

CTS (NINGBO) TESTING SERVICE TECHNOLOGY INTERNATIONAL

OPERATE ACCORDING TO ISO/IEC 17025

EMC TEST REPORT

TEST REPORT NUMBER : CNB3160818-00894-E



CE

CTS (Ningbo) Testing Service Technology Co., Ltd. Fl.1 & 8 West, Bldg. B, No. 66, Qingyi Rd., Hi-Tech Zone, Ningbo, Zhejiang, China

CENTRE OF TESTING SERVICE





	TEST REPORT EN 61000-6-3:2007+A1:2011+AC:201	12
	MC) —Part 6-3: Generic standards —	Emission standard for residential,
со	mmercial and light-industrial environme EN 61000-6-1:2007	ents
Electromagnetic compatibility (EN	IC) —Part 6-1: Generic standards — In	nmunity for residential, commercial
	and light-industrial environments	
Report Reference No	. CNB3160818-00894-E	
Date of issue	23 August 2016	
	CTS (Ningbo) Testing Service Tecl	
	GZ test site: A101, No.65, Zhuji Roa Guangzhou, Guangdong, China.	
Testing location/ procedure	Full application of Harmonised stand	
	Partial application of Harmonised sta Other standard testing method	ndards 🗆
Applicant's name		
Address		
Test specification:		
Standard	EN 61000-6-3:2007+A1:2011+AC:2	012, EN 61000-6-1:2007
Test Report Form No	CTSEMC-1.0	
TRF Originator	CTS (Ningbo) Testing Service Techn	nology Co., Ltd.
Master TRF	Dated 2009-01	
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Test item description	Pedometer	
Trade Mark	/	
Manufacturer	Model/Type	
reference IT3621-14	/04 Ratings	
Batter	y 1.5V	
Result	PASSED	
Compiled by:	Supervised by:	Approved by:

Kate zhang / File administrators

Le.

Duke yang / Technique principal



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1

EMC -- TEST REPORT

Test Report No. :	CNB3160818-00894-E	23 August 2016 Date of issue
1		
Type / Model	IT3621-14/04	
EUT	Pedometer	
Applicant		
Address		
Telephone Fax Contact		
Manufacturer		
Address		
Telephone		
Fax		
Contact		
Factory		
Address		
Telephone		
Fax		
Contact		

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1 TEST STANDARDS

The tests were performed according to following standards:

EN 61000-6-3:2007+A1:2011+AC:2012 Electromagnetic compatibility (EMC) —Part 6-3: Generic standards — Emission standard for residential, commercial and light-industrial environments

EN 61000-6-1:2007 Electromagnetic compatibility (EMC) —Part 6-1: Generic standards — Immunity for residential, commercial and light-industrial environments

2 SUMMARY

2.1 GENERAL REMARKS

Date of receipt of test sample	18 August 2016
Testing commenced on	18~22 August 2016
Testing concluded on	23 August 2016

2.2 FINAL ASSESSMENT

The EMC requirements pertaining to the technical standards and tested operation modes are

- fulfilled.
- not fulfilled.

The equipment under test

- - fulfils the EMC requirements cited on page 1.
- **does not** fulfil the EMC requirements cited on page 1.

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3 EQUIPMENT UNDER TEST

3.1 Power supply system utilised

Power supply voltage: Battery 1.5V

Other (Specified blank below)

3.2 Short description of the Equipment under Test (EUT)

1

Number of tested samples: Serial number: Prototype

3.3 EUT operation mode

The equipment under test was operated during the measurement under the following conditions:

Normal

Operating Mode:	Normal
Emissions tests	: According to EN 61000-6-3, searching for the highest disturbance.

Immunity tests: According to EN 61000-6-1, searching for the highest susceptivity.

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3.4 EUT configuration

(The CDF filled by the applicant can be viewed at the test laboratory.)

The following peripheral devices and interface cables were connected during the measurement:

Not Applicable

3.5 Performance level

The test results shall be classified in terms of the loss of function or degradation of performance of the equipment under test, relative to a performance level defined by its manufacturer or the requestor of the test, or agreed between the manufacturer and the purchaser of the product.

