

Report No.: JYTSZ-R12-2200205

FCC RF Test Report

Applicant:	Todos Industrial Limited
Address of Applicant:	Room 308, building A3, Fuhai information port, Fuhai street, Bao'an District
Equipment Under Test (El	UT)
Product Name:	Baby Anti Abandonment Car Seat key
Model No.:	Hiup key H6, 15671 - BABY CAR SEAT ALERT KEYCHAIN, TBSAV-3D, A1, A2, A3, AX, B1, B2, B3, BX, C1, C2, C3, CX. (X can be " 0-9", "az")
Trade Mark:	hiup, Tamotsu, Aprix, Todos
FCC ID:	2AZQ6-KEYH6
Applicable Standards:	FCC CFR Title 47 Part 15C (§15.247)
Date of Sample Receipt:	17 Feb., 2022
Date of Test:	18 Feb., to 21 Apr., 2022
Date of Report Issued:	22 Apr., 2022
Test Result:	PASS

Tested by:	Make OU	Date:	22 Apr., 2022
Reviewed by:	Test Engineer	Date:	22 Apr., 2022
	三尺kojeot Engineer 三、検験検測支用意		
Approved by:	Prove Carsed	Date:	22 Apr., 2022
	Manager V		

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in above the application standard version. Test results reported herein relate only to the item(s) tested.

This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.



2 Version

Version No.	Date	Description
00	22 Apr., 2022	Original



3 Contents

			Page
1	Cov	er Page	1
2	Vers	sion	2
3	Con	tents	3
4		eral Information	
4	Gen		4
	4.1	Client Information	
	4.2	General Description of E.U.T.	4
	4.3	Test Mode and Test Environment	5
	4.4	Description of Support Units	5
	4.5	Measurement Uncertainty	
	4.6	Additions to, Deviations, or Exclusions from the Method	5
	4.7	Laboratory Facility	5
	4.8	Laboratory Location	
	4.9	Test Instruments List	6
5	Mea	surement Setup and Procedure	8
	5.1	Test Channel	Q
	5.2	Test Setup	
	5.3	Test Procedure	
6	Test	t Results	11
	6.1	Summary	11
	6.2	Antenna requirement	
	6.3	AC Power Line Conducted Emission	
	6.4	Emissions in Restricted Frequency Bands	
	6.5	Emissions in Non-restricted Frequency Bands	



4 General Information

4.1 Client Information

Applicant:	Todos Industrial Limited
Address:	Room 308, building A3, Fuhai information port, Fuhai street, Bao'an District
Manufacturer:	TODOS INDUSTRIAL LIMITED
Address:	FLAT/RM 504 5/F HO KING COMMERCIAL CENTRE 2-16 FA YUEN STREET MONG KOK KL

4.2 General Description of E.U.T.

Product Name:	Baby Anti Abandonment Car Seat key
Model No.:	Hiup key H6, 15671 - BABY CAR SEAT ALERT KEYCHAIN, TBSAV-3D, A1, A2, A3, AX, B1, B2, B3, BX, C1, C2, C3, CX. (X can be " 0-9", "az")
Operation Frequency:	2402 MHz - 2480 MHz
Channel Numbers:	40
Channel Separation:	2MHz
Modulation Technology:	GFSK
Data Speed:	1 Mbps (LE 1M PHY), 2 Mbps (LE 2M PHY)
Antenna Type:	Internal Antenna
Antenna Gain:	-0.58 dBi (declare by applicant)
Antenna transmit mode:	SISO (1TX, 1RX)
Power Supply:	Rechargeable Li-ion Battery DC3.7V, 400mAh
Test Sample Condition:	The test samples were provided in good working order with no visible defects.
Remark:	Model No.: Hiup key H6, 15671 - BABY CAR SEAT ALERT KEYCHAIN, TBSAV-3D, A1, A2, A3, AX, B1, B2, B3, BX, C1, C2, C3, CX. (X can be " 0-9", "az") were identical inside, the electrical circuit design, layout, components used and internal wiring, with only difference being model name.



4.3 Test Mode and Test Environment

Keep the EUT in continuous transmitting with modulation
ducted emission and radiated spurious emission (below 1GHz), pre-scan all data speed,
s worse case mode. The report only reflects the test data of worst mode.
15℃ ~ 35℃
20 % ~ 75 % RH
1010 mbar

4.4 Description of Support Units

The EUT has been tested as an independent unit.

4.5 Measurement Uncertainty

Parameter	Expanded Uncertainty (Confidence of 95%(U = 2Uc(y)))		
Conducted Emission for LISN (9kHz ~ 150kHz)	±3.11 dB		
Conducted Emission for LISN (150kHz ~ 30MHz)	±2.62 dB		
Radiated Emission (30MHz ~ 1GHz) (3m SAC)	±4.45 dB		
Radiated Emission (1GHz ~ 18GHz) (3m SAC)	±5.34 dB		
Radiated Emission (18GHz ~ 40GHz) (3m SAC)	±5.34 dB		
Radiated Emission (30MHz ~ 1GHz) (10m SAC)	±4.32 dB		

Note: All the measurement uncertainty value were shown with a coverage k=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

4.6 Additions to, Deviations, or Exclusions from the Method

No

4.7 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

• FCC - Designation No.: CN1211

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

• ISED – CAB identifier.: CN0021

The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

• CNAS - Registration No.: CNAS L15527

JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.

• A2LA - Registration No.: 4346.01

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <u>https://portal.a2la.org/scopepdf/4346-01.pdf</u>

4.8 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd. Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China. Tel: +86-755-23118282, Fax: +86-755-23116366 Email: info-JYTee@lets.com, Website: <u>http://jyt.lets.com</u>



4.9 Test Instruments List

Radiated Emission(3m SAC):						
Test Equipment	Manufacturer	Model No.	Manage No.	Cal.Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)	
3m SAC	ETS	9m*6m*6m	WXJ001-1	01-19-2021	01-18-2024	
BiConiLog Antenna	Schwarzbeck	VULB9163	WXJ002	02-17-2022	02-16-2023	
Biconical Antenna	Schwarzbeck	VUBA9117	WXJ002-1	06-20-2021	06-19-2022	
Horn Antenna	Schwarzbeck	BBHA9120D	WXJ002-2	02-17-2022	02-16-2023	
Horn Antenna	Schwarzbeck	BBHA9120D	WXJ002-3	06-18-2021	06-17-2022	
Pre-amplifier (30MHz ~ 1GHz)	Schwarzbeck	BBV9743B	WXG001-7	02-17-2022	02-16-2023	
Pre-amplifier (1GHz ~ 18GHz)	SKET	LNPA_0118G-50	WXG001-3	02-17-2022	02-16-2023	
Pre-amplifier (18GHz ~ 40GHz)	RF System	TRLA- 180400G45B	WXG001-9	02-17-2022	02-16-2023	
EMI Test Receiver	Rohde & Schwarz	ESRP7	WXJ003-1	02-17-2022	02-16-2023	
Spectrum Analyzer	KEYSIGHT	N9010B	WXJ004-2	11-27-2021	11-26-2022	
Band Reject Filter Group	Tonscend	JS0806-F	WXJ089	N	I/A	
Coaxial Cable (30MHz ~ 1GHz)	JYTSZ	JYT3M-1G-NN-8M	WXG001-4	02-17-2022	02-16-2023	
Coaxial Cable (1GHz ~ 18GHz)	JYTSZ	JYT3M-18G-NN- 8M	WXG001-5	02-17-2022	02-16-2023	
Coaxial Cable (18GHz ~ 40GHz)	JYTSZ	JYT3M-40G-SS- 8M	WXG001-7	02-17-2022	02-16-2023	
Test Software	Tonscend	TS+	Version: 3.0.0.1			

Radiated Emission(10m SAC):						
Test Equipment	Manufacturer	Model No.	Manage No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)	
10m SAC	ETS	RFSD-100-F/A	WXJ090	04-28-2021	04-27-2024	
BiCanil og Antonno	SCHWARZBECK	VULB 9168	WXJ090-1	04-02-2021	04-01-2022	
BiConiLog Antenna	SCHWARZDECK	VULD 9100	VVJ090-1	03-30-2022	03-29-2023	
DiCanil og Antonno				04-02-2021	04-01-2022	
BiConiLog Antenna	SCHWARZBECK	VULB 9168	WXJ090-2	03-30-2022	03-29-2023	
				04-08-2021	04-07-2022	
EMI Test Receiver	R&S	ESR 3	WXJ090-3	03-30-2022	03-29-2023	
EMI Test Dessiver				04-08-2021	04-07-2022	
EMI Test Receiver	R&S	ESR 3	WXJ090-4	03-30-2022	03-29-2023	
Levy Dre emplifier	Deet			04-06-2021	04-05-2022	
Low Pre-amplifier	Bost	LNA 0920N	WXG002-3	03-30-2022	03-29-2023	
Levy Dre emplifier	Deet			04-06-2021	04-05-2022	
Low Pre-amplifier	Bost	LNA 0920N	WXG002-4	03-30-2022	03-29-2023	
Cabla	Deet		XC000 7	04-02-2021	04-01-2022	
Cable	Bost	JYT10M-1G-NN-10M	XG002-7	03-30-2022	03-29-2023	
Cabla	Deet		XG002-8	04-02-2021	04-01-2022	
Cable	Bost	JYT10M-1G-NN-10M		03-30-2022	03-29-2023	
Test Software	R&S	EMC32	Version: 10.50.40			



