PRT/800082-01/01

ELECTROTECHNICAL TESTING INSTITUTE
Pod lisem 129
171 02 Praha 8 - Troja

No. of pages: 16
No. of annexes/No. of an. pages:-/-
Ref.:Nov

No. of the Test Report: 800082-01/01

Issued:16.1.2008

TEST REPORT

Name of product:	Professional Bluetooth Hands-Free Car Kits
Type of product:	H8122, H8123, TBGEN-, TBCIG-, TBTOY-, TBHON-, TBNIS-, TBMIT-, TBSUV-
Ratings:	9-25V DC , Transmitting Frequency: 2402-2480MHz
Serial number:	---
Manufacturer:	Shenzhen HRT Electronics Co., Ltd. Building 2, Jingnan Road, Huamei Industrial Zone, Buji, Shenzhen Guangdong, 518112 Čína / P.R.China
Production site:	See manufacturer
EZÚ product coding system:	070199
Ordering firm:	Shenzhen HRT Electronics Co., Ltd. Building 2, Jingnan Road, Huamei Industrial Zone, Buji, Shenzhen Guangdong, 518112 Čína / P.R.China
Number of tested samples:	1
Samples submitted on:	15.1.2008
Location of testing:	Electrotechnical Testing Institute
Tested from	15.1.2008 **through** 16.1.2008
Other data:	Type representative H8122 was tested.
The product was tested according to:	ECE 10.02:2000

Compiled by: V.Nováková

ZKUŠEBNÍ LABORATOŘ Elektrotechnický zkušební ústav, s.p. *7*

Approved by: M.Vondra
Testing laboratory technical manager

Phone: +420 266104111 **Fax: +420 284680070** **E-mail: testing@ezu.cz**
http://www.ezu.cz

5	**MARKING**			
5.1	Vehicle or ESA has approval number			P
5.2	Presence of markings			
5.2.1.	Vehicle has approval mark according to paragraph 5.3			N
5.2.2.	ESA has approval mark according to paragraph 5.3			P
	No marking for electrical/electronic systems built into vehicles			N
5.3	On each vehicle conforming to a type approved under this Regulation must be affixed approval mark			N
5.3.1.	A circle containing the letter "E", followed by the distinguishing number of the country			P
6	**SPECIFICATION**			
6.2	Broadband electromagnetic disturbances generated by vehicles with spark ignition			
6.2.1.	For the method - see annex 4			
6.2.2	Limit for broadband electromagnetic disturbances generated by the vehicle.			
6.2.2.1.	Distance between the antenna and vehicle 10.0 ± 0.2 m			
	Frequency band [MHz]	Limit [dBµV/m]	Limit [µV/m]	
	30-75	34	50	N
	75-400	34-45 increase logarithmically	50-180 increase logarithmically	N
	400-1000	45	180	N
6.2.2.2.	Distance between the antenna and vehicle 3.0 ± 0.05 m			
	Frequency band [MHz]	Limit [dBµV/m]	Limit [µV/m]	
	30-75	44	160	N
	75-400	44-55 increase logarithmically	160-562 increase logarithmically	N
	400-1000	55	562	N
6.2.2.3.	The measured values are 2.0 dB, (20 %) below the limit			N
6.3.	Specifications concerning narrow band electromagnetic disturbances generated by vehicles.			
6.3.1.	For the method - see annex 5			
6.3.2.	Narrowband electromagnetic disturbances generated by the vehicle.			
6.3.2.1.	Distance between the antenna and vehicle 10.0 ± 0.2 m			
	Frequency band [MHz]	Limit [dBµV/m]	Limit [µV/m]	
	30-75	24	16	N
	75-400	24-35 increase logarithmically	16-56 increase logarithmically	N
	400-1000	35	56	N

6.3.2.1.	Distance between the antenna and vehicle 3.0 ± 0.05 m			
	Frequency band [MHz]	Limit [dBμV/m]	Limit [μV/m]	
	30-75	34	50	N
	75-400	34-45 increase logarithmically	50-180 increase logarithmically	N
	400-1000	45	180	N
6.3.2.3.	The measured values are 2.0 dB, (20 %) below the limit			N
6.3.2.4.	Measurement according to annex 5, paragraph 1.3 the value < 20 dBμV(10 μV) frequency band - 88-108 MHz The vehicle conform to the limits without further testing.			N
6.4	Immunity of vehicles to electromagnetic radiation.			
6.4.1.	For the method - see annex 6			
6.4.2.1.	Field strength reference limit shall be 24 V/m r.m.s. in over 90 % of the 20 MHz to 1000 MHz frequency band			N
	and 20 V/m r.m.s. over the whole 20 MHz to 1000 MHz frequency band			N
6.4.2.2.	During the tests subjected to a field strength 25% of above the reference level - no abnormal change in the speed of the driving wheels of the vehicle, - no degradation of performance which would cause confusion to other road users - no degradation in the driver's direct control of the vehicle can be observed by the driver or other road users			N
6.5.	Broadband electromagnetic disturbances generated by ESAs.			
6.5.1.	For the method - see annex 7			
6.5.2.1.	If measurements are made using the method described in annex 7			
	Frequency band [MHz]	Limit [dBμV/m]	Limit [μV/m]	
	30-75	64-54 increase logarithmically	1600-500 increase logarithmically	P
	75-400	54-65 increase logarithmically	500-1800 increase logarithmically	P
	400-1000	65	1800	P
6.5.2.2.	The measured values are 2.0 dB, (20 %) below the limit			P