3.6 Definition related to the performance level

based on the used product standard

□ based on the declaration of the manufacturer, requestor or purchaser

Criterion A:

Definition: normal performance within limits specified by the manufacturer, requestor or purchaser:

Criterion B:

Definition: temporary loss of function or degradation of performance which ceases after the disturbance ceases, and from which the equipment under test recovers its normal performance, without operator intervention:

Criterion C:

Definition: temporary loss of function or degradation of performance, the correction of which requires operator intervention:

Criterion D:

Definition: loss of function or degradation of performance, which is not recoverable, owing to damage to hardware or software, or loss of data:

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TEST ENVIRONM ENT 4

4.1 Address of the test laboratory

GZ test site: A101, No.65, Zhuji Road, Tianhe District, Guangzhou, Guangdong, China

Tel: +86-20-85543113 (32 lines)

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4.2 Test facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L3394

CTS (Ningbo) Testing Service Technology Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01: 2006 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

IC-Registration No.: 8374A

The 3m Alternate Test Site of CTS (Ningbo) Testing Service Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 8374A on May 22, 2014.

FCC-Registration No.: 971995

CTS (Ningbo) Testing Service Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration No.971995, July 13, 2012.

4.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35 ° C
Humidity:	25~75 %
Atmospheric pressure:	86~106 kPa

4.4 Definitions of symbols used in this test report

The black square indicates that the listed condition, standard or equipment is applicable for this report.
 The empty square indicates that the listed condition, standard or equipment is **not** applicable for this report.

4.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods - Part 4: Uncertainty in EMC Measurements" and is documented in the CTS guality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

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4.6 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Conduction disturbance	150kHz~30MHz	±1.22dB	(1)
Power disturbance	30MHz~300MHz	±1.38dB	(1)
Dediction emission (2m)	30MHz~300MHz	±3.14dB	(1)
Radiation emission (3m)	300MHz~1000MHz	±3.18dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

(2) The actual EUT tested items in this test report, only applies to this "measurement uncertainty" in part / all of the corresponding data.

4.7 Test Description

4.7.1 Description of Standards and Results

EMISSION (EN 61000-6-3:2007+A1:2011+AC:2012)					
Description of Test Item	Standard			Limits	Results
Conducted disturbance at mains terminals	EN 61000-6-3:2007+A1:2011+AC:2012			N/A	
Conducted disturbance at telecommunication port	EN 61000-6-3:2007+A1:2011+AC:2012			N/A	
Radiated disturbance	EN 610	00-6-3:2007+A1:2011+AC:20)12		PASS
Harmonic current emissions		EN 61000-3-2:2014		Class A	N/A
Voltage fluctuations & flicker		EN 61000-3-3:2013			N/A
	IM	MUNITY (EN 61000-6-1:2007	7)		
Description of Test Item		Basic Standard	Performance Criteria		Results
Electrostatic discharge (ESD)		IEC 61000-4-2: 2008	В		PASS
Radio-frequency, Continuous radiated disturbance		IEC 61000-4-3:2006 +A1:2007+A2:2010	A		PASS
Electrical fast transient (EFT)		IEC 61000-4-4:2012	В		N/A
Surge (Input a.c. power ports)		IEC 61000-4-5: 2014		В	N/A
Radio-frequency, Continuous conducted disturbance		IEC 61000-4-6: 2013		А	N/A
Power frequency magnetic field		IEC 61000-4-8: 2009		А	PASS
Voltage dips, >95% reduction				В	N/A
Voltage dips, 30% reduction		IEC 61000-4-11: 2004		В	N/A
Voltage interruptions				С	N/A
N/A is an abbreviation for Not	Applicat	le.	I		

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5 TEST CONDI TIONS AND RESULTS

5.1 Radiated disturbance (electric field)

For test instruments and accessories used see section 6 part 6.1.