Conducted Emission:						
Test Equipment	Manufacturer	Model No.	Manage No.	Cal.Date	Cal. Due date	
				(mm-dd-yy)	(mm-dd-yy)	
EMI Test Receiver	Rohde & Schwarz	ESCI 3	WXJ003	02-17-2022	02-16-2023	
RF Switch	TOP PRECISION	RSU0301	WXG003	02-17-2022	02-16-2023	
LISN	Schwarzbeck	NSLK 8127	QCJ001-13	02-17-2022	02-16-2023	
LISN	Rohde & Schwarz	ESH3-Z5	WXJ005-1	06-18-2021	06-17-2022	
LISN Coaxial Cable (9kHz ~ 30MHz)	JYTSZ	JYTCE-1G-NN-2M	WXG003-1	02-17-2022	02-16-2023	
Test Software	AUDIX	E3	Version: 6.110919b			

Conducted Method:						
Test Equipment	Manufacturer	Model No.	Manage No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)	
Spectrum Analyzer	Keysight	N9010B	WXJ004-3	10-25-2021	10-24-2022	
Vector Signal Generator	Keysight	N5182B	WXJ006-6	10-25-2021	10-24-2022	
Signal Generator	Keysight	N5173B	WXJ006-4	10-25-2021	10-24-2022	
Wireless Connectivity Tester	Rohde & Schwarz	CMW270	WXJ008-7	10-25-2021	10-24-2022	
DC Power Supply	Keysight	E3642A	WXJ025-2	10-25-2021	10-24-2022	
Temperature Humidity Chamber	ZHONG ZHI	CZ-A-80D	WXJ032-3	03-19-2021	03-18-2023	
Power Detector Box	MWRFTEST	MW100-PSB	WXJ007-4	10-25-2021	10-24-2022	
RF Control Unit	MWRFTEST	MW100-RFCB	WXG006	N/A		
Test Software	MWRFTEST	MTS 8310		Version: 2.0.0.0		



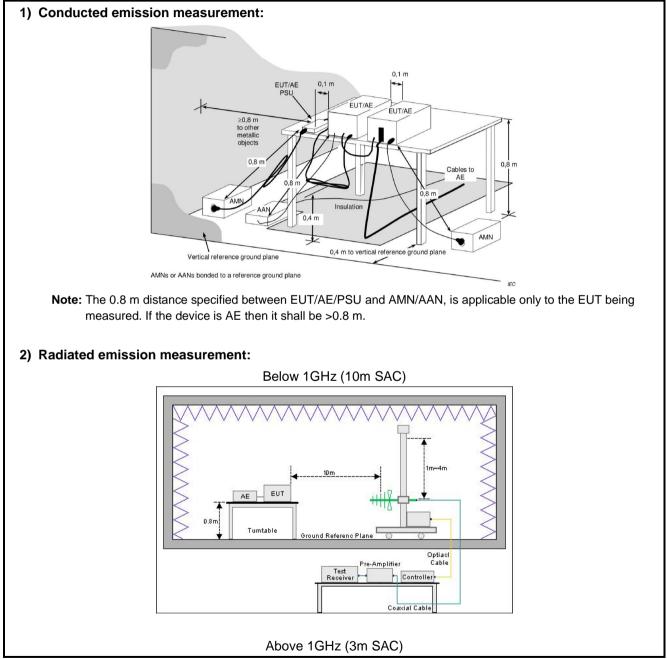
5 Measurement Setup and Procedure

5.1 Test Channel

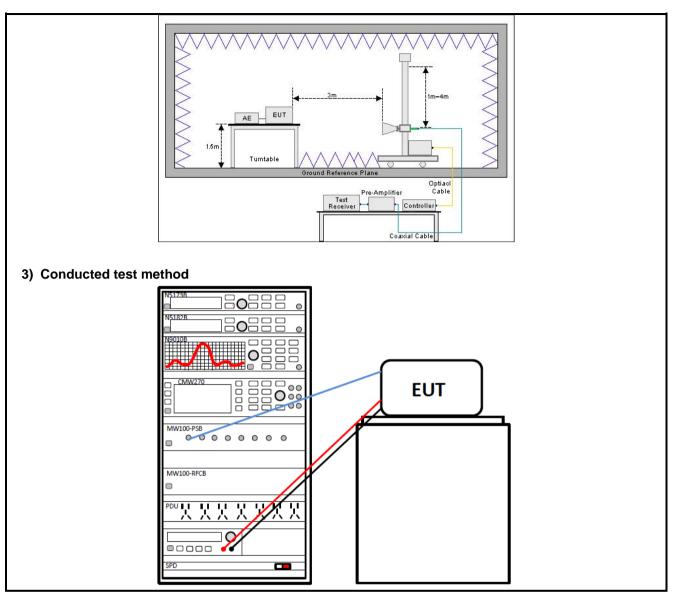
According to ANSI C63.10-2013 chapter 5.6.1 Table 4 requirement, select lowest channel, middle channel, and highest channel in the frequency range in which device operates for testing. The detailed frequency points are as follows:

Lowest channel		Midd	le channel	Highest channel		
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	
0	2402	20	2442	39	2480	

5.2 Test Setup









5.3 Test Procedure

Test method	Test step
Conducted emission	 The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.
Radiated emission	 For below 1GHz: 1. The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 10 m semi anechoic chamber. The measurement distance from the EUT to the receiving antenna is 10 m. 2. EUT works in each mode of operation that paods to be tested, and having
	 EUT works in each mode of operation that needs to be tested , and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data.
	For above 1GHz:
	 The EUT was placed on the tabletop of a rotating table 1.5 m the ground at a 3 m fully anechoic room. The measurement distance from the EUT to the receiving antenna is 3 m.
	2. EUT works in each mode of operation that needs to be tested, and having
	the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations.
	3. Open the test software to control the test antenna and test turntable. Perform
Conducted test method	 the test, save the test results, and export the test data. The BLE antenna port of EUT was connected to the test port of the test
	system through an RF cable.
	 The EUT is keeping in continuous transmission mode and tested in all modulation modes.
	3. Open the test software, prepare a test plan, and control the system through
	the software. After the test is completed, the test report is exported through the test software.



6 Test Results

6.1 Summary

6.1.1 Clause and Data Summary

Test items	Standard clause	Test data	Result
Antenna Requirement	15.203 15.247 (b)(4)	See Section 6.2	Pass
AC Power Line Conducted Emission	15.207	See Section 6.3	Pass
Duty Cycle	ANSI C63.10-2013	Appendix A – LE 1M PHY Appendix A – LE 2M PHY	Pass
Conducted Output Power	15.247 (b)(3)	Appendix A – LE 1M PHY Appendix A – LE 2M PHY	Pass
6dB Emission Bandwidth 99% Occupied Bandwidth	15.247 (a)(2)	Appendix A – LE 1M PHY Appendix A – LE 2M PHY	Pass
Power Spectral Density	15.247 (e)	Appendix A – LE 1M PHY Appendix A – LE 2M PHY	Pass
Band-edge Emission Conduction Spurious Emission	15.247 (d)	Appendix A – LE 1M PHY Appendix A – LE 2M PHY	Pass
Emissions in Restricted Frequency Bands	15.205 15.247 (d)	See Section 6.4	Pass
Emissions in Non-restricted Frequency Bands	15.209 15.247(d)	See Section 6.5	Pass

Remark:

1. Pass: The EUT complies with the essential requirements in the standard.

2. N/A: Not Applicable.

3. The cable insertion loss used by "RF Output Power" and other conduction measurement items is 0.5dB (provided by the customer).

