

EN 62311:2008
ASSESSMENT REPORT

For

Wallys Communications (SuZhou) Co.,LTD

Room 2723,Le Jia building,Jia Rui Xiang No.8, Suzhou Industrial Park, Suzhou, P.R Suzhou,
215000 China

Tested Model: DR900VX
Series Model: DR900VX-4.9,DR600VX,DR600VX-4.9,DR900VX-MX,DR600VX-MX

Report Type: Original Report	Product Type: Dual Band 11AC wireless Module
Test Engineer: Carry Cai	Carry Cai
Report Number: RKSA191022001-01D	
Report Date: 2019-11-30	
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant	Wallys Communications (SuZhou) Co.,LTD
Tested Model	DR900VX
Series Model	DR900VX-4.9,DR600VX,DR600VX-4.9,DR900VX-MX,DR600VX-MX
Model Difference	Model names
Product Type	Dual Band 11AC wireless Module
Power Supply	DC 3.3V
RF Function	2.4G Wi-Fi, 5G Wi-Fi, DFS
Operating Band/Frequency	2.4G Wi-Fi: 2412-2472 MHz 5G Wi-Fi Band1: 5150-5250MHz,5G Wi-Fi Band2: 5250-5350MHz 5G Wi-Fi Band3: 5470-5725MHz
Channel Number	2.4G Wi-Fi: 13; 5G Wi-Fi B1:7, B2:7, B3:18
Channel Separation	2.4G Wi-Fi: 5MHz; 5G Wi-Fi B1,B2,B3:10MHz
Antenna Type	Omni antenna
Antenna Gain	2.0dBi

**All measurement and test data in this report was gathered from production sample serial number: 20191022001. (Assigned by the BACL. The EUT supplied by the applicant was received on 2019-10-22.)*

Objective

This report is prepared on behalf of *Wallys Communications (SuZhou) Co.,LTD.* in accordance with EN 62311:2008, Generic standard to demonstrate the compliance of electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (0 Hz–300 GHz) is to demonstrate the compliance of apparatus with the basic restrictions or reference levels on exposure of the general public related to electric, magnetic, electromagnetic fields as well as induced and contact current.

The objective is to determine the compliance of EUT with EN 62311:2008.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with EN 62311:2008.

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road,Kunshan,Jiangsu province,China.

Bay Area Compliance Laboratories Corp. (Kunshan) Lab is accredited to ISO/IEC 17025 by A2LA (Lab code: 4323.01) and the FCC designation No. CN1185 under the FCC KDB 974614 D01 and CAB identifier CN0004 under the ISED requirement. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

FUNVAL

Technical Requirements Specification in EN 62311

General Description of Applied Standards

EN 62311 Generic standard to demonstrate the compliance of electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (0 Hz–300 GHz) is to demonstrate the compliance of apparatus with the basic restrictions or reference levels on exposure of the general public related to electric, magnetic, electromagnetic fields as well as induced and contact current.

RF Exposure Evaluation

Limit:

According to EN 62311, the criteria listed in the below table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified table 2 of Council Recommendation 1999/519/EC.

Reference levels for electric, magnetic and electromagnetic fields
(0 Hz to 300 GHz, unperturbed rms values)

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (μT)	Equivalent plane wave power density S_{eq} (W/m ²)
0-1 Hz	—	$3,2 \times 10^4$	4×10^4	—
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	—
8-25 Hz	10 000	$4\,000/f$	$5\,000/f$	—
0,025-0,8 kHz	$250/f$	$4/f$	$5/f$	—
0,8-3 kHz	$250/f$	5	6,25	—
3-150 kHz	87	5	6,25	—
0,15-1 MHz	87	$0,73/f$	$0,92/f$	—
1-10 MHz	$87/f^{1/2}$	$0,73/f$	$0,92/f$	—
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375 f^{1/2}$	$0,0037 f^{1/2}$	$0,0046 f^{1/2}$	$f/200$
2-300 GHz	61	0,16	0,20	10

Notes:

1. f as indicated in the frequency range column.

Test method

The antenna of the product, under normal use condition is at least 20cm away from the body of the user. Warning statement of the user for keeping 20cm separation distance and the prohibition of operating to a person has been printed on the user manual. So, this product under normal use is located on electromagnetic far field between the human body.

