RF Exposure Report

Report No.:	SA160219E04
FCC ID:	RSL-AP500
Test Model:	AT-AP500
Received Date:	Feb. 19, 2016
Test Date:	Mar. 11, 2016
Issued Date:	Apr. 14, 2016
Applicant:	Allied Telesis K.K.
Address:	2nd TOC Bldg. 7-21-11 Nishi-Gotanda, Shinagawa-ku, Tokyo 141-0031, Japan
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location (1):	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location (2):	No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

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Release Control Record

Issue No.	Description	Date Issued
SA160219E04	Original release.	Apr. 14, 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:	Mar. 11, 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:** Apr. 14, 2016

Claire Kuan / Specialist

Approved by : _____ , **Date:** Apr. 14, 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/cm^2

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

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	

3 Calculation Result Of Maximum Conducted Power

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
5180-5240	374.366	10.18	26	0.45934	1
5745-5825	348.113	10.18	26	0.42713	1

NOTE:
2412-2462MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 3] = 7.47$dBi
5180-5240MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2 / 4] = 10.18$dBi
5745-5825MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2 / 4] = 10.18$dBi

Conclusion:
Both of the 2.4GHz and 5GHz can transmit simultaneously, the formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1
CPD = Calculation power density
LPD = Limit of power density

Therefore, the worst-case situation is 0.23805 / 1 + 0.45934 / 1 = 0.69739, which is less than “1”.

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

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