Test Method:

ANSI C63.10-2013 KDB 558074 D01 15.247 Meas Guidance v05r02



6.1.2 Test Limit

Test items		Lin	nit				
	Frequency		Limit (dB	μV)			
	(MHz)	Quasi-Peak		Average			
AC Power Line Conducted	0.15 – 0.5	66 to	56 Note 1	56 to 46 Note 1			
Emission	0.5 – 5		56	46			
Linicolon	5 – 30		60	50			
		Note 1: The limit level in dBµV decreases linearly with the logarithm of frequency. Note 2: The more stringent limit applies at transition frequencies.					
Conducted Output Power	For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz bands: 1 Watt.						
6dB Emission Bandwidth	The minimum 6 dB bandw	idth shall be a	at least 500 kH	IZ.			
99% Occupied Bandwidth	N/A						
Power Spectral Density	For digitally modulated system intentional radiator to the a band during any time inter	antenna shall	not be greater	than 8 dBm in any 3 k			
Band-edge Emission Conduction Spurious Emission	In any 100 kHz bandwidth spectrum or digitally modu frequency power that is pr dB below that in the 100 k highest level of the desired radiated measurement, pr the peak conducted power power limits based on the permitted under paragraph this paragraph shall be 30 limits specified in §15.209 which fall in the restricted with the radiated emission	lated intentior oduced by the Hz bandwidth d power, base ovided the tra r limits. If the t use of RMS a n (b)(3) of this dB instead of (a) is not requi- bands, as def	nal radiator is of intentional ra- within the bar d on either an nsmitter demo ransmitter con veraging over section, the a 20 dB. Attenu ired. In additio ined in §15.20	operating, the radio diator shall be at least ad that contains the RF conducted or a unstrates compliance w nplies with the conduc a time interval, as ttenuation required un uation below the gener on, radiated emissions 5(a), must also compli	vith ted der al		
	Frequency	Limit (d		Detector			
	(MHz)	@ 3m	@ 10m	Questi			
Emissions in Destricted	30 - 88	40.0	30.0	Quasi-peak	-		
Emissions in Restricted	88 – 216 216 – 960	43.5	33.5 36.0	Quasi-peak			
Frequency Bands	960 - 1000	<u> </u>	44.0	Quasi-peak Quasi-peak	1		
	Note: The more stringent limit			Quasi-peak			
Emissions in Non-restricted	Hote. The more stringent limit		Limit (dBµV/m) @ 3m			
Frequency Bands	Frequency	Ave	rage	Peake			
	Above 1 GHz	54	1.0	74.0	1		
	Note: The measurement band	width shall be 1 M	Hz or greater.		1		
			-		•		



6.2 Antenna requirement

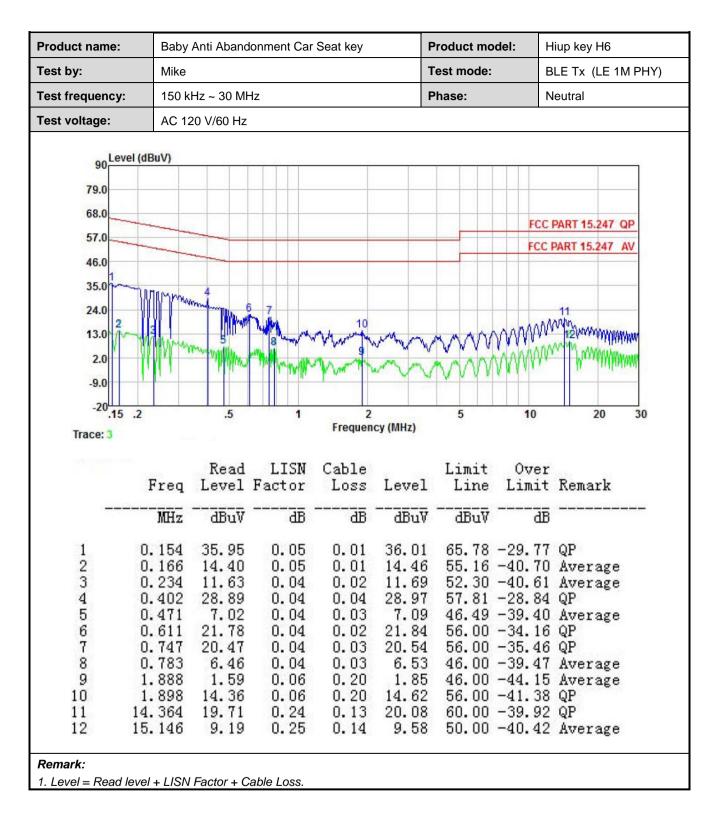
Standard requirement:	FCC Part 15 C Section 15.203 /247(b)(4)
responsible party shall be u antenna that uses a unique so that a broken antenna ca electrical connector is prohil 15.247(b) (4) requirement: (4) The conducted output po antennas with directional ga section, if transmitting anter power from the intentional ra	be designed to ensure that no antenna other than that furnished by the sed with the device. The use of a permanently attached antenna or of an coupling to the intentional radiator, the manufacturer may design the unit in be replaced by the user, but the use of a standard antenna jack or bited. by the user imit specified in paragraph (b) of this section is based on the use of ins that do not exceed 6 dBi. Except as shown in paragraph (c) of this inas of directional gain greater than 6 dBi are used, the conducted output adiator shall be reduced below the stated values in paragraphs (b)(1), tion, as appropriate, by the amount in dB that the directional gain of the
E.U.T Antenna:	
	hal antenna which cannot replace by end-user, the best case gain of the oduct internal photos for details.



oduct name:	Baby	Anti Aband	lonment Car	Seat key	Pre	oduct mod	l el: Hiu	ip key H6	
st by:	Mike Test mode:		Mike Test mode: BLE Tx (LE 1M PH		Mike			PHY)	
st frequency:	150 k	Hz ~ 30 Mł	Ηz		Ph	ase:	Lin	e	
st voltage:	AC 12	20 V/60 Hz							
Level (d	BuV)								
90									
79.0									
68.0							FCC	PART 15.247	QP
57.0								PART 15.247	
46.0									
35.0	man								_
24.0	MANNA	Mar 6	7					12	
13.0	3 4		WM		. fills and	IN IN IN PAR	MARAAM	to a star way and the start of	wood
2.0	a manufa	White Way	8 My	LANG CALLER PART	. h . Mar Midden	MANAN AN	¥ ¥ ¥ * *	BI AMA MANANA	. tring
-9.0			The way and	mount	man	nn	ANAMA.	As atoms	WAR
-3.0									
-20.15 .2		.5	1	2	CV (MH7)	5	10	20	30
-20.15 .2 Trace: 1		.5	1	2 Frequen	cy (MHz)	5	10	20	30
		.5 Read	а 	_	cy <mark>(MH</mark> z)	5 Limit	10 Over	20	30
	Freq	Read	<i></i>	Frequen	cy (MHz) Level		Over	20 Remark	30
	Freq	Read	LISN	Frequen		Limit	Over		30
Trace: 1	MHz	Read Level dBuV	LISN Factor dB	Frequent Cable Loss dB	Level 	Limit Line dBuV	Over Limit dB	Remark	30
Trace: 1	MHz). 162). 186	Read Level dBuV 35.76 14.40	LISN Factor dB 0.04 0.04	Frequent Cable Loss dB 0.01 0.02	Level dBuV 35.81 14.46	Limit Line dBuV 65.34 54.20	Over Limit dB -29.53 -39.74	Remark QP Average	30
Trace: 1	MHz). 162). 186). 230	Read Level dBuV 35.76 14.40 12.99	LISN Factor dB 0.04 0.04 0.04	Frequent Cable Loss dB 0.01 0.02 0.02	Level dBuV 35.81 14.46 13.05	Limit Line dBuV 65.34 54.20 52.44	Over Limit dB -29.53 -39.74 -39.39	Remark QP Average Average	30
Trace: 1	MHz). 162). 186). 230). 299	Read Level dBuV 35.76 14.40 12.99 10.27	LISN Factor dB 0.04 0.04 0.04 0.04 0.04	Frequent Cable Loss dB 0.01 0.02 0.02 0.03	Level dBuV 35.81 14.46 13.05 10.34	Limit Line dBuV 65.34 54.20 52.44 50.28	Over Limit 	Remark QP Average Average Average	
Trace: 1	MHz). 162). 186). 230). 299). 426). 449	Read Level dBuV 35.76 14.40 12.99 10.27 5.68 25.38	LISN Factor dB 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.0	Frequent Cable Loss dB 0.01 0.02 0.02 0.03 0.03 0.03 0.03	Level dBuV 35.81 14.46 13.05 10.34 5.75 25.45	Limit Line dBuV 65.34 54.20 52.44 50.28 47.33 56.89	Over Limit 	Remark QP Average Average Average QP	
Trace: 1	MHz). 162). 186). 230). 299). 426). 449). 651	Read Level dBuV 35.76 14.40 12.99 10.27 5.68 25.38 21.42	LISN Factor dB 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.0	Frequent Cable Loss dB 0.01 0.02 0.02 0.03 0.03 0.03 0.03 0.03	Level dBuV 35.81 14.46 13.05 10.34 5.75 25.45 21.49	Limit Line dBuV 65.34 54.20 52.44 50.28 47.33 56.89 56.00	Over Limit -29.53 -39.74 -39.39 -39.94 -41.58 -31.44 -34.51	Remark QP Average Average Average QP QP	
Trace: 1	MHz). 162). 186). 230). 299). 426). 449). 651). 661	Read Level dBuV 35.76 14.40 12.99 10.27 5.68 25.38 21.42 4.04	LISN Factor dB 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.0	Frequent Cable Loss dB 0.01 0.02 0.02 0.03 0.03 0.03 0.03 0.03 0.03	Level dBuV 35.81 14.46 13.05 10.34 5.75 25.45 21.49 4.11	Limit Line dBuV 65.34 54.20 52.44 50.28 47.33 56.89 56.00 46.00	Over Limit -29.53 -39.74 -39.39 -39.94 -41.58 -31.44 -34.51 -41.89	Remark QP Average Average Average QP QP Average	
Trace: 1	MHz). 162). 186). 230). 299). 426). 426). 449). 651). 661 (. 898 3. 057	Read Level dBuV 35.76 14.40 12.99 10.27 5.68 25.38 21.42 4.04 13.95 18.65	LISN Factor dB 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.0	Frequent Cable Loss dB 0.01 0.02 0.03 0.03 0.03 0.03 0.03 0.03 0.03	Level dBuV 35.81 14.46 13.05 10.34 5.75 25.45 21.49 4.11 14.22 19.01	Limit Line dBuV 65.34 54.20 52.44 50.28 47.33 56.89 56.00 46.00 56.00 60.00	Over Limit 	Remark QP Average Average Average QP QP Average QP QP	
Trace: 1	MHz). 162). 186). 230). 299). 426). 426). 449). 651). 661 . 898	Read Level dBuV 35.76 14.40 12.99 10.27 5.68 25.38 21.42 4.04 13.95	LISN Factor dB 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.0	Frequent Cable Loss dB 0.01 0.02 0.03 0.03 0.03 0.03 0.03 0.03 0.03	Level dBuV 35.81 14.46 13.05 10.34 5.75 25.45 21.49 4.11 14.22	Limit Line dBuV 65.34 54.20 52.44 50.28 47.33 56.89 56.00 46.00 56.00 56.00 50.00	Over Limit 	Remark QP Average Average Average QP QP Average QP Average QP Average	