Far Field Calculation Formula

$$E = \frac{\sqrt{30PG(\theta, \phi)}}{r}$$

G = antenna gain relative to an isotropic antenna
 θ, ϕ = elevation and azimuth angles to point of investigation
 r = distance from observation point to the antenna

Test Data

Environmental Conditions

Temperature:	22.3~25.0 °C
Relative Humidity:	48~50%
ATM Pressure:	101.1~101.3kPa

The testing was performed by Carry Cai from 2019-10-28 to 2019-11-18.

For 2.4G Wi-Fi:

Frequency Range (GHz)	Tune-up EIRP (dBm)	Tune-up EIRP (mW)	E-Field Strength (V/m)	E-Field Limit (V/m)	Result
2412-2472	20.00	100	8.66	61	Pass

Note: Antenna Gain (numeric): 2dBi (2.33) for 2.4G Wi-Fi

For 5G Wi-Fi:

Frequency Range (GHz)	Tune-up EIRP (dBm)	Tune-up EIRP (mW)	E-Field Strength (V/m)	E-Field Limit (V/m)	Result
5150-5250	18.50	70.79	7.29	61	Pass
5250-5350	18.00	63.10	6.88	61	Pass
5470-5725	19.00	79.43	7.72	61	Pass

Note: Antenna Gain (numeric): 2dBi (2.87) for 5G Wi-Fi.

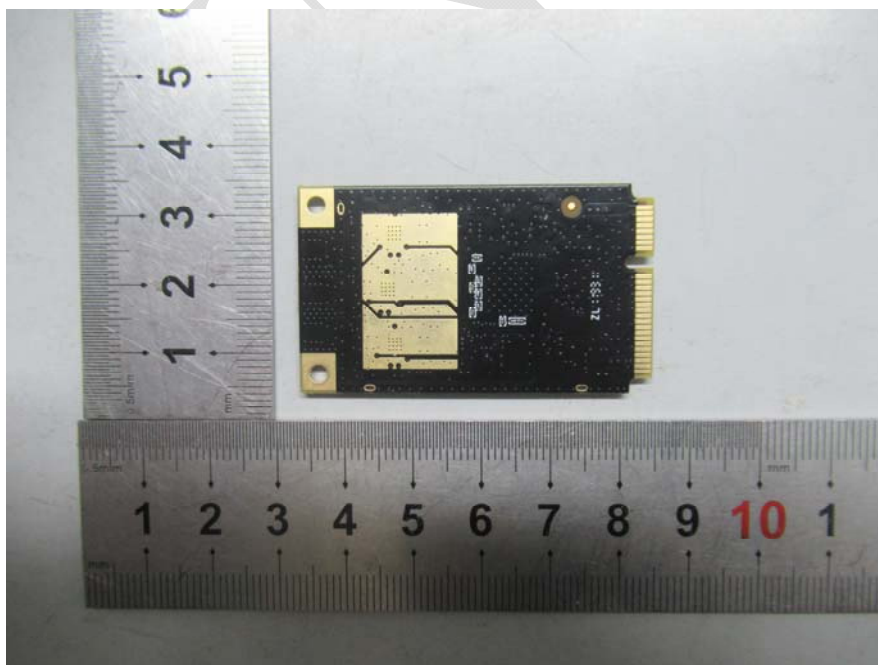
The distance from observation point to the antenna is 20cm.