5.1.1 Description of the test location

Test location : Semi-Anechoic chamber

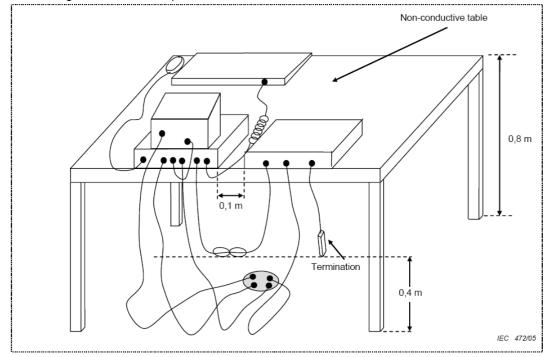
Test disturbance: 3 Meter

5.1.2 Description of the test set-up

5.1.2.1 Operating Condition

The EUT is normal during the test, and the results of the maximum emanation are recorded

5.1.2.2 Block Diagram of Test Setup



5.1.3 Limits of disturbance

Frequency (MHz)	Distance (Meters) Field Strengths Limits (dBµV/m)	
30 ~ 230	3	40
230 ~ 1000	3	47

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

(2) Distance refers to the distance in meters between the test instrument antenna and the closest point of any part of the E.U.T.

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5.1.4 Test result

The requirements are	Fulfilled
Band width	120kHz
Frequency range	30 MHz - 1000 MHz
Min. limit margin	>14.79 dB at 30 - 1000 MHz

Remarks: The limits are kept. For detailed results, please see the following page(s).

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5.1.5 Test protocol

Test point:HorizontalOperation modeNormalRemarks:		Result:	 - passed - not passed
EUT	Pedometer		
Operating Condition Battery 1.5V			
Test Condition	Ambient Temperature: 2	4°C Humidity: 569	%
Operator	Clark		
MODEL NO.	IT3621-14/04		

80.0 dBuV/m EN61000-6-3 RE 3M Margin -6 dB 30 ŝ 5 -20 30.000 57.00 84.00 111.00 138.00 165.00 192.00 219.00 246.00 300.00 MHz

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	32.1643	-16.32	31.65	15.33	40.00	-24.67	QP
2	126.3126	-16.35	32.30	15.95	40.00	-24.05	QP
3	150.1202	-15.96	31.53	15.57	40.00	-24.43	QP
4	211.8036	-10.32	31.19	20.87	40.00	-19.13	QP
5	244.2685	-11.52	32.86	21.34	47.00	-25.66	QP
6	296.7535	-2.28	31.22	28.94	47.00	-18.06	QP

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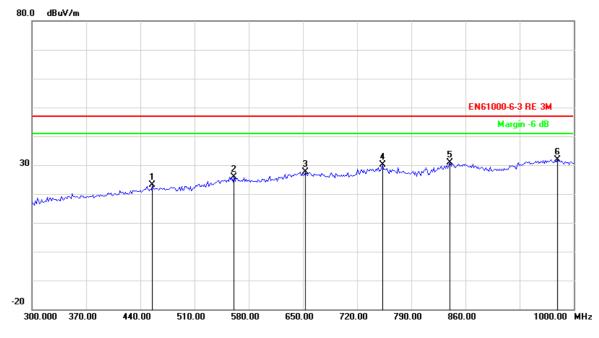
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No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	455.7114	-8.42	31.44	23.02	47.00	-23.98	QP
2	560.9218	-5.65	31.61	25.96	47.00	-21.04	QP
3	653.5070	-3.26	30.92	27.66	47.00	-19.34	QP
4	753.1062	-1.70	31.89	30.19	47.00	-16.81	QP
5	840.0802	-0.88	31.75	30.87	47.00	-16.13	QP
6	978.9579	0.15	31.85	32.00	47.00	-15.00	QP

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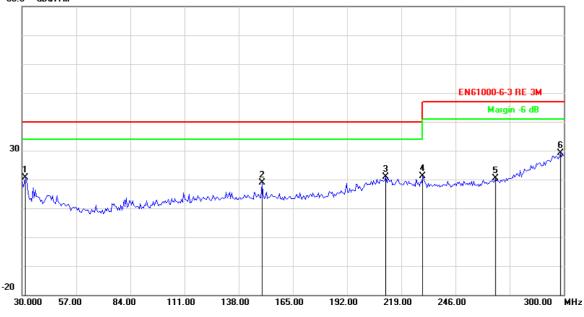