AC Power Line Conducted Emission 6 2





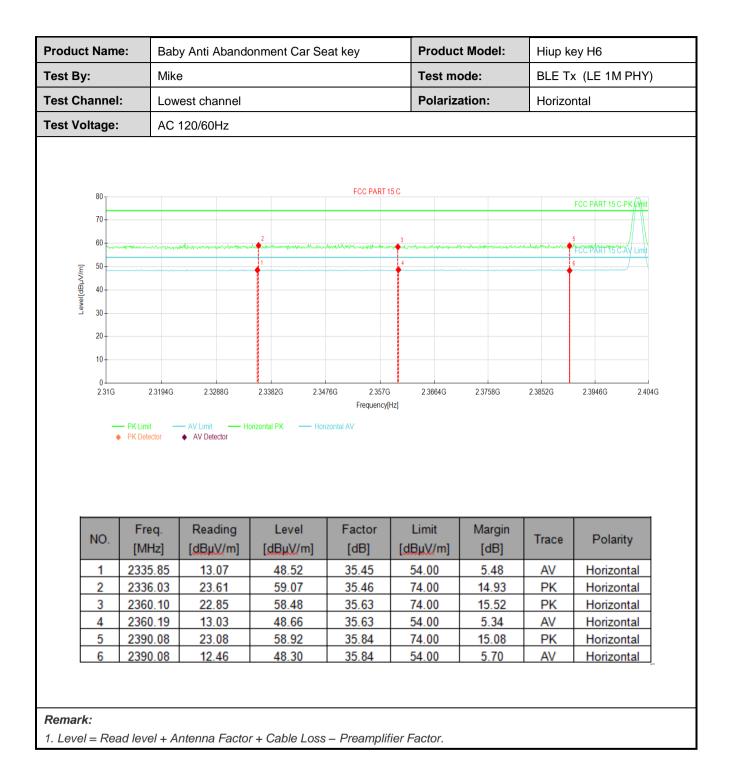


6.4 Emissions in Restricted Frequency Bands

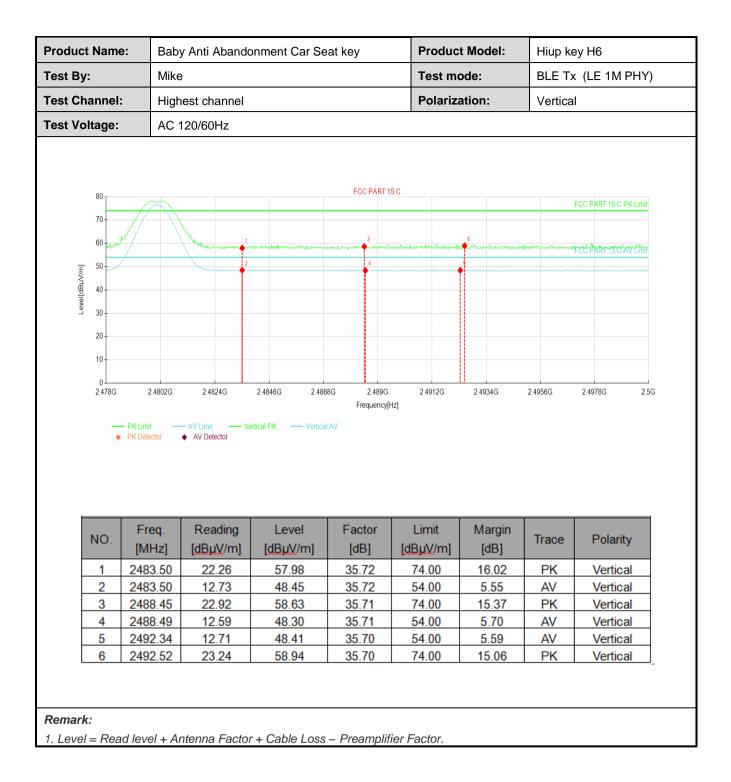
With metal shell:

st By: st Channel	Mik		onment Car Se	eat key	Produc	Product Model:	Hiup key H6		
		e			Test mo	Test mode:		BLE Tx (LE 1M PHY)	
	I: Low	est channel			Polariza	Polarization:		Vertical	
st Voltage:	AC	120/60Hz							
80 70 60		Martin and the first		FCC PART	3			FCC PART 15 C-PK Amit	
E 50 10 10 10 10 10 10		2						6	
2.31G	2.3194G	2.3288G	2.3382G 2.34			2.3758G	2.3852G	2.3946G 2.4040	
•	PK Limit -	AV Limit AV Detector	Vertical PK — Vertica	Frequency[Hz]				
NO.			/ertical PK — Vertica Level [dΒμV/m]		Limit [dBµV/m]	Margin [dB]	Trace	Polarity	
1	Freq. [MHz] 2331.71	 AV Detector Reading [dBµV/m] 23.37 	Level [dBµV/m] 58.80	Factor [dB] 35.43	Limit [dBµV/m] 74.00	[dB] 15.20	PK	Vertical	
1	Freq. [MHz] 2331.71 2331.99	• AV Detector Reading [dBµV/m] 23.37 13.14	Level [dBµV/m] 58.80 48.57	Factor [dB] 35.43 35.43	Limit [dBµV/m] 74.00 54.00	[dB] 15.20 5.43	PK AV	Vertical Vertical	
1 2 3	Freq. [MHz] 2331.71 2331.99 2362.17	 AV Detector Reading [dBµV/m] 23.37 13.14 23.62 	Level [dBµV/m] 58.80 48.57 59.26	Factor [dB] 35.43 35.43 35.64	Limit [dBµV/m] 74.00 54.00 74.00	[dB] 15.20 5.43 14.74	PK AV PK	Vertical Vertical Vertical	
1 2 3 4	 PK Detector Freq. [MHz] 2331.71 2331.99 2362.17 2362.45 	 AV Detector Reading [dBµV/m] 23.37 13.14 23.62 12.87 	Level [dBµV/m] 58.80 48.57 59.26 48.51	Factor [dB] 35.43 35.43 35.64 35.64	Limit [dBµV/m] 74.00 54.00 74.00 54.00	[dB] 15.20 5.43 14.74 5.49	PK AV PK AV	Vertical Vertical Vertical Vertical	
1 2 3	Freq. [MHz] 2331.71 2331.99 2362.17	 AV Detector Reading [dBµV/m] 23.37 13.14 23.62 	Level [dBµV/m] 58.80 48.57 59.26	Factor [dB] 35.43 35.43 35.64	Limit [dBµV/m] 74.00 54.00 74.00	[dB] 15.20 5.43 14.74	PK AV PK	Vertical Vertical Vertical	

