

Produkte
Products

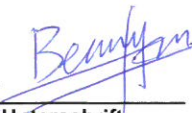
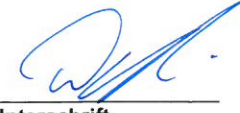
Prüfbericht - Nr.: 14041057 001			Seite 1 von 10		
<i>Test Report No.:</i>			<i>Page 1 of 10</i>		
Auftraggeber: <i>Client:</i>		Wincotme Electronic Ltd. Rm2, 8th Floor, Fonda Industrial Building 37-30 Au Pui Wan Street, Fo Tan Shatin, N.T. Hong Kong			
Gegenstand der Prüfung: <i>Test Item:</i>		Short Range Device - Pedometer			
Bezeichnung: <i>Identification:</i>	YOO-SA	Serien-Nr.: <i>Serial No.:</i>	Engineering sample		
Wareneingangs-Nr.: <i>Receipt No.:</i>	A000234390-001	Eingangsdatum: <i>Date of Receipt:</i>	29.07.2015		
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of test item at delivery:</i>		Test sample is not damaged and suitable for testing.			
Prüfort: <i>Testing Location:</i>		Hong Kong Productivity Council HKPC Building, 78 Tat Chee Avenue, Kowloon, Hong Kong			
Prüfgrundlage: <i>Test Specification:</i>		FCC Part 15 Subpart C ANSI C63.4-2009			
Prüfergebnis: <i>Test Results:</i>		Das vorstehend beschriebene Gerät wurde geprüft und entspricht oben genannter Prüfgrundlage. The above mentioned product was tested and passed .			
Prüflaboratorium: <i>Testing Laboratory:</i>		TÜV Rheinland Hong Kong Ltd. 8 - 10/F., Goldin Financial Global Square, 7 Wang Tai Road, Kowloon Bay, Kowloon, Hong Kong			
geprüft/ tested by:			kontrolliert/ reviewed by:		
08.09.2015	Benny Lau Senior Project Manager		08.09.2015	Sharon Li Department Manager	
<i>Datum</i> <i>Date</i>	<i>Name/Stellung</i> <i>Name/Position</i>	<i>Unterschrift</i> <i>Signature</i>	<i>Datum</i> <i>Date</i>	<i>Name/Stellung</i> <i>Name/Position</i>	<i>Unterschrift</i> <i>Signature</i>
Sonstiges: Other Aspects		FCC ID: 2ABPTYX4400			
Abkürzungen:		Abbreviations:			
P(ass) = entspricht Prüfgrundlage		P(ass) = passed			
F(ail) = entspricht nicht Prüfgrundlage		F(ail) = failed			
N/A = nicht anwendbar		N/A = not applicable			
N/T = nicht getestet		N/T = not tested			
<p>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.</p> <p><i>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.</i></p>					

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Product information

Manufacturers declarations

	Transmitter
Operating frequency range	2402 - 2480 MHz
Type of modulation	GFSK
Number of channels	40
Type of antenna	PCB Antenna
Power level	fix
Connection to public utility power line	No
Nominal voltage	V _{nom} : 3.7 V

Product function and intended use

The equipment under test (EUT) is a Bluetooth Low Energy Pedometer operating at 2.4GHz. It is powered by battery only.

FCC ID: 2ABPTYX4400

Models	Product description
YOO-SA	Pedometer

Submitted documents

Circuit Diagram
Block Diagram
Bill of material
User manual
Rating Label
Declaration of Equivalence

Special accessories and auxiliary equipment

- Nil

Independent Operation Modes

The basic operation modes are transmitting mode.

For further information refer to User Manual

Related Submittal(s) Grants

This is a single application for certification of the transmitter.

Remarks

- Nil

List of Test and Measurement Instruments

Hong Kong Productivity Council (Registration number: 90656)

Radiated Emission

Equipment	Manufacturer	Type	Cal. Date	Due Date
Semi-anechoic Chamber	Frankonia	Nil	14-Apr-15	14-Apr-16
New Fully Anchoic Chamber	TDK	N/A	15-Apr-15	15-Apr-16
Cable	Hubersuhner	SUCOFLEX 104	31-Mar-14	31-Mar-16
Test Receiver	R & S	ESU26	12-Feb-15	12-Feb-16
Bi-conical Antenna	R & S	HK116	22-Oct-13	22-Oct-15
Log Periodic Antenna	R & S	HL223	16-Oct-13	16-Oct-15
Coaxial cable	Harbour	LL335	10-Jun-14	10-Jun-16
Microwave amplifier 0.5-26.5GHz, 25dB gain	HP	83017A	17-Jul-14	17-Jul-16
High Pass Filter (cutoff freq. =1000MHz)	Trilithic	23042	28-Oct-13	28-Oct-15
Horn Antenna	EMCO	3115	07-Oct-13	07-Oct-15
Active Loop Antenna	EMCO	6502	17-May-15	17-May-16

TÜV Rheinland Hong Kong Ltd

AC Mains Conducted Emission

Equipment	Manufacturer	Type	Cal. Date	Due Date
Test Receiver	R & S	ESR3	12 Sep 14	12-Sep-15
LISN	R & S	ENV216	05 Feb 15	05-Feb-16
EMC32	R & S	v9.12	N/A	N/A

Results FCC Part 15 – Subpart C

Subclause 15.203 – Antenna Requirement		Pass
FCC Requirement: No antenna other than that furnished by the responsible party shall be used with the device		
Results:	Antenna type:	Fixed Integral PCB antenna
Verdict:	Pass	

