Radiofrequency Radiation Measurements

Public Wi-Fi Installations in Hong Kong

Office of the Communications Authority

23 December 2014

Executive Summary

The increasing popularity of the public Wi-Fi services has given rise to public concerns about the radiofrequency (RF) radiation from Wi-Fi access points (APs) installed at the public areas[1].

2. APs are radiocommunications transceivers for provision of wireless access of Internet service and they are scattered throughout the entire territory, mainly in the densely populated and built-up areas. According to the World Health Organisation (WHO), the exposure levels due to wireless networks (including Wi-Fi) are generally very low, and **there is no convincing scientific evidence that the weak RF signals from wireless networks cause adverse health effects.** Relevant information can be found in the website of WHO at: http://www.who.int/peh-emf/publications/facts/fs304/en/.

3. However, in view of the public concerns, the Office of the Communications Authority (the former Office of the Telecommunications Authority, hereinafter collectively referred to as "OFCA") conducted a territory-wide survey of RF radiation generated by APs in 2007 and subsequently took additional measurements at other locations including those on board public transport, bank, cinema, betting branch and newsstand in 2011 and mid 2014. This report[2] presents the updated measurement results. At the majority of the measurement locations, the measured RF exposure levels are less than 0.1% of the exposure limit recommended by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) in the "Guidelines for Limiting Exposure to Time-

[1] In this report, public areas refer to the areas that are accessible by the general public.

[2] This report contains information compiled by OFCA for reference only. Whilst OFCA endeavours to ensure that the information in this report is correct, no warranty or guarantee, express or implied, is given as to its accuracy. This report is not a substitute for medical advice. Anyone who wishes to use this report should seek expert and legal advice. The Government of the Hong Kong Special Administrative Region, the Communications Authority and OFCA accept no liability for any use reliance upon or otherwise citing this report and any part thereof.

varying Electric, Magnetic and Electromagnetic Fields (up to 300 GHz)" published in 1998 (the "ICNIRP guidelines") which has been adopted in Hong Kong for protection of workers and the public. The measured RF exposure levels at the other measurement locations range from 0.1% to 2.372% of the ICNIRP exposure limit. The RF exposure level varies depending on various factors, including proximity to the AP, the surrounding environment and the movement of the nearby objects. According to the measurement results, it is concluded that the non-ionizing radiation **generated by Wi-Fi installations at public areas in Hong Kong is well below the international recommended limits.**

Wi-Fi

4. In this report, Wi-Fi[3] refers to the IEEE 802.11 group of standards operating in the 2.4 GHz and 5 GHz bands. It is a wireless access technology for provision of broadband wireless access, which uses radio frequencies for linking up user terminal equipment (e.g. computers, PDA, pocket PC, mobile phone, etc.) and the broadband network for Internet access. The network device providing the Wi-Fi air interface between the broadband network and the user terminal equipment is called AP, which is a radio transceiver itself. The user terminal equipment should have installed/built-in Wi-Fi device for communications with the APs.

5. Wi-Fi devices share the same frequency bands with many other radio apparatus, such as Bluetooth wireless devices, cordless phones and video transmitters, in the 2.4 GHz and 5 GHz bands. Use of these devices for private purpose is covered by an exemption order[4] and no licence under the Telecommunications Ordinance (Cap. 106) is required. Provision of the public Wi-Fi service is permissible under a class licence provided that the service does not cross public streets or unleased Government land. Provision of public Wi-Fi service over public streets and unleased Government land requires a fixed carrier licence.

6. According to the exemption order, the permissible peak equivalent isotropically radiated power[5] (e.i.r.p) in the 2.4 GHz and 5.8 GHz bands is

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[3] Wi-Fi devices can operate in the 2.4 – 2.4825 GHz (2.4 GHz), 5.15 – 5.35 GHz, 5.47 – 5.725 GHz and 5.725 – 5.85 GHz (5.8 GHz) ranges. Currently, the majority of the public APs in Hong Kong operate in the 2.4 GHz band.

[4] The exemption order refers to the Telecommunications (Telecommunications Apparatus) (Exemption from Licensing) Amendment Order 2005 (the "Exemption Order") which exempts a number of frequency bands from the licence requirement. Full document of the Order is available at http://tel_archives.ofca.gov.hk/en/ta-regulations/es22005090922.pdf.

[5] Equivalent isotropically radiated power (e.i.r.p.) refers to the power radiated from an isotropic antenna while effective radiated power (e.r.p.) refers to the power radiated from a half-wave dipole which has a gain of 1.64 over the isotopic antenna.

