ETSI EN 300 328

RADIO SPECTRUM REPORT (BT)

for

OMATE LIMITED

Bluetooth wrist watch

Model Number: OMATE X

Prepared for : OMATE LIMITED
Address : Room 1101,11/F San Toi Building,No.139 Connaught Road, Central District, HongKong

Prepared by : Keyway Testing Technology Co., Ltd.
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Report No. : 14KWE R
Date of Test : Oct. 20~28, 2014
Date of Report : Oct. 29, 2014

Keyway Testing Technology Co., Ltd.

Applicant: **Address:**	OMATE LIMITED Room 1101,11/F San Toi Building,No.139 Connaught Road, Central District, HongKong		
Manufacturer: **Address:**	OMATE LIMITED Room 1101,11/F San Toi Building,No.139 Connaught Road, Central District, HongKong		
E.U.T:	Bluetooth wrist watch		
Model Number:	OMATE X		
Trade Name:	OMATE	**Serial No.:**	------
Date of Receipt:	Oct. 17, 2014	**Date of Test:**	Oct. 20~28, 2014
Test Specification:	ETSI EN 300 328 V1.8.1 (2012-06)		
Test Result:	The equipment under test was found to be compliance with the requirements of the standards applied. **Issue Date:Oct. 29, 2014**		

Tested by:	Reviewed by:	Approved by:
Cissy Song / Engineer	Andy Gao / Supervisor	Jade Yang / Supervisor

Other Aspects:
None.

Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested

This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Keyway Testing Technology Co., Ltd.

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1 General Information

1.1 General Description of EUT

Product Name:	Bluetooth wrist watch
Model No.:	OMATE X
Operating frequency bands	2402~2480 MHz
Modulation type:	FHSS GFSK, Pi/4 QPSK, 8DPSK BLE:GFSK
Channel numbers:	FHSS:79 BLE:40
Channel separation:	FHSS:1MHz BLE: 2MHz
Antenna Type:	Integral Antenna
Antenna gain:	0dBi (declare by Applicant)
Power Supply:	DC 3.7V DC 5V from adapter

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402MHz	11	2422MHz	21	2442MHz	31	2462MHz
2	2404MHz	12	2424MHz	22	2444MHz	32	2464MHz
3	2406MHz	13	2426MHz	23	2446MHz	33	2466MHz
4	2408MHz	14	2428MHz	24	2448MHz	34	2468MHz
5	2410MHz	15	2430MHz	25	2450MHz	35	2470MHz
6	2412MHz	16	2432MHz	26	2452MHz	36	2472MHz
7	2414MHz	17	2434MHz	27	2454MHz	37	2474MHz
8	2416MHz	18	2436MHz	28	2456MHz	38	2476MHz
9	2418MHz	19	2438MHz	29	2458MHz	39	2478MHz
10	2420MHz	20	2440MHz	30	2460MHz	40	2480MHz

Remark:
The EUT operation in above frequency list, and used test software to control the EUT for staying in continuous transmitting and receiving mode. Channel 1, 20 and 40 of Bluetooth were chosen for testing.

1.2 Test mode

Bluetooth mode	Keep the EUT in transmitting continuously mode.

1.3 Description of Support Units

The EUT has been tested as an independent unit.

1.4 Deviation from Standards

None.

1.5 Abnormalities from Standard Conditions

None.

1.6 Test Facility

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

- **FCC —Registration No.: 370994**

Keyway Testing Technology Co., Ltd., EMC Laboratory has been registered and fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 370994, February 21, 2012

- **Industry Canada (IC)**

The 3m Semi-anechoic chamber of Keyway Testing Technology Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9868A -1.

1.7 Test Location

All tests were performed at:

Keyway Testing Technology Co., ltd..
Address:Baishun Industrial Zone, Zhangmutou Town, Dongguan, Guangdong, China
Tel:
Fax:

