

Produkte
Products

Prüfbericht - Nr.: 14033627 001		Seite 1 von 10 <i>Page 1 of 10</i>	
<i>Test Report No.:</i>			
Auftraggeber: <i>Client:</i>	Sunbeam Products, Inc. d/b/a Jarden Consumer Solutions 2381 NW Executive Center Drive Boca Raton, FL 33431 United States		
Gegenstand der Prüfung: <i>Test Item:</i>	Bluetooth Low Energy Personal Weighing Scale		
Bezeichnung: <i>Identification:</i>	BFM147	Serien-Nr.: <i>Serial No.:</i>	Engineering sample
Wareneingangs-Nr.: <i>Receipt No.:</i>	00130731198-005	Eingangsdatum: <i>Date of Receipt:</i>	31.07.2013
Prüfart: <i>Testing Location:</i>	TÜV Rheinland Hong Kong Ltd. 8/F, First Group Centre, 14 Wang Tai Road, Kowloon Bay, Kowloon, Hong Kong Global United Technology Services Co., Ltd. 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, China		
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of test item at delivery:</i>	Test sample(s) is/are not damaged and suitable for testing.		
Prüfgrundlage: <i>Test Specification:</i>	FCC Part 15 Subpart C ANSI C63.4-2003		
Prüfresultat: <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:	
09.09.2013	Joey Leung Test Engineer	09.09.2013	Mika Chan Project Manager
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>
Sonstiges: <i>Other Aspects</i>		FCCID: Z4D-BFM147	
Abkürzungen:	P(ass) = entspricht Prüfgrundlage F(ail) = entspricht nicht Prüfgrundlage N/A = nicht anwendbar N/T = nicht getestet	Abbreviations:	P(ass) = passed F(ail) = 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.			

Table of Content

	Page
Cover Page	1
Table of Content	2
Product information.....	3
Manufacturers declarations	3
Product function and intended use	4
Submitted documents.....	4
List of Test and Measurement Instruments.....	5
Results FCC Part 15 – Subpart C	6
Subclause 15.203 – Antenna Information	Pass..... 6
Subclause 15.204 – Antenna Information	Pass..... 6
Subclause 15.207 – Disturbance Voltage on AC Mains.....	N/A..... 6
Subclause 15.247 (a)(2) – 6dB Bandwidth Measurement.....	Pass..... 6
Subclause 15.247 (b)(3) – Maximum Peak Output Power	Pass..... 7
Subclause 15.247 (d) – Spurious Conducted Emissions	Pass..... 7
Subclause 15.247 (d) – Spurious Radiated Emissions.....	Pass..... 8
Subclause 15.247 (d) – Band Edge Emissions.....	Pass..... 9
Subclause 15.205 – Restricted Bands next to Band-Edge.....	Pass..... 10
Subclause 15.247 (e) – Power Spectral Density	Pass..... 10
Appendix 1 – Test protocols	14 pages
Appendix 2 – Test setup	2 pages
Appendix 3 – Photo documentation	5 pages
Appendix 4 – Product documentation	14 pages

Product information

Manufacturers declarations

	Transceiver
Operating frequency range	2402 - 2480 MHz
Type of modulation	GFSK
Number of channels	40
Channel separation	2 MHz
Type of antenna	PCB 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 _{nom} : 6.0V
Independent Operation Modes	Transmitting Receiving

Product function and intended use

The Lose It, Health o meter wireless body analysis scale offers user to measure, track and share body composition vitals in addition to the ability to track user's calories, exercises and join challenges with the millions of other Lose It members.

In addition to body weight, the Lose It Health o meter scale measures:

- Body Fat
- BMI
- Hydration

Submitted documents

Circuit Diagram
Block Diagram
Bill of material
Label Artwork
User manual

List of Test and Measurement Instruments

Global United Technology Services Co., Ltd. (Registration number: 600491)

Equipment	Manufacturer	Type	Due Date
3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	05 Apr 2015
Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	N/A
ESU EMI Test Receiver	R&S	ESU26	28 Jun 2014
Loop Antenna	Zhinan	ZN30900A	28 Jun 2014
Bi-log Hybrid Antenna	SCHWARZBECK	VULB9163	17 Mar 2014
Double-ridged horn antenna	SCHWARZBECK	9120D	17 Mar 2014
Horn Antenna	ETS-LINDGREN	3160	17 Mar 2014
RF Amplifier	HP	8347A	28 Jun 2014
RF Amplifier	HP	8349B	28 Jun 2014
EMI Test Software	AUDIX	E3	N/A
Coaxial cable	GTS	N/A	28 Jun 2014
Coaxial Cable	GTS	N/A	28 Jun 2014
Thermo meter	N/A	N/A	30 Jun 2014
FSP 30 Spectrum Analyzer	R & S	FSP 30	17 Sep 2013