FCC 15.207 – Conducted Emission on AC Mains							Pass
Test Specification : ANSI C63.4 – 2009 Mode of operation : TX mode Port of testing : AC Mains input port of the Notebook Detector : Quasi-peak and Average RBW : 9 kHz Supply voltage : 120Vac 60Hz Temperature : 23°C Humidity : 50%							
Requirement:		15.207(a)					
Results:		Pass					
Live measurement							
Frequency range (MHz)	Frequency (MHz)	Quasi-peak dBµV	Average dBµV	Limit QP (dBµV)	Limit AV (dBµV)	Verdict	
0,15 – 0,5	0.16125	61.3	40.8	66 - 56	56 - 46	Pass	
> 0,5 - 5	No peak found	---	---	56	46	Pass	
> 5 - 30	No peak found	---	---	60	50	Pass	
Neutral measurement							
Frequency range (MHz)	Frequency (MHz)	Quasi-peak dBµV	Average dBµV	Limit QP (dBµV)	Limit AV (dBµV)	Verdict	
0,15 – 0,5	0.16800	60.6	41.2	66 - 56	56 - 46	Pass	
> 0,5 - 5	No peak found	---	---	56	46	Pass	
> 5 - 30	No peak found	---	---	60	50	Pass	
Results:		Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and data rate. Only the worst-case is reported. The radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150kHz to 30MHz does not exceed the limits. For test Results plots refer to Appendix 1.					

Subclause 15.215 (c) – 20 dB Bandwidth			Pass	
Test Specification : ANSI C63.4 – 2009 Mode of operation : Tx mode Port of testing : Enclosure RBW/VBW : 100 kHz / 300 kHz Supply voltage : 3.7V Temperature : 23°C Humidity : 50%				
Requirement: The intentional radiators must be designed to ensure that the 20dB bandwidth of the emission, is contained within the frequency band designated in the rule section under which the equipment is operated.				
Results: For test protocols refer to Appendix 1, page 2-3.				
Frequency (MHz)	20 dB left (MHz)	Limit (MHz)	20 dB right (MHz)	Limit (MHz)
2402	2401.12	> 2400	2402.77	< 2483.5
2440	2438.97	> 2400	2440.87	< 2483.5
2480	2479.02	> 2400	2481.18	< 2483.5

Subclause 15.249 (a) – Field Strength of Fundamental and Harmonics			Pass
Test Specification : ANSI C63.4 – 2009 Mode of operation : Tx mode Port of testing : Enclosure Frequency range : 9kHz – 25GHz RBW/VBW : 100 kHz / 300 kHz for $f < 1$ GHz 1 MHz / 3 MHz for $f > 1$ GHz Supply voltage : 3.7V Temperature : 23°C Humidity : 50%			
Requirement: The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following limit.			
Results: PASS.			
Fundamental Frequency 2402MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2402.00	81.60	114.0 / PK	
2402.00	66.84	94.0 / AV	
Fundamental Frequency 2402MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2402.00	91.27	114.0 / PK	
2402.00	74.28	94.0 / AV	
Harmonics 2402MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4804.00	56.65	74.0 / PK	
4804.00	46.06	54.0 / AV	
7206.00	62.39	74.0 / PK	
7206.00	50.27	54.0 / AV	
Harmonics 2402MHz		Horizontal Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
4804.00	59.76	74.0 / PK	
4804.00	48.71	54.0 / AV	
7206.00	61.46	74.0 / PK	
7206.00	49.44	54.0 / AV	
Fundamental Frequency 2440MHz		Vertical Polarization	
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	
2440.00	80.84	114.0 / PK	
2440.00	66.71	94.0 / AV	

Fundamental Frequency 2440MHz			Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2440.00	89.96	114.0 / PK	2440.00	73.29	94.0 / AV
2440.00					
Harmonics 2440MHz			Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4880.00	55.63	74.0 / PK	4880.00	44.69	54.0 / AV
4880.00					
Harmonics 2440MHz			Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4880.00	58.50	74.0 / PK	4880.00	47.89	54.0 / AV
4880.00					
Fundamental Frequency 2480MHz			Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2480.00	80.18	114.0 / PK	2480.00	65.62	94.0 / AV
2480.00					
Fundamental Frequency 2480MHz			Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2480.00	86.32	114.0 / PK	2480.00	70.39	94.0 / AV
2480.00					
Harmonics 2480MHz			Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4960.00	56.47	74.0 / PK	4960.00	45.51	54.0 / AV
4960.00					
Harmonics 2480MHz			Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m	Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4960.00	58.75	74.0 / PK	4960.00	47.48	54.0 / AV
4960.00					

Subclause 15.249 (d), 15.205 – Out Of Band Radiated Emission		Pass
Test Specification : ANSI C63.4 – 2009 Mode of operation : Tx mode Port of testing : Enclosure Detector : Peak Frequency range : 9kHz – 25GHz RBW/VBW : 1 MHz / 3 MHz for f > 1 GHz Supply voltage : 3.7V Temperature : 23°C Humidity : 50%		
Requirement:	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.	
Results:	All three transmit frequency modes comply with the field strength limit of section 15.209. There is no spurious found below 30MHz.	
Tx frequency 2402MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2400.000	62.93	74.0 / PK
2400.000	48.13	54.0 / AV
Tx frequency 2402MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2400.000	72.99	74.0 / PK
2400.000	53.47	54.0 / AV
Tx frequency 2440MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
No peak found	---	74.0 / PK
No peak found	---	54.0 / AV
Tx frequency 2440MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
No peak found	---	74.0 / PK
No peak found	---	54.0 / AV
Tx frequency 2480MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2483.500	51.90	74.0 / PK
2483.500	35.05	54.0 / AV
Tx frequency 2480MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2483.500	57.65	74.0 / PK
2483.500	37.95	54.0 / AV