4 W. However, it is found that the transmitting power of Wi-Fi devices, including those adopted for public Wi-Fi services, is generally in the range of equal to or below 0.1 W effective radiated power (e.r.p.) (i.e. 0.164 W e.i.r.p.). It is believed that such low output power of Wi-Fi device is due to the power limitation of the terminal equipment and the intended usage of Wi-Fi Internet access for short range applications (within 50 meters).

APs for Public Wireless Internet Access

7. In Hong Kong, there are many APs installed in publicly accessible areas, such as shopping malls, coffee shops, restaurants, MTR stations, airports, universities, convenience shops and public payphone kiosks. According to OFCA's record, as of 30 November 2014, there were already over 28 850 APs installed. The information on the locations of these APs for public service is available at:
http://apps.ofca.gov.hk/apps/clr/content/public_search.asp.

Public Health Concerns

8. Electromagnetic radiation generated by RF transmitters, including the transmitters of APs, is classified as non-ionization radiation (NIR)[6] or RF radiation. Unlike the high energy ionizing radiation, such as X-rays, which has strong ionization and penetration power, the energy of NIR is much lower, and it is associated with all sorts of objects in our daily life (such as computers and cordless phones). According to WHO, the levels of RF exposure from base stations and wireless networks are so low that the body temperature increases due to such RF exposure are insignificant and do not affect human health. The exposure levels due to wireless networks (including Wi-Fi) are generally very low, and **there is no convincing scientific evidence that the weak RF signals from wireless networks cause adverse health effects.** Relevant information can be found in the website of WHO at:
http://www.who.int/peh-emf/publications/facts/fs304/en/.

NIR Limits

9. As a safety precaution to protect public health, OFCA has adopted the ICNIRP guidelines on limits of exposure to RF electromagnetic fields in

[6] Please refer to OFCA's leaflet on "Know more on Radiofrequency Electromagnetic Radiation" for more information on NIR which can be downloaded from http://www.ofca.gov.hk/filemanager/ofca/Publicity/en/upload/10/2e.pdf.

the frequency range up to 300 GHz for the protection of workers and the public against non-ionizing radiation hazards.

10. In 2000, OFCA issued a *"Code of Practice for the Protection of Workers and Members of Public Against Non-Ionizing Radiation Hazards from Radio Transmitting Equipment"* (CoP) as guidance for radiocommunications service providers. Copy of the CoP can be downloaded from: http://tel_archives.ofca.gov.hk/en/code/practice/cop-radiation-hazards.pdf. Relevant NIR limits are extracted in Annex 1 for easy reference.

Calculated NIR Level Generated by Typical APs

11. A theoretical calculation done by OFCA about NIR level generated from a typical AP is given in Annex 2. It is shown that at a distance of 0.1 m from the antenna of the typical AP, the maximum NIR level generated by it is 1.3 W/m^2, which is far below the limit of the ICNIRP guidelines of 10 W/m^2 as adopted in the CoP. In theory, the NIR level decreases sharply when the distance from the AP increases. Hence, the theoretical calculated level of the NIR exposure is the worst scenario for the general public when they move around in a Wi-Fi zone. For most of the time, the NIR exposure of the public in such a Wi-Fi zone should be much lower than the calculated level. This is confirmed by the survey results as given below.

The Survey

12. Although the transmission power of the APs is low, there may be concerns whether they have been installed properly, and whether the aggregated NIR levels generated by two or more APs installed in close proximity to each other might exceed the limits of the CoP.

13. In order to assess the RF radiation emitted by APs, surveys have been conducted at 65 selected locations with Wi-Fi services which include:

(a) cafes, restaurants, convenience shops, public libraries, betting branches, banks, cinema, newsstands, etc.;
(b) public places with a large number of co-located Wi-Fi installations such as MTR stations, ferry piers, the airport, etc.;
(c) public payphone kiosks with APs where the APs are close to users due to physical constraint of the kiosks;

(d) public housing estates and government premises provided with public Wi-Fi services;
(e) busy districts where signals of public Wi-Fi services and those of domestic and commercial Wi-Fi installations co-exist;
(f) educational institutions; and
(g) a bus and an airport express train.

Measurement Methodology

14. The methodology of measurements on public APs generally followed the widely adopted approach for NIR measurements. The measurements were carried out in areas accessible by the general public. The measurement probe was mounted on a tripod at a height of approximately 1.7 m which corresponds to the head position of an average adult. Measurement results were derived on the basis of a continued sampling of the RF signals for 6 minutes in duration. Details of the measurement methodology are explained in Annex 3.

