

FCC Test Report

(PART 24)

Report No.: RF161122C09-1

FCC ID: TM74121001

Test Model: TD-4121C \ TD-4121X, TD-4122X(X=0~9,A~Z and blank for different product exterior color, logo and market) \ GD84 \ Gtel

All model are Same as TD-4121C $\,^{\rm ,}$ only for different product exterior color, logo and market

Received Date: Nov. 22, 2016

Test Date: Dec. 16, 2016 ~ Jan. 23, 2017

Issued Date: Jan. 23, 2017

Applicant: Taidoc Technology Corp.

- Address: 6F., No.127, Wugong 2nd Rd., Wugu Dist., New Taipei City 248, Taiwan (R.O.C.)
- 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 Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.



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Release Control Record Issue No. Description Date Issued Original Release Jan. 23, 2017 RF161122C09-1



1 Certificate of Control Product: Blood Glucose /Multi-Functional Monitoring System Brand: URight, FORA, ActiveCare Test Model: TD-4121C \ TD-4121X, TD-4122X(X=0~9,A~Z and blank for different product exterior color, logo and market) \ GD84 \ Gtel All model are Same as TD-4121C \ only for different product exterior color, logo and market Sample Status: Identical Prototype Applicant: Taidoc Technology Corp. Test Date: Dec. 16, 2016 ~ Jan. 23, 2017 Standards: FCC Part 24, Subpart E

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 :

Evonne Lin , Date:

Jan. 23, 2017

Evonne Liu / Specialist

Sterley We

Approved by :

Date: Jan. 23, 2017

Stanley Wu / Assistant Manager



2 Summary of Test Results

	Applied Standard: F	FCC Part 24 & Pa	rt 2
FCC Clause	Test Item	Result	Remarks
2.1046 24.232	2.1046 24.232 Effective Isotropic Radiated Power Pass		Meet the requirement of limit.
2.1046 24.232(d)	Peak to Average Ratio	Not Applicable	Refer to Note
2.1055 24.235 Frequency Stability		Not Applicable	Refer to Note
2.1049 24.238(b) Occupied Bandwidth		Not Applicable	Refer to Note
24.238(b)	Band Edge Measurements	Not Applicable	Refer to Note
2.1051 24.238	Conducted Spurious Emissions	Not Applicable	Refer to Note
2.1053 24.238	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -31.65 dB at 3760 MHz.

NOTE: Only the test item for ERP Power and radiated emission had been tested for this addendum and the conducted data is referring to module report (Report No.: UL20140724FCC/IC016-1).

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expended Uncertainty (k=2) (±)
Padiated Emissions up to 1 CHz	30 MHz ~ 200 MHz	2.93 dB
naulated Emissions up to 1 GHz	200 MHz ~1000 MHz	2.95 dB
Dedicted Emissions chave 1 CU-	1 GHz ~ 18 GHz	2.26 dB
naulated Emissions above 1 GHZ	18 GHz ~ 40 GHz	1.94 dB