6.6.	Narrowband electromagnetic disturbances generated by ESAs.			
6.6.1.	For the method - see annex 8			
6.6.2.1.	If measurements are made using the method described in annex 8			
	frequency band [MHz]	Limit [dBμV/m]	Limit [μV/m]	
	30-75	54-44 increase logarithmically	500-160 increase logarithmically	P
	75-400	44-55 increase logarithmically	160-562 increase logarithmically	P
	400-1000	55	562	P
6.6.2.2.	The measured values are 2.0 dB, (20 %) below the limit			P
6.7.	Immunity of ESAs to electromagnetic radiation.			
6.7.1.	For the method - see annex 9			
6.7.2.1.	Reference levels shall be 48 V/m for the 150 mm stripline testing method			N
	12V/m for hhe 800mm stripline testing method			N
	60 V/m for the TEM cell testing method			N
	48 mA for the bulk current injection			N
	24 Volts/m for the free field test method			N
6.7.2.2.	The ESA representative at a field strength 25 % above the reference limit - not exhibit any malfunction which would cause any degradation of performance which could cause confusion to other road users - no degradation in the driver's direct control of a vehicle fitted with the system			N
6.8.	Exceptions			
6.8.1.	Vehicle or electrical/electronic system or ESA does not include an electronic oscillator with an operating frequency greater than 9 kHz, it shall be deemed to conform to paragraphs 6.3.2. or 6.6.2. above and to annexes 5 and 8.			N
6.8.2.	Vehicles which do not have electrical/electronic systems or ESAs involved in the direct control of the vehicle need not be tested for immunity and shall be deemed to conform to paragraph 6.4. above and to annex 6.			N
6.8.3.	ESAs whose functions are not essential to the direct control of the vehicle need not be tested for immunity and shall be deemed to conform to paragraph 6.7. above and to annex 9.			P
6.8.4.	No type approval test for electrostatic discharge is necessary			N
6.8.5.	No type approval test for conducted transients is deemed necessary			N

Clause	***Test report according to*** ECE 10.02:2000 No.800082-01/01 Type: H8122	Result

Measurement of interfering radiation in the 30-1000 MHz Band
ECE10.02:2000

Product: Professional Bluetooth Hands-Free Car Kits

Type: H8122

Conditions of operation during measurement:
Full load

Measurement uncertainty: 4 dB.

