Shenzhen Huatongwei International Inspection Co.,Ltd.
Huatongwei 101, No.006, Keji south 12th Road, High-tech zone community, Yuehai Street,
Nanshan District, Shenzhen, Guangdong, China
Phone:86-755-26715499 E-mail: cs@szhtw.com.cn Website:http://www.szhtw.com.cn

CNAS 中国认可 国际互认 检测 TESTING CNAS L1225

TEST REPORT

For RF Expose

Report No. .....:	**CHTW24040033**	Report verification:
Project No. .....:	**SHT2403069701W**	
Applicant's name .....:	**Anker Innovations Limited**	
Address .....:	Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok, Kowloon, Hong Kong	
Product Name.....:	**Anker SOLIX Smart Meter**	
Trade Mark.....:	ANKER	
Model No.....:	A17X7	
Listed Model(s).....:	-	
Standard.....:	**EN IEC 62311:2020**	
Date of receipt of test sample.....:	Mar.25, 2024	
Date of testing.....:	Mar.26, 2024- Apr.12, 2024	
Date of issue.....:	Apr.15, 2024	
Result .....:	**PASS**	

Compiled by		
(position+printed name+signature) . :	File administrators Caspar Chen	Caspar Chen
Supervised by		
(position+printed name+signature) . :	Project Engineer Caspar Chen	Caspar Chen
Approved by		
(position+printed name+signature) . :	RF Manager Xu Yang	Xu Yang

Testing Laboratory Name.....:	**Shenzhen Huatongwei International Inspection Co., Ltd.**
Address .....:	Building 7, Baiwang Idea Factory, No.1051, Songbai Road, Yangguang Community, Xili Subdistrict, Nanshan District, Shenzhen, Guangdong, China

Contents

1. TEST STANDARDS AND REPORT VERSION

1.1. Test standards

The tests were performed according to following standards:

EN IEC 62311:2020- Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz – 300 GHz).
EN 62232:2017- Determination of RF field strength, power density and SAR in the vicinity of radio communication base stations for the purpose of evaluating human exposure.
ICNIRP Guidelines 1998-ICNIRP Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields (up to 300 GHz)

1.2. Report version information

Revision No.	Date of issue	Description
N/A	2024-04-15	Original

2. SUMMARY

2.1. Client Information

Applicant:	Anker Innovations Limited
Address:	Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok, Kowloon, Hong Kong
Manufacturer:	Anker Innovations Limited
Address:	Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok, Kowloon, Hong Kong

2.2. Product Description

Product Name:	Anker SOLIX Smart Meter
Trade Mark:	ANKER
Model No.:	A17X7
Listed Model(s):	-
Power supply:	3PH 400Vac 50Hz
Hardware version:	24-P008-HW1.0
Software version:	V1.0.0.0

2.3. Radio Specification Description

Bluetooth			
Supported type:	☒ LE-1Mbps		
WIFI-2.4GHz Band			
Supported type:	☒ 802.11b	☒ 802.11g	☒ 802.11n

Note: Please refer to RF report for detailed technical specifications

2.4. Testing Laboratory Information

Laboratory Name	Shenzhen Huatongwei International Inspection Co., Ltd.
Laboratory Location	Building 7, Baiwang Idea Factory, No.1051, Songbai Road, Yangguang Community, Xili Subdistrict, Nanshan District, Shenzhen, Guangdong, China
Contact information:	Tel: 86-755-26715499 E-mail: cs@szhtw.com.cn http://www.szhtw.com.cn

3. RF EXPOSURE

LIMIT

Table 6. Reference levels for occupational exposure to time-varying electric and magnetic fields (unperturbed rms values).[a]

Frequency range	E-field strength ($V\ m^{-1}$)	H-field strength ($A\ m^{-1}$)	B-field (μT)	Equivalent plane wave power density S_{eq} ($W\ m^{-2}$)
up to 1 Hz	—	1.63×10^5	2×10^5	—
1–8 Hz	20,000	$1.63 \times 10^5/f^2$	$2 \times 10^5/f^2$	—
8–25 Hz	20,000	$2 \times 10^4/f$	$2.5 \times 10^4/f$	—
0.025–0.82 kHz	$500/f$	$20/f$	$25/f$	—
0.82–65 kHz	610	24.4	30.7	—
0.065–1 MHz	610	$1.6/f$	$2.0/f$	—
1–10 MHz	$610/f$	$1.6/f$	$2.0/f$	—
10–400 MHz	61	0.16	0.2	10
400–2,000 MHz	$3f^{1/2}$	$0.008f^{1/2}$	$0.01f^{1/2}$	$f/40$
2–300 GHz	137	0.36	0.45	50

