FCC PART 15 SUBPART C TEST REPORT

for

Bluetooth Headphone adapter touch sensor

Model No.: BT-HP02AD-DX

FCC ID: SJ9-BT-HP02AD-DX

of

Applicant: PLANEX COMMUNICATIONS INC. Address: F Nissei Ebisu Bldg 2F.16-3 Higashi 3-chome,Shibuya-ku, TOKYO 150-0011,Japan

Tested and Prepared

by

Worldwide Testing Services (Taiwan) Co., Ltd.

FCC Registration No.: 930600

Industry Canada filed test laboratory Reg. No. IC 5679A-1

A2LA Accredited No.: 2732.01



Report No.: W6M21005-10668-C-1

6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C. TEL: 886-2-66068877 FAX: 886-2-66068879 E-mail: <u>wts@wts-lab.com</u>



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1 General Information

1.1 Notes

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.

The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.

Furthermore, there is no guarantee that a test sample which has passed all the relevant tests conforms to a specification.

Neither is there any guarantee that such a test sample will interwork with other genuinely open systems.

The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that is performance generally conforms to representative cases of communications equipment.

The test results of this test report relate exclusively to the item tested as specified in 1.5.

The test report may only be reproduced or published in full.

Reproduction or publication of extracts from the report requires the prior written approval of the Worldwide Testing Services(Taiwan) Co., Ltd.

Tester:

May 31, 2010

Kevin Wang

Keion Wong

Date

WTS-Lab. Name

Signature

Technical responsibility for area of testing:

Chang Tse-Ming May 31, 2010 WTS Date Name Signature



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX

1.2 Testing laboratory

1.2.1 Location

OATS No.5-1, Shuang Sing Village, LiShuei Rd., Wanli Township, Taipei County 207, Taiwan (R.O.C.) Company Worldwide Testing Services(Taiwan) Co., Ltd. 6F, NO. 58, LANE 188, RUEY-KUANG RD. NEIHU, TAIPEI 114, TAIWAN R.O.C. Tel : 886-2-66068877 Fax : 886-2-66068879

1.2.2 Details of accreditation status Accredited testing laboratory

A2LA accredited number: 2732.01

FCC filed test laboratory Reg. No. 930600

Industry Canada filed test laboratory Reg. No. IC 5679A-1



Test location, where different from Worldwide Testing Services (Taiwan) Co., Ltd. :

Name:	./.
Accredited number:	./.
Street:	./.
Town:	./.
Country:	./.
Telephone:	./.
Fax:	./.

1.3 Details of approval holder

Name:	PLANEX COMMUNICATIONS INC.
Street:	F Nissei Ebisu Bldg 2F.16-3 Higashi 3-chome, Shibuya-ku,
Town:	Tokyo 150-0011,
Country:	Japan
Telephone:	81-3-5766-1300
Fax:	81-3-5766-1301



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX

1.4 Application details

Date of receipt of test item:	May 25, 2010
Date of test:	from May 26, 2010 to May 31, 2010

1.5 General information of Test item

Type of test item:	Bluetooth Headphone adapter touch sensor
Model Number:	BT-HP02AD-DX
Multi-listing model number:	BT-HP02AD
Brand name:	PCI
Photos:	see appendix
Technical data	
Frequency band: Frequency (ch A): Frequency (ch B): Frequency (ch C):	2402 - 2480 MHz 2.402 GHz 2.441 GHz 2.480 GHz
<u>Transmitter</u> <u>Unom</u>	
Normal Mode Power (ch A or ch 0): Power (ch B or ch 39): Power (ch C or ch 78):	Conducted: 1.83 dBm Conducted: 1.35 dBm Conducted: 1.45 dBm
EDR Mode Power (ch A or ch 0): Power (ch B or ch 39): Power (ch C or ch 78):	Conducted: 1.29 dBm Conducted: 0.80 dBm Conducted: 0.94 dBm
Power supply:	Battery 3.7 Vdc 5 VDC (power on PC)
Operation modes:	duplex
Modulation Type:	GFSK 、 π / 4DQPSK 、 8DPSK
Antenna Type:	Multilayer Chip antenna
Antenna gain:	0.5 dBi



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX Host device: none

Classification:

Fixed Device	
Mobile Device (Human Body distance > 20 cm)	
Portable Device (Human Body distance < 20cm)	\square
Modular Radio Device	

Manufacturer: (if applicable)

Name:	HI-PRO INTERNATIONAL R&D CO., LTD.
Street:	3F., NO. 295, RUI GUANG RD., NEI HU,
Town:	TAIPEI
Country:	TAIWAN

./.

Additional information:

1.6 Test standards

Technical standard: FCC RULES PART 15 Subpart B / SUBPART C § 15.247 (2009-10)



Worldwide	Testing	Services(Taiwan)	Co., Ltd.
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2 Technical test

2.1 Summary of test results

No deviations from the technical specification(s) were ascertained in the course	×
of the tests performed.	

or

The deviations as specified in 3 were ascertained in the course of the tests performed.

2.2 Test environment

Temperature:	23 °C
Relative humidity content:	20 75 %
Air pressure:	86 103 kPa
Details of power supply	Battery 3.7 VDC 5 VDC (power on PC)
Extreme conditions parameters:	test voltage : extreme min : V max : V



Registration number: W6M21005-10668-C-1

FCC ID: SJ9-BT-HP02AD-DX 2.3 Test Equipment List

No.	Test equipment	Туре	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10	842121/013	R&S	2009/9/10	2010/9/9
ETSTW-CE 004	ZWEILEITER-V- NETZNACHBILDUNG TWO- LINE V-NETWORK	ESH3-Z5	840731/011	R&S	2010/3/2	2011/3/1
ETSTW-CE 005	Line-Impedance Stabilisation Network	NNBM 8126D	137	Schwarzbeck	2009/9/9	2010/9/8
ETSTW-CE 006	IMPULSBEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	2010/5/8	2011/5/7
ETSTW-CE 007	SPECTRUM ANALYZER 5GHz	FSB	849670/001	R&S	Pre-test	Use NCR
ETSTW-CE 008	HF-EICHLEITUNG RF STEP ATTENUATOR 139dB DPSP	334.6010.02	844581/024	R&S	Functi	on Test
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2009/7/21	2010/7/20
ETSTW-CE 015	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T8-02	20307	FCC	2009/9/12	2010/9/11
ETSTW-CE 016	TWO-LINE V-NETWORK	ENV216	100050	R&S	2009/9/9	2010/9/8
ETSTW-RE 002	Function Generator	33220A	MY43004982	Agilent	Functi	on Test
ETSTW-RE 003	EMI TEST RECEIVER	ESI 26	831438/001	R&S	2009/10/1	2010/9/30
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2009/9/18	2010/9/17
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	2009/9/11	2010/9/10
ETSTW-RE 006	Attenuator 10dB	50HF-010-5N-1	None	STEP	2010/3/5	2011/3/4
ETSTW-RE 010	ABSORBING CLAMP	MDS 21	3469	Schwarzbeck	2009/9/11	2010/9/10
ETSTW-RE 012	TUNABLE BANDREJECT FILTER	D.C 0309	146	K&L	Functi	on Test
ETSTW-RE 013	TUNABLE BANDREJECT FILTER	D.C 0336	397	K&L	Functi	on Test
ETSTW-RE 018	MICROWAVE HORN ANTENNA	AT4560	27212	AR	2009/10/1	2010/9/30
ETSTW-RE 020	MICROWAVE HORN ANTENNA	AT4002A	306915	AR	Functi	on Test
ETSTW-RE 021	SWEEP GENERATOR	SWM05	835130/010	R&S	2009/8/19	2010/8/18
ETSTW-RE 027	Passive Loop Antenna	6512	00034563	EMCO	2009/8/14	2011/8/13
ETSTW-RE 028	Log-Periodic Dipole Array Antenna	3148	34429	EMCO	2010/4/14	2011/4/13
ETSTW-RE 029	Biconical Antenna	3109	33524	EMCO	2010/4/14	2011/4/13
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	EMCO	2010/3/2	2011/3/1
ETSTW-RE 032	Millivoltmeter	URV 55	849086/013	R&S	2009/8/23	2010/8/22
ETSTW-RE 033	WaveRunner 6000A Serise Oscilloscope	WAVERUNNER 6100A	LCRY0604P14508	LeCroy	Functi	on Test
ETSTW-RE 034	Power Sensor	URV5-Z4	839313/006	R&S	2009/8/23	2010/8/22
ETSTW-RE 042	Biconical Antenna	HK116	100172	R&S	2010/1/13	2011/1/12
ETSTW-RE 043	Log-Periodic Dipole Antenna	HL223	100166	R&S	2010/4/29	2011/4/28
ETSTW-RE 044	Log-Periodic Antenna	HL050	100094	R&S	2010/5/11	2011/5/10
ETSTW-RE 047	PSA SERIES SPECTRUM ANALYZER	E4445A	MY46181369	Agilent	Pre-test	Use NCR
ETSTW-RE 048	Triple Loop Antenna	HXYZ 9170	HXYZ 9170-134	Schwarzbeck	2009/8/31	2010/8/30
ETSTW-RE 049	TRILOG Super Broadband test Antenna	VULB 9160	9160-3185	Schwarzbeck	2010/4/13	2011/4/12



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FCC ID: 519-	DI-NP02AD-DA					
ETSTW-RE 051	Attenuator 6dB	50HF-006-1	None	JFW	2010/3/5	2011/3/4
ETSTW-RE 053	Attenuator 3dB	50HF-003-1	None	JFW	2010/3/5	2011/3/4
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2009/6/10	2010/6/09
ETSTW-RE 060 Attenuator 30dB		5015-30	F651012z-01	ATM	Pre-test Use NCR	
ETSTW-RE 061	Amplifier Module	CHC 1	None	ETS	2009/11/12	2010/11/11
ETSTW-RE 062	Amplifier Module	CHC 2	None	KMIC	2009/11/12	2010/11/11
ETSTW-RE 064	Bluetooth Test Set	MT8852B-042	6K00005709	Anritsu	Function	on Test
ETSTW-RE 065	Amplifier	AMF-6F- 18002650-25-10P	941608	MITEQ	2010/4/13	2011/4/12
ETSTW-RE 066	Highpass Filter	H1G013G1	206015	MICROWAVE CIRCUITS, INC.	2010/3/5	2011/3/4
ETSTW-RE 072	CELL SITE TEST SET	8921A	3339A00375	HP	2009/10/2	2010/10/1
ETSTW-RE 073	Power Meter	N1911A	MY45100769	Agilent	2010/1/7	2011/1/6
ETSTW-RE 074	Power Sensor	N1921A	MY45241198	Agilent	2010/1/7	2011/1/6
ETSTW-RE 081	Highpass Filter	H03G13G1	4260-02 DC0428	MICROWAVE CIRCUITS, INC.	2010/3/5	2011/3/4
ETSTW-RE 091	Match Pad	MDCS1500	None	WOKEN	Function	on Test
ETSTW-RE 092	Match Pad	MDCS1510	None	WOKEN	Function	on Test
ETSTW-RE 096	SIGNAL GENERATOR	SMIQ 03B	102274	R&S	2009/6/5	2010/6/4
ETSTW-RE 099	DC Block	50DB-007-1	None	JFW	2010/3/5	2011/3/4
ETSTW-RE 105	2.4GHz Notch Filter	NO124411	39555	MICROWAVE CIRCUITS, INC.	2010/3/25	2011/3/24
ETSTW-RE 106	Humidity Temperature Meter	TES-1366	091011113	TES	2010/3/25	2011/3/24
ETSTW-GSM 002	Universal Radio Communication Tester	CMU 200	109439	R&S	2009/9/22	2010/9/21
ETSTW-GSM 019	Band Reject Filter	WRCTF824/849- 822/851-40 /12+9SS	3	WI	Function	on Test
ETSTW-GSM 020	Band Reject Filter	WRCD1747/1748- 1743/1752-32/5SS	1	WI	Functio	on Test
ETSTW-GSM 021	Band Reject Filter	WRCD1879.5/1880 .5-1875.5/1884.5- 32/5SS	3	WI	Function	on Test
ETSTW-GSM 022	Band Reject Filter	WRCT901.9/903.1- 904.25-50/8SS	1	WI	Function	on Test
ETSTW-GSM 023	Power Divider	4901.19.A	None	SUHNER	2009/9/21	2010/9/20
ETSTW-Cable 002	Microwave Cable	SUCOFLEX 104 (S Cable 7)	238093	HUBER+SUHNER	2009/9/16	2010/9/15
ETSTW-Cable 003	Microwave Cable	SUCOFLEX 104 (S Cable 11)	209953	HUBER+SUHNER	2009/9/16	2010/9/15
ETSTW-Cable 006	Microwave Cable	SUCOFLEX 104 (S Cable 8)	238095	HUBER+SUHNER	2010/3/5	2011/3/4
ETSTW-Cable 010	BNC Cable	5 M BNC Cable	None	JYE BAO CO.,LTD.	2010/3/5	2011/3/4
ETSTW-Cable 011	BNC Cable	BNC Cable 1	None	JYE BAO CO.,LTD.	2009/8/20	2010/8/19
ETSTW-Cable 012	BNC Cable	BNC Cable 2	None	JYE BAO CO.,LTD.	2009/8/20	2010/8/19
ETSTW-Cable 013	Microwave Cable	SUCOFLEX 104 (S_Cable 5)	232345	HUBER+SUHNER	2010/3/5	2011/3/4
ETSTW-Cable 022	N TYPE Cable	OATS Cable 3	0002	JYE BAO CO.,LTD.	2010/3/5	2011/3/4
ETSTW-Cable 039	Microwave Cable	SUCOFLEX 104 (S_Cable 19)	316739	HUBER+SUHNER	2010/3/5	2011/3/4
WTSTW-SW 001	EMI TEST SOFTWARE	Harmonics-1000	None	EMC PARTNER	HARCS V Firmware V	ersion 4.16 Version 2.18



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WTSTW-SW 002	EMI TEST SOFTWARE	EZ_EMC	None	Farad	Version ETS-03A1
WTSTW-SW 003	-SW 003 EMS TEST SOFTWARE		None	AUDIX	Version 3.2007-8-17b
WTSTW-SW 005	GSM Fading Level Correction	GSMFadLevCor	None	R&S	Version 1.66



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2.4 General Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-2003 using a 50μ H LISN (if necessary). Both lines were observed. The bandwidth of the spectrum analyzer was 10 kHz with an appropriate sweep speed.

RADIATION INTERFERENCE: The test procedure used was according to ANSI STANDARD C63.4-2003 employing a spectrum analyzer. For investigated frequency is equal to or below 1GHz, the RBW and VBW of the spectrum analyzer was 100 kHz and 100kHz respectively with an appropriate sweep speed. For investigated frequency is above 1GHz, both of RBW and VBW of the spectrum analyzer were 1 MHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The ambient. temperature of the UUT was 23°C with a humidity of 40 %.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of $dB\mu V$) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB.

Example:

Freq (MHz)METER READING + ACF + CABLE LOSS (to the receiver) = FS33 $20 \text{ dB}\mu\text{V} + 10.36 \text{ dB} + 6 \text{ dB} = 36.36 \text{ dB}\mu\text{V/m} @3m$

The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m (non metallic table) and arranged according to ANSI C63.4-2003 Section 13.1.2. The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to the frequency specified as follows:

(1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

(2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.

(3) If the intentional radiator operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.

(4) If the intentional radiator contains a digital device, regardless of whether this digital device controls the functions of the intentional radiator or the digital device is used for additional control or function purposes other than to enable the operation of the intentional radiator, the frequency range shall be investigated up to the range specified in paragraphs (a)(1)-(a)(3) of this section or the range applicable to the digital device, as shown in paragraph (b)(1) of this Section, whichever is the higher frequency range of investigation.

For hand-held devices, a exploratory test was performed with three (3) orthogonal planes to determine the highest emissions.

Measurements were made by Worldwide Testing Services(Taiwan) Co., Ltd. at the registered open field test site located No.5-1, Shuang Sing Village, LiShuei Rd., Wanli Township, Taipei County 207, Taiwan (R.O.C.). The Registration Number: **930600**.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.



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When the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

The formula is as follows: Average = Peak + Duty Factor Duty Factor = 20 log (dwell time/T) T = 100ms when the pulse train period is over 100 ms or the period of the pulse train.

Modified Limits for peak according to 15.35 (b) = Max Permitted average Limits + 20dB



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX <u>3 Test results (enclosure)</u>

Test case	Para. Number	Required	Test passed	Test failed
Peak Output Power	15.247(b)	×	×	
Equivalent radiated Power	15.247(b)	×	×	
Spurious Emissions radiated – Transmitter operating	15.247(c)	×	×	
Spurious Emissions conducted – Transmitter operating	15.247			
Carrier Frequency Separation	15.247(a) (1)	×	×	
Number of Hopping Frequencies	15.247(a) (1)(i)	×	×	
Time of Occupancy (Dwell Time)	15.247(a) (1)(i)	×	×	
20 dB Bandwidth	15.247(a) (1)(i)	×	×	
Band-edge Compliance of RF Emission	15.247(c)	x	×	
Radiated Emissions from Digital Part and Receiver Section of Transceiver	15.109	X	X	
Power Line Conducted Emission	15.207(a)	×	×	



3.1 Peak Output Power (transmitter)

FCC Rule: 15.247

This measurement applies to equipment with an integral antenna and to equipment with an antenna connector and equipped with an antenna as declared by the applicant.

The power was measured with modulation (declared by the applicant).

Normal mode

		Conducted Power						
Test conditions	Channel A	Channel B	Channel C					
	[dBm]	[dBm]	[dBm]					
$T_{nom} = 23^{\circ}C V_{nom} = 3.7 V$	1.83	1.35	1.45					

EDR mode

		Conducted Power					
Test conditions	Channel A [dBm]	Channel B [dBm]	Channel C [dBm]				
$T_{nom} = 23^{\circ}C V_{nom} = 3.7 V$	1.29	0.80	0.94				

			Radiated Power						
Test co	onditions	Channel A	Channel B	Channel C					
		[dBm]	[dBm]	[dBm]					
$T_{nom} = 23^{\circ}C$	$V_{nom} = 3.7 V$								

Test conditions	Signal Field strength TX highest power mode
$T_{nom}=23^{\circ}C, V_{nom}=3.7 V$ Frequency[MHz]	$dB\mu V/m$
Measurement uncertainty	< 3 dB

The diagrams for the field strength measurements are included in Appendix.