Measurement Results

15. The measurement results are provided in Annex 4 and they generally agree with the theoretical calculation. The levels of RF radiation measured are very low when compared with the limits as stipulated in the ICNIRP guidelines. It should be noted that the majority of the measured NIR levels are less than 0.1% of the ICNIRP exposure limit of 10 W/m^2.

Conclusions

16. Based on the measurement results, it is concluded that Wi-Fi **RF exposure levels at public areas in Hong Kong, including the government premises provided with public Wi-Fi services, are well below the international exposure limits which have been adopted in the CoP. The measurement results also tally with WHO's finding that exposure levels due to Wi-Fi are generally very low. According to the WHO, there is no convincing scientific evidence that the weak RF signals from wireless networks (including Wi-Fi) cause adverse health effects.**

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Annex 1

NIR Exposure Limits

The health protection standards specified in the CoP are those laid down in the ICNIRP guidelines. According to the ICNIRP guidelines, the limits of NIR levels as applicable to Wi-Fi devices are as follows:

Reference levels for general public exposure in the frequency range 2 – 300 GHz to time-varying electric and magnetic fields (unperturbed rms values)

Class of personnel	E-field strength (V/m)	H-field strength (A/m)	Equivalent plane wave power density (W/m^2)
General public	61	0.16	10

Note:

For frequencies between 100 kHz and 10 GHz, the E^2, H^2 and the power density are to be averaged over any 6-minute period.

Annex 2

Estimation on the NIR Level Generated from a Typical Wi-Fi Access Point

According to Annex 2 of the CoP, the power density **S** for far-field approximation is given by the following equation:

$$\mathbf{S(r,\theta,\varphi)} = \frac{\mathbf{R(\theta,\varphi)G_oP}}{\mathbf{4\pi r^2}} \qquad (1)$$

where

P = input power of the antenna
G_o = antenna gain
G_oP = e.i.r.p.
R = radiation pattern
(normalised to unity in the direction of maximum radiation)
r = distance from the observation point to the antenna

The far field equation (1) can be used when $\mathbf{r} > \mathbf{r_n} = \frac{\mathbf{h^2}}{\mathbf{2\lambda}}$

h = maximum dimension of the antenna
λ = operating wavelength

Assuming that:

λ = 0.123 m
(corresponds to frequency of 2.44 GHz which is the mid-point of 2.4 – 2.4835 GHz)
G_oP = 0.1 W e.r.p. (or 0.164 W e.i.r.p.)
(for a typical Wi-Fi transmitter)
h = 15 cm (corresponds to $\mathbf{r_n}$ = 9.1 cm)

At a distance separation of 10 cm (i.e. **r** = 0.1 m) from the antenna, which is just greater than $\mathbf{r_n}$ so that equation (1) can be used, the power density at the direction of maximum radiation of the antenna (i.e. **R** = 1):

S (**r** = 0.1 m) = **<u>1.3 W/m^2</u>**

Conclusion: **S** decreases at a rate inversely proportional to the square of the distance. It can be concluded that the NIR level generated from a typical Wi-Fi transmitter is far below the limit of 10 W/m^2.

Annex 3

Measurements of Non-Ionization Radiation from Wi-Fi APs

Measurement Equipment

- NIR levels from APs are measured using a professional radiation meter[7] which is designed for precision measurement of aggregated NIR levels contributed from different radio transmitters in the vicinity and provided direct readout of the required 6-minute average NIR levels[8] as required by the ICNIRP guidelines.

Measurement Arrangement

- Measurement of NIR levels is done in accordance with the following procedures:

  (a) At each Wi-Fi hotspot location, the NIR meter is moved around in the local area to locate the maximum receivable signal strength. The first measurement will be taken at that position.
  (b) At the measurement position, the NIR meter is fixed on a tripod at a height of 1.7 m (corresponds to the head position of an average adult) and continuous measurement is conducted for at least 6 minutes.
  (c) The NIR level averaged in the 6-minute interval as read out from the meter is recorded.
  (d) After conducting the measurement at the position identified in Step (a) which is usually close to the AP, further readings are taken sparsely within the local area where people normally stay. Steps (b) and (c) are repeated at other four sampling positions as far as the situation allows.
  (e) The minimum and the maximum recorded NIR levels obtained in Step (c) at the measurement positions will be presented in the summary table in Annex 4.

[7] The brand and model of the NIR meter used for the measurements as presented in this report are NARDA NBM-550. The frequency range of the associated measuring probe NARDA EF6091 is 100 MHz – 60 GHz.

[8] The meter reads out E-field in V/m where the unit is converted into power density in W/m^2 for easy reference.