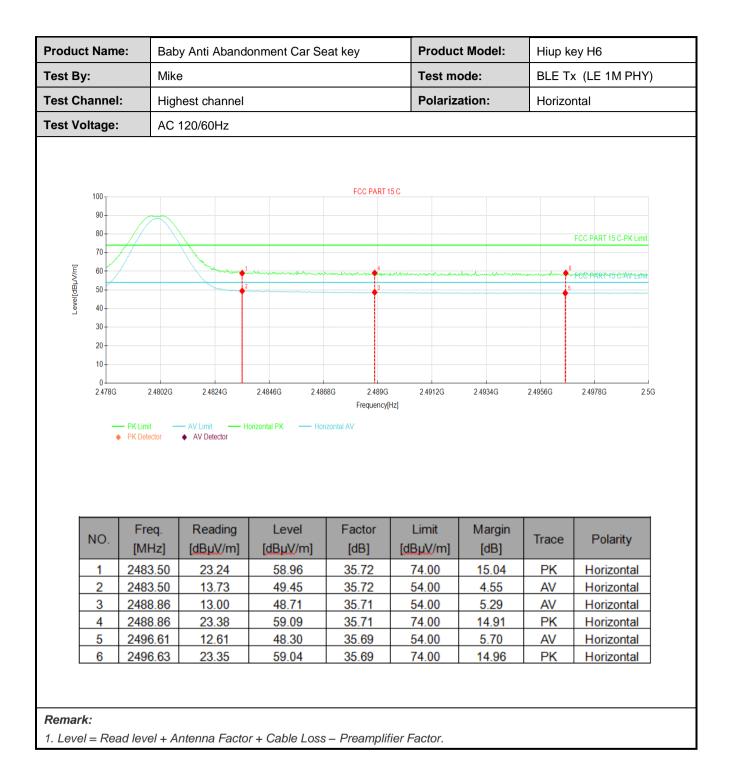




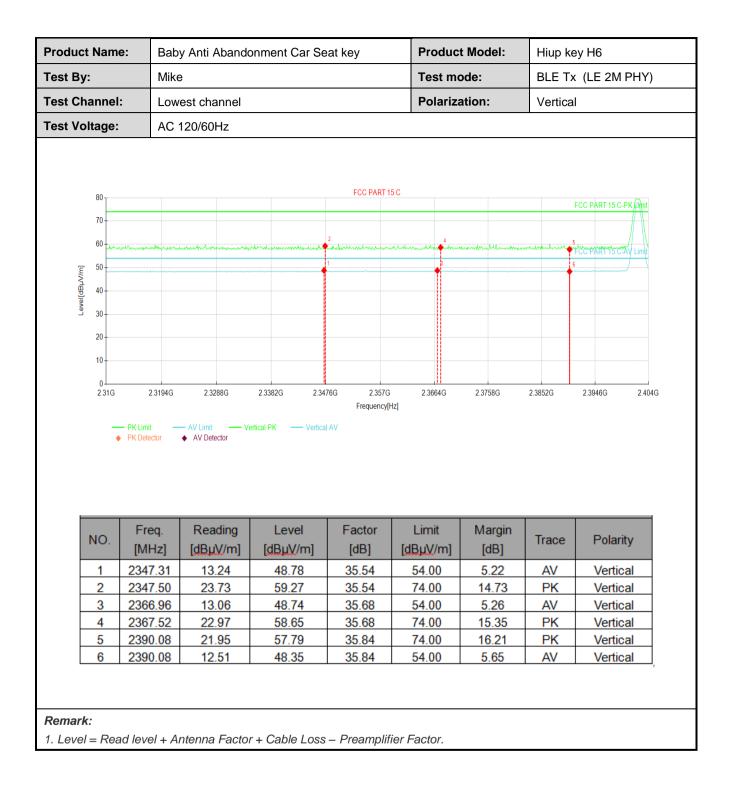




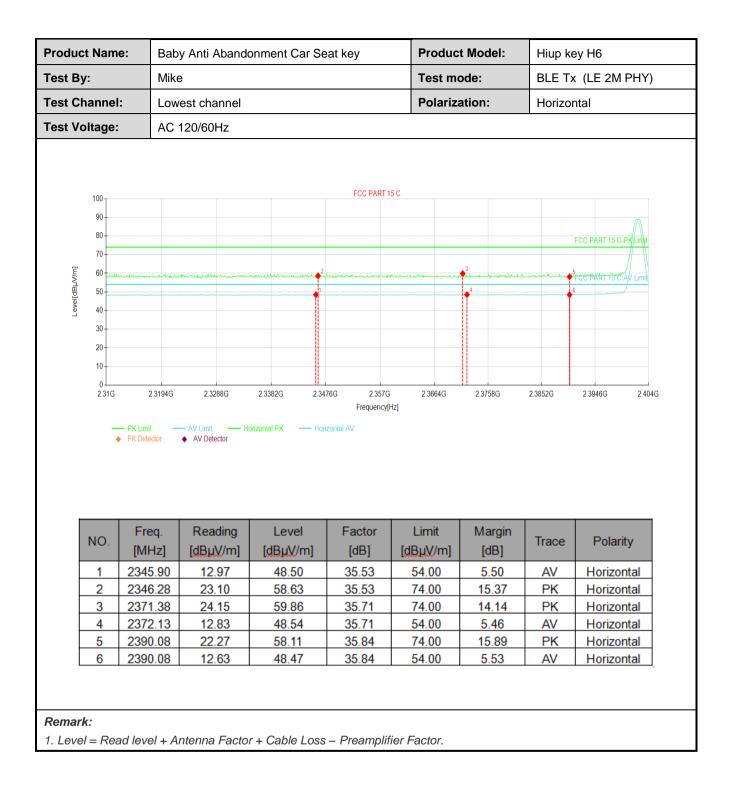




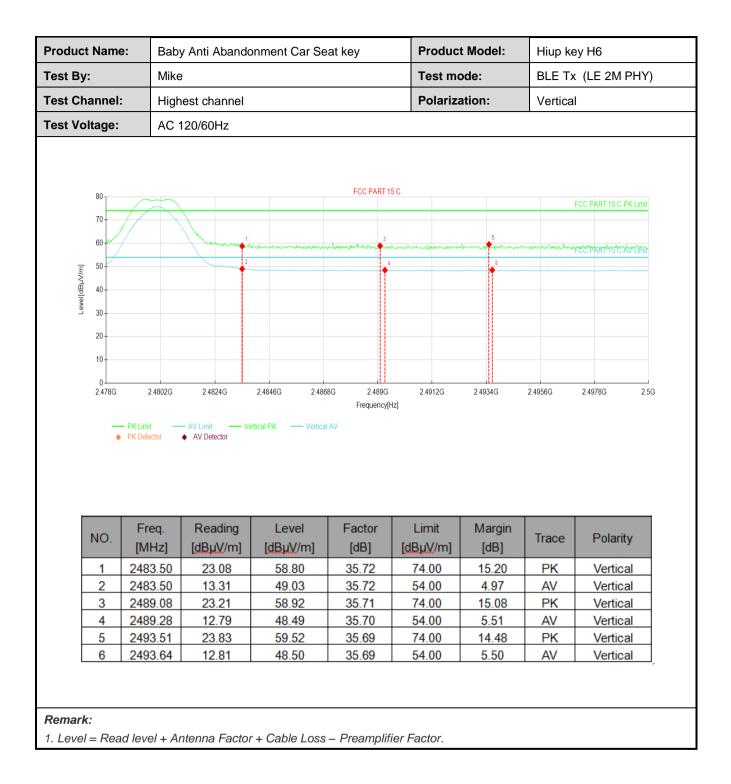




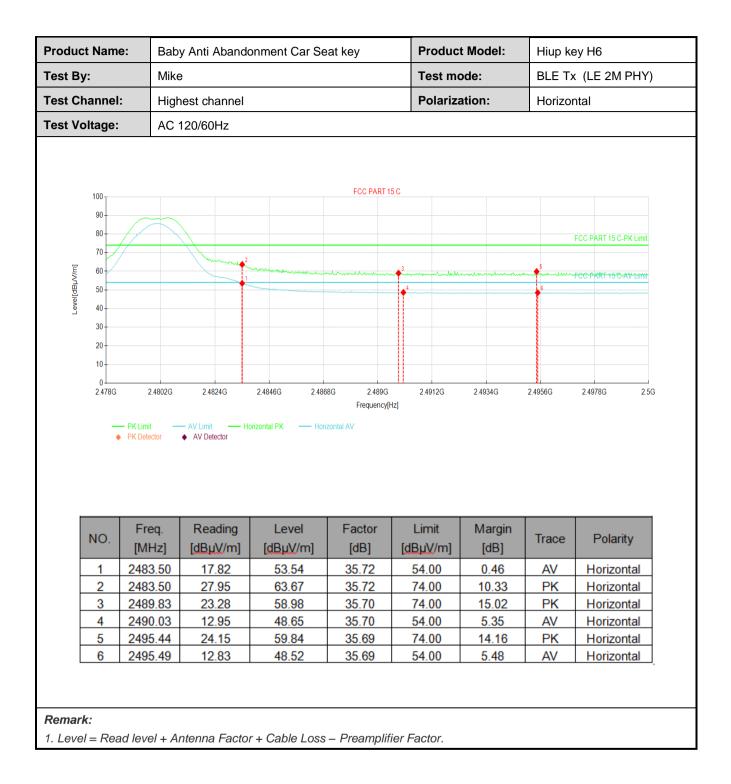










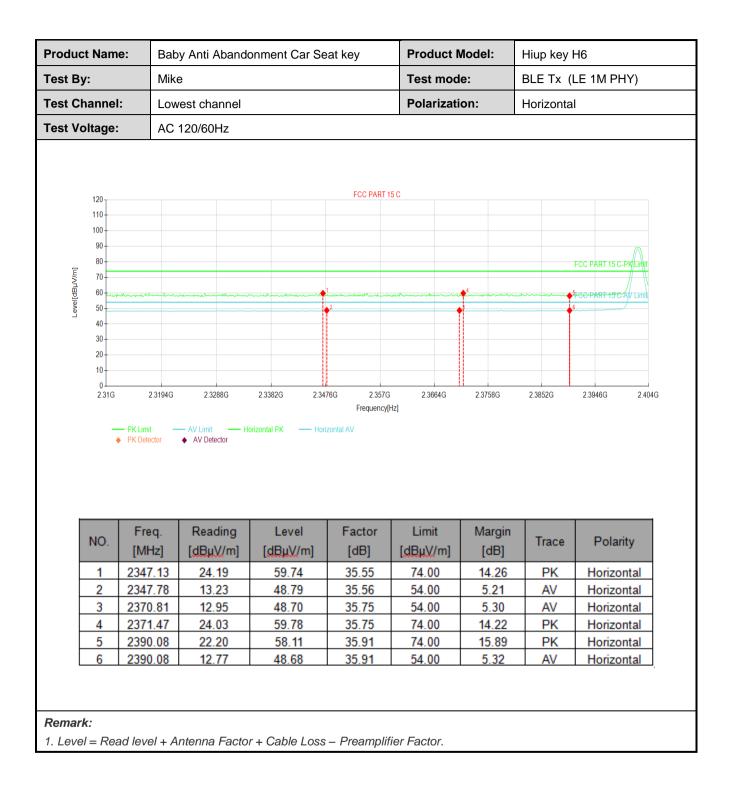




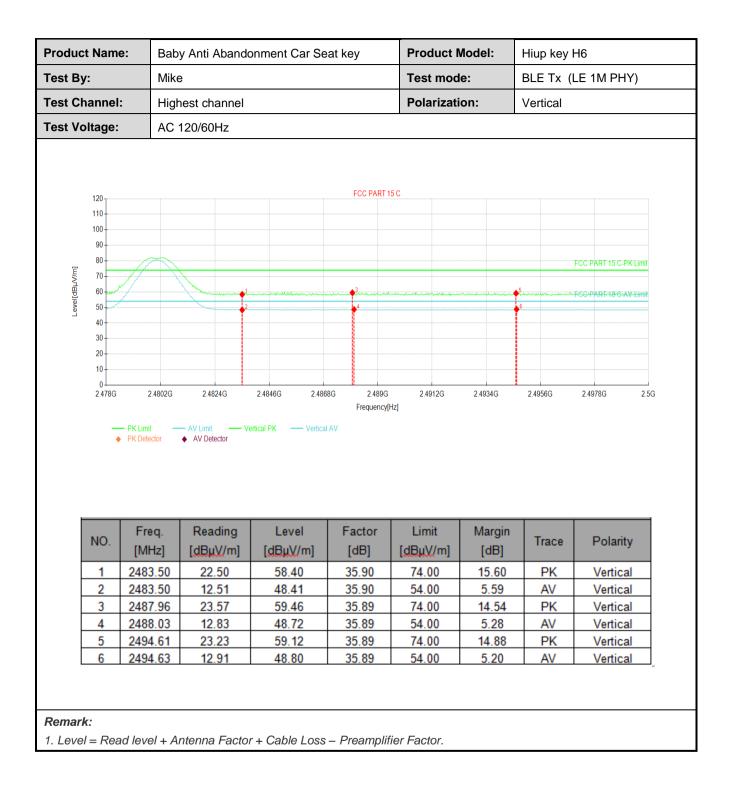
With Plastic Enclosure:

				onment Car Se	actioy	Product Model:		Hiup key H6			el: Hiup key H6			
est By:		Mike	Э			Test mod	e:	BLE Tx(LE 1M PH	()				
est Chann	nel:	Low	est channel			Polarizati	Polarization:		Vertical					
est Voltag	ge:	AC	120/60Hz				<u>.</u>							
120 - 110 - 100 - 90 - 80 - [wi/\140] 60 - 50 - 40 -				2	FCC PART 1	5 C			FCC PART 15 C-Pk	Clearin				
30- 20- 10- 0. 2.3)		2.3288G AV Limit Ve AV Detector	2.3382G 2.347 erfical PK — Vertical	Frequency[H	2.3664G iz]	2.3758G	2.3852G	2 3946G	2.404G				
20 - 10 - 0 -		mit —	— AV Limit — Ve		Frequency[H		2.3758G Margin [dB]	2.3852G	2.3946G Polarity					
20- 10- 2.3	31G 	mit	AV Limit Ve AV Detector	ertical PK — Vertical	Frequency(F AV Factor	Limit	Margin	_		/				
