

50064681 001 164074884 Prüfbericht-Nr.: Seite 1 von 14 Auftrags-Nr.: Test report No.: Order No.: Page 1 of 14 Kunden-Referenz-Nr.: N/A 26.09.2016 Auftragsdatum: Client reference No.: Order date .: BBB Inc. Auftraggeber: 28, Yatap-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, South Korea Client: Prüfgegenstand: Mobile Phone Test item: Bezeichnung / Typ-Nr.: EZ-100 Identification / Type No.: (elemark™, mobihealth) Auftrags-Inhalt: **FCC Certification** Order content: Prüfgrundlage: CFR47 FCC Part 15: Subpart B Section 15.107 Test specification: CFR47 FCC Part 15: Subpart B Section 15.109 Wareneingangsdatum: 08.08.2016 Date of receipt: Prüfmuster-Nr.: STR16098108I-6 Test sample No.: Prüfzeitraum: 08.08.2016 - 07.12.2016 Testing period: Please refer to photo documents Ort der Prüfuna: Shenzhen SEM.Test Place of testing: Technology Co., Ltd. Prüflaboratorium: TÜV Rheinland (Shenzhen) Testing laboratory: Co., Ltd. Prüfergebnis\*: **Pass** Test result\*: geprüft von / tested by: kontrolliert von / reviewed by: 29.12.2016 Lin Lin / Project Manager 29.12.2016 Sam Lin / Technical Certifier **Datum** Name/Stellung Unterschrift Datum Name/Stellung Unterschrift Name/Position Date Signature Date Name/Position Signature Sonstiges / Other: FCC ID: 2AKGP-EZ100 Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt Condition of the test item at delivery: Test item complete and undamaged: 1 = sehr gut \* Legende: 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhalt N/T = nicht getestet P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar Legend: 1 = very good 2 = good3 = satisfactory 4 = sufficient 5 = poorP(ass) = passed a.m. test specifications(s) F(aii) = failed a.m. test specifications(s) 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 only 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 test mark.



**Products** 

Prüfbericht - Nr.: 50064681 001 Test Report No.

Seite 2 von 14 Page 2 of 14

**Test Summary** 

5.1.1 CONDUCTED EMISSIONS

RESULT: Pass

5.1.2 RADIATED EMISSIONS

RESULT: Pass



# Products

# Prüfbericht - Nr.: 50064681 001 Test Report No.

Seite 3 von 14 Page 3 of 14

# Table of Contents

4	Onumer v. Province
1	GENERAL REMARKS
1.1	COMPLEMENTARY MATERIALS
2	TEST SITES5
2.1	TEST FACILITIES5
2.2	LIST OF TEST AND MEASUREMENT INSTRUMENTS
2.3	TRACEABILITY5
2.4	CALIBRATION5
2.5	MEASUREMENT UNCERTAINTY
2.6	LOCATION OF ORIGINAL DATA6
2.7	STATUS OF FACILITY USED FOR TESTING
3	GENERAL PRODUCT INFORMATION
3.1	PRODUCT FUNCTION AND INTENDED USE
3.2	RATINGS AND SYSTEM DETAILS
3.3	INDEPENDENT OPERATION MODES
3.4	Noise Generating and Noise Suppressing Parts
3.5	SUBMITTED DOCUMENTS
4	TEST SET-UP AND OPERATION MODES
4.1	PRINCIPLE OF CONFIGURATION SELECTION
4.2	TEST OPERATION AND TEST SOFTWARE
4.3	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT
4.4	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE
4.5	TEST SETUP DIAGRAM8
5	TEST RESULTS
5.1	Transmitter Requirement & Test Suites
5.1. 5.1	
0.7.	2 Hadiatos Emissione
6	PHOTOGRAPHS OF THE TEST SET-UP
7	LIST OF TABLES
8	LIST OF PHOTOGRAPHS



Products

Prüfbericht - Nr.: Test Report No.	50064681 001	Seite 4 von 14 Page 4 of 14			
1 General Remarks 1.1 Complementary Materials					
All attachments are integral parts of this test report. This applies especially to the following appendix: Appendix A: Test Results of Conducted Emissions and Radiated Emissions					



**Produkte Products** 

Prüfbericht - Nr.: 50064681 001

Seite 5 von 14 Page 5 of 14

#### **Test Sites**

Test Report No.

#### **Test Facilities**

Shenzhen SEM.Test Technology Co., Ltd. 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, China

FCC Registration No.: 934118

The tests at the test sites have been conducted under the supervision of a TÜV engineer.

#### 2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Shenzhen SEM.Test Technology Co., Ltd.

Radiated Emissions				
Equipment Manufacturer		Model No.	Model No. Serial No.	
Spectrum Analyzer	Agilent	E4407B	MY41440400	03.06.2017
Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	03.06.2017
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	03.06.2017
Amplifier	Agilent	8447F	3113A06717	03.06.2017
Amplifier	C&D	PAP-1G18	2002	03.06.2017
Broadband Antenna	Schwarz beck	VULB9163	9163-333	03.06.2017
Horn Antenna	ETS	3117	00086197	03.06.2017
Horn Antenna	ETS	3116B	00088203	03.06.2017
Loop Antenna	Schwarz beck	FMZB 1516	9773	03.06.2017
Conducted Emissions				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	03.06.2017
L.I.S.N	Schwarz beck	NSLK8126	8126-224	03.06.2017
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	03.06.2017

#### 2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

#### 2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

#### 2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table:

Table 2: Measurement Uncertainty

Items	Extended Uncertainty	
Conducted Emissions	± 2.88 dB	
Radiated Emissions (30-1000MHz)	± 5.10 dB	



Produkte Products

Prüfbericht - Nr.: 50064681 001

Seite 6 von 14 Page 6 of 14

Test Report No.