Temperature: 28°C Rel. Humidity: 57%

Mounting jig, power supply, load: ---

Measuring arrangement:
according to: ECE10.02:2000 , annex 7 ,8

Note: ---

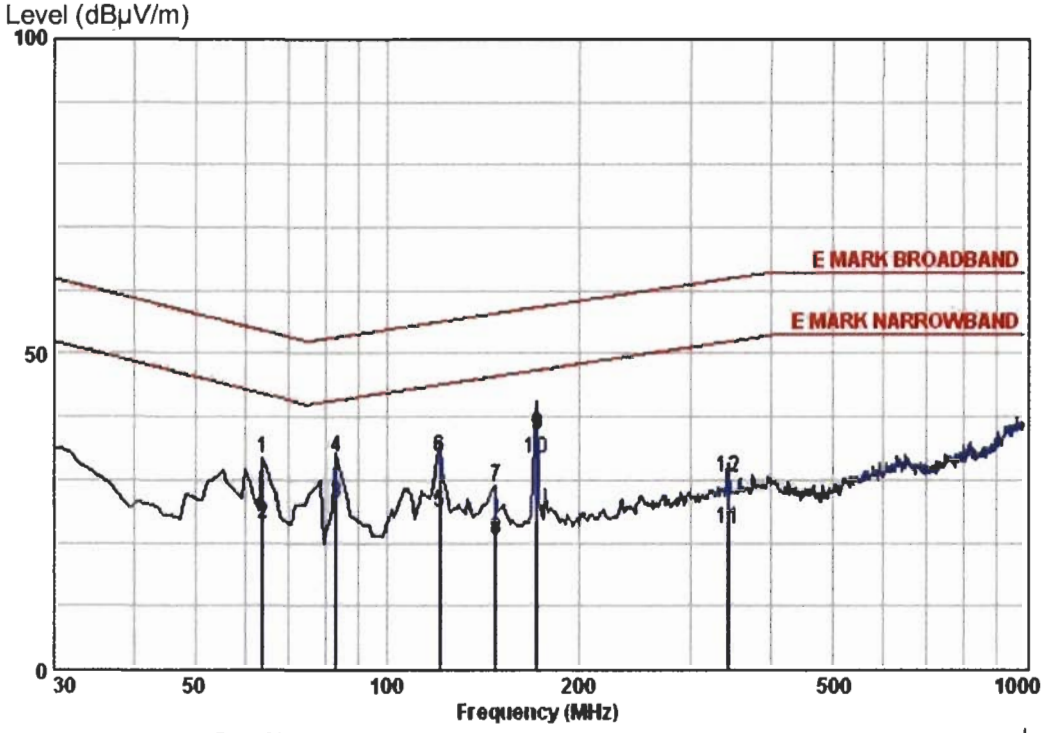
Test result: Pass

Measured by: Vondra **Date:** 16.1.2008 **Measured at:**EZÚ

Clause	***Test report according to*** ECE 10.02:2000 No.800082-01/01 Type: H8122	Result

Product: Professional Bluetooth Hands-Free Car Kits

Type : H8122



Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
63.950	48.21	10.46	0.00	25.10	33.56	53.74	-20.18	PEAK
63.950	37.78	10.46	0.00	25.10	23.13	53.74	-30.61	QP
83.350	43.57	7.95	0.00	25.13	26.39	52.69	-26.31	QP
83.350	50.99	7.95	0.00	25.13	33.80	52.69	-18.89	PEAK
121.180	36.71	13.55	0.00	25.10	25.16	55.15	-29.99	QP
121.180	45.35	13.55	0.00	25.10	33.80	55.15	-21.35	PEAK
148.340	41.46	12.51	0.00	24.93	29.04	56.48	-27.44	PEAK
148.340	33.26	12.51	0.00	24.93	20.84	56.48	-35.64	QP
171.620	50.16	11.89	0.00	24.82	37.23	57.44	-20.21	PEAK
171.620	46.52	11.89	0.00	24.82	33.59	57.44	-23.85	QP
342.340	31.50	15.58	0.00	24.67	22.40	61.98	-39.57	QP
342.340	39.65	15.58	0.00	24.67	30.56	61.98	-31.42	PEAK

Note: vertical, 9.0V power on,
Frequency of transmitter is without measuring range.

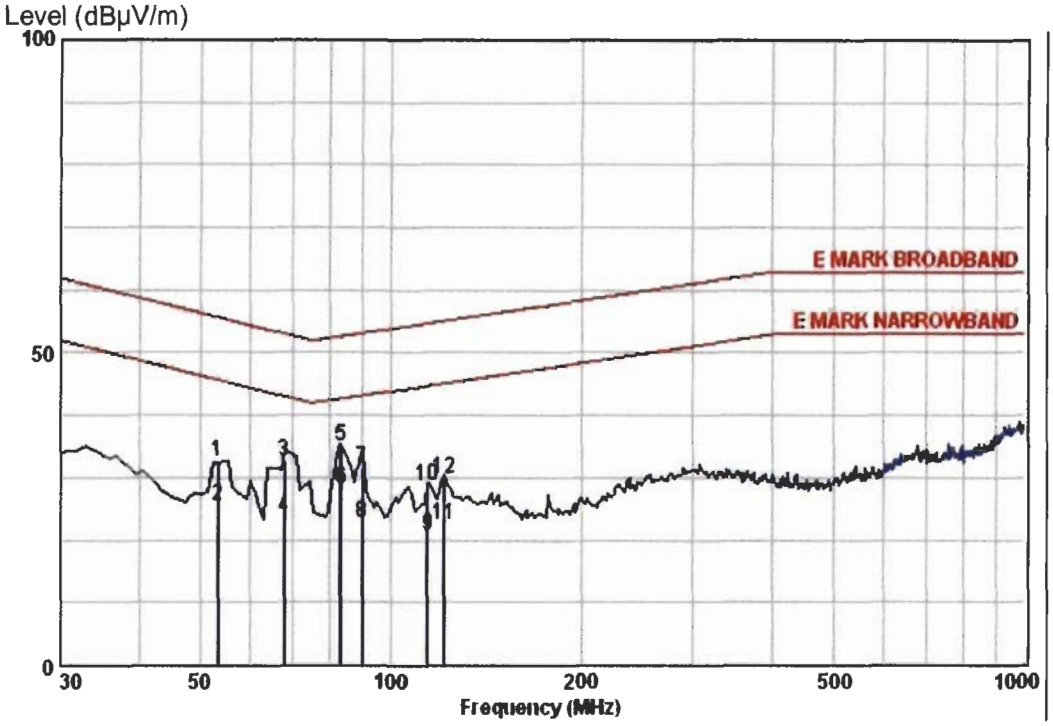
Test result: Pass

Measured by: Vondra **Date:** 16.1.2008 **Measured at:**EZÚ

Clause	***Test report according to*** ECE 10.02:2000 No.800082-01/01 Type: H8122	Result