2 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi-anechoic Chamber	ETS-LINDGREN	966	KW01	Apr.27,2014	Apr.27,2015
2	MULTI-DEVICE Controller	ETS-LINDGREN	2090	126913	N/A	N/A
3	Antenna Holder	ETS-LINDGREN	2070B		N/A	N/A
4	Signal Amplifier	SONOMA	310	187303	Apr.27,2014	Apr.27,2015
5	Signal Amplifier	DAZE	ZN3380C	11001	Apr.27,2014	Apr.27,2015
6	RF Cable	IMRO	IMRO-400	Cable 1#	Apr.27,2014	Apr.27,2015
7	RF Cable	IMRO	IMRO-400	Cable 2#	Apr.27,2014	Apr.27,2015
8	RF Cable	IMRO	IMRO-400	Cable 3#	Apr.27,2014	Apr.27,2015
9	RF Cable	IMRO	IMRO-400	Cable 4#	Apr.27,2014	Apr.27,2015
10	Bilog Antenna	ETS-LINDGREN	3142D		Apr.29,2014	Apr.29,2015
11	Horn Antenna	DAZE	ZN30701	11003	Apr.30,2014	Apr.30,2015
12	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829		Apr.27,2014	Apr.27,2015
13	EMI Test Receiver	Rohde&Schwarz	ESU26	101156	Apr.27,2014	Apr.27,2015
14	Spectrum Analyzer	Agilent	8593E	3911A04271	Apr.27,2014	Apr.27,2015
15	Band filter	Amindeon	82346		Apr.30,2014	Apr.30,2015
16	Universal radio communication tester	Rohde & Schwarz	CMU200		Apr.30,2014	Apr.30,2015
17	Splitter	Agilent	11636B		Apr.30,2014	Apr.30,2015
18	Constant temperature and humidity box	GF	GTH-800-40-1P	MAA9906-005	Apr.27,2014	Apr.27,2015
19	D.C. Power Supply	LongWei	PS-305D		Apr.27,2014	Apr.27,2015
20	Horn Antenna	ETS-LINDGREN	3160	100873A10	Apr.27,2014	Apr.27,2015
21	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	6s726384k	Apr.27,2014	Apr.27,2015

Conducted:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Signal Analyzer	Agilent	N9010A	MY	Jul.27,2014	Jul.27,2015
2	vector Signal Generator	Agilent	E4438C	MY	Jul.27,2014	Jul.27,2015
3	splitter	Mini-Circuits	ZAP-50W	NN	Jul.27,2014	Jul.27,2015
4	Directional Coupler	Agilent	87300C	MY	Jul.27,2014	Jul.27,2015
5	vector Signal Generator	Agilent	E4438C	US	Jul.27,2014	Jul.27,2015
6	X-series USB Peak and Average Power Sensor	Agilent	U2021XA	MY	Jul.27,2014	Jul.27,2015
7	X-series USB Peak and Average Power Sensor	Agilent	U2021XA	MY	Jul.27,2014	Jul.27,2015
8	X-series USB Peak and Average Power Sensor	Agilent	U2021XA	MY	Jul.27,2014	Jul.27,2015
9	X-series USB Peak and Average Power Sensor	Agilent	U2021XA	MY	Jul.27,2014	Jul.27,2015
10	4 Ch.Simultaneous Sampling 14 Bits 2 MS/s	Agilent	U2531A	TW	Jul.27,2014	Jul.27,2015
11	4 Ch.Simultaneous Sampling 14 Bits 2 MS/s	Agilent	U2531A	TW	Jul.27,2014	Jul.27,2015
12	splitter	Mini	PS3-7	4457	Jul.27,2014	Jul.27,2015

3 Test Summary

Radio Spectrum Matter (RSM) Part of Tx					
Test	**Test Requirement**	**Test method**	**Limit/Severity**	**Uncertainty**	**Result**
RF Output Power	Clause 4.3.2.1	Clause 5.3.2.2	20dBm	±1.5dB	PASS
Power Spectral Density	Clause 4.3.2.2	Clause 5.3.3.2	10dBm/MHz	±3dB	PASS
Duty Cycle, Tx-sequence, Tx-gap	Clause 4.3.2.3	Clause 5.3.2.2	Clause 4.3.2.3.2	±5 %	N/A
Medium Utilisation (MU) factor	Clause 4.3.2.4	Clause 5.3.2.2	≤ 10%	±5 %	N/A
Adaptivity	Clause 4.3.2.5	Clause 5.3.7.2	Clause 4.3.2.5.1.2 & Clause 4.3.2.5.2.2 & Clause 4.3.2.5.3.2	--	N/A
Occupied Channel Bandwidth	Clause 4.3.2.6	Clause 5.3.8.2	Clause 4.3.2.6.2	±5 %	PASS
Transmitter unwanted emissions in the OOB domain	Clause 4.3.2.7	Clause 5.3.9.2	Clause 4.3.2.7.2	±3dB	PASS
Transmitter unwanted emissions in the spurious domain	Clause 4.3.2.8	Clause 5.3.10.2	Clause 4.3.2.8.2	±6dB	PASS
Radio Spectrum Matter (RSM) Part of Rx					
Receiver spurious emissions	Clause 4.3.2.9	Clause 5.3.11.2	Clause 4.3.2.9.2	±6dB	PASS
Receiver Blocking	Clause 4.3.2.10	Clause 5.3.7.2	Clause 4.3.2.10.2	--	N/A

Remark:

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

Temperature (Uncertainty): ±1°C Humidity(Uncertainty): ±5%

Uncertainty: – 3%(for DC and low frequency voltages)

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