EXHIBIT A - EUT PHOTOGRAPHS

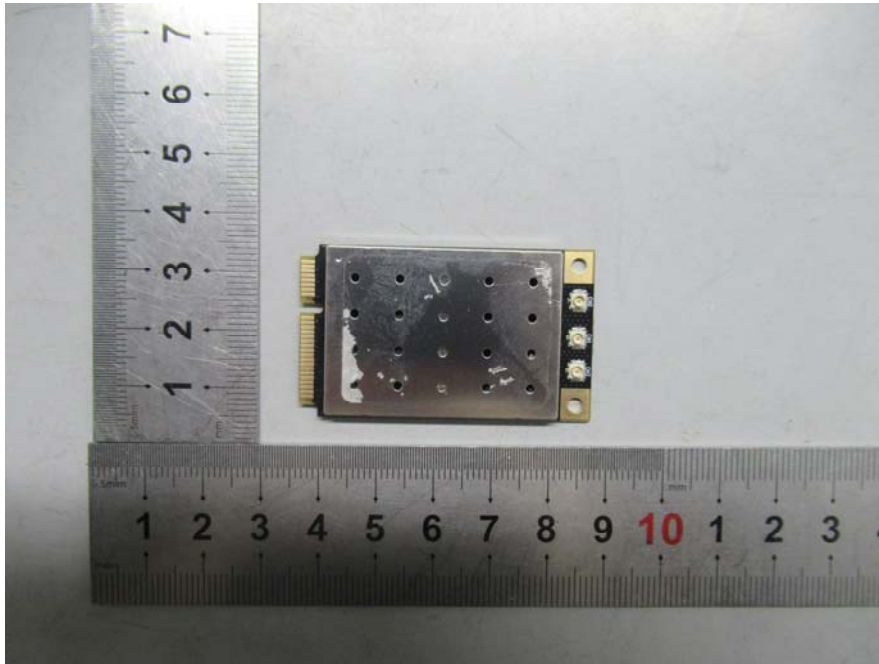
EUT – Top View



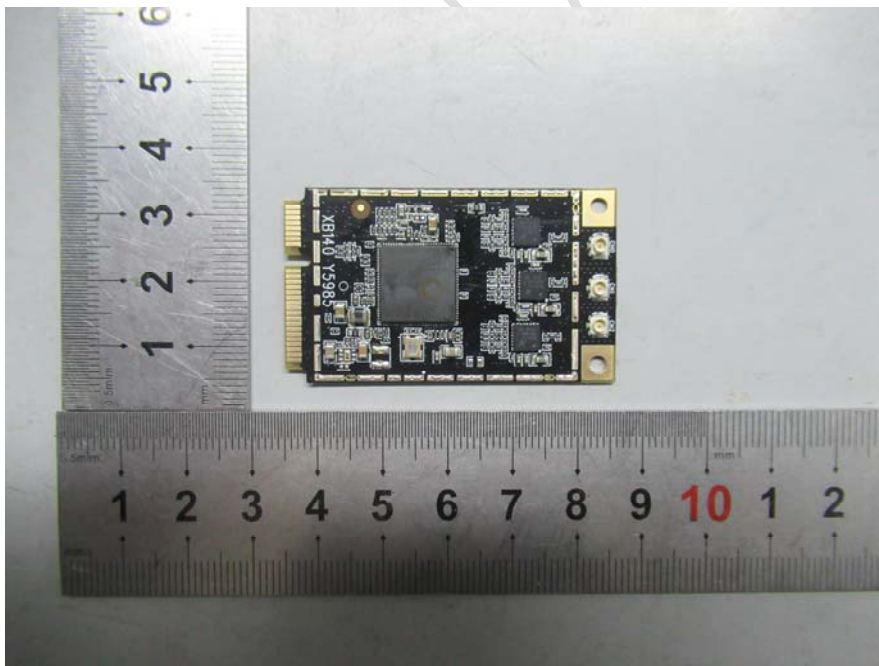
EUT – Bottom View



EUT – PCB Top View



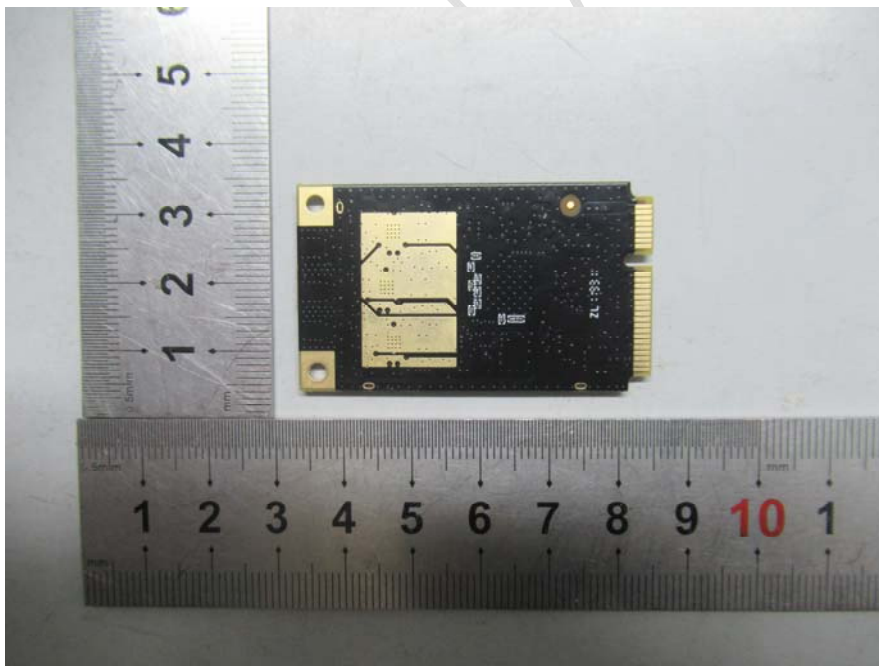
EUT – PCB Top Shielding off View



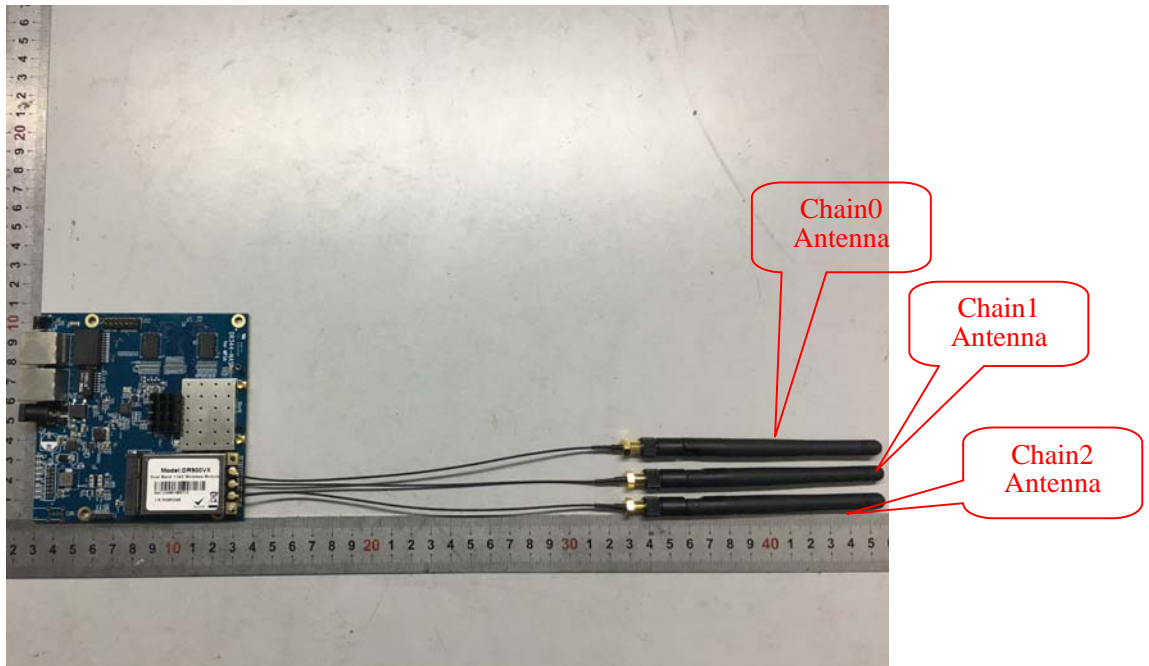
EUT – PCB Top Chip View



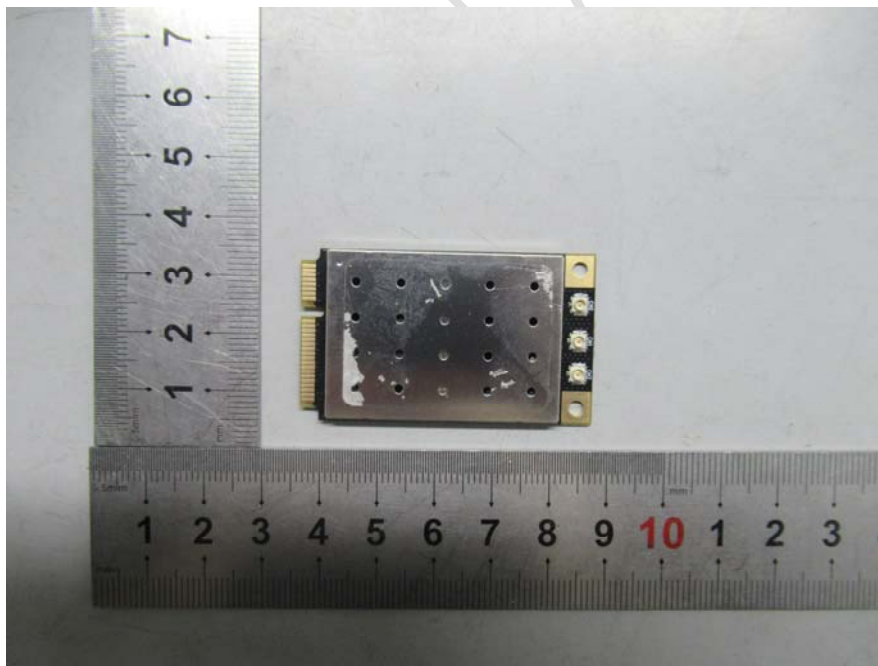