Annex 4

Results of NIR Measurements for Public Wi-Fi APs

Remarks

The NIR levels quoted in the table below have nothing to do with the coverage performance of the respective APs as the measurements were made only in proximity to the APs.

Locations of APs		**NIR Level**[9]	
		Measured Minimum/ Maximum Power Density (W/m^2)	**Ratio of the Measured Power Density when Compared with the Exposure Limit (10 W/m^2)**
Hong Kong Island (21 locations)			
Haagen-Dazs	Lan Kwai Fong, Central	0.01 / 0.02	0.1% / 0.2%
Circle K	Cochrane Street, Central	< 0.003	< 0.03%
McDonald's Restaurant	2/F, McDonald's Building, Yee Wo Street, Causeway Bay	< 0.003 / 0.0064	< 0.03% / 0.064%
Entrance of Cityplaza	18 Taikoo Shing Road, Taikoo Shing, Quarry Bay	< 0.003	< 0.03%
Office of OFCA	25/F, 26/F, 29/F Wu Chung House, 213 Queen's Road East, Wan Chai	< 0.003	< 0.03%
Pier 5	Central Pier No. 5	< 0.003	< 0.03%
Pier 6	Central Pier No. 6	< 0.003	< 0.03%
China Construction Bank	G/F, China Construction Bank, 3 Connaught Road Central	< 0.003	< 0.03%
Hong Kong Central Library	Children's Library, 2/F	< 0.003	< 0.03%
	Children's Multi-media Room, 2/F	< 0.003	< 0.03%
	Adult Library, 3/F	< 0.003	< 0.03%
	Special Reading Area, 5/F	< 0.003	< 0.03%
Harbour Building	38 Pier Road, Central	< 0.003 / 0.0056	< 0.03% / 0.056%
PCCW Payphone Kiosk	Kiosk no.1208, outside Southern Playground, Luard Road, Wan Chai	0.0058 / 0.1565	0.058% / 1.565%
PCCW Payphone Kiosk	Kiosk no.1201, outside Trust Tower, 68 Johnston Road, Wan Chai	0.0083 / 0.0186	0.083% / 0.186%
Hong Kong Jockey Club's	Shop A-D, G/F, New Spring Garden Mansion, 59-65 Spring	< 0.003 / 0.0043	< 0.03% / 0.043%

[9] The specified measurement range of the E-field probe is 1.3 mW/m^2 to 420 W/m^2.