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX Maximum Peak Output Power

Limits:

Frequency	Number of hopping channels								
MHz	≥ 75	≥ 50	49 ≥ 25	74 ≥ 15					
902-928		30 dBm	24 dBm						
2400-2483.5 MHz	30 dBm	-		21 dBm					
5725-5850 MHz	30 dBm	-							

In case of employing transmitter antennas having antenna gain >dBi and using fixed poin-to point operation consider §15.247 (b)(4).

Test equipment used: ETSTW-RE 055, ETSTW-RE 064



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3.2 RF Exposure Compliance Requirements

According to Supplement C, Edition 01-01 to OET Bulletin 65, Edition 97-01 this spread spectrum transmitter is categorically excluded from routine environmental evaluation because of the low power level, where there is a high likelihood of compliance with RF exposure standards.

The antenna used for this Bluetooth transceiver module must not be co-located or operating in conjunction with any other antenna or transmitter.

3.3 Out of Band Radiated Emissions

FCC Rule: 15.247(c), 15.35

For out of band emissions that are close to or that exceed the 20 dB attenuation requirement described in the specification, radiated measurements were performed at a 3 m separation distance to determine whether these emissions complied with the general radiated emission requirement. Limits:

For frequencies below 1GHz : Max. reading – 20 dB

Guidance on Measurement of FHSS Systems:

"If the emission is pulsed, modify the unit for continuous operation, use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation." Here the correction was added to the limit instead subtracted from the reading.

Duty Cycle correction = 20 log (dwell time/100ms) For frequencies above 1GHz (Peak measurements). Limit = max. aver. reading-20dB +20dB(because Peak detector is used)

For frequencies above 1GHz (Average measurements). Max. reading -20 dB - duty cycle correction:

No duty cycle correction was added to the reading

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 018, ETSTW-RE 021, ETSTW-RE 028, ETSTW-RE 030, ETSTW-RE 043, ETSTW-RE 044, ETSTW-RE 064



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3.4 Transmitter Radiated Emissions in restricted Bands

FCC Rules: 15.247 (c), 15.205, 15.209, 15.35

Radiated emission measurements were performed from 30 MHz to 26000 MHz. For radiated emission tests, the analyzer setting was as followings: RES BW VID BW Frequency <1 GHz 100 kHz 100 kHz (Peak measurements) Frequency >1 GHz 1 MHz 1 MHz (Peak measurements) 1 MHz 1 MHz (Average measurements) Limits:

For frequencies below 1GHz :

Frequency of Emission (MHz)	Field strength (microvolts/meter)	Field Strength (dB microvolts/meter)
30 - 88	100	40.0
88-216	150	43.5
216 - 960	200	46.0
Above 960	500	54.0

For frequencies above 1GHz (Average measurements).

Guidance on Measurement of FHSS Systems:

"If the emission is pulsed, modify the unit for continues operation, use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation." Here the correction was added to the limit instead subtracted from the reading.

Duty cycle correction $= 20 \log (dwell time/100ms)$

For frequencies above 1GHz (Average measurements).

Limit – duty cycle correction

No duty cycle correction was added to the reading.

 $54.0 dB \mu V/m$

For frequencies above 1GHz (Peak measurements).

Limit + 20dB

 $54.0 dB\mu V/m + 20 dB = 74 dB\mu V/m$

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 028, ETSTW-RE 029, ETSTW-RE 030, ETSTW-RE 042, ETSTW-RE 043, ETSTW-RE 044, ETSTW-RE 064



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3.5 Spurious emissions (tx)

Spurious emission was measured with modulation (declared by manufacturer).

In any 100 kHz bandwidth outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB 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. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, 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) (see § 15.205(c))

SAMPLE CALCULATION OF LIMIT. All results will be updated by an automatic measuring system in accordance to point 2.3.

Calculation of test results:

Such factors like antenna correction, cable loss, external attenuation etc. are already included in the provided measurement results. This is done by using validated test software and calibrated test system according the accreditation requirements.

The peak and average spurious emission plots was measured with the average limits.

In the Table being listed the critical peak and average value an exhibit the compliance with the above calculated Limits.

If in the column's correction factor states a value then the max. Field strength in the same row is corrected by a value gained from the "Marker-Delta-Method" or the "Duty-Cycle Correction Factor".

Summary table with radiated data of the test plots

Ν	lodel:	BT-	HP02AD-D	X	Date:	2010/5	5/29		
Ν	/lode:	TX r	node (CH	0)	Temperature:	24	°C	Engineer:	Kevin
Pola	arization:	Horizontal			Humidity:	60	%		
Ero		Dooding		Factor	Result	Limit	Margin	Table	Ant.
	equency MHz)	Reading	Detector				U U	Degree	High
	IVINZ)	(dBuV)		(dB)	(dBuV/m)	(dBuV/m)	(dB)	(Deg.)	(cm)
25	8.3367	17.54	peak	14.77	32.31	46.00	-13.69	120	150
96	9.1383	8.40	peak	28.82	37.22	54.00	-16.78	110	150

Frequency	Rea	ding	Factor	actor Result @3m		Limit	Limit @3m M		Table	
	(dB	uV)	(dB)	(dBuV/m)		(dBuV/m)			Degree	Ant. High
(MHz)	Peak	Ave.	Corr.	Peak	Ave.	Peak	Ave.	(dB)	(Deg.)	(cm)
4801.6030	54.92		-4.98	49.94		74.00	54.00	-24.06	315	150
7206.0000	47.48		-2.21	45.27		74.00	54.00	-28.73	280	150
9608.0000	30.33		13.01	43.34		74.00	54.00	-30.66	110	150
12010.0000	30.83		15.83	46.66		74.00	54.00	-27.34	210	150



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX

Polarization:	Vertical	-						
Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
262.1243	16.47	peak	14.89	31.36	46.00	-14.64	130	150
977.5551	11.29	peak	28.93	40.22	54.00	-13.78	140	150

Frequency	Rea	ding	Factor	ctor Result @3m		Limit @3m		Margin	Table	
	(dB	uV)	(dB)	(dBuV/m)		(dBuV/m)			Degree	Ant. High
(MHz)	Peak	Ave.	Corr.	Peak	Ave.	Peak	Ave.	(dB)	(Deg.)	(cm)
4801.6030	55.50		-4.98	50.52		74.00	54.00	-23.48	215	150
7206.0000	48.18		-2.21	45.97		74.00	54.00	-28.03	230	150
9608.0000	29.68		13.01	42.69		74.00	54.00	-31.31	140	150
12010.0000	30.94		15.83	46.77		74.00	54.00	-27.23	120	150

Mode: Polarization:		node (CH3	39)	Temperature: Humidity:	24 60	°C %	Engineer:	Kevin
Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
164.7295	16.87	peak	15.21	32.08	43.50	-11.42	110	150
990.1804	8.02	peak	29.09	37.11	54.00	-16.89	130	150

Frequency	Rea	ding	Factor	Result	:@3m	Limit	@3m	Margin	Table	
	(dB	uV)	(dB)	(dBu	V/m)	(dBu	V/m)	_	Degree	Ant. High
(MHz)	Peak	Ave.	Corr.	Peak	Ave.	Peak	Ave.	(dB)	(Deg.)	(cm)
4881.7640	63.42	44.72	-4.85	58.57	39.87	74.00	54.00	-14.13	295	150
7323.0000	48.31		-2.81	45.50		74.00	54.00	-28.50	110	150
9764.0000	30.96		12.86	43.82		74.00	54.00	-30.18	130	150
12205.0000	30.87		16.47	47.34		74.00	54.00	-26.66	210	150

Polarization: Vertical

Frequer (MHz		ading 3uV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
261.042	1 17	7.02	peak	14.84	31.86	46.00	-14.14	110	150
981.76	5 10).79	peak	28.98	39.77	54.00	-14.23	140	150



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Frequency	Rea	ding	Factor	Result	@3m	Limit	@3m	Margin	Table	
	(dB	uV)	(dB)	(dBu	V/m)	(dBu	V/m)		Degree	Ant. High
(MHz)	Peak	Ave.	Corr.	Peak	Ave.	Peak	Ave.	(dB)	(Deg.)	(cm)
4881.7640	60.71	44.04	-4.85	55.86	39.19	74.00	54.00	-14.81	335	150
7323.0000	48.46		-2.81	45.65		74.00	54.00	-28.35	210	150
9764.0000	31.23		12.86	44.09		74.00	54.00	-29.91	325	150
12205.0000	31.45		16.47	47.92		74.00	54.00	-26.08	130	150

Mode: Polarization:		node (CH7	78)	Temperature: Humidity:	24 60	°C %	Engineer:	Kevin
Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
162.5652	17.49	peak	15.35	32.84	43.50	-10.66	160	150
998.5972	7.92	peak	29.20	37.12	54.00	-16.88	170	150

Frequency	Rea	ding	Factor	Result	:@3m	Limit	@3m	Margin	Table	
	(dB	uV)	(dB)	(dBu	V/m)	(dBu	V/m)	_	Degree	Ant. High
(MHz)	Peak	Ave.	Corr.	Peak	Ave.	Peak	Ave.	(dB)	(Deg.)	(cm)
4961.9240	68.71	46.15	-5.01	63.70	41.14	74.00	54.00	-12.86	300	150
7440.0000	48.34		-3.19	45.15		74.00	54.00	-28.85	220	150
9920	31.3		13.28	44.58		74.00	54.00	-29.42	220	150
12400	31.66		16.51	48.17		74.00	54.00	-25.83	310	150

Polarization:	Vertical
	volucai

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
257.2545	16.67	peak	14.75	31.42	46.00	-14.58	130	150
994.3888	10.13	peak	29.15	39.28	54.00	-14.72	160	150

Frequency	Read	ding	Factor	Result	@3m	Limit	@3m	Margin	Table	
	(dB	uV)	(dB)	(dBu	V/m)	(dBu	V/m)	_	Degree	Ant. High
(MHz)	Peak	Ave.	Corr.	Peak	Ave.	Peak	Ave.	(dB)	(Deg.)	(cm)
4960.0190	65.13	44.83	-5.00	60.13	39.83	74.00	54.00	-14.17	340	150
7440.0000	48.75		-3.19	45.56		74.00	54.00	-28.44	230	150
9920.0000	30.38		13.28	43.66		74.00	54.00	-30.34	205	150
12400.0000	30.9		16.51	47.41		74.00	54.00	-26.59	310	150



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Note 1. Correction Factor = Antenna factor + Cable loss - Preamplifier

- 2. The formula of measured value as: Test Result = Reading + Correction Factor
- 3. Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average
- 4. All not in the table noted test results are more than 20 dB below the relevant limits.
- 5. See the attached diagram as appendix.

All other not noted test plots do not contain significant test results in relation to the limits.

TEST RESULT (Transmitter): The unit DOES meet the FCC requirements.

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 028, ETSTW-RE 029, ETSTW-RE 030, ETSTW-RE 042, ETSTW-RE 043, ETSTW-RE 044, ETSTW-RE 064



3.6 Carrier Frequency Separation

Carrier Frequency Separation was measured with modulation (declared by manufacturer).

According to FCC rules part 15 subpart C §15.247 frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or 20 dB bandwidth of the hopping channel, whichever is greater.

Test co	nditions	Channel Separation				
		Channel 0 Channel 0+1				
$T_{nom} = 23^{\circ}C$	$V_{nom} = 3.7 V$	1006 kHz				

Test co	nditions	Channel Separation				
		Channel 39 Channel 39+1				
$T_{nom} = 23^{\circ}C$	$V_{nom} = 3.7 V$	1006 kHz				

Test co	nditions	Channel Separation				
		Channel 78 Channel 78+1				
$T_{nom} = 23^{\circ}C$	$V_{nom} = 3.7 V$	1000 kHz				

Limits:

Frequency Range	Limits	
MHz	20 dB bandwidth < 25 kHz	20 dB bandwidth > 25 kHz
902-928	25 kHz	20 dB bandwidth
2400-2483.5 5725-5850.0	25 kHz	20 dB bandwidth

Test equipment used: ETSTW-RE 055, ETSTW-RE 064



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3.7 Number of Hopping Frequencies

According to FCC rules part 15 subpart C §15.247 frequency hopping systems operating in the 2400-2483.5 MHz band shall use at least 15 hopping frequencies. Frequency hopping systems in 5725-5850 MHz bands shall use least 75 hopping frequencies.

For frequency hopping systems operating in the 902-928 MHz band: if the 20dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies; if the 20dB bandwidth of the hopping channel 250 kHz or greater, the system shall use at least 25 hopping frequencies.

Test conditions		Operating Mode	Number of Channels
$T_{nom} = 23^{\circ}C$	V _{nom} = 3.7 V	normal transmitting	79

Limits:

Frequency Range	Limit	
MHz	20dB Bandwidth	Number of Channels
902-928 MHz	Bandwidth < 250 kHz	≥ 50
	Bandwidth ≥ 250 kHz	≥ 25
2400-2483.5	not defined	15
5725-5850.0 MHz	1 MHz	75

Test equipment used: ETSTW-RE 055, ETSTW-RE 064

Explanation: See attached diagrams in appendix.

3.7.1 Pseudorandom Frequency Hopping Sequence

The generation of the hopping sequence is determined by the Bluetooth cord specification and complies with the FCC requirements.

3.7.2 Coordination of hopping sequences to other transmitters

According to the Bluetooth core specification V1.1 such a coordination is not possible. During scatternet function only one of the two hopping sequences will be used at a definite moment.

3.7.3 System Receiver Hopping Capability

According to the Bluetooth core specification. The system receivers shift frequencies in synchronization with the transmitted signals.



3.8 Time of Occupancy (Dwell Time)

Frequency hopping systems operating in the 5725-5850 MHz band shall use an average time of occupancy on any frequency not greater than 0.4 seconds within a 30 second period.

In 2400-2483.5 MHz band the average time of occupancy on any channel shall not be greater than 0.4 seconds multiplied by the number of hopping channels employed.

For frequency hopping systems operating in the 902-928 MHz band: if the 20dB bandwidth of the hopping channel is less than 250 kHz, the average time of occupancy on any frequency shall not greater than 0.4 seconds within a 20 second period; if the 20dB bandwidth of the hopping channel is 250 kHz or greater, the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period.

Test conditions	Operating mode	Measurement period	Time of Occupancy
$T_{nom} = 23^{\circ}C$	normal transmitting-DH 1	31.6 s	139.52 ms
$V_{nom} = 3.7 V$	normal transmitting-DH 3	31.6 s	271.84 ms
Channel 0	normal transmitting-DH 5	31.6 s	325.05 ms

Test conditions	Operating mode	Measurement period	Time of Occupancy
$T_{nom} = 23^{\circ}C$	normal transmitting-DH 1	31.6 s	139.52 ms
$V_{nom} = 3.7 V$ Channel 39	normal transmitting-DH 3	31.6 s	271.84 ms
Channel 39	normal transmitting-DH 5	31.6 s	325.05 ms

Test conditions	Operating mode	Measurement period	Time of Occupancy
$T_{nom} = 23^{\circ}C$	normal transmitting-DH 1	31.6 s	139.52 ms
$V_{nom} = 3.7 V$ Channel 78	normal transmitting-DH 3	31.6 s	271.84 ms
Channel 78	normal transmitting-DH 5	31.6 s	325.05 ms



Limits and measurement periods:

Frequency MHz	Number of channels	Measurement Period	Limit
902 - 928	≥50	20 s	0.4 s
902 - 928	49 ≥ 25	10 s	0.4 s
2400 - 2483.5	≥ 15	0.4 s * number of used channels	0.4 s
5725- 5850	≥ 75	30 s	0.4s

Test equipment used: ETSTW-RE 055, ETSTW-RE 064

Explanation: See attached diagrams in appendix, which show the On-time and the number of counted events during the measurement period



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3.9 20dB Bandwidth

Frequency hopping systems operating in the 5725-5850 MHz bands shall use a maximum 20dB bandwidth of 1 MHz.

The 20dB bandwidth is measured on the lowest, middle and highest hopping channel.

For frequency hopping systems operating in the 902-928 MHz band the maximum 20dB bandwidth of the hopping channel is 500 kHz.

Normal mode

Test conditions		20 dB Bandwidth		
		Channel A	Channel B	Channel C
$T_{nom} = 23^{\circ}C$	$V_{nom} = 3.7 V$	794.871794872 kHz	801.282051282 kHz	794.871794872 kHz

EDR mode

Test conditions		20 dB Bandwidth		
		Channel A	Channel B	Channel C
$T_{nom} = 23^{\circ}C$	$V_{nom} = 3.7 V$	1.205128205 MHz	1.217948718 MHz	1.217948718 MHz

Limits:

Frequency Range / MHz	Limit
902-928	\leq 500 kHz
2400-2483.5	not defined
5725-5850	≤1 MHz

Test equipment used: ETSTW-RE 055, ETSTW-RE 064

Explanation: See attached diagrams in appendix.

3.9.1 System Receiver Input Bandwidth

It is determined in the Bluetooth core specification. The value matches to the bandwidth of transmitter signal.



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX **3.10** Band-edge Compliance of RF Emissions

According to FCC rules part 15 subpart C §15.247(c) in any 100 kHz bandwidth outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB 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. Attenuation below the general limits specified in § 15.209(a) is not required.

In addition radiated emission which fall in the restricted bands, as defined in section 15.205(a), must also with the radiated emission limits.

