

RF Exposure Report

Report No.: SA160219E04B

FCC ID: RSL-AP500

Test Model: AT-AP500

Received Date: Mar. 22, 2016

Test Date: June 13, 2016

Issued Date: Nov. 25, 2016

Applicant: Allied Telesis K.K.

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

Issue No.	Description	Date Issued
SA160219E04B	Original release.	Nov. 25, 2016

1 Certificate of Conformity

Product: Cloud-Managed Enterprise-class Wireless Access Point with IEEE802.11a/b/g/n/ac Dual Radio

Brand:  Allied Telesis™

Test Model: AT-AP500

Sample Status: ENGINEERING SAMPLE

Applicant: Allied Telesis K.K.

Test Date: June 13, 2016

Standards: FCC Part 2 (Section 2.1091)
KDB 447498 D01 General RF Exposure Guidance v06
IEEE C95.1-1992

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

Prepared by :  _____, **Date:** _____ Nov. 25, 2016
Wendy Wu / Specialist

Approved by :  _____, **Date:** _____ Nov. 25, 2016
May Chen / Manager

2 RF Exposure

2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
300-1500	F/1500	30
1500-100,000	1.0	30

F = Frequency in MHz

2.2 MPE Calculation Formula

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

2.3 Classification

The antenna of this product, under normal use condition, is at least 26cm away from the body of the user.

So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

The antennas provided to the EUT, please refer to the following table:

2.4GHz					
Transmitter Circuit	Brand	Model	Antenna Type	Antenna Gain(dBi) Including cable loss	Connector type
Chain (0)	Aristotle	RFA-02-G133-70B-110R	PIFA	3.1	i-pex(MHF)
Chain (1)		RFA-52-G181-58-90		2.47	
Chain (2)		RFA-02-G133-70B-180		1.75	
5 GHz					
Transmitter Circuit	Brand	Model	Antenna Type	Antenna Gain(dBi) Including cable loss	Connector type
Chain (0)	Aristotle	RFA-05-G134-70-230C	PIFA	2.65	i-pex(MHF)
Chain (1)		RFA-52-G181-58-90		5.55	
Chain (2)		RFA-05-G134-70-105C		4.15	
Chain (3)		RFA-05-G134-70-75C		4.04	

2.5 Calculation Result Of Maximum Conducted Power

The Maximum power was refer to the FCC test report (Report No.: RF160219E04 & RF160219E04A)

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2412-2462	362.092	7.47	26	0.23805	1
5260-5320	183.016	10.18	26	0.22456	1
5500-5700	189.967	10.18	26	0.23309	1

NOTE:

2.4GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 3] = 7.47\text{dBi}$

5GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2 / 4] = 10.18\text{dBi}$

Conclusion:

The formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots\text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz = $0.23805 / 1 + 0.23309 / 1 = 0.47114$

Therefore the maximum calculations of above situations are less than the "1" limit.

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