[a] Note:
1. f as indicated in the frequency range column.
2. Provided that basic restrictions are met and adverse indirect effects can be excluded, field strength values can be exceeded.
3. For frequencies between 100 kHz and 10 GHz, S_{eq}, E^2, H^2, and B^2 are to be averaged over any 6-min period.
4. For peak values at frequencies up to 100 kHz see Table 4, note 3.
5. For peak values at frequencies exceeding 100 kHz see Figs. 1 and 2. Between 100 kHz and 10 MHz, peak values for the field strengths are obtained by interpolation from the 1.5-fold peak at 100 kHz to the 32-fold peak at 10 MHz. For frequencies exceeding 10 MHz it is suggested that the peak equivalent plane wave power density, as averaged over the pulse width, does not exceed 1,000 times the S_{eq} restrictions, or that the field strength does not exceed 32 times the field strength exposure levels given in the table.
6. For frequencies exceeding 10 GHz, S_{eq}, E^2, H^2, and B^2 are to be averaged over any $68/f^{1.05}$-min period (f in GHz).
7. No E-field value is provided for frequencies <1 Hz, which are effectively static electric fields. Electric shock from low impedance sources is prevented by established electrical safety procedures for such equipment.

Table 7. Reference levels for general public exposure to time-varying electric and magnetic fields (unperturbed rms values).[a]

Frequency range	E-field strength ($V\ m^{-1}$)	H-field strength ($A\ m^{-1}$)	B-field (μT)	Equivalent plane wave power density S_{eq} ($W\ m^{-2}$)
up to 1 Hz	—	3.2×10^4	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	$1.375f^{1/2}$	$0.0037f^{1/2}$	$0.0046f^{1/2}$	$f/200$
2–300 GHz	61	0.16	0.20	10

[a] Note:
1. f as indicated in the frequency range column.
2. Provided that basic restrictions are met and adverse indirect effects can be excluded, field strength values can be exceeded.
3. For frequencies between 100 kHz and 10 GHz, S_{eq}, E^2, H^2, and B^2 are to averaged over any 6-min period.
4. For peak values at frequencies up to 100 kHz see Table 4, note 3.
5. For peak values at frequencies exceeding 100 kHz see Figs. 1 and 2. Between 100 kHz and 10 MHz, peak values for the field strengths are obtained by interpolation from the 1.5-fold peak at 100 kHz to the 32-fold peak at 10 MHz. For frequencies exceeding 10 MHz it is suggested that the peak equivalent plane wave power density, as averaged over the pulse width does not exceed 1,000 times the S_{eq} restrictions, or that the field strength does not exceed 32 times the field strength exposure levels given in the table.
6. For frequencies exceeding 10 GHz, S_{eq}, E^2, H^2, and B^2 are to be averaged over any $68/f^{1.05}$-min period (f in GHz).
7. No E-field value is provided for frequencies <1 Hz, which are effectively static electric fields. perception of surface electric charges will not occur at field strengths less than 25 kVm^{-1}. Spark discharges causing stress or annoyance should be avoided.

MPE Calculation Method

$$E=\eta_0 H=\frac{\sqrt{30PG(\theta,\phi)}}{r}$$

Where:
E: E-field strength (V/m)
P: power input to antenna (Watt)
G: is the antenna gain relative to an isotropic antenna;
θ,ϕ: are elevation and azimuth angles to point of investigation;
r: is the distance from observation point to the antenna;
η_0: is the characteristic impedance of free space.

◎ **Simultaneous transmission:**
Exposure field strengths can be compared to the reference levels on a sum square basis:

$$\sum_{i=100kHz}^{1MHz}\left(\frac{E_i}{c}\right)^2+\sum_{i>1MHz}^{300GHz}\left(\frac{E_i}{E_{L,i}}\right)^2\le 1$$

Where:
E_i is the electric field strength at frequency i;
$E_{L,i}$ is the electric field reference level;
c is $87/f^{1/2}$ V/m (f in MHz).

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Bar Antenna:

Radio Type	Frequency range (MHz)	Maximum EIRP* (dBm)	r (m)	E-field strength (V/m)	Limit (V/m)	Result
Bluetooth	2402-2480	6.22	0.2	1.772	61	Pass
WIFI	2412-2472	17.56	0.2	6.539	61	Pass

Note:

1) r is the distance from observation point to the antenna which is declared by the applicant.
2) The antenna gain of the Bar antenna is 0.67dBi.
3) *: refer to the RF report

Simultaneous transmission(Worst case): Bluetooth + WIFI

Radio Type	E-field strength (V/m)	Reference level (V/m)	Computed result	Limit	Result
Bluetooth	1.772	61	0.012	1.0	Pass
WIFI	6.539	61			

Suction cup Antenna:

Radio Type	Frequency range (MHz)	Maximum EIRP* (dBm)	r (m)	E-field strength (V/m)	Limit (V/m)	Result
Bluetooth	2402-2480	8.60	0.2	2.331	61	Pass
WIFI	2412-2472	19.94	0.2	8.601	61	Pass

Note:

1) r is the distance from observation point to the antenna which is declared by the applicant.
2) The antenna gain of the Suction cup antenna is 3.05dBi
3) *: refer to the RF report

Simultaneous transmission(Worst case): Bluetooth + WIFI

Radio Type	E-field strength (V/m)	Reference level (V/m)	Computed result	Limit	Result
Bluetooth	2.331	61	0.021	1.0	Pass
WIFI	8.601	61			

--------End of Report--------