Product: Professional Bluetooth Hands-Free Car Kits

Type : H8122



Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
53.280	45.38	12.53	0.00	25.23	32.68	55.73	-23.05	PEAK
53.280	38.29	12.53	0.00	25.23	25.59	55.73	-30.15	QP
67.830	48.43	9.32	0.00	25.10	32.66	53.10	-20.44	PEAK
67.830	39.53	9.32	0.00	25.10	23.76	53.10	-29.34	QP
83.350	51.23	9.12	0.00	25.13	35.21	52.69	-17.48	PEAK
83.350	44.23	9.12	0.00	25.13	28.22	52.69	-24.48	QP
90.140	46.52	10.16	0.00	25.20	31.47	53.21	-21.73	PEAK
90.140	38.01	10.16	0.00	25.20	22.97	53.21	-30.24	QP
114.390	33.12	13.02	0.00	25.10	21.05	54.77	-33.73	QP
114.390	40.96	13.02	0.00	25.10	28.88	54.77	-25.89	PEAK
121.180	34.12	13.72	0.00	25.10	22.74	55.15	-32.41	QP
121.180	41.35	13.72	0.00	25.10	29.97	55.15	-25.18	PEAK

Note: horizontal, 9.0V power on,
Frequency of transmitter is without measuring range.

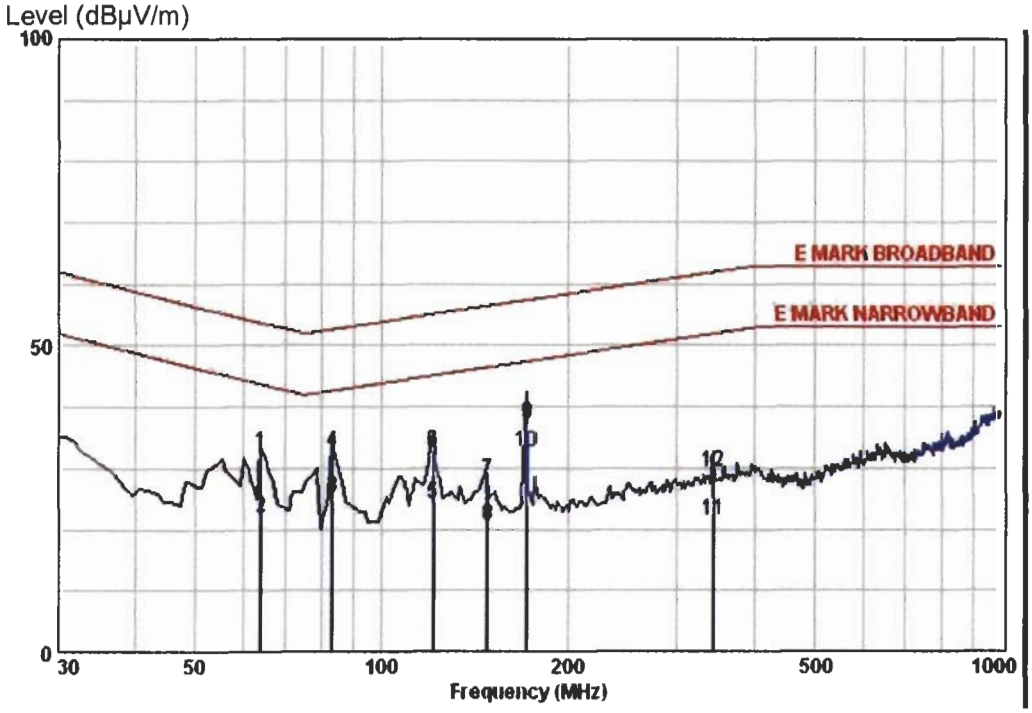
Test result: Pass

Measured by: Vondra **Date:** 16.1.2008 **Measured at:**EZÚ

Clause	***Test report according to*** ECE 10.02:2000 No.800082-01/01 Type: H8122	Result

Product: Professional Bluetooth Hands-Free Car Kits

Type : H8122



Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
63.950	47.21	10.46	0.00	25.10	32.56	53.74	-21.18	PEAK
63.950	36.78	10.46	0.00	25.10	22.13	53.74	-31.61	QP
83.350	42.57	7.95	0.00	25.13	25.39	52.69	-27.31	QP
83.350	49.99	7.95	0.00	25.13	32.80	52.69	-19.89	PEAK
121.180	35.71	13.55	0.00	25.10	24.16	55.15	-30.99	QP
121.180	44.35	13.55	0.00	25.10	32.80	55.15	-22.35	PEAK
148.340	40.46	12.51	0.00	24.93	28.04	56.48	-28.44	PEAK
148.340	33.26	12.51	0.00	24.93	20.84	56.48	-35.64	QP
171.620	50.16	11.89	0.00	24.82	37.23	57.44	-20.21	PEAK
171.620	45.52	11.89	0.00	24.82	32.59	57.44	-24.85	QP
342.340	30.50	15.58	0.00	24.67	21.40	61.98	-40.57	QP
342.340	38.65	15.58	0.00	24.67	29.56	61.98	-32.42	PEAK

Note: vertical, 13,5V power on,
Frequency of transmitter is without measuring range.

