

Produkte  
 Products

**Prüfbericht - Nr.:** 14031278 001

Test Report No.:

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**Auftraggeber:** Bluetrek Technologies Limited  
**Client:**  
 8/F., Tai Yip Building  
 141 Thomson Road  
 Wanchai  
 Hong Kong

**Gegenstand der Prüfung:** Bluetooth Low Energy Smart Watch  
**Test Item:**

**Bezeichnung:** COOKOO™ watch  
**Identification:**

 Serien-Nr.:  
 Serial No.:

Engineering sample

**Wareneingangs-Nr.:** 00120926147-001  
**Receipt No.:**

**Eingangsdatum:** 26.09.2012  
**Date of Receipt:**

**Prüfort:** TÜV Rheinland Hong Kong Ltd.  
**Testing Location:**  
 8/F, First Group Centre, 14 Wang Tai Road, Kowloon Bay, Kowloon, Hong Kong  
**Hong Kong Productivity Council**  
 HKPC Building, 78 Tat Chee Avenue, Kowloon, Hong Kong

**Zustand des Prüfgegenstandes bei Anlieferung:** Test sample(s) is/are not damaged and suitable for testing.  
**Condition of test item at delivery:**

**Prüfgrundlage:** FCC Part 15 Subpart C  
**Test Specification:**  
 ANSI C63.4-2003  
 CISPR 22:1997

**Prüfergebnis:** Das vorstehend beschriebene Gerät wurde geprüft und entspricht oben genannter Prüfgrundlage.  
**Test Results:**  
 The above mentioned product was tested and **passed**.

**Prüflaboratorium:** TÜV Rheinland Hong Kong Ltd.  
**Testing Laboratory:**  
 8 - 10/F., Goldin Financial Global Square, 7 Wang Tai Road, Kowloon Bay, Kowloon, Hong Kong

geprüft/ tested by:

kontrolliert/ reviewed by:

27.11.2012	Joey Leung Test Engineer		27.11.2012	Sharon Li Section Manager	
Datum Date	Name/Stellung Name/Position	Unterschrift Signature	Datum Date	Name/Stellung Name/Position	Unterschrift Signature

**Sonstiges:** FCCID: QITCOKO  
 Other Aspects

**Abkürzungen:** P(pass) = entspricht Prüfgrundlage  
 F(fail) = entspricht nicht Prüfgrundlage  
 N/A = nicht anwendbar  
 N/T = nicht getestet

**Abbreviations:** P(pass) = passed  
 F(fail) = failed  
 N/A = not applicable  
 N/T = not tested

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.  
 This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.

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## Product information

### Manufacturers declarations

	<b>Transceiver</b>
Operating frequency range	2402 - 2480 MHz
Type of modulation	GFSK
Number of channels	40
Channel separation	2 MHz
Type of antenna	Chip Antenna
Antenna gain (dBi)	0
Power level	fix
Type of equipment	stand alone radio device
Connection to public utility power line	No
Nominal voltage	V <sub>nor</sub> : 3.0V
Independent Operation Modes	Transmitting Receiving

## Product function and intended use

The COOKOO™ watch cleverly helps you manage your Bluetooth 4.0 smartphone so you don't have to constantly check it. The COOKOO™ watch will notify you when something happens on your phone in real time—even if you can't hear, see, or reach it.

The COOKOO™ watch connects to the latest *Bluetooth®* Smart Ready iOS or Android devices, such as the iPhone 4S, new iPad, HTC One (S, X, XL) and the new Samsung Galaxy S3—with many more phones to come!

Along with the *Connected App™*, the COOKOO™ watch is designed to simplify your life.

The *Connected App™* keeps you in control of the alerts and notifications you receive on the COOKOO™ watch. Use the default settings or customize your own based on your lifestyle.

Alert can be configured for:

- Incoming and missed calls
- Text/SMS messages
- Emails
- Facebook chats and messages
- Reminders

## Submitted documents

Circuit Diagram  
Block Diagram  
Bill of material  
Label Artwork  
User manual

## List of Test and Measurement Instruments

### Hong Kong Productivity Council (Registration number: 90656)

Equipment	Manufacturer	Type	S/N	Due Date
Semi-anechoic Chamber	Frankonia	Nil	Nil	25-May-13
Test Receiver	R & S	ESU40	100190	26-May-13
Bi-conical Antenna	R & S	HK116	100242	05-May-13
Log Periodic Antenna	R & S	HL223	841516/020	06-May-13
Coaxial cable 50ohm	Rosenberger	RTK081-05S-05S-10m	LA2-001-10M / 001	15-Nov-13
Microwave amplifier 0.5-26.5GHz, 25dB gain	HP	83017A	3950M00241	03-Oct-13
High Pass Filter (cutoff freq. =1000MHz)	Trilithic	23042	9829213	28-Oct-13
Horn Antenna	EMCO	3115	9002-3351	11-May-13
Double-Ridge Waveguide Horn	EMCO	3116	2616	11-May-13
Active Loop Antenna	EMCO	6502	9107-2651	21-Jun-13
FSP 30 Spectrum Analyser	R & S	FSP 30	100007	17-Sep-13