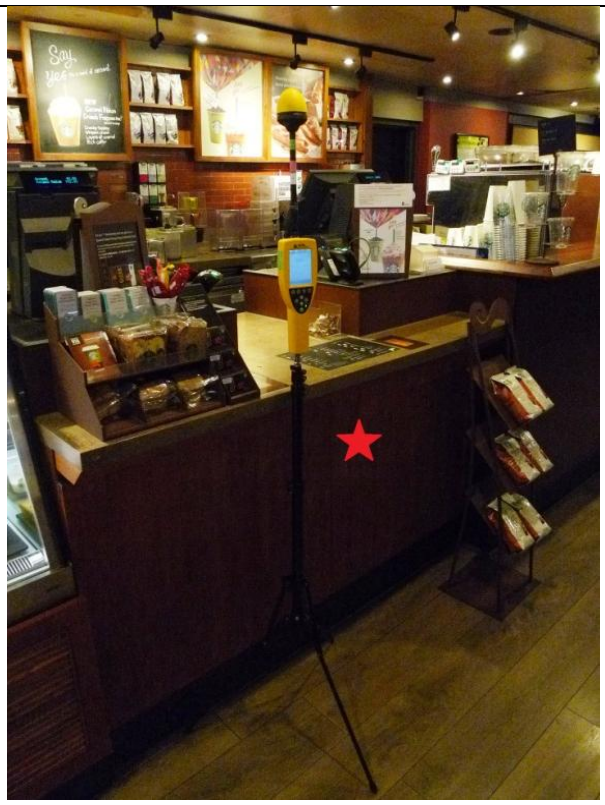
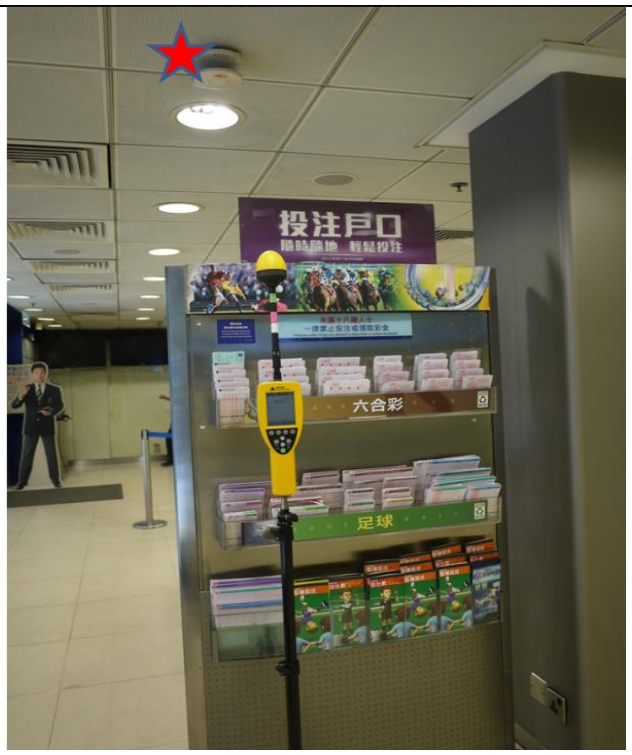
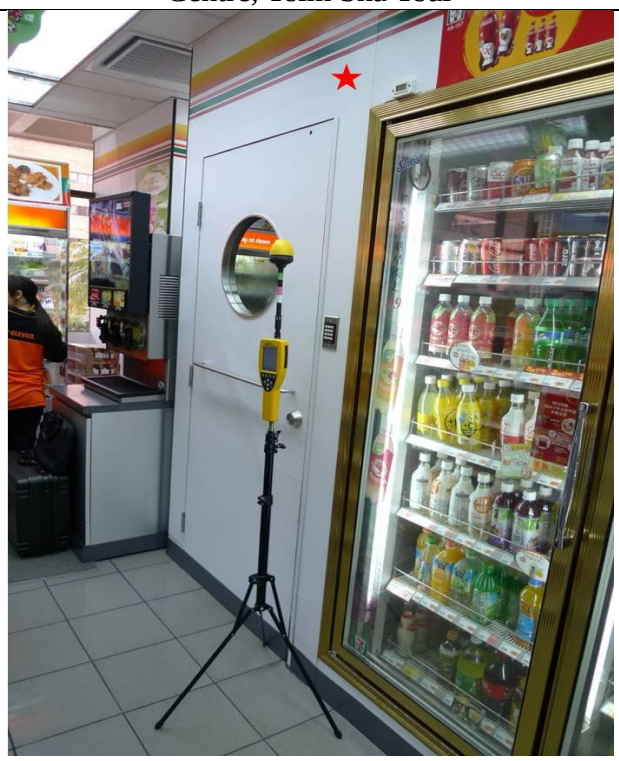
Betting Branch	Garden Lane, Wan Chai		
Hong Kong Park Sports Centre	1/F, Gymnasium Entrance	0.0094 / 0.0159	0.094% / 0.159%
Harbour Road Sports Centre	G/F, Main Entrance	< 0.003	< 0.03%
HSBC Premier	Shop 2A, 2/F, Hopewell Centre, 183 Queens Road East, Wan Chai	< 0.003 / 0.0048	< 0.03% / 0.048%
Tao Heung	Shop 104-5, 1/F, Oi Tung Shopping Centre, Oi Tung Estate, Shau Kei Wan	< 0.003 / 0.0077	< 0.03% / 0.077%
VanGO	Shop 5, G/F, Causeway Centre, 28 Harbour Road, Wan Chai	< 0.003	< 0.03%
Pret A Manager	Shop 1 and 2, Level B3, Three Pacific Place, 1 Queen's Road East	< 0.003	< 0.03%
Tai Wing Wah Village Cuisine	1/F, 1 Stewart Road, Wan Chai	< 0.003	< 0.03%
Newsstand	9-11 Cannon Street, Causeway Bay	0.0157 / 0.2372	0.157% / 2.372%
Kowloon (22 locations)			
KMB Bus Shelter	Bus Shelter, 105 Nathan Road, Tsim Sha Tsui	0.0196 / 0.0428	0.196% / 0.428%
KMB Bus Shelter	Bus Shelter - East Tsim Sha Tsui Railway Station	< 0.003 / 0.0051	< 0.03% / 0.051%
VanGO	G/F, Kimlai Court, 56A Kimberley Road, Tsim Sha Tsui	0.0036 / 0.0046	0.036% / 0.046%
7-Eleven	Room VA206, Shaw's Amenities Building, Hong Kong Polytechnic University, Hung Hom	< 0.003	< 0.03%
Starbucks Coffee	G/F, Restaurant Block, Hong Kong Cultural Centre, Tsim Sha Tsui	< 0.003	< 0.03%
Precious Blood Hospital (Caritas)	113 Castle Peak Road, Sham Shui Po	< 0.003	< 0.03%
Elements	Taxi stand, 1/F, Elements, 1 Austin Road West, Tsim Sha Tsui	< 0.003	< 0.03%
Kwun Tong Plaza Branch, Bank of China	G1 Kwun Tong Plaza, 68 Hoi Yuen Road, Kwun Tong, Kowloon	< 0.003	< 0.03%
Hong Kong Jockey Club's Betting Branch	M20, Kwun Tong Plaza, 68 Hoi Yuen Road, Kwun Tong	< 0.003/ 0.0063	< 0.03% / 0.063%
Starbucks Coffee	Shop 1, M/F, Hung Hom Station	< 0.003 / 0.0189	< 0.03% / 0.189%
Vitasoy Vending Machine	Basement, Golden Plaza, 745-747 Nathan Road	0.0099 / 0.0156	0.099% / 0.156%