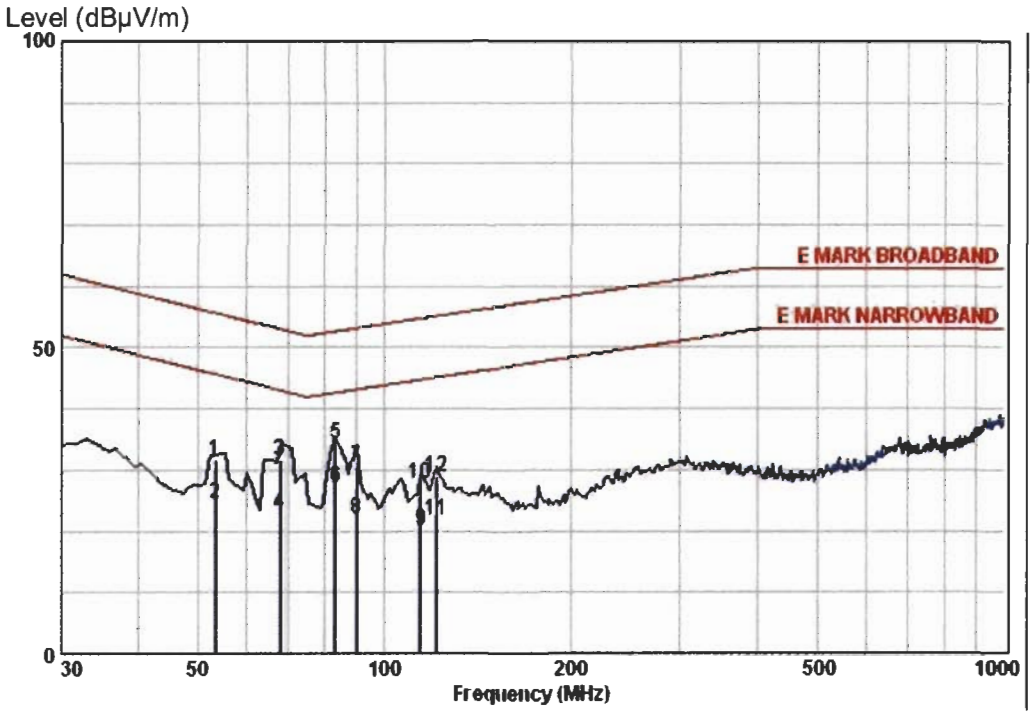
Test result: Pass

Measured by: Vondra **Date:** 16.1.2008 **Measured at:**EZÚ

Clause	***Test report according to*** ECE 10.02:2000 No.800082-01/01 Type: H8122	Result

Product: Professional Bluetooth Hands-Free Car Kits

Type : H8122



Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
53.280	44.38	12.53	0.00	25.23	31.68	55.73	-24.05	PEAK
53.280	37.29	12.53	0.00	25.23	24.59	55.73	-31.15	QP
67.830	47.43	9.32	0.00	25.10	31.66	53.10	-21.44	PEAK
67.830	38.53	9.32	0.00	25.10	22.76	53.10	-30.34	QP
83.350	50.23	9.12	0.00	25.13	34.21	52.69	-18.48	PEAK
83.350	43.23	9.12	0.00	25.13	27.22	52.69	-25.48	QP
90.140	45.52	10.16	0.00	25.20	30.47	53.21	-22.73	PEAK
90.140	37.01	10.16	0.00	25.20	21.97	53.21	-31.24	QP
114.390	32.12	13.02	0.00	25.10	20.05	54.77	-34.73	QP
114.390	39.96	13.02	0.00	25.10	27.88	54.77	-26.89	PEAK
121.180	33.12	13.72	0.00	25.10	21.74	55.15	-33.41	QP
121.180	40.35	13.72	0.00	25.10	28.97	55.15	-26.18	PEAK