Test point:	Vertical	Result:	 passed
Operation mode	Normal		- not passed
Remarks:			

EUT	Pedometer
MODEL NO.	IT3621-14/04
Operating Condition	Battery 1.5V
Test Condition	Ambient Temperature: 24°C Humidity: 56%
Operator	Clark

80.0 dBuV/m



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	31.6232	-16.25	36.97	20.72	40.00	-19.28	QP
2	149.5792	-15.96	34.76	18.80	40.00	-21.20	QP
3	211.2625	-10.28	31.11	20.83	40.00	-19.17	QP
4	229.6593	-11.63	32.70	21.07	40.00	-18.93	QP
5	265.9118	-10.41	30.74	20.33	47.00	-26.67	QP
6	298.3768	-1.85	31.09	29.24	47.00	-17.76	QP

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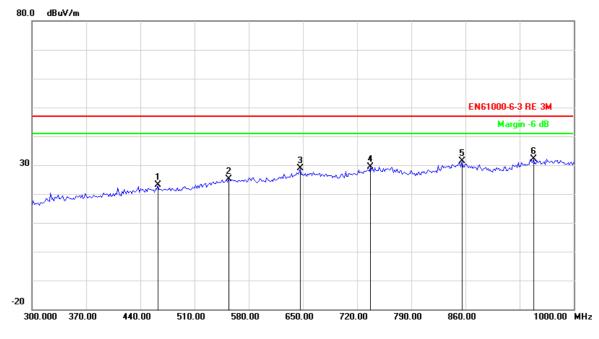
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No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	462.7255	-8.37	31.58	23.21	47.00	-23.79	QP
2	553.9078	-5.67	30.88	25.21	47.00	-21.79	QP
3	646.4930	-3.39	32.28	28.89	47.00	-18.11	QP
4	737.6754	-2.12	31.51	29.39	47.00	-17.61	QP
5	855.5110	-0.46	31.83	31.37	47.00	-15.63	QP
6	948.0962	0.34	31.87	32.21	47.00	-14.79	QP

Note:Level=Reading+Factor. Margin= Limit-Level

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5.2 Electrostatic discharge

For test instruments and accessories used see section 6 part 6.2.

5.2.1 Description of the test location

Test location :	Test location no. 2
Power supply:	Battery 1.5V
Test condition:	Ambient Temperature: 24°C, Humidity:56%
Date of test :	18~22 August 2016
Operator :	Clark

5.2.2 Severity of levels electrostatic discharge

5.2.2.1 Severity level: Contact discharge at ±4KV air discharge at ±8KV

Level	Test Voltage Contact Discharge (kV)	Test Voltage Air Discharge (kV)
1	2	2
2	4	4
3	6	8
4	8	15
Х	Special	Special

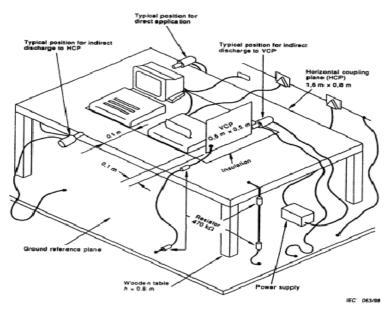
5.2.2.2 Performance criterion: B

5.2.3 Description of the test set-up

5.2.3.1 Operating Condition

The EUT is normal during the test, and the results of the maximum emanation are recorded

5.2.3.2 Block Diagram of Test Setup



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5.2.4 Test specification:

Contact discharge voltage:	■ 2 kV ■ 4	kV
Air discharge voltage:	■ 2 kV ■ 4	kV ∎8kV
Discharge impedance:	■ 330 ∧ / 150 pF	
Discharge factor:	■ ≥ 1 sec.	
Number of discharges:	■ ≥10	
Type of discharge:	Direct discharge	Air dischargeContact discharge
	Indirect discharge	 Contact discharge Contact discharge
Polarity:	Positive	Negative
Discharge location:	see photo docume	entation of the test set-up
	all external location	ns accessible by hand
	horizontal plate (H	CP)
	vertical coupling pl	late (VCP)

5.2.5 Test result

The requirements are **Fulfilled**

Performance Criterion: B

Remarks: During the test no deviation was detected to the selected operation mode(s).