20- 10- 0_ 23	→ PKL → PKD	mit etector req. ЛНz]	AV Limit Ve AV Detector Ve	ertical PK Vertical Level [dBµV/m]	Frequency[F AV Factor [dB]	Limit [dBµV/m]	Margin [dB]	Trace	Polarity	/				
20- 10- 2.3 NO	PKL 31G • PKD	req. /Hz] 40.08	AV Limit Ve AV Detector Ve	Level [dBµV/m] 58.83	Frequency(F AV Factor [dB] 35.49	Limit [dBµV/m] 74.00	Margin [dB] 15.17	Trace	Polarity	/ 1				
20- 10- 0.1 2.3 NO 1 2.2	→ PKL → PKD → PKD → PKD → PKD	req. //Hz] 40.08 40.83	AV Limit Ve AV Detector Ve Reading [dBµV/m] 23.34 13.26	Level [dBµV/m] 58.83 48.76	Frequency[F AV Factor [dB] 35.49 35.50	Limit [dBµV/m] 74.00 54.00	Margin [dB] 15.17 5.24	Trace PK AV	Polarity Vertica Vertica	/ 1 1				
20- 10- 2.3 NO 1 2 3	PKL 31G PKD PKD PKD PKD 23 23 23 23 23 23 23 23 23 23 23 23 23	req. //Hz] 40.08 40.83 71.00	AV Limit → Ve AV Detector → AV AV Detector → AV Detector → AV Detector	Level [dBµV/m] 58.83 48.76 59.80	Frequency(F AV Factor [dB] 35.49 35.50 35.75	Limit [dBµV/m] 74.00 54.00 74.00	Margin [dB] 15.17 5.24 14.20	Trace PK AV PK	Polarity Vertica Vertica Vertica					

