

## RF Exposure Report

**Report No.:** SA140707C54I

**FCC ID:** M82-UTX-3115

**Test Model:** UTX-3115

**Series Model:** UTX-3115XXXXXXXXXXXXXXXXXX, UTX3115XXXXXXXXXXXXXXXXXX ("X" can be 0-9 or A-Z or blank or any alphanumeric character), HPE Edgeline EL10

**Received Date:** Jun. 18, 2014

**Issued Date:** Aug. 30, 2016

**Applicant:** ADVANTECH CO., LTD

**Address:** No. 1, Alley 20, Lane 26, Rueiguang Rd, Neihu District, Taipei, Taiwan 114

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

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.

**Test Location:** No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)



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### Release Control Record

Issue No.	Description	Date Issued
SA140707C54I	Original release	Aug. 30, 2016

**1 Certificate of Conformity**

**Product:** COMPUTER

**Brand:** Advantech, Hewlett Packard Enterprise

**Test Model:** UTX-3115

**Series Model:** UTX-3115XXXXXXXXXXXXXXXXXX, UTX3115XXXXXXXXXXXXXXXXXX ("X" can be 0-9 or A-Z or blank or any alphanumeric character), HPE Edgeline EL10

**Sample Status:** Engineering sample

**Applicant:** ADVANTECH CO., LTD

**Standards:** FCC Part 2 (Section 2.1091)  
KDB 447498 D01 (October 23, 2015)  
IEEE C95.1

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 :** Celine Chou , **Date:** Aug. 30, 2016  
Celine Chou / Specialist

**Approved by :** Ken Liu , **Date:** Aug. 30, 2016  
Ken Liu / Senior 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 <sup>2</sup> )	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

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

### 3 Calculation Result of Maximum Tune up Power

Frequency Band (MHz)	Modulation Mode	Max Power (dBm)	Chain	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	
2412-2462	802.11b	19.17	A	2.98	20	0.033	1	
		17.84	B	2.98	20	0.024	1	
	802.11g	25.66	A	2.98	20	0.145	1	
		24.59	B	2.98	20	0.114	1	
	802.11n (20MHz)	26.01	A	2.98	20	0.158	1	
		24.83	B	2.98	20	0.120	1	
		25.98	A + B	5.99	20	0.313	1	
	802.11n (40MHz)	26.78	A	2.98	20	0.188	1	
		23.95	B	2.98	20	0.098	1	
		26.19	A + B	5.99	20	0.329	1	
	5180-5240	802.11a	14.91	A	1.40	20	0.009	1
			15.07	B	1.40	20	0.009	1
802.11n (20MHz)		15.10	A	1.40	20	0.009	1	
		15.06	B	1.40	20	0.009	1	
		15.17	A + B	4.41	20	0.018	1	
802.11n (40MHz)		15.65	A	1.40	20	0.010	1	
		15.01	B	1.40	20	0.009	1	
		14.94	A + B	4.41	20	0.017	1	
802.11ac (80MHz)		6.89	A	1.40	20	0.001	1	
		7.79	B	1.40	20	0.002	1	
		8.56	A + B	4.41	20	0.004	1	

Frequency Band (MHz)	Modulation Mode	Max Power (dBm)	Chain	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
5260-5320	802.11a	14.71	A	1.40	20	0.008	1
		16.18	B	1.40	20	0.011	1
	802.11n (20MHz)	14.70	A	1.40	20	0.008	1
		15.01	B	1.40	20	0.009	1
		15.18	A + B	4.41	20	0.018	1
	802.11n (40MHz)	9.97	A	1.40	20	0.003	1
		10.19	B	1.40	20	0.003	1
		10.84	A + B	4.41	20	0.007	1
	802.11ac (80MHz)	9.87	A	1.40	20	0.003	1
		10.28	B	1.40	20	0.003	1
		10.05	A + B	4.41	20	0.006	1
	5500-5720	802.11a	17.21	A	1.40	20	0.014
17.01			B	1.40	20	0.014	1
802.11n (20MHz)		17.13	A	1.40	20	0.014	1
		16.23	B	1.40	20	0.012	1
		17.20	A + B	4.41	20	0.029	1
802.11n (40MHz)		16.76	A	1.40	20	0.013	1
		16.57	B	1.40	20	0.012	1
		16.62	A + B	4.41	20	0.025	1
802.11ac (80MHz)		14.23	A	1.40	20	0.007	1
		14.23	B	1.40	20	0.007	1
		16.69	A + B	4.41	20	0.026	1

Frequency Band (MHz)	Modulation Mode	Max Power (dBm)	Chain	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
5745-5825	802.11a	18.79	A	1.40	20	0.021	1
		19.53	B	1.40	20	0.025	1
	802.11n (20MHz)	17.84	A	1.40	20	0.017	1
		19.23	B	1.40	20	0.023	1
		18.38	A + B	4.41	20	0.038	1
	802.11n (40MHz)	17.47	A	1.40	20	0.015	1
		19.31	B	1.40	20	0.023	1
		16.51	A + B	4.41	20	0.025	1
	802.11ac (80MHz)	16.58	A	1.40	20	0.012	1
		13.23	B	1.40	20	0.006	1
		12.49	A + B	4.41	20	0.010	1

Note:

2.4GHz Band:

802.11b / g: gain = 2.98dBi

802.11n: Directional gain = 2.98dBi + 10log(2) = 5.99dBi

5.0GHz Band:

802.11a: gain = 1.4dBi

802.11n: Directional gain = 1.4dBi + 10log(2) = 4.41dBi

Mode	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
BT LE	2402~2480	4.54	2.98	20	0.001	1
BT EDR	2402~2480	4.87	2.98	20	0.001	1



Frequency Band (MHz)	ERP (dBm)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
GPRS 824.2 ~ 848.8MHz	28.59	30.74	20	0.236	0.549
EDGE 824.2 ~ 848.8MHz	28.10	30.25	20	0.211	0.549
WCDMA 826.4 ~ 846.6MHz	19.86	22.01	20	0.032	0.551

Note: EIRP = ERP + 2.15dBi.

Frequency Band (MHz)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
GPRS 1850.2 ~ 1909.8MHz	28.22	20	0.132	1
EDGE 1850.2 ~ 1909.8MHz	27.70	20	0.117	1
WCDMA 1852.4 ~ 1907.6MHz	21.06	20	0.025	1
WCDMA 1712.4 ~ 1752.6MHz	20.71	20	0.023	1

\* The WLAN 2.4GHz, 5GHz, BT EDR, BT LE and WWAN cannot transmit simultaneously.

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