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5.3 Radiated, radio-frequency, electromagnetic field

For test instruments and accessories used see section 6 part 6.3.

5.3.1 Description of the test location

Test location:	Test location no. 2
Power supply:	Battery 1.5V
Test condition:	Ambient Temperature: 24°C, Humidity:56%
Date of test :	18~22 August 2016
Operator :	Clark

5.3.2 Severity levels of radiated, Radio-frequency, electromagnetic field

Level	Field strenght(V/m)
1	1
2	3
3	10
X	Special

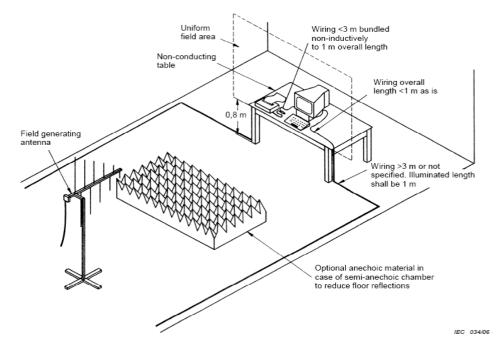
5.3.2.2 Performance criterion: A

5.3.3 Description of the test set-up

5.3.3.1 Operating Condition

The EUT is normal during the test, and the results of the maximum emanation are recorded

5.3.3.2 Block Diagram of Test Setup



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5.3.4 Test specification:

Frequency range:	 80 MHz to 1000 MHz
Field strength:	■ 3 V/m
EUT - antenna separation:	■ 3 m
Modulation:	 AM: 80 % sinusoidal 1000Hz
Frequency step:	 1 % with 3 s dwell time
Antenna polarisation:	■ horizontal ■ vertical
Frequency range:	■ 1400 MHz to 2000 MHz
Field strength:	■ 3 V/m
EUT - antenna separation:	■ 3 m
Modulation:	AM: 80 %sinusoidal 1000Hz
Frequency step:	 1 % with 3 s dwell time
Antenna polarisation:	■ horizontal ■ vertical
Frequency range:	■ 2000 MHz to 2700 MHz
Field strength:	■ 1 V/m
EUT - antenna separation:	■ 3 m
Modulation:	 AM: 80 % sinusoidal 1000Hz
Frequency step:	 1 % with 3 s dwell time
Antenna polarisation:	■ horizontal ■ vertical

5.3.5 Test result

The requirements are **Fulfilled**

Performance Criterion: A

Remarks:

During the test no deviation was detected to the selected operation mode(s).

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5.4 Power frequency magnetic field

For test instruments and accessories used see section 6 part 6.4.

5.4.1 Description of the test location

Test location:	Test location no. 2
Power supply:	Battery 1.5V
Test condition:	Ambient Temperature: 24°C, Humidity:56%
Date of test :	18~22 August 2016
Operator :	Clark

5.4.2 Severity levels of magnetic field immunity

5.4.2.1 Severity Level: 3A/m

Level	Magnetic Field Strength (A/m)
1	1
2	3
3	10
4	30
5	100
X	Special

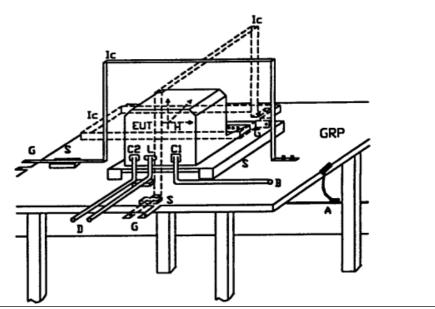
5.4.2.2 Performance Criterion: A

5.4.3 Description of the test set-up

5.4.3.1 Operating Condition

The EUT is normal during the test, and the results of the maximum emanation are recorded

5.4.3.2 Block Diagram of Test Setup



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5.4.4 Test specification:

Test frequency:	■ 50 Hz
Continuous field:	■ 3 A/m
Duration (Continuous field):	■ 60 s each Axis
Short duration (1-3s):	■ 3S
Axis:	■ x-axis ■ y-axis ■ z-axis

5.4.5 Test result

The requirements are **Fulfilled**

Performance Criterion: A

Remarks: During the test no deviation was detected to the selected operation mode(s).

