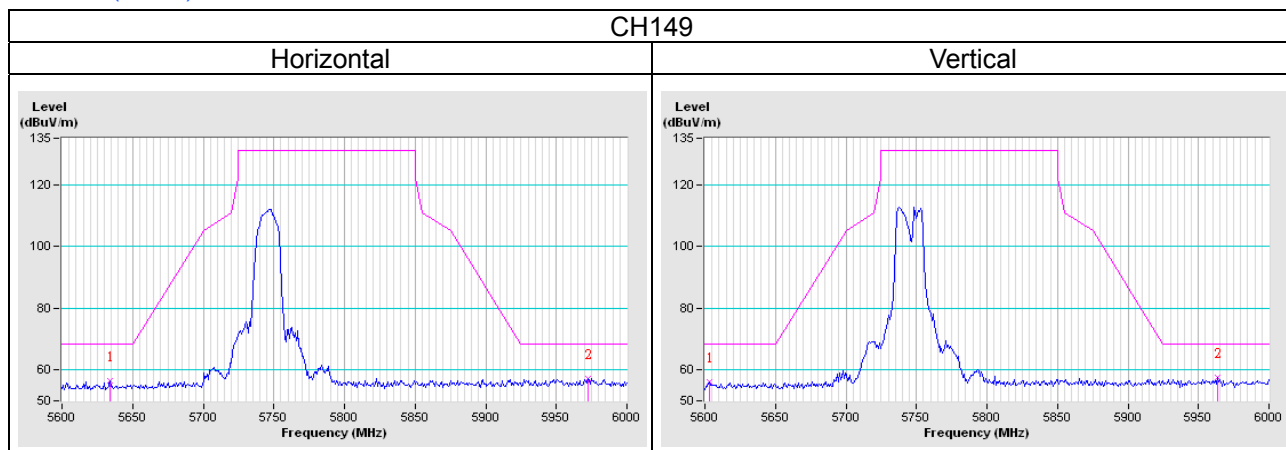
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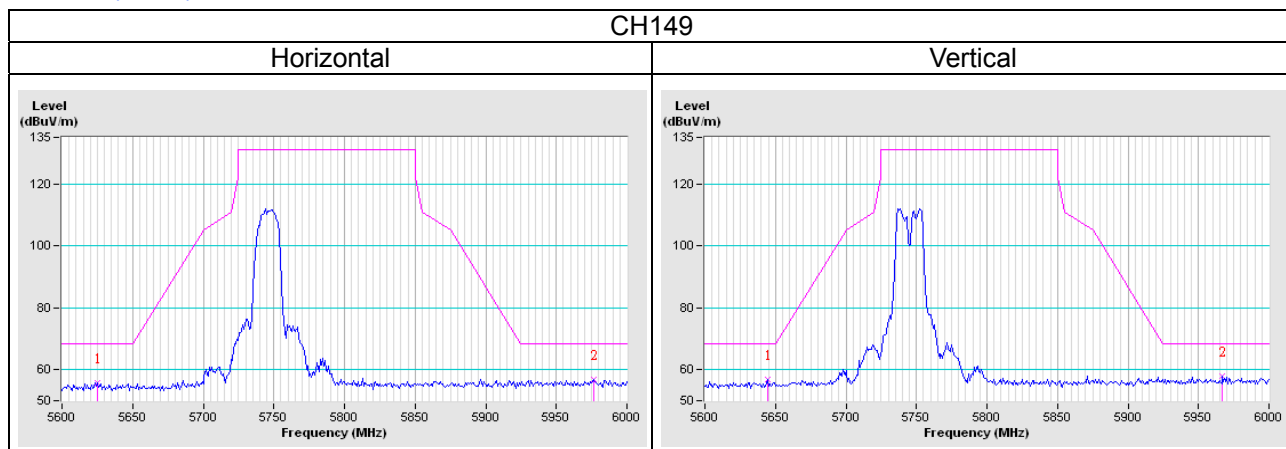
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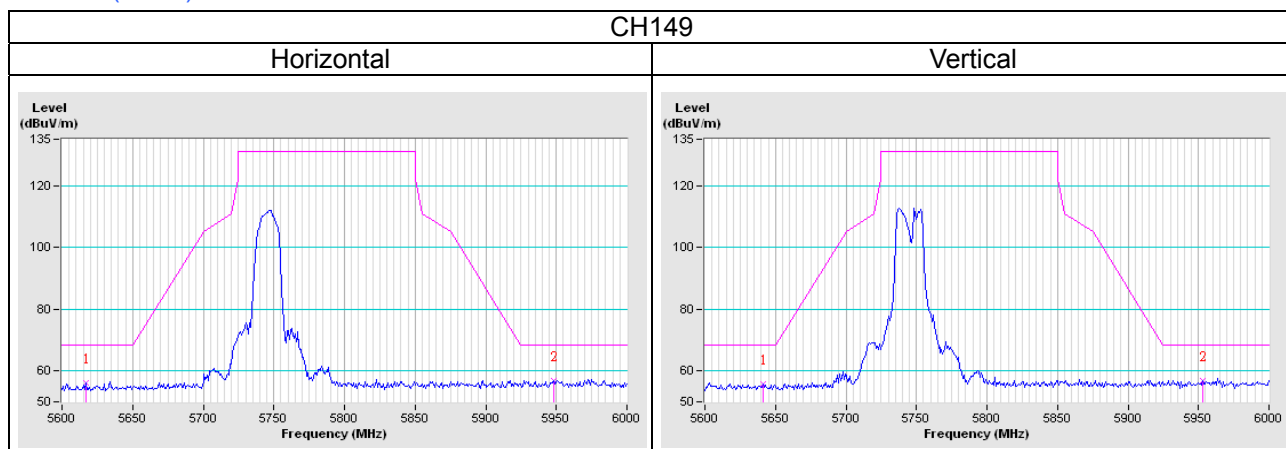
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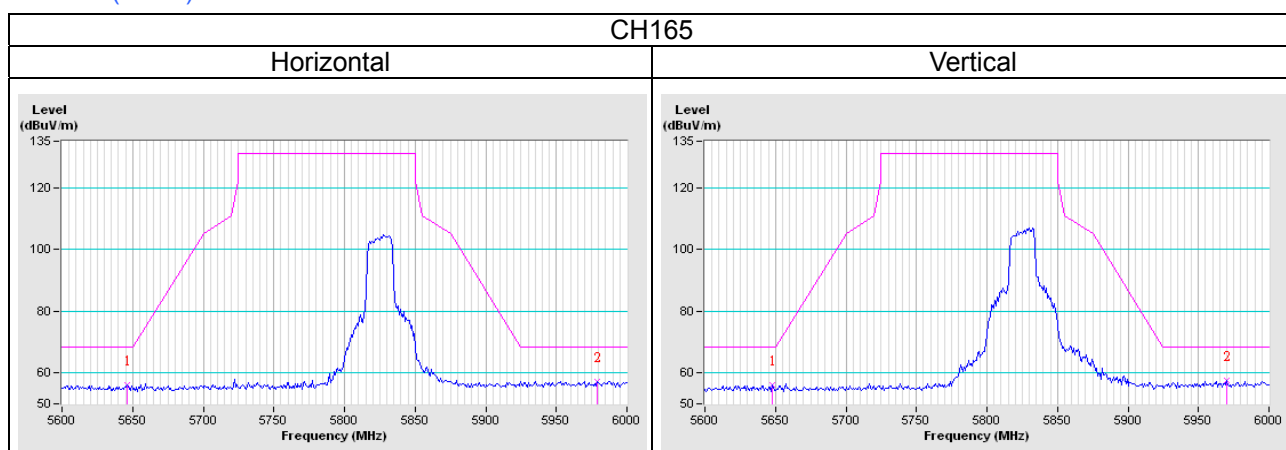
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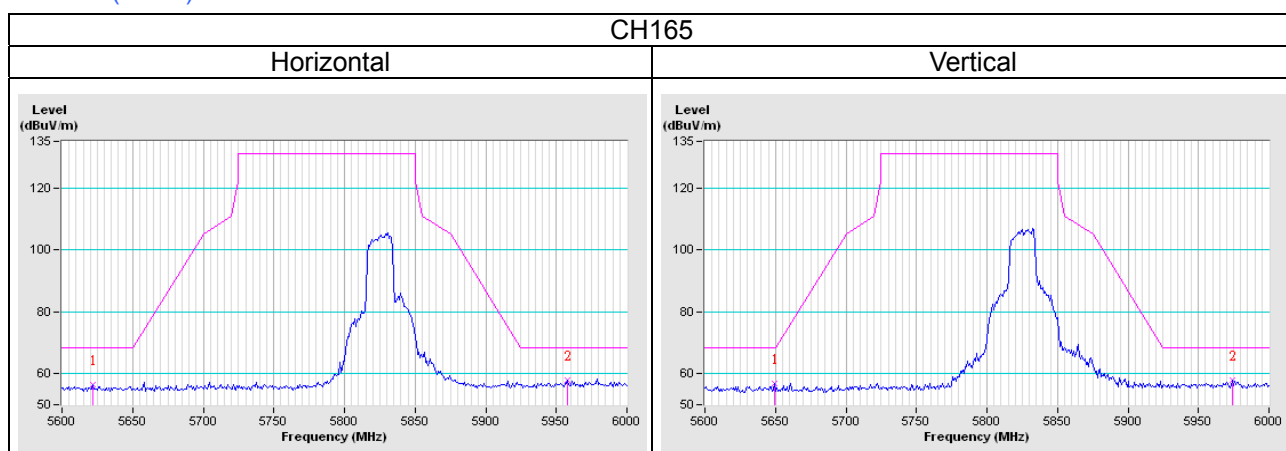
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802.11n (HT20)