Golden Computer Arcade	1/F, 146 Fuk Wa Street, Sham Shui Po	< 0.003 / 0.006	< 0.03% / 0.06%
Hung Hom MTR Station	Station Concourse, Hung Hom Station	< 0.003 / 0.005	< 0.03% / 0.05%
Kowloon City Plaza	Shopping mall, Kowloon City	0.004 / 0.005	0.04% / 0.05%
Soy Street, Yau Ma Tei	Near Shanghai Street (outdoor)	0.013 / 0.014	0.13% / 0.14%
Entrance of Langham Place	555 Shanghai Street, Mongkok	0.008 / 0.01	0.08% / 0.1%
Hong Kong Heritage Discovery Centre	Kowloon Park, Haiphong Road, Tsim Sha Tsui	< 0.003	< 0.03%
Kowloon East Government Offices	12 Lei Yue Mun Road, Kwun Tong	< 0.003	< 0.03%
Ho Man Tin Estate	Lobby, G/F, Tim Man House	< 0.003	< 0.03%
Oi Man Estate	Lobby, G/F , Tun Man House	< 0.003	< 0.03%
Newsstand	Outside Chungking Mansions, Tsim Sha Tsui	0.0184 / 0.1117	0.184% / 1.117%
MacDonald's Restaurant	G/F and M/F, 78-86 Yen Chow Street, Sham Shui Po	< 0.003 / 0.0037	<0.03% / 0.037%
New Territories (18 locations)			
Airport Terminal 1, Hong Kong International Airport	Level 5	< 0.003 / 0.0041	< 0.03% / 0.041%
Airport Terminal 1, Hong Kong International Airport	Level 7	< 0.003	< 0.03%
Airport Terminal 2, Hong Kong International Airport	Level 3	< 0.003	< 0.03%
Airport Terminal 2, Hong Kong International Airport	Level 5	< 0.003	< 0.03%
Airport Terminal 2, Hong Kong International Airport	Level 6	< 0.003	< 0.03%
City Gate, Tung Chung MTR Station	Shop G18, G/F, City Gate, Haagen-Dazs	< 0.003 / 0.009	< 0.03% / 0.09%
City Gate, Tung Chung MTR Station	Shop G19, G/F, City Gate, Starbucks	< 0.003	< 0.03%
Tsuen Wan Public Library	Tsuen Wan Government Offices, Sai Lau Kok Road, Tsuen Wan	< 0.003	< 0.03%
Sha Tin District Office	Sha Tin Government Offices, 1 Sheung Wo Che Road, Shatin	< 0.003	< 0.03%

Sha Tin Public Library	Children's Library, 1/F, 1 Yuen Wo Road, Sha Tin	< 0.003	< 0.03%
UA Cinema	Basement Level, New Town Plaza, Sha Tin	< 0.003	< 0.03%
Delifrance	Shop 36-37, Level 1, Discovery Park, Tsuen Wan	< 0.003 / 0.006	< 0.03% / 0.06%
Discovery Park, Tsuen Wan	Shopping Mall, Discovery Park, Tsuen Wan	< 0.003 / 0.004	< 0.03% / 0.04%
Kwai Tsing District Office	Public Enquiry Service Centre, Kwai Hing Government Offices Building, 166-174 Hing Fong Road, Kwai Chung	< 0.003	< 0.03%
New Town Plaza	L5-L7/F, Phase 1, 18 Sha Tin Centre Street, Sha Tin	< 0.003	< 0.03%
New Town Plaza	Customer Service Counter, L4/F, Phase 1, 18 Sha Tin Centre Street, Shatin	< 0.033 / 0.068	0.033% / 0.68%
Lingnan University	8 Castle Peak Road, Tuen Mun	0.003 / 0.03	0.03% / 0.3%
Yuen Long Public Library	Children's Library, 1/F, Yuen Long Government Offices, 2 Kiu Lok Square, Yuen Long	< 0.003	< 0.03%
Public Transportation (4 locations)			
Airport Express Train	On board an Airport Express Train	< 0.003 / 0.007	< 0.03% / 0.07%
City Flyer Bus	On board a City Flyer bus	< 0.003	< 0.03%
East Tsim Sha Tsui MTR Station	Concourse	< 0.003	< 0.03%
Shau Kei Wan MTR Station	Concourse near Exit C	<0.003	< 0.03%