Normal mode

Test conditions		Attenuation at or outside band-edges Single Frequency	
		Lower Band-edge	Upper Band-edge
$T_{nom} = 23^{\circ}C$	$V_{nom} = 3.7 V$	42.92 dB	56.39 dB

Test conditions		Attenuation at or outside band-edges Hopping Frequency	
		Lower Band-edge	Upper Band-edge
$T_{nom} = 23^{\circ}C$	$V_{nom} = 3.7$ V	42.52 dB	56.40 dB

EDR mode

Test co	nditions		r outside band-edges Frequency			
		Lower Band-edge Upper Band-edge				
$T_{nom} = 23^{\circ}C$	$V_{nom} = 3.7$ V	40.10 dB	53.77 dB			

Test co	nditions	Attenuation at or outside band-edges Hopping Frequency					
		Lower Band-edge Upper Band-ed					
$T_{nom} = 23^{\circ}C$	$V_{nom} = 3.7$ V	40.10 dB	53.78 dB				



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Limits:

Frequency Range / MHz	Limit				
902 –928					
2400 - 2483.5	- 20 dB				
5725 - 5850					

Test equipment used: ETSTW-RE 055, ETSTW-RE 064



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3.11 Radiated Emissions from Digital Part and Receiver Section of Transceiver

FCC Rule: 15.109

Summary table with radiated data of the test plots

Model:	BT-HP02A	D-DX		Date:	2010/5/29				
Mode:	Digital part	t		Temperature:	26	°C	Engineer: Kevin		
Polarization:	Horizontal			Humidity:	60	%			
Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)	
162.0241	3.39	peak	14.40	17.79	30.00	-12.21	145	335	
200.4410	8.66	peak	11.36	20.02	30.00	-9.98	120	310	
282.6854	5.00	peak	15.02	20.02	37.00	-16.98	220	340	
479.5592	4.48	peak	20.25	24.73	37.00	-12.27	210	125	
696.9940	0.59	peak	24.30	24.89	37.00	-12.11	305	110	
750.3006	0.99	peak	25.63	26.62	37.00	-10.38	230	150	

Frequency	Reading		Factor	Result	:@3m	Limit @3m		nit @3m Margin		
	(dB	uV)	(dB)	(dBuV/m)		(dBuV/m)		_	Degree	Ant. High
(MHz)	Peak	Ave.	Corr.	Peak	Ave.	Peak	Ave.	(dB)	(Deg.)	(cm)
3537.0740	45.63		-3.81	41.82		74.00	54.00	-32.18	120	150

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
196.6533	10.55	peak	11.58	22.13	30.00	-7.87	210	125
225.8718	7.06	peak	12.35	19.41	30.00	-10.59	250	110
262.1243	7.46	peak	14.03	21.49	37.00	-15.51	160	145
479.5591	0.65	peak	20.25	20.90	37.00	-16.10	130	340
800.8016	-2.08	peak	26.20	24.12	37.00	-12.88	330	325
942.4850	-2.44	peak	27.98	25.54	37.00	-11.46	215	310

Frequency	Reading		Factor	Result	@3m	Limit @3m		@3m Margin		
	(dB	uV)	(dB)	(dBuV/m)		(dBuV/m)			Degree	Ant. High
(MHz)	Peak	Ave.	Corr.	Peak	Ave.	Peak	Ave.	(dB)	(Deg.)	(cm)
2400.8020	48.11		-8.30	39.81		74.00	54.00	-34.19	140	150



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX

Mode: Polarization:	RX mode Horizontal	` '		Temperature: Humidity:	24 60	°C %	Engineer: Kevin		
Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)	
87.3548	25.32	peak	9.15	34.47	40.00	-5.53	220	150	
156.6133	17.62	peak	15.46	33.08	43.50	-10.42	130	150	
209.0982	23.14	peak	12.55	35.69	43.50	-7.81	110	150	
415.0301	20.79	peak	19.24	40.03	46.00	-5.97	160	150	
670.3407	12.71	peak	24.41	37.12	46.00	-8.88	120	150	

Frequency	Reading		Factor	Result	@3m	Limit @3m		Margin	Table	
	(dB	uV)	(dB)	(dBuV/m)		(dBuV/m)			Degree	Ant. High
(MHz)	Peak	Ave.	Corr.	Peak	Ave.	Peak	Ave.	(dB)	(Deg.)	(cm)
3663.3270	45.12		-3.35	41.77		74.00	54.00	-32.23	140	150

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
88.9780	22.16	peak	8.97	31.13	43.50	-12.37	130	150
152.2846	18.34	peak	15.41	33.75	43.50	-9.75	110	150
196.6533	24.85	peak	12.14	36.99	43.50	-6.51	140	150
492.1844	15.54	peak	20.93	36.47	46.00	-9.53	110	150
834.4690	11.24	peak	26.72	37.96	46.00	-8.04	210	150

Frequency	Reading		Factor	Result	@3m	Limit @3m		Margin	Table	
	(dB	uV)	(dB)	(dBuV/m)		(dBuV/m)			Degree	Ant. High
(MHz)	Peak	Ave.	Corr.	Peak	Ave.	Peak	Ave.	(dB)	(Deg.)	(cm)
2400.8020	47.61		-8.30	39.31		74.00	54.00	-34.69	110	150

Mode: Polarization:	RX mode Horizontal	· /		Temperature: Humidity:	24 60	°C %	Engineer:	Kevin
Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
87.8960	24.88	peak	9.09	33.97	40.00	-6.03	120	150
167.4350	17.48	peak	15.05	32.53	43.50	-10.97	220	150
200.4410	23.08	peak	11.99	35.07	43.50	-8.43	190	150
413.6273	20.31	peak	19.20	39.51	46.00	-6.49	210	150
673.1463	12.75	peak	24.45	37.20	46.00	-8.80	110	150



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX

Frequency	Rea	ding	Factor	Result	@3m	Limit	@3m	Margin	Table	
	(dB	uV)	(dB)	(dBu	V/m)	(dBu	V/m)		Degree	Ant. High
(MHz)	Peak	Ave.	Corr.	Peak	Ave.	Peak	Ave.	(dB)	(Deg.)	(cm)
3537.0740	45.63		-3.81	41.82		74.00	54.00	-32.18	120	150

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
91.1424	21.97	peak	9.08	31.05	43.50	-12.45	130	150
167.9760	18.77	peak	15.01	33.78	43.50	-9.72	210	150
196.6533	24.47	peak	12.14	36.61	43.50	-6.89	150	150
480.9620	14.67	peak	20.77	35.44	46.00	-10.56	180	150
908.8176	9.65	peak	27.80	37.45	46.00	-8.55	130	150

Frequency	Rea	ding	Factor	ctor Result @3m		Limit	Limit @3m		Table	
	(dB	uV)	(dB)	(dBu	V/m)	(dBu	V/m)		Degree	Ant. High
(MHz)	Peak	Ave.	Corr.	Peak	Ave.	Peak	Ave.	(dB)	(Deg.)	(cm)
2400.8020	48.11		-8.30	39.81		74.00	54.00	-34.19	140	150

Mode:	RX mode (CH78)			Temperature:	24	°C	Engineer:	Kevin
Polarization:	Horizontal			Humidity:	60	%	-	
Froqueney	Reading		Factor	Result	Limit	Margin	Table	Ant.
Frequency (MHz)	(dBuV)	Detector	(dB)	(dBuV/m)	(dBuV/m)	- U	Degree	High
	(ubuv)		(ub)	(ubu v/iii)	(ubuv/iii)	(ub)	(Deg.)	(cm)
86.8137	25.78	peak	9.21	34.99	40.00	-5.01	110	150
162.5652	17.49	peak	15.35	32.84	43.50	-10.66	210	150
213.4270	21.89	peak	12.87	34.76	43.50	-8.74	250	150
419.2386	20.65	peak	19.36	40.01	46.00	-5.99	120	150
908.8176	10.36	peak	27.80	38.16	46.00	-7.84	110	150

Frequency	Rea	ding	Factor	ctor Result @3m		Limit	Limit @3m		Table	
	(dB	uV)	(dB)	(dBu	V/m)	(dBu	V/m)		Degree	Ant. High
(MHz)	Peak	Ave.	Corr.	Peak	Ave.	Peak	Ave.	(dB)	(Deg.)	(cm)
3663.3270	45.12		-3.35	41.77		74.00	54.00	-32.23	120	150



Polarization:	Vertical							
Frequency (MHz)	Reading (dBuV)		Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree	Ant. High
	(ubuv)		(uD)	(ubuv/iii)		(ub)	(Deg.)	(cm)
89.5191	21.57	peak	8.91	30.48	43.50	-13.02	140	150
154.9900	16.95	peak	15.44	32.39	43.50	-11.11	130	150
196.6533	24.56	peak	12.14	36.70	43.50	-6.80	110	150
473.9480	14.64	peak	20.65	35.29	46.00	-10.71	210	150
820.4410	12.94	peak	26.63	39.57	46.00	-6.43	130	150

Frequency	Read	ding	Factor	Result	@3m	Limit	@3m	Margin	Table	
	(dBı	uV)	(dB)	(dBu)	V/m)	(dBu	V/m)		Degree	Ant. High
(MHz)	Peak	Ave.	Corr.	Peak	Ave.	Peak	Ave.	(dB)	(Deg.)	(cm)
3374.7490	45.38		-4.00	41.38		74.00	54.00	-32.62	110	150

Note 1. Correction Factor = Antenna factor + Cable loss - Preamplifier

- 2. The formula of measured value as: Test Result = Reading + Correction Factor
- 3. Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average
- 4. All not in the table noted test results are more than 20 dB below the relevant limits.
- 5. See attached diagrams in appendix.

Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of Emission	Field Strength	Field Strength
(MHz)	(microvolts/meter)	(dBmicrovolts/meter)
30 - 88	100	40.0
88-216	150	43.5
216 - 960	200	46.0
Above 960	500	54.0

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 028, ETSTW-RE 029, ETSTW-RE 030, ETSTW-RE 042, ETSTW-RE 043, ETSTW-RE 044, ETSTW-RE 064



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX **3.12** Power Line Conducted Emission

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the table bellows with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.

This measurement was transact first with instrumentation using an average and peak detector and a 10 kHz bandwidth. If the peak detector achieves a calculated level, the measurement is repeated by an instrumentation using a quasi-peak detector.

Frequency					Lev	vel (dB	μV)				
Irequency			quasi-p	beak				average			
150 kHz		lo	wer lin	nit line				Lower limit line			
Model: Mode: Polarization:				ature:		/5/29 °C %		Engineer: Rick			
Frequency (MHz)	Rea	ding uV) Ave.	Factor (dB) Corr.	Re	sult SuV) Ave.	Lir	nit uV) Ave.	Margin (dB)			
0.1547	27.41	13.53	10.74	38.15	24.27	65.74	1	-27.59			
0.4918	22.69	9.44	10.66	33.35	20.10	56.14	46.14	-22.79			
1.2400	21.54	8.48	10.31	31.85	18.79	56.00	46.00	-24.15			
1.6097	23.03	9.82	10.20	33.23	20.02	56.00	46.00	-22.77			
4.4450	11.25	4.13	10.19	21.44	14.32	56.00	46.00	-31.68			
12.6717	8.94	1.06	10.52	19.46	11.58	60.00	50.00	-38.42			
Polarization:	L1										
Frequency	Rea (dB	ding uV)	Factor (dB)	-	sult suV)		nit uV)	Margin			

Frequency		aing uV)	dB)		suit BuV)	(dBuV)		iviargin
(MHz)	QP	Ave.	Corr.	QP	Ave.	QP	Ave.	(dB)
0.1505	28.04	14.89	10.75	38.79	25.64	65.97	55.97	-27.18
0.2466	26.93	13.24	10.73	37.66	23.97	61.87	51.87	-24.21
1.2528	23.86	8.38	10.31	34.17	18.69	56.00	46.00	-21.83
1.6327	26.13	10.09	10.20	36.33	20.29	56.00	46.00	-19.67
4.9426	15.02	6.06	10.22	25.24	16.28	56.00	46.00	-29.72
11.2500	10.60	1.63	10.54	21.14	12.17	60.00	50.00	-37.83

Limits:

Frequency of Emission (MHz)	Conducted Limit (dBuV)				
	Quasi Peak	Average			
0.15-0.5	66 to 56	56 to 46			
0.5-5	56	46			
5-30	60	50			



Note: 1.The formula of measured value as: Test Result = Reading + Correction Factor 2.The Correction Factor = Cable Loss + LISN Insertion Loss + Pulse Limit Loss 3.Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average 4.All not in the table noted test results are more than 20 dB below the relevant limits. 5.See attached diagrams in appendix.

Test equipment used: ETSTW-CE 001, ETSTW-CE 004, ETSTW-CE 006, ETSTW-RE 064



Appendix

A Measurement diagrams

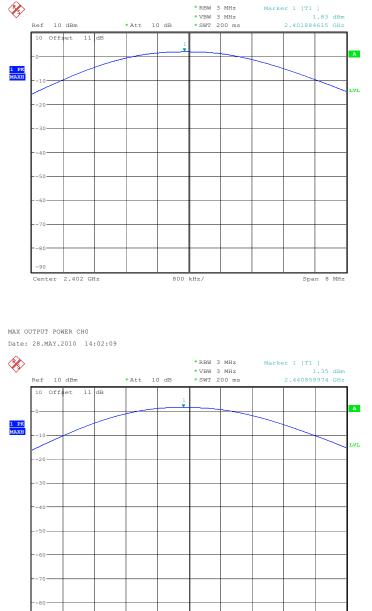
- 1. Peak Output Power
- 2. Spurious Emissions radiated-TX & RX
- 3. Carrier Frequency Separation
- 4. Number of Hopping Frequencies
- 5. Time of Occupancy (Dwell Time)
- 6. 20dB Bandwidth
- 7. Band-edge Compliance of RF Conducted Emissions
- 8. Radiated Emissions from Digital Part
- 9. Power Line Conducted Emission

B Photos

- 1. External Photos
- 2. Internal Photos
- 3. Set Up Photo of Radiated Emission
- 4. Set Up Photo of Conducted Emission



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX Peak Output Power Normal mode



800 kHz/

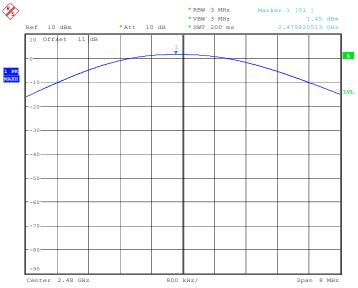
Span 8 MHz

MAX OUTPUT POWER CH39 Date: 28.MAY.2010 14:01:50

Center 2.441 GHz

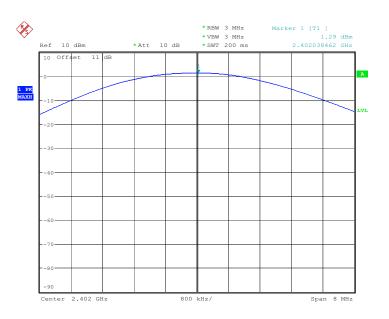


Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



MAX OUTPUT POWER CH78 Date: 28.MAY.2010 14:01:29

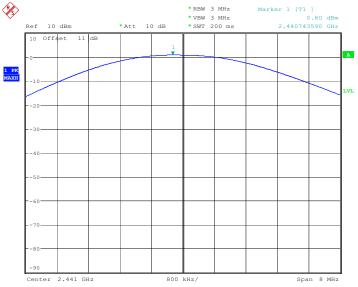
EDR mode



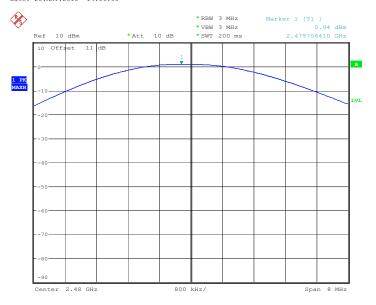
MAX OUTPUT POWER CHO EDR MODE Date: 28.MAY.2010 14:05:03



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



MAX OUTPUT POWER CH39 EDR MODE Date: 28.MAY.2010 14:06:00



MAX OUTPUT POWER CH78 EDR MODE Date: 28.MAY.2010 14:06:25

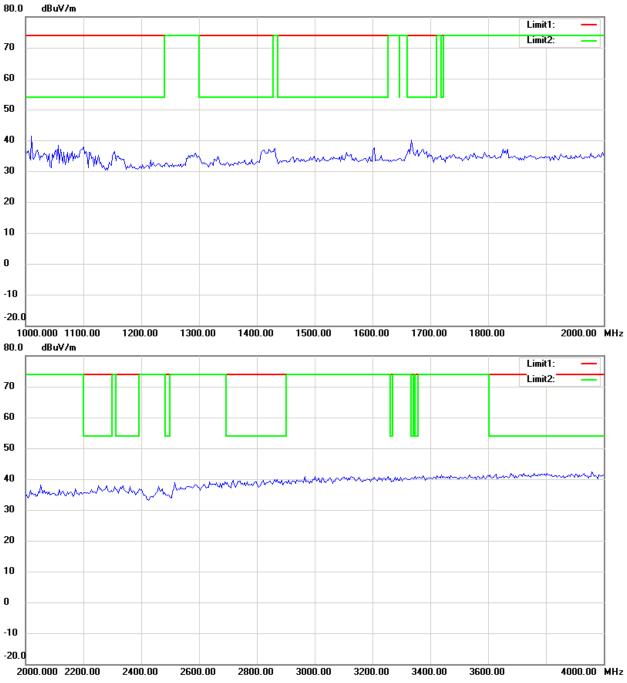


Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX Spurious Emissions radiated TX-CH 0 Antenna Polarization H 82.0 dBuV/m Limit1: 72 62 52 42 32 22 12 2 -8 -18.0 300.00 30.000 57.00 84.00 111.00 138.00 165.00 192.00 219.00 246.00 MHz dBu¥/m 82.0 Limit1: 72 62 52 42 32 22 12 2 -8 -18.0 300.000 370.00 440.00 510.00 580.00 1000.00 MHz 650.00 720.00 790.00 860.00

- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



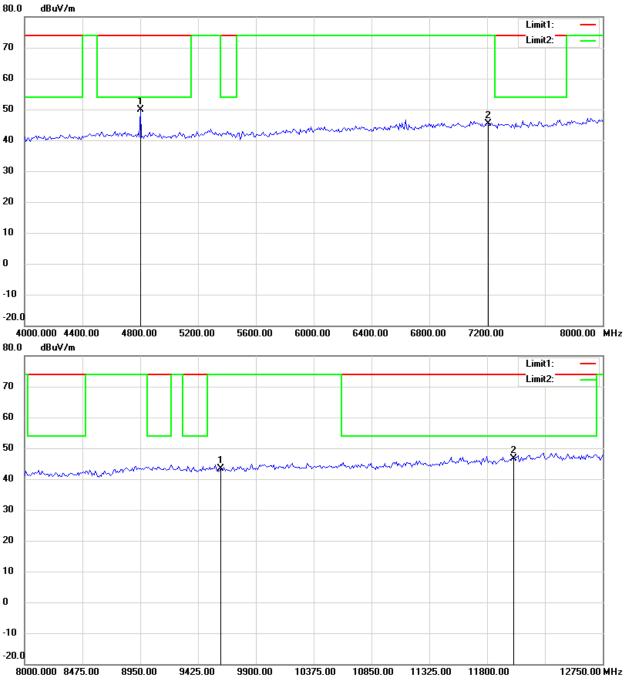
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