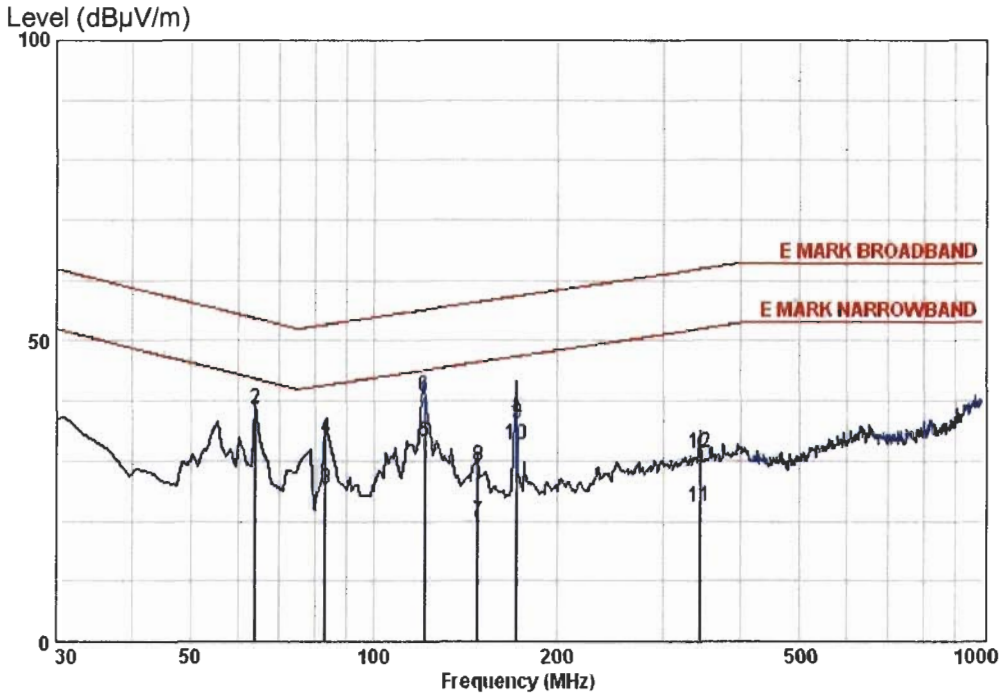
Note: horizontal, 13,5V power on,
Frequency of transmitter is without measuring range.

Test result: Pass

Measured by: Vohdra **Date:** 16.1.2008 **Measured at:**EZÚ

Product: Professional Bluetooth Hands-Free Car Kits

Type : H8122



Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
63.950	43.78	10.46	0.00	25.10	29.13	53.74	-24.61	QP
63.950	53.21	10.46	0.00	25.10	38.56	53.74	-15.18	PEAK
83.350	42.57	7.95	0.00	25.13	25.39	52.69	-27.31	QP
83.350	50.99	7.95	0.00	25.13	33.80	52.69	-18.89	PEAK
121.180	44.71	13.55	0.00	25.10	33.16	55.15	-21.99	QP
121.180	52.35	13.55	0.00	25.10	40.80	55.15	-14.35	PEAK
148.340	32.26	12.51	0.00	24.93	19.84	56.48	-36.64	QP
148.340	41.46	12.51	0.00	24.93	29.04	56.48	-27.44	PEAK
171.620	49.16	11.89	0.00	24.82	36.23	57.44	-21.21	PEAK
171.620	45.52	11.89	0.00	24.82	32.59	57.44	-24.85	QP
342.340	31.50	15.58	0.00	24.67	22.40	61.98	-39.57	QP
342.340	40.47	15.58	0.00	24.67	31.38	61.98	-30.60	PEAK

Note: vertical, 27.0V power on,
Frequency of transmitter is without measuring range.