Results FCC Part 15 – Subpart C

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

Subclause 15.204 – Antenna Information		Pass
Requirement:	Provide information for every antenna proposed for the use with the EUT	
Results:	a) Antenna type: PCB Antenna b) Manufacturer and model no: N.A. c) Gain with reference to an isotropic radiator: 0 dBi	
Verdict:	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		
Requirement:	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.			
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 : 6.0 VDC from Battery Temperature : 23°C Humidity : 50%				
Results: For test protocols please refer to Appendix 1, page 2-3.				
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	0.700	>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 : 1MHz / 3MHz Span : 3MHz Supply voltage : 6.0 VDC from Battery Temperature : 23°C Humidity : 50%				
Results: For test protocols please refer to Appendix 1, page 4-5.				
Channel	Channel frequency (MHz)	Peak Power Output (dBm)	Limit (dBm)	Verdict
Low	2402	-7.65	30	Pass
Mid	2440	-8.97	30	Pass
High	2480	-10.04	30	Pass
Verdict: Pass				

Subclause 15.247 (d) – Spurious Conducted Emissions				Pass	
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 : 6.0 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.			
Results:		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 6-7.			
Operating frequency (MHz)	Spurious frequency (MHz)	Spurious Level (dBm)	Reference value (dBm)	Delta (dB)	Verdict
2402	7050	-58.85	-8.51	-50.34	Pass
2440	8400	-59.15	-10.69	-48.46	Pass
2480	3300	-59.13	-12.03	-47.10	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 : 6.0 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 section15.205(a), must also comply with the radiated emission limits specified in section 15.209(a).	
Results:	Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and packet types. All three transmit frequency modes comply with the field strength within the restricted bands. There is no spurious found below 30MHz.	
Tx frequency 2402MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4804.000	48.82	74.0 / PK
4804.000	45.20	54.0 / AV
7206.000	38.72	74.0 / PK
7206.000	27.03	54.0 / AV
Tx frequency 2402MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4804.000	39.96	74.0 / PK
4804.000	36.69	54.0 / AV
7206.000	38.16	74.0 / PK
7206.000	26.97	54.0 / AV
Tx frequency 2440MHz Vertical Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4880.000	45.27	74.0 / PK
4880.000	41.78	54.0 / AV
7320.000	37.98	74.0 / PK
7320.000	27.88	54.0 / AV
Tx frequency 2440MHz Horizontal Polarization		
Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
4880.000	37.37	74.0 / PK
4880.000	33.99	54.0 / AV
7320.000	38.89	74.0 / PK
7320.000	27.86	54.0 / AV

Tx frequency 2480MHz			Vertical Polarization		
	Freq MHz		Level dBuV/m		Limit/ Detector dBuV/m
	4960.000		49.99		74.0 / PK
	4960.000		46.28		54.0 / AV
	7440.000		39.28		74.0 / PK
	7440.000		28.64		54.0 / AV
Tx frequency 2480MHz			Horizontal Polarization		
	Freq MHz		Level dBuV/m		Limit/ Detector dBuV/m
	4960.000		40.61		74.0 / PK
	4960.000		36.72		54.0 / AV
	7440.000		39.29		74.0 / PK
	7440.000		25.97		54.0 / AV

Subclause 15.247 (d) – Band Edge Emissions		Pass
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 : 6.0 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.	
Results:	There is no peak found outside any 100 kHz bandwidth of the operating frequency band. For test protocols refer to Appendix 1, page 8.	

Subclause 15.205 – Restricted Bands next to Band-Edge		Pass
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 : 6.0 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).
Results:		There is no peak found in the restricted bands. For test protocols refer to Appendix 1, page 9-12.

Subclause 15.247 (e) – Power Spectral Density		Pass	
Requirement:	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 Span : 1.5 × DTS BW Supply voltage : 6.0 VDC from Battery Temperature : 23°C Humidity : 50%			
Results:	For test protocols please refer to Appendix 1, page 13-14.		
Operating frequency (MHz)	Power density (dBm)	Limit (dBm)	Verdict
2402	-8.11	8.0	Pass
2440	-9.36	8.0	Pass
2480	-10.44	8.0	Pass
Verdict:		Pass	