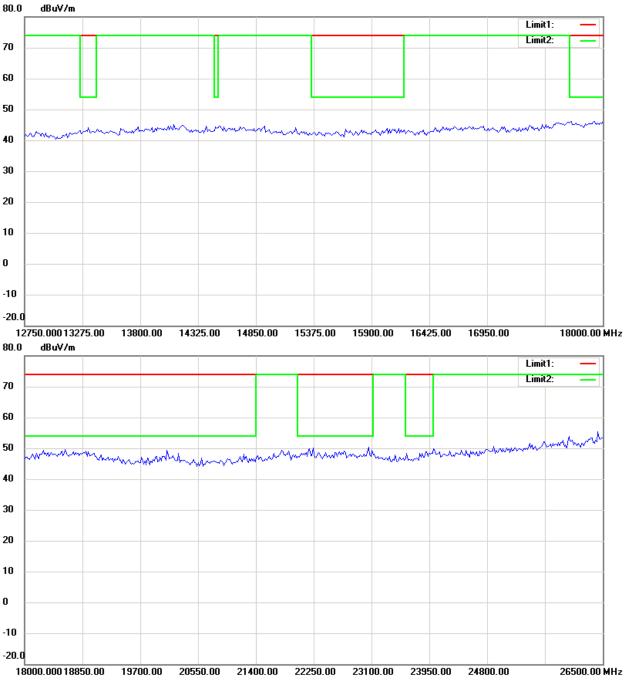
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
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Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

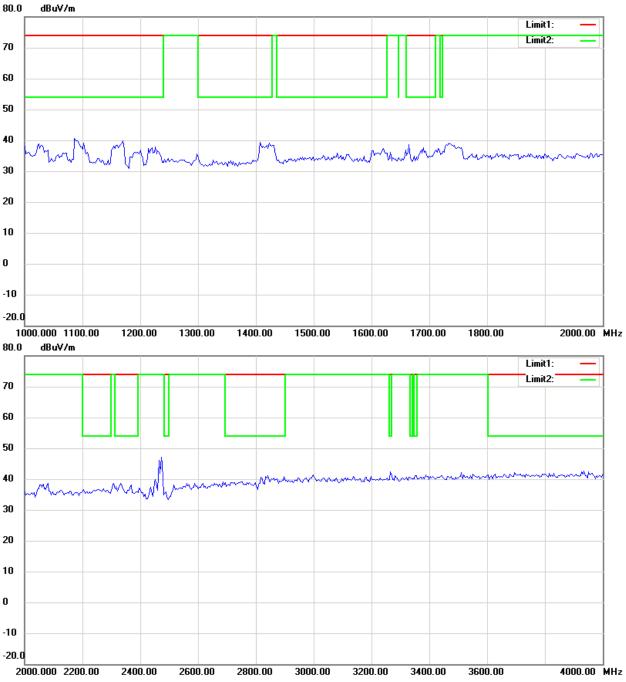


Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX Antenna Polarization V 82.0 dBu¥/m Limit1: 72 62 52 42 32 22 12 2 -8 -18.0 30.000 57.00 84.00 111.00 138.00 165.00 192.00 219.00 246.00 300.00 MHz 82.0 dBu¥/m Limit1: 72 62 52 42 32 22 12 2 -8 -18.0 1000.00 MHz 300.000 370.00 440.00 510.00 580.00 650.00 720.00 790.00 860.00

- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



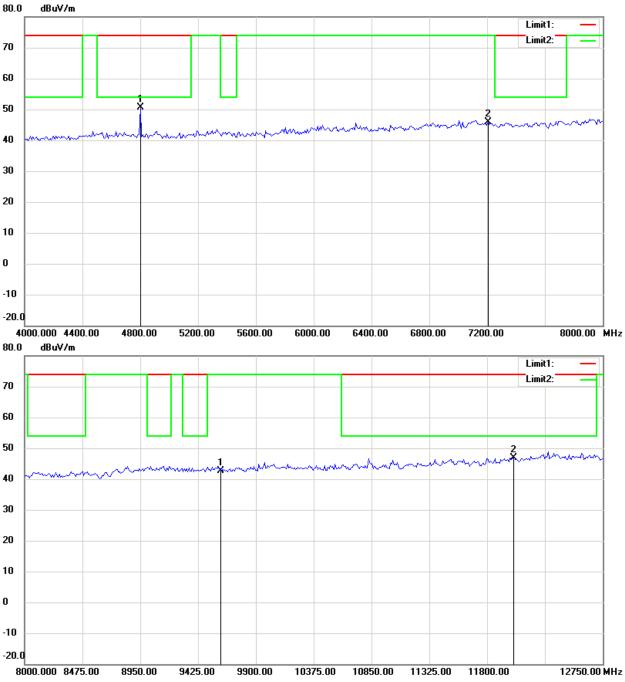
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



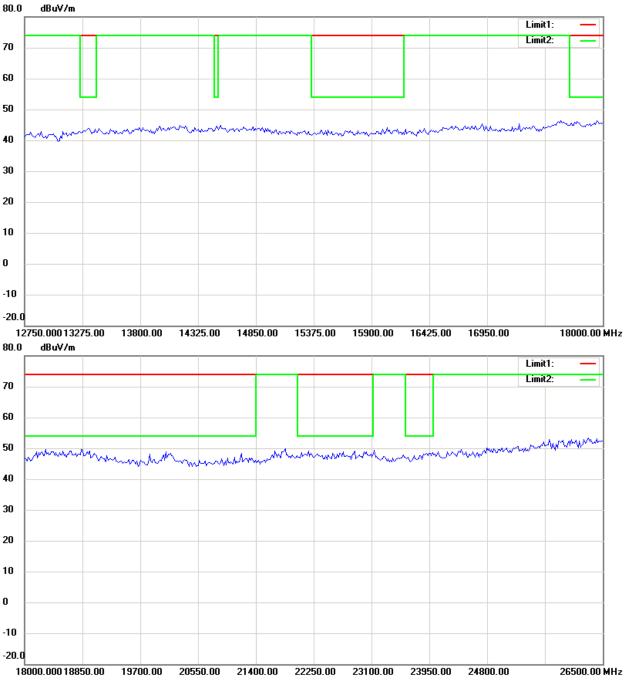
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



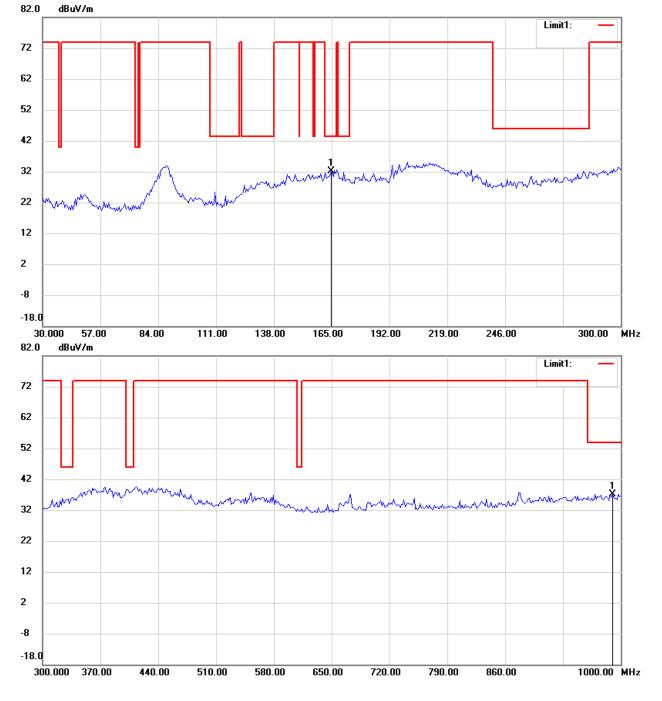
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



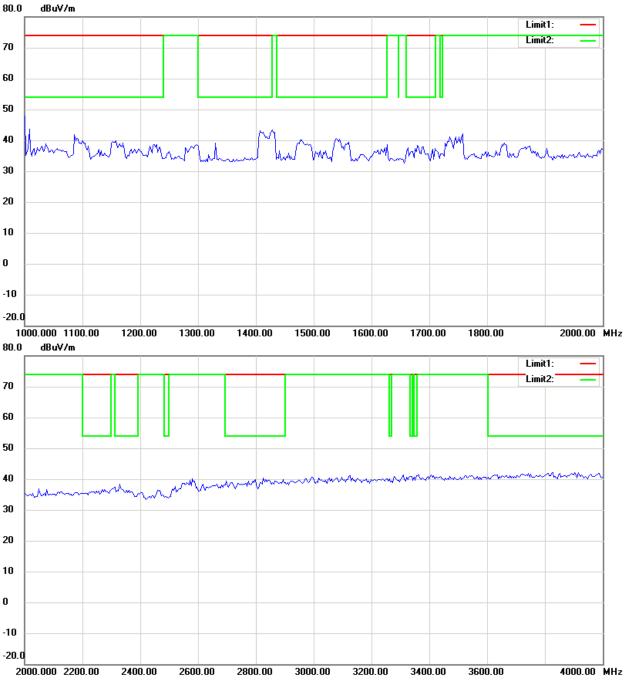
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX TX-CH 39 Antenna Polarization H



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



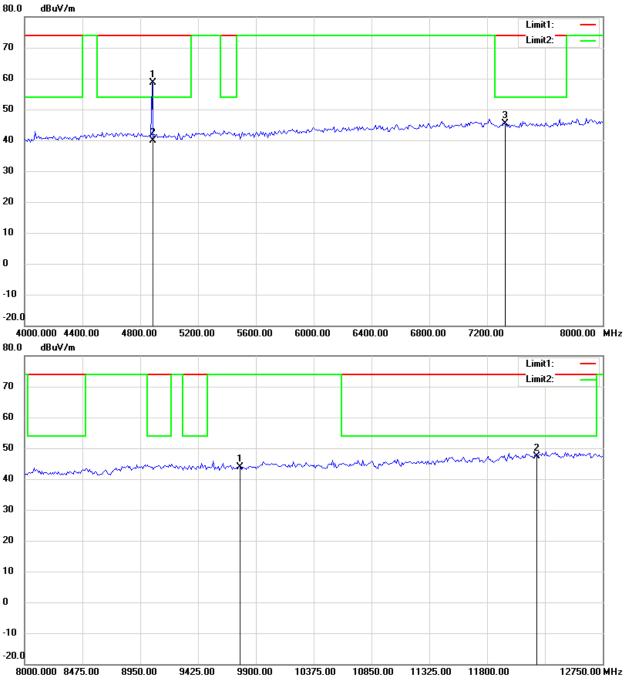
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



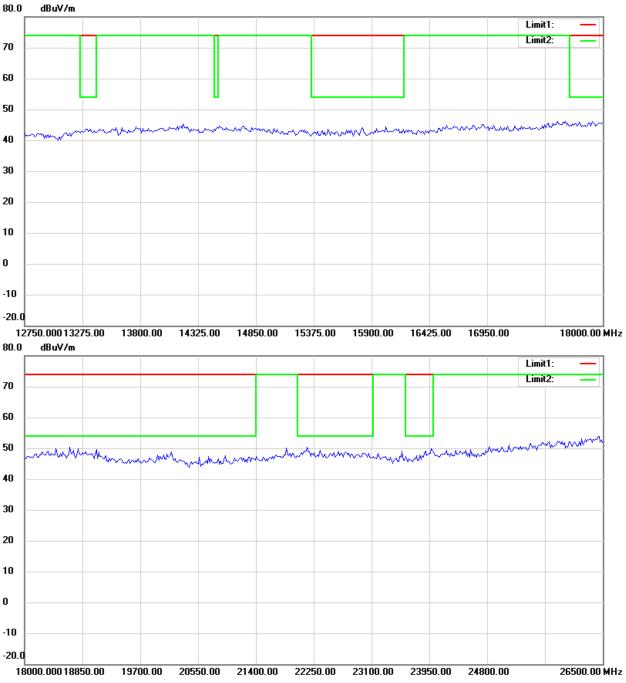
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



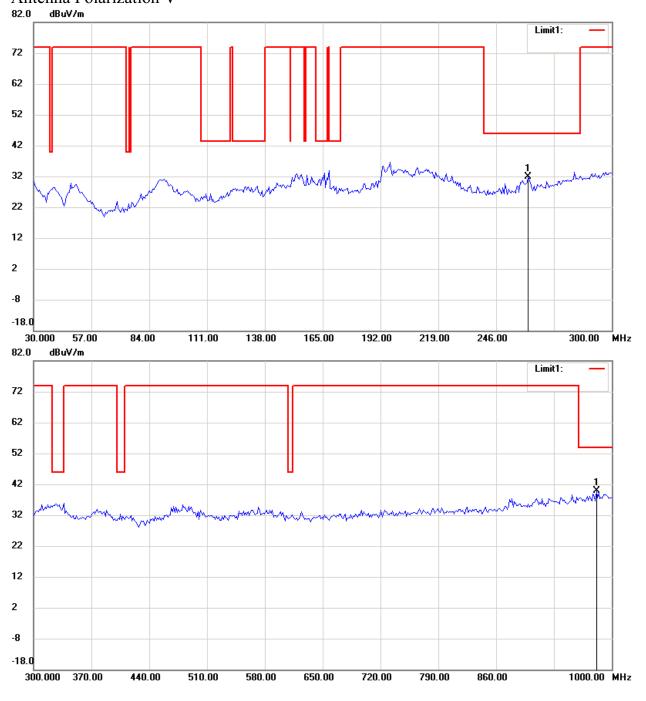
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



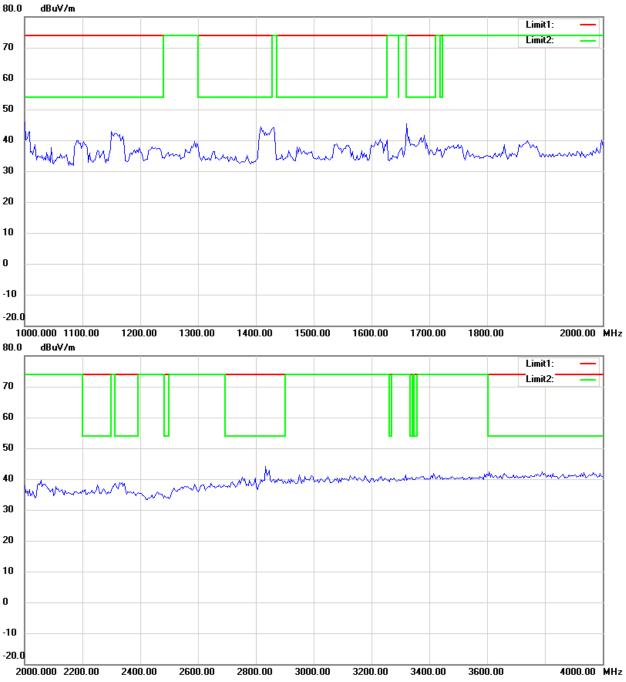
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX Antenna Polarization V



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



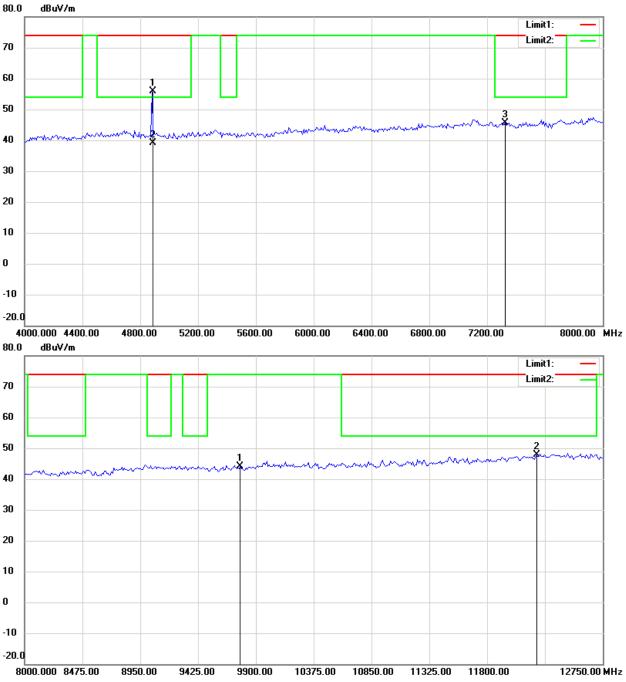
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



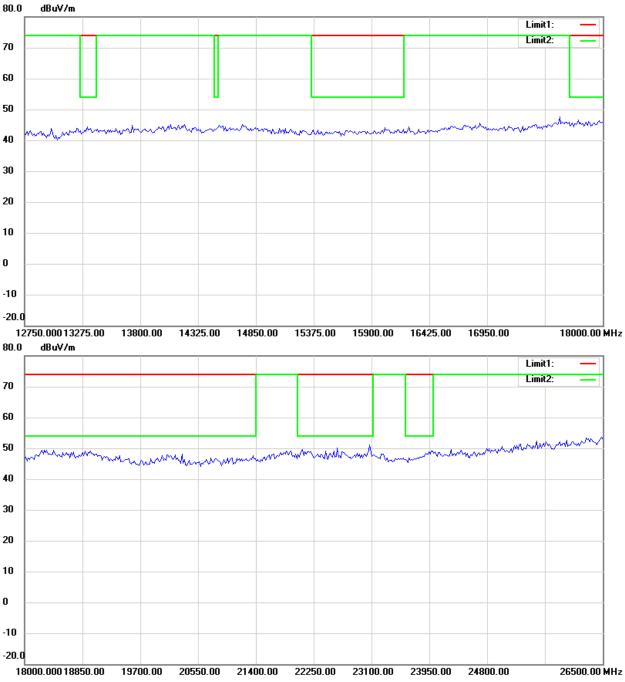
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