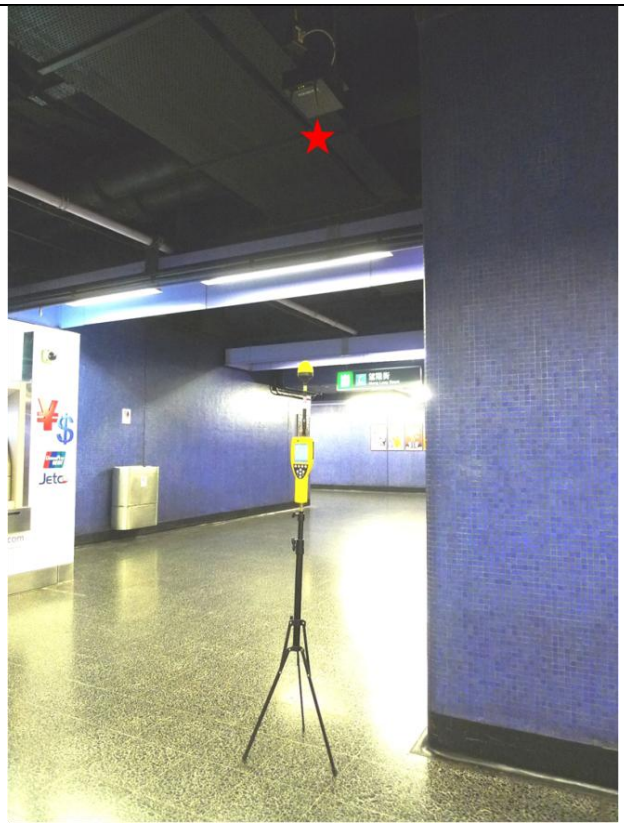
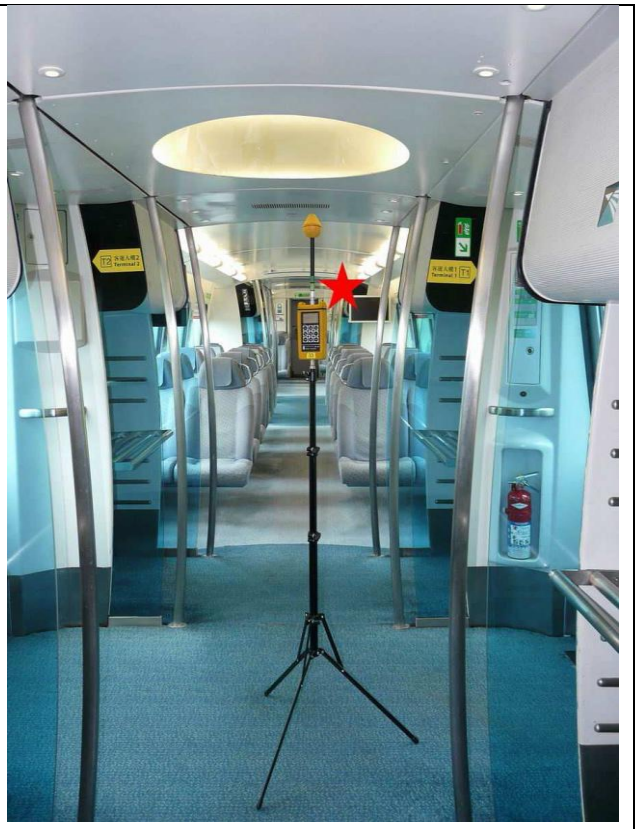
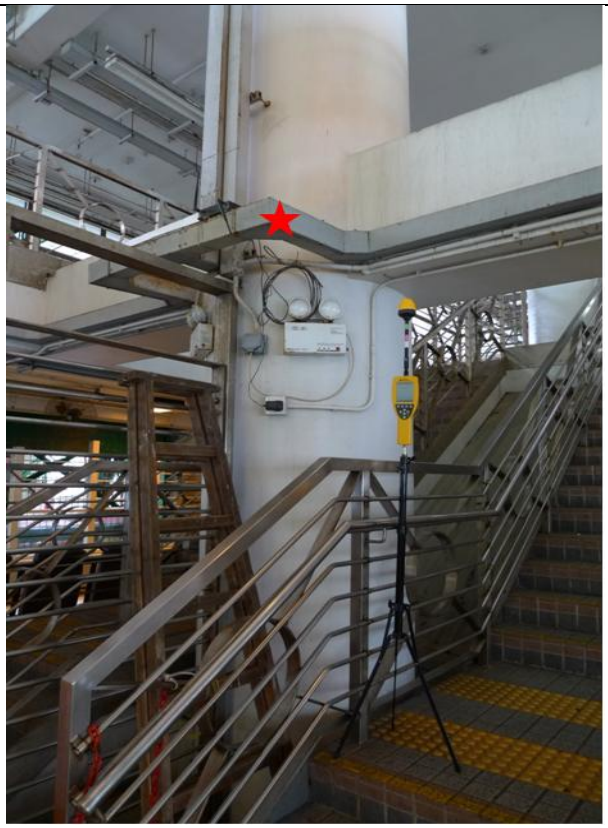
Some photos of the measurement locations are given in the Appendix.