EUT – PCB Bottom View



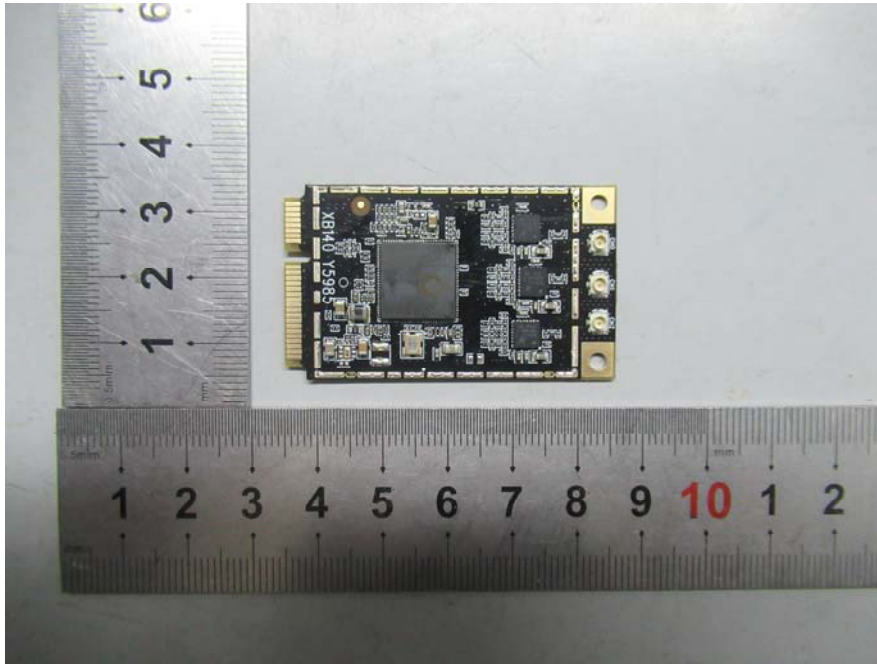
EUT with Base plate View



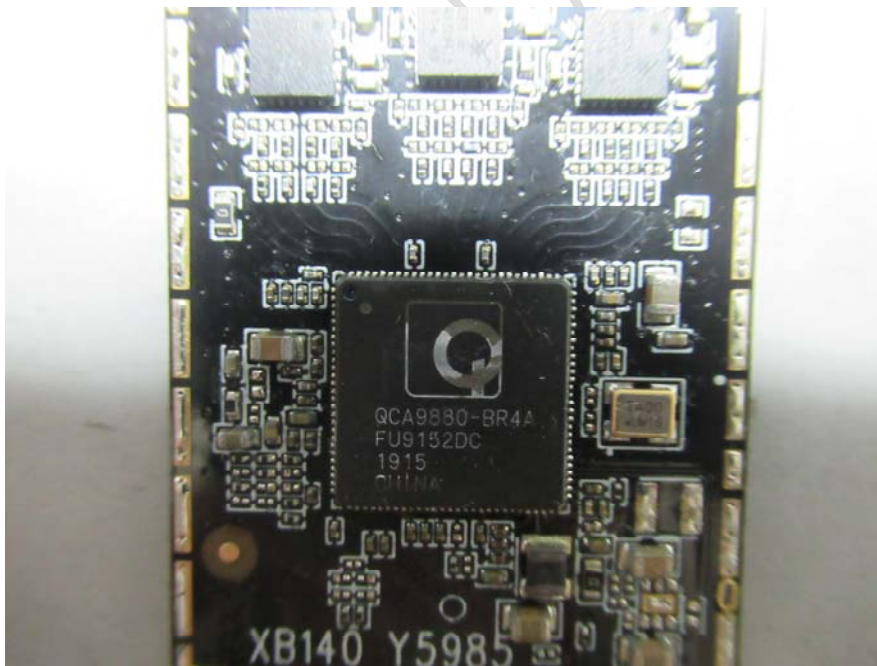
EUT – PCB Top View



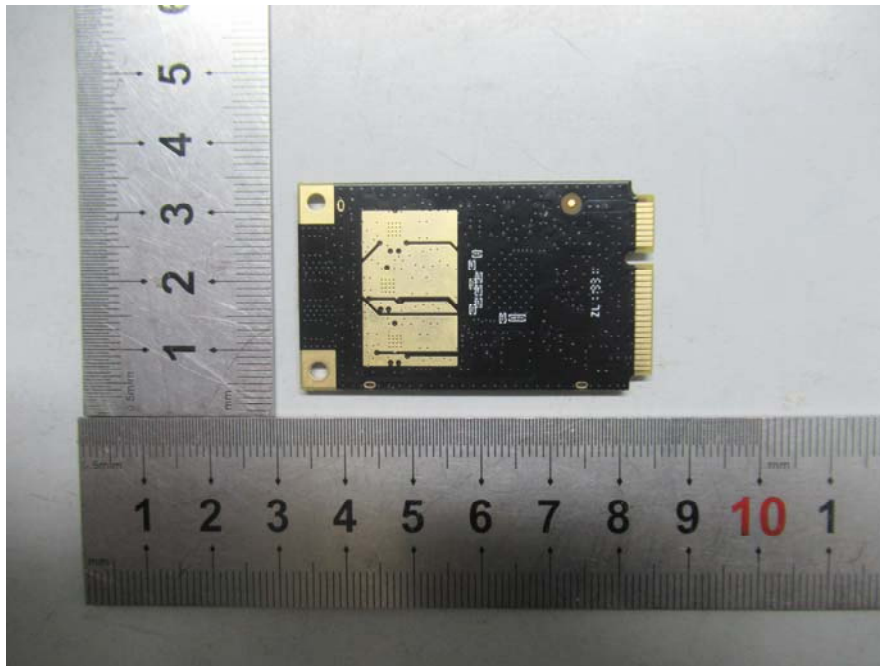
EUT – PCB Top Shielding off View



EUT – PCB Top Chip View



EUT – PCB Bottom View



PRODUCT SIMILARITY DECLARATION LETTER

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Date: 2019-10-20

DECLARATION OF SIMILARITY

Dear Sir or Madam:

We, Wallys Communications (SuZhou) Co.,LTD, hereby declare that product:
Dual Band 11AC wireless Module , as following models: DR900VX, DR900VX-4.9,
DR600VX,DR600VX-4.9,DR900VX-MX,DR600VX-MX.And only DR900VX
was tested by BACL with the same electromagnetic emissions and
electromagnetic compatibility characteristics.

The detail differences description as below:

All the products are the different model name, with the same appearance, structure,
power and size, and schematic and PCB design.

Please contact me if there is need for any additional clarification or information.

Best Regards,

Signature:



Contact Person: Richard

Title: Engineer

******* END OF REPORT *******