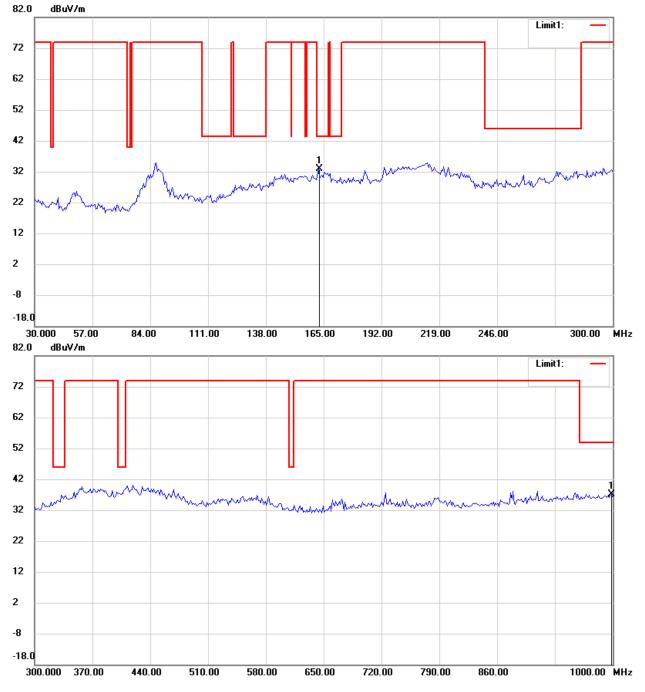
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



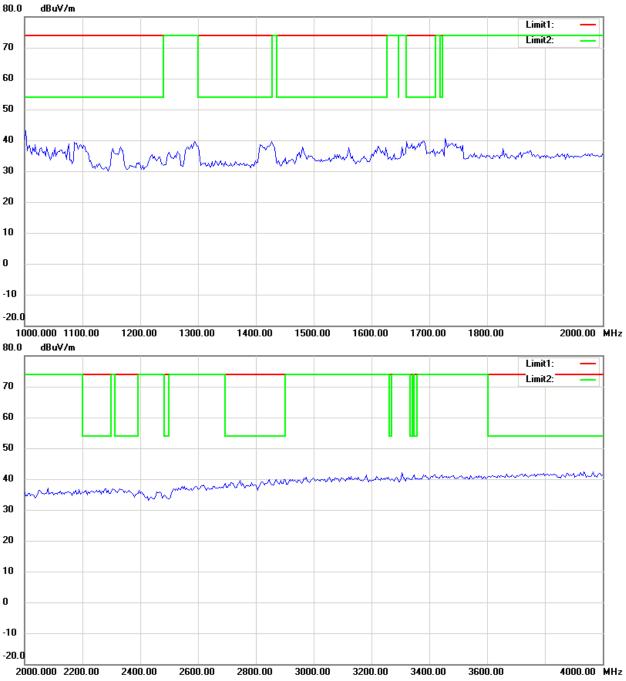
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX TX-CH 78 Antenna Polarization H



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



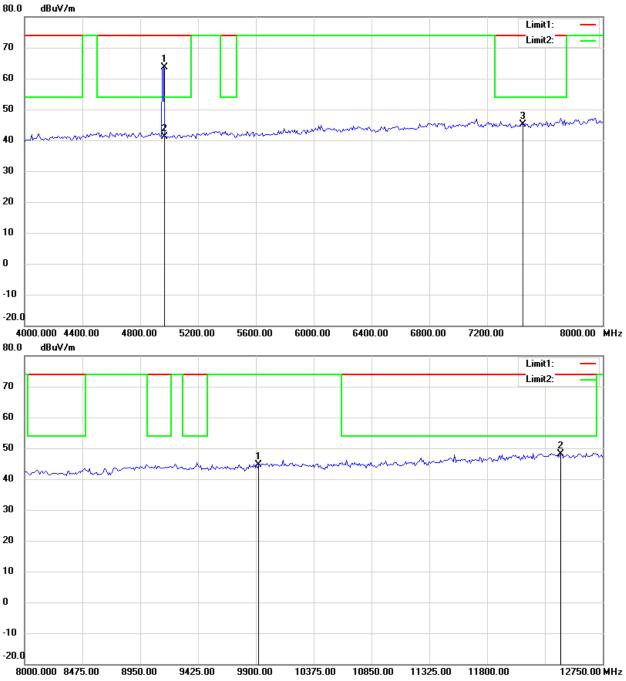
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



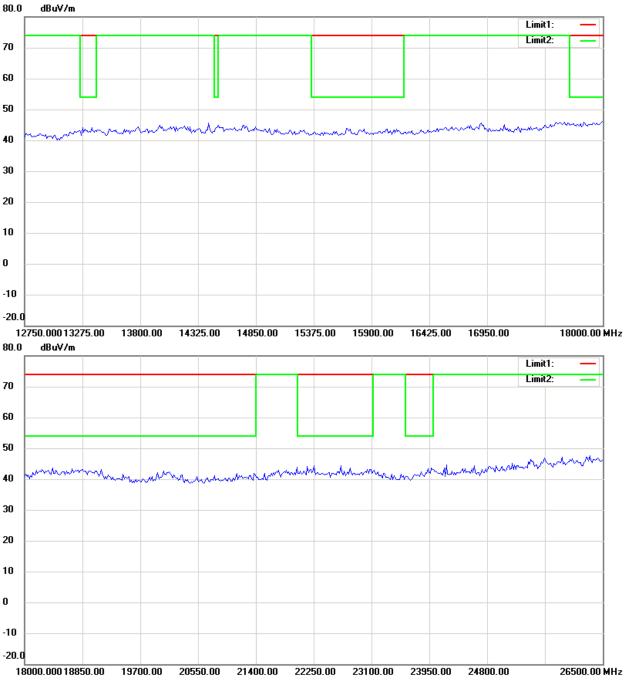
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



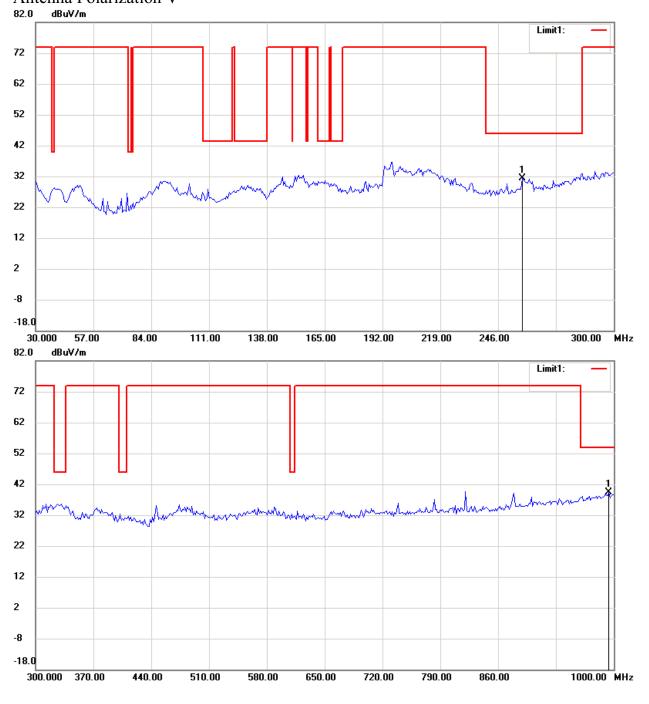
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



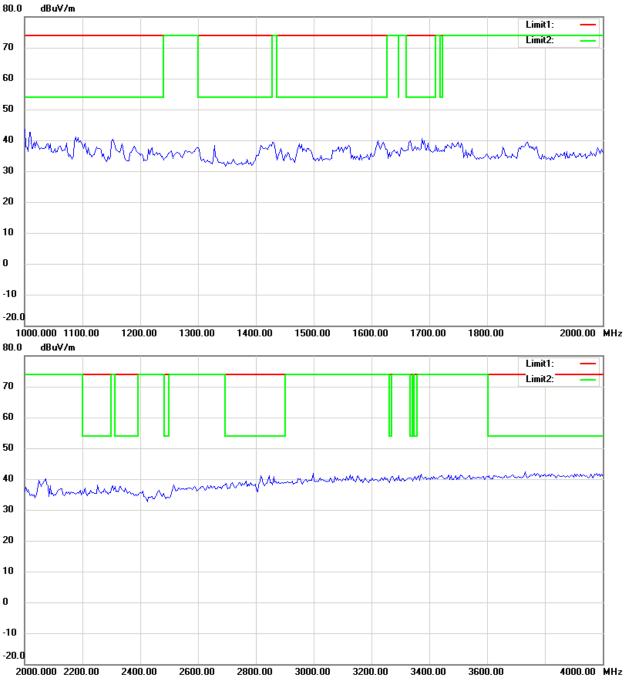
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX Antenna Polarization V



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



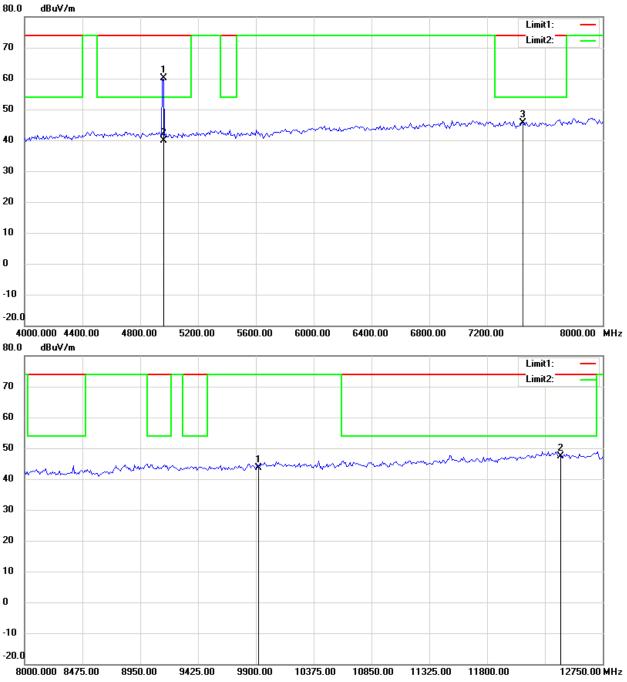
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



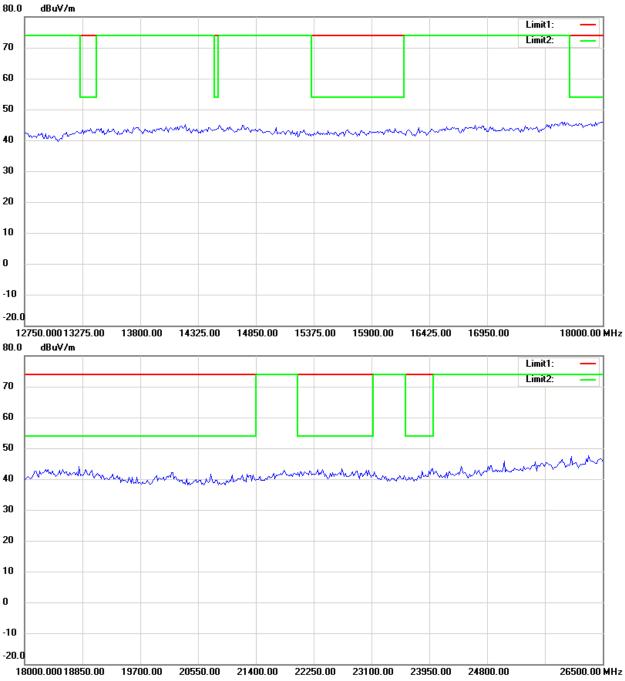
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX

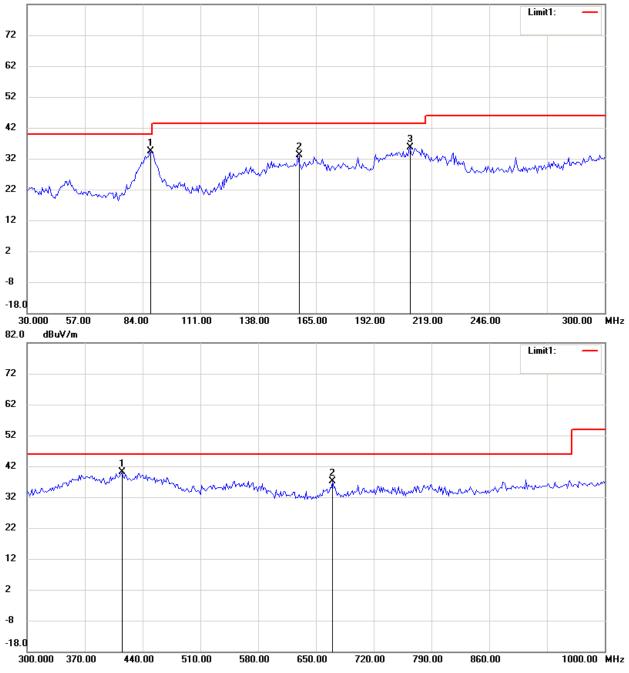


- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX RX-CH 0 Antenna Polarization H

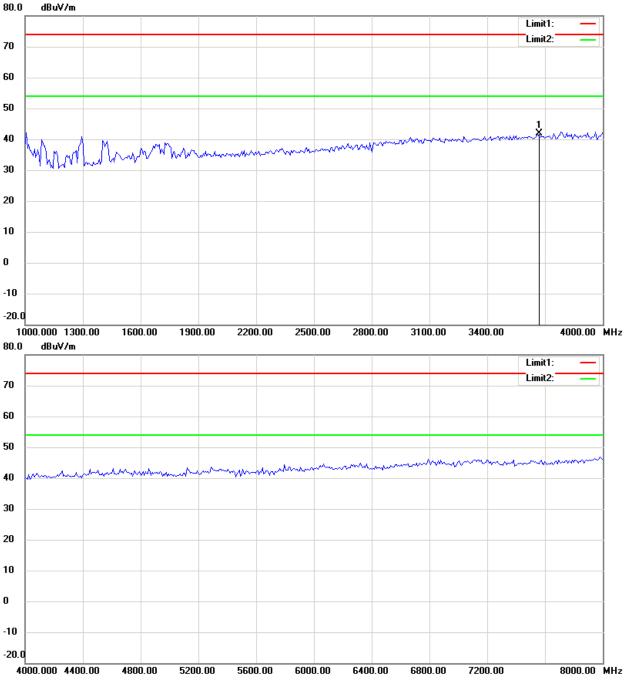




- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



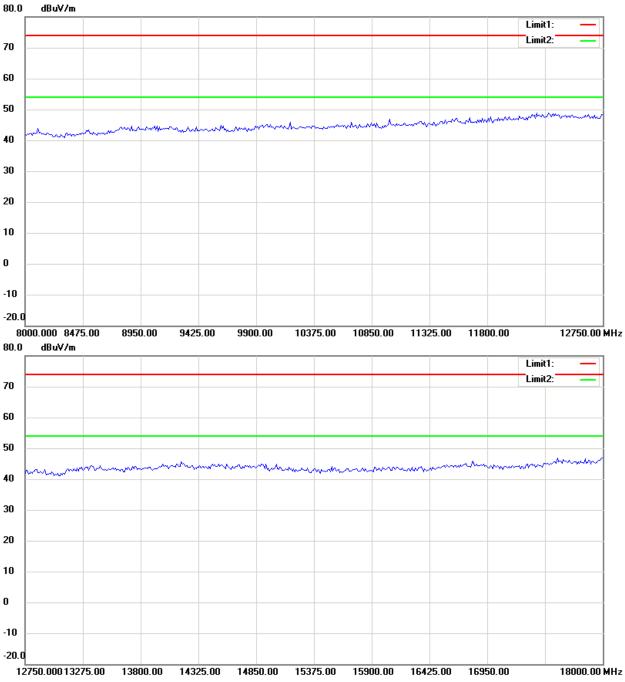
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



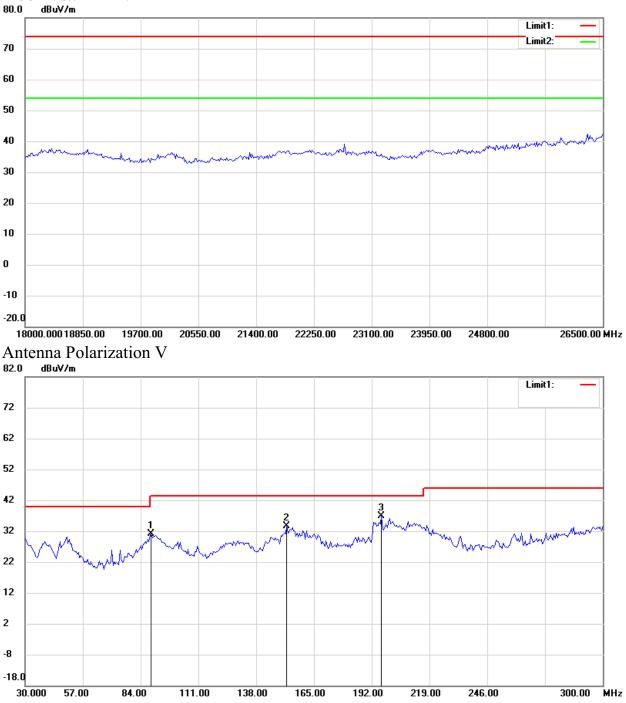
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



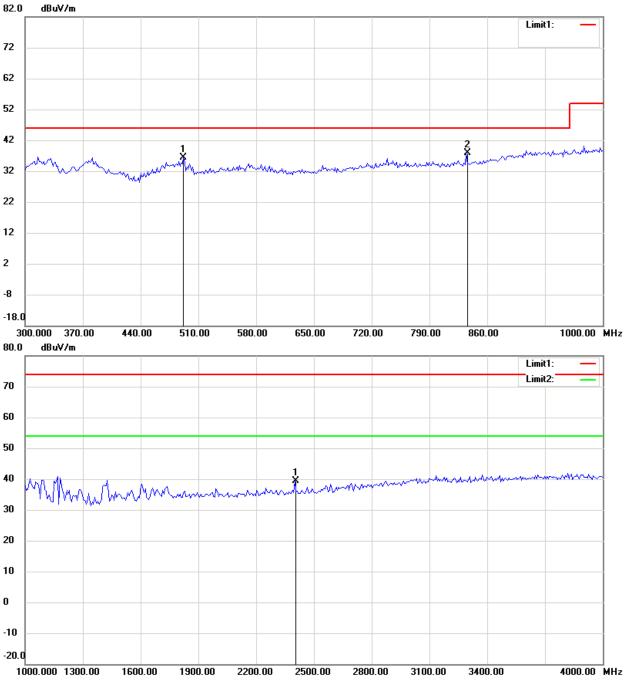
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