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6 USED TEST EQ UIPMENT

		6.1			
Radia	ted Emission(Electric fie	eld)			
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2016/03/24
2	EMI Test Receiver	ROHDE & SCHWARZ	ESVS 10	842885/001	2015/10/30
3	Biconical Antenna	ROHDE & SCHWARZ	HK116	100221	2016/03/26
4	Log per Antenna	ROHDE & SCHWARZ	HL223	100226	2016/03/26
5	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2016/03/26
6	Pre-Amplifier	EMC	EMC330	980113	2016/03/24
7	Pre-Amplifier	EMC	EMC012645	980114	2016/03/24
8	EMI Test Software	Farad	EZ-EMC	N/A	N/A

6.2

Electr	ostatic Discharge				
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ESD Simulator	Schlöder	SESD 200	0302016	2016/03/28

6.3

RF Field Strength Susceptibility					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Signal Generator	ROHDE & SCHWARZ	SMY 01	843215/014	2015/10/30
2	Signal Generator	ROHDE & SCHWARZ	SML03	102986	2015/10/30
3	Amplifier	KALMUS	713FC	7385-1	2015/10/30
4	Power Meter	ROHDE & SCHWARZ	NRVS	842856/049	2015/10/30
5	Field Probe	ETS	HI-6005	00075047	2015/11/10
6	RS Test Software	Farad	EZ-RS	N/A	N/A

6.4

Power Frequency Magnetic Field Susceptibility					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Power frequency mag-field generator System	EM TEST	EMS61000-8K	409001	2015/10/30

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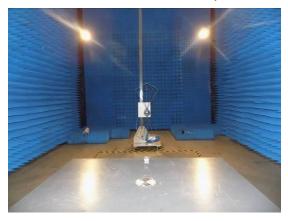
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7 TEST PHOTOG RAPHS

7.1. Photo of radiated emission measurement (R.E. Electric field)



7.2. Photo of electrostatic discharge Immunity measurement (E.S.D.)



7.3. Photo of RF field strength Immunity measurement (R.S.)



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7.4. Photo of PFM field immunity measurement (P.F.M.F.)



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8 EXTERNAL AND INTERNAL PHOTOS OF THE EUT



External view 1



External view 2



External view 3

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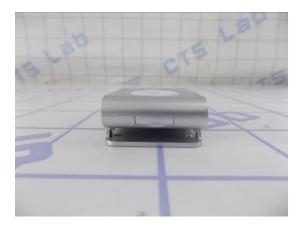
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External view 4



External view 5



External view 6

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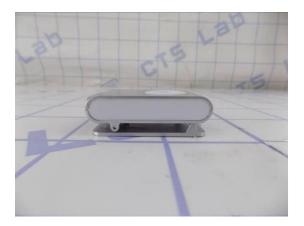
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See Reverse For Terms And Conditions of Service

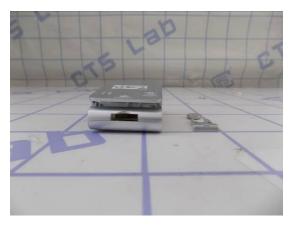
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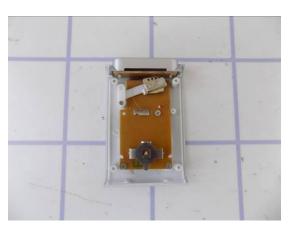
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External view 7



Internal view 1



Internal view 2

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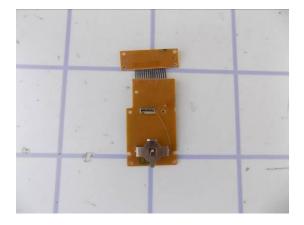
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PCB view 1



PCB view 2

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Manuf acturer/ Approval holder Declaration 9

The following identical model(s):

N/A

Belong to the tested device:

Product description: Pedometer Model name: IT3621-14/04

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