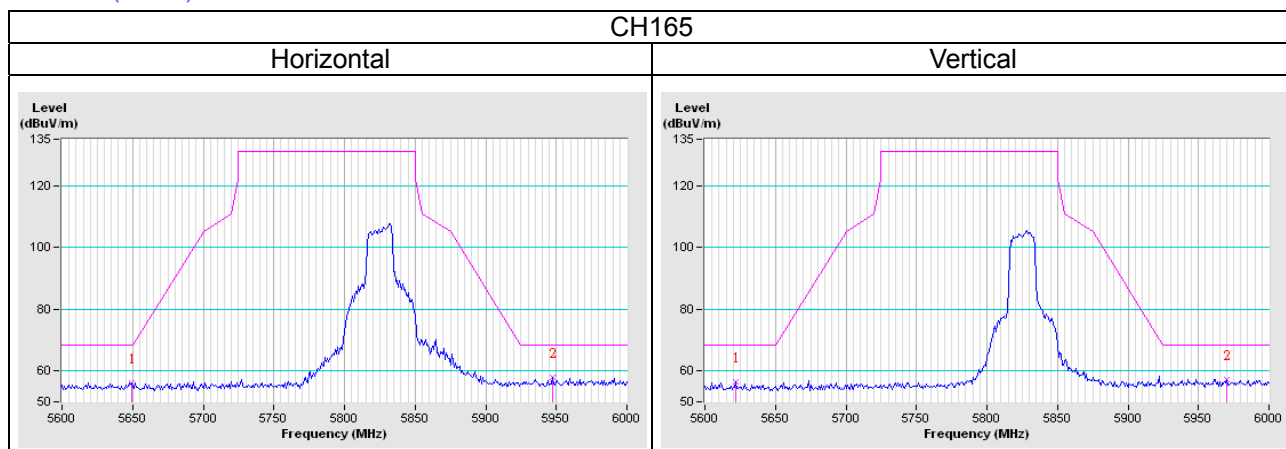
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802.11n (HT20)