2.2 Test Site And Instruments

Description & Manaufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent	N9038A	MY51210203	Jan. 21, 2016	Jan. 20, 2017
Spectrum Analyzer Agilent	N9010A	MY52220314	Nov. 16, 2016	Nov. 15, 2017
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 17, 2015	Dec. 16, 2016
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Jan. 07, 2016	Jan. 06, 2017
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Jan. 04, 2016	Jan. 03, 2017
Double Ridge Guide Horn Antenna EMCO	3115	5619	Jan. 04, 2016	Jan. 03, 2017
BILOG Antenna SCHWARZBECK	VULB 9168	9168-153	Jan. 07, 2016	Jan. 06, 2017
Agilent Communications Tester-Wireless	8960 Series 10	MY53201073	Jul. 03, 2015	Jul. 02, 2017
Preamplifier EMCI	EMC 012645	980115	Oct. 21, 2016	Oct. 20, 2017
Preamplifier EMCI	EMC 184045	980116	Oct. 21, 2016	Oct. 20, 2017
Preamplifier EMCI	EMC 330H	980112	Oct. 21, 2016	Oct. 20, 2017
Power Meter Anritsu	ML2495A	1232002	Sep. 08, 2016	Sep. 07, 2017
Power Sensor Anritsu	MA2411B	1207325	Sep. 08, 2016	Sep. 07, 2017
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4 2950114	Oct. 21, 2016	Oct. 20, 2017
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 21, 2016	Oct. 20, 2017
RF Coaxial Cable Worken	8D-FB	Cable-Ch10-01	Oct. 21, 2016	Oct. 20, 2017
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower &Turn Table Controller MF	MF-7802	NA	NA	NA
Radio Communication Analyzer	MT8820C	6201300640	Aug. 10, 2015	Aug. 09, 2017
Temperature & Humidity Chamber	GTH-120-40-CP-A R	MAA1306-019	Sep. 02, 2016	Sep. 01, 2017
DC Power Supply Topward	33010D	807748	Oct. 25, 2016	Oct. 24, 2018
Digital Multimeter Fluke	87-III	70360742	Jul. 01, 2016	Jun. 30, 2017
Signal Generator Agilent	N5182B	MY53050430	Oct. 19, 2016	Oct. 18, 2017



- Note: 1. The calibration interval of the above test instruments is 12 / 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
 - 2. The test was performed in HwaYa Chamber 10.
 - 3. The horn antenna and preamplifier (model: EMC 184045) are used only for the measurement of emission frequency above 1 GHz if tested.
 - 4. The FCC Site Registration No. is 690701.
 - 5. The IC Site Registration No. is IC7450F-10.



3 General Information

3.1 General Description of EUT

Product	Blood Glucose /Multi-Functional Monitoring System		
Brand	URight, FORA, ActiveCare		
	TD-4121C TD-4121X, TD-4122X(X=0~9,A~Z and blank for different product		
Test Medel	exterior color, logo and market) GD84 Gtel		
lest model	All model are Same as TD-4121C , only	for different product exterior color,	
	logo and market		
Status of EUT	Identical Prototype		
Dower Supply Doting	5.0 Vdc (adapter or host equipment)		
Power Supply Rating	3.7 Vdc (Li-ion battery)		
	GSM/GPRS	GMSK	
Modulation Type	EDGE	GMSK, 8PSK	
	WCDMA	BPSK	
	GSM/GPRS/EDGE	1850.2 ~ 1909.8 MHz	
Frequency Range	WCDMA	1852.4 ~ 1907.6 MHz	
	GSM/GPRS	955.65 mW	
Max. EIRP Power	EDGE	340.64 mW	
	WCDMA	228.72 mW	
Antenna Type	Fixed Internal Antenna		
Accessory Device	Refer to Note as below		
Data Cable Supplied	Refer to Note as below		

Note:

1. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter (EU Plug)	MEAN WELL	GSM06E05-TD	I/P: 100-240 Vac, 50/60 Hz, 0.18-0.09 A O/P: 5 Vdc, 1.2 A 1.3 m non-shielded cable w/o core
Adapter (FCC Plug)	MEAN WELL	GSM06U05-TD	I/P: 100-240 Vac, 50/60 Hz, 0.18-0.09 A O/P: 5 Vdc, 1.2 A 1.3 m non-shielded cable w/o core
Battery	SHENZHEN HYB BATTERY CO., LTD	D032-05-8023	3.7Vdc, 700mAh
USB Cable	CHEE CHEN HI Technology co.,LTD	YD-04579	0.6m shielded cable w/o core

*The adapters have same design and specification which are only different in Plug. So, only 2 adapters were applied for test.

2. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.



3.2 Configuration of System under Test

<Radiated Emission Test>



<E.I.R.P. Test>

Test table	EUT (Powered from battery)			
	555			
	Universal Radio Communication Tester			
*Kept in a remote area				

3.2.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Product	Brand	Model No.	Serial No.	FCC ID
1.	Universal Radio Communication Tester	R&S	CMU200	123295	NA

No.	Signal Cable Description Of The Above Support Units
1.	N/A

Note:

1. All power cords of the above support units are non-shielded (1.8m).

2. Items 1 acted as communication partners to transfer data.



3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis, and antenna ports.