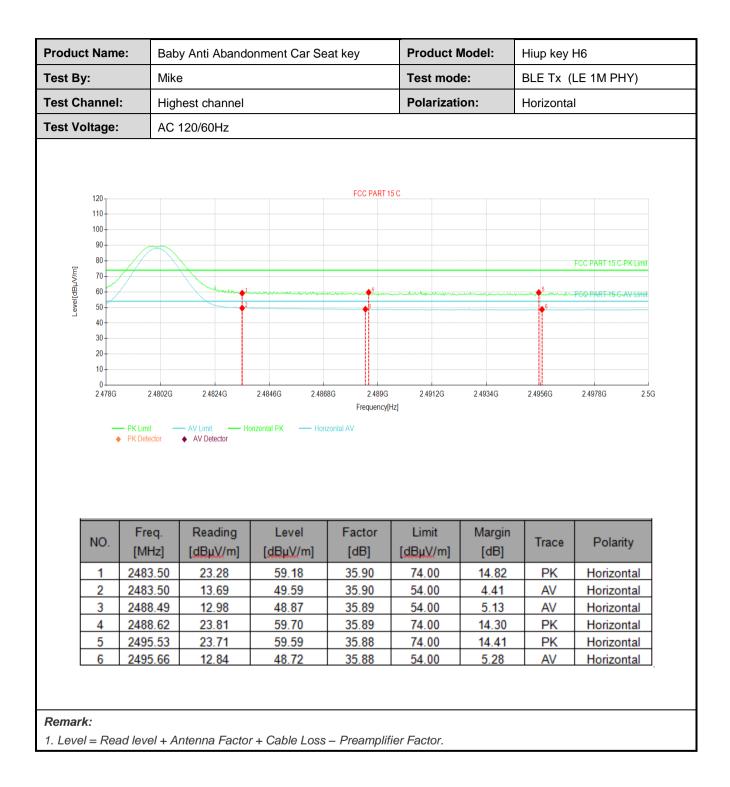




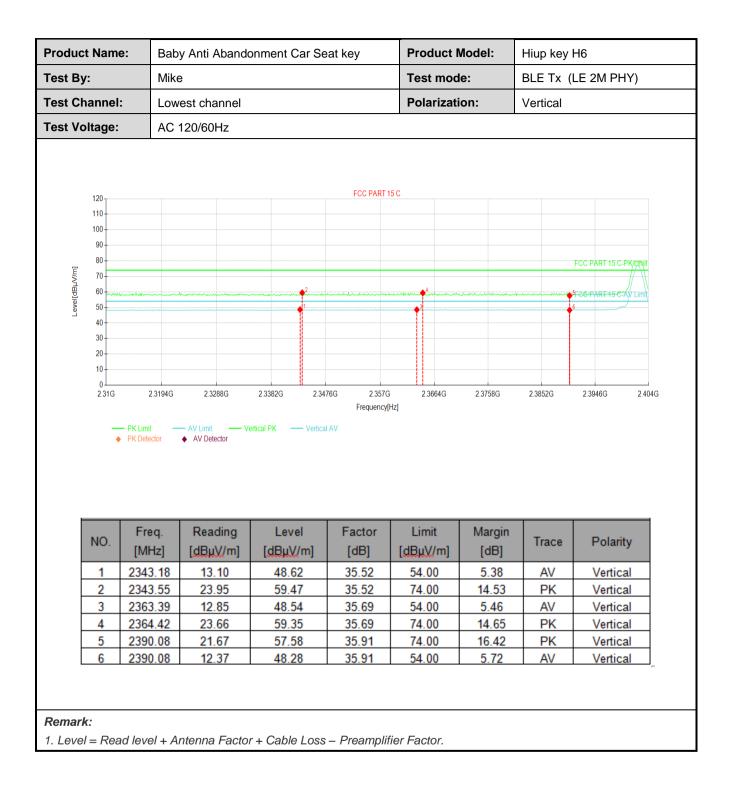




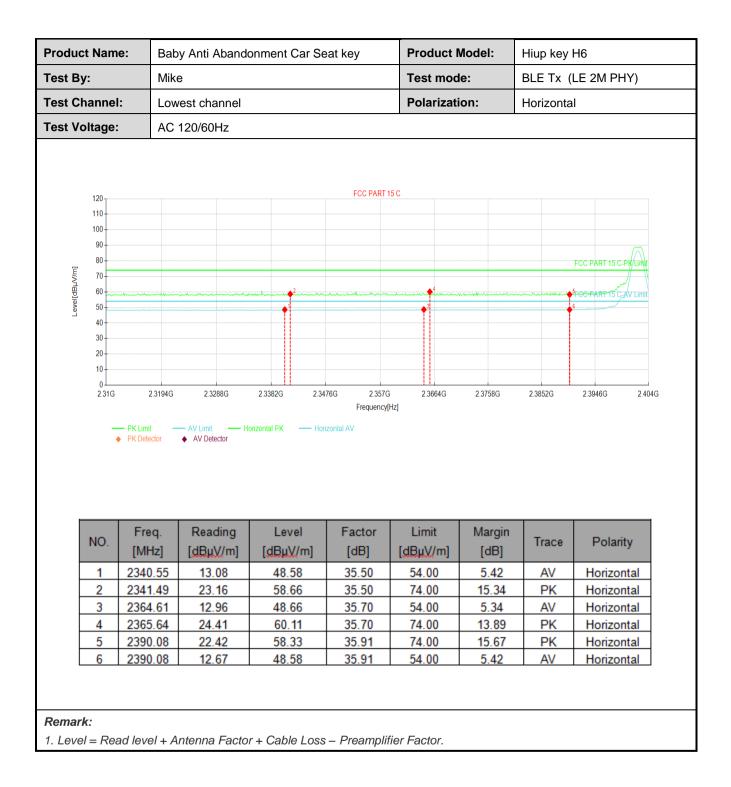




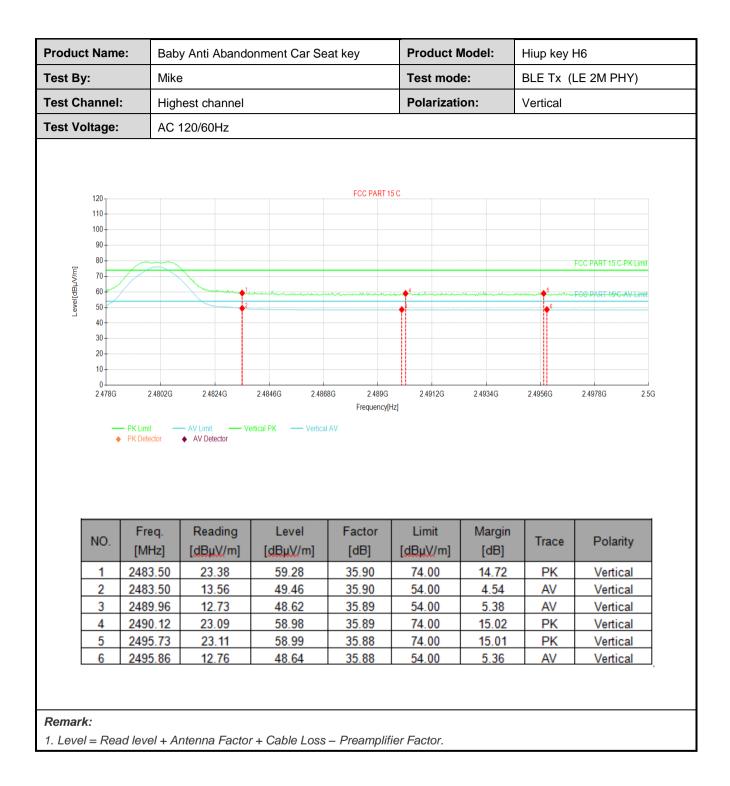




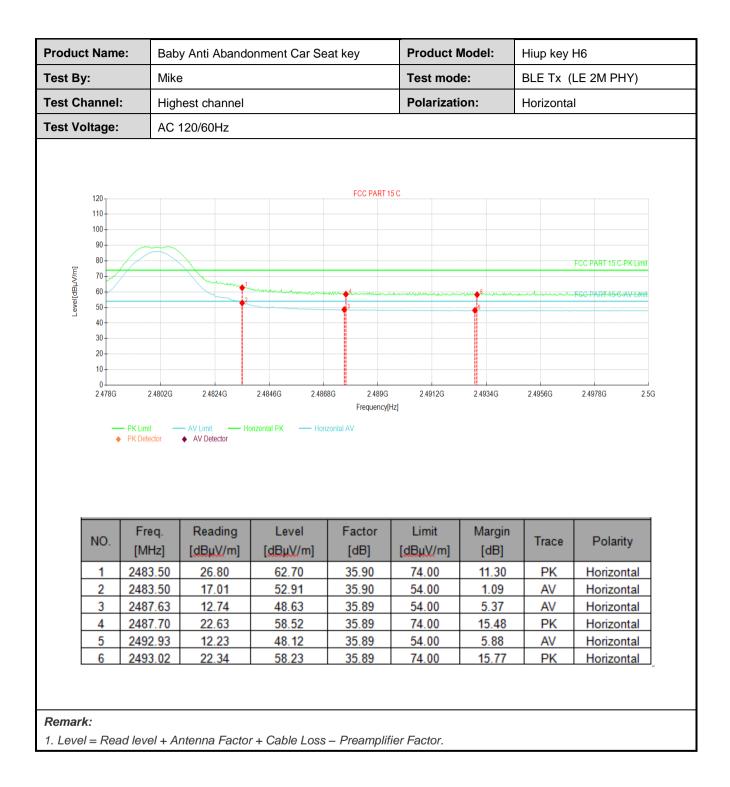














6.5 Emissions in Non-restricted Frequency Bands

Below 1GHz:

With metal shell:

	ame:	Baby An	ti Abar	ndonment C	ar Seat key	Pr	oduct Mode	el: Hiu	Hiup key H6		
est By:		Mike				Те	Test mode:		BLE Tx (LE 1M PHY)		
Test Frequ	ency:	30 MHz ·	~ 1 GH	lz		Po	larization:	Ver	tical & Horizonta		
Test Voltag	ge:	AC 120/6	60Hz								
						.					
					Full Spec	trum					
	⁸⁰ T										
	70										
	· • +										
	60+										
	50										
Level in dBuV/	· ~~ +							FCC PART	15.247 10m		
р Ц	40+										
ke	30										
L	30				****				*		
	20							****	State of the state		
	10						Provide and the second	The second later of the second s			
	10	all the second second	*	A Marile Joseph R	المراجعة ال محمد مراجعة المراجعة ا	and a state of the	elan a sur a sur a	• • • • • • • • • • • • • • • • • • •			
	o 	-		1 martine fr		100 M		- + +			
	30M	50	60	80 100	M	200	300 40	0 500	800 1G		
					Freque	ency in Hz					
	requency (MHz)	(dB µ	V/m)	Limit (dB µ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)		
	306.2560		12.32	36.00 30.00	23.68	100.0	Н	16.0			
	62,0000			30.00	21.75	100.0	Н	122.0			
	62.8830 541.1900		8.25 18.59			100.0	Н	223.0	-7.9		
	62.8830 541.1900 951.2090	000	8.25 18.59 26.25	36.00	17.41 9.75	100.0 100.0	H V	223.0	-0.1		
	541.1900	000	18.59	36.00	17.41		V		-0.1 -15.4		