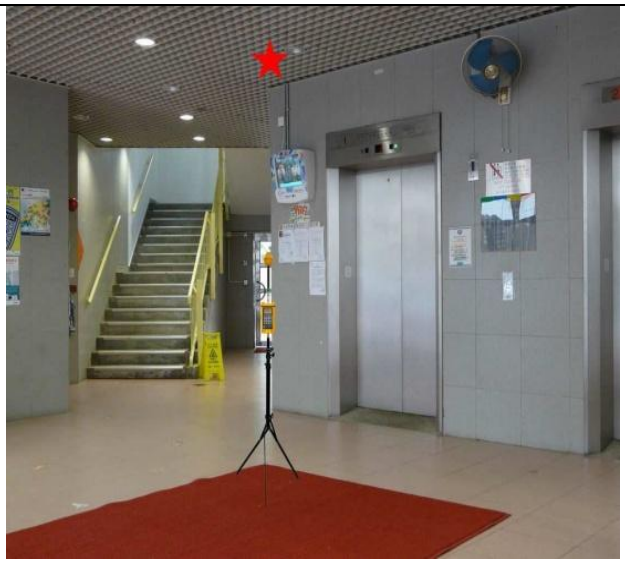
Photos of Wi-Fi Locations where Measurements were Taken

	
Vitasoy Vending Machine Basement, Golden Plaza, 745-747 Nathan Road	Starbucks Coffee G/F, Restaurant Block, Hong Kong Cultural Centre, Tsim Sha Tsui
	
Hong Kong Jockey Club's Betting Branch 59-65 Spring Garden Lane, Wan Chai	7-Eleven at Shaw's Amenities Building, Hong Kong Polytechnic University

	
Newsstand 9-11 Cannon Street, Causeway Bay	PCCW Kiosk 68 Johnston Road, Wan Chai
	
2/F, McDonald's Building Yee Wo Street, Causeway Bay	Children's Library of Hong Kong Central Library 66 Causeway Road, Causeway Bay

	
Children's Library of Sha Tin Public Library 1 Yuen Wo Road, Sha Tin	Children's Library of Yuen Long Public Library 1/F, Yuen Long Government Offices, 2 Kiu Lok Square, Yuen Long
	
Opposite to Main Entrance of Harbour Road Sports Centre G/F, 27 Harbour Road, Wan Chai	Gymnasium Entrance 1/F, Hong Kong Park Sports Centre 29 Cotton Tree Drive, Central

	
MTR Concourse Shau Kei Wan MTR Station	On Board an Airport Express Train
	
Central Pier No. 5	KMB Bus Stop 105 Nathan Road, Tsim Sha Tsui

	
Tim Man House, Ho Man Tin Estate Sheung Shing Street, Ho Man Tin	Tun Man House, Oi Man Estate Hau Man Street, Ho Man Tin
	
Adult Library of Hong Kong Central Library 66 Causeway Road, Causeway Bay	On board a City Flyer Bus

	
Sha Tin District Office at Sha Tin Government Offices 1 Sheung Wo Che Road, Sha Tin	Tsuen Wan Public Library at Tsuen Wan Government Offices Sai Lau Kok Road, Tsuen Wan
	
Public Enquiry Service Centre of Kwai Ching District Office 2/F, Kwai Hing Government Offices Building, 166 Hing Fong Road, Kwai Chung	Kowloon East Post Office G/F, Kowloon East Government Offices Building, 12 Lei Yue Mun Road, Kwun Tong