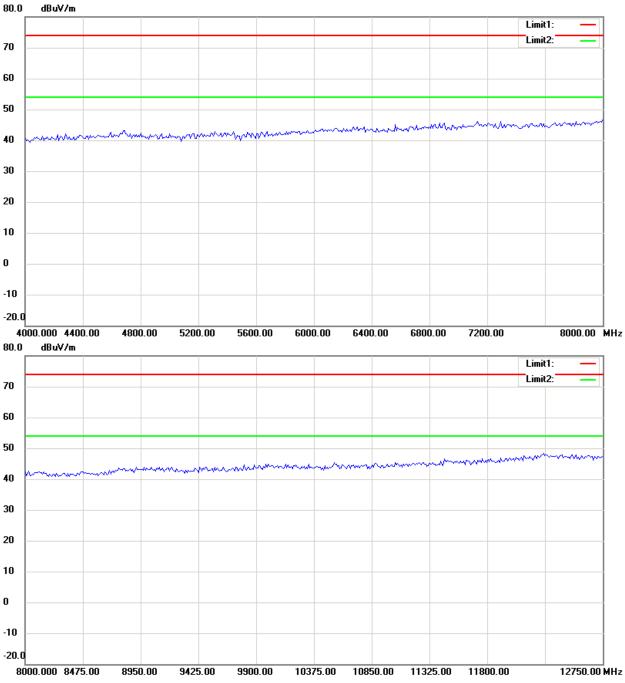
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



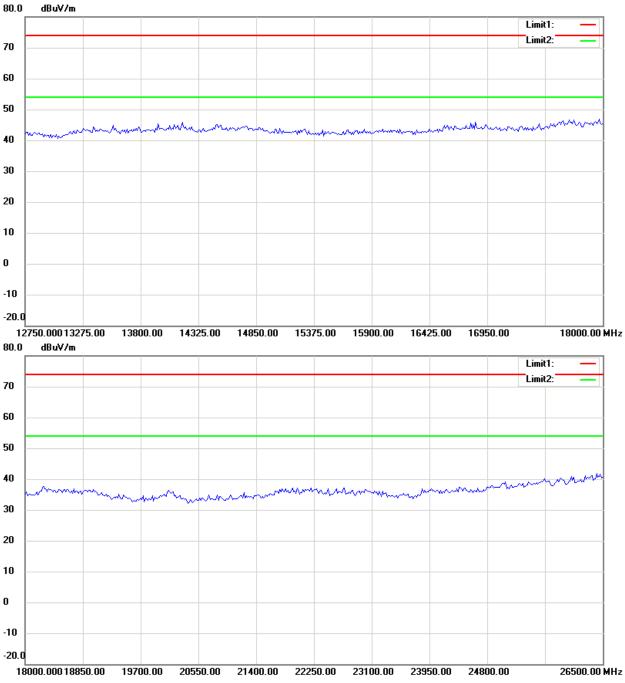
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



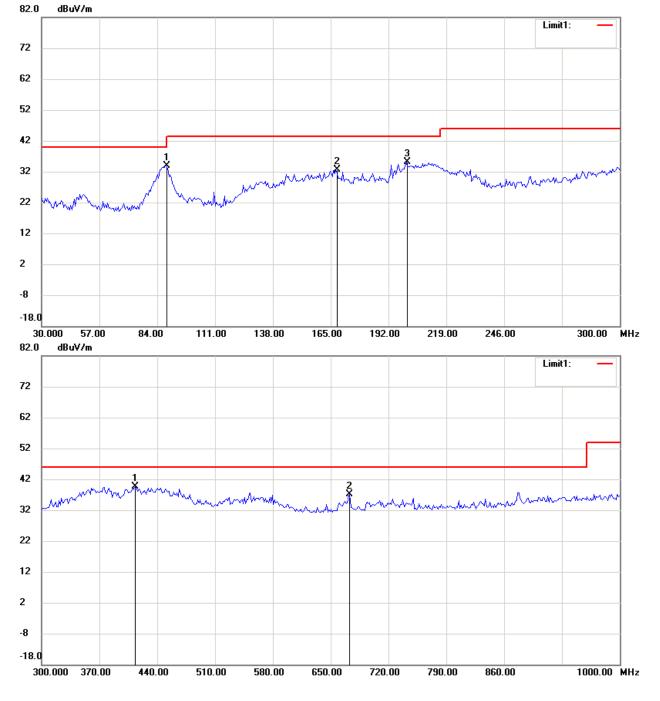
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX RX-CH 39 Antenna Polarization H

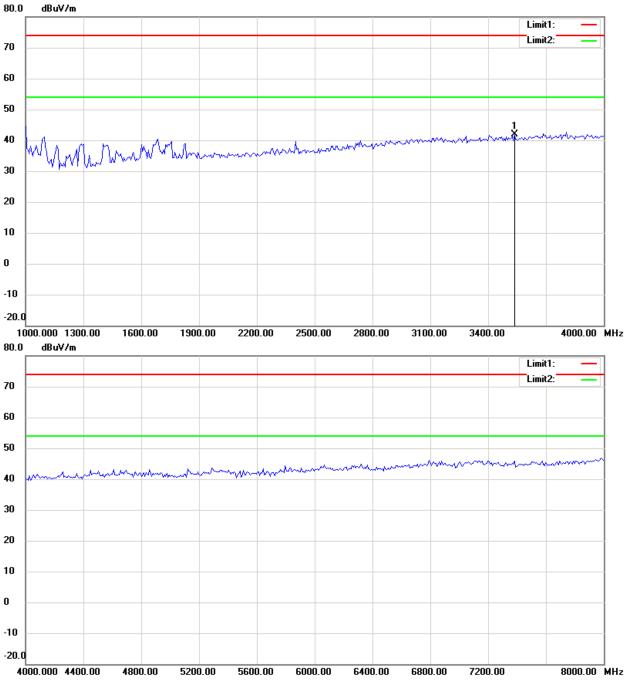


- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



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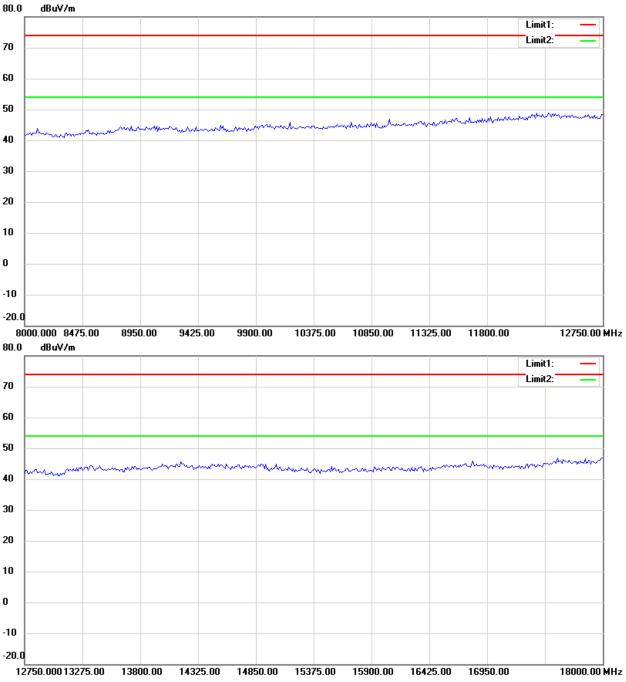
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



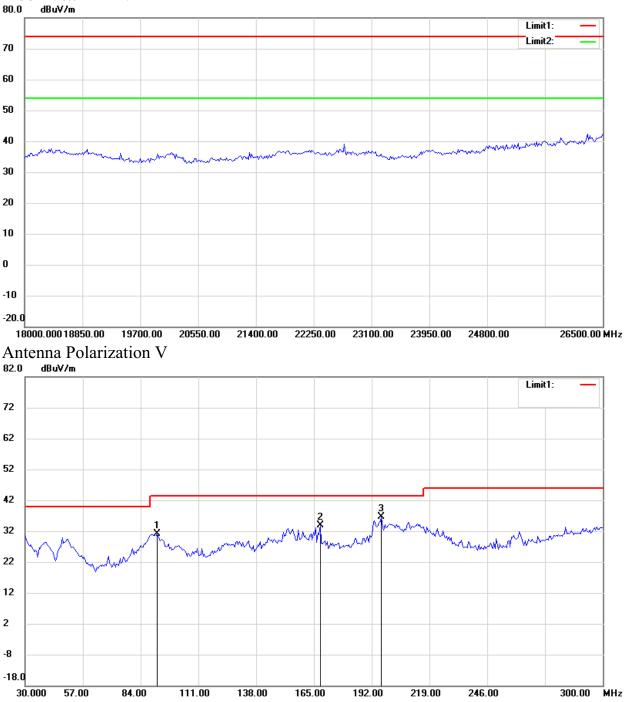
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



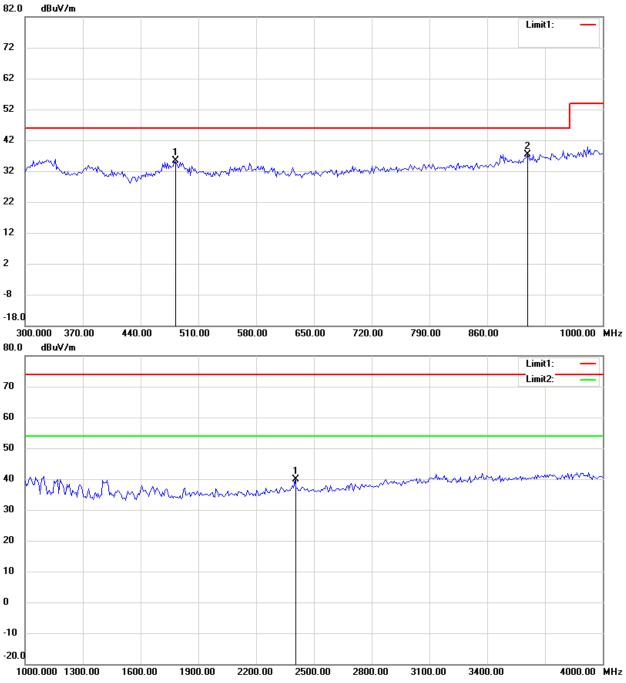
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



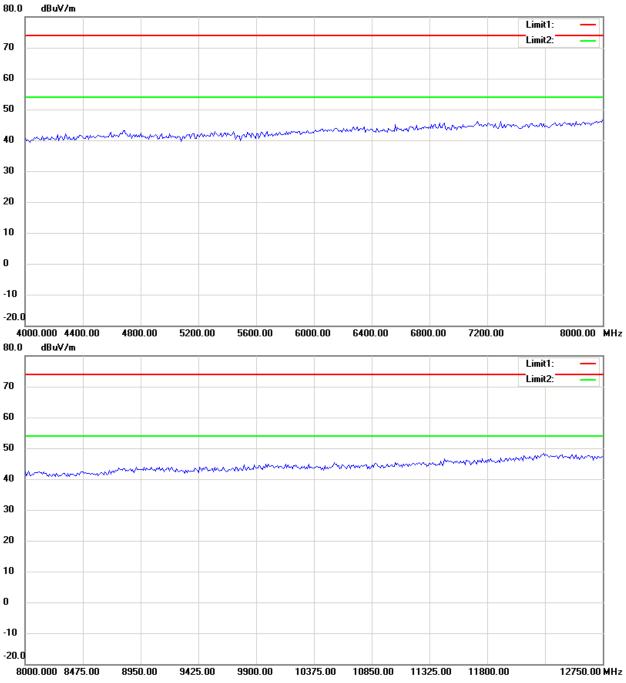
Worldwide Testing Services(Taiwan) Co., Ltd.



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



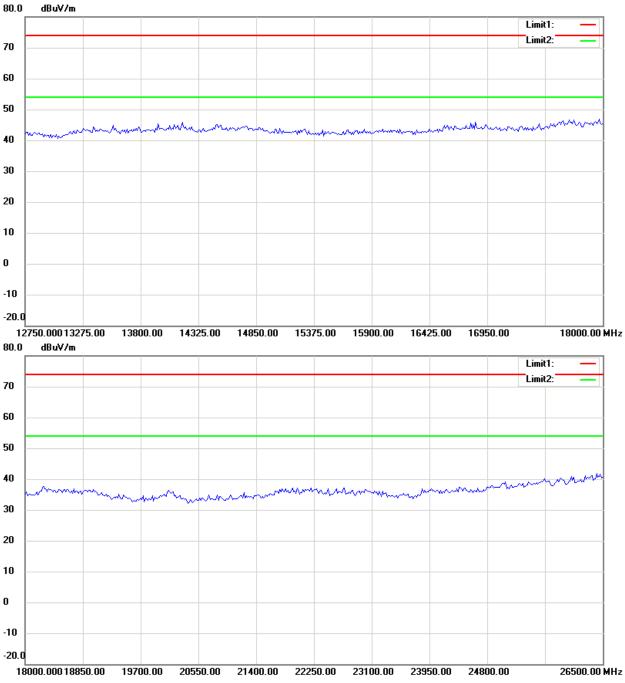
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



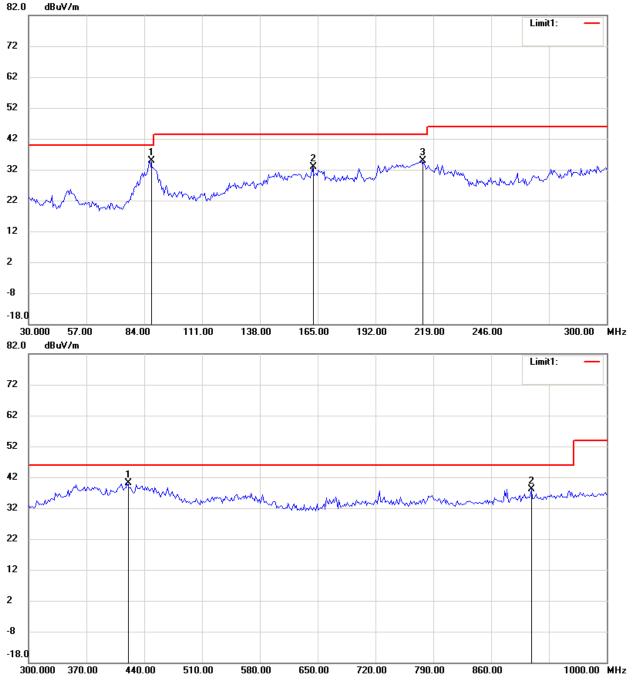
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



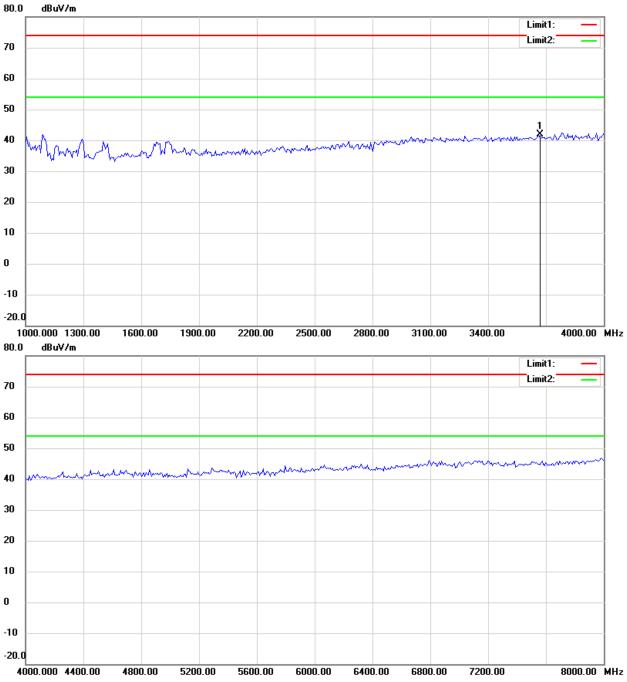
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX RX-CH 78 Antenna Polarization H 82.0 dBuV/m



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



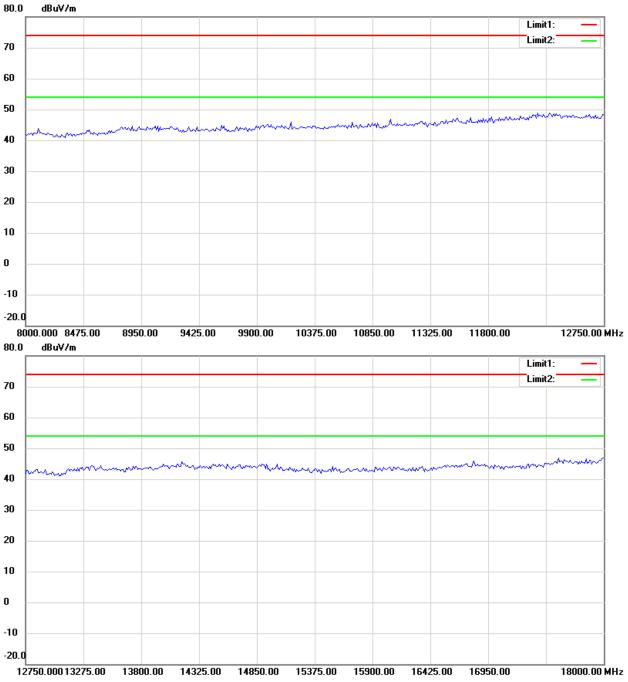
Worldwide Testing Services(Taiwan) Co., Ltd.