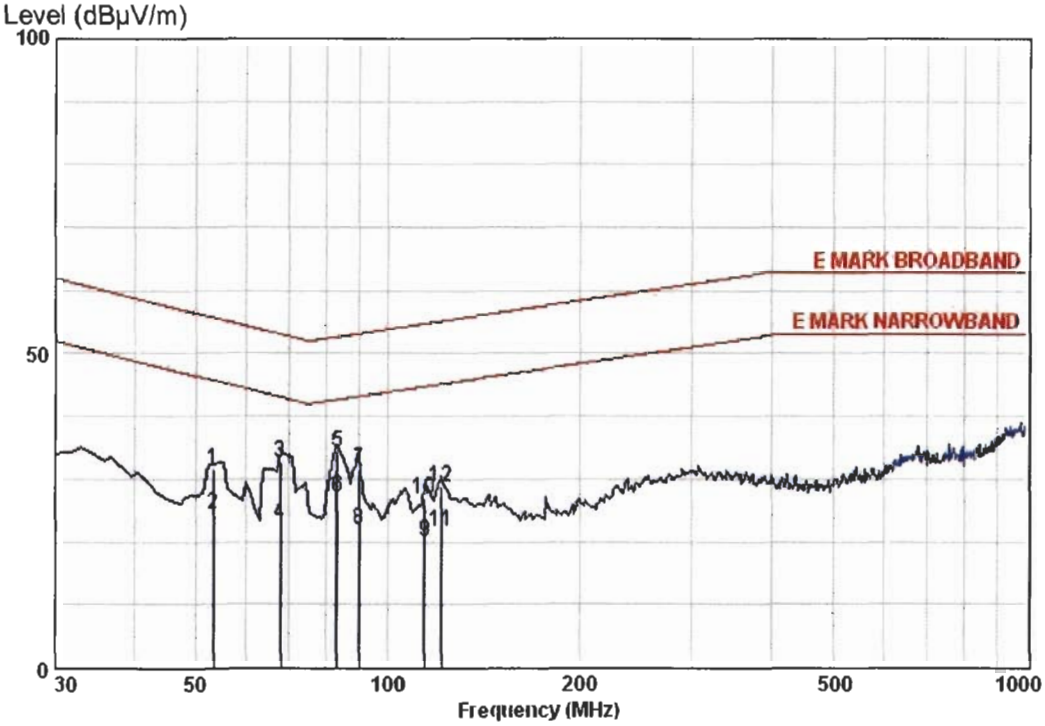
Test result: Pass

Measured by: Vondra **Date:** 16.1.2008 **Measured at:**EZÚ

Clause	***Test report according to*** ECE 10.02:2000 No.800082-01/01 Type: H8122	Result

Product: Professional Bluetooth Hands-Free Car Kits

Type : H8122



Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
53.280	44.38	12.53	0.00	25.23	31.68	55.73	-24.05	PEAK
53.280	37.29	12.53	0.00	25.23	24.59	55.73	-31.15	QP
67.830	48.43	9.32	0.00	25.10	32.66	53.10	-20.44	PEAK
67.830	38.53	9.32	0.00	25.10	22.76	53.10	-30.34	QP
83.350	50.23	9.12	0.00	25.13	34.21	52.69	-18.48	PEAK
83.350	43.23	9.12	0.00	25.13	27.22	52.69	-25.48	QP
90.140	46.52	10.16	0.00	25.20	31.47	53.21	-21.73	PEAK
90.140	37.01	10.16	0.00	25.20	21.97	53.21	-31.24	QP
114.390	32.12	13.02	0.00	25.10	20.05	54.77	-34.73	QP
114.390	38.96	13.02	0.00	25.10	26.88	54.77	-27.89	PEAK
121.180	33.12	13.72	0.00	25.10	21.74	55.15	-33.41	QP
121.180	40.35	13.72	0.00	25.10	28.97	55.15	-26.18	PEAK

Note: horizontal, 27.0V power on,
Frequency of transmitter is without measuring range.

Test result: Pass

Measured by: Vondra **Date:** 16.1.2008 **Measured at:**EZÚ

Clause	***Test report according to*** ECE 10.02:2000 No.800082-01/01 Type: H8122	Result

Used test equipments

☒ Test receiver RaS	ESIB26	110097	05.2008
☐ Test receiver RaS	ESVP	95-5821	02.2009
☐ Test receiver RaS	ESS	96-5876	11.2008
☒ Artificial mains RaS	ESH3-Z5	95-5821/2	02.2008
☒ Antenna Frankonia	BTA-M	00-6321	08.2009
☐ Absorbing clamp	MDS-21	92-5425	09.2010
☐ Supply source EM TEST	HFS300	98-6042	
☐ Isotropic field mon AMPLIFIER RES.	FM2000	96-5875/3	04.2008
☐ Isotropic field probe AMPLIFIER RES.	FP2000	96-5875/2	04.2008
☐ Amplifier BONN ELEKTRONIK	BLWA0810-100	96-5871	
☐ Amplifier BONN ELEKTRONIK	BSA0115-50	98-6038	
☐ Amplifier MILMEGA	AS0822-100	98-6038	
☐ Signal. generator PHILIPS	PM5390	88-5818	
☐ Process controller RaS	PSA5	95-5824/1	
☐ Spectrum monitor RaS	EZM	95-5826	
☐ XY-Plotter RaS	DOP2	95-5827	
☐ Probe RFT	TK12	700044	09.2010
☐ EM clamp Schaffner		6039	08.2008
☐ Coupling/dec. EM TEST	CDNxxx		
☐ Coupling. SHAFNER	Txxx		
☐ Antenna ADVANTEST	TR17206	96-5878	
☐ Antenna R+S	EMV-A23/ 95	96-5878	
☐ Antenna R+S	HL023A1		
☐ indicator of power		110057	2.2009
☐ Current probe	CT - 5		
☐ Current probe	AM503	79-4221	
☐ ferite clamp 1-1000 MHz	Z-24	10003	
☒ Anechoic chamber EZU			
☐ RadiSense		110117	10.2008
☒ Compact automotive generator	UCS200M		
☒ Voltage drop simulator	VDS200B1		

Cables:

☐ K11, K13a , K15 , ESH3-Z2
☐ K14 , K15a , K16
☐ K7a , K9a ,K1, ESH3-Z2
☐ K19 ☐ K23 ☒ K24

EZU equipments:

☐ Measured coil
☒ Isolated voltage power supply
☐ Stripline
☒ measuring scale

PICTURES OF EUT –H8122

Photo No.1 - front view

Photo No.2 - internal view

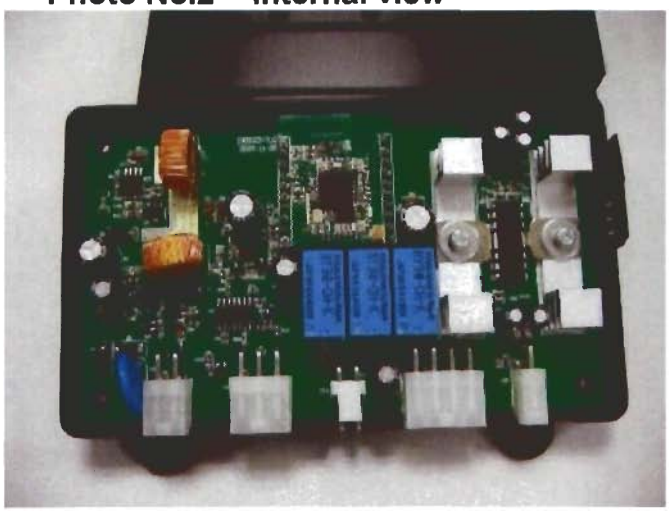
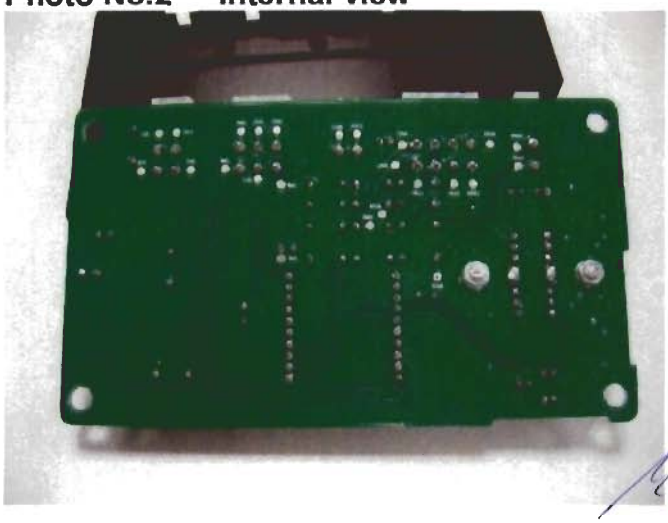


Photo No.2 - internal view



Model□H8122

Professional Bluetooth Hands-Free Car Kits
Model: H8122 Input: DC 9-25V E8 10R-02XXXX
Transmitting Frequency: 2402-2480MHz
SHENZHEN HRT ELECTRONICS

Model□H8123

Professional Bluetooth Hands-Free Car Kits
Model: H8123 Input: DC 9-25V E8 10R-02XXXX
Transmitting Frequency: 2402-2480MHz
SHENZHEN HRT ELECTRONICS

Model□TBGEN-

Professional Bluetooth Hands-Free Car Kits
Model: TBGEN- Input: DC 9-25 E8 10R-02XXXX
Transmitting Frequency: 2402-2480MHz
SHENZHEN HRT ELECTRONICS

Model□TBCIG-

Professional Bluetooth Hands-Free Car Kits
Model: TBCIG- Input: DC 9-25V E8 10R-02XXXX
Transmitting Frequency: 2402-2480MHz
SHENZHEN HRT ELECTRONICS

Model□TBTOY-

Professional Bluetooth Hands-Free Car Kits
Model: TBTOY- Input: DC 9-25V E8 10R-02XXXX
Transmitting Frequency: 2402-2480MHz
SHENZHEN HRT ELECTRONICS CO..

Model□TBHON-

Professional Bluetooth Hands-Free Car Kits
Model: TBHON- Input: DC 9-25 E8 10R-02XXXX
Transmitting Frequency: 2402-2480MHz
SHENZHEN HRT ELECTRONICS

Model□TBNIS-

Professional Bluetooth Hands-Free Car Kits
Model: TBNIS- Input: DC 9-25V E8 10R-02XXXX
Transmitting Frequency: 2402-2480MHz
SHENZHEN HRT ELECTRONICS

Model□TBMIT-

Professional Bluetooth Hands-Free Car Kits
Model: TBMIT- Input: DC 9-25V E8 10R-02XXXX
Transmitting Frequency: 2402-2480MHz
SHENZHEN HRT ELECTRONICS

Model□TBSUV-

Professional Bluetooth Hands-Free Car Kits
Model: TBSUV- Input: DC 9-25 E8 10R-02XXXX
Transmitting Frequency: 2402-2480MHz
SHENZHEN HRT ELECTRONICS