The worst case was found when positioned as the table below. Following channel(s) was (were) selected for the final test as listed below:

Band	EIRP	Radiated Emission
GSM	Y-plane	Y-axis
EDGE	Y-plane	Y-axis
WCDMA	Y-plane	Y-axis

GSM

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	EIRP	512 to 810	512, 661, 810	GSM, EDGE
-	Radiated Emission	512 to 810	512, 661, 810	GSM, EDGE

WCDMA

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	EIRP	9262 to 9538	9262, 9400, 9538	WCDMA
-	Radiated Emission	9262 to 9538	9262, 9400, 9538	WCDMA

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
EIRP	26 deg. C, 58 % RH	120 Vac, 60 Hz	Gavin Wu
Radiated Emission	25 deg. C, 65 % RH	120 Vac, 60 Hz	Gavin Wu



3.4 EUT Operating Conditions

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

3.5 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2 FCC 47 CFR Part 24 KDB 971168 D01 Power Meas License Digital Systems v02r02 ANSI/TIA/EIA-603-D 2010

NOTE: All test items have been performed and recorded as per the above standards.



4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

Mobile / Portable station are limited to 2 watts e.i.r.p.

4.1.2 Test Procedures

EIRP / ERP Measurement:

- a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 1 MHz for GSM, GPRS & EDGE, 5 MHz for WCDMA and CDMA, and 10 MHz for LTE mode.
- b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step b. Record the power level of S.G.
- d. EIRP = Output power level of S.G TX cable loss + Antenna gain of substitution horn.E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power 2.15 dBi.

Conducted Power Measurement:

The EUT was set up for the maximum power with GSM, GPRS, EDGE, WCDMA, CDMA, and LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.



4.1.3 Test Setup

EIRP / ERP Measurement:



For the actual test configuration, please refer to the attached file (Test Setup Photo).

Conducted Power Measurement:





4.1.4 Test Results

EIRP Power (dBm)

GSM							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Y	512	1850.2	-10.02	36.57	26.55	452.06	н
	661	1880.0	-9.69	37.22	27.53	566.76	
	810	1909.8	-10.47	37.18	26.71	469.03	
	512	1850.2	-7.88	37.65	29.77	948.64	
	661	1880.0	-7.78	37.58	29.80	955.65	V
	810	1909.8	-7.99	37.48	29.49	889.20	

EDGE							
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)
Y	512	1850.2	-14.36	36.57	22.21	166.42	н
	661	1880.0	-14.47	37.22	22.75	188.54	
	810	1909.8	-14.78	37.18	22.40	173.86	
	512	1850.2	-12.69	37.65	24.96	313.40	
	661	1880.0	-12.26	37.58	25.32	340.64	V
	810	1909.8	-12.74	37.48	24.74	297.85	

WCDMA								
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor (dB)	EIRP (dBm)	EIRP (mW)	Polarization (H/V)	
Y	9262	1852.4	-15.55	36.57	21.02	126.53	н	
	9400	1880.0	-15.79	37.22	21.43	139.12		
	9538	1907.6	-15.89	37.18	21.29	134.65		
	9262	1852.4	-14.47	37.65	23.18	208.02		
	9400	1880.0	-13.99	37.58	23.59	228.72	V	
	9538	1907.6	-14.12	37.48	23.36	216.77		



4.2 Radiated Emission Measurement

4.2.1 Limits of Radiated Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P) dB$. The emission limit is equal to -13 dBm.

4.2.2 Test Procedure

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G.
- c. EIRP = Output power level of S.G TX cable loss + Antenna gain of substitution horn.
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power 2.15 dBi.

NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz.

4.2.3 Deviation from Test Standard

No deviation.

4.2.4 Test Setup





4.2.5 Test Results GSM: Low Channel











Middle Channel













High Channel













EDGE: Low Channel











Middle Channel













High Channel













WCDMA: Low Channel











Middle Channel













High Channel











5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).



Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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The address and road map of all our labs can be found in our web site also.

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