



## Shenzhen Huaxia Testing Technology Co., Ltd

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

Telephone: +86-755-26648640  
Fax: +86-755-26648637  
Website: [www.cqa-cert.com](http://www.cqa-cert.com)

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# RF Exposure Evaluation Report

**Report No. :** CQASZ20190800696E-02  
**Applicant:** Hopwell Electronics  
**Address of Applicant:** RM 1507,Tower A,Viking Technology & Business Centre,93 Ta Chuen Ping St,Kwai Chung, Hongkong, China  
**Equipment Under Test (EUT):**  
**EUT Name:** Car Entertainment System  
**All Model No.:** BALTIMORE650BD, ATLANTA740  
**Test Model No.:** BALTIMORE650BD  
**Brand Name:** BLAUPUNKT  
**FCC ID:** 2ABQZ-650BD  
**Standards:** 47 CFR Part 1.1307  
47 CFR Part 2.1093  
KDB447498D01 General RF Exposure Guidance v06  
**Date of Receipt:** 2019-08-09  
**Date of Test:** 2019-08-09 to 2019-08-26  
**Date of Issue:** 2019-08-26  
**Test Result :** **PASS\***

**Tested By:** Tom Chen.  
(Tom Chen)

**Reviewed By:** Sheek, Luo  
(Sheek Luo)

**Approved By:** Jack Ai  
(Jack Ai)



\* In the configuration tested, the EUT complied with the standards specified above.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

## 1 Version

### Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20190800696E-02	Rev.01	Initial report	2019-08-16

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### 3 General Information

#### 3.1 Client Information

Applicant:	Hopwell Electronics
Address of Applicant:	RM 1507, Tower A, Viking Technology & Business Centre, 93 Ta Chuen Ping St, Kwai Chung, Hongkong, China
Manufacturer:	Hopwell Electronics
Address of Manufacturer:	RM 1507, Tower A, Viking Technology & Business Centre, 93 Ta Chuen Ping St, Kwai Chung, Hongkong, China

#### 3.2 General Description of EUT

Product Name:	Car Entertainment System
All Model No.:	BALTIMORE650BD, ATLANTA740
Test Model No.:	BALTIMORE650BD
Trade Mark:	BLAUPUNKT
Hardware Version:	C200MB-V1.3-2019.04.20
Software Version:	JST-V1.1-20190813-0.1
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V4.1
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Transfer Rate:	1Mbps/2Mbps/3Mbps
Number of Channel:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Product Type:	<input type="checkbox"/> Mobile <input type="checkbox"/> Portable <input checked="" type="checkbox"/> Fix Location
Test Software of EUT:	AppoTech RF Control Kit V4.2.25 (manufacturer declare )
Antenna Type:	PCB antenna
Antenna Gain:	2dBi
Power Supply:	DC 12V

Remark:

Model No.: BALTIMORE650BD, ATLANTA740

Only the model BALTIMORE650BD was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, and just model names and color are different for the marketing requirement.

## 4 SAR Evaluation

### 4.1 RF Exposure Compliance Requirement

#### 4.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

##### 4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

#### 4.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$$\left[ \frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

f(GHz) is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation<sup>17</sup>

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm is applied to determine SAR test exclusion

### 4.1.3 EUT RF Exposure

#### Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	0.300	0±1	1	1.259
Middle(2441MHz)	1.660	2±1	3	1.995
Highest(2480MHz)	2.570	2±1	3	1.995
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-1.640	-1±1	0	1.000
Middle(2441MHz)	0.850	1±1	2	1.585
Highest(2480MHz)	1.830	1±1	2	1.585
8DPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-1.330	-1±1	0	1.000
Middle(2441MHz)	1.010	1±1	2	1.585
Highest(2480MHz)	1.990	2±1	3	1.995

Worst case: GFSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	0.300	0±1	1	1.259	0.39	3.0
Middle (2441MHz)	1.660	2±1	3	1.995	0.62	
Highest (2480MHz)	2.570	2±1	3	1.995	0.63	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20190800696E-01