## Results FCC Part 15 – Subpart C

Subclause 15.203 – Antenna Information		Pass
<b>Requirement:</b>	No antenna other than that furnished by the responsible party shall be used with the device	
<b>Results:</b>	Permanent attached antenna	
<b>Verdict:</b>	Pass	

Subclause 15.204 – Antenna Information		Pass
<b>Requirement:</b>	Provide information for every antenna proposed for the use with the EUT	
<b>Results:</b>	a) Antenna type: b) Manufacturer and model no: c) Gain with reference to an isotropic radiator:	Chip Antenna N.A. 0 dBi
<b>Verdict:</b>	Pass	

Subclause 15.207 – Disturbance Voltage on AC Mains		N/A
The EUT is powered by battery.		

Subclause 15.247 (a)(2) – 6dB Bandwidth Measurement		Pass
<b>Requirement:</b>	Systems using digital modulation techniques may operate in the 902 – 928 MHz, 2400 – 2483.5 MHz, and 5725 – 5850 MHz bands. The minimum 6dB bandwidth shall be at least 500kHz. There is no requirement for hybrid system to comply with the 500 KHz minimum bandwidth normally associated with a DTS transmission. In addition, the EBW is required information for subsequent band power measurement.	
<b>EBW</b>		
Test Specification : FCC Part 15 Subpart A – Subclause 15.31		
Mode of operation : Tx mode, hopping off		
Port of testing : Temporary antenna port		
Detector : Peak		
RBW/VBW : 1-5% of EBW / $\geq 3 \times$ RBW		
Supply voltage : 3.0 VDC from Battery		
Temperature : 23°C		
Humidity : 50%		
<b>Results:</b>	For test protocols please refer to Appendix 1, page 2-3.	

Channel	Channel frequency (MHz)	Emission Bandwidth (MHz)	Limit (MHz)	Verdict
Low	2402	0.720	-	-
Mid	2440	0.730	-	-
High	2480	0.700	-	-

**6dB BW**

Test Specification : FCC Part 15 Subpart A – Subclause 15.31  
 Mode of operation : Tx mode, hopping off  
 Port of testing : Temporary antenna port  
 Detector : Peak  
 RBW/VBW : 100KHz/ 300KHz  
 Supply voltage : 3.0 VDC from Battery  
 Temperature : 23°C  
 Humidity : 50%

**Results:** For test protocols please refer to Appendix 1, page 4-5.

Channel	Channel frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Verdict
Low	2402	0.710	>0.5	Pass
Mid	2440	0.700	>0.5	Pass
High	2480	0.710	>0.5	Pass

**Subclause 15.247 (b)(3) – Maximum Peak Output Power** Pass

**Requirement:** For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850MHz bands: 1 Watt (30dBm)

Test Specification : FCC Part 15 Subpart A – Subclause 15.31  
 Mode of operation : Tx mode, hopping off  
 Port of testing : Temporary antenna port  
 Detector : Peak  
 RBW/VBW : >=EBW / >=3xRBW  
 Span : zero  
 Supply voltage : 3.0 VDC from Battery  
 Temperature : 23°C  
 Humidity : 50%

**Results:** For test protocols please refer to Appendix 1, page 6-7.

Channel	Channel frequency (MHz)	Peak Power Output (dBm)	Limit (dBm)	Verdict
Low	2402	-6.32	30	Pass
Mid	2440	-7.14	30	Pass
High	2480	-8.02	30	Pass

**Verdict:** Pass

<b>Subclause 15.247 (d) – Spurious Conducted Emissions</b>		<b>Pass</b>			
Test Specification	: FCC Part 15 Subpart A – Subclause 15.31				
Mode of operation	: Tx mode (2402MHz, 2440MHz, 2480MHz), hopping off				
Port of testing	: Temporary antenna port				
Detector	: Peak				
RBW/VBW	: 100 kHz / 300 kHz				
Supply voltage	: 3.0 VDC from Battery				
Temperature	: 23 °C				
Humidity	: 50 %				
Requirement:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.				
<b>Results:</b>	There is no peak found outside any 100kHz bandwidth of the operating frequency band in the three transmit frequency. All three transmit frequency modes comply with the limit stated in subclause 15.247(d). For test protocols refer to Appendix 1, page 8-9.				
Operating frequency (MHz)	Spurious frequency (MHz)	Spurious Level (dBm)	Reference value (dBm)	Delta (dB)	Verdict
2402	4800	-43.77	-7.94	35.83	Pass
	7200	-52.98	-7.94	45.04	Pass
2440	4850	-45.54	-8.10	37.44	Pass
	7300	-52.37	-8.10	44.27	Pass
2480	4950	-48.75	-9.95	38.80	Pass
	7450	-51.92	-9.95	41.97	Pass