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



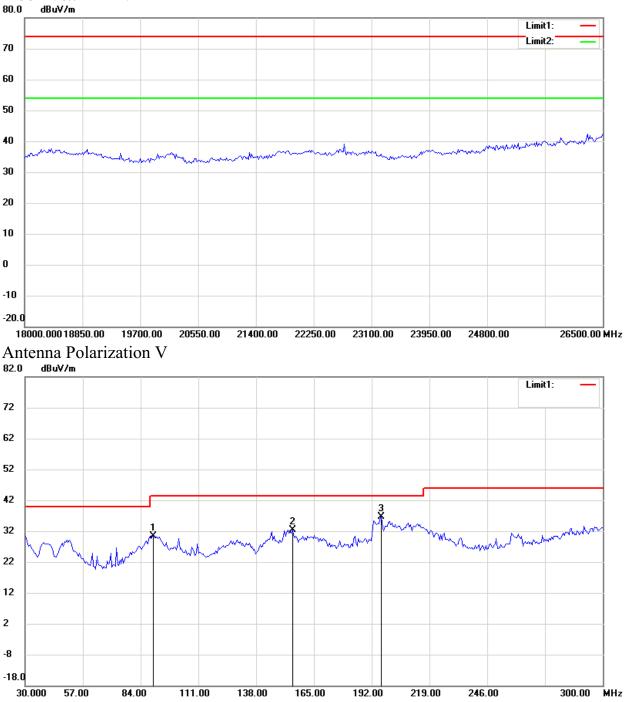
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



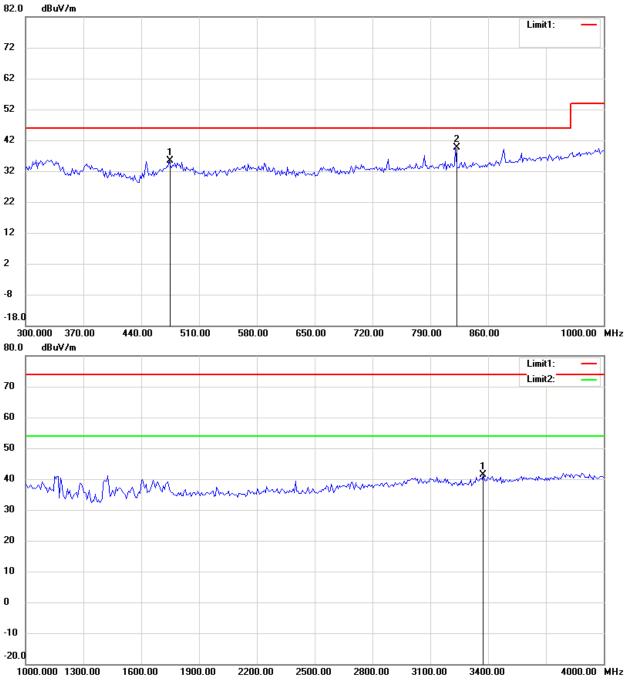
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



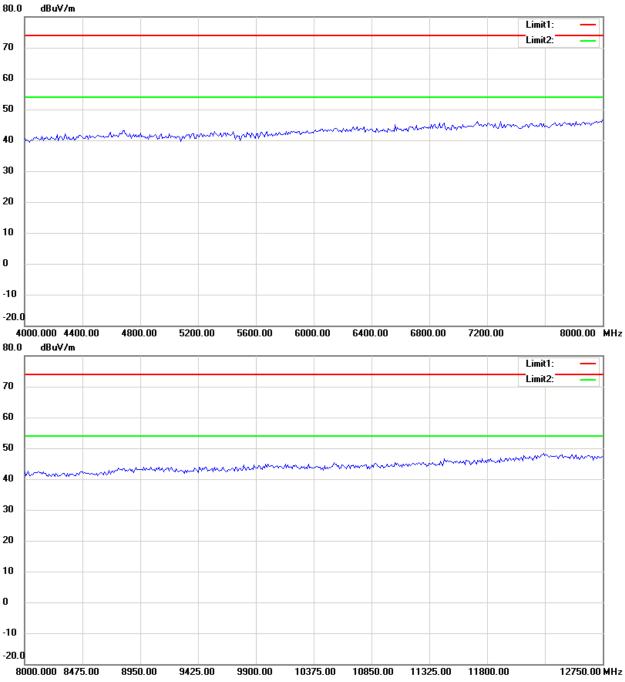
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



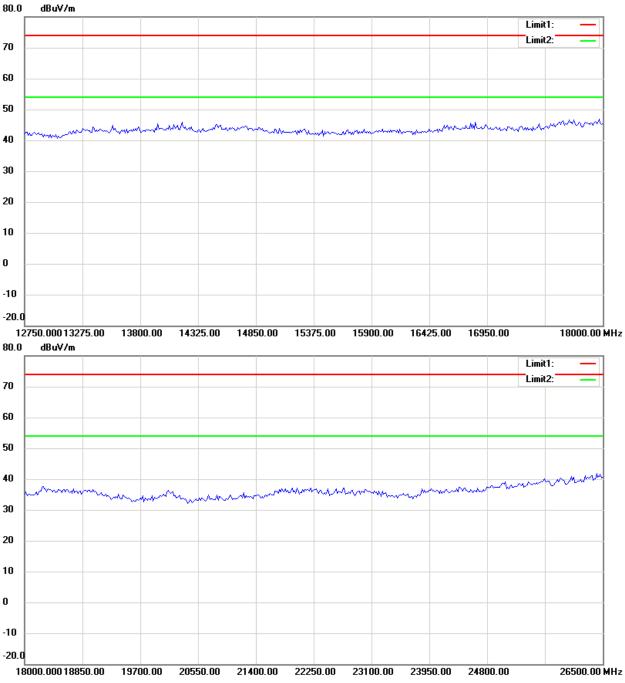
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.

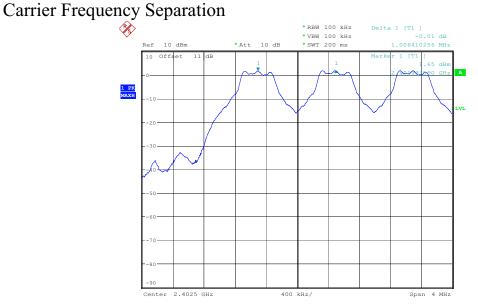


Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX

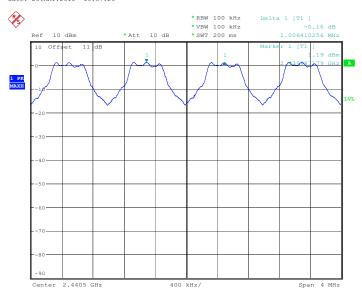


- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



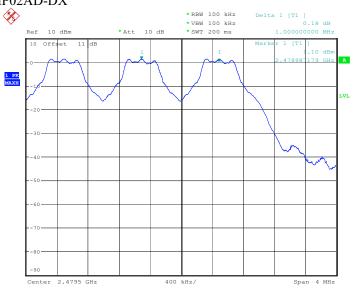


FREQUENCY SEPARATION CH0 Date: 28.MAY.2010 13:57:26



FREQUENCY SEPARATION CH39 Date: 28.MAY.2010 13:58:35

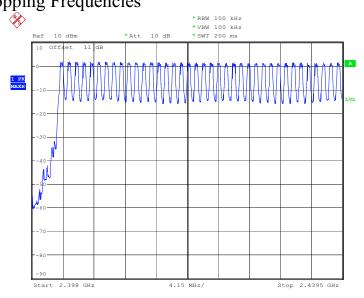




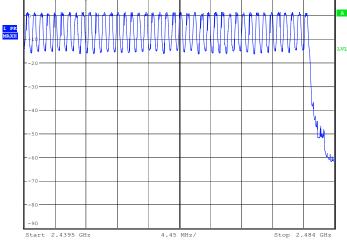
FREQUENCY SEPARATION CH78 Date: 28.MAY.2010 13:59:49



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX Number of Hopping Frequencies





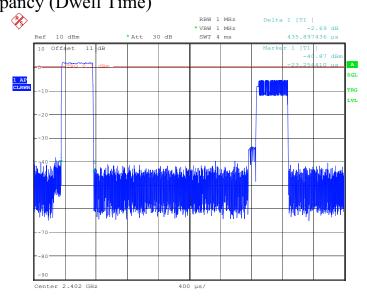


* RBW 100 kHz * VBW 100 kHz * SWT 200 ms

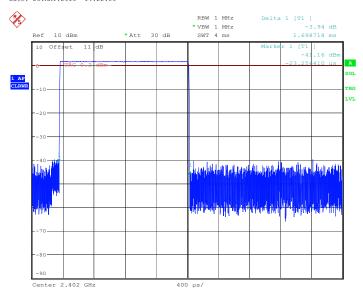
NUMBER OF HOPPING CH38-78 Date: 28.MAY.2010 14:18:06



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX Time of Occupancy (Dwell Time)

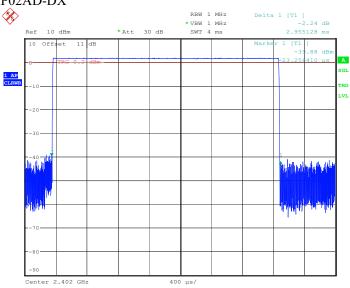


DWELL TIME CHO DH1 (0.436ms * 320events = 139.52ms) Date: 28.MAY.2010 14:22:06

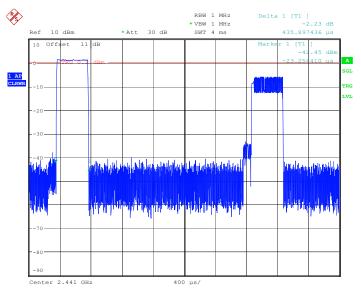


DWELL TIME CHO DH3 (1.699ms * 160events = 271.84ms) Date: 28.MAY.2010 14:26:20



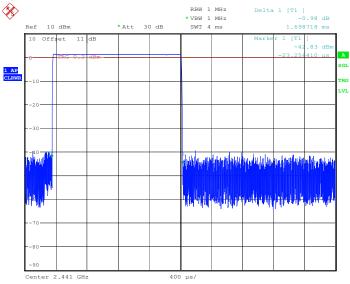


DWELL TIME CHO DH5 (2.955ms * 110events = 325.05ms) Date: 28.MAY.2010 14:27:31

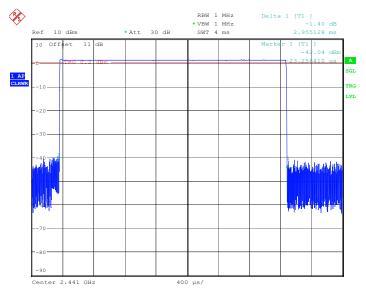


DWELL TIME CH39 DH1 (0.436ms * 320events = 139.52ms) Date: 28.MAY.2010 14:22:38



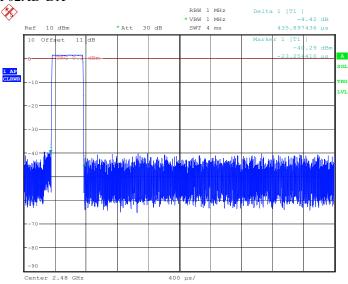


DWELL TIME CH39 DH3 (1.699ms * 160events = 271.84ms) Date: 28.MAY.2010 14:25:50

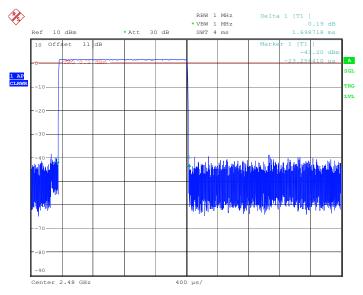


DWELL TIME CH39 DH5 (2.955ms * 110events = 325.05ms) Date: 28.MAY.2010 14:27:49



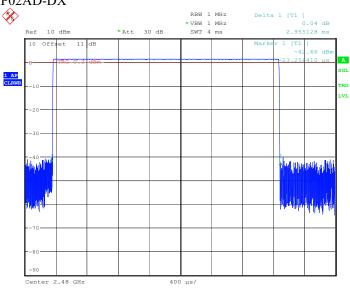


DWELL TIME CH78 DH1 (0.436ms * 320events = 139.52ms) Date: 28.MAY.2010 14:22:57



DWELL TIME CH78 DH3 (1.699ms * 160events = 271.84ms) Date: 28.MAY.2010 14:25:05

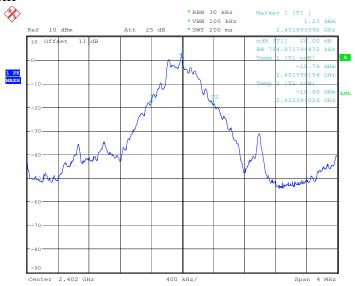


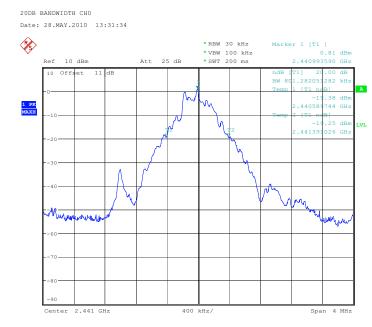


DWELL TIME CH78 DH5 (2.955ms * 110events = 325.05ms) Date: 28.MAY.2010 14:28:07



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX 20dB Bandwidth

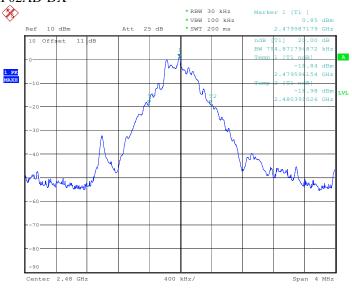




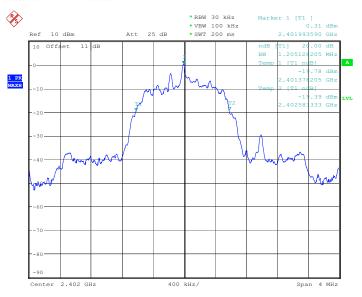
20DB BANDWIDTH CH39 Date: 28.MAY.2010 13:32:32

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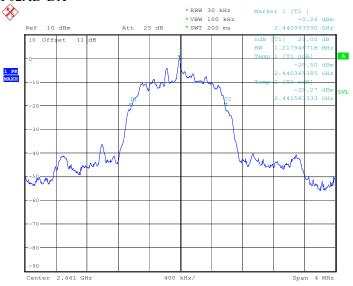


²⁰DB BANDWIDTH CH78 Date: 28.MAY.2010 13:33:00

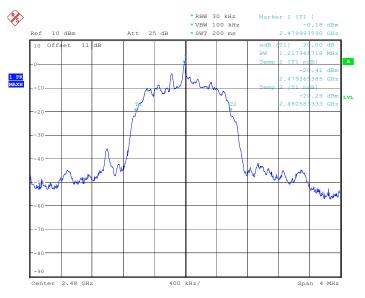


20DB BANDWIDTH CHO EDR MODE Date: 28.MAY.2010 13:35:30





²⁰DB BANDWIDTH CH39 EDR MODE Date: 28.MAY.2010 13:35:06

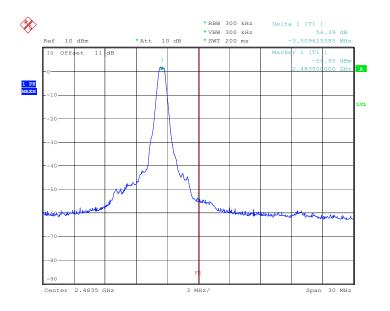


20DB BANDWIDTH CH78 EDR MODE Date: 28.MAY.2010 13:34:43



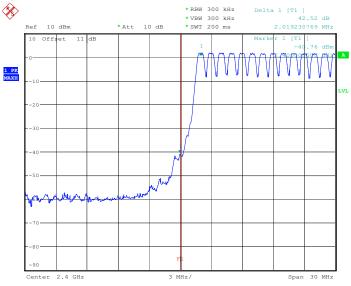
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX Band-edge Compliance of RF Conducted Emissions * RBW 300 kHz * VBW 300 kHz * SWT 200 ms Delta 1 [T1] 42.92 dB ×, 2.019230769 MHz Ref 10 dBm * Att 10 dB Off 11 [T1 -4 15 dB А 1 PK MAXH .vr An Center 2.4 GHz Span 30 MHz 3 MHz/

> BAND EDGE CH0 Date: 28.MAY.2010 13:38:45

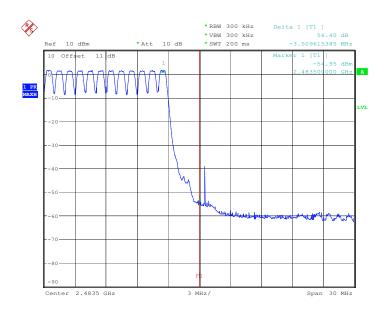


BAND EDGE CH78 Date: 28.MAY.2010 13:43:30



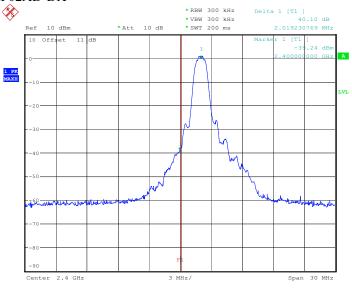


BAND EDGE CHO HOPPING MODE Date: 28.MAY.2010 13:42:07

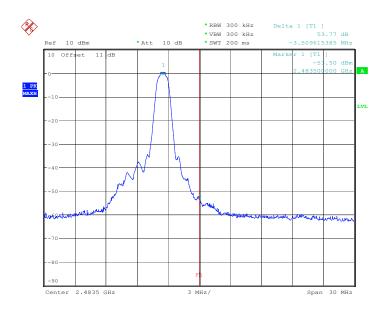


BAND EDGE CH78 HOPPING MODE Date: 28.MAY.2010 13:44:46



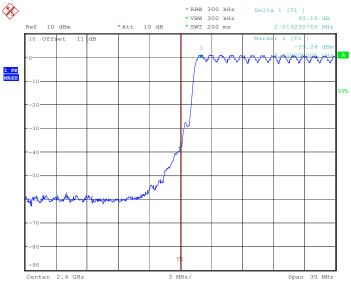


BAND EDGE CHO EDR MODE Date: 28.MAY.2010 13:50:18

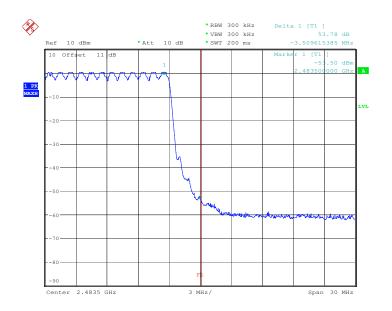


BAND EDGE CH78 EDR MODE Date: 28.MAY.2010 13:46:31





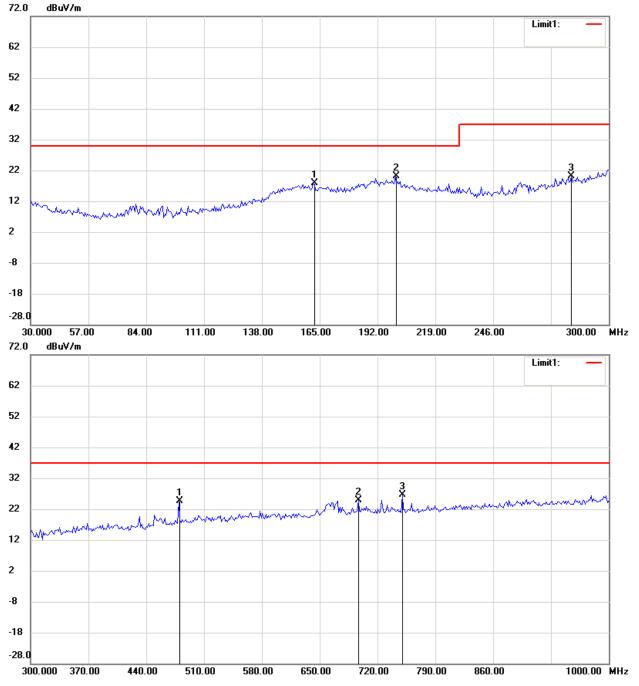
BAND EDGE CHO EDR HOPPING MODE Date: 28.MAY.2010 13:54:11