With Plastic Enclosure:

	В	aby Anti Aba	andonment C	ar Seat key	Pr	Product Model: Hiup key H6		ıp key H6
est By:	N	like			Те	est mode:	BLI	E Tx(LE 1M PH
Test Frequency:	3	0 MHz ~ 1 G	iHz		Po	plarization:	Vei	rtical & Horizont
Test Voltage:	A	C 120/60Hz						
				Full Spec	:trum			
1 ⁰⁸								
70+								
60							1	
≥ 50+							FOC PAR	T 15.247 10m
/14 0 1 1								
<u>i</u> = 40 +								
å 30-								*
207						4 (L.L.)		
10+	a state a state of the	main the time		e Judit dalah		75 July and a second se		
0	wal.			and the local data in the loca	and the second s			
301	N I	50 60	80 100	м	200	300 400		800 1G
÷.	м ,	50 60	80 100		200 ency in Hz	300 400	500	800 1G
• •	ncy	50 60 MaxPeak (dB µ V/m)	Limit (dB µ V/m)		ency in Hz Height (cm)	Pol	Azimuth (deg)	600 1G
Freque (MHz 58.	ncy z) 712000	MaxPeak (dB µ V/m) 9.54	Limit (dB	Freque Margin (dB) 20.46	ency in Hz Height (cm) 100.0	Pol V	Azimuth (deg) 270.0	Corr. (dB/m) 0 -16.3
30) Freque (MH2 58. 102.4	ncy z) 712000 847000	MaxPeak (dB µ V/m) 9.54 7.82	Limit (dB	Freque Margin (dB) 20.46 25.68	ency in Hz Height (cm) 100.0 100.0	Pol V V	Azimuth (deg) 270.0 256.0	Corr. (dB/m) 0 -16.3 0 -18.6
30N Freque (MH2 58. 102.1 146.1 273.1	ncy z) 712000 847000 982000 373000	MaxPeak (dB µ V/m) 9.54 7.82 11.77 12.19	Limit (dB µ V/m) 30.00 33.50 33.50 36.00	Freque (dB) 20.46 25.68 21.74 23.81	Height (cm) 100.0 100.0 100.0 100.0	Pol V V V V	Azimuth (deg) 270.0 256.0 261.0 7.0	Corr. (dB/m) 0 -16.3 0 -18.6 0 -15.6 0 -14.8
301 301 (MHz 58. 102.1 146.1 273.1 602.4	ncy z) 712000 847000 982000	MaxPeak (dB	Limit (dB µ V/m) 30.00 33.50 33.50	Freque Margin (dB) 20.46 25.68 21.74	Height (cm) 100.0 100.0 100.0	Pol V V V V V V	Azimuth (deg) 270.0 256.0 261.0	Corr. (dB/m) 016.3 018.6 015.6 014.8 06.6



Above 1GHz:

With metal shell:

		В	LE Tx (LE 1M PH	IY)		
		Test	channel: Lowest cl	hannel		
		C	etector: Peak Val	ue	1	1
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4804.00	56.41	-9.60	46.81	74.00	27.19	Vertical
4804.00	58.14	-9.60	48.54	74.00	25.46	Horizontal
	· · ·	De	tector: Average Va	alue		
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4804.00	49.99	-9.60	40.39	54.00	13.61	Vertical
4804.00	50.64	-9.60	41.04	54.00	12.96	Horizontal
			channel: Middle ch			
		D	etector: Peak Val		1	
Frequency	Read Level	Factor	Level	Limit	Margin	Polarization
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
4884.00	56.33	-9.04	47.29	74.00	26.71	Vertical
4884.00	57.71	-9.04	48.67	74.00	25.33	Horizontal
	1	De	tector: Average Va		I	T
Frequency	Read Level	Factor	Level	Limit	Margin	Polarization
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
4884.00	50.36	-9.04	41.32	54.00	12.68	Vertical
4884.00	51.13	-9.04	42.09	54.00	11.91	Horizontal
			hannel: Highest c			
_	I = ·· · I		etector: Peak Val		I	1
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4960.00	56.32	-8.45	47.87	74.00	26.13	Vertical
4960.00	57.90	-8.45	49.45	74.00	24.55	Horizontal
		De	tector: Average Va	alue		
Frequency	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
(MHz)			44.00	54.00	12.18	Vertical
(MHz) 4960.00	50.27	-8.45	41.82	54.00	12.10	ventical



		В	LE Tx (LE 2M PH	Y)		
		Test	channel: Lowest cl	hannel		
		C	Detector: Peak Val	he	1	-
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4804.00	57.81	-9.60	48.21	74.00	25.79	Vertical
4804.00	62.57	-9.60	52.97	74.00	21.03	Horizontal
		De	tector: Average Va	alue		
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4804.00	50.78	-9.60	41.18	54.00	12.82	Vertical
4804.00	57.88	-9.60	48.28	54.00	5.72	Horizontal
		Test	channel: Middle ch			
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Detector: Peak Valu Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4884.00	(dBµV) 57.39	-9.04	48.35	(dBµ v/m) 74.00	(UB) 25.65	Vertical
4884.00	62.43	-9.04	53.39	74.00	20.61	Horizontal
4004.00	02.43		tector: Average Va		20.01	Tionzonitai
Frequency	Read Level	Factor	Level	Limit	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Polarization
4884.00	50.65	-9.04	41.61	54.00	12.39	Vertical
4884.00	58.15	-9.04	49.11	54.00	4.89	Horizontal
			channel: Highest c			
_	I I		etector: Peak Val		Г	1
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4960.00	57.82	-8.45	49.37	74.00	24.63	Vertical
4960.00	63.01	-8.45	54.56	74.00	19.44	Horizontal
		De	tector: Average Va	alue		
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4960.00	50.47	-8.45	42.02	54.00	11.98	Vertical
4960.00	57.85	-8.45	49.40	54.00	4.60	Horizontal
Remark:						



With Plastic Enclosure:

		B	LE Tx (LE 1M PH	Y)		
		Test c	hannel: Lowest cl	hannel		
		D	etector: Peak Val	ue		
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4804.00	57.51	-9.60	47.91	74.00	26.09	Vertical
4804.00	61.70	-9.60	52.10	74.00	21.90	Horizontal
		Det	ector: Average Va	alue		
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4804.00	52.04	-9.60	42.44	54.00	11.56	Vertical
4804.00	57.22	-9.60	47.62	54.00	6.38	Horizontal
		Test o	hannel: Middle ch	nannel		
		D	etector: Peak Val	ue		
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4884.00	57.68	-9.04	48.64	74.00	25.36	Vertical
4884.00	61.52	-9.04	52.48	74.00	21.52	Horizontal
		Det	ector: Average Va	alue		
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4884.00	52.00	-9.04	42.96	54.00	11.04	Vertical
4884.00	57.04	-9.04	48.00	54.00	6.00	Horizontal
		Test c	hannel: Highest c	hannel		
			etector: Peak Val			
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4960.00	57.90	-8.45	49.45	74.00	24.55	Vertical
4960.00	61.67	-8.45	53.22	74.00	20.78	Horizontal
		Det	ector: Average Va	alue		
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4960.00	51.68	-8.45	43.23	54.00	10.77	Vertical
4960.00	57.36	-8.45	48.91	54.00	5.09	Horizontal
Remark: 1. Level = Read	l level + Factor.					



		В	LE Tx (LE 2M PH	IY)		
		Test o	channel: Lowest cl	hannel		
		D	etector: Peak Val	ue		
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4804.00	62.92	-9.60	53.32	74.00	20.68	Vertical
4804.00	63.38	-9.60	53.78	74.00	20.22	Horizontal
		Det	tector: Average Va	alue		
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4804.00	56.56	-9.60	46.96	54.00	7.04	Vertical
4804.00	57.30	-9.60	47.70	54.00	6.30	Horizontal
		Test	channel: Middle ch	nannel		
		D	etector: Peak Val	ue		
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4884.00	62.57	-9.04	53.53	74.00	20.47	Vertical
4884.00	63.76	-9.04	54.72	74.00	19.28	Horizontal
		De	tector: Average Va	alue		
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4884.00	56.11	-9.04	47.07	54.00	6.93	Vertical
4884.00	57.26	-9.04	48.22	54.00	5.78	Horizontal
			hannel: Highest c etector: Peak Val			
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4960.00	62.58	-8.45	54.13	74.00	19.87	Vertical
4960.00	63.67	-8.45	55.22	74.00	18.78	Horizontal
		De	tector: Average Va	alue		
Frequency (MHz)	Read Level (dBµV)	Factor (dB)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Polarization
4960.00	56.13	-8.45	47.68	54.00	6.32	Vertical
4960.00	57.04	-8.45	48.59	54.00	5.41	Horizontal
Remark:	l level + Factor.	-0.40	40.09	04.00	5.41	

-----End of report-----