Subclause 15.247 (d) – Spurious Radiated Emissions			Pass
Test Specification	ANSI C63.4 – 2003		
Mode of operation	Tx mode (2402MHz, 2440MHz, 2480MHz), hopping off		
Port of testing	Enclosure		
Detector	Peak		
RBW/VBW	100 kHz / 300 kHz for f < 1 GHz 1 MHz / 1 MHz for f > 1 GHz		
Supply voltage	3.0 VDC from Battery		
Temperature	23°C		
Humidity	50%		
Requirement:	In any 100kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in section 15.205(a), must also comply with the radiated emission limits specified in section 15.209(a).		
Results:	<p>Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and packet types.</p> <p>All three transmit frequency modes comply with the field strength within the restricted bands. There is no spurious found below 30MHz.</p>		
Tx frequency 2402MHz	Vertical Polarization		
	<b>Freq MHz</b>	<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>
4804.519		54.41	74.0 / PK
4803.942		49.37	54.0 / AV
Tx frequency 2402MHz	Horizontal Polarization		
	<b>Freq MHz</b>	<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>
4804.391		54.92	74.0 / PK
4803.942		48.86	54.0 / AV
Tx frequency 2440MHz	Vertical Polarization		
	<b>Freq MHz</b>	<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>
4880.529		53.11	74.0 / PK
4879.952		47.79	54.0 / AV
Tx frequency 2440MHz	Horizontal Polarization		
	<b>Freq MHz</b>	<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>
4880.545		54.14	74.0 / PK
4879.952		49.01	54.0 / AV
Tx frequency 2480MHz	Vertical Polarization		
	<b>Freq MHz</b>	<b>Level dBuV/m</b>	<b>Limit/ Detector dBuV/m</b>
4959.567		54.01	74.0 / PK
4959.920		48.40	54.0 / AV

Tx frequency 2480MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4959.535	52.85	74.0 / PK	
4959.920	45.84	54.0 / AV	

<b>Subclause 15.247 (d) – Band Edge Emissions</b>		<b>Pass</b>
Test Specification	: FCC Part 15 Subpart A – Subclause 15.31	
Mode of operation	: Tx mode (2402MHz, 2480MHz)	
Port of testing	: Temporary antenna port	
Detector	: Peak	
RBW/VBW	: 100 kHz / 300 kHz	
Supply voltage	: 3.0 VDC from Battery	
Temperature	: 23°C	
Humidity	: 50%	
Requirement:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.	
<b>Results:</b>	There is no peak found outside any 100 kHz bandwidth of the operating frequency band. For test protocols refer to Appendix 1, page 10.	

<b>Subclause 15.205 – Band edge compliance of radiated emissions</b>		<b>Pass</b>
Test Specification	: FCC Part 15 Subpart A – Subclause 15.31	
Mode of operation	: Tx mode (2402MHz, 2480MHz)	
Port of testing	: Temporary antenna port	
Detector	: Peak	
RBW/VBW	: 1 MHz / 1 MHz	
Supply voltage	: 3.0 VDC from Battery	
Temperature	: 23°C	
Humidity	: 50%	
Requirement:	Radiated emissions which fall in the restricted bands, as defined in 15.205 (a), must also comply with the radiated emission limits specified in 15.209(a).	
<b>Results:</b>	There is no peak found in the restricted bands. For test protocols refer to Appendix 1, page 11-18.	

<b>Subclause 15.247 (e) – Power Spectral Density</b>		<b>Pass</b>			
<b>Requirement:</b> For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.					
Test Specification : FCC Part 15 Subpart A – Subclause 15.31					
Mode of operation : Tx mode (2402MHz, 2440MHz, 2480MHz), hopping off					
Port of testing : Temporary antenna port					
Detector : Peak					
RBW/VBW : 100 KHz / 300 KHz					
Supply voltage : 3.0 VDC from Battery					
Temperature : 23°C					
Humidity : 50%					
BWCF : -15.2dB					
<b>Results:</b> For test protocols please refer to Appendix 1, page 19-20.					
Operating frequency (MHz)	Reading (dBm)	BWCF (dB)	Power density (dBm)	Limit (dBm)	Verdict
2402	-6.48	-15.2	-21.68	8.0	Pass
2440	-7.23	-15.2	-22.43	8.0	Pass
2480	-8.15	-15.2	-23.35	8.0	Pass
<b>Verdict:</b> Pass					