BAND EDGE CH78 EDR HOPPING MODE Date: 28.MAY.2010 13:49:30



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX Radiated Emissions from Digital part Antenna Polarization H

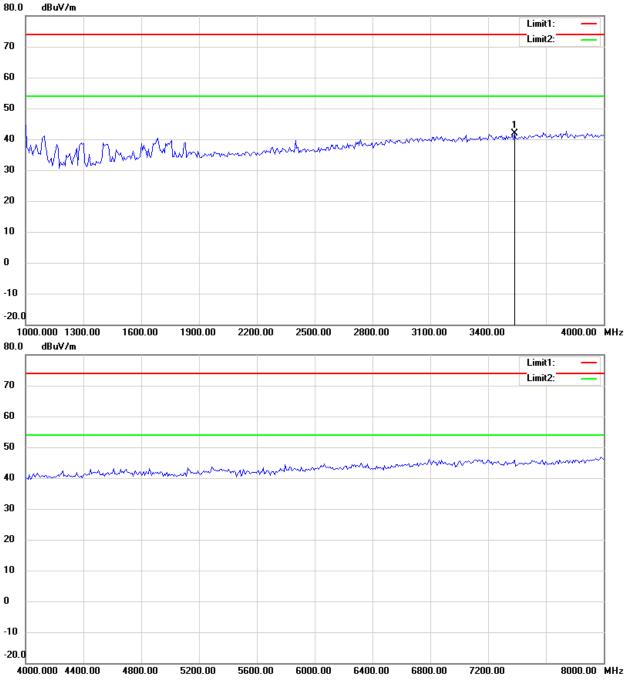


Note:

- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX

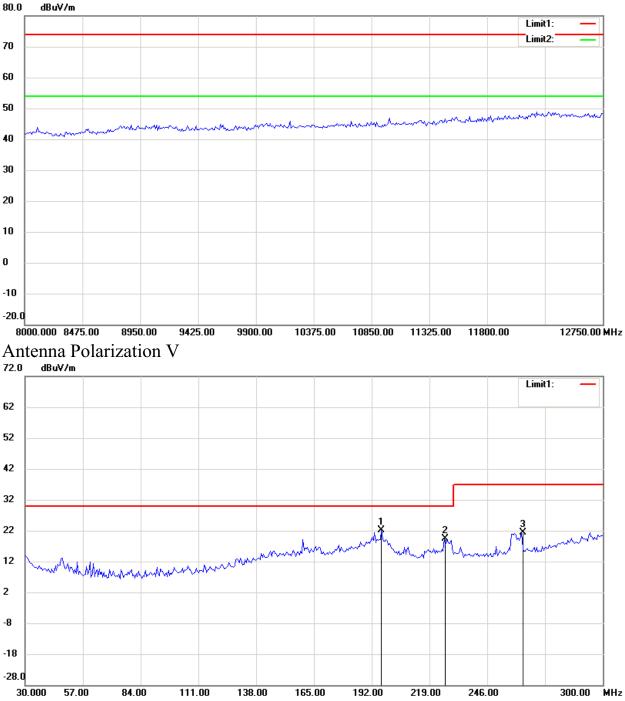


Note:

- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX

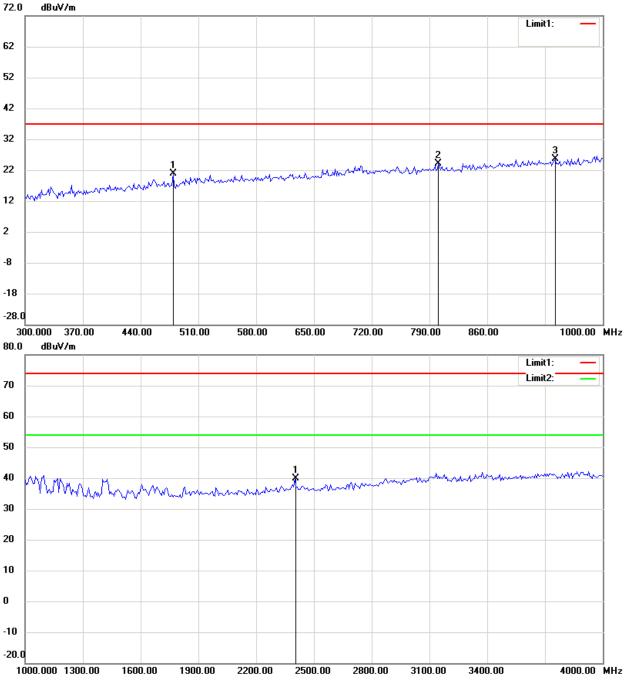


Note:

- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



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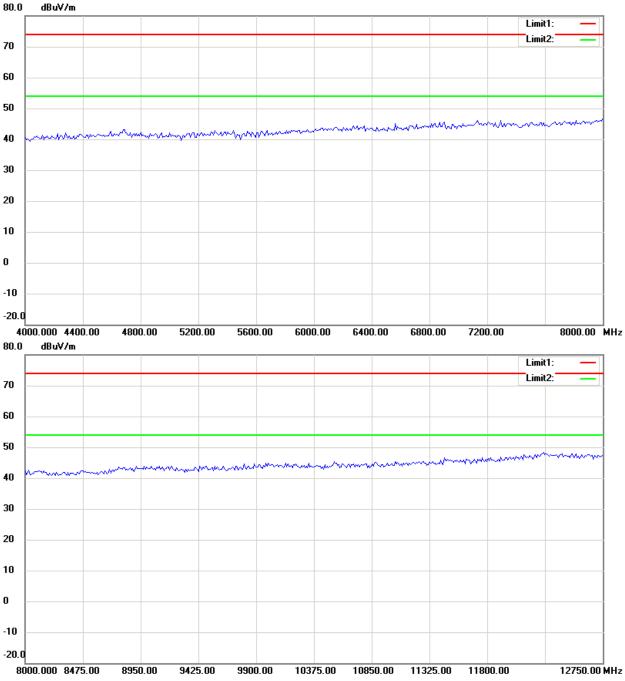


Note:

- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX



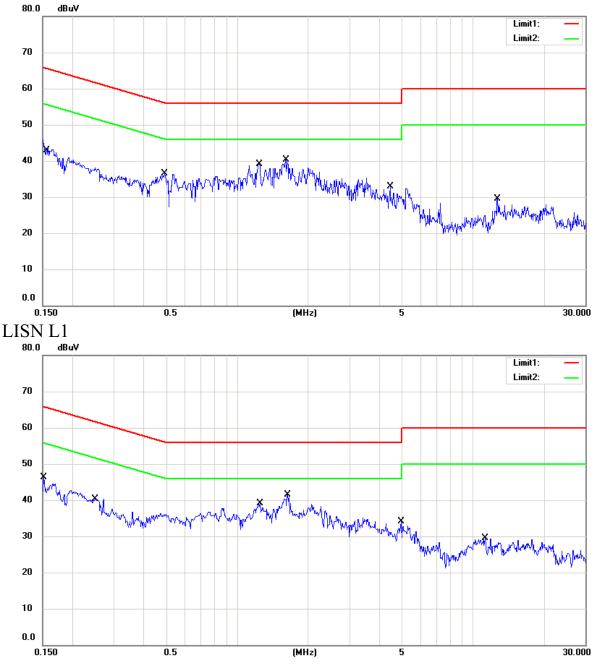
Note:

- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of radiated test data of this test report.



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX Power Line Conducted Emission





- 1. The attached measurement plots are preliminarily pre-scanned with peak detector for determining the final checking frequencies and are for reference only.
- 2. The some frequencies may exceed the limit line without the specified detectors, but that cannot present the results are failed to the specification of test standard.
- 3. For corrected test results are listed in the relevant table of AC conducted test data of this test report.



Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX External Photos





Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX





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Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX





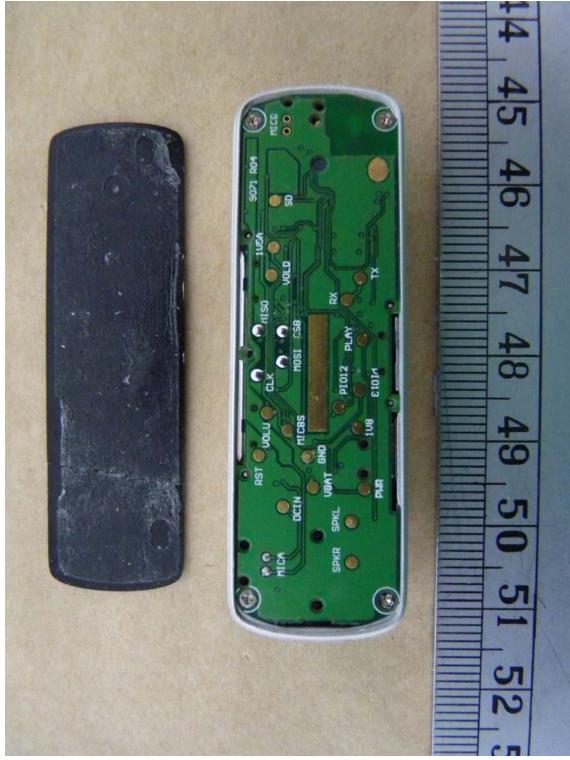




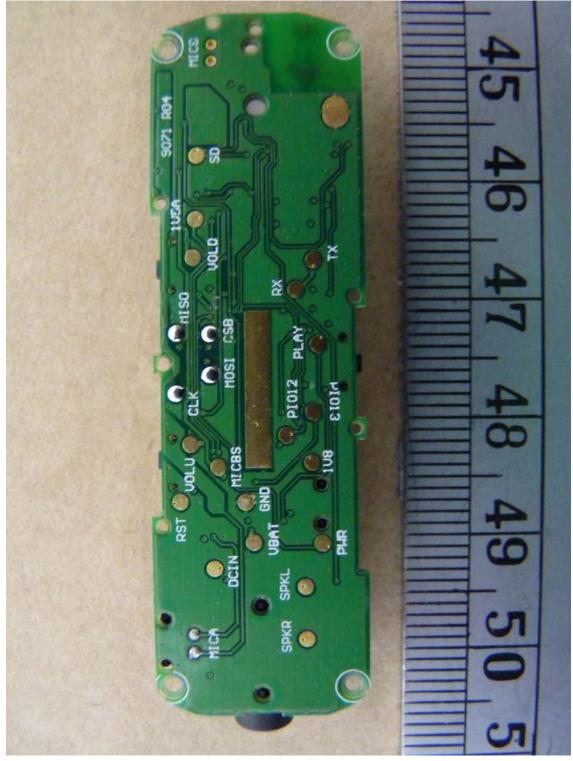




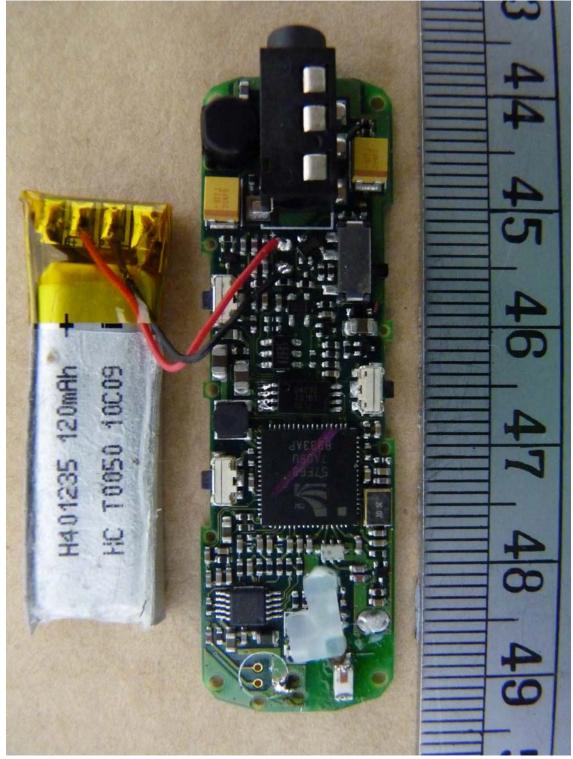
Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX Internal Photos













Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX Multi-listing model no.: BT-HP02AD External photos

















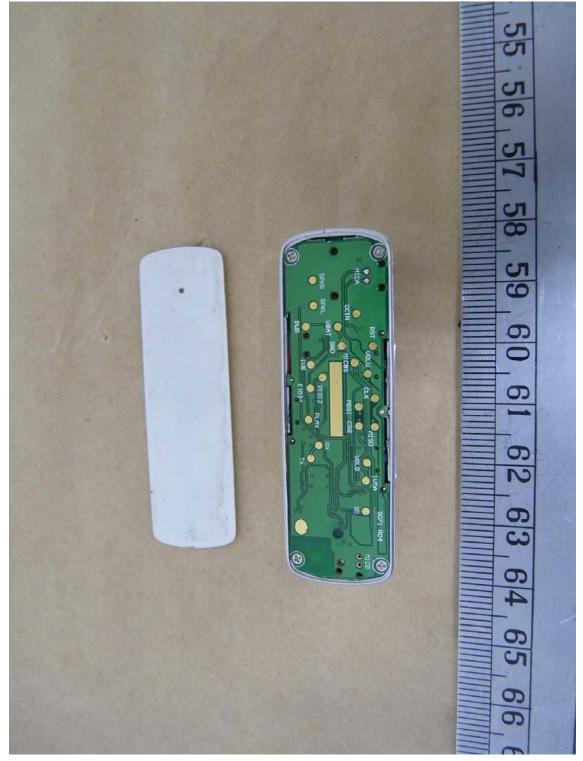








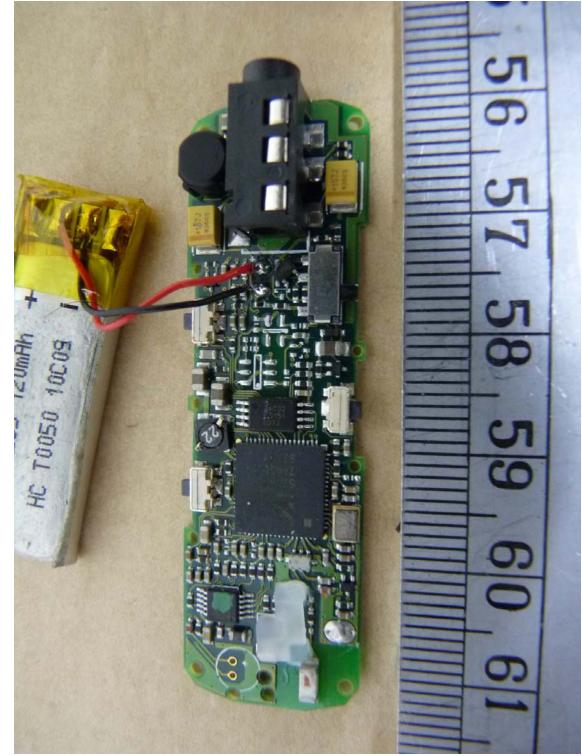
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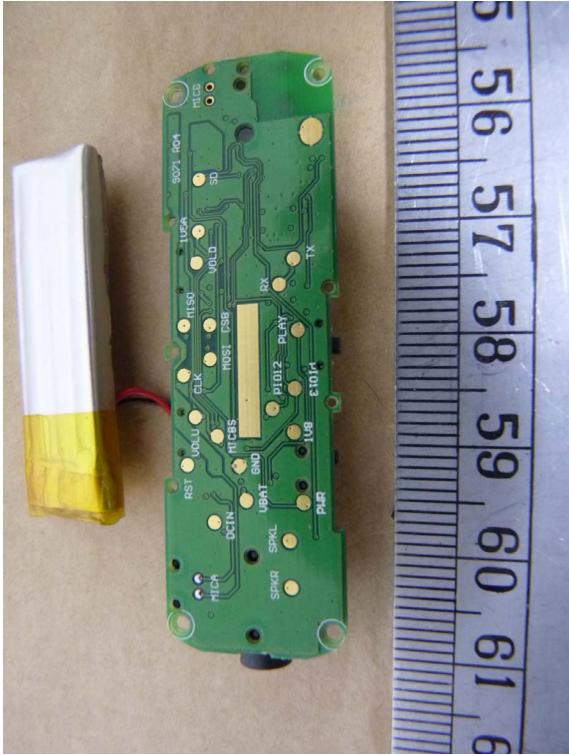














Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX Set Up Photo of Radiated Emission EMI mode













Registration number: W6M21005-10668-C-1 FCC ID: SJ9-BT-HP02AD-DX Set Up Photo of Conducted Emission