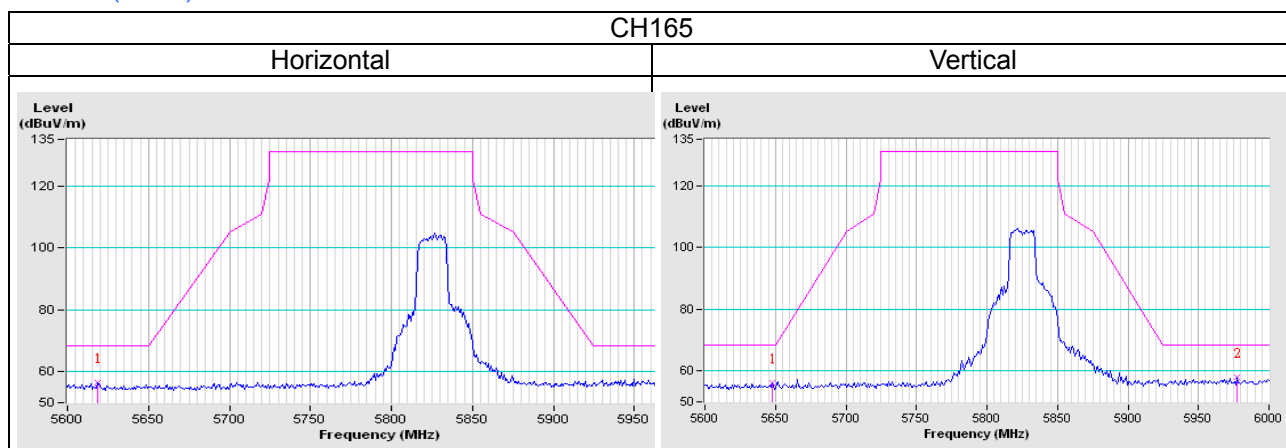
ML-2452-PNL6M4-N36 Ant. + ML-2452-PNA7-01R Ant.

802.11n (HT20)



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

802.11n (HT20)



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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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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