Radiated Emissions (above 1000MHz) ± 5.10 dB

#### 2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

# 2.7 Status of Facility Used for Testing

The Shenzhen SEM.Test Technology Co., Ltd. Test facility located at 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.



**Produkte Products** 

50064681 001 Prüfbericht - Nr.:

Seite 7 von 14 Page 7 of 14 Test Report No.

#### **General Product Information**

#### 3.1 Product Function and Intended Use

The EUT is a Mobile Phone which supports Data transfer, Video playing function etc. It also supports GSM, WCDMA, LTE, Bluetooth (dual mode), WiFi 802.11 b/g/n and GPS wireless technology. This report is only for JBP. Other functions are reported in the related reports.

For details refer to the User Manual, Technical Description and Circuit Diagram.

#### 3.2 Ratings and System Details

Table 3: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment	Mobile Phone
Type Designation	EZ-100
Trade Mark	elemark™, mobihealth
FCC ID	2AKGP-EZ100
Operating Temperature Range	-30°C ~ +50 °C
Highest internal source	1GHz
Operating Voltage	USB Operated
Testing Voltage	5Vdc from PC with input 120Vac, 60Hz

#### 3.3 Independent Operation Modes

The basic operation modes are:

A.1 Data Transfer

#### 3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

#### 3.5 Submitted Documents

- Application Form

- Block Diagram

- User Manual

- FCC/IC Label and Location Info

- Photo Document

Products

Prüfbericht - Nr.: 50064681 001

Seite 8 von 14 *Page 8 of 14* 

Test Report No.

# 4 Test Set-up and Operation Modes

#### 4.1 Principle of Configuration Selection

**Emissions:** The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

#### 4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.4: 2014.

#### 4.3 Special Accessories and Auxiliary Equipment

Table 4: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N	Rating
Desktop	DELL	OPTIPLEX 380	N/A	N/A
TF card	Kingston	Class 10	N/A	N/A
AC/DC Adapter	BBB Inc	HNFG050100UE	N/A	Input: 100-240Vac, 50/60Hz Output: 5Vdc, 1A
USB cable	BBB Inc	Unshielded	N/A	Length: 1.0m
earphone	BBB Inc	Unshielded	N/A	Length: 1.2m

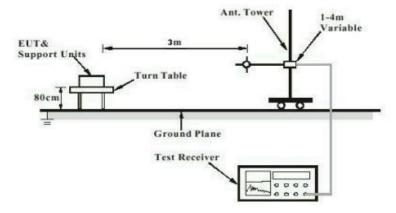
#### 4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

#### 4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)





Products

Test Report No.

Prüfbericht - Nr.: 50064681 001

Seite 9 von 14 Page 9 of 14

Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

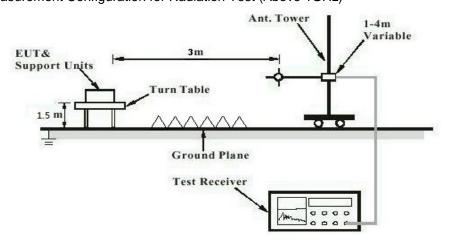
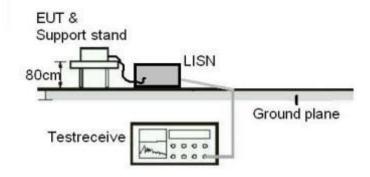


Diagram of Measurement Configuration for Mains Conduction Measurement





**Products** 

 Prüfbericht - Nr.:
 50064681 001
 Seite 10 von 14

 Test Report No.
 Page 10 of 14

#### 5 Test Results

#### 5.1 Transmitter Requirement & Test Suites

#### 5.1.1 Conducted Emissions

RESULT: Pass

**Test Specification** 

Test standard : FCC Part 15.107(a)
Basic standard : ANSI C63.4: 2014
Frequency range : 0.15MHz to 30MHz

Classification : Class B

Limits : FCC Part 15.107(a) Kind of test site : Shielded Room

**Test Setup** 

Date of testing : 25.10.2016

Input voltage : 5Vdc from PC with input 120Vac, 60Hz

Operation mode : A.1

Earthing : Not connected

Refer to 50064681 001 Appendix A for detail test data.



**Products** 

 Prüfbericht - Nr.:
 50064681 001
 Seite 11 von 14

 Test Report No.
 Page 11 of 14

#### 5.1.2 Radiated Emissions

RESULT: Pass

**Test Specification** 

Test standard : FCC Part 15.109(a)
Basic standard : ANSI C63.4: 2014
Frequency range : 30MHz to 6000MHz

Classification : Class B

Limits : FCC Part 15.109(a)

Kind of test site : 3m Semi-anechoic Chamber

**Test Setup** 

Date of testing : 25.10.2016

Input voltage : 5Vdc from PC with input 120Vac, 60Hz

Operation mode : A.1

Earthing : Not connected

Ambient temperature :  $23 \, ^{\circ}\text{C}$ Relative humidity :  $48 \, ^{\circ}\text{M}$ Atmospheric pressure :  $101 \, \text{kPa}$ 

Refer to 50064681 001 Appendix A for detail test data.